



Agenda Attachments

July 2022

- ATTACHMENT 7.1.1 MINUTES – ORDINARY COUNCIL MEETING – 21 JUNE 2022**
- ATTACHMENT 8.1.1 - ACCOUNTS FOR PAYMENT – JUNE 2022**
- ATTACHMENT 8.1.2 - ACCOUNTS FOR PAYMENT – CREDIT CARDS – MAY 2022**
- ATTACHMENT 8.2.1 - DEVELOPMENT APPLICATION – 699 POULTNEY RD, BULYEE**
- ATTACHMENT 8.2.2 - DEVELOPMENT APPLICATION – 124 CORRY RD, BULYEE**
- ATTACHMENT 8.2.3 - MANAGEMENT OF BUSHFIRE VOLUNTEERS**
- ATTACHMENT 8.2.4 - FEES AND CHARGES**
- ATTACHMENT 8.2.5.1 - 2022/2023 ANNUAL BUDGET**
- ATTACHMENT 8.2.5.2 - 2022/2023 CAPITAL AND PROJECT EXPENDITURE**
- ATTACHMENT 8.3.1 - FINAL BENDERING LANDFILL MANAGEMENT PLAN**
- ATTACHMENT 8.3.2 - QUOTES ROAD MAINTENANCE UNIT AUSROADS AND SOUTH WEST ISUZU**
- ATTACHMENT 8.3.3 - DRFAWA FLOOD AND FIRE DAMAGE PROJECT SUPERVISION QUOTES**



MINUTES

ORDINARY COUNCIL MEETING
21 June 2022

Unconfirmed

CONTENTS

1.	DECLARATION OF OPENING.....	3
2.	ATTENDANCE/APOLOGIES/LEAVE OF ABSENCE	3
3.	PUBLIC QUESTION TIME.....	3
4.	MEMORIALS.....	3
5.	PETITIONS/DEPUTATIONS/PRESENTATIONS/SUBMISSIONS.....	3
6.	DECLARATIONS OF INTEREST	4
7.	CONFIRMATION OF MINUTES.....	7
7.1.	PREVIOUS COUNCIL MEETING AND BUSINESS ARISING FROM MINUTES.....	7
7.1.1.	ORDINARY COUNCIL MEETING	7
7.2.	COMMITTEE MEETINGS AND BUSINESS ARISING FROM MINUTES	7
7.2.1.	AUDIT AND RISK MANAGEMENT COMMITTEE MEETING.....	7
8.	MATTERS REQUIRING A COUNCIL DECISION	8
8.1.	CORPORATE AND COMMUNITY SERVICES REPORTS	8
8.1.1.	ACCOUNTS FOR PAYMENT.....	8
8.1.2.	ACCOUNTS FOR PAYMENT – CREDIT CARDS	10
8.1.3.	MONTHLY FINANCIAL REPORTS	12
8.2.	GOVERNANCE AND COMPLIANCE.....	14
8.2.1.	DELEGATION REGISTER REVIEW.....	14
8.2.2.	1922 & YOU EXEMPTION HEALTH (PUBLIC BUILDING) REGULATIONS	4
8.2.3.	INTERIM AUDIT 2021/2022 FINDINGS AND MANAGEMENT COMMENT	16
8.2.4.	AUDIT AND RISK MANAGEMENT COMMITTEE RECOMMENDATIONS.....	18
8.3.	WORKS AND SERVICES	20
8.3.1.	REMOVAL OF KUNJIN STREET TRAFFIC ISLANDS	20
9.	CHIEF EXECUTIVE OFFICER REPORT	22
10.	PRESIDENT'S REPORT	22
11.	COUNCILLORS' QUESTIONS REPORTS, AND INFORMATION ITEM.....	22
12.	URGENT BUSINESS APPROVED BY THE PRESIDENT OR BY A DECIDED OF THE COUNCIL 22	
13.	INFORMATION BULLETIN.....	22
14.	WALGA AND CENTRAL ZONE MOTIONS.....	22
15.	NEXT MEETING	22
16.	MEETING CLOSURE	22

1. DECLARATION OF OPENING

The Chairperson, Shire President Cr. D Hickey opened the meeting at 3.03pm and acknowledged the Njaki Njaki Nyoongar people as the traditional owners of the lands and waters where Corrigin is situated, and paid respect to Elders past and present.

2. ATTENDANCE/APOLOGIES/LEAVE OF ABSENCE

Shire President

Cr. D L Hickey
Cr. S L Jacobs
Cr. S C Coppen
Cr. M B Dickinson
Cr. C E Steele
Cr. B Fare (via Teams)

Chief Executive Officer
Executive Support Officer

N A Manton
K L Biglin

Members of the Public

J MacGregor
C Burling
G Humphries
A Hughes
S Burch
S Mayne

APOLOGIES

Deputy Shire President

Cr. M A Weguelin

COUNCIL RESOLUTION

(57/2022) Moved: Cr Steele

Seconded: Cr Coppen

That council allow Cr Brydon Fare to attend the meeting electronically by MS Teams from his home in Perth due to COVID-19.

Carried 5/0

3. PUBLIC QUESTION TIME

NIL

4. MEMORIALS

The Shire has been advised that Bruce Matthews, Helen Lee, Yvonne Matthews and Judith Crossland have passed away since the last meeting.

5. PETITIONS/DEPUTATIONS/PRESENTATIONS/SUBMISSIONS

Juanita MacGregor gave a presentation on behalf of 1922 & You seeking Council support to activate the space at 33 Walton Street, Corrigin and to provide background to their request of exemption under the *Health (Public Building) Regulations 1992*.

COUNCIL RESOLUTION

(58/2022) Moved: Cr Coppen

Seconded: Cr Jacobs

Council resolved to bring item 8.2.2 1922 & You Exemption Health (Public Building) Regulations) forward to the first item in the agenda.

Carried 6/0

8.2.2. 1922 & YOU EXEMPTION HEALTH (PUBLIC BUILDING) REGULATIONS

Applicant:	1922 & You
Date:	7/06/2022
Reporting Officer:	Lauren Pitman, Environmental Health Officer
Disclosure of Interest:	NIL
File Ref:	A1058
Attachment Ref:	Attachment 8.2.2 Variation request for 1922 & You

SUMMARY

This report seeks Council approval to decrease the number of sanitary facilities required for the 1922 & You premises at 33 Walton Street, Corrigin.

BACKGROUND

The building and land at 33 Walton Street, was sold by the Red Cross to the 1922 & You group last year. The not-for-profit organisation was formed by local people with the common interest to activate a community space for Corrigin that was different to what is already available in the town. The historically significant building, although requiring much repair and renovation, was found to be a good place to establish a multi-purpose building and area for youth and families to use.

Since the idea of this community space was put forward to the community there has been a drive to raise funds to return the building to a habitable state. The roof structure needs complete replacement and the northern wall also requires some structural work. These works require a building permit which will be sought from the Shire when the engineering drawings have been completed. As part of the building permit process, some other aspects of the premises will also be required to be improved and be brought into line with current day Regulations and Code.

The building and outdoor area is classified as a public building under the *Health (Public Building) Regulations 1992* (the Regulations), in particular a 9B building as per the Building Code of Australia (the Code). The number of toilets required under the Code, which is also a requirement of the Regulations, must be increased to accommodate the maximum amount of people that the building and outdoor area can hold.

In consultation with Mr Duncan Wilson, the contract building surveyor at the City of Kalamunda, the number of toilets the premises should have based on a maximum accommodation of 150-200 people, is:

- 2 x Female ablutions (including 1 x Female ambulant pan)
- 2 x Male ablutions (including 1 x Male ambulant pan)
- 1 x Unisex Disabled accessible abluion

The 1922 & You group investigated the cost of a demountable style toilet block. The group applied for funding to assist with acquiring these ablutions, to the Shire in the community grants round in April 2022, however their application was not successful. They have applied to other funding sources.

The 1922 & You Chairperson, Juanita MacGregor, has consulted with the Shire CEO and EHO to revisit the toilet requirements for the community space at 33 Walton Street.

In consultation with the Shire's EHO, it was suggested that the group gain approval from the Shire of Corrigin for the required sanitary facility number to be reviewed and reduced using Regulation 20 of the Regulations:

20. *Sanitary facilities*

(1) *Every public building, shall, unless exempted in writing by the local government, be provided with a water carriage system for sewage disposal and sanitary conveniences in accordance with the Building Regulations or as approved by the local government.*

The EHO advised that Council support and approval be granted prior to a building permit application being submitted to the Shire for the project so that the group can organise the ablution block and budget for the cost of it.

COMMENT

The Code specifies the number of sanitary facilities required for a Class 9B building, and due to the limited use of this building and area, a lesser amount has been deemed to be suitable by the Shire's Environmental Health Officer.

1922 & You Chairperson, Mrs Juanita MacGregor, has written an email to the Shire of Corrigin (see attachment) requesting that the sanitary facilities that will be required at the 33 Walton Street public building, when it is developed, are reduced to the following:

- 2 x Unisex Pans; and
- 1 x Unisex Disabled/Ambulant Pan (to regulations)

The Shire EHO is in support of the reduced number of toilets for the 9B public building, however there must also be hand wash basins supplied with each toilet.

It has been agreed between Mrs MacGregor and the Shire EHO that the requested ablutions will cater for up to 150 people only. This will set the maximum accommodation for the whole facility when it becomes approved under the Regulations and will appear on the building's certificate which must be displayed at the building at all times.

Any function which requires a higher number of people, will either be required to have additional portable toilets brought in, or an alternative function venue will need to be sought.

STATUTORY ENVIRONMENT

Health (Public Buildings) Regulations 1992
Building Code of Australia

POLICY IMPLICATIONS

NIL

FINANCIAL IMPLICATIONS

NIL

COMMUNITY AND STRATEGIC OBJECTIVES

Shire of Corrigin Strategic Community Plan 2021-2031 and Corporate Business Plan 2021-2025:

Objective: Social

An effectively serviced, inclusive and resilient community

Strategic Community Plan		Corporate Business Plan	
Outcome	Strategies	Action No.	Actions
1.4	Support local volunteer organisations through initiatives that reduce volunteer fatigue and strengthen their resilience	1.4.2	Continue to lobby the key stakeholders to ensure the necessary support is provided for volunteer services who support Corrigin
		4.4.4	Continue to lobby the key stakeholders to ensure the necessary support is provided for volunteer services who support Corrigin

VOTING REQUIREMENT

Simple Majority

COUNCIL RESOLUTION

(59/2022) Moved: Cr Steele Seconded: Cr Dickinson

That Council approves the request by 1922 and You, to alter the required number of sanitary facilities to the lesser numbers of:

- 1 x unisex toilet and hand wash basin with disability access compliant with the Building Code of Australia, and*
- 2 x unisex toilets with hand wash basins,*

for the public building located at 33 Walton Street, which 1922 & You have proposed will be repaired and altered to become a community and youth hub for multiple community uses in the near future.

Carried 6/0

J MacGregor, C Burling, A Hughes G Humphries, S Burch and S Mayne left the room at 3.37pm and did not return.

DECLARATIONS OF INTEREST

Cr Coppen declared a Proximity Interest in item 8.3.1 as he owns the businesses located on Kunjin Street

6. CONFIRMATION OF MINUTES

6.1. PREVIOUS COUNCIL MEETING AND BUSINESS ARISING FROM MINUTES

6.1.1. ORDINARY COUNCIL MEETING

Minutes of the Shire of Corrigin Ordinary Council meeting held on Tuesday 17 May 2022 (Attachment 7.1.1).

COUNCIL RESOLUTION

(60/2022) Moved: Cr Dickinson Seconded: Cr Jacobs

That the Minutes of the Shire of Corrigin Ordinary Council meeting held on Tuesday 17 May 2022 (Attachment 7.1.1) be confirmed as a true and correct record.

Carried 6/0

6.2. COMMITTEE MEETINGS AND BUSINESS ARISING FROM MINUTES

6.2.1. AUDIT AND RISK MANAGEMENT COMMITTEE MEETING

Minutes of the Shire of Corrigin Audit and Risk Management Committee Meeting held on Tuesday 14 June 2022 (Attachment 7.2.1).

COUNCIL RESOLUTION

(61/2022) Moved: Cr Steele Seconded: Cr Dickinson

That the Minutes of the Shire of Corrigin Audit and Risk Management Committee Meeting held on Tuesday 14 June 2022 (Attachment 7.2.1) be confirmed as a true and correct record.

Carried 6/0

7. MATTERS REQUIRING A COUNCIL DECISION

7.1. CORPORATE AND COMMUNITY SERVICES REPORTS

7.1.1. ACCOUNTS FOR PAYMENT

Applicant:	Shire of Corrigin
Date:	9/06/2022
Reporting Officer:	Tanya Ludlow, Finance / Human Resources Officer
Disclosure of Interest:	NIL
File Ref:	FM.0036
Attachment Ref:	Attachment 8.1.1 – Accounts for Payment – May 2022

SUMMARY

This report provides Council with a list of all financial dealings relating to all accounts for the previous month.

BACKGROUND

This information is provided to Council monthly in accordance with provisions of the *Local Government Act 1995* and *Local Government (Financial Management) Regulations 1996*. A Local Government is to develop procedures for the authorisation of, and payment of, accounts to ensure that there is effective security for which money or other benefits may be obtained.

COMMENT

The cheque, EFT and Direct Debit payments that have been raised during the month of February 2022 are provided as Attachment 8.1.1 – Accounts for Payment – May 2022.

After payment of the following cheque, EFT and Direct Debit payments, the balance of creditors will be \$587.17.

Bank Account	Payment Type	Reference	Amount	Total
Municipal	EFT	17479 - 17487, 17490 - 17577	\$648,108.66	
	Cheque	020737 - 020747	\$22,462.59	
	Direct Debit	May 2022	\$27,682.00	
	Payroll	May 2022	\$123,740.78	\$821,994.03
Trust	EFT	17488 - 17489	\$60.60	
	Cheque	No Payments	\$0.00	
	Direct Debit	No Payments	\$0.00	\$60.60
Licensing Trust	EFT	No Payments	\$0.00	
	Direct Debit	May 2022	\$34,338.85	\$34,338.85
Edna Stevenson	EFT	No Payments	\$0.00	
	Cheque	No Payments	\$0.00	
	Direct Debit	No Payments	\$0.00	\$0.00
Total Payments for the Month of May 2022				\$856,393.48

Previous Accounts for Payment report

To enable Council to check that no sequential payment numbers have been missed from the previous accounts for payment report and the report provided as Attachment 8.1.1 – Accounts for Payment – May 2022, the following information is provided on the last cheque or EFT number used.

Bank Account	Payment Type	Last Number	First Number in Report
Municipal, Trust, ES Trust and Licensing	EFT	EFT17478	EFT17479
Municipal	Cheque	020736	020737
Trust	Cheque	003392	No Payments
Edna Stevenson	Cheque	000065	No Payments

Please note that the above does not include payments made via Direct Debit (DD) as they are not in sequential number order.

STATUTORY ENVIRONMENT

S6.4 Local Government Act 1995, Part 6 – Financial Management
R34 Local Government (Financial Management) Regulations 1996

POLICY IMPLICATIONS

Policy 2.7 – Purchasing Policy

FINANCIAL IMPLICATIONS

Expenditure in accordance with the 2021 / 2022 Annual Budget.

COMMUNITY AND STRATEGIC OBJECTIVES

Shire of Corrigin Strategic Community Plan 2021-2031 and Corporate Business Plan 2021-2025:

Objective: Governance and Leadership
Strong Governance and leadership

Strategic Community Plan		Corporate Business Plan	
Outcome	Strategies	Action No.	Actions
4.4	Provide informed and transparent decision making that, meets our legal obligations, and the needs of our diverse community	4.4.3	Regular reviews of Council’s Long Term Financial Plan to ensure the long term financial stability of the Shire
		4.4.4	Provide Council adequate and appropriate financial information on a timely basis

VOTING REQUIREMENT

Simple Majority

COUNCIL RESOLUTION

(62/2022) Moved: Cr Jacobs Seconded: Cr Steele

That Council reviews the list of accounts paid and acknowledges that payments totalling \$856,393.48 have been made during the month of May 2022.

Carried 6/0

7.1.2. ACCOUNTS FOR PAYMENT – CREDIT CARDS

Applicant:	Shire of Corrigin
Date:	14/06/2022
Reporting Officer:	Kylie Caley, Deputy Chief Executive Officer
Disclosure of Interest:	NIL
File Number:	FM.0036
Attachment Ref:	Attachment 8.1.2 – Accounts for Payment – Credit Cards April

SUMMARY

This report provides Council with a list of all financial dealings relating to the use of credit card payments for the period 29 March 2022 to 28 April 2022

BACKGROUND

This information is provided to Council monthly in accordance with provisions of the *Local Government Act 1995* and *Local Government (Financial Management) Regulations 1996*. A Local Government is to develop procedures for the authorisation of, and payment of, accounts to ensure that there is effective security for, which money or other benefits may be obtained.

Council is presented with the monthly accounts for payment at each Council meeting, providing information of payments made for the reporting period. This report includes the monthly payment of the credit card debit to the National Australia Bank.

COMMENT

Accountability in local government can be multifaceted, as councils seek to achieve diverse social, political, and financial goals for the community benefit. The accountability principles of local government are based on strong financial probity, financial propriety, adherence to conflict of interest principles and expectations that local government is fully accountable for community resources.

This report provides Council with detailed information of purchases paid for using the Shire of Corrigin corporate credit cards.

A monthly review of credit card use is independently assessed by the Deputy Chief Executive Officer, to confirm that all expenditure that has been incurred, is for the Shire of Corrigin and has been made in accordance with Council policy, procedures, the *Local Government Act 1995* and associated regulations. The review by the Deputy Chief Executive Officer also ensures that misuse of any corporate credit card can be readily detected.

This review has been conducted and no issues are evident, and all areas of compliance have been met.

STATUTORY ENVIRONMENT

S6.4 Local Government Act 1995, Part 6 – Financial Management
R34 Local Government (Financial Management) Regulations 1996

POLICY IMPLICATIONS

Policy 2.9 – Purchasing Policy
Policy 2.16 - Corporate Credit Cards

FINANCIAL IMPLICATIONS

Expenditure in accordance with the 2021/2022 Annual Budget.

COMMUNITY AND STRATEGIC OBJECTIVES

Shire of Corrigin Strategic Community Plan 2021-2031 and Corporate Business Plan 2021-2025:

Objective: Governance and Leadership
Strong Governance and Leadership

Strategic Community Plan		Corporate Business Plan	
Outcome	Strategies	Action No.	Actions
4.4	Provide informed and transparent decision making that, meets our legal obligations, and the needs of our diverse community	4.4.3	Regular reviews of Council’s Long Term Financial Plan (LTFP) to ensure the long term financial stability of the Shire
		4.4.4	Provide Council adequate and appropriate financial information on a timely basis

VOTING REQUIREMENT

Simple Majority

COUNCIL RESOLUTION

(63/2022) Moved: Cr Dickinson Seconded: Cr Jacobs

That Council:

1. *in accordance with Attachment 8.1.2 endorse credit card payments for the period 29 March 2022 to 28 April 2022 for \$1,561.07.*

Carried 6/0

7.1.3. MONTHLY FINANCIAL REPORTS

Applicant:	Shire of Corrigin
Date:	14/06/2022
Reporting Officer:	Kylie Caley, Deputy Chief Executive Officer
Disclosure of Interest:	Nil
File Number:	FM.0037
Attachment Ref:	Attachment 8.1.3 – Monthly Financial Statements for the period ending 31 May 2022

SUMMARY

This report provides Council with the monthly financial reports for the month ending 31 May 2022.

BACKGROUND

The *Local Government (Financial Management) Regulations 1996*, regulation 34 states that a local government must prepare each month a statement of financial activity reporting on the revenue and expenditure, as set out in the annual budget.

Variances between budgeted and actual expenditure including the required material variances (10% with a minimum value of \$10,000) are included in the variance report.

COMMENT

May closed with the Shire still in a good cash position with still \$2,497,963 in short term investment. This doesn't include the advanced payment of the FAGS funding as that was transferred to reserves in April.

The outstanding rates balance is \$148,749. Rates collection to date is at 94.9% compared to 94% in May 2021. The property on Goyder Street that forms part of this outstanding balance went to auction on 26 May 2022 and was passed in due to bids not reaching the reserve price.

Further information on the May financial position is in the variance report included in the monthly financial reports.

STATUTORY ENVIRONMENT

s. 6.4 *Local Government Act 1995, Part 6 – Financial Management*
r. 34 *Local Government (Financial Management) Regulations 1996*

POLICY IMPLICATIONS

NIL

FINANCIAL IMPLICATIONS

Expenditure in accordance with the 2021/22 Annual Budget.

COMMUNITY AND STRATEGIC OBJECTIVES

Shire of Corrigin Strategic Community Plan 2021-2031 and Corporate Business Plan 2021-2025:

Objective: Governance and Leadership
Strong Governance and Leadership

Strategic Community Plan		Corporate Business Plan	
Outcome	Strategies	Action No.	Actions
4.4	Provide informed and transparent decision making that, meets our legal obligations, and the needs of our diverse community	4.4.3	Regular reviews of Council’s Long Term Financial Plan to ensure the long term financial stability of the Shire
		4.4.4	Provide Council adequate and appropriate financial information on a timely basis

VOTING REQUIREMENT

Simple Majority

COUNCIL RESOLUTION

(64/2022) Moved: Cr Coppen Seconded: Cr Dickinson

That Council accept the Statement of Financial Activity for the month ending 31 May 2022 as presented, along with notes of any material variances.

Carried 6/0

7.2. GOVERNANCE AND COMPLIANCE

7.2.1. DELEGATION REGISTER REVIEW

Applicant:	Shire of Corrigin
Date:	09/06/2022
Reporting Officer:	Kirsten Biglin, Executive Support Officer
Disclosure of Interest:	NIL
File Number:	GOV.0001
Attachment Ref:	Attachment 8.2.1 – Delegations Register

SUMMARY

Council is requested to review and endorse the Delegation Register as required under s5.46 (2) of the *Local Government Act 1995*.

BACKGROUND

Under s5.46 (2) of the *Local Government Act 1995* Council is required to review its delegations to the Chief Executive Officer (CEO) and employees at least once every financial year.

Council can delegate certain powers and duties to the CEO and the CEO, in turn, can on-delegate those powers and functions to other employees.

Section 5.46 of the Act requires the CEO to keep a register of, and records relevant to, delegations to the CEO and any delegations on-delegated to employees. This section also requires the delegations to be reviewed at least once every financial year. The current delegation register was last reviewed by Council at the Ordinary Council Meeting on 15 June 2021 and passed by resolution 91/2021.

COMMENT

The Delegations Register has been updated and amended based on the WA Local Government Association (WALGA) model template.

The WALGA Governance team provided assistance in the drafting of the register.

STATUTORY ENVIRONMENT

S5.18 Local Government Act 1995 Register of delegations to committees

*S5.42 (1) Local Government Act 1995 Delegation of some powers and duties to CEO **

S5.46 (2) of the Local Government Act 1995 Register of, and records relevant to, delegations to CEO and employees.

POLICY IMPLICATIONS

NIL

FINANCIAL IMPLICATIONS

NIL

COMMUNITY AND STRATEGIC OBJECTIVES

Shire of Corrigin Strategic Community Plan 2021-2031 and Corporate Business Plan 2021-2025:

Objective: Governance and Leadership
Strong Governance and Leadership

Strategic Community Plan		Corporate Business Plan	
Outcome	Strategies	Action No.	Actions
4.3	Forward planning and implementation of plans to achieve strategic direction and service levels	4.3.1	Work with external organisations to collaboratively plan and achieve improved community, education, health and business outcomes
		4.3.2	Continue representation on relevant Boards, Committees and Working groups to influence positive local and regional outcomes

VOTING REQUIREMENT

Absolute Majority

COUNCIL RESOLUTION

(65/2022) Moved: Cr Coppen Seconded: Cr Jacobs

That Council endorse the Delegations Register as provided in Attachment 8.2.1.

Carried by Absolute Majority 6/0

7.2.3. INTERIM AUDIT 2021/2022 FINDINGS AND MANAGEMENT COMMENT

Applicant:	Shire of Corrigin
Date:	29/04/2022
Reporting Officer:	Kylie Caley, Deputy Chief Executive Officer
Disclosure of Interest:	NIL
File Ref:	FM.0302
Attachment Ref:	Attachment 8.2.3.1 – Interim Management Letter – Year ending 30 June 2022. Attachment 8.2.3.2 – Interim Audit Findings – Year ending 30 June 2022

SUMMARY

Council is to consider the feedback from the interim audit conducted by AMD between 21 and 22 March 2022.

BACKGROUND

AMD conducted the interim audit on behalf of the Office of the Auditor General from 21 to 22 March 2022 onsite. The Shire of Corrigin administration staff responded to the numerous requests for information prior to the auditors arriving onsite and during this period.

The auditors provided feedback on one finding from the interim audit that requires attention for future compliance.

COMMENT

The finding noted by the Auditors and reported to the OAG related to purchase orders being raised after the invoices had been received. These non-compliant orders relate to purchases of a renewal nature that are paid in advance for the financial year and essentially the invoices are issued by the supplier on or around 1 July each year. These include but are not limited to software licenses, annual security monitoring fees and subscriptions where the invoice arrives prior to budget adoption.

Historically there has been no formal process implemented for these renewal purchases and orders raised as the invoice arrives.

A process will be developed and documented by the DCEO to mitigate any further noncompliance and ensure there is a timetable of when the charges are due to be raised in order for an order to be issued prior to the invoice being received in the new financial year to comply with the purchasing policy.

STATUTORY ENVIRONMENT

Local Government Act 1995, s 7.12A – Duties of a Local Government in respect to the Audit.

POLICY IMPLICATIONS

- 3.1 Risk Management Policy
- 8.11 Audit and Risk Committee
- 8.12 Appointment of an Auditor

FINANCIAL IMPLICATIONS

NIL

COMMUNITY AND STRATEGIC OBJECTIVES

Shire of Corrigin Strategic Community Plan 2021-2031 and Corporate Business Plan 2021-2025:

Objective: Governance and Leadership
Strong Governance and Leadership

Strategic Community Plan		Corporate Business Plan	
Outcome	Strategies	Action No.	Actions
4.4	Provide informed and transparent decision making that meets our legal obligations, and the needs of our diverse community	4.4.4	Provide Council adequate and appropriate financial information on a timely basis.
4.5	Implement systems and processes that meet legislative and audit obligations	4.5.1	Continual improvement in governance and operational policies, processes and implementation

VOTING REQUIREMENT

Simple Majority

COUNCIL RESOLUTION

(66/2022) Moved: Cr Coppen Seconded: Cr Dickinson

That Council receive the Interim Audit findings from AMD Chartered Accountants and notes the areas that have been addressed and issues to be completed prior to the final audit.

Carried 6/0

7.2.4. AUDIT AND RISK MANAGEMENT COMMITTEE RECOMMENDATIONS

Applicant:	Shire of Corrigin
Date:	15/06/2022
Reporting Officer:	Natalie Manton, Chief Executive Officer
Disclosure of Interest:	NIL
File Ref:	FM.0047, CM.0054
Attachment Ref:	Attachment 8.2.4.1 - Financial and Systems Review Regulation 17 Review Internal Attachment 8.2.4.2 - Risk Review Dashboard

SUMMARY

The Audit and Risk Management Advisory Committee recommends that Council endorse the resolutions from the meeting held on Tuesday 14 June 2022.

BACKGROUND

The Shire of Corrigin engaged Butler Settineri to conduct an independent review of the requirements of Local Government *Financial Management Regulation 5* and *Audit Regulation 17* including the following areas:

- review current risk management policies, procedures and plans;
- evaluate the financial internal control systems and procedures;
- evaluate the operational internal control systems and procedures;
- assess systems and processes for maintaining legislative compliance;
- provide a list of any improvements identified during the review; and
- provide a report including recommendations to assist the CEO to assess the appropriateness and effectiveness of the systems and procedures.

COMMENT

The Financial Management and System Review as well as the Risk Management Review reports provide a measurement of the appropriateness and effectiveness of the Shire's current systems and processes. The reviews include a list of recommendations for improvements to systems and processes

The internal Risk Management Review Dashboard provides an overview of identified risks and monitors actions and improvements.

STATUTORY ENVIRONMENT

Local Government Act 1995 (WA)

Local Government (Audit) Regulations 1996

r 17 CEO to review certain systems and processes

Local Government (Financial Management) Regulations 1996

r 5 CEO duties as to financial management

(1) Efficient systems and procedures are to be established by the CEO of a local government.

POLICY IMPLICATIONS

3.1 Risk Management Policy

8.11 Audit and Risk Management Committee

FINANCIAL IMPLICATIONS

The cost of implementing recommendations of the financial and risk management review to be contained in the 2021/22 budget

COMMUNITY AND STRATEGIC OBJECTIVES

Shire of Corrigin Strategic Community Plan 2021-2031 and Corporate Business Plan 2021-2025:

Objective: Governance and Leadership
Strong Governance and Leadership

Strategic Community Plan		Corporate Business Plan	
Outcome	Strategies	Action No.	Actions
4.5	Implement systems and processes that meet legislative and audit obligations	4.5.1	Continual improvement in governance and operational policies, process and implementation.

VOTING REQUIREMENT

Simple Majority

COUNCIL RESOLUTION

(67/2022) Moved: Cr Dickinson Seconded: Cr Jacobs

- 1 *That the recommendation from the Audit and Risk Management Committee to receive the updated Internal Audit Risk Management Report- Dashboard update be endorsed.*

- 2 *That Council receives and notes the Chief Executive Officer's Financial and Risk Management Review (in accordance with Regulation 5 of the Local Government (Financial Management) Regulations 1996 and Regulation 17 of the Local Government (Audit) Regulations 1996 which reports on the efficiency of the Shire of Corrigin systems and processes.*

Carried 6/0

7.3. WORKS AND SERVICES

Cr Copen declared a Proximity Interest in Item 8.3.1 and left the room at 3.59pm.

7.3.1. REMOVAL OF KUNJIN STREET TRAFFIC ISLANDS

Applicant:	Shire of Corrigin
Date:	14/06/2022
Reporting Officer:	Natalie Manton, Chief Executive Officer
Disclosure of Interest:	NIL
File Ref:	GR.0049
Attachment Ref:	NIL

SUMMARY

Council is asked to support a request to Main Roads WA to remove the raised traffic islands in Kunjin Street to allow large vehicles to travel through Corrigin.

BACKGROUND

The shire has received numerous requests for the raised traffic islands in Kunjin Street (Brookton Highway) to be removed as they make it very difficult for trucks to enter and exit the industrial area. Machinery dealers, transport operators and farmers moving large machinery down Kunjin Street find that the islands damage their tyres. In 2019 the CEO met with the Operations Manager Wheatbelt Region Main Roads WA to discuss the traffic islands between the railway line and Corrigin Motel and requested that they be removed.

At the time the Asset Manager confirmed that the section of highway through the town of Corrigin was programmed for resurfacing in 2022/23 and the raised traffic islands could be removed and replaced with painted islands at the same time.

In January 2022 Main Roads WA advised that it does not have any plans to remove the islands on Kunjin Street. The islands sit within an asphalt section that was laid in 2008 and Main Roads have assessed it as being in good condition and not needing work at this stage. The revised indicative resurfacing year is likely to be 2026/27 or 2027/28 depending on the deterioration rate.

COMMENT

The CEO has received several requests from local farmers and machinery dealer for the islands to be removed to improve access to and from the industrial area and also to prevent damage to tyres on large machinery.

Main Roads WA have requested Council endorsement of the request to remove the raised traffic islands prior to the resurfacing of the road which is expected to be some years away.

STATUTORY ENVIRONMENT

Road Traffic Act 1972

Road Traffic (Vehicles) Act 2012

Road Traffic (Vehicle Standards) Regulations 2002

POLICY IMPLICATIONS

NIL

FINANCIAL IMPLICATIONS

NIL

COMMUNITY AND STRATEGIC OBJECTIVES

Shire of Corrigin Strategic Community Plan 2021-2031 and Corporate Business Plan 2021-2025:

Objective: Economic

A strong, diverse economy supporting agriculture, local business and attracting new industry.

Strategic Community Plan		Corporate Business Plan	
Outcome	Strategies	Action No.	Actions
2.1	Support the diverse industry across the Shire	2.1.1	Determine and respond as required to the current and future demand for industrial land
		2.1.5	Support local business development initiatives where possible

VOTING REQUIREMENT

Simple Majority

COUNCIL RESOLUTION

(68/2022) Moved: Cr Jacobs Seconded: Cr Dickinson

That Council request that Main Roads WA remove the raised traffic islands in the centre of Kunjin Street (Brookton Highway) from the railway line to the Corrigin Motel and replace them with painted islands to improve access for large vehicles through Corrigin.

Carried 5/0

Cr Copen re-entered the room at 4.02pm.

8. CHIEF EXECUTIVE OFFICER REPORT

The CEO attended the Local Emergency Management Forum in Narrogin last week. Several shires are interested in the issue of burnt asbestos and supported the need for more asbestos awareness as a result of the lessons learnt from the recent fires.

9. PRESIDENT'S REPORT

The President advised that the next meeting of the WALGA Central Country Zone is to be held in Williams on Friday 24 June 2022.

The President thanked Cr Coppen for stepping up to Chair the Audit and Risk Management Committee meeting while he was away with COVID.

10. COUNCILLORS' QUESTIONS REPORTS, AND INFORMATION ITEM

11. URGENT BUSINESS APPROVED BY THE PRESIDENT OR BY A DECIDED OF THE COUNCIL

12. INFORMATION BULLETIN

13. WALGA AND CENTRAL ZONE MOTIONS

14. NEXT MEETING

Ordinary Council Meeting on Tuesday 19 July 2022.

15. MEETING CLOSURE

The President, Cr Des Hickey closed the meeting at 4.12pm.

President: _____ Date: _____

LIST OF ACCOUNTS DUE AND SUBMITTED TO COUNCIL FOR THE MONTH OF JUNE 2022

CHQ/EFT	DATE	NAME	DESCRIPTION	AMOUNT	BANK
EFT17610	08/06/2022	SWINBURNE UNIVERSITY OF TECHNOLOGY	2022 EDNA STEVENSON SCHOLARSHIP PAYMENT	\$ 3,117.40	ES TRUST
EFT17611	08/06/2022	PUBLIC TRANSPORT AUTHORITY	TRANSWA TICKET SALES FOR MAY 2022	\$ 68.68	TRUST
EFT17612	08/06/2022	SHIRE OF CORRIGIN - MUNICIPAL	TRANSWA TICKET COMMISSIONS FOR MAY 2022	\$ 12.12	TRUST
EFT17631	30/06/2022	SHIRE OF CORRIGIN - MUNICIPAL	CORRIGIN COMMUNITY DEVELOPMENT FUND DONATION - HOCKEY LIGHTS	\$ 20,000.00	TRUST
20748	02/06/2022	SYNERGY	ELECTRICITY CHARGES	\$ 5,806.88	MUNI
20749	02/06/2022	SHIRE OF CORRIGIN	PAYROLL DEDUCTIONS	\$ 179.00	MUNI
20750	07/06/2022	SHIRE OF CORRIGIN	CONTAINERS FOR CHANGE SCHEME FLOAT RECOUP	\$ 194.00	MUNI
20751	08/06/2022	SYNERGY	ELECTRICITY CHARGES	\$ 3,780.68	MUNI
20752	08/06/2022	WATER CORPORATION OF WA	WATER CHARGES	\$ 1,104.04	MUNI
20753	09/06/2022	SYNERGY	ELECTRICITY CHARGES	\$ 8,711.20	MUNI
20754	13/06/2022	SHIRE OF CORRIGIN	CONTAINERS FOR CHANGE SCHEME FLOAT RECOUP	\$ 265.10	MUNI
20755	16/06/2022	SHIRE OF CORRIGIN	PAYROLL DEDUCTIONS	\$ 184.00	MUNI
20756	20/06/2022	SHIRE OF CORRIGIN	PAYMENT CANCELLED - INCORRECT PAYMENT DATE	\$ -	MUNI
20757	21/06/2022	SHIRE OF CORRIGIN	CONTAINERS FOR CHANGE SCHEME FLOAT RECOUP	\$ 361.00	MUNI
20758	30/06/2022	RAC	ROADSIDE ASSISTANCE FOR COMMUNITY BUS - 12 MONTH RENEWAL	\$ 108.00	MUNI
20759	30/06/2022	SYNERGY	ELECTRICITY CHARGES	\$ 4,903.71	MUNI
20760	30/06/2022	SHIRE OF CORRIGIN	PAYROLL DEDUCTIONS	\$ 191.00	MUNI
EFT17578	02/06/2022	BGC QUARRIES	52.46 TONNES OF 10MM / 7MM MIXED AGGREGATE	\$ 3,456.59	MUNI
EFT17579	02/06/2022	BROWNLEY'S PLUMBING & GAS	NEW FIRE HOSE FOR CARAVAN PARK	\$ 3,192.81	MUNI
EFT17580	02/06/2022	CORRIGIN TYREPOWER	PLANT REPAIRS - SIDE TIPPER TRAILER	\$ 142.00	MUNI
EFT17581	02/06/2022	ELDERS NARROGIN	SHIRE PROPERTY INSPECTIONS - DECEMBER 2021	\$ 1,834.00	MUNI
EFT17582	02/06/2022	MOORE AUSTRALIA W A PTY LTD	WORKSHOPS - FINANCIAL REPORTING, MANAGEMENT REPORTING, BUDGET	\$ 3,465.00	MUNI
EFT17583	02/06/2022	NARROGIN BETTA HOME LIVING	ELECTRIC OVEN - 36 CAMM STREET, DISHWASHER - 2 SPANNEY STREET	\$ 2,898.00	MUNI
EFT17584	02/06/2022	NEU-TECH AUTO ELECTRICS	PLANT SERVICE - ISUZU D-MAX UTE	\$ 365.02	MUNI
EFT17585	02/06/2022	SOURCE MY PARTS PTY LTD	PLANT PARTS - LOADER	\$ 266.96	MUNI
EFT17586	02/06/2022	WESTERN MECHANICAL CORRIGIN	PLANT PARTS - SMALL PLANT, DOLLY TRAILER	\$ 214.80	MUNI
EFT17587	02/06/2022	CHILD SUPPORT AGENCY	PAYROLL DEDUCTIONS	\$ 219.32	MUNI
EFT17588	02/06/2022	SALARY PACKAGING AUSTRALIA	SALARY PACKAGING PAYROLL DEDUCTIONS	\$ 392.63	MUNI
EFT17589	08/06/2022	BOC LIMITED	CONTAINER SERVICE FEE FOR SWIMMING POOL - MEDICAL OXYGEN	\$ 12.95	MUNI
EFT17590	08/06/2022	BEST OFFICE SYSTEMS	PHOTOCOPYING CHARGES - ADMIN OFFICE, RESOURCE CENTRE, DEPOT	\$ 480.56	MUNI
EFT17591	08/06/2022	BITUTEK PTY LTD	72,043 SQUARE METRES OF RESEALING TO 6 ROADS WITHIN CORRIGIN SHIRE	\$ 281,949.37	MUNI
EFT17592	08/06/2022	CJS AGRI-MECHANICS	PLANT SERVICE - TIPPER TRUCK	\$ 1,800.00	MUNI
EFT17593	08/06/2022	CORRIGIN MEDICAL CENTRE	FLU VACCINATIONS FOR SHIRE EMPLOYEES	\$ 168.00	MUNI
EFT17594	08/06/2022	CORRIGIN SENIOR CITIZENS CENTRE INC.	2021 / 2022 COMMUNITY GRANT PROGRAM - SOLAR BOLLARDS	\$ 2,500.00	MUNI
EFT17595	08/06/2022	CROSSLAND CONSTRUCTION	PLANT HIRE - WATER CART WET HIRE	\$ 5,747.50	MUNI
EFT17596	08/06/2022	DEPT OF FIRE & EMERGENCY SERVICES	2021 / 2022 ESL FOURTH QUARTER CONTRIBUTION	\$ 7,520.71	MUNI
EFT17597	08/06/2022	ELDERS RURAL SERVICES AUSTRALIA LIMITED	220 LITRES OF GLYPHOSATE, 8,400 KG OF CEMENT	\$ 7,337.00	MUNI

LIST OF ACCOUNTS DUE AND SUBMITTED TO COUNCIL FOR THE MONTH OF JUNE 2022

CHQ/EFT	DATE	NAME	DESCRIPTION	AMOUNT	BANK
EFT17598	08/06/2022	MA & BJ SZCZECINSKI	PLANT HIRE - BOBCAT	\$ 1,430.00	MUNI
EFT17599	08/06/2022	NUTRIEN AG SOLUTIONS LIMITED	FENCING PLIERS	\$ 293.99	MUNI
EFT17600	08/06/2022	REINFORCED CONCRETE PIPES AUSTRALIA (WA) PTY LTD	CONCRETE PIPES FOR BULLARING GORGE ROCK ROAD	\$ 5,806.96	MUNI
EFT17601	08/06/2022	RURAL TRAFFIC SERVICES PTY LTD	TRAFFIC MANAGEMENT SERVICES - VERGE CLEARING FOLLOWING BUSHFIRE	\$ 25,301.86	MUNI
EFT17602	08/06/2022	STANTEC	CONSULTANCY SERVICES - PREPARATION OF CORRIGIN BIKE PLAN	\$ 15,642.00	MUNI
EFT17603	08/06/2022	STIRLING FREIGHT EXPRESS	FREIGHT CHARGES	\$ 3,535.52	MUNI
EFT17604	08/06/2022	THE BLUE POSY	FLOWERS FOR STAFF MEMBER	\$ 80.00	MUNI
EFT17605	08/06/2022	THE DAN TURNER FAMILY TRUST	ENGINEERING INSPECTION AND REPORT FOR DENTAL SURGERY	\$ 792.00	MUNI
EFT17606	08/06/2022	THE PORTABLE TOILET COMPANY	PORTABLE TOILETS FOR CORRIGIN TIP AND CONTAINERS FOR CHANGE SHED	\$ 5,478.00	MUNI
EFT17607	08/06/2022	VALLEY AIRCON & REFRIGERATION	REPAIRS TO CREC DRINK FRIDGE	\$ 720.50	MUNI
EFT17608	08/06/2022	WA CONTRACT RANGER SERVICES	RANGER SERVICES	\$ 561.00	MUNI
EFT17609	08/06/2022	WILCARRA PTY LTD	PLANT HIRE - SIDE TIPPER DRY HIRE	\$ 30,663.60	MUNI
EFT17613	16/06/2022	CHILD SUPPORT AGENCY	PAYROLL DEDUCTIONS	\$ 219.32	MUNI
EFT17614	16/06/2022	SALARY PACKAGING AUSTRALIA	SALARY PACKAGING PAYROLL DEDUCTIONS	\$ 392.63	MUNI
EFT17615	16/06/2022	NATURE PLAY SOLUTIONS PTY LTD	FOOTPATH CONSTRUCTION FROM KUNJIN STREET TO LARKE CRESCENT	\$ 64,723.01	MUNI
EFT17616	16/06/2022	TRUCKFIX W A	PLANT REPAIRS - PRIME MOVER	\$ 230.74	MUNI
EFT17617	20/06/2022	BRYDON FARE	PAYMENT CANCELLED - INCORRECT PAYMENT DATE	\$ -	MUNI
EFT17618	20/06/2022	CLAIRE STEELE	PAYMENT CANCELLED - INCORRECT PAYMENT DATE	\$ -	MUNI
EFT17619	20/06/2022	DESMOND LAURENCE HICKEY	PAYMENT CANCELLED - INCORRECT PAYMENT DATE	\$ -	MUNI
EFT17620	20/06/2022	MATTHEW BEN DICKINSON	PAYMENT CANCELLED - INCORRECT PAYMENT DATE	\$ -	MUNI
EFT17621	20/06/2022	MICHAEL ANDREW WEGUELIN	PAYMENT CANCELLED - INCORRECT PAYMENT DATE	\$ -	MUNI
EFT17622	20/06/2022	SCOTT CRAIG COPPEN	PAYMENT CANCELLED - INCORRECT PAYMENT DATE	\$ -	MUNI
EFT17623	20/06/2022	SHARON LYNNE JACOBS	PAYMENT CANCELLED - INCORRECT PAYMENT DATE	\$ -	MUNI
EFT17624	21/06/2022	BRYDON FARE	COUNCILLOR SITTING FEES AND ALLOWANCES	\$ 2,350.00	MUNI
EFT17625	21/06/2022	CLAIRE STEELE	COUNCILLOR SITTING FEES AND ALLOWANCES	\$ 2,350.00	MUNI
EFT17626	21/06/2022	DESMOND LAURENCE HICKEY	COUNCILLOR SITTING FEES AND ALLOWANCES	\$ 7,800.00	MUNI
EFT17627	21/06/2022	MATTHEW BEN DICKINSON	COUNCILLOR SITTING FEES AND ALLOWANCES	\$ 2,350.00	MUNI
EFT17628	21/06/2022	MICHAEL ANDREW WEGUELIN	COUNCILLOR SITTING FEES AND ALLOWANCES	\$ 3,053.12	MUNI
EFT17629	21/06/2022	SCOTT CRAIG COPPEN	COUNCILLOR SITTING FEES AND ALLOWANCES	\$ 2,584.38	MUNI
EFT17630	21/06/2022	SHARON LYNNE JACOBS	COUNCILLOR SITTING FEES AND ALLOWANCES	\$ 2,350.00	MUNI
EFT17632	30/06/2022	ALLWEST PLANT HIRE AUSTRALIA PTY LTD	PLANT HIRE - MANITOU LOADER	\$ 4,208.60	MUNI
EFT17633	30/06/2022	AMPAC DEBT RECOVERY (WA) PTY LTD	DEBT RECOVERY AND ASSOCIATED LEGAL FEES	\$ 690.25	MUNI
EFT17634	30/06/2022	AUSTRALIA DAY COUNCIL OF WESTERN AUSTRALIA	2022 / 2023 GOLD ASSOCIATE MEMBERSHIP	\$ 685.00	MUNI
EFT17635	30/06/2022	AUSTRALIA POST	POSTAGE CHARGES FOR MAY 2022	\$ 83.31	MUNI
EFT17636	30/06/2022	AVON WASTE	5 WEEKS RUBBISH COLLECTION - MAY 2022	\$ 21,637.10	MUNI
EFT17637	30/06/2022	BRENDON JOHN GERRARD	STAFF REIMBURSEMENT	\$ 1,219.62	MUNI
EFT17638	30/06/2022	BROWNLEY'S PLUMBING & GAS	PLUMBING REPAIRS - 11 COURBOULES CRESCENT	\$ 1,060.95	MUNI

LIST OF ACCOUNTS DUE AND SUBMITTED TO COUNCIL FOR THE MONTH OF JUNE 2022

CHQ/EFT	DATE	NAME	DESCRIPTION	AMOUNT	BANK
EFT17639	30/06/2022	CJS AGRI-MECHANICS	PLANT SERVICE & REPAIRS - PRIME MOVER, TIPPER TRUCK	\$ 7,183.70	MUNI
EFT17640	30/06/2022	CLINIPATH PATHOLOGY	PRE-EMPLOYMENT DRUG SCREENING	\$ 40.00	MUNI
EFT17641	30/06/2022	CORRIGIN ENGINEERING PTY LTD	REPAIR GRAVE SHORING, MAKE PLATFORM & RAMP FOR OIL DUMP AT TIP	\$ 918.98	MUNI
EFT17642	30/06/2022	CORRIGIN OFFICE SUPPLIES	STATIONERY SUPPLIES	\$ 670.37	MUNI
EFT17643	30/06/2022	CORRIGIN ROADHOUSE	REFRESHMENTS AND CATERING SUPPLIES	\$ 2,789.70	MUNI
EFT17644	30/06/2022	CORRIGIN SUPERMARKET AND LIQUOR (IGA & CELLARBRATIONS)	REFRESHMENTS AND CATERING SUPPLIES	\$ 224.90	MUNI
EFT17645	30/06/2022	CROSSLAND CONSTRUCTION	PLANT HIRE - WATER TANKER	\$ 3,836.25	MUNI
EFT17646	30/06/2022	DAMIAN WHITEHEAD	STAFF REIMBURSEMENT	\$ 43.12	MUNI
EFT17647	30/06/2022	ECOFLO WASTEWATER MANAGEMENT PTY LTD	ECO TOILET FOR GORGE ROCK	\$ 33,362.71	MUNI
EFT17648	30/06/2022	EXURBAN PTY LTD	TOWN PLANNING CONSULTANCY SERVICES FOR MAY 2022	\$ 4,761.50	MUNI
EFT17649	30/06/2022	FIRST HEALTH SERVICES	MEDICAL SUPPORT SERVICE FEE FOR JUNE 2022	\$ 12,552.85	MUNI
EFT17650	30/06/2022	GANNAWAY BROS.	POLY PIPE FITTINGS FOR SALEYARDS, GASKETS FOR TOWN DAM PUMP	\$ 969.90	MUNI
EFT17651	30/06/2022	GREAT SOUTHERN FUEL SUPPLIES	FUEL SUPPLIES FOR MAY 2022	\$ 28,809.65	MUNI
EFT17652	30/06/2022	GREENFIELD TECHNICAL SERVICES	CONSULTANCY SERVICES - ROAD FIRE DAMAGE INSPECTIONS	\$ 3,181.20	MUNI
EFT17653	30/06/2022	HAULMORE TRAILER RENTALS	PLANT HIRE - DOLLY TRAILER	\$ 1,925.00	MUNI
EFT17654	30/06/2022	HOCKING HERITAGE AND ARCHITECTURE	CONSULTANCY SERVICES - PREPARTION DRAWINGS FOR BILBARIN HALL	\$ 16,855.30	MUNI
EFT17655	30/06/2022	HUTTON AND NORTHEY SALES	METER READING AT 5 WALTON STREET	\$ 194.54	MUNI
EFT17656	30/06/2022	INTELIFE - TWINKARRI	VERGE AND ROADSIDE CLEAN UP FOLLOWING BUSHFIRES	\$ 76,560.00	MUNI
EFT17657	30/06/2022	IEQUIP	PLANT HIRE AND DAMAGE COSTS - SKIDSTEER	\$ 760.65	MUNI
EFT17658	30/06/2022	JA GIMBEL PAINTING	INTERNAL REPAINT OF 25 SEIMONS AVENUE	\$ 7,260.00	MUNI
EFT17659	30/06/2022	KATEMS SUPERMARKET	REFRESHMENTS AND CATERING SUPPLIES	\$ 125.10	MUNI
EFT17660	30/06/2022	KERRIE LEE ARGENT	RECYCLED MATERIALS ART WORKSHOP - ARTIST FEE	\$ 346.00	MUNI
EFT17661	30/06/2022	KODY NORMAN BROWN	STAFF REIMBURSEMENT	\$ 144.30	MUNI
EFT17662	30/06/2022	LANDGATE	RURAL UV GENERAL REVALUATION, CONSOLIDATED MINING TENEMENT	\$ 7,463.20	MUNI
EFT17663	30/06/2022	LAWN DOCTOR	70 CUBIC METRES OF LAWN SAND	\$ 7,738.50	MUNI
EFT17664	30/06/2022	LAWN DOCTOR TURF FARM	SUPPLY AND LAY KIKUYU TURF ON MAIN OVAL EMBANKMENT	\$ 5,472.50	MUNI
EFT17665	30/06/2022	MALLEE TREE CAFE & GALLERY	REFRESHMENTS AND CATERING SUPPLIES	\$ 652.00	MUNI
EFT17666	30/06/2022	MARKETFORCE	TENDER ADVERTISING 02-2022 ROAD MAINTENANCE TRUCK	\$ 525.03	MUNI
EFT17667	30/06/2022	NATURE PLAY SOLUTIONS PTY LTD	PROGRESS PAYMENT - ROTARY PARK UPGRADE	\$ 187,609.90	MUNI
EFT17668	30/06/2022	NEU-TECH AUTO ELECTRICS	PLANT PARTS & REPAIRS - HILUX UTES, TIPPER TRUCKS, TURF TRACTOR	\$ 2,075.43	MUNI
EFT17669	30/06/2022	SAVANA SERVICES	REMOVAL OF ASBESTOS FROM BILBARIN HALL	\$ 31,020.00	MUNI
EFT17670	30/06/2022	SHIRE OF KULIN	SECOND HAND DESK FOR LEADING HAND ROAD CONSTRUCTION AT DEPOT	\$ 55.00	MUNI
EFT17671	30/06/2022	SOUTH REGIONAL TAFE	FORKLIFT LICENCE COURSE AT COMMUNITY RESOURCE CENTRE	\$ 597.60	MUNI
EFT17672	30/06/2022	SQUIRE PATTON BOGGS (AU)	LEGAL ADVICE AND REPRESENTATION - CREC	\$ 4,036.45	MUNI
EFT17673	30/06/2022	STANTEC	CONSULTANCY SERVICES - PREPARATION OF CORRIGIN BIKE PLAN	\$ 1,100.00	MUNI
EFT17674	30/06/2022	TALIS CONSULTANTS PTY LTD	REVISION AND ADDITIONS TO BENDERING TIP LANDFILL MANAGEMENT PLAN	\$ 5,141.13	MUNI
EFT17675	30/06/2022	TELSTRA	PHONE AND INTERNET CHARGES	\$ 259.07	MUNI

LIST OF ACCOUNTS DUE AND SUBMITTED TO COUNCIL FOR THE MONTH OF JUNE 2022

CHQ/EFT	DATE	NAME	DESCRIPTION	AMOUNT	BANK
EFT17676	30/06/2022	TREMAR CONTRACTING	CREC GREASE TRAP REMOVAL, SEPTIC WASTE REMOVAL	\$ 1,197.90	MUNI
EFT17677	30/06/2022	VALLEY AIRCON & REFRIGERATION	REPLACEMENT OF INDOOR FAN AT MEDICAL CENTRE	\$ 587.40	MUNI
EFT17678	30/06/2022	WALLIS COMPUTER SOLUTIONS	OPTUS TELTONIKA INTERNET SERVICE - FUSION 3RD CONNECTION	\$ 99.00	MUNI
EFT17679	30/06/2022	WESTERN MECHANICAL CORRIGIN	2 DRUMS OF PENRITE OIL	\$ 2,290.00	MUNI
EFT17680	30/06/2022	WESTERN TYRES CORRIGIN	PLANT REPAIRS - HOLDEN COLORADO UTE	\$ 59.25	MUNI
EFT17681	30/06/2022	MUNICIPAL EMPLOYEES UNION	PAYROLL DEDUCTIONS	\$ 61.50	MUNI
EFT17682	30/06/2022	SALARY PACKAGING AUSTRALIA	SALARY PACKAGING PAYROLL DEDUCTIONS	\$ 392.63	MUNI
EFT17683	30/06/2022	SHIRE OF CORRIGIN OUTSIDE STAFF SOCIAL CLUB	PAYROLL DEDUCTIONS	\$ 160.00	MUNI
EFT17684	30/06/2022	CORRIGIN HARDWARE	HARDWARE SUPPLIES - MAY 2022	\$ 1,901.00	MUNI
EFT17685	30/06/2022	CORRIGIN OFFICE SUPPLIES	STATIONERY SUPPLIES	\$ 23.10	MUNI
EFT17686	30/06/2022	CORRIGIN ROADHOUSE	REFRESHMENTS AND CATERING SUPPLIES, DIESEL SUPPLY DURING BUSHFIRES	\$ 830.06	MUNI
DD14277.1	30/06/2022	SHIRE OF CORRIGIN - MUNICIPAL	2022 EDNA STEVENSON TRUST ADMINISTRATION FEE	\$ 4,400.00	ES TRUST
DD14165.1	01/06/2022	AWARE SUPER	SUPERANNUATION CONTRIBUTIONS	\$ 8,442.43	MUNI
DD14165.2	01/06/2022	MLC NAVIGATOR RETIREMENT PLAN	SUPERANNUATION CONTRIBUTIONS	\$ 111.00	MUNI
DD14165.3	01/06/2022	HOSTPLUS SUPERANNUATION FUND	SUPERANNUATION CONTRIBUTIONS	\$ 327.07	MUNI
DD14165.4	01/06/2022	BT SUPER FOR LIFE	SUPERANNUATION CONTRIBUTIONS	\$ 466.07	MUNI
DD14165.5	01/06/2022	REST SUPERANNUATION	SUPERANNUATION CONTRIBUTIONS	\$ 430.17	MUNI
DD14165.6	1/06/2022	AUSTRALIAN SUPER	SUPERANNUATION CONTRIBUTIONS	\$ 1,594.24	MUNI
DD14165.7	1/06/2022	CATHOLIC SUPER	SUPERANNUATION CONTRIBUTIONS	\$ 998.29	MUNI
DD14165.8	1/06/2022	CONSTRUCTION & BUILDING UNIONS SUPER FUND	SUPERANNUATION CONTRIBUTIONS	\$ 254.10	MUNI
DD14175.1	1/06/2022	WESTNET PTY LTD	INTERNET CHARGES	\$ 149.95	MUNI
DD14290.1	1/06/2022	NATIONAL AUSTRALIA BANK	CREDIT CARD PAYMENTS	\$ 10,085.44	MUNI
DD14221.1	15/06/2022	AWARE SUPER	SUPERANNUATION CONTRIBUTIONS	\$ 8,296.49	MUNI
DD14221.2	15/06/2022	MLC NAVIGATOR RETIREMENT PLAN	SUPERANNUATION CONTRIBUTIONS	\$ 111.00	MUNI
DD14221.3	15/06/2022	HOSTPLUS SUPERANNUATION FUND	SUPERANNUATION CONTRIBUTIONS	\$ 327.07	MUNI
DD14221.4	15/06/2022	BT SUPER FOR LIFE	SUPERANNUATION CONTRIBUTIONS	\$ 475.01	MUNI
DD14221.5	15/06/2022	REST SUPERANNUATION	SUPERANNUATION CONTRIBUTIONS	\$ 430.17	MUNI
DD14221.6	15/06/2022	AUSTRALIAN SUPER	SUPERANNUATION CONTRIBUTIONS	\$ 2,015.19	MUNI
DD14221.7	15/06/2022	CATHOLIC SUPER	SUPERANNUATION CONTRIBUTIONS	\$ 998.29	MUNI
DD14221.8	15/06/2022	CONSTRUCTION & BUILDING UNIONS SUPER FUND	SUPERANNUATION CONTRIBUTIONS	\$ 188.84	MUNI
DD14280.1	19/06/2022	CLASSIC FUNDING GROUP PTY LTD	RESOURCE CENTRE PHOTOCOPIER LEASE PAYMENT	\$ 237.60	MUNI
DD14254.1	20/06/2022	THE BOND ADMINISTRATOR	THE BOND ADMINISTRATOR DEBIT - 2 SPANNEY STREET	\$ 280.00	MUNI
DD14256.1	29/06/2022	WESTERN AUSTRALIAN TREASURY CORPORATION	LOAN NO. 102 INTEREST PAYMENT - CREC	\$ 77,276.28	MUNI
DD14269.1	29/06/2022	AWARE SUPER	SUPERANNUATION CONTRIBUTIONS	\$ 9,311.66	MUNI
DD14269.2	29/06/2022	MLC NAVIGATOR RETIREMENT PLAN	SUPERANNUATION CONTRIBUTIONS	\$ 111.00	MUNI
DD14269.3	29/06/2022	HOSTPLUS SUPERANNUATION FUND	SUPERANNUATION CONTRIBUTIONS	\$ 381.57	MUNI
DD14269.4	29/06/2022	BT SUPER FOR LIFE	SUPERANNUATION CONTRIBUTIONS	\$ 483.96	MUNI

LIST OF ACCOUNTS DUE AND SUBMITTED TO COUNCIL FOR THE MONTH OF JUNE 2022

CHQ/EFT	DATE	NAME	DESCRIPTION	AMOUNT	BANK
DD14269.5	29/06/2022	REST SUPERANNUATION	SUPERANNUATION CONTRIBUTIONS	\$ 437.69	MUNI
DD14269.6	29/06/2022	AUSTRALIAN SUPER	SUPERANNUATION CONTRIBUTIONS	\$ 3,178.15	MUNI
DD14269.7	29/06/2022	CATHOLIC SUPER	SUPERANNUATION CONTRIBUTIONS	\$ 1,467.96	MUNI
DD14269.8	29/06/2022	CONSTRUCTION & BUILDING UNIONS SUPER FUND	SUPERANNUATION CONTRIBUTIONS	\$ 55.91	MUNI
DD14293.1	29/06/2022	CONSTRUCTION & BUILDING UNIONS SUPER FUND	SUPERANNUATION CONTRIBUTIONS	\$ 306.69	MUNI
DD14185.1	1/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 30.50	LIC
DD14187.1	2/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 928.25	LIC
DD14189.1	3/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 133.80	LIC
DD14191.1	7/06/2022	DEPARTMENT OF TRANSPORT	DOR DIRECT DEBIT	\$ 648.45	LIC
DD14193.1	8/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 3,361.70	LIC
DD14195.1	9/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 1,427.20	LIC
DD14200.1	10/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 2,304.55	LIC
DD14203.1	13/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 1,875.35	LIC
DD14213.1	14/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 1,249.85	LIC
DD14217.1	15/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 285.95	LIC
DD14228.1	16/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 1,522.80	LIC
DD14232.1	17/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 921.50	LIC
DD14240.1	20/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 804.85	LIC
DD14242.1	21/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 1,913.05	LIC
DD14244.1	22/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 2,121.00	LIC
DD14246.1	23/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 4,010.85	LIC
DD14248.1	24/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 2,223.10	LIC
DD14252.1	27/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 1,456.00	LIC
DD14261.1	28/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 1,681.90	LIC
DD14265.1	29/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 2,263.70	LIC
DD14273.1	30/06/2022	DEPARTMENT OF TRANSPORT	DOT DIRECT DEBIT	\$ 6,985.00	LIC
JNL	2/06/2022	PAYROLL	FORTNIGHTLY PAYROLL PAYMENT PPE 01/06/2022	\$ 62,840.29	MUNI
JNL	16/06/2022	PAYROLL	FORTNIGHTLY PAYROLL PAYMENT PPE 15/06/2022	\$ 64,920.96	MUNI
JNL	30/06/2022	PAYROLL	FORTNIGHTLY PAYROLL PAYMENT PPE 29/06/2022	\$ 62,634.35	MUNI

\$ 1,408,281.10

MUNICIPAL ACCOUNT PAYMENTS	\$ 1,342,533.55
TRUST ACCOUNT PAYMENTS	\$ 20,080.80
LICENSING ACCOUNT PAYMENTS	\$ 38,149.35
EDNA STEVENSON TRUST ACCOUNT PAYMENTS	\$ 7,517.40
	\$ 1,408,281.10



**SHIRE OF CORRIGIN
NAB BUSINESS MASTERCARD
PAYMENTS OF ACCOUNTS BY CREDIT CARD
FOR THE STATEMENT PERIOD: 29 APRIL 2022 TO 27 MAY 2022**

DATE	DETAILS	DESCRIPTION	AMOUNT
CARD NUMBER 4557-XXXX-XXXX-4143			
4/05/2022	J & K Hopkins	Furniture for CEO's office	\$ 3,888.00
6/05/2022	Business News	Annual subscription for N Manton	\$ 825.00
8/05/2022	Bunnings Cannington	Solar lights and outdoor cushion covers for admin office	\$ 110.25
		CREDIT CARD TOTAL	\$ 4,823.25
CARD NUMBER 4557-XXXX-XXXX-0935			
25/05/2022	Shire of Corrigin - Licensing	Registration renewal to 30 June 2022 for CR6	\$ 28.70
		CREDIT CARD TOTAL	\$ 28.70
CARD NUMBER 4557-XXXX-XXXX-0918			
4/05/2022	Corrigin Office Supplies	Super glue	\$ 1.40
4/05/2022	Corrigin Post Office	10 sheet paper shredder	\$ 99.00
4/05/2022	Corrigin Office Supplies	Cross cut paper shredder	\$ 180.00
6/05/2022	Belvedere Nursery	Various plants	\$ 918.50
11/05/2022	Neu-tech Auto Electrics	2 pin plug kit	\$ 11.00
17/05/2022	Shire of Corrigin - Licensing	MR Licence computer theory test - D Whitehead	\$ 20.20
18/05/2022	ABCO Products	Toilet paper, hand towels, cleaning supplies	\$ 3,248.64
19/05/2022	Belvedere Nursery	Woodland red mulch	\$ 405.00
26/05/2022	Keeler Hardware	Lockwood narrow entrance lock kit for admin office	\$ 349.75
		CREDIT CARD TOTAL	\$ 5,233.49

BILLING ACCOUNT \$ -
TOTAL CREDIT CARD PAYMENTS \$ **10,085.44**

I, Kylie Caley, Deputy Chief Executive Officer, have reviewed the credit card payments on card 4557-XXXX-XXXX-4143 and card 4557-XXXX-XXXX-0918 and confirm that from the descriptions on the documentation provided that ;

- all transactions are expenses incurred by the Shire of Corrigin;
- all purchases have been made in accordance with the Shire of Corrigin policy and procedures;
- all purchases are in accordance with the Local Government Act 1995 and associated regulations;
- no misuse of the any corporate credit card is evident .

Kylie Caley *Kylie Caley* 6 / 7 /2022

I, Natalie Manton, Chief Executive Officer, have reviewed the credit card payments on card 4557-XXXX-XXXX-0935 and confirm that from the descriptions on the documentation provided that ;

- all transactions are expenses incurred by the Shire of Corrigin;
- all purchases have been made in accordance with the Shire of Corrigin policy and procedures;
- all purchases are in accordance with the Local Government Act 1995 and associated regulations;
- no misuse of the any corporate credit card is evident .

Natalie Manton *Nma* 6 / 7 /2022



Statement for

NAB Business Visa

NAB Commercial Cards Centre - GPO Box 9992 Melbourne Victoria 3001
Tel 1300 498 594 8am - 8pm AEST & AEDT Monday to Friday, 9am - 6pm AEST & AEDT Saturday and Sunday
Fax 1300 363 658
Lost & Stolen Cards: 1800 033 103 (24 hours, 7 days a week)

Cardholder Details

Cardholder Name: MRS NATALIE ANITA MANTON

Account No:

Statement Period: 29 April 2022 to 27 May 2022

Cardholder Limit: \$10,000

Transaction record for: MRS NATALIE ANITA MANTON

Date	Amount A\$	Details	Explanation	Amount NOT subject to GST	Amount subject to GST	GST component (1/11th of the amount subject to GST)	Reference
6 May 2022	\$3,888.00 ✓	J & K HOPKINS CANNING VALE	Furniture for CEO's office. Annual subscription - N Manton Solar lights, outdoor cushion covers				74564452125
9 May 2022	\$825.00 ✓	BUSINESS NEWS PTY LT PERTH					74940522126
11 May 2022	\$110.25 ✓	BUNNINGS 350000 CANNINGTON					74940522129
Total for this period	\$4,823.25		Totals				

Employee declaration

I verify that the above charges are a true and correct record in accordance with company policy

Cardholder signature: *N.A.M.*

Date: *30/6/22*



Statement for

NAB Business Visa

NAB Commercial Cards Centre - GPO Box 9992 Melbourne Victoria 3001
Tel 1300 498 594 8am - 8pm AEST & AEDT Monday to Friday, 9am - 6pm AEST & AEDT Saturday and Sunday
Fax 1300 363 658
Lost & Stolen Cards: 1800 033 103 (24 hours, 7 days a week)

Cardholder Details

Cardholder Name: MS KYLIE ANN CALEY
Account No:
Statement Period: 29 April 2022 to 27 May 2022
Cardholder Limit: \$5,000

Transaction record for: MS KYLIE ANN CALEY

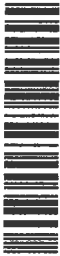
Date	Amount A\$	Details	Explanation	Amount NOT subject to GST	Amount subject to GST	GST component (1/11th of the amount subject to GST)	Reference
26 May 2022	\$28.70 ✓	CGN SHIRE LIC CORRIGIN	Registration renewal to 30 June		CR6		03135071611
Total for this period	\$28.70		Totals				

Employee declaration

I verify that the above charges are a true and correct record in accordance with company policy

Cardholder signature: *Kylie Ann Caley*

Date: 13.6.22



Statement for

NAB Business Visa

NAB Commercial Cards Centre - GPO Box 9992 Melbourne Victoria 3001
Tel 1300 498 594 8am - 8pm AEST & AEDT Monday to Friday, 9am - 6pm AEST & AEDT Saturday and Sunday
Fax 1300 363 658
Lost & Stolen Cards: 1800 033 103 (24 hours, 7 days a week)

Cardholder Details

Cardholder Name: MR PHILIP JAMES BURGESS

Account No:

Statement Period: 29 April 2022 to 27 May 2022

Cardholder Limit: \$5,000

Transaction record for: MR PHILIP JAMES BURGESS

Date	Amount A\$	Details	Explanation	Amount NOT subject to GST	Amount subject to GST	GST component (1/11th of the amount subject to GST)	Reference
5 May 2022	\$1.40 ✓	CORRIGIN OFFICE SUP CORRIGIN	super glue				03121126329
5 May 2022	\$99.00 ✓	POST CORRIGIN LPO CO CORRIGIN	10 page paper shredder				74813842124
5 May 2022	\$180.00 ✓	CORRIGIN OFFICE SUP CORRIGIN	cross cut paper shredder				03121259080
9 May 2022	\$918.50 ✓	Belvedere Nursery Narragin	plants				74249232126
16 May 2022	\$11.00 ✓	NEU TECH AUTO ELECTRIC CORRIGIN	2 pin plug kit				74229852133
18 May 2022	\$20.20 ✓	CGN SHIRE LIC CORRIGIN	MR Licence Theory Test - O Whitehead				02121889554
19 May 2022	\$3,248.64	ABCO PRODUCTS BENTLEY	toilet paper, hand towels, cleaning supplies				74229852138
20 May 2022	\$405.00 ✓	Belvedere Nursery Narragin	woodland mulch				74249232139
27 May 2022	\$349.75 ✓	KEELERHARDWARE.COM.AU NORTH WILLOUGH	Lockwood narrow entrance lock kit for admin office				74201332146
Total for this period	\$5,233.49		Totals				

Employee declaration

I verify that the above charges are a true and correct record in accordance with company policy

[Handwritten Signature]

Cardholder signature:

Date:

8/7/2022



BENCHMARKING QUALITY

A 98 Byfield Street, Northam WA 6401

P 1800 800 909

F 1800 800 910

www.wheatbeltsteel.com.au

16/06/2022

Shire of Corrigin
PO Box 221
Corrigin, WA, 6375
eso@corrigin.wa.gov.au

Dear Shire of Corrigin,

PLANNING APPLICATION - Job 3057 – Clive Turner – Deposited Plan 2416327 - 699 Poultney Road, Bulyee, Corrigin, WA, 6306

Please find attached documents to submit for a Planning Permit application for the above property.

Project - Structural Steel Shed (32m x 21m x 6.6m) Height of the shed will be 8.1m
672 m2 - Class 10a
Final Value \$202,950.00 inc GST.

The shed will be Machinery Storage Shed.

Storm water will be directed by gutters and PVC pipe to a water tank.

We will be paying the Planning fees, can you please provide an invoice and I will arrange payment.

If you require any further information please do not hesitate to contact me on 08 9622 6622.

Kind Regards,

Steph Laughton
Project Coordinator





Imagery ©2022 CNES / Airbus, Maxar Technologies, Map data ©2022 100 m

General Notes

Design Criteria:- Non-Cyclonic Region A1 , Terrain category 2.0, Importance 2 to AS 1170.2, AS 1170.1, AS1170.4

Site Conditions:- Class M to AS2870. If it does not satisfy either condition refer to the engineer. The site shall be compacted to 96% MDD which corresponds to a minimum of 7 blows per 300mm to a depth of 1050mm using PSP Test. Footings and Slabs have been designed using an allowable bearing pressure of 200 kPa. with an estimated ground movements up to 40mm.

Concrete: Footings 20 MPa, 20 agg. 80 slump, supplied and laid to AS 3600 (Supply BY WBS).

Steelwork:

- UB = 300 PLUS MPa
 - SHS / RHS = C350 L0
 - PLATES = 250 MPa
 - Purlins & Girts = 450 - 500 MPa
- Supplied and installed to AS 4100 and AS 4600.

Steelwork Treatment: HOT DIP GALVANISED

Welding:- All Welding to AS 1554 SP 6CFW or FSBW E48xx/W50xx electrodes/wire u.n.o., purlin and girts cleats to 6CFW.

Bolting:- Structural Bolts M16/M20 Grd 8.8s galvanized uno, HD Bolts 4.6 Grade galv, purlin bolts Grd 4.6 ep. Cleats 6 thk 300 MPa plate u.n.o., min 2 bolts per connection.All bolts to have thread outside the connected bearing area.

Cladding:- TRIMDEK (or equiv.) 0.42 BMT fixed as per manufacturers specifications for non-cyclonic conditions u.n.o.

Roof Cladding Finish = ZINCALUME

Wall Cladding Finish = ZINCALUME

Gutter Type = 200mm Tapered to One End

Gutter Finish = (ZINCALUME)

Downpipe = PVC Stormwater Pipe

STEEL SCHEDULE

- C1 310UB40 COLUMN
- C2 250UB26 COLUMN
- TR1 700 DEEP WEB TRUSS
- DB1 200x100x4.0 RHS DOOR BEAM
- BR1 50x2.5 CA DURAGAL BRACING
- FB1 50x2.5 CA DURAGAL FLY BRACE

- FP1 C20015 FASCIA PURLIN
- P1 Z20015 PURLINS @ MAX 1700ctrs BRIDGE CENTRALLY
- G1 Z20015 GIRTS @ MAX 1900ctrs BRIDGE CENTRALLY
- G2 Z15015 GIRTS @ MAX 1900ctrs BRIDGE CENTRALLY

- F1 Ø600x1500 DEEP PILE FOOTING
- F2 Ø600x900 DEEP PILE FOOTING

NOTE: ALL PURLINS AND GIRTS TO BE LAPPED 900mm (UNLESS OTHERWISE NOTED)

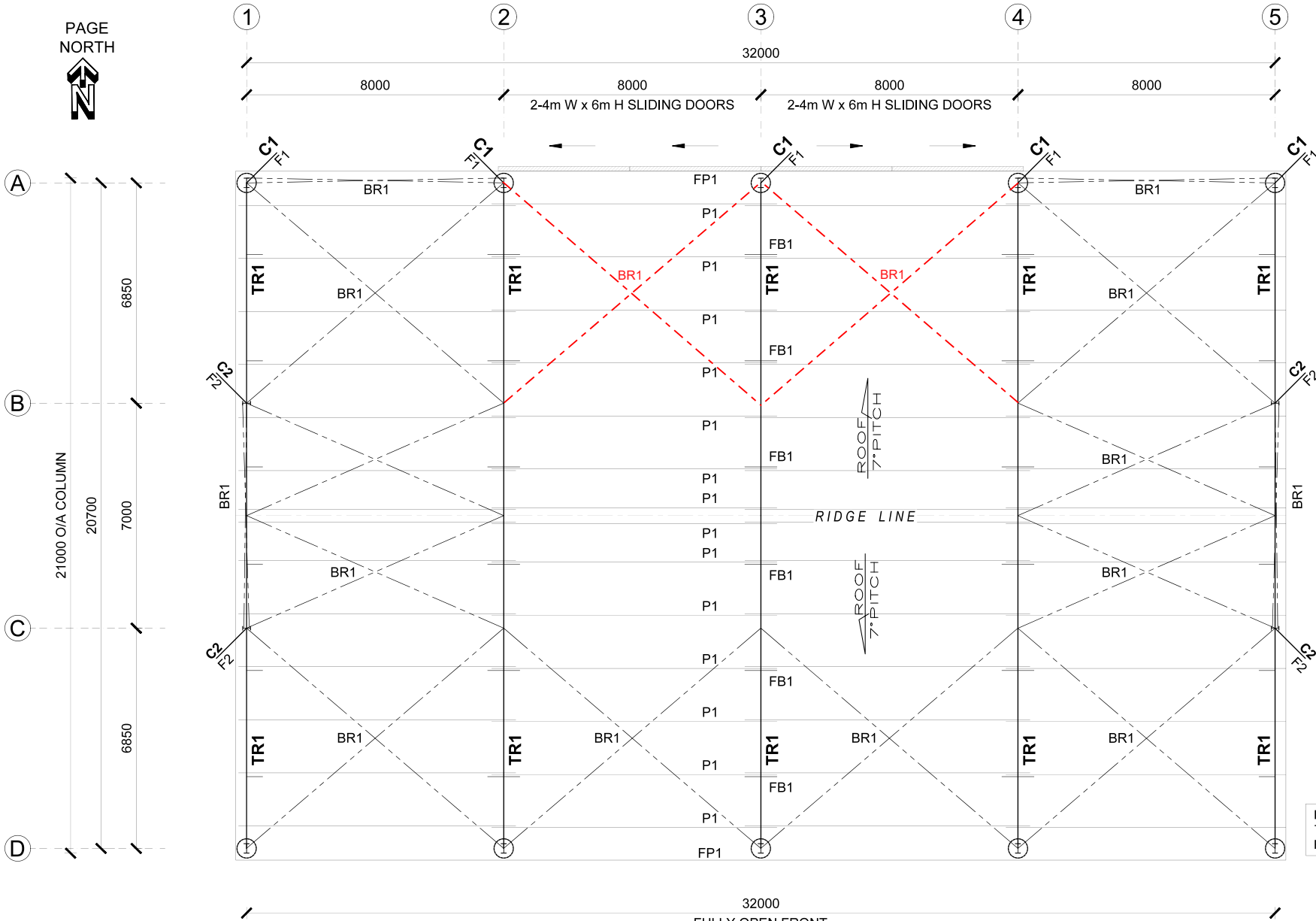
SANTIAGO ABUEVA, JR.
Civil/Structural Engineer
FIEAust NER 2994678 RPEQ 26229



1800 800 909
1800 800 910
98 Byfield St Northam WA 6401
www.wheatbelt-steel.com.au

JOB DETAILS	PROJECT No.	3057	DATE	02/05/2022	DRAWING No.	3057 - 01			REVISIONS	REV No.	BY	DESCRIPTION	DATE	PRE CONSTRUCTION PROOFING	INITIALS	DATE
	CLIENT	C.D. & L.A. TURNER (CLIVE TURNER) 699 POULTNEY ROAD CORRIGIN WA 6306			DRAWING	GENERAL NOTES									APRVD.	S.A.
						01	AAR	Revised Location of S.Doors	03/05/2022					CHKD.	H.C.	09/05/2022
						00	RBL	ENGINEER'S CERTIFICATION	02/05/2022							

PAGE NORTH



NOTE:
TYPICAL LOCATION OF
FB, FP1 AND P1 U.O.N.

32000
FULLY OPEN FRONT

SANTIAGO ABUEVA, JR.
Civil/Structural Engineer
FIEAust NER 2994678 RPEQ 26229



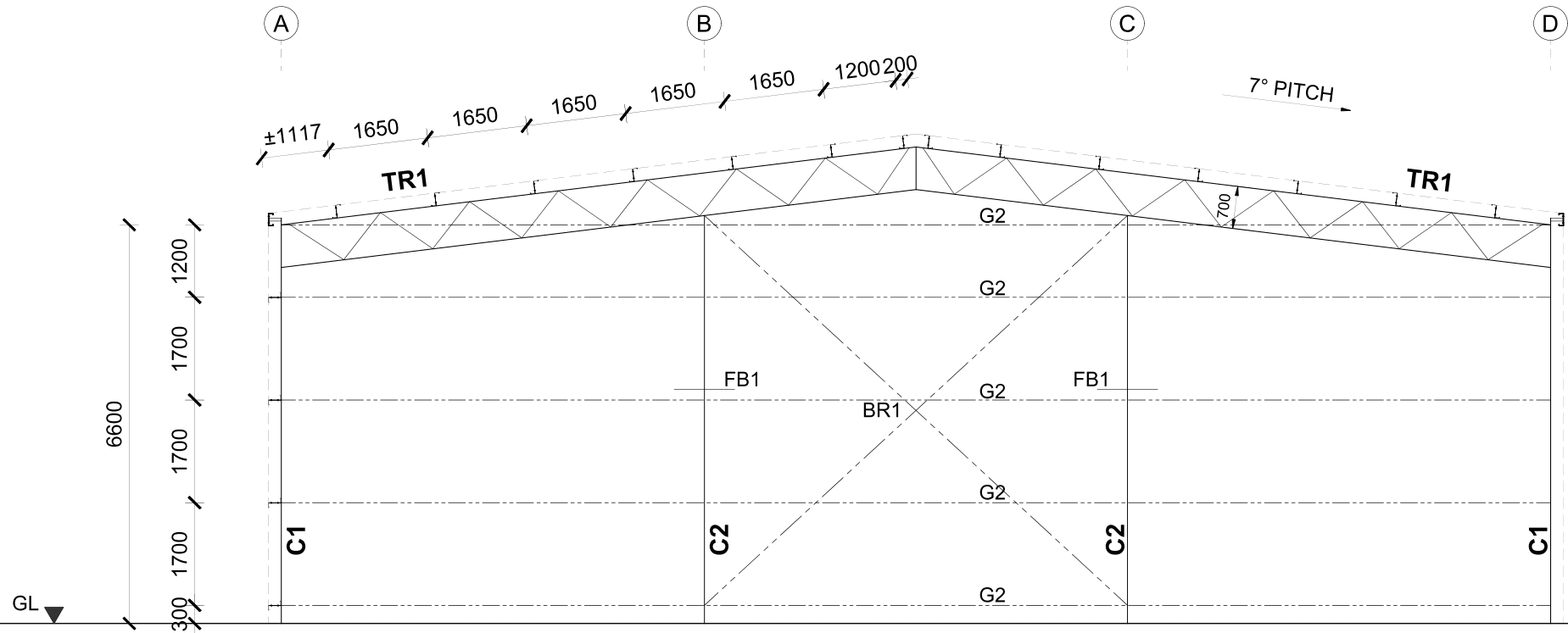
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1800 800 910
98 Byfield St Northam WA 6401
www.wheatbelt-steel.com.au

JOB DETAILS	PROJECT No.	3057	DATE	02/05/2022	DRAWING No.	
	CLIENT	C.D. & L.A. TURNER (CLIVE TURNER) 699 POULTNEY ROAD CORRIGIN WA 6306		DRAWING No.	3057 - 02	
	DRAWING	PLAN VIEW		SCALE	1:125	

REVISIONS	01	AAR	Revised Location of S.Doors	03/05/2022
	00	RBL	ENGINEER'S CERTIFICATION	02/05/2022
	REV No.	BY	DESCRIPTION	DATE

PRE CONSTRUCTION PROOFING	APRVD.	S.A.	09/05/2022
	CHKD.	H.C.	09/05/2022
	INITIALS	DATE	

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ELEVATION ON GRID 1
MIRROR TO GRID 5

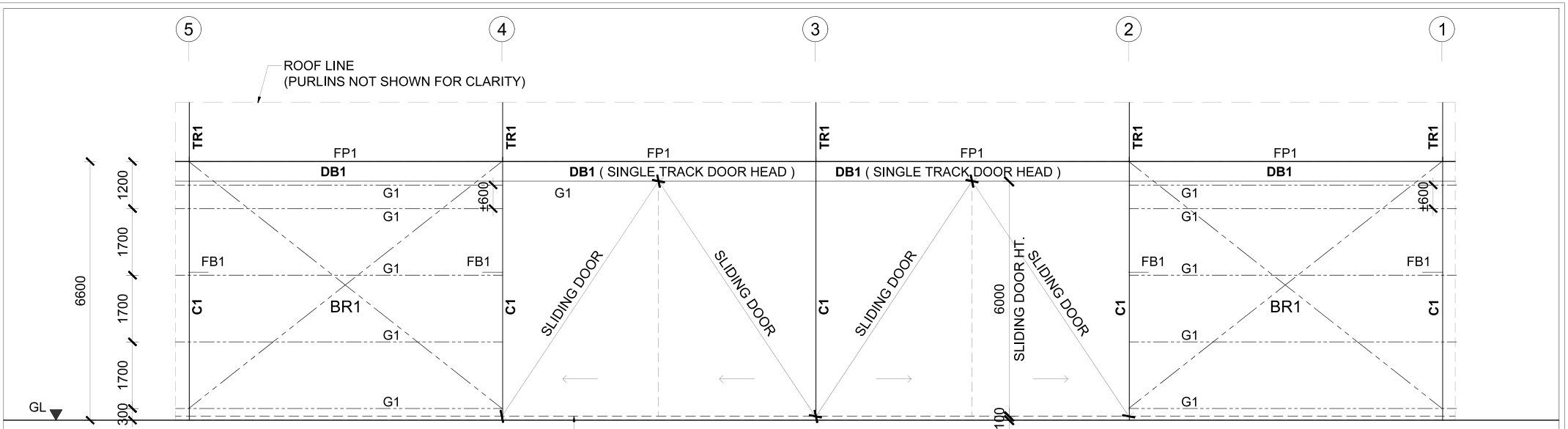
SANTIAGO ABUEVA, JR.
Civil/Structural Engineer
FIEAust NER 2994678 RPEQ 26229



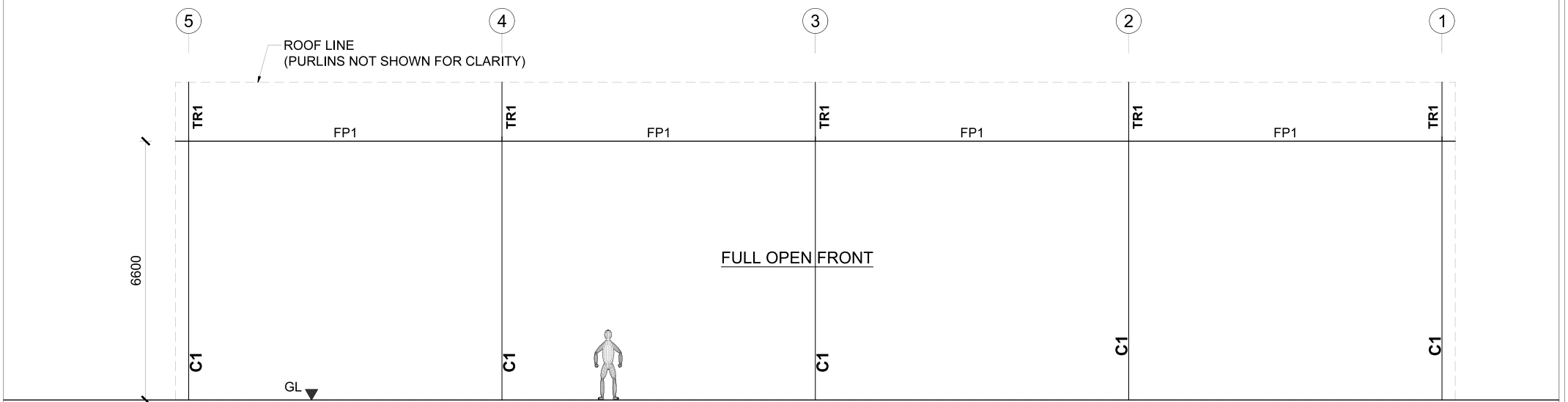
1800 800 909
1800 800 910
98 Byfield St Northam WA 6401
www.wheatbelt-steel.com.au

JOB DETAILS	PROJECT No.	3057	DATE	02/05/2022	DRAWING No.				REVISIONS				PRE CONSTRUCTION PROOFING	INITIALS	DATE
	CLIENT	C.D. & L.A. TURNER (CLIVE TURNER) 699 POULTNEY ROAD CORRIGIN WA 6306		DRAWING	ELEVATIONS SHEET 1	SCALE	1:75	REV No.		BY	DESCRIPTION	DATE		APRVD.	S.A.
								01	AAR	Revised Location of S.Doors	03/05/2022				
								00	RBL	ENGINEER'S CERTIFICATION	02/05/2022				
													CHKD.	H.C.	09/05/2022

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ELEVATION ON GRID A



ELEVATION ON GRID D

S. Abueva

SANTIAGO ABUEVA, JR.
Civil/Structural Engineer
FIEAust NER 2994678 RPEQ 26229



1800 800 909
1800 800 910
98 Byfield St Northam WA 6401
www.wheatbelt-steel.com.au

JOB DETAILS	PROJECT No.	3057	DATE	02/05/2022	DRAWING No.	
	CLIENT	C.D. & L.A. TURNER (CLIVE TURNER) 699 POULTNEY ROAD CORRIGIN WA 6306		3057 - 04		
	DRAWING	ELEVATIONS SHEET 2		SCALE 1:140		

REV No.	BY	DESCRIPTION	DATE
01	AAR	Revised Location of S.Doors	03/05/2022
00	RBL	ENGINEER'S CERTIFICATION	02/05/2022

PRE CONSTRUCTION PROOFING	APRVD.	S.A.	09/05/2022
	CHKD.	H.C.	09/05/2022
	INITIALS	DATE	

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FORM 1 - APPLICATION FOR DEVELOPMENT APPROVAL



Owner Details			
Name(s):	Caromile Pty Ltd of Bulyee		
ABN (if applicable):	84 881 445 388		
Mailing Address:	332 Bulyee-Quairading Road, Bulyee WA		Postcode: 6306
Work Phone:		Fax:	
Home Phone:		Email:	admin@cousinsfarming.com
Mobile Phone:	0428 384 872		
Contact Person for Correspondence:	Michael Cousins		
Signature:		Date:	10/6/2022
Signature:		Date:	10/6/2022
<i>The signature of the owner(s) is required on all applications. This application will not proceed without that signature. For the purposes of signing this application an owner includes the persons referred to in the Planning and Development (Local Planning Schemes) Regulations 2015 Schedule 2 clause 62(2).</i>			

Applicant Details (if different from owner)			
Name(s):	CRISP Wireless Pty Ltd		
Mailing Address:	PO Box 1004 NARROGIN		Postcode: 6312
Work Phone:	6808 2100	Fax:	
Home Phone:		Email:	lballard@crispwireless.com.au
Mobile Phone:			
Contact Person for Correspondence:	Leigh Ballard		
The information and plans provided with this application may be made available by the local government for public viewing in connection with the application.			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Signature:		Date:	10/06/2022

Property Details			
Lot No:	3	Street No:	124
Diagram or Plan No:	68219	Certificate of Title Volume No:	1740
		Folio:	675
Title encumbrances (e.g. easements, restrictive covenants):			
Street Name:	Corry Rd	Suburb:	Bulyee
Nearest street intersection:	Kweda Road North		

*The above information can be obtained by referring to the Certificate of Title. A copy of the Certificate of Title should be provided with an application for works. Certificates can be purchased through Landgate directly, or by paying the access fee along with your application fee.

Proposed Development								
Nature of Development:	Works	<input type="checkbox"/>	Use	<input type="checkbox"/>	Works and Use	<input checked="" type="checkbox"/>		
Is an exemption from development claimed for part of the development?					Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
If yes, is the exemption for:		Works	<input type="checkbox"/>	Use	<input type="checkbox"/>			
Description of proposed works and/or land use:		Telecommunications Communication Repeater Tower						
Description of exemption claimed (if relevant)		N/a						
Nature of any existing buildings and/or land use:		General farming						
Approximate cost of proposed development:				\$	20,000.00			
Estimated time of completion:		4-6 weeks						

Checklist of required materials		Attached?
A plan or plans in a form approved by the local government showing the following — (i) the location of the site including street names, lot numbers, north point and the dimensions of the site; (ii) the existing and proposed ground levels over the whole of the land the subject of the application; (iii) the location, height and type of all existing structures and environmental features, including watercourses, wetlands and native vegetation on the site; (iv) the structures and environmental features that are proposed to be removed; (v) the existing and proposed use of the site, including proposed hours of operation, and buildings and structures to be erected on the site; (vi) the existing and proposed means of access for pedestrians and vehicles to and from the site; (vii) the location, number, dimensions and layout of all car parking spaces intended to be provided; (viii) the location and dimensions of any area proposed to be provided for the loading and unloading of vehicles carrying goods or commodities to and from the site and the means of access to and from those areas; (ix) the location, dimensions and design of any open storage or trade display area and particulars of the manner in which it is proposed to develop the open storage or trade display area; (x) the nature and extent of any open space and landscaping proposed for the site;		<input checked="" type="checkbox"/>
Plans, elevations and sections of any building proposed to be erected or altered and of any building that is intended to be retained.		<input type="checkbox"/>
A report on any specialist studies in respect of the development that the local government requires the applicant to undertake such as site surveys or traffic, heritage, environmental, engineering or urban design studies.		<input type="checkbox"/>
Any other plan or information that the local government reasonably requires		<input type="checkbox"/>
Form 2 for providing additional information for development approval for advertisements		<input type="checkbox"/>

OFFICE USE ONLY												
Application Fee:							File No.					
Fees Paid:		/		/			Application No.	P		/		
Received By:							Record No.					
Date Received		/		/			Receipt No.					



ASIC

Australian Securities & Investments Commission

Current Company Extract

Name: CAROMILE PTY LTD

ACN: 008 790 814

Date/Time: 30 May 2022 AEST 12:01:54 PM

This extract contains information derived from the Australian Securities and Investments Commission's (ASIC) database under section 1274A of the Corporations Act 2001.

Please advise ASIC of any error or omission which you may identify.

EXTRACT

Organisation Details	Document Number
Current Organisation Details	
Name: CAROMILE PTY LTD	0879081A
ACN: 008 790 814	
ABN: 24008790814	
Registered in: Western Australia	
Registration date: 18/08/1975	
Next review date: 18/08/2022	
Name start date: UNKNOWN	
Previous state number: C0750926P	
Status: Registered	
Company type: Australian Proprietary Company	
Class: Limited By Shares	
Subclass: Proprietary Company	

Address Details	Document Number
Current	
Registered address: CARBON ACCOUNTANTS, 'Carbon Accountants', 40 Ellen Stirling Parade, ELLENBROOK WA 6069	7EAT60246
Start date: 13/02/2020	
Principal Place Of Business address: C/- Mr A J Cousins, Quairading Road, BULYEE WA 6306	0879081A
Start date: 13/12/1990	

Contact Address
Section 146A of the Corporations Act 2001 states 'A contact address is the address to which communications and notices are sent from ASIC to the company'.
Current
Address: LOCKED BAG 7, ELLENBROOK WA 6069
Start date: 25/11/2021

Officeholders and Other Roles	Document Number
Director	
Name: RONALD ALAN COUSINS	7E1068937
Address: Quairading Road, BULYEE WA 6306	
Born: 26/11/1961, PINGELLY, WA	
Appointment date: 05/04/2007	
Name: MICHAEL ARTHUR COUSINS	7E1068937
Address: Quairading Road, BULYEE WA 6306	
Born: 02/11/1964, PINGELLY, WA	
Appointment date: 05/04/2007	
Secretary	
Name: RONALD ALAN COUSINS	7E1068937
Address: Quairading Road, BULYEE WA 6306	
Born: 26/11/1961, PINGELLY, WA	
Appointment date: 05/04/2007	

Name:	MICHAEL ARTHUR COUSINS	7E1068937
Address:	Quairading Road, BULYEE WA 6306	
Born:	02/11/1964, PINGELLY, WA	
Appointment date:	05/04/2007	

Share Information**Share Structure**

Class	Description	Number issued	Total amount paid	Total amount unpaid	Document number
A	CLASS A SHARES	1	1.00	0.00	0879081A
B	CLASS B SHARES	1	1.00	0.00	0879081A

Members

Note: For each class of shares issued by a proprietary company, ASIC records the details of the top twenty members of the class (based on shareholdings). The details of any other members holding the same number of shares as the twentieth ranked member will also be recorded by ASIC on the database. Where available, historical records show that a member has ceased to be ranked amongst the top twenty members. This may, but does not necessarily mean, that they have ceased to be a member of the company.

Name: HOPEN PTY LTD
 ACN: 008 782 045
 Address: Quairading Road, BULYEE WA 6306

Class	Number held	Beneficially held	Paid	Document number
A	1	no	FULLY	0879081A

Name: LESLEY MARCIA COUSINS
 Address: 332 Bulyee-Quairading Road, BULYEE WA 6306

Class	Number held	Beneficially held	Paid	Document number
B	1	yes	FULLY	3E7186504

Documents

Note: Where no Date Processed is shown, the document in question has not been processed. In these instances care should be taken in using information that may be updated by the document when it is processed. Where the Date Processed is shown but there is a zero under No Pages, the document has been processed but a copy is not yet available.

Date received	Form type	Date processed	Number of pages	Effective date	Document number
06/02/2020	484B Change To Company	06/02/2020	2	06/02/2020	7EAT60246

	Details Change Of Registered Address				
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Note: Where the expression 'Unknown' is shown, the precise date may be available from records taken over on 1 January 1991 and held by ASIC in paper or microfiche.

*****End of Extract of 3 Pages*****



Prepared for:	Shire of Corrigin
Attention:	CEO: Natalie Manton Consultant Planner: Joe Douglas
Date:	13 June 2022 / Updated 17 June 2022
Site Location:	124 Corry Road, Bulyee WA 6306

Commercial in Confidence



Vision Statement

To be the first choice for broadband internet in regional Western Australia by providing first class infrastructure with a consistent focus on excellent customer service and ongoing regional community consultation to ensure our program meets the needs of country WA.

Background

CRISP Wireless is a Network owner/operator licensee for Wireless Broadband services in Western Australia.

We provide a unique telecommunications solution that utilises Point to Point secured wireless connectivity between sites as well as community wireless services and subscriber broadband.

Quality Information

Prepared for:

Cousins Site (RCP-R1-115-Q)

Prepared by:

CRISP Wireless Pty Ltd

Address: PO Box 1004, Narrogin WA 6312

Email: lballard@crispwireless.com.au

Document number:

Revision	Revision Date	Details	Authorization		
			Prepared By	Reviewed By	Authorised By
A	30/05/2022	Proposal	Heidi Cowcher	Leigh Ballard	Leigh Ballard
B	17/06/2022	Revision	Heidi Cowcher	Leigh Ballard	Leigh Ballard



Proposal

CRISP Wireless proposes to extend our fixed wireless network across the Wheatbelt. We are proposing to place a sea container adjacent to an existing telecommunications tower at 124 (Lot 3) Corry Road, Bulyee WA 6306. The proposed works shall be referred to as Telecommunications Infrastructure (ie: Communication Repeater Point - Wireless Broadband)'. The land area is currently zoned rural for the purpose of general farming. For the purposes of the development application, it shall be referred to as 'Agriculture Intensive (ie: cropping, grazing, including various associated improvements)'. The site proposed will not affect the current farming practices.

This can be seen below on aerial maps.

Photo 1a

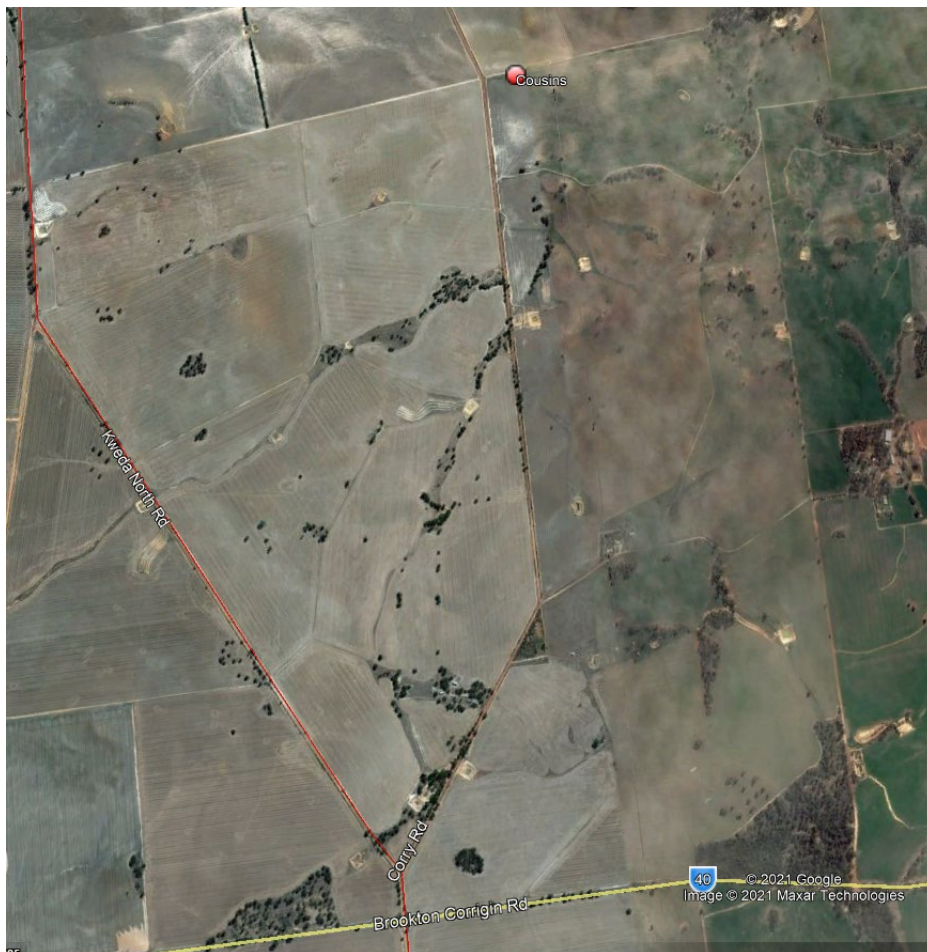


Photo 1b



The 30m tower and communications hut will be similar to the adjacent photo.



Access to the land will be via a 12m crossover from Corry Road, then onto farm tracks within the lot boundary. We envisage this to have minimal traffic on it whilst erecting the infrastructure and significantly less once complete. Photo 4 shows the proposed access to site. All access will be maintained within 124 Corry Road. No access will be from the unconstructed road reserve to the northern boundary.

Photo 5 shows the approximate boundary distances: ranging from 33m to 2295m.

Photo 4

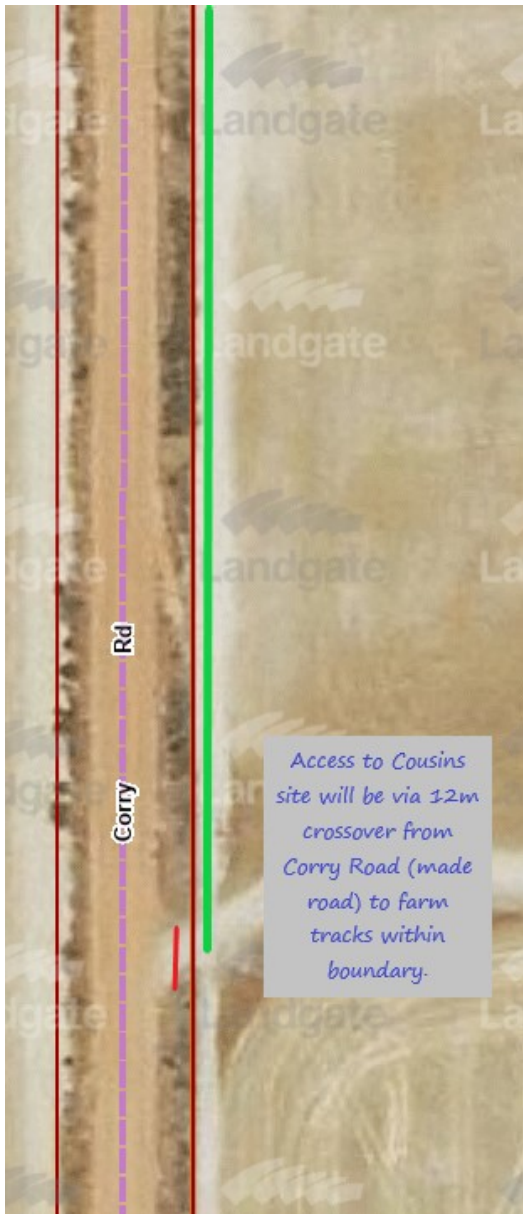
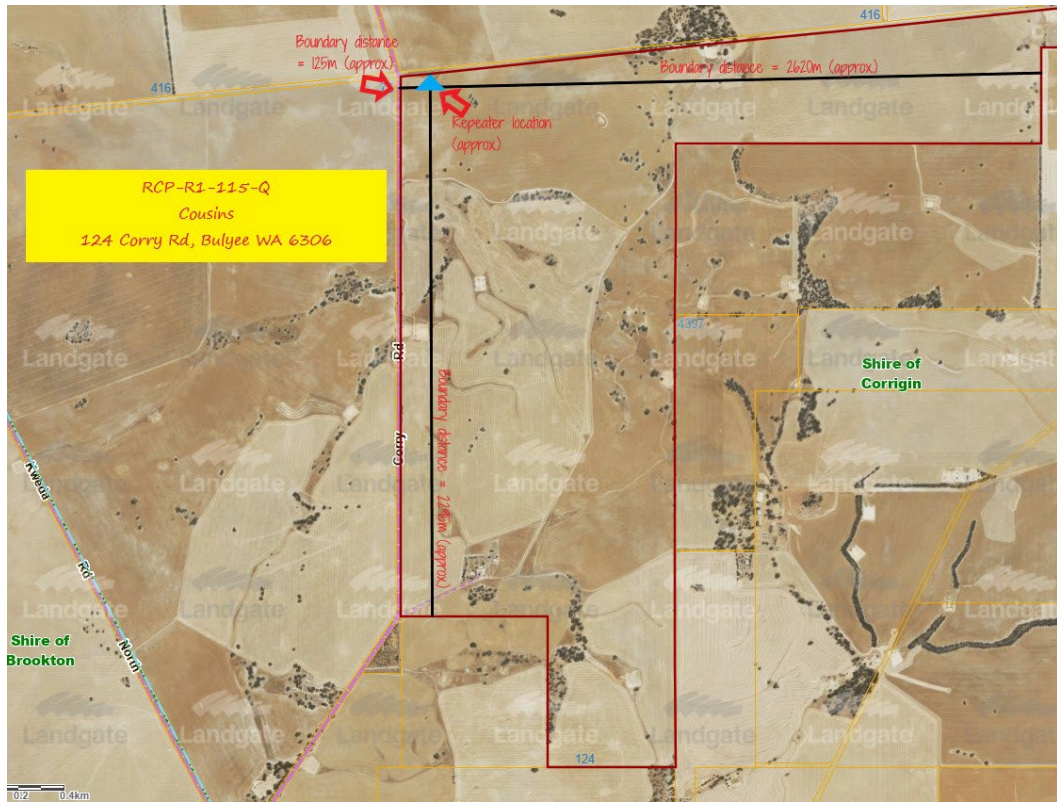
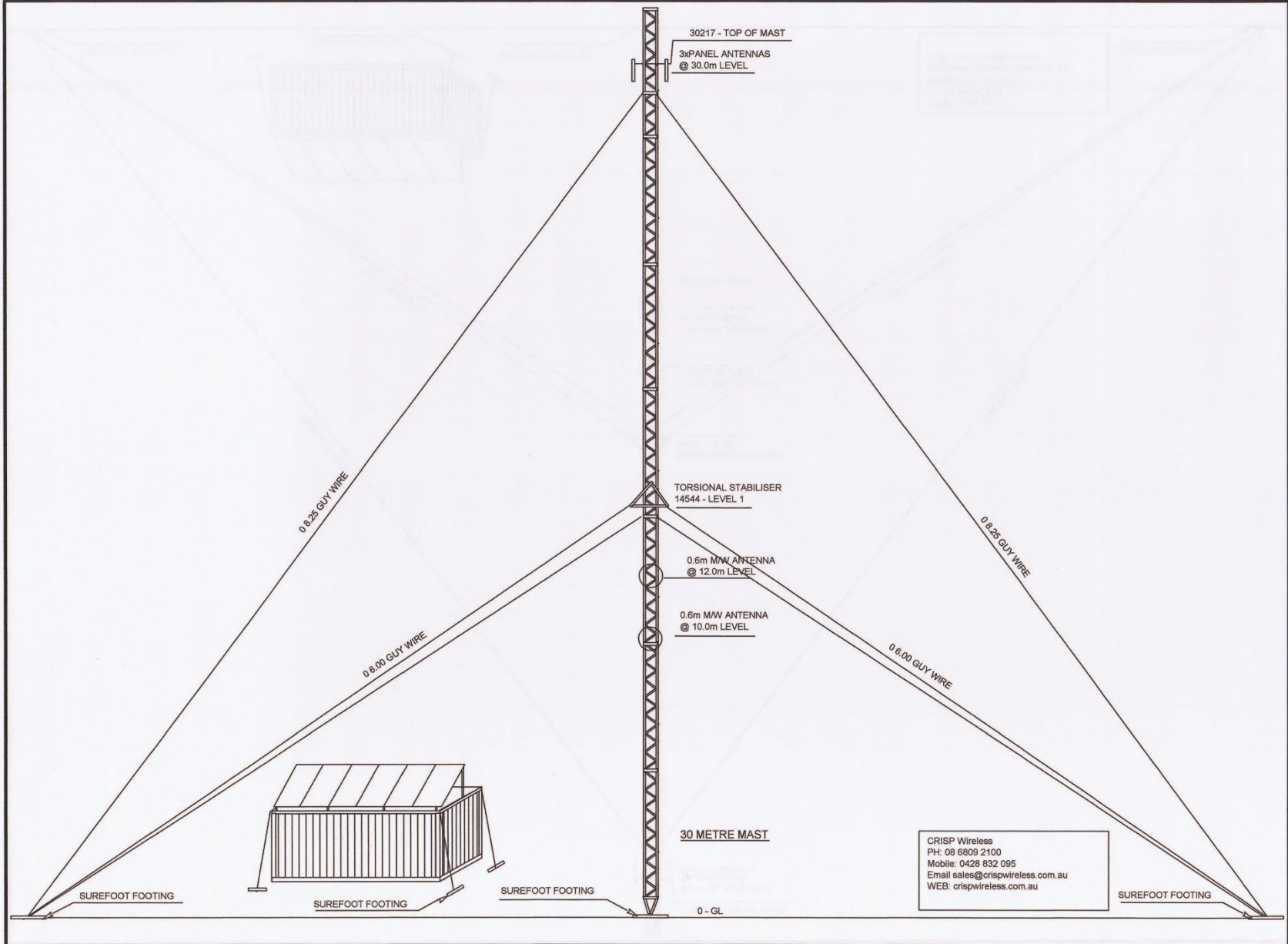


Photo 5 a & b





CRISP Wireless
 PH: 08 6809 2100
 Mobile: 0428 832 095
 Email sales@crispwireless.com.au
 WEB: crispwireless.com.au

WESTERN



AUSTRALIA

REGISTER NUMBER 3/D68219	
DUPLICATE EDITION N/A	DATE DUPLICATE ISSUED N/A

RECORD OF CERTIFICATE OF TITLE
UNDER THE TRANSFER OF LAND ACT 1893

VOLUME **1740** FOLIO **675**

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES



LAND DESCRIPTION:

LOT 3 ON DIAGRAM 68219

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

CAROMILE PTY LTD OF BULYEE

(A D327671) REGISTERED 22/9/1986

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: 1740-675 (3/D68219)
PREVIOUS TITLE: 1344-6
PROPERTY STREET ADDRESS: 124 CORRY RD, BULYEE.
LOCAL GOVERNMENT AUTHORITY: SHIRE OF CORRIGIN

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“Reframing Rural Fire Management”

REPORT OF THE SPECIAL INQUIRY
INTO THE
JANUARY 2016 WAROONA FIRE

VOLUME 1: REPORT



**Government Of
Western Australia**

“REFRAMING RURAL FIRE MANAGEMENT”

**REPORT OF THE SPECIAL INQUIRY
INTO THE
JANUARY 2016 WAROONA FIRE**



Waroona Fire Special Inquiry

29 April 2016

Mr M C Wauchope
Commissioner
Public Sector Commission
Locked Bag 3002
WEST PERTH WA 6827

Dear Mr Wauchope,

SPECIAL INQUIRY INTO JANUARY 2016 WAROONA FIRE

I am pleased to submit the *Report of the Special Inquiry into the January 2016 Waroona Fire*. The Special Inquiry has been conducted in accordance with the provisions of the *Public Sector Management Act 1994* and the Terms of Reference.

The Special Inquiry started in early February, ran for 13 weeks and held formal hearings on 22 days. The Special Inquiry has evoked a significant response. One hundred and sixty five written submissions have been received. One hundred people appeared at formal hearings and five people gave evidence via telephone. We have met and interacted with 42 organisations and interest groups. My gratitude goes to all those who contributed their wisdom, knowledge and experience to this Special Inquiry.

The Special Inquiry team has worked diligently to inquire against the Terms of Reference and to analyse the matters presented in submissions and in formal hearings. The Special Inquiry has endeavoured to meet with and listen to all who registered an interest. Mindful of the timeframe, this has been a significant task.

The report of the Special Inquiry carries 17 'Recommendations for Strategic Change' and 23 'Agency Opportunities for Improvement'. It is my belief that, when actioned, these will reframe rural fire management in Western Australia for the benefit of the community.

I particularly acknowledge those who have been directly affected by the fire, and who, in a time of turmoil, gave of their time to tell us their story. Many were traumatised by the fire. Others were coming to terms with the loss of neighbours, stock, farm assets, homes, plantations and livelihoods. We spoke with firefighters, many of whom were seasoned and had vast experience. The depth of impact of this fire on them was evident from the look in their eyes, the emotion in their words and the pain in their hearts. I hope that this report reflects all these stories.

I also want to acknowledge the unfailing support that has been given by officers and the heads of many agencies including the Department of the Premier and Cabinet, the Department of Fire and Emergency Services and the Department of Parks and Wildlife. The Special Inquiry also gratefully acknowledges support provided by the Shires of Harvey and Waroona.

Finally, I extend my heartfelt thanks to the staff of the Special Inquiry. Each of them has made a lasting contribution. They are individually mentioned elsewhere in this report. Without their effort and judgement this Special Inquiry and its Report would not have been possible.

Thank you for the opportunity to contribute to the vision of a safer Western Australian community.

Yours sincerely

A handwritten signature in blue ink that reads "Euan A. Ferguson". The signature is written in a cursive, flowing style.

Euan Ferguson AFSM
Special Inquirer
Waroona Fire Special Inquiry

This report is dedicated to those affected by the Waroona fire. In particular:

to the memory of those whose lives were lost;

to those who have suffered injury and hurt that may be ongoing;

to those whose livelihoods have been destroyed or disrupted;

and

**to those who did their best to fight the fire and protect the community
during a time of adversity.**

“Hope springs from adversity”

Acknowledgements

This Special Inquiry Report has been made possible through the dedication and hard work of a small team of very talented people drawn from a range of Western Australian Government departments. I acknowledge the assistance given by the following: the Department of the Premier and Cabinet through Ms Emma Clegg, Ms Bethany Couper, Mr Angus Duncan, Mr Frank Fiorillo, Ms Helen Gladstones, Ms Jean Perkins, and Ms Barbara Willinge; the Department of Planning through Ms Courtney Barron; the State Emergency Management Committee Secretariat through Ms Narelle Edmonds; and the State Solicitor's Office through Ms Fiona Seaward.

I particularly would like to thank Ms Courtney Barron who acted as the very capable Executive Officer for the Special Inquiry and who, with Ms Fiona Seaward, provided essential analysis and insightful contributions to the conduct of the Special Inquiry.

I thank the Shires of Waroona and Harvey, the City of Bunbury and the Department of Planning in Bunbury for allowing their premises to be used for formal hearings. Also, thanks to the Shires of Waroona and Harvey for the support they have given during the Special Inquiry.

I thank the Director of the State Emergency Management Committee Secretariat, the Fire and Emergency Services Commissioner and staff of the Department of Fire and Emergency Services for providing office, logistical and technical support.

I also thank the members of the Yarloop and Cookernup Bush Fire Brigades for meeting with me at a time when many were struggling to reconcile the consequences of this fire on their community and on themselves.

Finally, I thank those community members who have been affected by this fire and who came forward to share with me their story and identify lessons to be learned for the future. Your thoughts and proposals have foreshadowed a future rich in opportunity.

Contents - Part One: Addressing Terms of Reference

Chapter 1	Letter of transmittal Acknowledgements Contents Page	
Chapter 2	Prologue	11
Chapter 3	Executive Summary and Recommendations	15
	<ul style="list-style-type: none">• Strategic Recommendations• Opportunities for Improvement	
Chapter 4	Compelling Questions and Findings	27
Chapter 5	Lessons Learned from Previous Bushfire Emergencies	41
	[ToR 2 & 3]	
	<ul style="list-style-type: none">• Summary of previous reports• Assessing Implementation	
Chapter 6	The Fire	63
	<ul style="list-style-type: none">• The Waroona fire• Losses and damages	
Chapter 7	Fuel Management and Fire Prevention	89
	[ToR 1(a) & (b)]	
	<ul style="list-style-type: none">• Defining fuel management• Hazard reduction burns• Department of Parks and Wildlife• Other agencies• Fuel management around Yarloop• Other fuel management considerations• Local solutions for local problems	
Chapter 8	Incident Management	115
	[ToR 1 (c) & (d)]	
	<ul style="list-style-type: none">• Initial Response• Incident management over the course of the fire	

Chapter 9	Resource Efficiency	143
	[ToR 1 (c) & (d)]	
	<ul style="list-style-type: none"> • Observation on resource management over the course of the fire • Maps • Resource management arrangements • Automatic vehicle location capability 	
 Chapter 10	 Information, Alerts and Warnings	 159
	[ToR 1 (f)]	
	<ul style="list-style-type: none"> • Policy framework • Types of emergency information • Information issued to residents of Waroona • Information issued to residents of Yarloop • General issues regarding the wording of community alerts • General issues regarding maps 	
 Chapter 11	 Evacuation and Shelter Issues	 185
	[ToR 1 (g)]	
	<ul style="list-style-type: none"> • Evacuation framework • Evacuations during the Waroona fire • Shelter options during a bushfire 	
 Chapter 12	 Traffic Management	 193
	[ToR 3]	
	<ul style="list-style-type: none"> • Current legislative and policy framework • Traffic management during the Waroona fire • Location of vehicle control points and inappropriate detours • Transportation of workers to the Wagerup refinery • Previous recommendations regarding traffic management • The need to fix the traffic management policy 	
 Chapter 13	 Essential Services	 207
	[ToR 1 (e)]	
	<ul style="list-style-type: none"> • Water Infrastructure • Communication Infrastructure • Power Infrastructure • Roads Infrastructure 	

Chapter 14	Transition to Recovery	217
	[ToR 1 (g) & ToR 3]	
	<ul style="list-style-type: none"> • Recovery Framework • Commencement of Recovery • Emergency services' role in recovery • Participation in Recovery • Welfare Considerations 	
 Chapter 15	 Rural Fire Capability	 233
	[ToR 3]	
	<ul style="list-style-type: none"> • Rural fire management across Australia • History and framework • Use of volunteers in IMT's • Capability • Training and advancement of bushfire volunteers in DFES • Volunteers within the Incident Management Team • Industrial Relations • Volunteer Voice • A Rural Fire Service • Rural Fire Management Framework 	
 Chapter 16	 Concluding Comments	 263

Contents - Part Two: Appendices

- Appendix 1:** Letter of appointment and Terms of Reference
- Appendix 2:** Acronyms List
- Appendix 3:** Traffic Light of the Status of Previous Review Recommendations
- Appendix 4:** *Reconstruction of the spread and behaviour of the Waroona bushfire (Perth Hills 68)* by Lachlan McCaw; Neil Burrows, Brett Beecham and Paul Rampant (Department of Parks & Wildlife WA)
- Appendix 5:** Maps of fire progression by Lachlan McCaw; Neil Burrows, Brett Beecham and Paul Rampant (Department of Parks & Wildlife WA)
- Appendix 6:** *Meteorological Aspects of the Waroona Fire January 2016* by the Bureau of Meteorology, Western Australian Regional Office, Perth WA
- Appendix 7:** Chronology
- Appendix 8:** List of written submissions
- Appendix 9:** List of oral submissions
- Appendix 10:** List of introductory scoping meetings

Chapter Two – Prologue

In early January 2016 a major bushfire swept down from the parched Darling Escarpment and across the farms of the Swan Coastal Plain. The fire had a severe impact on the settlements of Waroona, Yarloop, Preston Beach and surrounding areas. For the many people affected, it will take time to adjust to the pain of loss and suffering. For some, there will be enduring, lifelong memories of hurt and loss.

This Special Inquiry has been established to respond to the Terms of Reference (refer to Appendix 1). The Terms of Reference refer to the “Waroona Fire”, but the impact extends widely to a number of towns and communities, including the town of Yarloop, where two people lost their lives. One hundred and eighty one dwellings were destroyed. Every one of these was someone’s home. Many businesses and livelihoods, including farm and forestry businesses, will take years to re-establish.

An important duty has been to read and listen to the stories and recollections of the members of these communities. There are many questions arising from the ashes of this disaster. Wherever possible, this Special Inquiry has endeavoured to answer those questions. But even four months after the event, some questions remain only partially answered.

It has been the objective of this Special Inquiry to seek to identify improvements to the systems of community safety and bushfire risk management in Western Australia. The recommendations and opportunities identified in this report are aimed at making Western Australia a safer place not just for the present, but far into the future. Some recommendations for strategic change will take time, possibly years, to establish and to reap the benefits.

The Special Inquiry has had the benefit of time and the luxury of hindsight. It has been informed by the views, experiences, and the collective knowledge and careful consideration of many wise advisers. I thank these contributors, some of whom have set a high bar of expectation.

Hindsight is a wonderful thing. But we must act with disciplined caution when exercising this hindsight. It must always be remembered that those who were key players in this fire emergency were not afforded such luxury. Many individuals, be they citizens or members of agencies or in community teams, worked in extreme and challenging conditions. Many were hot, hungry, dehydrated and sometimes sick with worry and exhaustion. Dangers were ever present. Fast decisions had to be made with information that was incomplete and sometimes conflicting. There were many unknowns. People made decisions. Assumptions changed. Best laid plans failed. Teams used their initiative and adjusted. Even the most straightforward of tasks became complex. Emergency and essential services worked to create order out of chaos. Everyone worked against time and the progression of the fire.

It would be easy to look at any shortcomings and be tempted to fall into the trap of finding fault and allocating blame. This must be resisted. In striving for excellence in bushfire emergency management, it must be recognised that there are many parts of the system: the fire, the weather, the terrain and the actions and reactions of people that are subject to sudden and unpredictable change. Under these conditions, much is unknown. Almost everything is shrouded by uncertainty. People make judgements and those judgements are not infallible. Errors can and do occur, despite the best intentions and best efforts of people.

Blame is a poor tool for strengthening resilience. Whilst blame is a natural reaction, it is a waste of energy. Wherever possible it has been the intent of this Special Inquiry to regard any shortcomings firstly as shortcomings in the systems of work for bushfire management. Everyone works within a system. If we want to improve the way that people operate within that system, then we must look to improving the system, rather than to first look to allocating blame on individuals. Good decisions come from wisdom, knowledge and experience. It is through a process of identifying then implementing lessons that systems can be improved and we can better equip people to make good decisions so that such large and destructive fires are dealt with properly, or better still, avoided. This is how we, and future generations, gain wisdom.

All of the people the Special Inquiry met with: citizens, landowners, farmers, business owners, personnel from agencies, essential services and from emergency services, were genuine in their commitment to do the best they could during this crisis. The Special Inquiry noted a strong urge from all the witnesses and submissions to understand the failings in the current systems of work, to learn from this tragic experience, and to change the future.

The Special Inquiry noted that there have been improvements in the systems of bushfire management in Western Australia over recent years. Many Bush Fire Brigade members spoke of the strengthening collaborative and cooperative relationship with the staff of the Department of Parks and Wildlife (P&W). New standards for the conduct of hazard reduction burning, introduced by the Office of Bushfire Risk Management, have been actively absorbed into the “business as usual” for P&W staff. P&W exhibited a strong commitment to hazard reduction and incident management.

There is a discernible renewed vitality and direction since the establishment of the Department of Fire and Emergency Services (DFES). Many witnesses attested to the high degree of confidence held in DFES’ urban fire capability. That capability is seen as professional, and highly competent. There were many reports that the players – at every level – are making great efforts to work in a positive and collegiate manner. Whilst there remain a number of challenges in relation to the rural fire system, it is evident that DFES staff have taken great strides to increase their capability in rural fire.

This Special Inquiry has cast a spotlight on various aspects of the Waroona fire. Some decisions and actions, taken in fleeting seconds, have been subject to detailed analysis, comment and review. This analysis has highlighted deficiencies, not just in the firefighting operation, but also in the systems for managing bushfire in Western Australia. The system for managing rural fire has been variously described as, at best, “disjointed and disconnected”; at worst, “dysfunctional and broken”.

Of particular concern were many reports that the current arrangements are failing the cornerstone of rural fire management in Western Australia: the Bush Fire Brigade volunteers.

It is my view that there exists a need to effect fundamental changes to the system of rural fire management in Western Australia. My conclusion, which has been very carefully considered, is that the current system for managing bushfire in Western Australia is failing citizens and the government.

This conclusion will be contentious. But it is supported by many submissions and the repeated observations that point to the need for systemic change.

Perhaps the most compelling support for fundamental change is the dramatic increase in the number and impact of damaging and costly bushfires over the last six years in Western Australia.

In a hotter and drier world, the future will be increasingly volatile, uncertain, complex and ambiguous. The bushfire problem will not diminish. Concerted and direct action needs to be taken to address the risk and vulnerability from bushfire now, and for the next 10 years and beyond. Without action, the stage is set for an escalation of bushfire risk and the consequences thereof.

Emergency service organisations can only do so much in times of disaster. The consequences of a major bushfire on a community may be mitigated by the community's appreciation of, and ability to act on, their own risk. This reinforces the philosophy of "shared responsibility" that has been identified by previous Inquiries. During this Special Inquiry there were countless examples of individuals and neighbours who successfully fought the fire and then supported each other to recover after it. More troubling were frequent accounts of well intentioned and capable community members who were thwarted from protecting their own properties and their neighbours' properties by a system that was inflexible, impractical and, in some instances, defied common sense and ran counter to the principle of "shared responsibility".

There is a compelling argument that the State needs to readjust expenditure away from fire response and recovery, towards a greater investment in prevention and fuel hazard management. This includes investing more in the education, resilience and readiness of local communities and individual citizens. Many of the recommendations of this Special Inquiry set the background to enable this shift in focus. There will be a need to maintain this momentum into the future. If such change does not occur, then the prospect of a future catastrophic bushfire event becomes increasingly likely.

This report must be a catalyst for change. Should there be no change, then this Special Inquiry will have failed. The Special Inquiry has made 17 'Recommendations for Strategic Change'. These are intended to reframe whole of government policies and structures for managing rural fire in Western Australia and for bushfire risk management into the future. There are also 23 'Agency Opportunities for Improvement' that, whilst being of a smaller scale, are crucial in order that agencies, individually and collectively, improve capacity and capability so that they are ready for the future.

Acting on these recommendations sets the stage for a landscape that is resilient to fire, a community that is informed and adapted to their bushfire risk and emergency managers who are skilled and ready to serve. I believe that the seeds of change sown by this Special Inquiry will lead to a safer Western Australian community.

Euan Ferguson AFSM
Special Inquirer
Waroona Fire Special Inquiry

Chapter Three - Executive Summary and Recommendations

Executive Summary

Context

Previous Inquiry Recommendations not yet all completed

Since 2007 there have been a number of significant fires in WA. These have resulted in a number of reports (including two independent inquiries). These reports have made a large number of recommendations. Good progress has been made implementing many of these recommendations. However, the analysis of evidence provided by agencies supports the view that, even though many actions have been deemed as “completed”, the intent established by some of the recommendations has yet to be achieved. For some recommendations, the definition of success, or completion, may be open to different interpretation.

Prior to the fire – a dry winter, temperatures warmest on record at Dwellingup

The Bureau of Meteorology (BoM) report that rainfall was very much below average in the South West of WA in 2015.

BoM report that rainfall totals were in the lowest 10% of records in areas west of a line from Jurien Bay to Wagin to Albany. This below average rainfall in 2015 is consistent with a trend of declining annual rainfall that has been observed over the last 40 years (Appendix 6).

2015 was also a very warm year. Dwellingup experienced its warmest year in 75 years of records.

As a result, forest fuels were significantly drier than average for that time of year. This was a continuation of the trend of the last five years, where fuels have been the driest or very close to the driest over the last 23 years.

Fuel reduction targets on public land not met in previous 12 years

P&W has a hazard reduction burning policy that recognises three Land Management Zones for burning. Land Management Zones A and B target asset protection objectives. Land Management Zone C targets broad scale landscape burns.

For a range of reasons, the annual burning targets in every zone, in almost every year, have not been met.

Recent new funding to build P&W capability

P&W express a total public land landscape target (for the South West) of having 45 percent of the landscape below six years in fuel age.

In 2015, P&W received additional funding from the State Government’s Royalties for Regions program of \$20 million over four years. The intent of this additional funding is to improve the P&W capability for conducting hazard reduction burning.

Since the Margaret River burn escape in November 2011, it is evident that P&W has effected much change in its hazard reduction burn prescriptions and process. It would be wrong not to

acknowledge the improvements made in this area. The commitment to hazard reduction burning was also evident from interactions with P&W staff.

However, there is a significant backlog of planned burns arising from the moratorium on burning that was invoked immediately after that burn escape.

P&W need to continually focus on maintaining hazard reduction and fire management as the highest priority. Should hazard reduction targets not be met into the future, there will be more out of scale bushfires. This will have adverse impacts on biodiversity, forest health as well as community impacts.

Bauxite mining operations on State Forest restricted planned burns and created difficult access for firefighters

Substantial areas of the State Forest in this part of the escarpment are subject to bauxite mining operations. In this area, hazard reduction burning is severely limited by the vulnerability of young vegetation regrowth to fire. The terrain is also very difficult, even for heavy earthmoving machinery. Contoured rip lines (constructed to aid revegetation), mine pits, haul roads, conveyors and power easements all contributed to slow and difficult access in the mining lease area.

Numerous blocks of forest to east of Yarloop also presented a hazard

Immediately to the east of Yarloop are a number of blocks of (then) long unburnt forest. The blocks have a mix of tenures including the State and local governments and community organisations. Only a small block managed by P&W had been subjected to any recent burning (May 2015). Shire of Harvey public reserves in and around Yarloop were mown about every two to three weeks and firebreaks were maintained annually. With a fire bearing down from the east from the Darling Scarp, these forest blocks became a source of embers and spot fires.

The “Waroona Main Drain” acted as a “fire fuse” to the west

On the Swan Coastal Plain there were significant areas of heavy fuels, scrub and trees associated with irrigation, drainage and plantations. Well established firebreaks were in place around the McLarty pine plantation, but the broad scale of the fire meant it swept across these. On the Waroona Main Drain there was minimal fire prevention work carried out. The continuous nature of these fuels resulted in a long “fire fuse” where severe fire behaviour meant suppression was very difficult.

The Fire

Two fires (Fire 68 and Fire 69) were started by lightning in State Forest south of Dwellingup on the evening of Tuesday, 5 January 2016. There was a concerted initial response to control the fires from the ground and from the air by P&W crews from Dwellingup.

There were initial safety concerns for crews trying to access one of the fires (Fire 68) that they might be overrun by Fire 69 to the east. This delayed initial control efforts on Fire 68.

By late morning, Fire 68 was well established and had jumped the Murray River. Crews were having difficulty fighting the fire due to fire behaviour, heavy forest fuels and steep rocky terrain.

The fire burned through parts of the long unburnt Lane Poole Reserve, then through the surrounding State Forest on the Darling Scarp. This area is subject to bauxite mining by Alcoa. This landscape presented obstacles for firefighters due to mining infrastructure (quarry pits, haul roads, conveyors, powerlines) and the presence of significant areas of recently rehabilitated forest.

The unchecked progression of the fire through long unburnt forest and the heavy fuels of the rehabilitated forest resulted in severe fire behaviour and the development of the pyro-cumulonimbus cloud.

Incident management was initially from P&W at Mundaring. At around 1700 hours, the Incident Management Team (IMT) resolved to upgrade the fire to a Level 3 Incident, and to operate from the Orion mine site the following day. During the late afternoon the fire behaviour increased and the plan changed to establish the IMT at Waroona.

At dusk the rate of spread and fire behaviour increased. At 2100 hours, a Watch and Act warning was issued for “Lane Poole Reserve, Alcoa mine site, and adjacent private properties in the Shire of Waroona”.

During the evening new fires started on the eastern side of Waroona. It is almost certain that these fires were started from lightning induced by the pyro-cumulonimbus cloud over the fire. These fires burned from the escarpment onto the Swan Coastal Plain. They threatened Waroona and Hamel on Wednesday evening. Resources from Fire and Rescue Brigades and Bush Fire Brigades worked to successfully protect Waroona and Hamel.

The fire then spread west of Waroona on the coastal plain. Suppression was hindered as intense fire burned along heavy fuels of the Waroona Main Drain and roadside vegetation.

At 2225 hours an Emergency Warning was issued for “Waroona townsite, Alcoa minesite and adjacent private properties in Shire of Waroona”. The warning specified an area bounded by: “Willowdale Road, Johnston Road, Somers Road, Coronation Road and Nanga Brook Road including Waroona townsite”. This warning was progressively updated through the night.

On Thursday morning, incident control transferred from Mundaring to Waroona. The IMT members coming in to the Waroona Incident Control Centre were delayed due to Vehicle Control Points and the active fire south of Waroona. This resulted in shift handover briefings between the outgoing and the incoming IMTs mainly being done over the telephone.

During Thursday the IMT was established, but it was in catch up mode.

In the afternoon, local resources focused on the north of Yarloop, P&W crews worked to the east of the South Western Highway and DFES worked west of the Highway, focussing on the western side of the fire.

At 1210 hours an Emergency Warning was issued for “Waroona and Harvey and surrounding areas, including Preston Beach, in the Shires of Harvey and Waroona”.

In the late afternoon there was no town water in Yarloop.

In the evening, between 1900 and 2000 hours, easterly winds increased dramatically and without warning. The fire east of the South Western Highway made a run in a south westerly direction.

From approximately 1930 hours to 2000 hours, the fire entered Yarloop from the east. There was massive ember attack. Many houses ignited simultaneously. Firefighters and the small number of residents who remained were overwhelmed. There were 11 Fire and Rescue and Bush Fire Brigade firefighting vehicles and eight P&W tankers in and around Yarloop at this time. Some Yarloop residents sought refuge in their cars on the oval at Yarloop. Some firefighting appliances assisted residents sheltering there.

Tragically, during this period, two residents of Yarloop lost their lives.

At 1935 hours the first Emergency Warning that explicitly mentions Wagerup, Yarloop and Cookernup was issued.

To the west, the fire crossed the Forrest Highway and subsequently cut off Preston Beach. Led by local residents and a number of Bush Fire Brigades, people took shelter at the carpark adjacent to the beach. During the ensuing hours, Volunteer Marine Rescue activated boats to take residents off the beach and evacuate them to Bunbury.

Vehicle Control Points were established around the expanded fire area.

Over the next 10 days, firefighting operations continued to establish control lines around the fire perimeter and to extinguish hotspots. Western Power, Main Roads and the Shires of Waroona and Harvey initiated recovery actions.

Interstate crews were received from New South Wales to assist with fire operations.

Over the course of the fire there emerged widespread dissatisfaction with traffic management. There were many reports of an inflexible approach being used at Vehicle Control Points.

A detailed description of the fire is found at Chapter 6. Further detail is found at Appendices 4, 5 and 6.

Summary of Losses and Damage

Tragically, during the fire, two residents of Yarloop lost their lives. The fire burned a total area of 69,165 hectares comprising 31,180 hectares of private property and 37,985 hectares of public land. One hundred and eighty one properties were destroyed. At time of writing, it is estimated that the cost of the fire, including the costs of suppression, losses, damage and recovery (including estimated insurance losses) totals approximately \$155 million. More detail can be found at Chapter 6.

Strategic Recommendations and Opportunities for Improvement

In this report, recommendations are made in two contexts. First, 17 'Recommendations for Strategic Change' are made. These are larger and more strategic proposals that will require whole of government attention.

Secondly, and supporting the above, 23 ‘Agency Opportunities for Improvement’ have been identified. These are actions that require the attention of one or more agencies either individually or collectively. In the main, these should be able to be undertaken by relevant agencies with changes of policy or by a redirection of internal resources

Recommendations and opportunities are listed numerically, by chapter subject, in the order that they appear in the body of the report.

Lessons Learned From Previous Bushfire Emergencies

Recommendation 1: The State Government to explore options for streamlining the functions and the independence of the State Emergency Management Committee Secretariat and the Office of Bushfire Risk Management with a view to including an inspectorate function, and appointing a person who is dedicated to that role. The purpose is to provide assurance and reporting, and to inquire into, monitor and report transparently on emergency management standards, preparedness, capability, service delivery and investment performance outcomes. Within two years of the establishment of this arrangement the State Government to review and assess whether it is meeting the desired outcomes.

The Fire

Opportunity 1: The Departments of Fire and Emergency Services and Parks and Wildlife (and, when established, the Rural Fire Service) to engage with the Bureau of Meteorology and the Bushfire and Natural Hazards Cooperative Research Centre to investigate the prediction of cloud to ground lightning occurrences.

Opportunity 2: The Departments of Fire and Emergency Services and Parks and Wildlife (and, when established, the Rural Fire Service) to engage with the Bureau of Meteorology and the Bushfire and Natural Hazards Cooperative Research Centre to investigate the causes of and effects of pyro-cumulus weather occurrences on bushfire behaviour.

Fuel Management and Fire Prevention

Recommendation 2: The Department of Parks and Wildlife to plan for the highest priority hazard reduction burning effort around settlements and critical assets in the South West and Perth Hills. The annual objective is to treat a total of 60,000 hectares of priority hazard reduction per annum, comprising 20,000 hectares per annum of Land Management Zone A and 40,000 hectares per year of Land Management Zone B.

Recommendation 3: The Department of Parks and Wildlife to continue emphasis on landscape hazard reduction burning with the annual objective of treating 140,000 hectares per annum in Land Management Zone C. In combination with Recommendation 2 (above) the strategic objective will be that a fuel age of less than six years will be maintained across 45% of the landscape on State Forest, National Parks and other Parks and Wildlife managed lands in the South West and Perth Hills. This will address the current backlog (created from under achievements of the recent two decades of burn programs) by the end of the 2020-2021 burning season (i.e. within the next 5 years).

Recommendation 4: The Departments of Parks and Wildlife and Fire and Emergency Services to develop options for the expansion of the ‘Bushfire Mitigation Grant Scheme’

utilising both State and Commonwealth Government funding to enable the implementation of hazard reduction works identified through the Bushfire Risk Management Planning process. This will target hazard reduction projects on land owned by private landholders in rural-urban interface areas, critical infrastructure protection, local government land, roadsides and land managed by utilities.

Recommendation 5: The Department of Fire and Emergency Services, utilising the Office of Bushfire Risk Management, to develop a simplified and fast track hazard reduction burn (and other fuel mitigation techniques) planning and approval process to ensure the timely conduct of township and asset protection burns by Bush Fire Brigades and individual property owners. The process is to be agile and adaptable for the range of stakeholders which may participate in low risk, small scale, low complexity burn planning and approvals.

Opportunity 3: The Department of Parks and Wildlife and the Forest Products Commission to explore policy options for mechanical thinning of forest, including mining rehabilitation forest, for the purpose of bushfire mitigation.

Opportunity 4: The Department of Fire and Emergency Services, in collaboration with the Departments of Planning, Parks and Wildlife, Environment Regulation and Water, to lead consideration of developing guidance to landholders with respect to bushfire ‘fuse breaks’ along lineal fuels such as roadsides and irrigation drainage channels.

Incident Management

Recommendation 6: The State Emergency Management Committee to adopt, across all hazards, the doctrine of:

- the primacy of life;
- the ‘Strategic Control Priorities’ (as documented by the Department of Fire and Emergency Services); and
- community warnings that are timely, tailored and relevant.

Agencies will reinforce amongst emergency management personnel the importance of this doctrine through briefings and intent statements.

Recommendation 7: The State Government to establish an arrangement to develop a ‘network’ of Western Australian State Government agency personnel who can be called upon for bushfire and emergency incident management capability within Western Australia. The arrangement will be led by the State Emergency Management Committee and modelled on systems used by the Department of Parks and Wildlife.

Recommendation 8: The Departments of Parks and Wildlife and Fire and Emergency Services to adopt the policy that all bushfire Level 3 Incident Management Teams in the Perth Hills and the South West will be integrated and pre-formed from the start of the 2016/17 fire season with substantial involvement of both the Departments of Parks and Wildlife and Fire and Emergency Services personnel on all teams.

Opportunity 5: The Departments of Fire and Emergency Services and Parks and Wildlife (and, when established, the Rural Fire Service) to investigate options for improving aerial and satellite based bushfire intelligence gathering. In particular, to investigate the provision of Infra-Red Linescan capability.

Opportunity 6: The Departments of Fire and Emergency Services and Parks and Wildlife, in conjunction with the Australasian Fire & Emergency Service Authorities Council, to explore the development of a standardised approach and content for an ‘initial (4 hour)’ Incident Action Plan.

Opportunity 7: The Departments of Fire and Emergency Services and Parks and Wildlife to assess the merits and disadvantages of Incident Controller and Incident Management Team work cycle extending over a 24 hour period (but still allowing for individual rest times in line with fatigue policy).

Resource Efficiency

Recommendation 9: The State Emergency Management Committee, in consultation with Western Australian Farmers Federation, the Association of Bush Fire Brigades, the Contractors Association of WA, and the Forest Industries Federation of WA, to establish systems for the voluntary registration of:

- farmer firefighting units;
- contractor firefighting resources; and
- forestry industry brigades.

The purpose of the arrangement is to facilitate the safe, efficient and effective recognition, organisation, deployment, management and coordination of farmer, contractor and forestry firefighter resources.

The systems would include a process for enabling access through traffic management points during bushfires. Progress towards establishing these systems is to be reported by State Emergency Management Committee in its annual preparedness report.

Recommendation 10: The Departments of Fire and Emergency Services and Parks and Wildlife to investigate and adopt an emergency services resource management system that will enable the registration, tasking, tracking, management and coordination of emergency management personnel, vehicles, plant and aircraft.

Opportunity 8: The Department of Fire and Emergency Services to review the policy of dispatching task force resources from Perth metropolitan and regional urban locations to bushfires to ensure that only vehicles that are fit for purpose and appropriate to the task are deployed.

Information, Alerts and Warnings

Recommendation 11: The Department of Fire and Emergency Services to investigate and adopt a system that will allow the public to opt in, monitor and receive, through a ‘push mechanism’, bushfire and other emergency warnings, maps and information using a wide variety of devices including personal hand held smart devices.

Opportunity 9: The State Emergency Management Committee to develop policy guidance for local governments regarding the installation of bushfire and emergency community warning sirens in ‘at risk’ communities.

Evacuation and Shelter Issues

Recommendation 12: The Department of Fire and Emergency Services to work with the Department of Planning and Local Governments to adopt a policy which enables Local Governments to identify, register and communicate, 'Places of Bushfire Last Resort' in settlements and townsites where the life risk from bushfire is very high or greater.

Opportunity 10: The Department of Fire and Emergency Services to lead, in collaboration with the Department of Planning and the Building Commission, the development of a policy and guidance to landholders on a range of bushfire shelter options, including household bushfire refuges and community bushfire refuges.

Opportunity 11: The Departments of Fire and Emergency Services, Planning, and Environment Regulation to consider policy options with respect to the clearing of vegetation by landholders within a specified distance of an asset or dwelling, for the purposes of bushfire protection.

Traffic Management

Recommendation 13: The Department of Fire and Emergency Services to issue a photo identification card to DFES members, members of Bush Fire Brigades, volunteer emergency services, Incident Management Teams, forestry industry brigade members and Networked Government Emergency Agency members. DFES also to consider temporary windscreen signage to identify vehicles carrying such personnel.

Recommendation 14: The State Emergency Management Committee to review the policy for traffic management at emergency incidents so it reflects national 'best practice'. This includes the production and issuing of an aide-memoire to guide traffic management, emergency and incident management personnel.

The policy should provide a practical balance between risk to life and the public value of enabling the timely restoration of livelihoods and the movement of critical resources, (including essential services, critical businesses and livestock welfare services), through traffic management points.

The review will involve a range of stakeholders including the Departments of Fire and Emergency Services, Parks and Wildlife, Agriculture and Food WA; Main Roads WA, WA Police, WA Farmers Federation, WA Local Government Association, Forest Industries Federation, and the Transport Industry and ensure that the views of the community are considered.

Transition to Recovery

Opportunity 12: The Department of Fire and Emergency Services to engage with the WA Local Government Association to explore opportunities for Local Government personnel to be included in the make-up of Rapid Impact Assessment Teams.

Opportunity 13: The State Emergency Management Committee to develop an aide-memoire for Incident Controllers to guide the initial recovery considerations during an incident. The aide-memoire to include: triggers for the initiation of rapid impact assessment and the

escalation of the recovery function; and immediate and likely future community health, welfare and safety considerations. These triggers will inform the Incident Controllers when considering the discretionary appointment of ‘Deputy Incident Controller, Recovery’ during an incident that impacts on the community. The role of the ‘Deputy Incident Controller, Recovery’ would be (with the Incident Controller) to consider the initiation of the recovery process and to manage the transition from incident response to the recovery phase.

Rural Fire Capability:

Recommendation 15: The State Government to create a Rural Fire Service to enhance the capability for rural fire management and bushfire risk management at a State, regional and local level. The proposed Rural Fire Service will:

- be established as a separate entity from the Department of Fire and Emergency Services or, alternatively, be established as a sub-department of the Department of Fire and Emergency Services;
- have an independent budget;
- be able to employ staff;
- have a leadership structure which, to the greatest degree possible, is regionally based and runs the entity;
- be led by a Chief Officer who reports to the responsible Minister on policy and administrative matters; and to the Commissioner for Fire and Emergency Services during operational and emergency response;
- have responsibilities and powers relating to bushfire prevention, preparedness and response; and
- operate collaboratively with the Department of Fire and Emergency Services, the Department of Parks and Wildlife, Local Government and volunteer Bush Fire Brigades.

In creating the Rural Fire Service, the State Government to consider whether back office and corporate support services could be effectively provided by an existing Department, such as the Department of Fire and Emergency Services or the Department of Parks and Wildlife.

The State Government to review the creation of the Rural Fire Service two years after its establishment, to assess whether its structure and operations are achieving the intended outcome.

Recommendation 16: The State Emergency Management Committee to establish a State Bushfire Coordinating Committee as a sub-committee of SEMC. The State Bushfire Coordinating Committee will be chaired by the Director of the Office of Bushfire Risk Management and will have the primary responsibility to:

- develop a State Bushfire Management Policy and a set of long term bushfire risk management objectives;
- provide a forum for key bushfire risk management stakeholder agencies;
- advise the SEMC on matters pertaining to bushfire, in particular, to report against the investment in, and achievement of the bushfire risk management objectives;
- provide advice and support to the proposed Chief Officer of the Rural Fire Service on bushfire risk management matters; and
- report to SEMC and to the community on bushfire risk management matters on at least an annual basis.

Recommendation 17: The Department of the Premier and Cabinet to conduct an independent review of the current arrangement for the management and distribution of the Emergency Services Levy. The review will have the specific purpose of:

- seeking input from key entities including the Departments of Treasury, Finance, Fire and Emergency Services, Lands, and Parks and Wildlife, WA Local Government Association, and the Office of Bushfire Risk Management.
- ensuring the arrangement has the flexibility and agility to deal with emerging bushfire risk priorities.
- establishing a budget process that enables a shift in investment towards prevention, mitigation and building community resilience and capability.

Opportunity 14: The Department of Fire and Emergency Services training for Fire and Rescue career staff (at LFF and S/O training courses) to include enhanced training in natural hazard incident management; hazard reduction burning; rural and forest fire behaviour and the Department of Parks and Wildlife use of fire as a management tool.

Opportunity 15: The Departments of Fire and Emergency Services and Parks and Wildlife (and, when established, the Rural Fire Service) to agree on minimum targets for volunteer participation as Sector Commanders, and in Incident Management Team positions and develop strategies to meet those targets.

Opportunity 16: The Department of Fire and Emergency Services (and, when established, the Rural Fire Service) and the Volunteer Associations to develop fatigue management guidelines for emergency service volunteers.

Opportunity 17: The Department of Fire and Emergency Services (and, when established, the Rural Fire Service) to measure and report annually on the volunteer fire and emergency service worker contribution.

Opportunity 18: The Department of Fire and Emergency Services (and, when established, the Rural Fire Service) in consultation with the Association of Bush Fire Brigade Volunteers, to review the policy for disposal of ‘retired’ firefighting vehicles to first make disposed vehicles available to landowners who are sponsored by the local Brigade. Such vehicles to be subject to a limited decommissioning process.

Opportunity 19: The Department of Parks and Wildlife, in consultation with their workforce and the Community and Public Sector Union (CPSU) and the Australian Workers Union (AWU), to carry out a workforce workload analysis of its fire program (covered by both the CPSU and the AWU workforce). The analysis to have a particular emphasis on the management of workload and fatigue in employees involved in the fire program.

Opportunity 20: The Department of Fire and Emergency Services to investigate, with the United Firefighters Union, an ‘emergency roster’ arrangement that enables the temporary adoption of extended firefighter shift arrangements to enable more career firefighters to be made available for duty during significant emergencies.

Opportunity 21: The Department of Fire and Emergency Services (and, when established, the Rural Fire Service) to implement (and act on) a volunteer emergency service worker consultation framework to promote effective and meaningful ongoing consultation with fire

and emergency services volunteers on matters that affect volunteer systems of work, equipment and health, welfare and safety.

Opportunity 22: The Departments of Fire and Emergency Services and Parks and Wildlife (and, when established, the Rural Fire Service), in consultation with relevant stakeholders including the Public Sector Commission and the Volunteer Associations, to conduct (and act on) an annual culture survey amongst paid and career staff and volunteer emergency service workers.

Opportunity 23: When established, the Rural Fire Service, in conjunction with the Departments of Parks and Wildlife and Fire and Emergency Services, to establish a Western Australian Centre for Excellence in Rural and Forest Fire Management. The Centre to include a networked capability for research, planned burning, lessons learned and facilitating training for rural firefighters, especially for members of volunteer Brigades.

Chapter Four– Compelling Questions and Findings

Soon after the fire the members of the affected and broader community started asking questions. Many of these questions were echoed by written submissions and in oral evidence. These questions, and my best attempt at seeking out, and explaining, the answers, follow.

Further, on a number of matters I have chosen to make specific findings. These findings are made on the basis of the facts available to me and, where appropriate, on the basis of my judgement.

1. What was the time between ignition and detection of the fire?

Answer: Lightning activity was recorded by BoM on the evening of Tuesday 5 January 2016 between 1800 hours and 2000 hours. It is likely that Fires 68 and 69 were ignited some time in this time frame.

The fire was detected by a P&W officer who was checking the Sentinel Hotspots website (Landgate/Geoscience Australia) from his home at 0630 hours on Wednesday 6 January 2016.

FINDING: The fires known as Perth Hills Fire 68 and 69 were started by lightning in State Forest known as the Lane Poole Reserve after dark on Tuesday 5 January 2016 at an undetermined time.

2. Who reported the fire?

Answer: The fire was detected by a P&W officer who was checking the Sentinel Hotspots website (Landgate/Geoscience Australia) from his home at 0630 hours on Wednesday 6 January 2016. He contacted the P&W Regional Duty Officer who initiated initial attack resources.

3. What was the elapsed time between detection and first attack?

Answer: As it was a Wednesday (work day), many P&W employees were already on their way to work. The Regional Duty Officer notified a field based P&W officer, and by 0703 hours the Field Officer was en route to the fire. He arrived in the fire area around 0830 hours. Concurrently, P&W staff were being notified and resources were en route.

4. What was the initial weight of attack on the fire?

Answer: The initial attack focussed on Fire 69 first, due to concerns that the direction of spread of Fire 69 might threaten crews that otherwise might have been deployed to Fire 68. The initial attack resources included:

- *4 x fire tankers from Dwellingup;*
- *4 x fire tankers from Jarrahdale;*
- *2 x D6 bulldozers;*
- *2 x front end loaders; and*
- *1 x spotter aircraft.*

5. When were aircraft deployed to the fire?

Answer: A P&W spotter aircraft detection flight had been arranged the previous evening for a routine 0700 hours flight. This aircraft was airborne at 0658 hours and reported smoke as it approached the escarpment. This aircraft then provided accurate locations for Fires 68 and 69.

At 0726 hours P&W requested the State Operations Air Desk to provide air support from firebombing aircraft. Over the next 90 minutes the following aircraft were dispatched to both fires from Bunbury and Jandakot:

- *4 x fixed wing Single Engine Air Tankers;*
- *7 x rotary wing Helitaks; and*
- *1 x rotary wing Aircrane.*

6. When was heavy plant deployed to the fire?

Answer: Heavy plant was part of the initial attack response. The first Nash contractor dozer arrived on the fire at 0935 hours. The second Nash contractor dozer arrived at 1015 hours.

7. Were there fire spread predictions carried out (eg: “Aurora” or “Phoenix” predictions)?

Answer: The IMT used Project Vesta predictions to estimate the fire progression. During the daytime on Wednesday 6 January, fire behaviour and progression were reasonably in accordance with those forecast by the Vesta tables.

8. Did P&W ask for help quickly enough?

Answer: There was a concerted initial attack mounted on Fire 69. By 0730 hours (one hour after detection) the following resources were on scene or en route to the fires:

- *15 firefighters;*
- *8 tankers; and*
- *4 heavy plant.*

By 0946 hours there were 27 firefighters from P&W at the fires or en route. This does not include the contractor personnel associated with heavy plant that had been activated (approximately eight additional personnel), and does not include aviation resources.

When the fire crossed the Murray River there was a reassessment of the plan and more resources were requested. At this stage the intensity of the fire and its rapid rate of spread, combined with the heavy fuels and difficult terrain, meant that the fire was uncontrollable until either it burnt into lighter fuels, or there was a significant change in the weather.

It should be acknowledged that P&W staff were also creating a reserve of resources in case of more lightning fires showing up during the day.

During the initial response, at 0804 hours, the Incident Controller (IC) arranged for the DFES Communications Centre to be advised of the fire.

The IC, in evidence to the Special Inquiry, stated that: “There was a discussion later in the morning about whether or not we utilised brigade assistance, and, in fact, there were several discussions about it”.

Due to the steepness of the terrain and the fact that the bulldozers were encountering difficulty creating access for fire trucks; and that a number of (at least eight) tankers (and water carts) were at the fire area, it was resolved that there was no requirement for Bush Fire Brigade resources at that time.

9. Why did the fire get so big so fast?

Answer: There were two initial lightning fires in close proximity. The fires were discovered by a P&W officer from the Sentinel Hotspots web site at 0630 hours on Wednesday 6 January 2016. The subsequent initial response by P&W was timely and concerted. The P&W Field Officer assessed that there was a risk that the most south east of the two fires (Fire 69) had the potential to overrun crews if they were deployed to the fire to the north west (Fire 68). Thus, allowing for safety, there was a delay in crews and heavy plant commencing work on Fire 68. Fire 69 was contained at 1143 hours. The initial attack was also hampered by slow access and steep and rocky terrain on the fall into the Murray River. This slowed the rate of control line construction.

Further, the very dry winter and spring had resulted in extremely dry forest fuels. This contributed to fire behaviour that was greater than expected, particularly in the evening and overnight on the Wednesday night. Moderate easterly winds pushed Fire 68 down to, and ultimately across, the Murray River. Once the fire crossed the Murray River, it spread rapidly up slope into long unburnt forest fuels and the fragmented rehabilitation forest of the Alcoa mining and rehabilitation area. Access through much of the mining lease was made very difficult because of mine extraction roads, conveyors, power easements and thick pockets of heavy vegetation regeneration.

FINDING: The timing, weight of attack and strategies employed on the initial fire attack on Fires 68 and 69 were reasonable.

FINDING: Rainfall in South West Western Australia was very much below average in 2015. From May to October 2015, the Waroona region recorded rainfall in the lowest 10% of records. In 2015 Dwellingup recorded its warmest year of day-time maximum temperatures in its 75 years of records. Bureau of Meteorology measures of the dryness of heavy forest fuels indicated that forest fuels were significantly drier than the five year average. The dry condition of forest fuels contributed to the difficulty of suppressing and extinguishing the fire.

FINDING: The Incident Management Team decided to delay initial suppression actions on Fire 68 due to concerns that Fire 69, should it not be controlled quickly, might overrun crews that would otherwise have been deployed on Fire 68. Given the likelihood and consequences of the safety risks that this scenario presented, this was an appropriate decision.

FINDING: From about 1030 hours on 6 January 2016, the ability to control Fire 68 was hampered by:

- difficult access;
- very dry fuels;
- heavy forest fuels;
- the intensity of the fire;
- steep and rocky terrain; and
- the delay caused by safety risks presented by Fire 69.

FINDING: After it crossed the Murray River, the ability to control Fire 68 was hampered by terrain, heavy forest fuels and difficult ground access in the State Forest, including the area known as the Alcoa Mining Lease.

10. Why weren't fuels in the Alcoa mining lease area reduced?

Answer: There are complex issues in relation to the rehabilitation of bauxite mined areas. Rehabilitation areas under five years old do not have sufficient fuel to carry a low intensity fire. Regenerating trees do not reach seed "maturity" until about 25 years old. This means that, up to 25 years old, the eucalypts do not carry viable seed sources. If rehabilitation less than 25 years old is burnt, then there will be a total kill of trees.

In addition, during rehabilitation, bulldozers prepare ground for seeding by ripping contour lines. The result is a very uneven terrain that is extremely difficult to walk over and requires experienced bulldozer operators to navigate fire control line.

The issue of fuel reduction on the Alcoa mining lease area is further discussed in this report.

11. Was the transfer of control to a Level 3 IMT early enough?

Answer: The fire was declared a Level 3 Incident at 2215 hours on 6 January 2016. At that time a Level 3 IC assumed control of the fire from the Level 2 IC. With the benefit of hindsight, the decision to activate a Level 3 IMT could have been made earlier. The fire crossing the Murray River was a signal that the fire was likely to develop into a campaign (and therefore a Level 3) fire. Other cues that the fire might develop into a Level 3 fire were that:

- *the head fire was unable to be controlled;*
- *forest fuels were drier than average;*
- *access was hampered by steep rocky terrain;*
- *the fire was burning into State Forest where Alcoa bauxite mining operations hampered access and suppression; and*
- *a pyro-cumulonimbus cloud had formed over the fire.*

This needs to be considered in the context that the fire behaviour and the rate of spread from dusk and overnight were greater than forecast by fire behaviour models.

The transfer of control to the incoming Level 3 IMT was further compounded by transport obstacles faced by the incoming IMT early the next morning. On Thursday morning the following transitions occurred concurrently:

- *Transfer of control from the Mundaring P&W ICC to the Waroona Incident Control Centre (ICC);*
- *Portable ICC buildings established on the Waroona Oval;*
- *New incoming IMT;*
- *Normal shift changeover (night shift to day shift).*

FINDING: There were a number of cues that the fire had the potential to be declared a Level 3 Incident. Despite these cues, the potential for a Level 3 fire was not recognised until after 1530 hours on Wednesday 6 January 2016.

FINDING: There were a number of delays and setbacks to the Incident Management Team who were incoming to Waroona on Thursday 7 January 2016. These delays and setbacks were largely outside their control and affected the ability of the Incident Controller to establish the strategy for most of the day.

12. Why were some people not warned?

Answer: Many warnings were issued during the fire. The majority were timely and accurate. However, during the first two days of the fire a number of warnings were neither timely nor accurate. These included:

- *warnings around Waroona on the evening of Wednesday 6 January 2016; and*
- *warnings around Yarloop and Cookernup on the evening of Thursday 7 January 2016.*

In relation to Waroona, the IMT had estimated that the fire was moving at a rate of spread of between one to two kilometres per hour. If not controlled, this would not result in impact on the town of Waroona for a further six to 12 hours. The actual fire behaviour supported these predictions. As at 1900 hours, the IMT understood that the fire was approximately 13 kilometres from the town of Waroona.

Investigations after the bushfire have been unable to conclusively account for the fast spread of the bushfire to Waroona on the evening of 6 January 2016. However, the origin of the fires that threatened the township of Waroona on the evening of the 6 January 2016 are more likely to have been from cloud to ground lightning from a fire induced cloud over the fire (as opposed to have been from either the main fire of Fire 68 or spotfires emanating from Fire 68). This conclusion is reached based on reports from two eyewitnesses who saw a lightning strike originating from the pyro-cumulonimbus cloud that had developed over the fire. These eyewitnesses saw the lightning start new fires.

The Special Inquiry is satisfied that members of the IMT appropriately considered all available information when preparing and issuing community alerts and warnings on 6 January 2016. The Special Inquiry is satisfied that it was the sudden occurrence of a separate fire near Waroona which resulted in the lack of an emergency warning alert being issued to people in Waroona prior to the fire reaching Waroona.

In relation to Yarloop, the incoming IMT personnel on 7 January 2016 were faced with a number of setbacks, and were in catch-up mode for most of the day on 7 January 2016, their first day at the fire.

At 1253 hours the IC participated in a pre-recorded interview with ABC radio in which he referred to the fire bearing down on the townships of Yarloop, Cookernup and Harvey. Unfortunately this recording never went to air.

Leading up to the fire burning through Yarloop, there had been extensive Emergency Warnings issued for areas to the east and north east of Yarloop. These Emergency Warnings included a part of Yarloop, north of Johnston Road. These took the form of warnings on the P&W and DFES web sites, warnings on local radio and a number of telephone Emergency Alerts. These warnings specifically mentioned Waroona, Harvey and surrounding areas.

It was not until 1935 hours that an Emergency Warning specifically naming Yarloop and Cookernup was issued. There was no telephone Emergency Alert issued for Yarloop or Cookernup on 7 January 2016. There was no organised “house by house” advice to leave.

It is most likely that the lack of access to an updated map by the staff in the DFES Public Information Section contributed to the lack of appreciation of the impending risk to residents of Yarloop and Cookernup.

The ‘Spot Weather Forecast’, issued by the Bureau of Meteorology at 1459 hours on Thursday 7 January 2016 for the Waroona fire area, forecast an 1800 hours temperature of 34 degrees, a relative humidity of 23 percent and 1800 hours winds (at 10 metres) as: ‘ENE 15-25 km/h’. Under the heading ‘Significant wind changes and uncertainties associated with the forecast’ the Spot Weather Forecast states: ‘Variable gusts to 90 km/h possible with thunderstorms’. The Forecast also states: ‘Winds are forecast to tend to E/NE’ly and fresh gusty again overnight’. The Spot Weather Forecast indicated ENE winds increasing to 40 kilometres per hour, gusting to 60 kilometres per hour at 0300 to 0600 on the morning of Friday 8 January 2016.

The onset of the very strong, dry and hot winds around 1930 hours was not specifically forecast and was not expected.

Whilst many residents had a general awareness that a major fire was burning in the area to the east, many did not appreciate that there was an escalating risk to residents in and around Yarloop and Cookernup. The lack of a specific warning mentioning Yarloop contributed to this lack of awareness.

The presence of the State Operations Centre (SOC) and the Regional Operations Centre (ROC) are also relevant here. Whilst it is reasonable to accept that one of the functions of these two layers in the line of control is to overview and provide analysis of the IMT plans, it is not evident that staff at either facility critically reviewed warnings.

The following excerpt from the findings of the 2009 Victorian Bushfires Royal Commission is relevant:

The Commission observed a disturbing tendency among senior fire agency personnel— including the Chief Officers—to consistently allocate responsibility

further down the chain of command, most notably to the incident control centres. Although incident management teams certainly have direct management responsibility for the response to the fires, under the AIIMS arrangements this should be seen as a delegation of authority, rather than a shifting of responsibility or accountability. This principle that accountability must rest ultimately at the top of the chain of command applies to Victoria Police as well as to the CFA and DSE.¹

In these instances the IMT could have been supported by the staff in the SOC and ROC in identifying gaps in these warnings. It is concluded that there is room for improvement, by reinforcing the primacy of warnings during bushfire events at every level in the organisations. The role of the SOC and the ROC needs to be re-visited to ensure that a facilitating, supporting and enquiring role is defined. If, on the basis that the IMT require more specific guidance, then, and only then, should the SOC and ROC staff adopt a directing or a commanding role.

Finally, many residents were, apparently, waiting for a final official message to leave. This highlights the risk of over reliance by the public on systems that may fail (due to a range of causes including human error and technology failures) and of the tendency for bushfires to change progression without warning.

FINDING: The origin of the fires that threatened the township of Waroona on the evening of 6 January 2016 are more likely to have been from cloud to ground lightning from a fire induced cloud over the fire (as opposed to have been from either the main fire of Fire 68 or spotfires emanating from Fire 68).

FINDING: On the evening of Thursday 7 January 2016, there was a delay in issuing a Bushfire Emergency Warning that was specific to Wagerup and the townships of Yarloop and Cookernup. An Emergency Warning was issued at 1935 hours. There was no Emergency Alert telephone warning that specifically mentioned Yarloop or Cookernup issued on 7 January 2016.

13. Could people (at Yarloop) have been evacuated earlier?

Answer: There were a number of cues that a major fire was burning to the north east and east of Yarloop. These included:

- *The fire-induced pyro-cumulonimbus cloud over the fire was visible during Wednesday afternoon and Thursday morning.*
- *The sound of firefighting aircraft and helicopters.*
- *The presence of fire appliances in the local area.*
- *An Emergency Warning was issued from the IMT in relation to the area north of Johnston Road (which is actually within the Yarloop townsite) and the townsites of Waroona and Harvey.*

The IMT had to deal with a number of concurrent fire runs and vulnerabilities. These included: fire runs on the western side of the fire (and around the Forrest Highway);

¹ Royal Commission into Victoria's Bushfires, McLeod, R. N., Pascoe, S. M., & Teague, B. G., *Final report: Volume 2*, 2010, Melbourne, Government Printer for the State of Victoria, p. 79

Preston Beach; south of Hamel; the Wagerup Refinery; and fire emerging from State Forest to the east of Harvey and Yarloop.

With the benefit of hindsight, there may have been an opportunity to issue a specific Emergency Warning to Yarloop residents, including a telephone Emergency Alert message. This, in conjunction with the local fire units using vehicle sirens and door knocking by police and fire services, may have resulted in more people evacuating earlier. However at that time there were many competing priorities that required attention. The ability to realise the threat to Yarloop and Cookernup would have required not just detailed planning and resources, but also the ability to foresee a wind event that was not specifically forecast.

On the evidence available, it is also noted that neither staff at the DFES SOC nor the ROC identified or discussed the gap in warnings to Yarloop.

14. Were there enough fire trucks in Yarloop?

Answer: The Shire of Harvey's Chief Bush Fire Control Officer (CBFCO) estimates there were seven Bush Fire Brigade trucks and four Fire and Rescue Trucks in Yarloop as the ember attack occurred at around 1930 hours on Thursday evening. In addition, eight P&W trucks and a number of bulldozers had relocated to Yarloop from the South Western Highway, where the fire had overrun them.

During Thursday afternoon, the Harvey CBFCO had requested a minimum of 12 additional heavy tankers be sent to supplement resources at Yarloop. This request was made by radio to the DFES communications bus. There is no indication that the request was acted upon.

At 2015 hours, the Harvey CBFCO spoke directly to the Western Division Commander over a mobile phone. He reiterated his request for 12 additional fire appliances and advised that the fire was causing significant impact on Yarloop. The Division Commander immediately dispatched a strike team (five fire trucks) to Yarloop and then set about re-deploying additional trucks from elsewhere on the fire to Yarloop.

FINDING: During Thursday 7 January 2016, the Incident Management Team were confronted with a large number of concurrent and immediate priorities. The significance and potential of the threat to Yarloop and Cookernup during Thursday evening was not fully appreciated by the Incident Management Team. As a result, additional resources were not dispatched to Yarloop until after the severe wind event that occurred between 1930 to 2000 hours.

FINDING: On the evening of Thursday 7 January 2016, there was a delay in recognising the request from the Harvey Chief Bush Fire Control Officer for additional firefighting resources for the protection of Yarloop, and in providing them.

15. Why was there no water in Yarloop?

Answer: The Yarloop water supply relies on water being pumped from a network of pipes as part of a broader regional water supply scheme. Water is piped into holding tanks. Power was interrupted mid-morning on the Thursday resulting in the water pumps ceasing operation. Water held in storage dams was depleted from late morning on

Thursday 7 January 2016. By 1500 hours the storage dams were empty due to the high demand as residents wetted down their properties.

Harvey Water also had a system for delivering agricultural water to Yarloop from the Stirling Trunk Main pipes. There was a network of water points or hydrant points through Yarloop, including one at the Yarloop Fire Station. A number of these points were utilised (presumably by local Brigade personnel).

It is likely that some residents and some visiting Brigades would not have been aware of the Harvey Water supply scheme water points.

There was an attempt by some Fire and Rescue personnel on the oval to access the Harvey Water delivery point at the oval. However, there was not a compatible fitting.

FINDING: At around 0726 hours on Thursday 7 January 2016 the power to the Water Corporation Yarloop Town Water Supply was lost. This resulted in an inability to pump water to fill two 225,000 litre service tanks that gravity feed the Wagerup and Yarloop Town Water Supplies. This event, associated with the extreme water demand from Wagerup and Yarloop customers on 7 January 2016, resulted in the service tanks running empty and the water supply in Yarloop failing from around 1424 hours on that day.

16. Were resources sent to protect the Alcoa refinery at the expense of the settlements?

Answer: A Task Force of Fire and Rescue appliances with career Fire and Rescue commanders was deployed to the Wagerup Refinery on Thursday 7 January 2016 during the afternoon. This Task Force, along with some local resources, and supported by Alcoa staff, was actively involved in defending the Wagerup Refinery as the fire burnt up to and around the Refinery. As the fire threat eased at Wagerup, the risk then transferred to Yarloop.

There is no evidence that supports the contention that resources were sent to Wagerup at the expense of Yarloop. At the time that resources were deployed to Wagerup and the fire was impacting the Refinery, the threat to Yarloop was still to be realised. The Division Commander responsible for the Wagerup Refinery Sector was cognisant of a number of significant consequences if the refinery was damaged and had to cease operation.

17. Could large air tankers have been used?

Answer: DFES utilised Large Air Tankers (LAT) from Victoria at the O'Sullivan fire in February 2015. The set up time in that instance was 20 hours. Planning undertaken by DFES suggests a minimum set up time of 10 hours is required.

The Fire and Emergency Services Commissioner gave evidence that the LAT were not requested by the State because there was no request from the IC.

Information provided by DFES states that the "lead in time to mobilise LAT/Very Large Air Tankers (VLAT) for Waroona would have made assistance impractical at the point in time that additional resources were needed..."

The characteristics of the VLAT and LAT aircraft require specific runway length, pavement strength, refuelling and water/foam mixing capability at the airbase. This means that Perth Airport, RAAF Base Pearce and Busselton were possible options during this fire.

DFES advised the Special Inquiry that “the Helitaks, Aircrane and Fixed Wing aircraft would have outperformed the VLAT and LAT in the volume of water/suppressant dropped, average drops per hour ... their target flexibility and agility on the fireground ... during the Waroona fires”.

On the basis of these limitations, DFES is of the view that “the LAT/VLAT would not have affected the extent and impact of the Waroona fire”.

In addition to the above, with the development of a pyro-cumulonimbus cloud formations over the fire at periods on Wednesday 6 and Thursday 7 January 2016, air operations would have been affected by up and down bursts of winds. There would have been potential safety consequences from LAT operating in the fire area.

In acknowledging the DFES conclusion that “the Helitaks, Aircrane and Fixed Wing aircraft would have outperformed the VLAT and LAT” it is noted that Western Australia made no requests for these classes of aircraft from the eastern states. The mere fact that individual officers on the IMT did not request the aircraft does not preclude DFES, as the Hazard Management Agency (HMA) for fire, from considering proactively requesting them as a resource that could have been made available either for this fire, or in the event of another fire.

The Special Inquiry observed that, amongst witnesses from DFES and P&W, there is not a lot of experience or capability familiarity with LATs amongst fire management personnel (from both DFES and P&W). The fact that the IMT officers did not request the LAT or VLAT aircraft is hardly surprising. This may suggest that more information could be provided on this capability in pre-fire season briefings in the future.

18. Why was there so much destruction in Yarloop?

Answer: When the fire entered long unburnt forest to the east and south east of Yarloop, fire behaviour increased. This is evident by the increased amount of crown fire. About this time a pool of hot, dry air (that had originated well east of the fire area during the day), moved over the fire area and directly affected the fire around Yarloop. There was a sharp increase in wind speed (estimated to be over 50 kilometres per hour). Combined with the spot fires from the long unburnt forest, this resulted in massive ember showers across the South Western Highway and through and around Yarloop.

From evidence available, there were also some areas of high fuel load (eg: some roadsides, some blocks of forested land and some house blocks) within the town area that sustained the fire through the town.

This, combined with the older style of construction of the timber houses, resulted in multiple ignitions of many houses within a short time. This overwhelmed the suppression resources available. Notwithstanding this, there were numerous reports of houses being saved by residents and firefighters.

FINDING: Sometime between 1900 hours and 2000 hours on Thursday 7 January 2016 a strong easterly wind event affected the fireground. This was particularly felt at Yarloop. On advice from the Bureau of Meteorology, the origin of this wind event was a pool of hot, dry air that had originated east of the fire (in the Great Southern weather district) earlier in the day.

19. Was the devastation of Yarloop foreseeable?

Answer: Like many Western Australian communities, the settlement of Yarloop exists in a bushfire prone environment. That part of Yarloop west of the South Western Highway was not included in the definition of Bushfire Hazard Areas. It has been tragically shown how vulnerable the town and surrounds is to bushfire.

The following factors resulted in an increased vulnerability for Yarloop:

- *the older construction style of the mainly timber houses;*
- *areas within the town boundary where there were trees overhanging roads and long grass in some reserves;*
- *a number of forested blocks to the north east and east of the town that were long unburnt and subject to the creation of burning embers; and*
- *the strong easterly wind event on the evening of Thursday 7 January 2016.*

It is self-evident that many did not foresee the possibility that the town might be consumed by a bushfire.

20. What is the land tenure of the forest blocks around Yarloop? Who is responsible for that land? What hazard reduction had been undertaken around and within Yarloop?

Answer: There is a mix of owners of forested block around Yarloop. (Refer to Land Tenure map). The land tenure map shows forested blocks as follows:

- *Shire of Harvey;*
- *Main Roads Western Australia;*
- *WA Rifle Association;*
- *Log Fence Pony Club;*
- *Department of Lands, and*
- *Department of Parks and Wildlife.*

A P&W Nature Reserve at the intersection of Johnston Road and the South Western Highway had been burnt by P&W in May 2015. Plans had been approved for other P&W reserves to be burnt in autumn and spring of 2016.

Shire of Harvey grassed reserves within the town site were cut every two to three weeks and firebreaks were maintained annually.

FINDING: On the east side of Yarloop, east of and adjacent to the South Western Highway, there is an area of forest, of mixed tenure, that is long unburnt. When the fire entered this forest it became impossible to suppress. The forest then became a source of burning embers that were then borne by the strong easterly wind event. This contributed to the difficulty of fire suppression and the difficulty of protecting houses in Yarloop.

21. Did Yarloop residents recognise and understand the risk?

Answer: Yarloop is one of numerous settlements that is located on the edge of the Darling Scarp and the Swan Coastal Plain. When a particular weather pattern occurs, there is a risk of hot, dry and strong easterly winds to blow off the escarpment. This weather event occurs periodically, but probably several times every summer.

Further, the occurrence of evening downslope winds (also known as “katabatic winds”) is a feature that numerous locals have observed and have remarked on this to the Special Inquiry.

A significant area of forested land to the north east and east of Yarloop presented a risk of spotting into the town with a strong easterly wind.

In December 2015, the State published “Bushfire Prone Area maps”. These are intended as a development planning tool (developments in Bushfire Prone Areas must meet certain building standards). A part of Yarloop (east of the South Western Highway) has been identified as being a Bushfire Prone Area.

Notwithstanding this, it is likely that few residents of Yarloop fully understood the bushfire risk and their own vulnerability.

FINDING: The loss of life, loss of houses and damage in Yarloop on 7 January 2016 were directly attributable to the fire.

22. Why weren’t bulldozers or private firefighting vehicles let through Vehicle Control Points?

Answer: The operation of Vehicle Control Points was broadly in line with the SEMC policy on traffic management in emergencies. The policy and its implementation left much to be desired.

In 2007, three truck drivers died following a decision to allow transport vehicles through a partial road closure on the Great Eastern Highway near Boorabbin. The three truck drivers were killed by the fire when a sudden wind change swept the fire over the Highway. There is little doubt that this event and the criticisms stemming from it, weigh heavily on the minds of the WA Police, Main Roads WA and P&W staff. It could be considered that this event has resulted in an overly risk averse approach when dealing with traffic management at bushfires.

Notwithstanding the need to carefully weigh up risks when enabling re-entry into a fire area, it is the view of the Special Inquiry that a range of people and resources, (that could have been effectively used during the fire and in the immediate aftermath and recovery), were denied access or were unnecessarily slowed and impeded.

Repeated examples of inflexible and impractical traffic management support the conclusion that the policy and its implementation is flawed. When traffic management policies in WA are compared to those in a number of other states, it is clear that there is room for substantial improvement.

The Special Inquiry has recommended that there be a review of the policy and the practice of traffic management in emergencies in order that there is a balance between protecting life and protecting livelihoods.

Other recommendations deal with systems for registering private firefighting resources and enabling fireground access.

<p>FINDING: The application of the traffic management policy at some locations during the Waroona fire did not meet the expectations of the community. On this basis, the policy and its application requires review.</p>

23. Did agencies “work as one”?

Answer: In considering past criticisms of the key agencies not working together, the Special Inquiry has seen evidence of significant improvements in the relationships between various agencies over the last 5 years. The Special Inquiry was repeatedly told that the relationship between Bush Fire Brigades and the P&W was good and that there was a strong underpinning trust, common methodology and good interoperability.

There were comments that the methodology and approach used by some DFES staff and some Fire and Rescue Brigades was more suited to urban or Rural-Urban Interface situations. There were some examples given of fire appliances and personnel that were not used effectively, and which did not integrate as well as could be expected.

Staff and volunteers from P&W, DFES and Bush Fire Brigades all agreed strongly that there was a need for a better system for resources management during an incident. IMT personnel are being hampered and let down by the absence of a resources management system.

There is also evidence that some fire appliances sent into the fire area were not fit for the potential role they might play and the risks that they faced. An example of this was when the Rockingham Pumper was disabled and subsequently destroyed on the active fire edge.

Finally, the Special Inquiry was concerned that there is still significant work to be done to have truly multi-agency pre-formed IMTs. The concept appears to be mature within P&W, but it is noted that there are very low levels of involvement of DFES staff or volunteers.

Chapter Five – Lessons Learned From Previous Bushfire Emergencies

Good decisions come from wisdom, knowledge and experience. Wisdom, knowledge and experience come from bad decisions (Anon)

Introduction

Since 2011, a number of reviews have been commissioned by the Western Australian Government to consider the management of bushfire incidents. This Special Inquiry was directed to consider the following reports:

- *A Shared Responsibility* – Report of the Perth Hills Bushfire February 2011 Review;
- *Appreciating the Risk* – Report of the Special Inquiry into the November 2011 Margaret River Bushfire;
- Post Incident Analyses of the 2011 Margaret River and Nannup Bushfires;
- Parkerville Bushfire Review; and
- O’Sullivan and Lower Hotham Bushfires Review

The Special Inquiry is of the view that it is imperative that there is a culture of continuous improvement in fire and emergency services, natural resource managers and the owners and operators of critical infrastructure. It is through this lens that the above reports have been considered.

The dynamic nature of the system within which fire and emergency services operate has been aptly described by the United State Army as ‘VUCA’: ‘Volatile, Uncertain, Complex and Ambiguous’. There are many unknowns when fire and emergency workers go to a call-out and so it is not unreasonable that some actions might be taken that, on review, could have been done differently.

It is critically important that there is a system whereby the lessons that are identified through after action reviews, debriefs, formal reviews and investigations can then be implemented. A lesson identified is not learned until it is implemented and actioned by current players, built into doctrine for future generations and is subject to a process of periodic review.

The box below summarises the background and framework of each of reports which the Special Inquiry has been directed to consider.

Title	<i>A Shared Responsibility</i> – Report of the Perth Hills Bushfire February 2011 Review
Author	Mr Mick Keelty AO (with support from the Department of the Premier and Cabinet)
Date delivered	17 August 2011
Terms of Reference	<ol style="list-style-type: none">1. The adequacy of current preventative measures, specifically prescribed burning and other bushfire mitigation activities.2. The impact of land use, environmental and building laws, practices and policies in the affected areas, affecting bushfire prevention, mitigation and response and what, if any, changes may be required.

	<p>3. The actions that can and should be taken by landowners, residents and tenants in relation to bushfire risk management including undertaking vegetation clearance, operation of evaporative air-conditioners and storage and/or removal of hazardous inflammable material surrounding their dwellings and buildings. This should include consideration of associated enforcement regimes and penalties.</p> <p>4. The adequacy and effectiveness of information and communication campaigns and mechanisms, including systems for alerting residents in relation to the fire or potential fires.</p> <p>5. Improvements that can be made in relation to the coordination of activities across all levels of government, including with volunteer groups.</p>
Number of recommendations	55

Title	<i>Appreciating the Risk</i> – Report of the Special Inquiry into the November 2011 Margaret River Bushfire
Author	Mr Mick Keelty AO (with support from the Department of the Premier and Cabinet)
Date delivered	27 January 2012
Terms of Reference	<p>Examine and report on:</p> <ol style="list-style-type: none"> The causes of the November 2011 Margaret River Bushfire. The basis for and circumstances leading up to Department of Environment and Conservation prescribed burn BS520 within the Leeuwin-Naturaliste National Park. The extent to which this prescribed burn was consistent with departmental policy and standard operating procedures. <p>Determine whether critical decisions regarding the prescribed burn, and its management, had sufficient regard for relevant risks, particularly the forecast weather conditions over the period of the burn.</p> <p>Based on such examination, make such recommendations as considered necessary for the prudent management of future prescribed burns.</p>
Number of recommendations	10
Additional response measures	<p>In addition to accepting the recommendations of the Report, the Government committed to undertaking a number of actions, including:</p> <ul style="list-style-type: none"> Any Level 3 bushfire to automatically fall under the control of the Fire and Emergency Services Commissioner; Declaration of South West bushfire risk zone; and Establishment of the Office of Bushfire Risk Management

Title	Post Incident Analysis for Blackwood Fire 8 – Ellensbrook – Gnarabup, 23/24 November 2011
Author	Noetic Solutions
Date delivered	14 November 2012
Terms of Reference	<ol style="list-style-type: none"> 1. Weather conditions during and following the fire escape 2. Effectiveness of pre-suppression bushfire mitigation strategies 3. Effectiveness of suppression strategies and tactics during the fire 4. Effectiveness of incident management 5. Level of resourcing 6. Information management and effectiveness of community advice 7. Effectiveness of evacuation procedures 8. Effectiveness of people welfare 9. Effectiveness of aerial suppression 10. Effectiveness of interagency operations 11. Effectiveness of emergency management procedures 12. Effectiveness of recovery actions 13. Recommendations
Number of recommendations	58

Title	Post Incident Analysis for Blackwood Fire 11 – Milyeannup-Sollya, 23 November to 5 December 2011 (Nannup PIA)
Author	Noetic Solutions
Date delivered	14 November 2012
Terms of Reference	<ol style="list-style-type: none"> 1. Context of the burn in relation to land tenure and burn history 2. Review of the planning process for the prescribed burn 3. Burn Prescription 4. Implementation of the burn prescription 5. Weather conditions leading up to and during the fire escape 6. Factors contributing to the escape 7. Effectiveness of pre suppression and bushfire mitigation strategies including resourcing 8. Effectiveness of suppression strategies and tactics during the fire 9. Effectiveness of incident management 10. Level of resourcing 11. Information management and effectiveness of community advice 12. Effectiveness of evacuation procedures 13. Effectiveness of people welfare 14. Effectiveness of aerial suppression 15. Effectiveness of interagency operations 16. Effectiveness of emergency management procedures 17. Effectiveness of recovery actions 18. Recommendations
Number of recommendations	33

Title	Parkerville Stoneville Mt Helena Bushfire Review
Author	SEMC (with support from the DFES and the Department of the Premier and Cabinet)
Date delivered	10 June 2014
Terms of Reference	<p>To understand the aspects of the event that worked well and should be built on and highlight any issues that could be improved on. The review addressed:</p> <ol style="list-style-type: none"> 1. Understand and document the context of the incident including timing, conditions, resources available and any other concurrent incidents which may have impacted on response. 2. The effectiveness of response by agencies, incident management, public information, and suppression strategies and tactics during the fire. 3. The effectiveness of recent SEMC approved changes to policies, plans and associated agency procedures at incident, operational and strategic levels. 4. The effectiveness of relevant legislation such as the Bush Fires Act, and the Emergency Management Act 2005. 5. The effectiveness of associated activities across Prevention, Preparedness, Response and Recovery (PPRR) and any other relevant matters. 6. Comment on the improvements proposed as arising from the review and any other factors to improve the effectiveness of PPRR.
Number of recommendations	27 identified opportunities for improvement

Title	Lower Hotham and O'Sullivan Bushfire
Author	State Emergency Management Committee (co-authored by the Australasian Fire and Emergency Services Authorities Council, the NOUS Group and the Bushfire and Natural Hazards Cooperative Research Centre)
Date delivered	20 February 2016
Terms of Reference	<p>To specifically examine:</p> <ul style="list-style-type: none"> • operational vertical communications; • interstate resource deployment; and • interagency collaboration.
Number of recommendations	23 identified opportunities for improvement.

In total, across these Reports there are 206 recommendations. These recommendations are listed in Appendix 3 to this Report.

Assessing implementation

Ascertaining the progress towards implementation of each recommendation was not a straightforward task for this Special Inquiry. This can be attributed to the following reasons:

- deficiencies in internal processes for capturing recommendations and opportunities for improvement;

- a lack of clear reporting lines to oversight bodies;
- a lack of clear Key Performance Indicators set by oversight bodies; and
- differing views as to what constitutes ‘complete’.

Deficiencies in internal processes for capturing recommendations and opportunities for improvement

‘Continuously improve our services’ and ‘work together as a committed team’ are amongst the Core Values of DFES, as outlined in its Annual Report.¹

The Special Inquiry is concerned that these Core Values are not adequately reflected within the governance processes adopted by DFES to review incidents and capture lessons learnt. These processes range from informal ‘hot’ debriefs following an incident, to more formal Post Incident Analyses (PIAs) and Major Incident Reviews (MIRs).

It is noted that DFES provided internal policies to the Special Inquiry outlining governance arrangements for incident analysis and the Integrated Planning and Reporting System (IPRS).

However, during the course of this Special Inquiry it was also noted that:

- a number of key consultative committees, aimed at creating dialogue on improvements with Bush Fire Brigade volunteers, have either been wound up, or they are inactive (including the Volunteer Occupational Health, Safety & Welfare Committee);
- in discussions with members of two Bush Fire Brigades weeks after the fire, it was revealed that there had been no attempt to debrief those members;
- following the conduct and publication of the *Joint Agency Operational Audit Report into the Waroona Fire of January 2016* (11 March 2016), at the time of giving evidence to the Special Inquiry, key fire management staff had not seen the Report;
- following the Esperance Fire (December 2015) a MIR was conducted by DFES alone, in spite of the fact that P&W was a key player in aspects of that fire; and
- senior IMT members before the Inquiry had not received a pre-season briefing on LAT capability. The National Aerial Firefighting Centre (NAFC), of which DFES is a member, co-published a paper in August 2015 entitled *Large Air Tanker Evaluation*. That evaluation made a generally positive conclusion in relation to the operations of the LATs in Victoria in the 2014/15 Victorian fire season, including the deployment of Victorian LATs to Western Australia during the Northcliffe fire. That the results of this evaluation were not recognised and discussed with senior operational personnel, such as Level 3 ICs, is troubling.

These instances give rise to concern. They indicate deficiencies in the ability of DFES to gather and communicate lessons from previous incidents amongst on-the-ground fire practitioners and ensure these lessons are acted upon and reflected in doctrine.

A lack of clear reporting lines to oversight bodies

From 2011 to 2013 the progress towards implementing the 2011 Perth Hills Bushfire Report was reported to the Bushfire Review Implementation Group (BRIG). Until the BRIG

¹ DFES, *Annual Report 2014/15*, 2015

disbanded and its work transferred to the SEMC, relevant agencies thus reported to BRIG for the implementation of one report (Perth Hills Bushfire Report) and SEMC for the implementation of another (Margaret River Report).

The SEMC Secretariat advised the Special Inquiry that it currently monitors the recommendations of all previous relevant bushfire inquiries, through a report tabled at every SEMC meeting.² Whilst the Special Inquiry acknowledges it is preferable for all Reports to be monitored by the one body, it would appear that the progress of Reports is one item on an already lengthy agenda, and it is thus uncertain whether substantive assessment and discussion can occur.

This approach taken to date in reporting on implementation appears focussed on counting recommendations completed, rather than measuring overall progress and change. The Special Inquiry questions how Government was effectively able to maintain a holistic view of the progress towards implementing recommendations without there being a single oversight body and a forum where progress can be shared and challenged.

The transparency of reporting on the progress towards implementation has also been variable. Following the 2011 Perth Hills Bushfire Report, the BRIG regularly published Stakeholder Briefings on the Department of the Premier and Cabinet, and later SEMC, websites. These stakeholder briefings gradually incorporated some, but not all recommendations from subsequent reviews.

The Special Inquiry is concerned that the last publicly available stakeholder briefing is dated August 2014. Since that time the implementation of Reports has been noted as an item contained in SEMC meeting communiques, but has not contained the same level of detail as previously the case. It is unclear how stakeholders can now effectively monitor progress against specific recommendations.

As noted by the Western Australian Local Government Association (WALGA):

Whilst there is a requirement to undertake these reviews the subsequent process for adopting, implementing and evaluating the changes implemented is lacking. The reports are tabled with the SEMC with recommendations allocated to various committees and agencies. This fragments the implementation process and leads to confusion amongst stakeholders. Separate status reports are tabled at subsequent SEMC meetings; however the holistic picture is lost.³

The Special Inquiry notes that at the March 2016 SEMC meeting, the creation of a single database to track all review recommendations was supported. This notion is supported by the Special Inquiry, but it is not sufficient in itself to ensure effective monitoring and assessment of progress.

As will be discussed further in this Chapter, it is the Special Inquiry's view that the annual SEMC Preparedness Reports would be an appropriate medium in which to provide the public with a clear view of progress being made towards implementation. The 2015 Preparedness Report notes that SEMC continues to monitor the implementation of recommendations of

² Cronstedt, M., & Edwards, F., Hearing, 30 March 2016

³ Submission of Western Australia Local Government Association

major reviews, but there is no assessment or acknowledgement of the progress made by agencies in this regard.

A lack of clear Key Performance Indicators

Where agencies have been reporting back to a body or committee such as the BRIG or the SEMC on their progress towards implementing review recommendations, there does not appear to be any key performance measures or a comprehensive reporting framework. This has led to a situation where agencies provide reports which are largely qualitative, of varied quality, and in which progress is difficult to measure.

The Special Inquiry concurs with the view expressed by WALGA, that accountability and effectiveness in relation to implementing previous Reports is neither measured nor reported in an appropriate manner.⁴

WALGA recommended to the Special Inquiry that the SEMC Secretariat develop an assurance framework to monitor the implementation and effectiveness of recommendations emanating from all public inquiries and reviews. The Special Inquiry agrees with this proposal, and the scope for an enhanced role for the SEMC Secretariat is discussed later in this chapter.

Differing views of ‘complete’

Related to the above point, it is unclear whether a recommendation is treated as complete when its intended outcomes have been delivered, or once the associated project has been absorbed into the works program of the relevant agency. This has led to a scenario where agencies and stakeholders have differing views as to the progress that has been made in implementing previous reports.

For example, in its submission to the Special Inquiry, DFES advised that 97.8% of recommendations allocated to their agency before 2016 are complete.⁵ As can be seen in the assessment of recommendations contained in Appendix 3 to this Report, the Special Inquiry does not share this view.

This issue is not confined to DFES. As documented in Appendix 3, the Special Inquiry has queried the reporting of all agencies with respect to some recommendations.

General progress towards implementation

Previous inquiries and reviews, when considering the implementation of recommendations, have noted that whilst some improvements remain to be made, generally there has been progress. For example:

It is clear overall that the progress achieved in interagency collaboration, interoperability and coordination in recent years is becoming well established ... Inevitably however some deficits were also noted and some of these are issues that have come to attention in previous reviews.⁶

⁴ Submission of WALGA

⁵ Submission of DFES

⁶ State Emergency Management Committee, *O’Sullivan and Lower Hotham Review Report*, 2016, p. 4

The Review noted that there have been improvements in the capabilities of the major fire-fighting agencies arising from the implementation of recommendations contained in these reports.⁷

Whilst the Special Inquiry shares this view, it cannot be ignored that the presence of similar issues arising across reports is indicative of at least some recommendations not being effectively implemented.

The O'Sullivan and Lower Hotham Bushfires Review noted:

In relation to interagency collaboration, four main areas previously identified as issues also come to the fore in this Review. These are:

- *the use of pre-formed incident management teams;*
- *design and use of incident management systems;*
- *clarity of roles and expectations; and*
- *interoperability of systems and equipment.⁸*

Witnesses in one of the hearings in this Special Inquiry highlighted that many issues which arose in the Lower Hotham fires were repeated in Waroona.⁹

In noting these comments, the Special Inquiry is cognisant of the fact that recent reviews that are received by the SEMC (either through having been conducted by the SEMC Secretariat or by a consultant engaged by the SEMC) contain an assessment of agencies headed by some SEMC members. The system seems fraught with the potential for bias through conflict of interest and the need to portray performance through a soft lens.

Specific improvements that have been made

Due to the large volume of recommendations, the Special Inquiry has not been able to conduct a detailed assessment of the implementation of each. There is value however, in highlighting and evaluating a number of specific improvements which have been made since 2011.

DFES organisational improvements

The 2011 Perth Hills Bushfire Report was scathing in its assessment of the effectiveness of the (then) Fire and Emergency Services Authority (FESA), and the Special Inquiry commends DFES for the organisational improvements that have been undertaken since that time.

For example, the FES Commissioner has implemented a reform program which has included measures to address a lack of operational focus, the transition from a board-governed state authority to a State Government department and the articulation of the strategic direction for DFES into the future.

⁷ SEMC, *Parkerville Stoneville Mt Helena Bushfire Review*, 2014, p. 14

⁸ SEMC, *O'Sullivan and Lower Hotham Review Report*, 2016, p. 8

⁹ Peterson, P., Hall, G., & Booth, M., Hearing, 9 March 2016

DFES has also established a governance framework, standardised processes and methodologies for business improvement projects to ensure that they are delivered on time, within agreed cost and to the desired quality.¹⁰

Whilst there are still identifiable agency level improvements that can be made, as will be discussed in Chapter 15 of this Report, the Special Inquiry notes the organisational development changes that have been made at DFES.

Community engagement

A further area in which DFES has particularly focussed resources is the improvement in its community engagement practices. The Community Liaison Unit (CLU) was established in 2012 in response to the recommendations of the Perth Hills Bushfire Report. As noted in the O'Sullivan and Lower Hotham Bushfires Review, the presence of the CLU at major incidents has reduced the burden on the Department of Child Protection and Family Services (CPFS) staff and has enabled better information and support to affected community members.¹¹

The Bushfire Ready program is also indicative of improvements in community engagement. Since the 2011 Perth Hills fires, DFES has worked to increase the number of Bushfire Ready facilitators in the State from 40 to approximately 150. The Parkerville Bushfire Review expressed the view that this has led to a significant improvement in the approach to annual training/forums, a focus on development of the facilitator training modules, improvements to communications tools and reference material.¹²

P&W improved prescribed burn practices

Recommendations 1 and 2 of the Margaret River Bushfire Report, and the Government's response to that Report, directed the former Department of Environment and Conservation to undertake a major review of its prescribed burn practices, to ensure alignment with *AS/NZS ISO 31000:20009 Risk Management – Principles and Guidelines*.

The Special Inquiry is impressed by P&W's implementation of these recommendations, and received evidence that OBRM has conducted audits in each of P&W's nine regions, which confirm that P&W's prescribed burning activities have been planned and conducted in line with the international standard.

Whilst P&W have been unable to meet their yearly burn targets, as discussed in greater detail in Chapter 7 of this Report, this should not detract from the considerable work that has been undertaken to improve the focus of the agency on contemporary and effective risk management practices.

Capes enhanced service delivery reform

The Capes enhanced service delivery reform, led by DFES and the Shire of Augusta-Margaret River, has impressed the Special Inquiry as an example of a positive reform following the 2011 Margaret River Bushfire Report.

¹⁰ Submission of DFES

¹¹ SEMC, *O'Sullivan and Lower Hotham Review Report*, 2016, p. 42

¹² SEMC, *Parkerville Stoneville Mt Helena Bushfire Review*, 2014, p. 27

Within the Capes region (broadly bounded by Busselton and Bussell Highway to the north and east of the region with Augusta to the South), the project has been successful in the delivery of the following outcomes:

- gazettal of the town sites of Yallingup, Cowaramup, Gnarabup/Prevelly and Witchcliffe as DFES fire districts. Bushfire Brigades in these areas have been transitioned to dual registered fire brigades with responsibility for, and the capacity to service a ‘special Capes Zone Response’ area established for both structural and bushfire response;
- development, exercising and implementation of a special Capes Zone Response arrangements between DFES, local governments and P&W in areas of high bushfire risk; and
- establishment of multi-agency and all hazards major incident control centres in Busselton and Margaret River, which are capable of managing level 2/3 incidents.

The Special Inquiry concurs with the view expressed by DFES, that these enhancements, which are reviewed annually, have vastly improved rapid response arrangements.¹³

The provision of additional resources into the Capes region has also enabled greater flexibility to release resources to support other shires/regions without unduly impacting on local response capability.¹⁴ For example, in the Waroona fire, bushfire brigades from the City of Busselton provided more than 380 volunteer days, and brigades from the Shire of Augusta-Margaret River provided more than 200.

DFES expressed a view that younger volunteers are now more interested in joining the brigades, because of the higher level of training and support available.¹⁵ This view was supported by anecdotal evidence received by the Special Inquiry when it visited the Augusta-Margaret River area.

Combined Air Desk

In November 2013 the State Operations Air Desk commenced operation. It is a combined initiative between the P&W and DFES, enabling the management of the State’s aerial suppression fleet on behalf of both agencies. The relationship of P&W and DFES in relation to the Combined Air Desk is formalised through a heads of agreement, and there are sub-arrangements pertaining to the fixed wing operation and the rotary water/firebombing operation.

The Parkerville Bushfire Review expressed the view that during that incident:

*... the interoperability gained through the establishment of the joint air desk with DFES and P&W contributed to the successful operation of such a large fleet of aircraft.*¹⁶

The FES Commissioner advised the Special Inquiry that a combined intelligence desk is now being developed, based on the successful model of the State Operations Air Desk.¹⁷

¹³ Submission of DFES

¹⁴ Ibid

¹⁵ Ibid

¹⁶ SEMC, *Parkerville Stoneville Mt Helena Bushfire Review*, 2014, p. 43

Areas to be addressed

The Special Inquiry is of the view that there are some clear areas relating to recommendations of previous reviews, where further work is required by agencies. Whilst several of these areas are discussed in further detail throughout this Report, they are worth noting in the holistic view of the implementation of previous Reports.

Traffic management

As noted by the Parkerville Bushfire Review, difficulties with traffic management commonly arise in bushfire incidents:

An issue consistently raised by those who provided submissions or were interviewed was access to the fire ground after the fire and the issue of traffic management (road blocks) in general. This was also a difficulty experienced in the Perth Hills Fire and Margaret River Fire and comment in the subsequent inquiries. It was also a feature of the 2012 Tasmanian Fires and the 2009 Victorian Fires.¹⁸

Traffic management was the subject of recommendations in two of the Reports that this Special Inquiry has been directed to consider; namely:

- 2011 Perth Hills Bushfire Report, Recommendation 32:
 - The Western Australia Police and the FESA jointly examine the Traffic Management System developed in response to the 2009 Victorian bushfires and seek its adaptation to use in Western Australia with additional attention to the access and egress by bona fide residents to areas that are evacuated.
- 2014 Parkerville Bushfire Review, Recommendation 3.5.15:
 - A Restricted Access Permit system for the entry/re-entry of residents, based on the one developed for the Parkerville Stoneville Mt Helena Bushfire should be finalised.

DFES and WA Police have advised the Special Inquiry that both of the above recommendations are regarded as complete. In March 2012 the SEMC considered the Traffic Management System utilised in Victoria, and referred to by Mr Keelty in his Perth Hills Bushfire Report. SEMC accepted the recommendation from its Traffic Management Working Group that the Victorian model not be adopted as it was considered cumbersome.

DFES and WA Police further advised that a draft traffic management policy has been developed and promulgated, and a restricted access permit system is being trialled.

The Special Inquiry is of the view that, despite the difficulties faced in all jurisdictions to appropriately manage traffic during bushfire incidents, the relevant recommendations relating to this issue in previous reports have not been sufficiently implemented.

¹⁷ Gregson, W., Hearing, 6 April 2016

¹⁸ SEMC, *Parkerville Stoneville Mt Helena Bushfire Review*, 2014, p. 52

The issue of bona fide resident access has not been adequately addressed¹⁹ in Western Australia, and was one of the most contentious issues that arose during the Waroona bushfire incident. The Special Inquiry has thus chosen to focus on this issue in Chapter 12 of this Report, and in that chapter suggests how this issue can be more sufficiently addressed in future, including by expanding the agencies involved in the development of policies so that they more appropriately reflect the needs of all stakeholders during an incident.

Bushfire Risk Management Planning Process

In the Perth Hills Bushfire report, Mr Keelty made a number of recommendations pertaining to the measurement of fuel loads across all land irrespective of tenure. In the Report, Mr Keelty states the following:

*Until the scale of the risk posed by the build-up of fuel loads is quantified by local governments and the State government agencies responsible for fire, it is not possible to ensure that the most effective programs are in place to mitigate against it.*²⁰

To address this issue, and fulfil a number of recommendations of the Perth Hills Bushfire Report, DFES has led the development of a process for Bushfire Risk Management Plans (BRMPs). This process involves conducting tenure blind risk assessments of a local government area (or areas within a local government boundary) and identifying and prioritising treatments to address these risks within a specified timeframe.

Under schedule 3.9 of State Emergency Management Policy 2.9 ‘*Management of Emergency Risks*’, local governments identified as having a high or extreme level of bushfire risk are required to develop a BRMP. The aim of a BRMP is to facilitate a coordinated and efficient approach towards the identification, assessment and treatment of assets exposed to bushfire-related risk.²¹

In accordance with guidelines and utilising systems developed by DFES, local governments develop the BRMP in collaboration with stakeholders responsible for managing land within their area, including State Government agencies. Landholders are then responsible for implementing treatment strategies to reduce risks identified in the BRMP, and report back to local government on their progress.

A range of government and non-government stakeholders before the Special Inquiry expressed support for the BRMP process as a ‘tenure blind’ approach to the identification and treatment of bushfire risks. This view is shared by the Special Inquiry.

A pilot for the BRMP process was conducted between March and July 2014 in the South West and Lower South West DFES regions.

The City of Cockburn is the only local government with a completed BRMP, and this was undertaken by that local government independently, outside of the BRMP process.

¹⁹ Submission of Association of Volunteer Bushfire Brigades (AVBFB)

²⁰ Government of Western Australia, *A Shared Responsibility: The Report of the Perth Hills Bushfires February 2011 Review*, 2011, p. 89

²¹ Office of Bushfire Risk Management, *Guidelines for Preparing a Bushfire Risk Management Plan*, November 2015, p. 11

However, the development and implementation of this project has been, in the view of the Special Inquiry, unacceptably slow. Indeed, while the Director of OBRM stated that the tenure blind integrated approach is “what the future looks like”, the BRMP process has lacked sufficient penetration.²²

A common concern arising on the part of stakeholders involved with the BRMP process is a lack of resources to both develop the plans, and implement the treatments identified. DFES itself, as the agency having oversight of this project, advised that progress has been stalled by a lack of fiscal and human resources.²³

Local governments, whilst indicating support for the concept of BRMP, have raised objections to being responsible for the preparation of the plans due to a lack of funding and limited resources. The WALGA advised the Special Inquiry that it requested the State Government to undertake a full assessment of the costs and resources required to develop and manage the plans, and resultant mitigation works, but that such an assessment was not undertaken (or provided to WALGA).²⁴

Some stakeholders also express concerns about the varying abilities of local governments to undertake this work. For example:

*The concept is right, that we need to have a plan at local government level which is tenure blind and which looks at the whole question of bushfire prevention, preparation, damage mitigation, coordination and detection... The problem with it that I see at the moment is that the plans are intended to be implemented by local government, and I don't see a commitment or the experience or the expertise within most local government areas.*²⁵

The O'Sullivan and Lower Hotham Bushfires Review noted the success of the BRMP will depend on “adequate funding being made available to enable local governments to undertake BRMP requirements”.²⁶

Similarly the Parkerville Bushfire Review expressed the view that:

*a more rapid rollout of this initiative could be advantageous, with funding allocated to maximise the opportunities for participation by local governments, so that the State reaps the benefit of the program as quickly as possible.*²⁷

State agencies with land management responsibilities have also expressed concern in relation to the resourcing imposition of the BRMP process, both in terms of attending BRMP meetings in each local government area, and arranging for on the ground treatments identified for land for which they are responsible. To be able to undertake this work effectively, an agency would need to be able to prioritise treatments across the State (or at least multiple local government areas), but under the current design of the project it is unclear whether this would be possible.

²² Carter, M., Hearing, 5 April 2016

²³ Submission of DFES, p. 17

²⁴ Submission of WALGA

²⁵ Underwood, R., Hearing, 11 March 2016

²⁶ SEMC, *O'Sullivan and Lower Hotham Review Report*, 2016, p. 13

²⁷ SEMC, *Parkerville Stoneville Mt Helena Bushfire Review*, 2014, p. 21

It is for this reason that the Department of Lands has advocated for a more centrally coordinated approach to the planning, funding and implementation of BRMPs.²⁸ In addition, the Department of Lands has proposed that a whole of government “Mitigation Activity Fund” seeded initially by the Royalties for Regions program, be introduced to supplement current funding and agency expenditure for bushfire mitigation activities on State-owned land.²⁹

As will be discussed in greater detail in Chapter 7, the Special Inquiry shares the view that additional resources should be made available for the implementation of the BRMP process, potentially through a grant scheme utilising both State and Commonwealth funding.

The Special Inquiry concurs with the view expressed by Mr Keelty in his 2011 Perth Hills Bushfire Report, that “the size of the challenge is not an acceptable reason for shrinking from it”.³⁰

Emergency Services Levy

The Emergency Services Levy (ESL) was introduced on 1 July 2003, and funds career and volunteer fire brigades, volunteer State Emergency Service (SES) units and volunteer emergency service units in Western Australia. The ESL is a State Government charge, levied on rates notices issued by local governments. Money collected by local governments is then provided to DFES for allocation. Local governments can apply to receive grant funding from the ESL for capital and operating costs.

In the 2015/16 financial year, of the total DFES budget of approximately \$360 million, just over \$320 million was sourced from the ESL. The remaining sources of funding are State Government funding, and “other revenue and Commonwealth Government Grants”.³¹

In the Perth Hills Bushfire Report, Mr Keelty queried the appropriateness of DFES both managing the distribution of ESL funding and being a recipient. Mr Keelty referred to issues raised by a 2006 Community Development and Justice Standing Committee Report into the ESL and by submissions to the Perth Hills Bushfire Report. He expressed the view that a review of the ESL should be urgently undertaken, and made the following recommendation:

Recommendation 48: The State Government move the responsibility for the management and distribution of the Emergency Services Levy to the Department of Finance.

The Parkerville Bushfire Review noted that this recommendation had yet not been implemented, and submissions to that Review argued that the ESL was too focussed on response capability, and should be utilised to improve community resilience.³²

²⁸ Submission of Department of Lands

²⁹ Ibid.

³⁰ Government of Western Australia, *A Shared Responsibility: The Report of the Perth Hills Bushfires February 2011 Review*, 2011, p. 77

³¹ DFES, *Emergency Services Levy Question and Answer Guide 2015/16*, 2015, p. 4

³² SEMC, *Parkerville Stoneville Mt Helena Bushfire Review*, 2014, p. 17

DFES advised this Special Inquiry that it had worked with the Department of Finance to consider this recommendation, and it was determined that there was no major benefit evident in transferring the assessment and collection of the ESL to the Department of Finance. This advice is consistent with what has been publicly reported through the Stakeholder Briefings of the BRIG.

However, several stakeholders raised the issue of the ESL with this Special Inquiry, with concerns being similar to those which arose during the Perth Hills 2011 Review and the Parkerville Bushfire Review.

Key concerns regarding the administration of the ESL include:

- increases in the levy amount are perceived to be used to supplement the administrative costs of DFES. For example, the ESL rate for 2015/16 increased by 10.8% on the previous year. This increase saw an additional \$31.3 million in funding for DFES, along with a reduction of \$15.6 million from consolidated revenue;
- insufficient funding being directed towards mitigation activities, despite the value for money benefits that can be derived from investment in mitigation as compared to response; and
- a lack of transparency in the allocation of funding, and concern that it is not based upon risk.

The Association of Volunteer Bush Fire Brigades described sentiment towards the administration of the ESL as follows:

This is a very strong issue amongst volunteers and the local governments. There is a perception that the rules are different for Department of Fire and Emergency Services who are now in control of the distribution of the funding. There is a strong sense of conflict of interest that the body administering the levy is the main beneficiary of the level of funding to which they receive? There needs to be clear separations and the rules re-visited to ensure volunteers and local governments have access to funding to enable bushfire mitigation to occur and fairer access to equipment and resources funding.³³

The Bushfire Front agreed that there remains a need to review the ESL:

I would like to see a much more independent decision-making process relating to... levy money as part of the overall funds that are available for bushfire management in Western Australia and they should go into the pool, which is then allocated according to a properly thought out strategy: where is the problem, what are the priorities, where will this money do most good?³⁴

Evidently whilst relevant Government agencies may be of the view that Recommendation 48 of the Perth Hills Bushfire Report has been adequately considered, and regarded as inappropriate, this is not a view shared by stakeholders.

³³ Submission of AVBFB, p. 8

³⁴ Underwood, R., Hearing, 11 March 2016

The Special Inquiry is concerned that the consideration of this recommendation was undertaken by DFES and the Department of Finance in a way that was not sufficiently inclusive or transparent. The administration of the ESL is of such broad ranging consequence that a larger number of stakeholders should have been involved in its review, including WALGA, volunteer representatives, P&W and the Department of Lands. Even if a broader review had reached the same conclusion, that the current administration is appropriate, this would have allowed all parties to have a greater understanding of each other's position.

As such, the Special Inquiry considers that the implementation of Recommendation 48 of the 2011 Perth Hills Bushfire Report remains incomplete. This is not based on a view as to whether responsibility for the ESL should be transferred to the Department of Finance; rather, the recommendation is regarded as incomplete because of the manner in which it was considered by Government.

As will be discussed in further detail at Chapter 15, in light of the changes to the framework for rural fire management proposed by this Special Inquiry, there is undoubtedly a need for an independent review of the ESL to be conducted.

Structural Reforms since 2011

Since 2011 the Government has undertaken two major structural reforms relating to risk management and emergency preparedness: the creation of the Office of Bushfire Risk Management, and increasing the independence of the SEMC and SEMC Secretariat. Whilst generally these reforms have been positive, the Special Inquiry is of the view that further enhancements to both of these bodies would go towards addressing some of the outstanding issues relating to bushfire risk management in Western Australia.

Office of Bushfire Risk Management

On 23 February 2012, as part of the release of the Margaret River Bushfire Review Report, the Government announced the establishment of the Office of Bushfire Risk Management (OBRM) as an office of the then FESA, with specific expertise in and a focus on bushfires.

At that time, the stated role of the OBRM was to have independent oversight of prescribed burning undertaken within the South West Bushfire Zone, with the authority to direct, subject to specific criteria, that any prescribed burn could not occur or be delayed if risks were not adequately considered.³⁵

Since its establishment, OBRM has achieved the following outcomes in bushfire risk management:

- developed and implemented guidelines for preparing bushfire risk management plans;
- developed and implemented the mapping standard for bushfire prone areas;
- overseen the review of P&W's prescribed burning programs to ensure compliance with ISO 31000 Risk Management principles and guidelines;
- developed a best practice guide for prescribed burning in the Kimberley region; and

³⁵ Parliament of Western Australia Legislative Assembly, Statement by Premier, *Margaret River Bushfires – Keelty Report (Hansard)*, 23 February 2012, p 292b-298a

- conducted audits of the prescribed burning activities of P&W, DFES and the Kimberley Land Council.

Evidently, OBRM undertakes roles related to both policy development and to assurance and reporting.

The work that OBRM undertakes with P&W is well regarded by the Special Inquiry. This work includes approving three year master burn plans and providing assurance against the overall program. OBRM also has the ability to investigate any P&W prescribed burn which escapes and has a significant impact.

The Director of OBRM expressed the view that the relationship between OBRM and P&W “has been very successful” and that Government agencies such as P&W see value in an independent organisation such as OBRM being able to examine their operations.³⁶

This view is shared by the Director General of P&W, who stated that the role OBRM has undertaken in auditing P&W practices has been “positive” and that “it is important for community confidence that you have a third party in that space”³⁷. The Director General also stated that “it gives me confidence, in terms of progressing with a vigorous burn program, to know that we have in place processes that deal with that public risk.”

In the view of the Director General, OBRM has also been vital in maintaining community support for P&W’s fuel management activities:

*That’s also a risk to the whole process of prescribed burning, if it is done unsuccessfully or has adverse outcomes, that we will then lose community support for that as a tool... we can use (OBRM) as a third party to come in and evaluate our processes, post-incidents, to provide feedback.*³⁸

It is the view of the Special Inquiry that OBRM has been instrumental in the increasingly risk based approach to bushfire management in the State.

However, the Special Inquiry is of the view that OBRM’s ability to undertake an assurance role with respect to DFES is far more limited, due to it sitting within the structure of that organisation. The Special Inquiry received evidence that there is three years’ worth of OBRM audit reports highlighting issues with DFES’ prescribed burning frameworks, which are prepared for the Commissioner and not publicly released. Whilst not released publicly due to sensitive information, the Inquiry questions the value of an Audit Report which is only provided to the subject being audited.

In his hearing before the Special Inquiry, the Director of OBRM noted the issue around perceptions of a lack of independence of OBRM from DFES. He emphasised however that the Commissioner values the independence of OBRM and that OBRM has functionally operated independently of DFES.

³⁶ Carter, M., Hearing, 5 April 2016

³⁷ Sharp, J. Hearing, 7 April 2016

³⁸ Ibid.

The position of OBRM within the framework and the machinery of government were acknowledged by the Director of OBRM as being “the elephant in the room since the formation of OBRM”. He continues:

*That has been a tension since OBRM was formed as far as that level of independence, and that’s clearly where the tension is around that, the audit and assurance function.*³⁹

Increasing the independence of OBRM would enable it to both improve the effectiveness of its assurance role with respect to prevention, and also potentially extend its role to assessing suppression. Although such a task could be undertaken by an Auditor General, the Director General of P&W stated that due to the expertise required and the frequency of the role, “to have an office that functions as an audit office of both mitigation and suppression may well be a valid role for it to play”.⁴⁰

Increasing the independence of OBRM would also assist in clarifying its role in assurance, reporting and standard setting, rather than the implementation of policy and projects, which it does not have sufficient resourcing to do. This has become an increasing risk as OBRM has expanded its role from working with P&W and DFES, to working more closely with local governments. The Director of OBRM noted that there is a particular expectation on the part of volunteers, that OBRM will deliver the implementation of policies. In his view, “we need to support it [the BRMP process] without being so descriptive.”⁴¹

The Special Inquiry has received evidence however that some stakeholders, particularly volunteers, feel that the processes being created by OBRM are overly prescriptive. For example:

*... we had the Margaret River fire and that really put government in a bit of a spin and everybody went ultra-conservative after that. The Office of Bushfire Risk Management has actually made things a lot more difficult to actually – to do prescribed burning.*⁴²

*At a community level it has been too hard to do any preventative burns or risk remediation around town sites that local brigades used to do.*⁴³

The Special Inquiry is of the view that there is scope for OBRM to develop a more simplified process for conducting low risk burns, and this is discussed in greater detail in Chapter 7 of this Report.

State Emergency Management Committee and Secretariat

The SEMC Secretariat is a sub department of DFES, and was created in 2012 through the restructuring of the FESA business unit known as Emergency Management Western Australia. This complemented reforms to the SEMC under which the SEMC relinquished

³⁹ Carter, M., Hearing, 5 April 2016

⁴⁰ Sharp, J. Hearing, 7 April 2016

⁴¹ Carter, M., Hearing, 5 April 2016

⁴² Iffla, J., Hearing, 9 March 2016

⁴³ Quinlan, M. Hearing, 9 March 2016

some operational roles and responsibilities, and three independent members were appointed, including an independent Chair and Deputy Chair.

As a sub-department, the SEMC Secretariat has its own financial appropriation, and some of the powers of the FES Commissioner are devolved to the Executive Director of the SEMC Secretariat. The FES Commissioner remains the employing authority for the SEMC Secretariat.

The SEMC Secretariat's strategic objective is to develop and improve the State's emergency management arrangements through capability building and the provision of advisory and support services. Its core functions are to:

- administer the *Emergency Management Act 2005*, including the development and maintenance of related regulations, policies, plans and procedures;
- provide executive and administrative support to the SEMC;
- provide whole-of-government representation on four SEMC subcommittees and two reference groups; and
- build local emergency management capacity by advising local governments, local emergency management committees and other regional stakeholders through a State-wide network of District Emergency Management Advisors.

Since the beginning of 2014 the SEMC Secretariat has also had a role in providing support to the State Recovery Coordinator.

The Special Inquiry commends the work of the SEMC Secretariat in relation to two particular projects:

- the State Risk Project, which seeks to gain a comprehensive understanding of the risks that Western Australia faces at the state, district and local level; and
- the Strategic Plan, which rests on the three pillars of risk, capability and impact.

Both of these projects are indicative of the development of a more strategic level of thinking, appropriate for a body tasked with oversight responsibilities in emergency management.

This Special Inquiry has been specifically directed to consider the Preparedness Reports, annually produced by the SEMC Secretariat since 2012. The purpose of the Preparedness Reports is to capture and report in a single document the state of preparedness of key government and non-government entities and the general community. This is done through an assessment of key indicators aligned to a state emergency management capability framework. SEMC Preparedness Reports are provided to the Minister and tabled in Parliament, and attempt to measure the capability to manage major emergencies.

The Special Inquiry has received evidence that the process to develop these reports is continuing to evolve, but is concerned that they are not as incisive as they could be. Whilst the Preparedness Reports provide a high level summary of agency activities relating to emergency management, in the absence of identifiable key performance indicators or issues to be addressed, it is difficult to see how the level of preparedness can be meaningfully assessed.

Further, the Special Inquiry is of the view that the Preparedness Reports would be an appropriate medium in which to report on the implementation of previous reviews, as discussed above.

In its submission to the Special Inquiry, the SEMC Secretariat acknowledged that improvements to the Preparedness Reports could be made:

*The last four iterations of the Preparedness Report collectively provide a foundation for the ongoing collection and analysis of data relating to the State's emergency readiness... There is potential for the Report to be of much greater use to Government for providing information on emergency management performance and to guide resource allocation priorities. However, to do that there will be the need to have expertise and systems in place to provide consistent, reliable and robust data to inform the process.*⁴⁴

Stakeholders were more explicit in their concern that the Reports were not yet an accurate measure of the preparedness of the State. For example:

*... unless you actually physically get out there and start checking, it's probably not as rosy as what they are telling the State Emergency Management Committee.*⁴⁵

Similarly, confidence in incident reviews undertaken by the SEMC Secretariat is also varied. The Special Inquiry noted that the Parkerville Bushfire Review in particular, was not incisive in its identification of key issues. The SEMC Secretariat itself noted the difficulties it faces in undertaking this role:

*The SEMC Secretariat is inevitably required to report on the actions of its parent agency DFES or even on activities in which the SEMC Secretariat staff are directly involved, such as the functioning of Incident Support and Operational Area Support Groups.*⁴⁶

The independence of the Chair and the Deputy Chair was intended, in part, to enable the SEMC to undertake this role. The current chair noted the value of his independence:

*... the appointment (of the Chair) infers that the Chair will act with independence and not with any regard to any particular allegiance of any Government department, and the fact that we can't meet without either the Chair or the Deputy Chair, because they're the two independent people being in that position, doesn't allow it to be carried by any particular agenda.*⁴⁷

The Special Inquiry notes that some stakeholders do not believe that the SEMC or the SEMC Secretariat is sufficiently independent to carry out its intended role. For example:

There is a view of a conflict of interest with the State Emergency Management Committee being under the Department of Fire and Emergency Services... The current model is perceived as the State Emergency Management Committee that set

⁴⁴ Submission of SEMC Secretariat, p. 4

⁴⁵ Iffla, J., Hearing, 9 March 2016

⁴⁶ Submission of SEMC Secretariat, p. 3

⁴⁷ Edwards, F., Hearing, 30 March 2016

*strategic State policy being subservient to a department, whose head is a person that sets the policy for that Department? This perceptively implies an ability to influence policy so it would not be detrimental to a particular department's operations?*⁴⁸

In its submission to the Special Inquiry, the SEMC Secretariat notes that in his 2011 Report, Mr Keelty advocated a “greater degree of separation and independence than has been achieved to date”⁴⁹ for the body. It should be noted however that the Chair of the SEMC advised the Special Inquiry that the FES Commissioner has not acted in any way so as to compromise the independence of the Committee.⁵⁰

This Special Inquiry has received evidence, both formally and anecdotally, to indicate support from Government agencies and non-Government stakeholders for the SEMC Secretariat to have greater independence from DFES, and that this may be best achieved through transferring it to the Department of the Premier and Cabinet. Such a structural change would also be consistent with the recommendations made by Mr Keelty in the Perth Hills Bushfire Report, who was of the view that independence was necessary for the (then) Emergency Management WA to truly gain a whole of government perspective.⁵¹

Indeed, the SEMC Secretariat has expressed support for this proposition:

*Alignment with or under the DPC has been seen as the most appropriate model under current circumstances, in that the State Recovery Coordinator is located within DPC and whole-of-government considerations are critical to both emergency preparedness and recovery (as evidenced by the Waroona fires and recovery effort).*⁵²

Whilst greater independence in a structural sense may be of value, the Special Inquiry is of the view that it is more important for the SEMC and the SEMC Secretariat to be empowered to undertake a more thorough assurance and reporting role. This could be achieved through the development of a designated inspectorate role within the SEMC Secretariat. There is also scope for greater alignment with the OBRM, given its own assurance and reporting role discussed above.

The Director of the SEMC Secretariat agreed that it is a natural trajectory for the SEMC Secretariat to move towards examining more thoroughly emergency management risks, capability and impact, and documenting the progress made.⁵³ In its written submission, the SEMC Secretariat also noted that further developing and monitoring compliance with risk assessment and mitigation standards would complement and reinforce the work currently undertaken by OBRM, and that given the “similarity of roles” there may be opportunity to incorporate elements of OBRM within a realigned SEMC Secretariat.⁵⁴

⁴⁸ Submission of AVBFB, p. 8

⁴⁹ Submission of SEMC Secretariat, p. 2

⁵⁰ Cronstedt, M, & Edwards, F, Hearing, 30 March 2016

⁵¹ Government of Western Australia, *A Shared Responsibility: The Report of the Perth Hills Bushfires February 2011 Review*, 2011, p. 171

⁵² Submission of SEMC Secretariat, p. 3

⁵³ Cronstedt, M, & Edwards, F, Hearing, 30 March 2016

⁵⁴ Submission of SEMC Secretariat, p. 3

The State Recovery Coordinator, in his hearing before the Special Inquiry, agreed:

I think that such an inspectorate could have a very useful role in establishing standards and targets for improvement and the interaction between such an inspectorate and the preparedness report prepared by SEMC would be very useful so that could give some substance to standards being achieved and provide a much better basis for the assessment of risk.⁵⁵

Recommendation 1: The State Government to explore options for streamlining the functions and the independence of the State Emergency Management Committee Secretariat and the Office of Bushfire Risk Management with a view to including an inspectorate function, and appointing a person who is dedicated to that role. The purpose is to provide assurance and reporting, and to inquire into, monitor and report transparently on emergency management standards, preparedness, capability, service delivery and investment performance outcomes. Within two years of the establishment of this arrangement the State Government to review and assess whether it is meeting the desired outcomes.

⁵⁵ Hay, B., Hearing, 24 March 2016

Chapter Six – The Fire

*A rolling wave of flame.*¹

Direct reference is made within this Chapter to the following Appendices:

- Appendix 3 – Reconstruction of the Spread and Behaviour of the Waroona Bushfire Perth Hills 68;
- Appendix 4 – Maps of fire progression; and
- Appendix 5 – Meteorological aspects of the Waroona Fire of January 2016.

The Waroona Fire

Phase 1: 0630 to 1900 hours 6 January 2016

Fuels

Lightning activity during 5 January 2016 ignited two fires west of Murray Road in a young forest block. The two fires were titled Fire PH68 (Fire 68) and Fire PH69 (Fire 69).

Both fires were first detected by P&W staff monitoring the Landgate ‘FireWatch’ website at 0630 hours on 6 January 2016.²

FINDING: The fires known as Perth Hills Fire 68 and Fire 69 were started by lightning in State Forest known as the Lane Poole Reserve after dark on Tuesday 5 January 2016 at an undetermined time.

Whilst Fire 69 was contained by 1143 hours, the initial attack on Fire 68 was slower due to safety concerns that the crews downwind of Fire 69 might be overrun by that fire. These safety concerns were valid and the actions of the IMT were appropriate. Access to Fire 68 was also hampered by large rocky outcrops and the presence of a large number of dead trees. Fire 68 became the main fire front known as the Waroona fire.

Both fires initially developed in open State Forest of jarrah and marri on the eastern side of the Murray River valley in six year old fuels, dating from a spring 2009 hazard reduction burn in young forest. Reports from the 2009 burn indicated the fire was of moderate intensity and consumed ground and near shrub level fuels. Fuels on the steep west-facing aspect of the valley burnt patchily or not at all which may suggest the fuel age was greater than six years old. The reconstructed rate of spread between 1140 hours and 1450 hours was 1,105 metres per hour.

Fuels west of the Murray River were considerably older than those to the east, ranging from 10 to 37 years since last burnt.

¹ Smith, S., telephone hearing with Special Inquiry, 15 April 2016

² DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016 p. 9

A significant proportion of the State Forest impacted by this phase of the fire had been subject to bauxite mining. The landscape was modified by mining infrastructure (quarry pits, haul roads, conveyors, powerlines) and the presence of significant areas of recently rehabilitated forest. These presented significant challenges for access by firefighters, and limited the application of fire control strategies.

As the fire progressed further west it encountered an increased proportion of older rehabilitated bauxite pits, densely stocked with jarrah and marri saplings.

Reconstruction of the fire suggests that between 1800 and 1906 hours the rate of spread of the fire increased to 3272 metres per hour. This period coincided with the fire encountering an area of un-mined forest in a proposed national park: this area was last burnt in 1978 and contained fuel with an age of 37 years.

The initial response

At 0700 hours a P&W spotter plane was deployed. It confirmed the presence of two fires near Nanga Road, Dwellingup at 0725 hours.³

At 0703 hours, following the initial detection of the fire, the P&W Duty Officer requested the following P&W crew to be dispatched from the P&W Dwellingup depot: four four-wheel-drive heavy fire vehicles and one front end loader.⁴ A P&W Field Operations Officer was dispatched from Dwellingup. He was directed by the Duty Officer to head to Nanga Road, based on the preliminary spotter plan observations of the fire location and because there are a number of camping facilities in that area.⁵

Between 0720 hours⁶ and 0730 hours⁷, the P&W machinery was mobilised, with trucks and a front end loader despatched from Dwellingup. The initial P&W crews were tasked to first work on the easternmost (Fire 69). This was due to the direction in which Fire 69 was moving. The presence of easterly winds made Fire 69 a threat to the safety of crews who may be deployed to fight the westerly Fire 68.⁸ The P&W Field Operations Officer informed the Special Inquiry:

... the way that Fire 69 was running was going to run towards Fire 68 ... we would have potentially been putting people in between the two fires, which we didn't think was a safe move to do... [W]e thought we needed to get 69 under control so we weren't putting people potentially in front of that one.⁹

This approach was consistent with firefighting safety principles, including the LACES (Lookout; Awareness; Communication; Escape routes; Safety zones) principle.¹⁰

³ Pasotti, M., Hearing, 16 March 2016

⁴ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 39

⁵ Pasotti, M., Hearing, 16 March 2016

⁶ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 9

⁷ Pasotti, M., Hearing, 16 March 2016

⁸ Ridley, J., Hearing, 17 March 2016

⁹ Gunn, S., Hearing, 1 April 2016

¹⁰ DFES, *Safety Circular 10/2015*, November 2015. This document explains the LACES principle which is a well-recognised safety system used to streamline firefighter's decision making processes in hazardous environments.

Making the westernmost fire (Fire 68) the second priority was also due to the fire being located in terrain that hindered access to the fire site. In practical terms, the landscape made tracking the fire with machinery difficult. This limited the ability to apply a direct attack strategy. Heavy machinery was required to cut a track to the fire – a front end loader was initially dispatched; two dozers and two additional front end loaders despatched shortly after.¹¹ Once the P&W machinery reached the fire, crews were able to construct a mineral earth control line around the fire. The rate of construction of this control line was about 100 metres per hour; but this was not as fast as the fire was moving.¹²

Aerial support was part of P&W's initial resource deployment. At 0726 hours, four fixed wing water bombers were requested by the P&W duty officer,¹³ and at 0745 hours two water bombers were dispatched from both Jandakot and Bunbury (making four in total). The aircraft were instructed to focus their suppression activities on Fire 68, with the aim of holding it until ground crews could gain access.

At 0800 hours, an IMT was established at the P&W Mundaring office to manage the Department's response to the fire.¹⁴ The P&W Duty Officer became the IC. Shortly after establishment, the IMT informed the DFES Communications Centre of the fire.¹⁵

At 0830 hours, the IC declared the fire to be a Level 1 incident.¹⁶ Westplan – Fire provides that a Level 1 fire incident is characterised as being able to be controlled through local or initial response resources within a few hours of notification of the fire.¹⁷ A Level 1 incident is broadly defined by meeting one or more of the following typical conditions:

- there are no significant issues;
- there is a single or limited multi agency response (day to day business);
- there is minimal impact on the community;
- the incident can be managed by a Controlling Agency IMT only; or
- there is a low level of complexity.¹⁸

At the time of declaration as a Level 1 incident, it was anticipated by the IMT that the fire would be brought under control with relative ease.

By approximately 0830 hours, the total P&W resources deployed to the fire included four trucks from Dwellingup and four trucks from Jarrahdale, each manned by two people; two dozers; and two front end loaders.¹⁹

¹¹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 40

¹² Pasotti, M., Hearing, 16 March 2016

¹³ Ibid

¹⁴ Ibid

¹⁵ At 0804 hours the IMT informed the DFES Communications Centre of the fire; DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016 p.10

¹⁶ Ibid

¹⁷ State Emergency Management Committee, *State Emergency Management Plan for Fire (Westplan – Fire)*, 2013, p. 24

¹⁸ State Emergency Management Committee, *State Emergency Management Policy No 4.1 - Incident Management*, 2013, p. 4

¹⁹ Ridley, J., Hearing, 17 March 2016

The first Incident Action Plan (IAP) was prepared by the IMT at 0930 hours. As set out in the IAP, the initial objectives of the P&W response were to: contain both fires east of the Murray River and west of Murray Road; to protect users of the Bibbulmun Track and infrastructure at the Murray Campsite; and to keep the community informed for the duration of the incident. The strategies to be employed to achieve containment were direct attack on the fire using dozers and front end loaders, with support by aircraft and ground crews.²⁰ It was estimated that approximately two kilometres of tracking with machinery was required.²¹

By 1000 hours, the resources deployed by P&W had increased. The Special Inquiry received evidence from the IC which stated that the deployed resources consisted of seven experienced officers, eight trucks, two front end loaders, two dozers and three water carts. Two additional trucks were on their way from Boddington.²² The IC reported to the Special Inquiry that he and his team were comfortable with this level of deployment; particularly given experienced operators were working on the fire.²³

Fire 69 was tracked and contained by 1143 hours on 6 January 2016. Containment was achieved through ground based direct attack.²⁴ Despite Fire 69 being contained, the Special Inquiry heard that significant access issues remained for crews attempting to fight Fire 68:

*... because of the location and the terrain, we were having great difficulty in establishing – or rapidly establishing – mineral earth breaks ... it was right on the breakaway into the Murray Valley. There was also a creek line to the south of it ... So although we had machinery quite quickly on site ... the initial tracking was difficult.*²⁵

These initial difficulties meant that Fire 68 continued to burn uncontained. However, the P&W Duty Field Officer considered that:

*... during those initial stages the fire probably wasn't doing anything out of the norm... And even the spotter reports were getting to some point mid-afternoon it was probably within the realms of what would have been expected.*²⁶

As the fire continued to move west, the strategy was to try to anchor the fire into the Murray River on the east; to bring crews to the western side of the river and then to build containment lines. The intent was to try to get around the fire (meaning the entire perimeter) during the night of 6 January 2016.²⁷

²⁰ Incident Action Plan, Shift 1, 6 January 2016, p. 1

²¹ Ibid., p 3

²² Ridley, J., Hearing, 17 March 2016

²³ Ibid

²⁴ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 40

²⁵ Ridley, J., Hearing, 17 March 2016

²⁶ Gunn, S., Hearing, 1 April 2016

²⁷ Pasotti, M., Hearing, 16 March 2016

The Special Inquiry heard that the IMT did not believe it was possible to directly address the head of the fire. The Operations Officer reported that:

... there was no safe way to put people on the west side of the river [to fight the fire], initially, because the fire would – if it crossed, was probably going to cross mid-slope, spot across, and they would be stuck between the two fires.²⁸

As tackling the fire from the west would have been dangerous, the P&W crews applied the “usual strategy of start from the tail [of the fire] and track your way to the front”.²⁹

By 1200 hours, aerial intelligence and reports from the field indicated that the fire was 800 metres east of the Murray River. The original proposition of catching the fire prior to it crossing the river was looking increasingly less likely to the IMT, particularly due to the speed of the containment line production.³⁰

At 1330 hours, the fire had reached 160 hectares in size.³¹ It was when the fire jumped the Murray River shortly after this time that a marked escalation of the response occurred.

FINDING: The timing, weight of attack and strategies employed on the initial fire attack on Fires 68 and 69 were reasonable.

FINDING: The Incident Management Team decided to delay initial suppression actions on Fire 68 due to concerns that Fire 69, should it not be controlled quickly, might overrun crews that would otherwise have been deployed on Fire 68. Given the likelihood and consequences of the safety risks that this scenario presented, this was an appropriate decision.

FINDING: Rainfall in South West WA was very much below average in 2015. From May to October 2015, the Waroona region recorded rainfall in the lowest 10% of records. In 2015 Dwellingup recorded its warmest year of day-time maximum temperatures in its 75 years of records. Bureau of Meteorology measures of the dryness of heavy forest fuels indicated that forest fuels were significantly drier than the five year average. The dry condition of forest fuels contributed to the difficulty of suppressing and extinguishing the fire.

FINDING: From about 1030 hours on 6 January 2016, the ability to control Fire 68 was hampered by:

- difficult access;
- very dry fuels;
- heavy forest fuels;
- the intensity of the fire;
- steep and rocky terrain; and
- the delay caused by safety risks presented by Fire 69.

²⁸ Ibid

²⁹ Ibid

³⁰ Pasotti, M., Hearing, 16 March 2016

³¹ DFES and P&W, *Interim Fire Chronology*, 1 February 2016

FINDING: After it crossed the Murray River, the ability to control Fire 68 was hampered by terrain, heavy forest fuels and difficult ground access in the State Forest, including the area known as the Alcoa Mining Lease.

Escalation from Level 1 to Level 2

The uncontained fire crossed the river at approximately 1345 hours. It then continued to gather momentum and increase in size.³² The head fire was reported by aerial surveillance to be on the steep western slopes of the Murray River valley. At around this time, the IC requested additional resources in the form of eight to ten more P&W trucks.³³ Aerial resources were directed to try to contain the hop overs as best as possible.³⁴

As the fire crossed the river, the P&W crews were still confined to tracking the fire on its eastern boundary. The Special Inquiry heard that attacking the fire from the west was still considered too risky.³⁵

Following the fire crossing the river, it appeared likely to the IC that the fire would start impacting on infrastructure and key roads. Tracking wasn't occurring at a rate which would allow for the fire to be wound in. There was also a degree of uncertainty about how the fire would behave once it reached the disturbed areas in the landscape to the west, such as the Willowdale mine site and surrounding land.³⁶

Consequently, the IC escalated the fire from a Level 1 to Level 2 incident at 1530 hours on 6 January 2016.³⁷ DFES personnel were briefed on the fire at 1600 hours.³⁸

Level 2 fires are considered to be more complex than a Level 1 fire either in size, required resources, risk or community impact. They usually require delegation of a number of incident management functions, and may require interagency response.³⁹

A Level 2 incident is broadly defined by meeting one or more of the following typical conditions:

- requires a multi-agency response;
- has a protracted duration;
- requires coordination of multi-agency resources;
- there is some impact on critical infrastructure;
- there is a medium level of complexity;
- there is a medium impact on the community (health, safety, economic, technological or other);
- there is potential for the incident to be declared an 'Emergency Situation'; or
- the incident involves multiple hazards.⁴⁰

³² DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 10

³³ Ridley, J., Hearing, 17 March 2016

³⁴ Gunn, S., Hearing, 1 April 2016

³⁵ Pasotti, M., Hearing, 16 March 2016

³⁶ Ridley, J., Hearing, 17 March 2016

³⁷ Ibid

³⁸ Todd, B., Diary, 6 January 2016

³⁹ State Emergency Management Committee, *Westplan – Fire*, 2013, p. 24

⁴⁰ SEMC, *SEMP No 4.1 – Incident Management*, 2013, p. 4

Once the fire was declared a Level 2 incident, the IMT decided to establish an ICC at the Orion facility within the Alcoa Willowdale mine site. This decision was revised at approximately 1700 hours as the result of an increase in fire behaviour, which led the IMT to believe there was potential for the fire to reach that site in the near future.⁴¹

The IMT had not anticipated that the fire would reach private property or Waroona townsite within the next eight to 10 hours, based on the rate of spread at that time. The Waroona Oval was therefore considered to be a suitable alternative ICC location (the Waroona ICC). Plans were put in place to have the Waroona ICC established by 0600 hours on 7 January 2016.⁴²

The IMT also agreed that a pre-formed Level 3 P&W IMT needed to be made available for the following day.⁴³ P&W has five preformed IMTs. Each team carries a complement of around 50 personnel filling different IMT roles.⁴⁴ The intention is to have one team available for each duty week covering the South West's bushfire season.

Consideration of the need for a preformed IMT commenced from around 1400 hours. The P&W preformed Red IMT was activated at 1710 hours on 6 January 2016, for intended commencement of duty at 0600 on 7 January 2016 at the Waroona ICC.⁴⁵

When giving evidence before the Special Inquiry, the IC who activated the Red IMT stated that the request for the preformed IMT reflected an appreciation for the likelihood that the fire would become a Level 3 incident in the near future, if it was not already considered to be one.⁴⁶

The Special Inquiry has considered whether the Waroona fire could have been declared a Level 3 Incident earlier than it was – 2215 hours on 6 January 2016.

The Special Inquiry considers there is one key point in time where an earlier escalation to Level 3 may have been considered: the fire jumping the Murray River.

Westplan – Fire defines Level 3 fire incidents as incidents which are considered to be protracted, large and resource intensive. They may affect community assets and/or public infrastructure, and attract significant community, media and political interest. Level 3 incidents will usually involve delegation of all the Incident Management functions.⁴⁷

State Emergency Management Policy 4.1 *'Incident Management'* (SEMP 4.1) outlines the key criteria of a Level 3 incident, which are:

- the incident requires significant multi agency response;
- there is a protracted response duration;
- there is significant impact on critical infrastructure;
- there is significant coordination of multi-agency resources;
- there is a high level of complexity;

⁴¹ Ridley, J., Hearing, 17 March 2016

⁴² DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 10

⁴³ Ridley, J., Hearing, 17 March 2016

⁴⁴ P&W, SOP 091 *'Preparedness and mobilisation of preformed AIIMS teams'*, 1 December 2015

⁴⁵ P&W have five colour-named, preformed IMTs operating on a standby roster system.

⁴⁶ Ridley, J., Hearing, 17 March 2016

⁴⁷ SEMC, Westplan – Fire, p. 25

- there is significant impact on the community (health, safety, economic, technological or other);
- there are multiple incident areas;
- evacuation and/or relocation of community is required;
- there is actual or potential loss of life or multiple, serious injuries; or
- a declaration of an ‘Emergency Situation’ or ‘State of Emergency’ is required.⁴⁸

At the time the fire crossed the Murray River there were a number of cues that the fire was likely to develop into a significant (and therefore a Level 3) fire:

- the head fire was unable to be controlled;
- forest fuels were drier than average;
- access was hampered by steep rocky terrain;
- the fire was burning into State Forest where bauxite mining operations hampered access and suppression; and
- a pyro-cumulonimbus cloud had formed over the fire.

This needs to be considered in the context that the fire behaviour and the rate of spread from dusk and overnight were greater than forecast by fire behaviour models.

FINDING: There were a number of cues that the fire had the potential to be declared a Level 3 Incident. Despite these cues, the potential for a Level 3 fire was not recognised until after 1530 hours.

Shortly after activating the Red IMT, P&W requested assistance from DFES. A Sector Commander, eight tankers, a resource officer and a local government representative were sought from DFES, to be available for duty on the morning of 7 January 2016.⁴⁹

There was continued exponential growth of the fire, including an ‘unexpected and dramatic’ escalation at 1700 hours – at this time the fire crossed Nanga Road.⁵⁰ The fire was plotted as being 800 hectares in size, moving at approximately one to one and a half kilometres per hour, even when travelling uphill.⁵¹

It became apparent to the IMT that the fire had the potential to reach the scarp within the next 12 to 14 hours. Due to the fuel types in the mine site and the limitations accessing the fire due to the landscape, the next opportunity to safely catch the fire was thought to be in the open pasture at the bottom of the scarp.⁵²

The Special Inquiry heard that local experience suggested that the fire entering the pasture on the Swan Coastal Plain would have made it more accessible, providing the ability for firefighters to hold the fire in the pasture while machinery contained the flanks.⁵³ In anticipation, plans were put in place for additional machinery to be made available for the

⁴⁸ SEMC, SEMP 4.1 – *Incident Management*, 2013, p. 5

⁴⁹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 11

⁵⁰ Ibid

⁵¹ Pasotti, M. Hearing, 16 March 2016

⁵² Ibid

⁵³ Ibid

morning of 7 January 2016.⁵⁴ However, with fires breaking out around Waroona later in the evening, and the head fire continuing to move at a fast pace, the IMT was not in position to action this strategy.

During a hearing with the Special Inquiry, the Incident Controller B conceded:

*... it was a very frustrating evening [of 6 January], very, very difficult to formulate a coherent strategy that you could say was aimed at suppressing the fire ... it was a larger, more intense fire than we thought it should have been, and so, yes, we didn't formulate a coherent suppression strategy as opposed to a protection of assets of the community.*⁵⁵

At 1730 hours, a large pyro-cumulonimbus cloud had formed above the fire, and the plume was moving towards the south-west.⁵⁶ This thunder cloud formation brought additional risks of strong erratic updraft and downdraft winds which result in unpredictable fire behaviour. The cloud was easily visible from the Swan Coastal Plain. Numerous ground lightning strikes were detected by sensors from 1640 hours onwards, ceasing at around 2015 hours.⁵⁷

By 1800 hours, P&W had nine machines working on the fire, along with 20 heavy-duty vehicles, 14 IMT staff, multiple water carts and seven aerial water bombers.⁵⁸

As dusk settled, the rate of spread of the fire increased.

Phase 2: 1900 hours 6 January 2016 to 0930 hours 7 January 2016

Fuels

During the second phase, the fire spread through a complex mosaic of active mining operations, mining infrastructure, rehabilitated bauxite pits and remnant native forest. Much of this area carried fuels older than 20 years, apart from some areas to the south which were burnt in 2006.

Once the fire reached the edge of the escarpment it encountered a mixture of remnant woodlands and pastures. The northern flank of the fire, just east of Waroona, encountered one year old fuels burnt during a 2015 bushfire.

As the fire reached the Swan Coastal Plains it encountered cured and irrigated pasture, remnant woodlands and swamp vegetation along drains and road verges.

Between 1900 and 2300 hours on 6 January 2016 the fire spread at a faster than predicted rate. Possible reasons for this increased rate of spread include the presence of extensive areas of rehabilitated forest with heavy unmanaged fuel loads, and the unusually dry antecedent conditions.

⁵⁴ Low, K., Hearing, 16 March 2016

⁵⁵ Ibid

⁵⁶ McCaw, L., Burrows, N., Beecham, B. Rampant, P., *Reconstruction of the spread and behaviour of the Waroona bushfire (Perth Hills 68)*, P&W, 6 April 2016, p. 22

⁵⁷ Ibid., p. 21

⁵⁸ Ridley, J., Hearing, 17 March 2016

At around 2130 hours a tongue of fire was reported to have crossed the South Western Highway between Waroona and Hamel. The area where the fire crossed the highway is the Drakes and Sampson Brook convergence. It is likely that the alignment of the two Brooks and the terrain contributed to channelling the wind and path of the fire.

West of the South Western Highway the fire entered the Waroona main drain. The heavy fuels around the drain allowed the fire to rapidly spread north west. This spread resulted in a very long narrow fire shape. Efforts to contain the fire along the drain were hampered by the speed and intensity of the fire in the remnant vegetation adjoining the drain.

By 0200 hours on 7 January 2016 the fire was impacting the eastern outskirts of Waroona where it burnt through one year old fuel dating from the January 2015 bushfire. This young fuel is thought to have reduced the fire intensity and the likelihood of spot fires starting.⁵⁹

New fires around Waroona during the evening of 6 January 2016

Aerial intelligence from 1912 hours indicated that the fire had grown to 2800 hectares and was predicted to be spreading at approximately one and a half to two kilometres per hour. As the rate of spread overnight was double that predicted, the IMT identified that there was a need to prepare for potential impact on Waroona by the morning of 7 January 2016.⁶⁰

As aerial intelligence ceased overnight, information on the location and behaviour of the fire was greatly reduced and instead continued to be tracked by P&W personnel on the grounds. The available intelligence was restricted to observations from the field, often made a considerable distance away.⁶¹

At approximately 1900 hours, the IMT had predicted that there was an estimated 12 hours before the fire reached the Waroona townsite. The fire was approximately 13 kilometres from Waroona and eight kilometres from the nearest private property. It was predicted by the IMT to be moving, at worst, at a rate of 2,000 metres per hour.⁶²

However, shortly after 2100 hours the Waroona townsite was reported to be under sustained ember attack.⁶³ At that same time a ‘Watch and Act’ alert was issued for Lane Poole Reserve, the Alcoa mine site, and adjacent private properties in the Shire of Waroona.

The Harvey CBFCO informed the Special Inquiry that at 2115 hours he received a call from the DFES Communications Centre advising that there was fire in Waroona. The P&W fire reconstruction report noted that there was evidence of a number of independent ignition points a distance from the main fire – this included in areas to the east of Waroona. It is thought that these were caused by lightning strikes from the pyro-cumulonimbus cloud.⁶⁴

⁵⁹ McCaw, L., Burrows, N., Beecham, B. Rampant, P., *Reconstruction of the spread and behaviour of the Waroona bushfire (Perth Hills 68)*, P&W, 6 April 2016

⁶⁰ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 50

⁶¹ McCaw, L., et al, op. cit., p. 22

⁶² Pasotti, M., Hearing, 16 March 2016

⁶³ McCaw, L., et al, op. cit., p. 22

⁶⁴ Ibid

The spot fires were approximately 13 kilometres away from the last known location of the head fire.⁶⁵ The Special Inquiry heard how the presence of the spot fires rapidly and unexpectedly escalated the fire situation, severely undermining the IMT's IAP and the ongoing fire suppression effort. The IMT, particularly from a warnings and strategy perspective, lost a significant amount of time that was anticipated to be available to prepare for the fire before it posed a serious risk to lives and property.

From the IMT's point of view, the fire had shifted 13 kilometres in an hour and a half. This rendered the fire behaviour predictions to date and the IMT's predetermined strategy redundant. As the Operations Officer at the time succinctly put it in evidence before the Special Inquiry:

*It beat us to the punch, basically.*⁶⁶

These sentiments were echoed by the incoming Level 3 IC:

*So it was a ... frustrating evening, very, very difficult to formulate a coherent strategy that you could say was aimed at suppressing the fire, and virtually all our energy was placed in trying to get intelligence from wherever we could, but it never ... came to shape.*⁶⁷

At the time the spot fires around Waroona broke out, all the P&W resources were located on the east side of the Murray River and were not readily deployable to Waroona, which is located to the west of the river. At approximately 2215 hours, the IMT requested additional resources from the local government and DFES for deployment into Waroona for asset protection. The requested resources were drawn from the Waroona Volunteer Fire and Rescue Service and Yarloop and Cookernup Bush Fire Brigades.⁶⁸

The impact of the fires around Waroona on the planning and response by the IMT cannot be understated: the IMT was surprised. A significant amount of time that they had anticipated would be available to contain the head fire essentially disappeared; for the next few days, the IMT was left constantly chasing a fire that was growing larger and larger.

FINDING: The origin of the fires that threatened the township of Waroona on the evening of 6 January 2016 are more likely to have been from cloud to ground lightning from a fire induced cloud over the fire (as opposed to have been from either the main fire of Fire 68 or spotfires emanating from Fire 68).

Opportunity 1: The Departments of Fire and Emergency Services and Parks and Wildlife (and, when established, the Rural Fire Service) to engage with the Bureau of Meteorology and the Bushfire and Natural Hazards Cooperative Research Centre to investigate the prediction of cloud to ground lightning occurrences.

⁶⁵ Ridley, J., Hearing, 17 March 2016

⁶⁶ Pasotti, M., Hearing, 16 March 2016

⁶⁷ Low, K., Hearing, 16 March 2016

⁶⁸ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 50

Opportunity 2: The Departments of Fire and Emergency Services and Parks and Wildlife (and, when established, the Rural Fire Service) to engage with the Bureau of Meteorology and the Bushfire and Natural Hazards Cooperative Research Centre to investigate the causes of and effects of pyro-cumulus weather occurrences on bushfire behaviour.

Escalation to a Level 3 Incident

Preparations for the fire to be declared a Level 3 incident had begun prior to the formal escalation. The preparations including activating the preformed Red IMT, commencing the establishment of an ICC at Waroona, and the request for additional resources from DFES and P&W.

The DFES SOC became fully activated by 2200 hours on 6 January 2016.⁶⁹ The MOC in Perth, along with the Bunbury, Northam and Manjimup ROCs were escalated at 2224 hours to assist with the provision of resources.⁷⁰

Formal escalation of the fire from a Level 2 to a Level 3 incident occurred at 2215 hours on 6 January 2016.⁷¹ Under Westplan – Fire, any Level 3 fire, being a complex fire in which life and property are at risk, automatically falls under the overall control of the FES Commissioner.⁷²

The declaration of a Level 3 incident, and utilisation of section 13 of the *Bush Fires Act 1954*, does not mean that a DFES employee will automatically assume the IC role; rather it provides that the FES Commissioner has the authority to direct the response to the fire.⁷³ A Controlling Agency can also be appointed. A Controlling Agency is the agency with responsibility, either through legislation or by agreement with the Hazard Management Agency, to control the response activities to an incident.⁷⁴

In the case of the Waroona fire, P&W was the Controlling Agency, and P&W staff continued to be appointed as the ICs for the four Operational Periods immediately following the fire being escalated to Level 3, and for a number of subsequent shifts over the course of the fire.

At 2215 hours, the FES Commissioner's delegate appointed the first Level 3 IC under section 13 of the *Bush Fires Act 1954*. Section 13 of the *Bush Fires Act 1954* provides that the FES Commissioner can appoint an authorised person to take control of all operations to assist in managing an incident.⁷⁵

The Special Inquiry understands that a handover between the initial IC and the incoming Level 3 IC commenced at 2200 at the P&W Mundaring office. The incoming Level 3 IC had been shadowing the initial IC for two hours in anticipation of the section 13 of the *Bush Fires Act 1954* appointment being made.

⁶⁹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 12

⁷⁰ *Ibid.*, p. 40

⁷¹ *Ibid.*, p. 12

⁷² State Emergency Management Committee, *Westplan – Fire*, 2013

⁷³ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 29

⁷⁴ SEMC, *SEMP 4.1 – Incident Management*, 2013, p. 7

⁷⁵ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 29

At 2225 hours an Emergency Warning was issued for the “Waroona townsite, Alcoa mine site and adjacent private properties in Shire of Waroona”. The warning specified an area bounded by: “Willowdale Road, Johnston Road, Somers Road, Coronation Road and Nanga Brook Road including Waroona townsite”. This warning was progressively updated through the night.

Establishment of the ICC in Waroona and incoming IMT difficulties

A portable ICC was established on the Waroona oval for use by the incoming IMT early on the morning of 7 January 2016.

On Thursday morning the following transitions occurred concurrently:

- transfer of control from the Mundaring P&W ICC to the Waroona ICC;
- portable ICC buildings established on the Waroona Oval;
- new incoming IMT (first shift on this fire); and
- normal shift change-over (night shift to day shift).

When some members of the incoming IMT arrived to commence their shift, the setup of the Waroona ICC was not yet complete.⁷⁶

Many of the incoming IMT membered suffered delays in arriving at the ICC. Most of the IMT team members were due to commence their shift at around 0600 hours. Many had left their homes around 0400 hours in order to arrive.⁷⁷ However, those members of the incoming IMT located to the south of Waroona (being the majority of P&W personnel) faced delays in the form of Vehicle Control Points. The IC did not arrive until around 0900 hours,⁷⁸ whilst the Public Information Officer and Alerts Officer arrived between 0800 hours⁷⁹ and 0850 hours.⁸⁰

All of the above matters necessarily affected the effectiveness of the handover processes and the smooth commencement of this shift of the IMT. In some cases, shift handover briefings between the outgoing and the incoming IMTs were being done over the telephone. This delay had flow on effects for the remainder of the shift.

FINDING: There were a number of delays and setbacks to the Incident Management Team who were incoming to Waroona on Thursday 7 January 2016. These delays and setbacks were largely outside their control and affected the ability of the Incident Controller to establish the strategy for most of the day.

Management of the Level 3 incident

During the night of 6 January 2016 and early morning of 7 January 2016, the IMT for Operational Period 1 prepared an IAP for the incoming IMT for Operational Period 2.

⁷⁶ Wegwermer, T., Transcript, 21 April 2016

⁷⁷ Hill, C., Transcript, 18 March 2016

⁷⁸ Mair, G., Transcript 18 March 2016

⁷⁹ Henderson, P., Transcript, 18 March 2016

⁸⁰ Hill, C., Transcript, 18 March 2016

The ‘Operations Summary’ within the IAP, prepared at 0015 hours on 7 January 2016, noted that the fire was a complex fire, which was uncontrolled and uncontained. The fire was estimated at being 12,000 hectares in size, with a perimeter of 80 kilometres. Less than 10 kilometres of the fire had been tracked.⁸¹

The Operations Summary noted that there was a very high Fire Danger Rating forecast for the coming day. The ‘Incident Objectives’ listed within the IAP included to “contain the fire by 2400 hours on 7 January 2016”.⁸² The strategies to achieve this objective were: “continue to attack the main run of the fire; attack, contain and mop up hop overs as they occur; and utilise aviation resources tactically”. The strategy and tactics also included the sourcing and tasking of graders and front end loaders to contain the fire on the coastal plain.⁸³

By daybreak on 7 January 2016, it was apparent to some members of the IMT for the first operational period that “it was going to be very ugly”.⁸⁴ the north-easterly winds forecasted meant that the fire front, which had uncontained flanks, would be entering into inaccessible forest made up of reasonably heavy fuels. As a result of the wind direction and the size and ferocity of the fire, the IMT were concerned about the townships south of Waroona.⁸⁵

Adding to concerns it was reported by the Water Corporation at 0726 hours that power had been lost to the Yarloop town water supply system.⁸⁶ This meant that water supplied to Yarloop was gravity fed, which would result in reduced water pressure for the end user. Applications by the Water Corporation to enter Yarloop to reconnect power to the water supply system were rejected by the Operations Officer then, and again at 1300 hours on 7 January 2016.⁸⁷ At 1700 hours on 7 January 2016 the Water Corporation reported that there was “no water at Yarloop”.

Despite this, the Special Inquiry heard that there was still optimism that the spread of the head of the fire to the west could be tackled in open pasture to the west of South Western Highway to stop the spread in a westerly direction.⁸⁸ The Operations Officer noted that a number of assets, being brigade, DFES and private units, along with machinery, were in place to the west of the scarp and could deal with the fire’s spread west.⁸⁹

However, evidence given at Special Inquiry hearings by members of the IMTs for both Operational Period 1 and Operational Period 2 suggested that there was little hope among staff on the ground of containing the fire in the immediate future. Operations Officer A conceded:

So I guess based on our handover notes [for Operational Period 2 commencing at 0600 hours on 7 January], we were aware that the towns south of Waroona were in a pretty ordinary spot, and what was going to happen to them apart from I guess what we could do to defend them was – we weren’t going to be able to stop the impact that

⁸¹ Incident Action Plan, Shift 2, 7 January 2016, p. 4

⁸² Ibid., p. 3

⁸³ Ibid., p. 4

⁸⁴ Pasotti, M., Hearing, 16 January 2016

⁸⁵ Ibid

⁸⁶ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 45; Submission of the Water Corporation, 11 March 2016

⁸⁷ Ibid

⁸⁸ Pasotti, M., Hearing, 16 March 2016

⁸⁹ Ibid.

*was going to happen. It was just a matter of how bad it was going to be, when it was going to be and what we could do about it. But it was probably inevitable at that point.*⁹⁰

The resignation to the inevitable described above was, in contrast, not shared by the DFES Duty Assistant Commissioner located in the SOC. He informed the Special Inquiry that when he handed over to the incoming DFES Duty Assistant Commissioner at 0830 hours on 7 January 2016, he thought:

*... we had a manageable fire. Yes, it was going to take a bit of effort and a bit of grunt, but, you know, kind of, I thought with the ... capability which we had sent down there, with the management structures which were being put into place, with the support of the aerial resources, that – and also with ... a pretty strong boundary ... in the Forrest Highway, that we ... would be able to hold it.*⁹¹

It is likely that the differences in appreciation of the severity of the fire may be attributable to the different locations of the persons who held them; nonetheless, these divergent views concern the Special Inquiry. The differing views call into question the respective roles of, and the level of communication between, the IMT and the ROC on one hand; and the ROC and the SOC on the other.

The Special Inquiry heard that early on the morning of 7 January 2016, a decision was made to create two divisions on the fire. The dividing line was based on the expertise of each agency. P&W were responsible for fighting the fire to the east of South Western Highway – an area made up of predominantly forest country. DFES were responsible for the west of South Western Highway – an area that contained numerous assets and structures requiring protection.⁹² The Western Division Commander also had the Wagerup Refinery within his division.

Phase 3: 0930 to 1830 hours 7 January 2016

Fuels

When the fire entered the third phase east of Muja Northern terminal powerlines, the fire encountered fuels in the jarrah marri forest with a fuel age of 6 to 10 years. West of the terminal the fire encountered more jarrah marri forest with a fuel age of 20 years, including some areas of up to 37 years. There was also extensive areas with rehabilitated mine pits containing fuels of varying ages. South of Willowdale Road, Wagerup, vegetation where the fire burnt through was predominantly native forest with the youngest fuels being 8 years old.

Throughout the morning there was an obvious increase in fire intensity. This intensity was likely a result of older fuels in the fire area. Fire intensity increased later in the morning as it burnt through an area with a fuel age of 20 years or more. In the afternoon the wind became a northerly which had the effect of extending the fire southward along the escarpment to the east of Yarloop.

⁹⁰ Pasotti, M., Hearing, 16 March 2016

⁹¹ Gifford, G., Hearing, 24 March 2016

⁹² Chick, J., Hearing, 1 April 2016

Throughout the day the fire also remained active in agricultural lands on the coastal plain west of Waroona. The pattern of fire spread on the coastal plain was strongly influenced by factors of land use and conditions of pastures, native vegetation and belts of planted trees.⁹³

Planning and protection of Yarloop

West of the South Western Highway was a mix of Fire and Rescue appliances and Bush Fire Brigade tankers. These resources were focussing on the Forrest Highway and around the pine plantations. Some of these appliances were two wheel drive pumpers that had limitations operating in the rural fire environment they were in.

A tongue of fire moved down the escarpment, under the influence of north-east winds, crossing the South Western Highway in a number of locations to the south of Waroona.⁹⁴ The fire continued to extend towards the east of Yarloop.

The South West ROC records indicate that by 1430 hours on 7 January 2016 the following resources (in addition to ongoing aerial support consisting of four fixed wing bombers, two helitaks and an air crane)⁹⁵ were deployed to the Waroona fire:⁹⁶

Department of Parks and Wildlife		Department of Fire and Emergency Services	
Personnel		Career and volunteer personnel	
Ground	157	Ground	234
IMT	64	IMT	16 ⁹⁷
Machines/Equipment		Equipment	
Grader	1	Trucks	33
Front End Loader	6	Light tankers	23
Dozer	9	Fire and Rescue Service Pumper	6
Water cart	4		
Snorkel	1		
Trucks	36		
Light Tankers	34		

Table 6.1: Resources deployed to Waroona fire as at 1430 7 January 2016⁹⁸

It is not possible for the Special Inquiry to provide a specific breakdown of the exact location of each piece of equipment and all personnel at specific times – this reinforces the need for an emergency services resource management system which allows tracking of personnel, vehicles, plant and aircraft as discussed later in this chapter.

Table 6.1 is the most concise breakdown of resources deployed to the Waroona fire provided to the Special Inquiry. The Special Inquiry notes that the disparity in the number of IMT staff between P&W – 64 – and DFES – 16 – doesn't reflect a fully balanced multi-agency IMT.

⁹³ McCaw, N., et al, op. cit.

⁹⁴ McCaw, N., et al, op. cit.

⁹⁵ DFES, *Commissioner's Briefing Note 1600 hours*, 7 January 2016, p. 4

⁹⁶ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 51

⁹⁷ Page 51 of the DFES and P&W Joint Agency Operational Audit stated that DFES had '1' person in the IMT at this time; the Special Inquiry received subsequent information that the correct number was 16.

⁹⁸ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 51

Recognition of the threat to Yarloop

The Special Inquiry has found that there was some awareness of the threat the fire posed to Yarloop at least 24 hours before the fire impacted the town.

The DFES Duty Assistant Commissioner in the SOC informed the Special Inquiry that in the handover he received when he commenced his shift at 1655 hours on 6 January 2016, he was informed:

WITNESS: ... resource planning was underway and a contingency plan had been developed with regards to the rural urban interface around Yarloop and Waroona.”

SPECIAL INQUIRER: The specific mention around Yarloop and Waroona – so someone specifically said that there was a strategy for rural urban interface operations?

*WITNESS: Correct.*⁹⁹

The Special Inquiry also received evidence that the IMT, or at least some members of the IMT, considered the vulnerability of Yarloop during the early stages of the fire. In addition to general concern for the townsites south of Waroona, Operations Officer A identified the following item as one he needed to discuss on handover:

*Also need to do some triage and planning for fire impact to Yarloop and south if northerly influence takes effect.*¹⁰⁰

Whilst the Operations Officer cannot recall to whom or when this information was imparted, he believes that it was shared.¹⁰¹

At the request of the Waroona CBFCO, the Harvey CBFCO gathered a small Task Force of local tankers and positioned them in and around Yarloop, but particularly to the north of Yarloop. This action would suggest that volunteer firefighters were aware of the risk posed by the fire to the township of Yarloop.

The IAP for Operational Period 3, prepared at 1700 hours on 7 January 2016, noted that there was “fire around Waroona and Yarloop townsites and threatening Preston Beach”.¹⁰² It also noted that:

*There has been little progress possible on the southern boundary of the fire east of Waroona and a major effort will be required to track and contain this flank of the fire.*¹⁰³

The same IAP lists the townsites of Waroona, Hamel, Yarloop, Cookernup, Harvey, Preston Beach, Myalup and Binningup as being significant assets in the area that were under

⁹⁹ Gifford, G., Hearing, 24 March 2016

¹⁰⁰ Pasotti, M., Hearing, 16 March 2016

¹⁰¹ Ibid.

¹⁰² Incident Action Plan, Shift 3, 7 January 2016, p. 4

¹⁰³ Ibid

threat by fire, and had a high priority for action. It is noted in the IAP that the protection of life takes precedence over assets.¹⁰⁴

On the afternoon of 7 January 2016, the IMT were facing a very large and complex fire with multiple areas of concern. For the division west of the South Western Highway, areas of concern included Lake Clifton, Preston Beach, Myalup, Cookernup, Yarloop and the Forrest Highway.¹⁰⁵

FINDING: During Thursday 7 January 2016, the Incident Management Team were confronted with a large number of concurrent and immediate priorities. The significance and potential of the threat to Yarloop and Cookernup during Thursday evening was not fully appreciated by the Incident Management Team. As a result, additional resources were not dispatched to Yarloop until after the severe wind event that occurred between 1930 to 2000 hours.

Protection of the Yarloop township

The ‘Spot Weather Forecast’, issued by the Bureau of Meteorology at 1459 hours on Thursday 7 January 2016 for the Waroona fire area, forecast an 1800 hours temperature of 34 degrees, a relative humidity of 23 percent and 1800 hours winds (at 10 metres) as: ‘ENE 15-25 km/h’. Under the heading ‘Significant wind changes and uncertainties associated with the forecast’ the Spot Weather Forecast states: ‘Variable gusts to 90 km/h possible with thunderstorms’. The Forecast also states: ‘Winds are forecast to tend to E/NE’yly and fresh gusty again overnight’. The Spot Weather Forecast indicated ENE winds increasing to 40 kilometres per hour, gusting to 60 kilometres per hour at 0300 to 0600 on the morning of Friday 8 January 2016.

The Divisional Commander for the division west of the South Western Highway was aware of this forecast and that there might be a thunderstorm which might create some erratic winds. The Divisional Commander agreed that this is not uncommon with a thunderstorm.¹⁰⁶ However, the Divisional Commander went on to explain that:

... the wind conditions through the first – what I would say the first three to four days of that incident were extremely erratic. They were very strong. One part of the fire would report that the fire – the wind conditions going in one direction, the next sector would actually report it going in a 45 completely opposite direction. So the weather conditions were very – extremely unpredictable at that point, and it made it very difficult for us to have an idea of where exactly this fire could well have been at that point and where it was going to go.¹⁰⁷

By 1500 hours on 7 January 2016, the fire was reported as being three kilometres north and five kilometres east of Yarloop.¹⁰⁸

Construction of an earth break along existing powerlines east of Yarloop by a grader supported by firefighting vehicles commenced mid-afternoon. This was commanded by the

¹⁰⁴ Ibid., p. 11

¹⁰⁵ Wegwermer, T., Hearing, 21 April 2016

¹⁰⁶ Ibid

¹⁰⁷ Ibid

¹⁰⁸ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 14

CBFCO for the Shire of Harvey.¹⁰⁹ During this time it is estimated that there were 11 firefighting vehicles and 55 firefighters in and around Yarloop.

It is reported that from 1700 hours, the winds became constant east-south-easterlies, pushing the fire closer to Yarloop. The winds continued to rise in strength over the next two and half hours.¹¹⁰

Phase 4: 1830 to 2400 hours 7 January 2016

Fuels

When the fire entered the final phase it was mostly burning on freehold land which included extensive areas of remnant native forest, partially cleared lands with pasture, a vineyard and other agriculture enterprises. On the eastern side of the Yarloop townsite there were a number of small crown reserves established for a variety of purposes including a rifle range, nature reserve, recreation, road verge and rubbish pit.

Bushland around Yarloop is typically an open forest of jarrah with dense mid-storey of flowering trees and a well-developed under-storey of shrubs. The recent fire history of this area is not well documented, but local knowledge indicates that most of the bushland around Yarloop has not been burn for at least 20 years, with the exception of a small nature reserve at the southern end of the townsite and west of the South Western Highway that was burnt by a P&W hazard reduction burn in May 2015.

During the evening of 7 January 2016, the rate of fire spread increased as the fire came into areas with older fuel loads. The extreme fire behaviour in heavy fuel loads caused massive spotting that impacted Yarloop resulting in the ignition of a large number of buildings in a very short time.

The rapid escalation of the fire behaviour experienced at Yarloop was reflected across the western side of the fire. This included the east of Waroona in the Lake Navarino area and west of Waroona on the coastal plain, where the fire made a major run through McLarty pine plantation and the Yalgorup National Park. This run was interrupted by Lake Preston, although spot fires landing on the western side of the lake ignited coastal heathland that continued to burn westwards until it reached bare dunefields.¹¹¹

The Fire impacts Yarloop

At 1830 hours, the fire was reported to be one to two kilometres both north and east of Yarloop. Immediately prior to Yarloop being impacted, consideration was being given to thickening the powerline firebreak. This plan was abandoned as changing conditions meant all firefighting east of Yarloop had to cease – crews were pulled back to the South Western Highway for safety.¹¹²

¹⁰⁹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 15

¹¹⁰ McCaw, N., et al, op. cit., p. 31

¹¹¹ McCaw, N., et al, op. cit.

¹¹² DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 15

The Special Inquiry heard that prior to 1830 hours the Harvey CBFCO communicated with the DFES Incident Control Vehicle in Waroona a request for extra firefighting units for asset protection.¹¹³

The Harvey CBFCO advised the Special Inquiry during a hearing that:

... they [the Incident Control Vehicle personnel] noted that I had called and they said they would take it to the [operations] officer and ... get back to me.

I called again probably just prior to – it would have been – yes, it would have been half-seven and requested the same and then the next time that I called them I actually stated that we had multiple structure fires and I still hadn't had a response from the first [request].¹¹⁴

The DFES Deputy Operations Officer advised the Special Inquiry that he only became aware of this request through an “overheard conversation while moving around in the ICC”.¹¹⁵ The Deputy Operations Officer informed the Special Inquiry that:

... [the Harvey CBFCO] was requesting support, but [he] wasn't actually within the structure.¹¹⁶

The Special Inquiry understands that the comment that the Harvey CBFCO wasn't ‘within the structure’ refers to the fact the Harvey CBFCO was working on the fire but was not fulfilling a position within the IMT structure. As a result, he was not reporting through a Divisional Commander. It would seem that the Harvey CBFCO's position and the significance of his request was not recognised by the Division Commander or the IMT Operations structure.

This highlights the need for an improvement in the recognition of local knowledge, and the inclusion of local firefighters (especially Fire Control Officers and CBFCOs) in the IMT structure – particularly in Operations. This also reinforces the need for a resource management system that enables increased visibility of resources on the fire ground.

The Special Inquiry understands the resource request was discussed, but was not fulfilled. The DFES Deputy Operations Officer advised the Special Inquiry that there were no Fire and Rescue resources available on the east side of the fire that could have been redeployed to assist the Harvey CBFCO.¹¹⁷

FINDING: On the evening of Thursday 7 January 2016, there was a delay in recognising, and in providing the additional firefighting resources that were requested by the Harvey Chief Bush Fire Control Officer for the protection of Yarloop.

¹¹³ Penny, P., Hearing, 10 March 2016

¹¹⁴ Ibid

¹¹⁵ Norman, P., Hearing, 24 March 2016

¹¹⁶ Ibid

¹¹⁷ Ibid

Shortly after 1900 hours fire behaviour along the south west flank of the fire was reported to escalate rapidly due to extremely strong winds. This wind blew out all containment lines around Yarloop:

SPECIAL INQUIRER: So there had been reports that the fire, you know, went through from one end of Yarloop to the other in seven minutes, which is incredibly rapid time. But is – I mean, was it seven minutes or do you think it was a little bit longer than seven minutes?

WITNESS: Probably seemed like seven hours on the night, but the initial – I guess, the initial attack, which was basically a gust of wind which – it could have been 100 kilometres an hour. It could have been more. It could have been less. Bit hard to – bit hard to tell. But it was – it was unbelievably hot. And that, sort of, lasted 10 seconds, maybe longer. And the ember attack, basically, followed straight after that. And that was – look, I – yes.¹¹⁸

FINDING: Sometime between 1900 hours and 2000 hours on Thursday 7 January 2016 a strong easterly wind event affected the fireground. This was particularly felt at Yarloop. On advice from the Bureau of Meteorology, the origin of this wind event was a pool of hot, dry air that had originated east of the fire (in the Great Southern weather district) earlier in the day.

At this time it is understood that approximately 11 vehicles – being Bush Fire Brigade and P&W vehicles – and 55 firefighters were positioned in Yarloop.

The Special Inquiry has received evidence that residents in and around Yarloop, as well as in other areas affected by the fire, did not see any fire resources putting out the fire as it neared their property.

A submission the Special Inquiry received from a Yarloop resident noted:

We certainly had no support from fire units at our place... No effort was made to control the fire prior to it reaching Yarloop or our place.¹¹⁹

Another Yarloop resident advised the Special Inquiry that:

I drove up to the fire front and measured it back to our property. There were no fire units in the area that I saw nor heard on the radio. I should point out that this is the fire front that I believe travelled down the hill to the west of me and through Yarloop.

At about 6.30pm [on 7 January] I decided to ring 000 ... [to] ask for fire [fighting assistance] and after a short time was connected to a fire controller. I asked if she was in Waroona and she said she was in Perth. After some direction onto a map with her I was able to indicate that the fire front was 2 kilometres east of my property and on the south side of Hoffman Road. I estimated it would be at my place in the hour. The fire controller announced she was not aware of a fire front in that location.

¹¹⁸ Penny, P., Hearing, 4 April 2016

¹¹⁹ Submission of member of the public 44

*Shortly after my call we had several drops from heli attack before they had to leave pending last light. Sadly although it was nice to see them it had little effect on the inferno.*¹²⁰

The Special Inquiry also received numerous accounts of idle equipment during the Waroona Fire.

From the evidence available, it is difficult to conclude whether there were any suitable resources able to be deployed to Yarloop. There clearly were resources the question is whether they were able to be deployed. It is also unclear why they needed to be on the west side of South Western Highway, they could have come from anywhere.

A ferocious fire

The Special Inquiry received numerous reports of the ferocity of the fire as it approached Yarloop at approximately 1930 hours. The extreme fire behaviour caused massive spotting and ember attack which resulted in the ignition of many buildings in Yarloop within a very short period of time.¹²¹

Many houses ignited simultaneously, overwhelming the firefighters and small number of residents who remained. Tragically, two residents lost their lives when they were sheltering in their homes. Some Yarloop residents who had not left town sought refuge in their cars on the oval at Yarloop. Some firefighting appliances deployed to the oval to assist residents sheltering there.

At 1935 hours, the first Emergency Warning that explicitly mentioned Wagerup, Yarloop and Cookernup was issued.

The Special Inquiry heard from Operations Officer A, who was at the ICC at the time the fire impacted Yarloop awaiting handover from the Operations Officer B. He stated that he believed the firefighting crews in Yarloop were overrun because:

*... in my mind, because they tried – they were trying to establish an anchor point halfway along a flank and then work into the wind upslope out – up the scarp. It's just completely ineffective. They were never going to have a long-term win. So the fire we had was too strong to make that viable. That could be viable if it was a really mild, high humidity, benign fire behaviour. You could do that. But it wasn't. It was running hard. So there was no anchor point.*¹²²

Despite the suggestion above that the strategy being applied may have been ineffective, the Special Inquiry heard many accounts of the unexpected escalation and ferocity of the fire at the time it impacted Yarloop, which rendered it extremely difficult to defend.

SPECIAL INQUIRER: So I think – and I don't want to put words into your mouth – but would you agree that Yarloop was undefendable?

¹²⁰ Ibid

¹²¹ McCaw, N., et al, op. cit., p. 32

¹²² Pasotti, M., Hearing, 16 March 2016

*WITNESS: Given what I know of Yarloop and in terms of its preparedness and its setting and the nature of most of the buildings and the fire, the nature of the fire that came through there, I would agree with that. It was undefendable, certainly on the eastern side – yes – the eastern side of the town that took the brunt of the impact.*¹²³

The Operations Officer B told the Special Inquiry:

*... at one stage every single boundary was a head fire when, you know, it went through Yarloop. Like, the whole thing just exploded in a massive downdraught.*¹²⁴

This is reinforced by his Deputy Operations Officer – a DFES firefighter with over 25 years of experience – who told the Special Inquiry that:

... in my experience, I've never seen an event like it. On that falling sunset and the wind event – the increase of winds to, in my estimation, 80 to 100 kilometres an hour all around that 8 o'clock nightfall period that ... the fire just jumped every direction – north, south, east and west.

*Never seen anything like it from a fire that was pretty well controlled, being tracked, that we were comfortable with, other than one area that didn't pose any risk to community, and, as I said, as my notes said at 8 o'clock, we just had multiple hop overs on every containment line, so –yes. I haven't seen anything like that.*¹²⁵

At 21+00 hours on 7 January 2016, an emergency situation for the Shires of Waroona and Harvey was declared by the DFES Commissioner's delegate under section 50 of the *Emergency Management Act 2005*.¹²⁶

Losses and damage

The Special Inquiry acknowledges the assistance provided by various agencies and bodies in collating the cost of losses and damages arising from the Waroona fire. It is recognised that these costs are indicative at the time of writing – further costs will arise as the recovery continues.

The information below provides an overview of some of the losses sustained in the loss and restoration of assets, infrastructure and services. It is also acknowledged that there will be many costs, including uninsured losses, which will be considerable but difficult to quantify.

Total area burnt:	69,165 hectares
Private property area burnt:	31,180 hectares
Public land area burnt:	37,985 hectares
Forest Products Commission plantation burnt:	3,300 hectares
Fatalities:	2
Buildings	181 (166 dwellings in Yarloop)

¹²³ Mair, G., Hearing, 18 March 2016

¹²⁴ Chick, J., Hearing, 1 April 2016

¹²⁵ Norman, P., Hearing, 24 March 2016

¹²⁶ Declaration made under section 50 of the *Emergency Management Act 2005* dated 7 January 2016

Costs incurred and / or damage estimates

Agency	Type of cost	\$ Dollar value	
Department for Child Protection and Family Support	Response	422,087	
	Recovery	299,180	
	Other	997,800	
	Total		1,719,067
Department of Parks and Wildlife	Employee costs	2,815,652	
	Accommodation, food etc	1,712,137	
	Aviation fuels	208,286	
	Aircraft costs	736,256	
	Fleet costs	609,804	
	Other general items	360,458	
	Contractor machinery	3,531,611	
Total		9,974,204	
Department of Fire and Emergency Services	Air operations	2,178,000	
	Employee costs	956,000	
	Fleet	103,000	
	Contractor, accommodation	114,000	
	Burnt pumper	755,000	
	Contribution to LGA costs	50,000	
	Administration and general	591,000	
Total		4,747,000	
Department of Agriculture and Food WA	Employee costs	116,500	
	Operating Expenses, Equip	15,800	
	Stock	700,000	
	Fencing	7,900,000	
	Dairy	300,000	
	Bee Hives	17,400	
	Pasture	1,300,000 to 3,600,000	
	Horticulture (vegetables & citrus)	693,000 to 763,000	
Vineyard	2,150,000 to 2,250,000		
Total		13,192,700 to 15,662,700	
Water Corporation	Incident response	678,193	
	Recovery activities	596,253	
	Incident recovery revenue lost	233,370	
	Total		1,507,816
WA Police	Employee costs, travel and accommodation		826,000
Western Power	Cost of repair to electrical distribution infrastructure		26,000,000
Main Roads WA	Samson Brook bridge	1,025,000	
	Traffic Control	585,000	
	Repairs and maintenance	431,000	
	Total		2,041,000

Agency	Type of cost	\$ Dollar value	
Shire of Harvey	Loss of Building and contents	9,277,900	
	Road infrastructure	561,000	
	Clean-up and site safety	1,779,000	
	Other costs	1,223,000	
	Total		12,840,900
Shire of Waroona	Employee costs	178,970	
	Verge clearing and tree works	271,360	
	Forecasted costs	250,071	
	Other costs	145,715	
	Total		846,116
Forest Products Commission	Direct losses to the timber industry ¹²⁷		8,000,000
Insurance Council of Australia	Estimated loss value ¹²⁸		71,000,000
			152,667,893
Total			to 155,164,803

Table 6.2: Costs incurred and / or damage estimates

FINDING: The loss of life, loss of houses and damage in Yarloop on 7 January 2016 were directly attributable to the fire.

¹²⁷ Gartry, L., *Waroona bushfire damage to pine plantations to cost WA economy up to \$50m*, 15 February 2016, <http://www.abc.net.au/news/2016-02-15/waroona-bushfire-damage-to-pine-plantations/7170034>

¹²⁸ Insurance Council of Australia, *Victorian Bushfire Losses Push Summer Catastrophe Bill Past \$550m*, 25 March 2016, http://www.insurancecouncil.com.au/media_release/plain/357

Chapter Seven - Fuel Management and Fire Prevention

If you don't have fuel load you just can't have a wild fire.¹

What is fuel management? – Leaves, twigs & trees

Fuel management is the cornerstone of every issue relating to the Waroona fire.

Fuel is the accumulation of live and dead vegetation, including twigs, leaves, bark or shrubs, which can be consumed during a fire. Forests naturally accumulate fuel. Various native species are adapted to fire and promote periodic fire by shedding flammable bark, leaves, twigs and branches.

The structure of fuels can be described as follows:

- litter level: exists at the bottom of the structure, consisting of dead leaves, fallen bark and twigs;
- shrub level: sits above the litter level, consisting of small trees and shrubbery; and
- crown level: is the top level, consisting of tall trees.

Most fires will typically burn at the litter and shrub levels. When there is sufficient intensity, some fires will be carried aloft to burn at the crown level (“crowning”).

Fuel management techniques include scrub rolling, physically removing fuel, slashing and hazard reduction burning. Hazard reduction burning is the most prevalent form of forest fuel management used by natural resource managers.

The aim of conducting a hazard reduction burn is to reduce both the likelihood and intensity of a fire.

There are two areas of priority for hazard reduction. First, asset based hazard reduction conducted to protect highly valued assets including houses, critical infrastructure and town sites. Secondly, broad scale hazard reduction which is intended to manage fuel loads across the landscape.

Generally, legislation provides that the person or organisation responsible for fuel management is the owner of the land.

Indigenous practices – Fire is part of Australia's history

Bushfire has shaped the Australian landscape. When Europeans discovered and colonised Australia in 1788 the Aboriginal people occupied the whole of the Australian continent. There were over 400 tribal groups who all had one common technique for survival and managing the land: - fire.

¹ Ierace, J., Hearing, 9 March 2016

It is important to acknowledge the expertise in fire management Aboriginal people possess in their culture. Bill Gammage described:

*Nothing shows so powerfully how crucial land care was. This was no casual burning. It was a mortal duty, a levy on the souls of brave men and women. In the driest and most fire prone continent on earth, abundance was natural. It was made by skilled, detailed and provided management of country.*²

Luke and McArthur (1977) say that:

*Fires lit by them (Aboriginals) spread widely in many parts of Australia. When lightning is considered also, it seems reasonable to believe that fire occurred frequently in most seasons and extensively in dry seasons following above average rainfall. It can also be concluded that fuel seldom accumulated to the same extent as it has during the period of European settlement.*³

The Special Inquiry received evidence that jarrah forests in the South West of Western Australia were burnt by Aboriginal people every three to four years.⁴

Periodic fire is part of the natural environment across much of Western Australia. Using fire to manage the land is therefore part of the Australian landscape and part of the Australian heritage. Traditional Aboriginal fire techniques may help inform how best to use fire on the land.

Why are hazard reduction burns important?

*Failure to act on reducing bush fuel loads will have an inevitable result in yet another unstoppable, cataclysmic firestorm busting from the bush as a tsunami of flame, smoke and embers.*⁵

For a fire to burn, you must have three things oxygen, heat and fuel. To control a fire you need to remove one of these elements. The Special Inquiry accepts that the reason why hazard reduction burning is so important is because, of these three elements, in the natural environment fuel is the easiest to modify or remove.

The underpinning principle, supported by research, is that fires that occur in fuel-reduced areas burn less intensively, cause less damage and are easier to control.⁶ Existing research is supported by evidence provided to the Special Inquiry by P&W which compares the extent of prescribed burning with the size of bushfires occurring. Figure 7.1 below shows that since the 1960s the decline in areas subject to a hazard reduction correlates to an increase in the area burnt by bushfire.

² Gammage, B., *The Biggest on Earth. How Aborigines made Australia*, Allen & Unwin, Sydney, 2012, p. 434

³ Luke, R.H & McArthur A.G *Bushfire in Australia*. Australian Government Publishing Service. Canberra, 1978, p. 359

⁴ Submission of member of the public 61

⁵ Submission of member of the public 72

⁶ Burrows, N., & McCaw, L., 'Prescribed burning in southwestern Australia forests', *Frontier in Ecology environment*, vol. 11, no. 1, 2011, pp.25-34. p.28; Burrow, N. *More burning, Less Fire: A Discussion Paper*, Department of Environment and Conservation, Science Division, November 2012; Submission of P&W

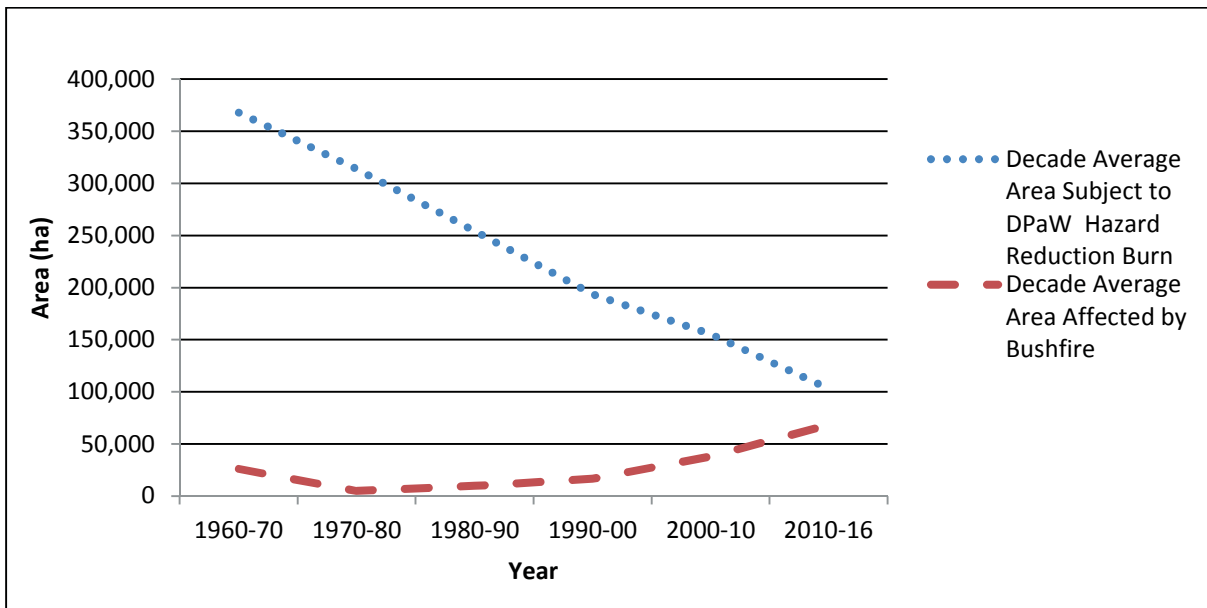


Figure 7.1: Department of Parks and Wildlife hazard reduction burns and bushfire decade average area burnt since 1960

The Special Inquiry notes that fuel management, hazard reduction burning and the ecological effects of fire are all still the subject of considerable discussion and research effort, both in Australia and across the world. The Special Inquiry received a number of views on this point.

For example, one concern raised was the possibility of a hazard reduction burn escaping thereby putting life and property at risk, like the November 2011 Margaret River bushfire.

The Special Inquiry notes that over the last decade only about 2% of hazard reduction burns have escaped and in most cases the burns which do escape have been quickly contained.⁷

Other critics of hazard reduction burning acknowledge that fire, as a tool of hazard reduction, has a place:

If it [hazard reduction burning] is very carefully targeted with a very specific outcome in mind in terms of protecting a particular community asset or whatever, then, okay, maybe prescribed burning has a role to play there.⁸

It is the view of the Special Inquiry that the use of hazard reduction burning remains the best practice to reduce the severity of fire over broad forest landscapes. The Special Inquiry strongly urges a recommitment to the principles and philosophies of hazard reduction burning around assets. Ongoing discussion on hazard reduction burns should be led by researchers and land management practitioners.

⁷ Burrow, N. *More burning, Less Fire: A Discussion Paper*, Department of Environment and Conservation, Science Division, November 2012

⁸ Robertson, P., & Shultz, B., Hearing, 11 March 2016

P&W – Unable to meet targets

*Really it's about controlling their bloody parks fuel load. That's all it's about, mate.*⁹

A large proportion of the area burnt by the Waroona fire was State Forest land managed by P&W.

P&W is the lead agency responsible for conserving native flora, fauna and natural ecosystems across 114 million hectares of land or 45% of Western Australia, an area larger in size than New South Wales, Victoria and Tasmania combined.

Under the *Conservation and Land Management Act 1984* (CALM Act) P&W manages land including:

- national park;
- regional parks;
- State forests;
- time reserves;
- nature reserves;
- unallocated Crown land; and
- unmanaged reserves outside town sites and across the State.

Fire management, including conducting hazard reduction burns, forms a large part of P&W's statutory responsibility.¹⁰ P&W uses hazard reduction burns for the purposes of:

- maintaining biodiversity;
- mitigating the severity of bushfires and to help protect lives and property by reducing the build-up of flammable fuel loads;
- rehabilitating vegetation after disturbance, such as timber harvesting and mining; and
- undertaking research on fire and its interactions with our environment.

Policy context

To understand how the role and responsibility of fire management is developed in P&W it is important to examine the historical context in which P&W has operated.

Pre-the 1961 Dwellingup Fire

Following European settlement in Western Australia in 1829 there was little to no attempt to deal with bushfires. This changed with the passage of the *Forests Act 1918* and the creation of the Forests Department in 1919.

Under the guidance of the *Forests Act* and Forest Department, throughout the 1920s bushfire prevention focused on an approach of 'fire exclusion'. Rather than use fire as a management tool, fire exclusion consisted of dividing forest into smaller plots through the creation of a network of tracks. These tracks did little to prevent the spread of bushfire.¹¹ By the 1930s

⁹ Ierace, L., Hearing, 10 March 2016

¹⁰ Section 33(1)(aa) of the *Conservation and Lands Management Act 1984* (WA)

¹¹ Submission of P&W

the policy of fire exclusion was disregarded as the number of uncontrolled bushfires had increased.¹² Between 1930 and 1954 there was no clear fire policy.

In 1954 the Forests Department introduced a policy of broad scale hazard reduction burning to manage the build-up of fuels. These initial burns mainly took place in the northern jarrah forest of the South West of Western Australia over winter. Little was done elsewhere in the southern forests area to manage fuel build up. The primary reason was because of a lack of access and the difficulty of predicting fire behaviour in karri and karri-tingle forests.

Post the 1961 Dwellingup Fire

The lack of any clear fire prevention policy in the South West of Western Australia culminated in the devastating Dwellingup bushfire of 1961. Like the Waroona fire, the Dwellingup fire was caused by a series of lightning strikes and strong hot winds, leading to an area of 350,000 hectares being burnt. This included the town of Dwellingup and the smaller settlements of Holyoake, Nanga Brook and Karridale. While there was no loss of human life, there were significant losses of houses, buildings, infrastructure, pasture, stock and fencing.

In the wake of the 1960/61 fire season and the Dwellingup fire a Royal Commission was held. The report of the Commission contained many recommendations concerning measures necessary to prevent and control bushfires. The following recommendation is considered to be the most significant:

The Forest Department is to make every endeavour to improve and extend the practice of control burning to ensure that the forests receive the maximum protection practical consistent with silvicultural requirements.

This recommendation did not represent a new fuel management policy, but rather reinforced and gave credence to the practice of small scale burns which the Forests Department adopted in 1954. In response to the Royal Commission's recommendation the Forests Department commenced a comprehensive fire behaviour research program to investigate new techniques for fuel reduction burning.¹³ This approach also included the introduction of aerial ignition techniques.¹⁴

The hazard reduction burning program became progressively better planned, taking into account a wide variety of factors including community protection, forest management objectives, protection of rare fauna and flora, visual amenity along tourist routes and smoke management.¹⁵ Up until the 1980s an average area of 300,000 hectares was consistently subject to hazard reduction programs.

¹² Submission of P&W

¹³ Bushfire Front, 'Forest Fire History', 2012, <http://bushfirefront.com.au/bushfire-problems/fire-management-on-public-lands>

¹⁴ Submission of member of the public 39

¹⁵ Bushfire Front, 'Forest Fire History', 2012, <http://bushfirefront.com.au/bushfire-problems/fire-management-on-public-lands>

Old growth forests

Since the 1990s there has been a decline in the number of hazard reduction burns conducted. The Special Inquiry was provided with several explanations which explain the decline in hazard reduction burns:

- increase in red tape for conducting fuel reduction burns;
- less money being set aside for State and local agencies to conduct fuel reduction burns; and
- fewer experienced State agency staff capable of conducting fuel reduction burns.

The decline in hazard reduction burning can also be attributed to changes in forest policy in old growth forests. In the late 1980s there was a push from the community to establish national parks and nature reserves as a way of protecting old growth forests.¹⁶ The success of these movements saw the creation of the Shannon National Park and Lane Pool Reserve in the 1980s.

An unintended consequence of this change in forest policy is that the forest industry, which had previously played a significant role in fire suppression and hazard reduction burning, was no longer the fire management resource that it once was.

From 2000 onwards large uncontrollable wildfires burning in forests with heavy fuel loads have become more frequent.

It is of fundamental importance that, in establishing policies for the management and protection of old growth forests in Western Australia, fire management continues to be an overarching priority. The trend for increasing size and intensity of forest fires shows that a failure to practise effective fire management results in significant damage to biodiversity and visitor experience, along with impact on built assets, infrastructure and residents of forest communities. Derogation of the duty to manage fuels properly ultimately results in consequences whose measure goes well beyond dollar value.

P&W hazard reduction burns – Current approach, performance, comments

Current approach

Hazard reduction burning continues to be a fuel management tool utilised by P&W. The Special Inquiry concurs with the following statement submitted by P&W:

The extent of prescribed burning undertaken over the past 55 years in South West Western Australia has enabled fire managers to achieve a high level of protection for community assets and natural values on and near the lands managed by P&W. There have been numerous examples where the fuel reduction burning program has resulted in relatively rapid containment of bushfires and significant saves, even under extreme fire weather conditions.¹⁷

¹⁶ Submission of Hon Wilson Tuckey MP

¹⁷ Submission of P&W

In accordance with the Code of Practice for Fire Management (Code of Practice), P&W develops fire management plans, where necessary, for specific areas, and ensures the integration of hazard reduction burns with other land management activities to achieve identified land management goals.

P&W's current approach to fire management is outlined in a range of plans and policies under the CALM Act. In particular, *Policy Statement No. 19* and *Policy Statement No. 88* contain the fire management objectives of P&W. Broadly these policy documents make a number of statements relating to risk management, use of fire, fire suppression, bushfire prevention and fire research.

Of particular importance is Point 5.1 in *Policy Statement No.88* which provides that P&W:

*will use prescribed burning to reduce fire-related risk to communities and built and natural assets at both the local scale and landscape scale, and also to achieve biodiversity conservation, forest silviculture, research and other land management objectives.*¹⁸

Performance

In performing annual hazard reduction burns P&W is the only government agency to have a fuel reduction target, which is 200,000 hectares per annum. This figure is informed by the science that:

*We (P&W) need to burn at least 8% (of public forests land area) per annum, otherwise we are going to see a steep increase in area burnt by wildfire, and if more area is burnt by wildfire, then the risk to the community increases, not to mention damage to the environment, ecosystem and biodiversity.*¹⁹

To achieve a target of 200,000 hectares P&W recognises three different Land Management Zones:

- Land Management Zone A (LMZ A): an area within 3.5 kilometres of a built asset. LMZ A has an annual hazard reduction burn target of 20,000 hectares.
- Land Management Zone B (LMZ B): an area between 3.5 kilometres and 11 kilometres away from an asset. LMZ B has an annual target of 40,000 hectares.
- Land Management Zone C (LMZ C): all other areas (in the landscape). LMZ C has a target of 140,000 hectares per annum.

Completing burns in LMZ A and B is given the highest priority because of the fuel load's relative position to an asset.²⁰

¹⁸ P&W, *Corporate Policy Statement No. 88*, December 2015, Part 5.1

¹⁹ Burrow, N. *More burning, Less Fire: A Discussion Paper*, Department of Environment and Conservation, Science Division, November 2012, p. 1

²⁰ Sharp, J., Hearing, 7 April 2016

Figure 7.2 below demonstrates that since 2003/04, P&W has only once been able to achieve its burning target for one land management zone.

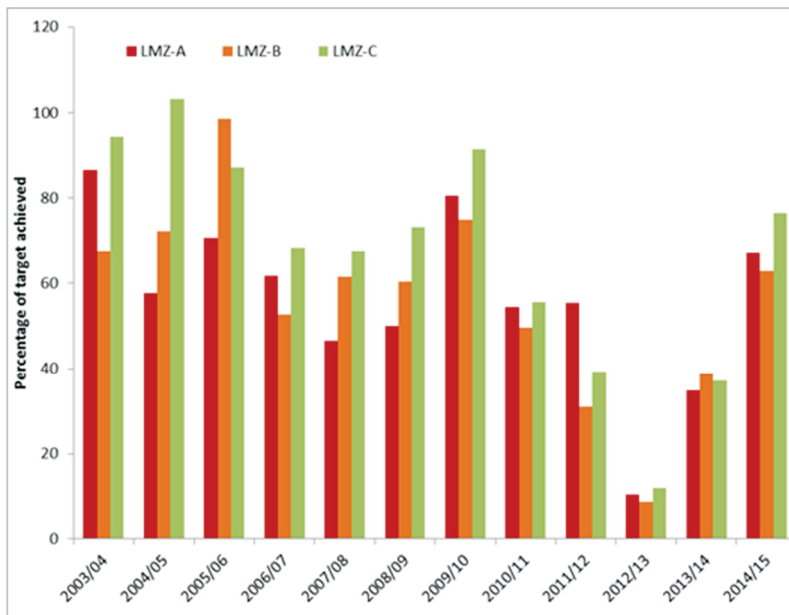


Figure 7.2: Proportion of the prescribed burning target achieved in each Landscape Management Zone since 2003/04

Of note in the above graph is the particularly low percentage of the target achieved for all land management zones in the 2012/13 and 2013/14 burn seasons. This is attributable to the moratorium placed on the then Department of Environment and Conservation in response to escapes of hazard reduction burns near Margaret River in November 2011.

As evident in Figure 7.2, P&W annual hazard reduction burning targets continue to be elusive. The consequence is that there is an accumulation of unburnt fuels. This adds a ‘backlog’ that needs to be considered when planning future burn targets. Disturbingly, there seems to be no structured process to recognise areas that have been planned for burning but where the burn is not achieved (the ‘backlog’). For example if only 180,000 hectares are burnt in one year, P&W does not adjust the new annual burn target for the following year (to catch up on this backlog) at 220,000 hectares. The target of 200,000 hectares remains a constant, irrespective of previous years’ achievements (or under-achievements).

P&W have submitted that, to assist in addressing this accumulating fuel load, P&W was allocated \$20 million over 4 years in May 2015 from the Royalties for Regions (RfR) fund. These funds have been directed towards improved flexibility and movement of personnel and resources across the south west, and the engagement of contractors to assist with hazard reduction burns. From May to December 2015, P&W achieved 131,224 hectare of hazard reduction burning, a significant increase in achievement compared to the previous year’s achievement over the same six month period.

The allocation of RfR funds is a positive recognition by Government of both the importance of fuel management and the resources required by P&W to address its responsibilities. There is no guarantee that this funding will be available to P&W in future years. The Special Inquiry strongly suggests that the ability of P&W to meet its burn target across any of the Land Management Zones and to treat the current backlog is totally dependent on

sufficient funding being sustained and additional funding being made available to address this backlog.

In discussions with senior P&W officers on this matter, they reinforce that there is an overarching fuel load strategy that they are striving to achieve. The strategic objective is that a fuel age of less than six years will be maintained across 45% of the landscape on State Forest, National Parks and other Parks and Wildlife managed lands in the South West and Perth Hills. The Director General has assured the Special Inquiry that, over the next five years, if the strategic objective is met, then the 'backlog' will also be dealt with.

The Special Inquiry supports the P&W strategic objective for fuel age on P&W land in the South West. It reinforces the need that the burn targets and the fuel age profile must be monitored and reported on at least an annual basis.

Recommendation 2: The Department of Parks and Wildlife to plan for the highest priority hazard reduction burning effort around settlements and critical assets in the South West and Perth Hills. The annual objective is to treat a total of 60,000 hectares of priority hazard reduction per annum, comprising 20,000 hectares per year of Land Management Zone A and 40,000 hectares per year of Land Management Zone B.

Recommendation 3: The Department of Parks and Wildlife to continue emphasis on landscape hazard reduction burning with the annual objective of treating 140,000 hectares per annum in Land Management Zone C. In combination with Recommendation 2 (above) the strategic objective will be that a fuel age of less than six years will be maintained across 45% of the landscape on State Forest, National Parks and other Parks and Wildlife managed lands in the South West and Perth Hills. This will address the current backlog (created from under achievements of the recent two decades of burn programs) by the end of the 2020-2021 burning season (i.e. within the next 5 years).

A General Comment on P&W

P&W has the lead role in responding to and suppressing bushfires on P&W managed land, aside from the Perth metropolitan region and in DFES gazetted fire districts. P&W works collaboratively with DFES in combating bushfires. In the South West of Western Australia, P&W has significant firefighting capabilities and is currently supported by the Forest Products Commission (FPC) and volunteer Bush Fire Brigades.

The Special Inquiry received a written submission from P&W and was provided with additional information over several meetings, and held a hearing with its Director General.

The Special Inquiry also had a number of meetings with P&W staff. Elsewhere in this report, the two unions that represent P&W employees have also given evidence and provided submissions in relation to P&W resourcing and fatigue management.

The Special Inquiry was impressed with the professionalism, approach and conduct of the P&W burning program. This includes evidence provided by P&W bushfire researchers. Whilst succession planning continues to be a challenge for P&W, the level of expertise within the agency (particularly since the 2011 Margaret River burn escape) was commendable. The Special Inquiry is of the view that the person, body or agency responsible

for the management of public land should also retain responsibility for managing fuels on that land. This is consistent with the theme of ‘Shared Responsibility’.

Other agencies

In Western Australia, the responsibility for fire prevention activities is shared by a number of agencies.

Department of Fire and Emergency Services

During the Special Inquiry some uncertainty was expressed as to whether FES Commissioner has an over-arching responsibility for fire prevention and mitigation (including fuel management) as well as the response to and suppression of fires.

A view that has been put to the Special Inquiry by a number of individuals and groups is that DFES has eroded its bushfire prevention capability. It has been further suggested that DFES has, over time, become a ‘response only’ organisation. The FES Commissioner has on a number of occasions publicly stated that he has no responsibility for fire prevention and mitigation. In one interview, when asked about prescribed burning the FES Commissioner made clear that, “The issue of prescribed burning is a matter for [P&W].”²¹

Given the significance of his leadership role with fire in the state, it would seem logical that the FES Commissioner would want to have overarching interest and ability to effect fire prevention policy and practice. This position appears to be supported by the legislation.

The *Emergency Management Act 2005* allows for the prescribing (by regulation) of “a hazard management agency for emergency management, or an emergency management aspect” in relation to a hazard. The FES Commissioner is prescribed as the hazard management agency for emergency management of the hazard of fire for the whole of the State.²²

‘Emergency management’ is defined as the “management of the adverse effects of an emergency” and includes prevention, preparedness, response and recovery.²³ Prevention includes, “the mitigation or prevention of the probability of the occurrence of, and the potential adverse effects of, an emergency”.²⁴

Section 10(1) of the *Bush Fires Act 1954* outlines the various functions of the FES Commissioner. These include:

- report to the Minister as often as the FES Commissioner thinks is expedient so to do on the best means to be taken for preventing or extinguishing bush fires;²⁵
- carry out such fire prevention measures as the FES Commissioner considers necessary;²⁶

²¹ De Ceglie, A., *WA bushfires: Fire Commissioner Wayne Gregson has ‘no regrets’ of handling of South West fires*, 17 January 2016, at <http://www.perthnow.com.au/news/western-australia/wa-bushfires-fire-commissioner-wayne-gregson-has-no-regrets-over-handling-of-south-west-fires/news-story/e97a5003c45093f60a40bc5db7c58503>

²² Regulation 17(2) of the *Emergency Management Regulations 2005*

²³ Section 3 of the *Emergency Management Act 2005*

²⁴ Section 3 of the *Emergency Management Act 2005*

²⁵ Section 10(1)(a) of the *Bush Fires Act 1954*

²⁶ Section 10(1)(e) of the *Bush Fires Act 1954*

- carry out research in connection with fire prevention and control and matters pertaining to fire prevention and control;²⁷ and
- conduct publicity campaigns for the purpose of improving fire prevention measures.²⁸

Further, section 35 of the *Bush Fires Act 1954* provides the FES Commissioner with the power to issue section 33 firebreak notices and to carry out associated works in the event of a default by the relevant local government authority.

On the information available, the Special Inquiry suggests that the FES Commissioner does, by virtue of being the HMA for fire, have an overarching responsibility for fire prevention and mitigation. Should this be proven not to be the case, then it is strongly recommended that the Government, either through legislation or by policy, move to recognise that the FES Commissioner has an overarching fire prevention, mitigation and management responsibility for the State.

Department of Lands

The Department of Lands administers Western Australia's Crown land estate under the *Land Administration Act 1997*. Crown land makes up 92% of the State and includes all land (other than freehold), and all State coastal and other waters.

Crown Land that is leased, vested in other agencies, or reserved and managed by other bodies is the management responsibility of such lessors, vestees or management bodies. As such the responsibility for many Crown land parcels rests with private individuals, corporations and Commonwealth, State and Local Government entities.

The Department of Lands has direct responsibility for the remaining UCL and UMR, including on-ground management of fire risk. The Department of Lands has a Memorandum of Understanding (MOU) with DFES and P&W for fire management on these lands. DFES typically manages mitigation of fire risk on parcels of UCL and UMR within the Perth metropolitan area, regional centres and townsites, while P&W manages the equivalent risk on remaining parcels of UCL and UMR elsewhere in Western Australia.

Department of Education

The Department of Education has a MOU with DFES for the purpose of coordinating bushfire risk management activities. DFES and the Department of Education undertook a bushfire risk assessment of the Yarloop Primary School in September 2015, and identified treatment actions which were subsequently completed prior to the Waroona fire.²⁹

Local Government

Local governments are responsible for undertaking prevention activities on all land vested in the local government.

²⁷ Section 10(1)(f) of the *Bush Fires Act 1954*

²⁸ Section 10(1)(g) of the *Bush Fires Act 1954*

²⁹ Submission of Department of Fire and Emergency Services (DFES), p. 8

In addition, under the *Bush Fires Act 1954*, local governments have a number of powers to require individual property owners to establish fire breaks and undertake hazard reduction.

Most local governments utilise the services of their volunteer Bush Fire Brigades and Bush Fire Control Officers in relation to these activities.

Fuel management around Yarloop - A disaster waiting to happen?

Many government agencies in Western Australia own or manage land but undertake no bushfire management. That produces very serious consequences, one of which we believe was, in fact, the destruction of the town of Yarloop.³⁰

In examining fuels in the area affected by the Waroona fire it is clear that there is still some way to go to achieve the vision of ‘shared responsibility’ expressed in the Perth Hills Bushfire Report.

Private land owners are bound to undertake hazard reduction on their land, and can be issued with a notice from local government pursuant to section 33 of the *Bush Fires Act 1954* requiring mitigation be undertaken on their property. However, there is no requirement for Crown land to be maintained to the same standard.

The Special Inquiry received evidence that identified a number of examples of poor fuel management practices. To quote examples:

Bagieau Road bush reserve has had no maintenance for many years. The last time the bush was cleared from under the power poles was back in 2003.³¹

Roadside vegetation and crown land, unburnt for 20 or more years, vacant town site land with dry grass, weeds and leaf litter unaltered by any form of bushfire mitigation in the preceding spring provided the perfect scenario.³²

Many road verges were poorly maintained and carried heavy fuels of dry grass and weeds.³³

The saw mill on Campton Rd had no fire plan in place ... all the offcuts and old timber had been pushed into the bushland.³⁴

A new planting of plantation pines directly behind our residence has had no weed management, such that the dead weeds are quite thick around young pines.³⁵

Roadside burning has now ceased and no fuel reduction has occurred for several years.³⁶

³⁰ Underwood, R., Hearing, 11 March 2016

³¹ Submission of Vineyard 28

³² Submission of member of public 39

³³ Submission of the Institute of Foresters WA Division

³⁴ Submission of member of public 57

³⁵ Submission of Vineyard 28

³⁶ Submission of member of public 63

However, the Special Inquiry did receive some examples of good fuel management. One example is the Yarloop Primary School:

*The Primary School remained standing throughout the fire. Although unattended as the fire passed, the school survived this was due to the fire Protection Plan developed by local fire experts - this plan included fuel reduction and separation of buildings from vegetation.*³⁷

This plan was developed in accordance with the MOU between DFES and the Department of Education to identify and development treatment options for addressing bushfire related risk. This MOU applies to all schools identified in the Department of Education bushfire zone register.

These stories demonstrate varying levels of fuel management in the burnt area.

As will become evident, the difficulty in addressing fuel management in relation to the area affected by the Waroona fire stems from the number of different land holders, and because of the varying landforms, land uses and vegetation types the fire burnt through.³⁸

Case Example Yarloop: “You own the fuel you own the risk” - it’s not that simple

Yarloop was significantly affected by the fire with two fatalities of residents and the destruction of 166 houses and residential buildings. It is the view of the Special Inquiry that localised areas of long unburnt fuel within and adjoining Yarloop played a significant contribution to the damage in town by generating very high fire intensities and mass ember attack that resulted in extensive damage to buildings.³⁹

The Special Inquiry believes that fuel management in Yarloop is indicative of the broader approach to fuel management across the region.

This section will specially examine several parcels of land to the south east where the fire first impacted and then entered Yarloop. The parcels of land discussed are significant because of the different number of landholders responsible for fuel management including State Government agencies, Local Government and private land holders. Figure 7.3 demonstrates the variety of landholders managing the areas of land discussed below.

Shire of Harvey

The Shire of Harvey was responsible for several plots of land to the south east including parks, reserves, Yarloop Bushfire Brigade Station and an area of forest designated for rubbish disposal.

Fuel management activities undertaken by the Shire of Harvey include:

- mowing long grass;
- weed control;

³⁷ Submission of member of public 39

³⁸ Burrows, N., & McCaw, L., Hearing 6 April 2016

³⁹ McCaw, L., Burrows, N., Beecham, B. Rampant, P., *Reconstruction of the spread and behaviour of the Waroona bushfire (Perth Hills 68)*, P&W, 6 April 2016

- removal of Victorian teatree;
- working with other stakeholders to install fire breaks;
- regular fuel inspections; and
- ‘cool’ burns conducted between 2009-11.

Aerial images show a significant area of the townsite was covered by native vegetation on roadsides, some house blocks and various tracts of public land. There were heavy fuels in these areas. Information received in relation to one parcel of land notes that ‘fuel load reduction’ measures were conducted, but very little detail is provided on what these measures were other than to say woody debris was removed. The removal of teatrees in some areas was noted.

Shire of Waroona

The Shire of Waroona manages a small area of land 4.4 hectares in size to the north of Yarloop. The Shire reported that it only conducts fuel management programs on areas that are considered to be a strategic risk. The area the Shire is responsible for was not identified as an area of strategic risk as it is not heavily vegetated, so no fuel management activities were undertaken.

P&W

P&W reported that an area of land it is responsible for was subject to a prescribed burn in autumn 2015, with remaining areas scheduled to be burnt in autumn/spring 2016. P&W also reports conducting annual inspections of tracks to ensure they are clear of any fuel load.

Main Roads WA

Main Roads WA is responsible for two areas of land, a rehabilitated sand pit and road reserves along the South Western Highway.

Main Roads manages the rehabilitated sand pit in conjunction with P&W. Main Roads reported that no fuel reduction or fire breaks have been undertaken on the site.

Road reserves directly alongside the road, where there are no overhanging trees or understory vegetation, are treated annually with slashing and herbicide. Areas further back from the roadside which does contain vegetation, including trees and shrubs, have no reported fuel management work undertaken to maintain their conservation value.

Log Fence Pony Club (LFPC)

The LFPC reported having conducted annual hazard reduction burns over the past 5 years.

These burns have been conducted alongside other fuel management approaches, including:

- establishing fire breaks;
- weed spraying along the fence line;
- mowing tall grass;
- tree pruning;

- removing large trees close to the club house; and
- installing gutter guard on large gutters around the club house.

During the Waroona fire the LFPC clubhouse, despite receiving some fire damage, did survive. Club members attribute the club house survival due to the installation of the gutter guard.

In 2016 the LFPC plans to continue to remove large trees from around the clubhouse and continue to install gutter guard.

The LFPC is to be commended for their thorough fuel management program.

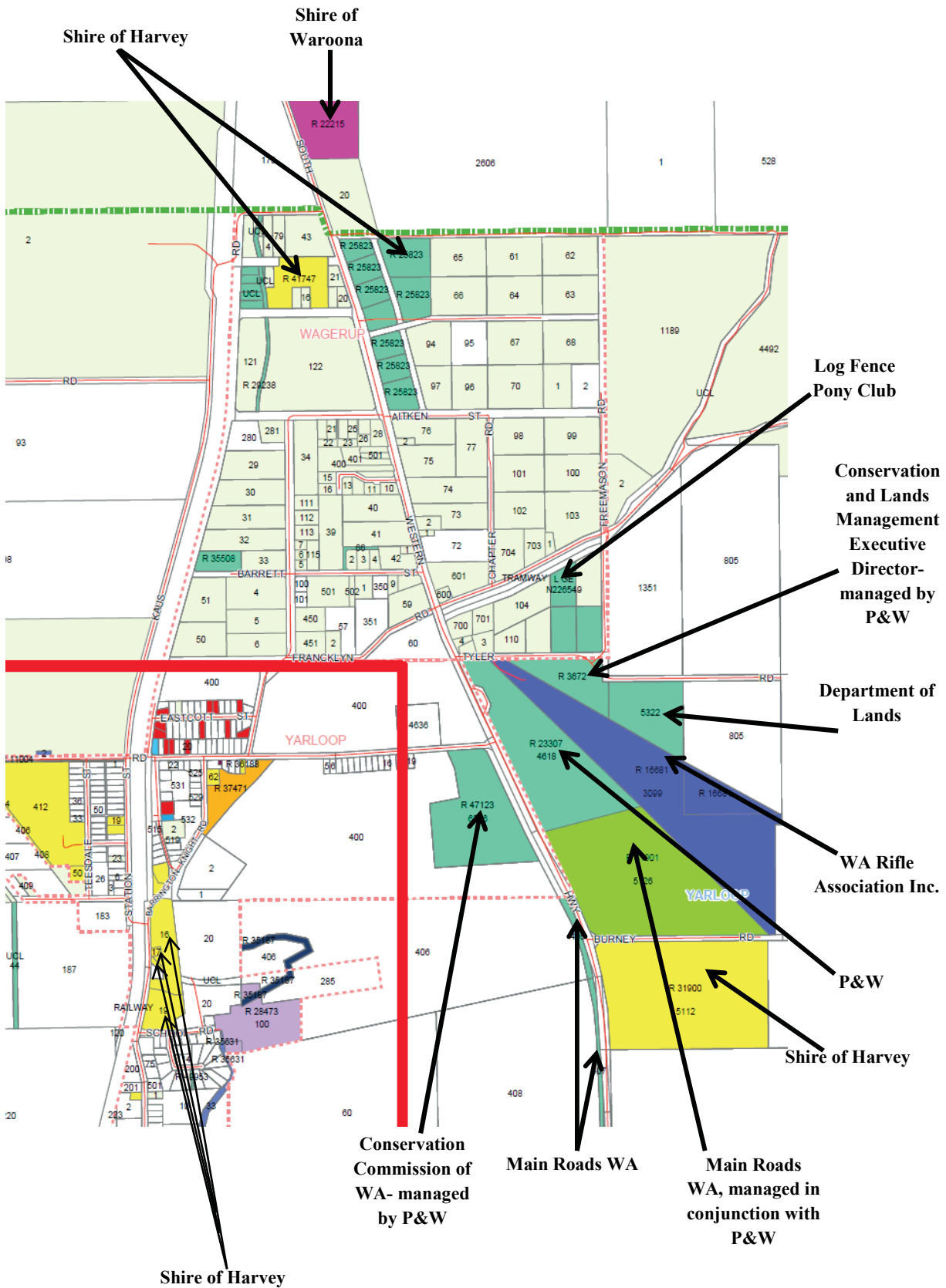
West Australian Rifle Association

The West Australian Rifle Association (WARA) has undertaken a number of fuel management measures including maintaining fire breaks, emptying rubbish bins, clearing gutters and maintaining the area around the building. The house on the land survived the Waroona fire.

WARA expressed concerns about the difficulty in conducting prescribed burns on their land. The Association writes that it conducted a prescribed burn on the land many years ago, but more recent attempts have been more difficult. The Association also noted that during their last attempt to conduct a prescribed burn five years ago the local fire brigade attended, put the fire out and informed the Association of the rules around prescribed burning. This evidence demonstrates some of the difficulties in conducting a prescribed burn on occupied public land.

FINDING: On the east side of Yarloop, east of and adjacent to the South West Highway, there is an area of forest, of mixed tenure, that was long unburnt. When the fire entered this forest it became impossible to suppress. The forest then became a source of burning embers that were then borne by the strong easterly wind event. This contributed to the difficulty of fire suppression and the difficulty of protecting houses in Yarloop.

Figure 7.3: Yarloop Landholders



Discussion

These examples lead the Special Inquiry to the conclusion that regular, effective fuel management activities are not being undertaken by all landowners or bodies with responsibility for parcels of land. There are three important impediments to hazard reduction performance:

- the lack of implementing a BRMP process;
- the onerous nature of the hazard reduction burn process; and
- the lack of funds and resources to undertake these burns.

Bushfire Risk Management Plan

In 2011, the Keelty Perth Hills Bushfire Report recommendations led to the development and implementation of the BRMP process. In December 2015 OBRM published the '*Guidelines for Preparing a Bushfire Risk Management Plan.*'

These plans are consistent with the broader National Strategy for Disaster Resilience released by Council of Australian Governments on 7 December 2009. The strategy calls for:

*A new focus on shared responsibility; one where political leaders, governments, business and community leaders, and the not-for-profit sector all adopt increased or improved emergency management and advisory roles, and contribute to achieving integrated and coordinated disaster resilience.*⁴⁰

The National Strategy states that:

*Disaster resilience is a long-term outcome, which will require long-term commitment. Achieving disaster resilience will require achieving sustained behavioural change, the results of which should be seen across a number of years and political cycles.*⁴¹

As discussed in Chapter 5, BRMPs are to be utilised by local governments as a way of engaging in a tenure blind risk assessment to identify who is responsible for fuel management, how should the risk be prioritised and what treatment should be undertaken to deal with that risk. The value of developing a BRMP is that it can assist Government by providing accurate and real advice on the state of the bushfire risk.

The City of Cockburn is the only local government in Western Australia with a completed BRMP. However, it was completed outside of the BRMP process.

The Special Inquiry also visited the City of Wanneroo for a briefing and inspection of their fire prevention and hazard reduction burning program. The City, through its planned burning Officer and the Community Emergency Services Manager, is a leader in its approach for local government fuel management programs. The Special Inquiry commends the City and its Officers on their approach and achievements. The Special Inquiry, whilst being cognisant of the costs involved, suggests that this is a model for Western Australian local governments.

⁴⁰ Council of Australian Governments, *National Strategy for Disaster Resilience: Building our nation's resilience to disasters*, 2011, Commonwealth of Australia, p. 3

⁴¹ *Ibid.*, p. 4

Although the guidelines for developing a BRMP were only released in December 2015, the Special Inquiry believes that a BRMP for Yarloop would have assisted in identifying who was responsible for fuel management, and would have prioritised and identified which areas of land required fuel management treatment.

DFES is the responsible agency for providing guidance to and coordinating local governments to enable the production of a BRMP.⁴² OBRM is responsible for setting the BRMP standards.⁴³

In evidence to the Special Inquiry, when the Director of OBRM was asked about progress, he said:

*... that's early on and I would say has lacked enough penetration, you know, in two years of being there to – well, we actually don't have any. So, no, they haven't actually finished one of them. So it has been very, very slow going for a range of reasons and one of which is around the structural issues that I described earlier in that it has been managed through a central process where my belief is that, once again, it would be better managed through regional delivery mechanisms within a bushfire-focused structure. I'm – I have no doubt about that.*⁴⁴

A second challenge for implementing BRMPs is funding. Across local government there is widespread support to implement BRMPs, however there is a lack of resources.

*The process essentially shifted the responsibility and cost for assessing and coordinating bushfire risk on crown lands from the State to Local Government.*⁴⁵

The implementation of treatments identified in BRMPs (or outside of the BRMP process) is currently funded through the National Bushfire Mitigation Program (NBMP). This program is a competitive grants process to distribute money based on the highest priority mitigation works. The NBMP provides \$1 million to Western Australia over three years, in other words around \$330,000 per year. The need to secure ongoing funding for BRMP will be vital for the future.

Concerns exist Australia wide about the quantum and proportion of funds for natural disaster prevention and mitigation. The recent Inquiry into Natural Disaster Funding by the Productivity Commission found that current natural disaster funding arrangements “are not efficient, equitable or sustainable.”⁴⁶ It found they are prone to “cost shifting, ad hoc responses and short-term political opportunism”.⁴⁷

⁴² Carter, M., Hearing, 5 April 2016

⁴³ Gregson, W., Hearing, 6 April 2016

⁴⁴ Carter, M., Hearing, 5 April 2016

⁴⁵ Submission of WALGA

⁴⁶ Productivity Commission, *Productivity Commission Inquiry Report: Natural Disaster Funding Arrangements*, December 2014, vol. 1, p. 2

⁴⁷ Ibid.

The Productivity Commission go on to say that:

Governments over-invest in post-disaster reconstruction and under invest in mitigation that would limit the impact of natural disasters in the first place ... The funding arrangements matter because they impact the incentives to manage risks....

Governments can do better in terms of policies that enable people to understand natural disaster risks and also give them the incentive to manage the risks effectively.⁴⁸

The Special Inquiry commends the development of a BRMP process. However, both the planning and the implementation have barely commenced. The current resources engaged to develop and facilitate these plans are on short term tenure within DFES. The Special Inquiry supports any effort to maintain or enhance these resources until such time as all Local Governments have a BRMP.

Recommendation 4: The Departments of Parks and Wildlife and Fire and Emergency Services to develop options for the expansion of the ‘Bushfire Mitigation Grant Scheme’ utilising both State and Commonwealth Government funding to enable the implementation of hazard reduction works identified through the Bushfire Risk Management Planning process. This will target hazard reduction projects on land owned by private landholders in rural-urban interface areas, critical infrastructure protection, local government land, roadsides and land managed by utilities.

Hazard Reduction Burn Process

The evidence presented by the West Australia Rifle Association, to some extent, highlights the difficulty some organisations and individuals face in attempting to carry out a hazard reduction burns.

The City of Gosnells experienced similar difficulties in relation to a small fuel reduction burn on a parcel of land less than one hectare in size, but which had the potential to reduce the threat of bushfires to nearby residential dwellings and also provide a small strategic buffer between two much larger areas of bushland. The City spent in excess of \$10,000 over an 18 month period of time in order to obtain the relevant environmental approvals and land clearing permits.⁴⁹

An individual or a Bush Fire Brigade wanting to conduct a hazard reduction burn during a restricted period on private property requires a local government permit. Outside of a restricted period there still may be a requirement to have a permit.

Currently there is no overarching State wide approval process to acquire a permit. Instead each request is based on the policy set by the LGA in which the parcel of land is situated. OBRM approves each LGA’s permit approval process. OBRM has its own set of policies for approving a permit process.

⁴⁸ Productivity Commission, Key points of the *Productivity Commission Inquiry Report: Natural Disaster Funding Arrangements*, December 2014, at <http://www.pc.gov.au/inquiries/completed/disaster-funding/report>

⁴⁹ Submission City of Gosnells

However, in placing the obligation on LGA to issue burn permits there has developed a tendency for local governments to not approve hazard reduction burns:

*The system itself is too prohibitive to allow someone to get on and do what they need to do.*⁵⁰

Another group commented:

*So I think everyone has fallen back to a safety position where it's safer to do nothing and I think that's the stage where we've got to now.*⁵¹

Finally:

*It has become impossible for us to continue to carry out these fuel reduction practices on our own property. We have encountered resistance, hostility, frustration and red tangled tape from our local district fire brigades when trying to obtain permits when it is a legally permitted burning period in order to carry out these fuel reduction burns and when the right conditions prevail, even though we have demonstrated that we have the necessary equipment to safely carry out control measures and the human resources available to be in attendance at the time.*⁵²

The Special Inquiry discussed this point with the Executive Director of OBRM who advised that there is no restriction or guidelines currently produced by OBRM. However, this has been identified as the next area of work to be undertaken.⁵³

This discussion with the Executive Director of OBRM confirmed the difficulties faced by individual landholders wanting to conduct a hazard reduction burn.⁵⁴ That is in order to reduce the potential liability of local government conditions placed on a permit to burn may be so onerous that an individual landholder may not be able to undertake a burn.

Difficulties around DFES involvement in fuel management has been previously discussed. The issue of local volunteer fire brigades undertaking hazard reduction burning was also discussed with the FES Commissioner.

The FES Commissioner agreed that developing a simple and fast tracked hazard reduction process would facilitate increased hazard reduction burns on private property.

Evident from the discussion with both the Executive Director of OBRM and the FES Commissioner is the uncertainty and lack of policies for local Bush Fire Brigades to utilise when planning and conducting a hazard reduction burns. Greater certainty and work is needed in this area.

⁵⁰ Carter, M., Hearing, 5 April 2016

⁵¹ Iffla, J., Hearing, 9 March 2016

⁵² Submission of member of the public 90

⁵³ Carter, M., Hearing, 5 April 2016

⁵⁴ Ibid

Recommendation 5: The Department of Fire and Emergency Services, utilising the Office of Bushfire Risk Management, to develop a simplified and fast track hazard reduction burn (and other fuel mitigation techniques) planning and approval process to ensure the timely conduct of township and asset protection burns by Bush Fire Brigades and individual property owners. The process is to be agile and adaptable for the range of stakeholders which may participate in low risk, small scale, low complexity burn planning and approvals.

Other Fuel Management Considerations

Alcoa Bauxite Mine Lease area – Alcoa or Parks and Wildlife?

A significant proportion of the total fire area (41%) occurred on State forest subject to bauxite mining operations undertaken by Alcoa of Australia. The significance of this particular land use lies in the heightened level of complexity with respect to land management of bushfire risk.

Bauxite mining has had a significant impact on the land. The pattern of mining has resulted in a very patchy and varied landscape with large areas undergoing different stages of land rehabilitation. When Alcoa completes mining in one area it is then required to rehabilitate the land mined back to or as close to its original natural state. There are two problems with this process. As Alcoa shifts to mine different areas and begins rehabilitation, new rehabilitated areas then contain a wide variety of vegetation types, fuel structures and fuel ages compared with older rehabilitated areas of land. Related to this first problem is that rehabilitated land cannot be subject to a hazard reduction burn for a period up to 25 years. The reason being is that young planted saplings would not yet be fire resistant and would burn during a fire.

The fuel therefore in the Alcoa Mining Lease area was patchy with newly rehabilitated areas having very heavy fuel loads, whilst older areas where fuel management activities could be conducted were likely to have less of a fuel load.

Consequently, when the fire reached the area of rehabilitated forest it;

Went through the mining envelope, barely hiccupped, I suspect, maybe took a breath but it didn't – it certainly didn't slow up that much. It maybe, in fact, sped up during parts... certainly, the mining and the change of fuel and vegetation structure through the mining envelope was a significant feature of this fire and its behaviour.⁵⁵

Hazard reduction burning is unsuitable on rehabilitated mining land. There is an opportunity to investigate alternative forms of fuel management that can be utilised including mechanical thinning. This form of fuel management involves mechanically removing selected trees at fixed intervals and has been shown to be effective in areas of younger regenerated native forests and plantation.⁵⁶ A system of mechanical thinning has already been successfully applied in younger karri regrowth where these forests have heavy fuel loads and that prescribed burning can only occur after mechanical thinning.

⁵⁵ Burrows, N., Hearing, 5 April 2016

⁵⁶ Submission of Forest Products Commission

The Commonwealth Government has made available funding for trials in mechanical thinning of forests. These trials aim to establish whether mechanical thinning of forests can reduce bushfire risk in areas where prescribed burning is undesirable.⁵⁷

Opportunity 3: The Department of Parks and Wildlife and the Forest Products Commission to explore policy options for mechanical thinning of forest, including mining rehabilitation forest, for the purpose of bushfire mitigation.

A further issue related to the Alcoa Mining Lease is determining responsibility for fuel management in the mining lease area.

P&W in their submission advised that where fuel management activities do not interfere with mining operations, fuel management is a P&W responsibility, whereas P&W's responsibility to undertake fuel management in areas where mining operations are in progress may be restricted due to mining operations by Alcoa.

What is clear to the Special Inquiry is that there are complexities and practical constraints in achieving any fuel management in a mining lease environment. Therefore, the Special Inquiry encourages P&W to establish clear guidelines as to responsibilities for fuel management in areas of land subject to a mining lease. The Special Inquiry also encourages Alcoa to commit to best practice fuel management principles.

Waroona and Harvey Irrigation Open Channel Water Delivery System

One factor that allowed the fire to escalate was the lineal fuel loads around the Waroona and Harvey Irrigation Open Channel Water Delivery System. The heavy fuel load and remnant forest running alongside the channels created a very long and narrow fire shape which allowed the fire to travel quickly to impact west of Waroona.

*During the Waroona bushfire the network ... drains acted as wicks that allowed fire to spread very rapidly.*⁵⁸

One volunteer firefighter commented:

*Once the fire got into the flat country, you know, we could pull it up in open paddocks, but we were losing it down drains, road reserves, tree lines. That's basically where we lost it.*⁵⁹

Tongues of fire were able to race away from the fire front down drains at speeds estimated to be 5-6km an hour.⁶⁰

The open channel system was constructed by and for the operation of Government managed irrigation schemes. In summer, the channels aid in supplying water from dams to irrigators, whilst in winter the channels drain water from the catchment to the estuaries to the west.

⁵⁷ Department of Agriculture and Water Resources, *Mechanical Bushfire Fuel Load Reduction Programme*, Government of Australia, 7 March 2016, at <http://www.agriculture.gov.au/forestry/national/nbmp>

⁵⁸ Submission of the Institute of Foresters

⁵⁹ Penny, P., Hearing, 10 March 2016

⁶⁰ Penny, P., Hearing 10 March 2016

In identifying which agency was responsible for fuel management around the channels, the Special Inquiry contacted the Water Corporation and Harvey Water.

In response, the Water Corporation stated that it is: “Not involved in the operations or maintenance of the open channel water delivery system” and directed the Inquiry to Harvey Water.

Harvey Water responded to the request by stating that;

As far as we are aware there is nothing in the Act (Water Agencies (Powers) Act 1984) and the transfer of powers that specially requires Harvey Water to be responsible for bushfire mitigation in respect of the channel.⁶¹

The lack of certainty over responsibility for fuel management around these channels is of concern to the Special Inquiry. The Special Inquiry sought legal advice on who was responsible, but at the time of writing, this was still not satisfactorily resolved. The Special Inquiry encourages Harvey Water and the Water Corporation to enter into discussions to develop a fuel management plan around the Open Channel Water Delivery Systems.

Opportunity 4: The Department of Fire and Emergency Services, in collaboration with the Departments of Planning, Parks and Wildlife, Environment Regulation and Water, to lead consideration of developing guidance to landholders with respect to bushfire ‘fuse breaks’ along lineal fuels such as roadsides and irrigation drainage channels.

McLarty and Myalup pine plantations

The Special Inquiry received evidence that lineal fuel loads allowed the fire to race towards McLarty pine plantation faster than expected. The Waroona fire tore through the McLarty and Myalup pine plantations west of Waroona. The fire destroyed 3,330 hectares of pine plantation.

Commercial tree plantations are valuable assets with a long investment timeframe, up to 30 years in the case of pines. If a plantation is burnt, there can be significant ‘down-stream’ impacts on timber harvesters, processors and the transport industry. During the past decade major bushfires have resulted in very significant damage to pine plantations in the Blackwood Valley, at Gngarara and Yanchep, and most recently at Waroona.⁶²

The FPC is the agency responsible for fuel management on the pine plantations. In evidence, the FPC outline fuel management activities undertaken including.⁶³

- establishing fire breaks in excess of the size required by the Code of Practice for Timber Plantations in Western Australia;
- fire break maintenance was undertaken from August to November 2015 in preparation for the heat of summer;
- pruning across access roads was undertaken in August September 2015; and
- needle bed burning in the plantation is undertaken in the winter/spring of each year.

⁶¹ Supplementary submission of Harvey Water

⁶² Submission of the Institute of Foresters Australia WA Division

⁶³ Submission of the Forest Products Commission

The mitigation activities outlined above provide adequate plantation protection for small to medium fires. However, the fire conditions on 7 January 2016 were of such intensity that firebreaks and reduced fuel areas within the plantation were not adequate to prevent spread of the fire. The Special Inquiry has observed that, within the plantations, areas that were needle bed burnt in 2015 had less fire impact and damage.

Furthermore, the land adjacent to the plantation was only subject to irregular small scale hazard reduction burning. Previously vegetation around McLarty Pine Plantation had been burnt every 3 to 4 years as protection for the plantation.⁶⁴ This lack of fuel management may have contributed to the destruction of the pine plantation.

Individual landholders – “If you own the fuel load you own the problem”

Finally, private individual landowners need to be reminded that fuel management first falls upon the landowner. Fuel management is a shared responsibility:

*A person who looks after their property can be let down by a neighbour who is not as conscientious.*⁶⁵

The Special Inquiry received evidence that demonstrated the varying degrees to which people undertook fuel management activities on their private properties. That is evident from the following submission regarding Yarloop:

*So here's a bloke, you know, with a good crop, a lot of dried ground and he's got a firebreak alongside his boundary and the reserve next-door has got something there full of noxious weeds and bloody fire hazard and all this hasn't been burnt off for years.*⁶⁶

Although, as previously recognised in this chapter, the process for conducting hazard reduction burns on private property is onerous, this is no excuse not to manage fuel loads.

Individuals are still able to carry out the following fuel management activities without a permit such as:

- mowing or slashing long grass;
- physically removing fuel within 20 meters of a house or other infrastructure;
- weeding;
- installing fire breaks;
- clearing gutters;
- providing water points;
- creating access;
- irrigating grass to maintain it in a green state;
- grazing out, slashing and mowing of grass;
- construction of mineral earth and slashed firebreaks;
- thinning and pruning of trees and plantations; or
- chaining (with and without burning) of vegetation.

⁶⁴ Tyler, L., Hearing 22 March 2016

⁶⁵ Government of Western Australia, *A Shared Responsibility: The Report of the Perth Hills Bushfires February 2011 Review*, 2011, p. 68

⁶⁶ McKay, R. Hearing, 22 March 2016

Good fuel management can be the explanation as to why some infrastructure burnt during the Waroona fire and some didn't.

The Special Inquiry would like to commend those individuals who carried out fuel management activities in the lead up to the 2015/16 fire season.

Local Solutions for Local Problems

The following discussion outlines a series of proposed solutions which have the potential to empower local communities in preventing the risk of bushfire. The Special Inquiry commends these ideas for exploration by local community groups.

Whilst partnerships between local government and the community sector take time to develop, it is now increasingly recognised that engagement of local people is critical to achieving meaningful outcomes within a local community.⁶⁷

A good example of local government and community engagement was the Yarloop Primary School. As quoted earlier the primary school had engaged with local fire experts to develop a fire protection plan.⁶⁸ The survival of the primary school can be attributed to this plan which the community, under the guidance of Government agencies, came together to carry out.

Every community is unique and to some extent faces its own challenges. Local government is well placed to coordinate planning, identifying and providing for local needs. The most beneficial changes often take place through community engagement and empowerment initiatives which respond to opportunities or deal with problems.

The 'Fire Wise' Concept

'Fire Wise' is an initiative currently being utilised by a small group of people living in the Rural Urban Interface in the South West and Perth Hills. The Fire Wise concept empowers individuals and the community to become more self-reliant in reducing the bushfire risk rather than relying on Government. Part of the focus of this concept involves individuals, neighbours and the community coming together to conduct fire prevention activities.

The Fire Wise concept gives sound consideration to several key areas including:⁶⁹

- implementing vegetation exclusion zones around homes;
- using techniques to reduce ember penetration into a home during a fire;
- retrofitting houses and gardens to make them more bushfire resistant;
- engendering a culture of self-reliance in homeowners and within communities;
- encouraging a willingness in the community to share with Government bodies the responsibility for fire safety;
- using supportive bushfire mitigation messages rather than being directive; and
- encouraging individuals and the media to showcase how to develop Fire Wise gardens.

⁶⁷ Office for the Community Sector, Department of Planning and Community Development Victoria, *Community collaboration: The changing context of local government and community sector partnerships*, 1 July 2013, Government of Victoria

⁶⁸ Submission of member of the public 39

⁶⁹ Submission of Fire Wise

Combining the Fire Wise message with a campaign similar to the Water Corporation's 'Waterwise' message may result in significant community take up. The Special Inquiry encourages consideration of the Fire Wise campaign approach.

Landcare Australia

Another local level approach involving people working together to improve and manage their communities is Landcare Australia.

Landcare is a national network of thousands of locally-based community groups who care for the natural resources in their communities. Members of these networks work together to make decisions about the long term social, economic and environmental health of their region.

This example demonstrates a model that could be applied to bushfire management. The community partnership offers opportunities for collaborative learning and encourages joint decision making, giving the community greater say in what is important and what needs to be done. Fire prevention could form part of this process or, alternatively, be modeled on it.

A concluding comment on fuel

Fuel management was the second most common issue raised during the course of the Special Inquiry. The length and detail of the foregoing chapter reflects those submissions. It also attests to the complexity of managing fuel and, therefore, bushfire risk. Notwithstanding this, the Special Inquiry reinforces the fundamental relationship between proper fuel management and bushfire risk reduction.

It is because of the difficulty and challenges associated with meeting this aspiration, that the community is forced to resort to a range of secondary bushfire protection measures.

If there was to be nothing else done but to manage fuels properly in areas vulnerable to bushfire, then much of the work of this Special Inquiry would have been done.

Chapter Eight – Incident Management

*The whole thing just exploded in a massive downdraught.*¹

Initial response

Responsibility for response

The legislative framework in WA provides that the designation of the agency responsible for the initial response to a fire is primarily based on the type of land where the fire starts.

DFES responds to fires that occur within gazetted fire districts. P &W provides the initial response to fire which starts on land to which the *Conservation and Land Management Act 1984* applies. Local Governments, through their brigades, are generally responsible for responding to fire on most private property and UCL outside of fire districts.²

The framework for emergency management arrangements under which the responsible agency operates during a bushfire is provided by Westplan – Fire. Westplan – Fire provides that DFES, P&W and local governments are responsible for developing and implementing rapid, effective and complementary fire response arrangements for their jurisdictions.³

The Waroona fire originated on land managed by P&W and was considered to be “well within Parks and Wildlife estate”.⁴ This meant the initial response to the fire was managed by P&W and the role of IC⁵ was initially performed by the P&W Perth Hills District Officer who was on duty when the fire was detected.

Framework for incident management in Western Australia

Westplan – Fire details the response arrangements for responding to fire incidents in WA. It provides that the Australasian Inter-service Incident Management System (AIIMS) is to be utilised by all fire controlling agencies. AIIMS is an incident management structure used nationally by fire and emergency services.

Section 4.3 of Westplan – Fire details the levels of response which apply to fire, including bushfire. This section details: the principles which support the response; the requirement to appoint an IC; minimum IMT requirements; and criteria for the determination of incident level.

Section 4.3 of Westplan – Fire also provides that SEMP 4.1 must be adhered to for incident response, control and coordination.⁶

¹ Chick, J., Hearing, 1 April 2016

² DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p29

³ SEMC, Westplan – Fire, 2013

⁴ Ridley, J., Hearing, 17 March 2016

⁵ As per Westplan – Fire, all fires requiring suppression will have an IC appointed by the Controlling Agency which was, in this case, P&W.

⁶ State Emergency Management Committee, *State Emergency Management Policy 4.1 – Incident Management*, 2013

SEMP 4.1 is in place to ensure common understanding by all emergency management agencies on the principles, and structures utilised for emergency management in WA. It provides the operational principles, such as declaring the incident level, and the operational structures applicable to incident management in WA.

In addition to Westplan – Fire and the SEMP 4.1, there are a number of agency level policies, procedures and protocols which apply to incident management and responding to bushfires. These are referred to, where relevant, throughout this chapter.

The role of the State Operations Centre, Metropolitan Operations Centre and Regional Operations Centre

The principle of unity of command is based on the concept that each individual should only report to one supervisor. In the case of incident management, there should only be one IC for any incident. The IC is responsible for directing and coordinating the actions of all personnel, with one set of objectives, and one plan for the management of the incident.⁷

The ‘line of control’ above the IC is not defined by AIIMS. Each State and Territory has their own approach. In WA, there are three tiers to the line of control, being:

- Incident level (through the ICC);
- Regional level (through the ROC); and
- State level (through the SOC).

In addition to the SOC and the ROC, there is another branch of operational oversight within DFES; this is the MOC. The SOC, MOC and ROC do not replace the role of IC. Their role is to support, assist and advise the IC and IMT.

During the Waroona fire, the SOC, MOC and three ROCs (Bunbury, Northam and Manjimup) were activated.⁸

The SOC is located in the DFES Emergency Service Complex in Cockburn. As described by the FES Commissioner, the SOC has a number of roles:

Firstly, when there is not an incident it monitors all activity state-wide from a state perspective to ensure that there is adequate resources and that the Level 1 incidents are being appropriately attended to and that there are arguably no escalation of occurring events. It considers risk of the various regions ... so that we can do some pre-planning, pre-deployment, pre-coordination of resources if there [are] elevated levels of risk. It considers day-to-day resources to ensure that there are appropriate capabilities in the various regions. It considers the disposition of the fleet and it considers ongoing activity in a broader, strategic sense to – in day-to-day.⁹

⁷ DFES, *Western Australian Fire and Emergency Services Manual*, Part 6, 2014, p. 20

⁸ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 40

⁹ Gregson, W. Hearing, 6 April 2016

The Special Inquiry accepts this description of the role of the SOC. In contrast, the DFES Western Australian Fire and Emergency Services Manual (WAFESM) provides that:

*The DFES SOC maintains the overall command, control and coordination of both DFES and external resources available under the provisions of Western Australian legislation at a State level, whilst also maintaining an overview of latent resources and response capability from relevant state-based and national agencies.*¹⁰

The Special Inquiry notes that this may lead to inconsistencies with the AIIMs structure. It is questioned whether there is actually ability for the SOC to simultaneously provide a command, control and coordination function. It is important that the system of incident management, particularly at a regional and state level, should not be designed and tailored for just one incident. Rather, it should be designed for coordination of responses to multiple concurrent incidents (of various types). It appears to the Special Inquiry that the role of the SOC, particularly in respect to Level 3 incidents, is one of coordination rather than command or control.

During major fires, such as the Waroona fire, the overall coordination of P&W resources is undertaken through a senior P&W officer present in the SOC.¹¹

As the FES Commissioner advised the Special Inquiry, when the SOC is activated it:

*... brings together the highest level of coordination across state government and non-State Government resources, Commonwealth resources and oversight of the aerial fleet of intelligence and of costs and a whole range of other aspects that support the incident controller. So it has the objective then of overseeing, indeed mentoring the incident controller, ensuring that there is good situational awareness of the existing emergency, ensuring that the resources that are allocated to that and are being either requested by the incident controller or arguably might be requested by the incident controller are being corralled and preliminarily made available.*¹²

Consistent with comments in Chapter 9 of this Report, the Special Inquiry is of the view that the coordination role of both the SOC and ROC needs to be reinforced. In relation to warnings, there is ample room for the SOC to scrutinise more closely both the content and the context of alerts, warnings and public messaging. This is an important role for organisational elements above the ICC.

The role of the MOC, when activated to support a regional incident, is to provide any required support to the ROC. It becomes an expanded logistical support for the ROC, as it is difficult to maintain regional support over an extended period of time without support from the metropolitan area.¹³

The Special Inquiry is aware of instances during the Waroona fire where the SOC and MOC became involved in directing operations of resources on the fireground. This is problematic in that, when resources are dispatched to an incident, they should, on arrival, be under the exclusive command and control of the IC. This is discussed in detail later in this chapter.

¹⁰ DFES, *Western Australian Fire and Emergency Services Manual*, Part 3, 2014, p. 8

¹¹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 29

¹² Gregson, W. Hearing, 6 April 2016

¹³ *Ibid*

The role of the ROC is the coordination of operational resources at a regional level. The WAFESM provides that:

Whilst the ROC is not commanding or controlling individual incidents, its structure closely aligns to the functions of AIIMS. When considered necessary, the Regional Superintendent may direct an IMT to reassess their incident strategies based on the regional resource disposition and/or risks.¹⁴

This is consistent with FES Commissioner's view that the role of the ROC is:

.... to bring together various regional stakeholders to assist the incident controller and to consider interaction at the local level of the various government, non-government agencies and other stakeholders that are going to be required usually in direct support of the response and there are a number of for a that are established interagency working groups or operational groups that come together to ensure that the incident controller has got the best advice from what's available from a resource perspective regionally.¹⁵

During an incident, the IMT requests additional resources initially through the ROC; the ROC then prioritises and attempts to fill the request and escalates through the chain of command to the MOC or SOC, as required.

Observations on incident management over the course of the fire

The Special Inquiry has considered the following key points regarding the management of the Waroona fire:

- the need for clear priorities within the IMT and among personnel on the ground;
- difficulty in the incoming IMT coming to grasp with a very large volatile and dynamic situation;
- multiple points of the fire that were coming under pressure from the increasing wind speed on the evening of 7 January 2016;
- challenges in re-setting strategy when the current plan has failed; and
- the IMT, both individually and collectively, failed to act on a number of cues the highlighted the risk to Yarloop.

The doctrine underpinning incident management in Western Australia

Primacy of life

The overarching recommendation of the 2009 Victorian Bushfires Royal Commission was that of ensuring the primacy of life. Ensuring that primacy of life is the key focus of emergency response means all subsequent actions are undertaken in a manner which supports the philosophy.

¹⁴ DFES, *Western Australian Fire and Emergency Services Manual*, Part 5, 2014, p. 5

¹⁵ Gregson, W., Hearing, 6 April 2016

In WA, Westplan – Fire recognises the primacy of life. The first priority for Incident Action Planning is to ‘address the protection of community members and keep them informed’.¹⁶ Westplan – Fire also provides that “the safety of personnel tasked to the incident will be the fundamental priority in all phases of incident management.”¹⁷

The primacy of life must be a central consideration in the tactics and decision making of all emergency management personnel, particularly those in the IMT.

Whilst the primacy of life was recognised by the IMT in the Waroona Fire, the Special Inquiry believes there needs to be greater emphasis placed on the importance of providing warnings to the community. As discussed in Chapter 10, there is room to reinforce the primacy of warnings during bushfire events to all those involved in the response to a Level 3 bushfire. In particular, the Special Inquiry considers that the role of the ROC and the SOC needs to be re-visited to ensure that a facilitating, supporting and enquiring role in relation to the dissemination of public emergency information is clearly defined.

Strategic Control Priorities

The Special Inquiry found that there are three sets of priorities for emergency management response within Western Australian policy. These are the:

- SEMC ‘State Core Objectives’;¹⁸
- DFES ‘Strategic Control Priorities’;¹⁹ and
- fire response priorities in Westplan – Fire.²⁰

At a strategic State level, the SEMC has endorsed six core objectives for emergency management in WA. These are:

- people - to protect the lives and wellbeing of people;
- economy - to maintain and grow the state’s productive capacity;
- infrastructure - to maintain key infrastructure such as transport and utilities;
- social setting - to maintain public order, safety, sanitation, education, health and culture;
- government - to maintain public administration, democracy and rule of law; and
- environment - to protect the ecosystem and biodiversity of the state.²¹

The Special Inquiry recognises that the SEMC State Core Objectives are not necessarily used to determine the priority for operational response to an incident; rather they identify the key areas which are of critical importance to the State’s wellbeing and are often used when assessing risk.²² There is, however, overlap between these, the DFES Strategic Control Priorities and the Westplan – Fire priorities.

¹⁶ SEMC, Westplan – Fire, 2013, p. 19

¹⁷ Ibid

¹⁸ SEMC, *Emergency Preparedness Report 2015*, October 2015, p. 19

¹⁹ DFES, *Strategic Plan 2012-2024*, 2012, p. 3

²⁰ SEMC, Westplan – Fire, 2013, p. 19

²¹ SEMC, *Emergency Preparedness Report 2015*, October 2015, p. 19

²² SEMC, State Risk Project, *Western Australia: Working together to manage emergency risk*, no date, <https://semc.wa.gov.au/Documents/Resources/SRP%20Brochure.pdf>

The DFES *Strategic Plan 2012-2024* identifies the Department's six Strategic Control Priorities. These are:

- protection and preservation of life;
- community warnings and information;
- protection of critical infrastructure and community assets;
- protection of residential property;
- protection of assets supporting individual livelihood and community financial sustainability; and
- protection of environmental and heritage values.²³

The DFES Strategic Control Priorities are almost identical to the Strategic Control Priorities which were issued by the Victorian Fire Services Commissioner following the 2009 Victorian Bushfires Royal Commission.²⁴ These priorities were developed to give guidance to Victorian firefighting staff when responding to emergency situations. Since their inception, they have been adopted as 'State Strategic Control Priorities' for application across all emergency response operations in Victoria.²⁵

The purpose of the Victorian 'State Strategic Control Priorities' is to:

... provide clear direction on the factors that must be considered and actioned during the response to any emergency. The intent is to minimise the impacts of emergencies and enable affected communities to focus on their recovery as early as practicable.

*The state strategic control priorities underpin the planning and operational decisions made when managing the response to emergencies.*²⁶

Importantly, the Victorian State Strategic Control Priorities and the DFES Strategic Control Priorities are not hierarchical in nature (other than the primacy of life remaining as the utmost priority). Their aim is to provide a concise focus for emergency management personnel during incidents, but can be ordered and applied as the each individual incident requires.

The Special Inquiry considers that there is a lack of reinforcement of the Strategic Control Priorities outside of the DFES Strategic Plan 2012-2024. It appears to the Special Inquiry that there is more awareness of the priorities for response contained within Westplan – Fire.

Westplan – Fire provides that all fire response is to be based on the priorities of: life; property; critical infrastructure and environment.²⁷ A DFES District Officer advised the Special Inquiry that the Westplan – Fire priorities are 'drummed in pretty well' as part of training.²⁸

²³ DFES, *Strategic Plan 2012-2024*, 2012

²⁴ Country Fire Authority Victoria, *Implementing the Government's Response to the 2009 Victorian Bushfires Royal Commission*, May 2011, p. 16

²⁵ Emergency Management Victoria, *Emergency Management Manual Victoria*, State of Victoria, 2014, at <https://www.emv.vic.gov.au/policies/emmv/>

²⁶ Emergency Management Victoria, *Emergency Management Manual Victoria*, Part 3 - State Emergency Response Plan, 2014, page 3.2

²⁷ SEMC, Westplan – Fire, 2013, p. 19

²⁸ Norman, P., Hearing, 24 March 2016

The Special Inquiry received numerous accounts of instances where persons affected by the Waroona fire were informed by emergency personnel that their priority was to protect assets, rather than agriculture. One submission from a Waroona resident observed that:

[Firefighting] personnel need to be aware that asset protection for farmers should include not only the house and yard but sheds, machinery, livestock, pasture, fences and stockyards – these are the assets and livelihood of farms.²⁹

This was echoed by another Waroona resident's submission:

In suburbs, bricks and mortar is top priority, while in grazing a country a hay shed full of hay can be more valuable than a house.

The importance farmers put on livestock and animal welfare and farm assets does not appear to be taken into account by the people in control.³⁰

The Special Inquiry notes that the ability to protect agricultural assets was, in some instances, compounded by the deployment of resources not suited to agricultural firefighting, this is discussed further later in this chapter.

Despite this, more flexibility in the application of protection priorities is required to ensure that rigid adherence to the priority doesn't create 'tunnel vision' among emergency services personnel. The use of strategic control priorities which include both assets which recognises many different forms of assets, private property, critical infrastructure, community assets, and assets that support livelihood and business, will allow firefighting efforts to be directed where most appropriate.

The Special Inquiry believes it would be most instructive for one set of strategic control priorities, which are non-hierarchical in nature with the exception of the primacy of life being retained as the ultimate priority to be adopted across for emergency management response in WA. This will ensure all personnel responding to an emergency have a common understanding of the factors that must be considered and actioned during the response to any incident.

Recommendation 6:

The State Emergency Management Committee to adopt, across all hazards, the doctrine of:

- the primacy of life;
- the Strategic Control Priorities" (as documented by the Department of Fire and Emergency Services); and
- community warnings that are timely, tailored and relevant.

Agencies will reinforce amongst emergency management personnel the importance of this doctrine through briefings and intent statements.

²⁹ Submission of member of the public 100

³⁰ Submission of member of the public 70

The use of fire progression predictions by the Incident Management Team

There were a number of options for developing fire progression predictions available to the IMT. These include Aurora simulations, Vesta tables, the Sentinel Hotspots website, and accounts from those on the fire front. However, use of these resources was limited, particularly after nightfall.

Early during Operational Period 1 while the fire was relatively small in size air intelligence plots were being provided to the IMT. These plots indicated the fire size and estimated rate of spread.³¹ Additional information on smoke behaviour was provided to the Operations Officer from the helitaks providing aerial suppression.³²

At the same time, the Planning Officer used Vesta calculations – a modelling tool which allows estimates to be made of fire behaviour and spread – as his primary source to predict how fast and fire the fire was likely to move. He, appropriately, based his calculation on the oldest fuel type the calculation, allows 10 to 20 years, to ensure a ‘worst case scenario’ picture of fire progression.³³

A map of the fire plot produced on the basis of aerial intelligence was provided to the IMT at approximately 1900 hours on the evening of 6 January 2016. This was the last map made available before the spotter plane was grounded for the evening.³⁴

As night fell, the availability of the intelligence required to predict the fire’s behaviour was reduced to information relayed from the fire ground. Incident Controller B informed the Special Inquiry, when asked whether any predictions of the fire progression were available when he commenced his shift at 2215 hours on 6 January 2016:

*No. That was a frustration throughout the night ... [W]hat we did know was the fire ... was going a lot faster than any of our predictions could – would have suggested that it was going or should have gone.*³⁵

He advised the Special Inquiry that the planning section of the IMT never got to the stage of being able to produce a predictive map.³⁶ He noted that:

... where you have got such a dynamic fire, any information you get is useless to you anyway.

*What we did do was put an experienced officer out into the field and asked them to stay – to get as close to the fire as they could safely, given the access – the egress that was available, and give us as much information as they could about the progress of the fire. But it was – it was patchy.*³⁷

³¹ Pasotti, M., Hearing, 16 March 2016

³² Ibid

³³ Todd, B., Hearing, 16 March 2016

³⁴ Ibid

³⁵ Low, K., Hearing, 16 March 2016

³⁶ Ibid

³⁷ Keith Low Oral Hearing Transcript 16/3/16 p15-16

The Planning Officer A was asked by the Special Inquirer during a hearing whether Aurora – a national bushfire prediction, detection and simulation system – was used for fire progression predictions. He informed the Special Inquiry that:

... when I was looking at the maps that were generated ... [and were] ... kept as part of [P&W's] records in our Kensington office the other day, I saw an Aurora prediction ... that was generated apparently around 3 o'clock on the morning of the 7th [January], or it was ... based on a fire plot ... from about 3 o'clock in the morning.

Now, I didn't see that... I have no recollection at all of that, which I'm really confident that I would have noted it, I would have made some reference to it in my fire diary or it would have come up in an incident management team meeting.

*I just don't recall seeing one at all. Subsequently, down at Waroona, I don't recall seeing any.*³⁸

The Special Inquiry is concerned that maps were generated, but not provided, the reason why is not clear, to members of the IMT, particularly the Planning Officer.

The difficulties experienced overnight were reflected in evidence the Special Inquiry received from the Planning Officer C. He informed the Special Inquiry that the IMT did not have a good fire shape at the initial IMT or planning meetings on the morning of 7 January 2016, noting that:

*[O]ne of the things I asked ... our intelligence unit leader to do – is to look at doing some predictions. And he wasn't able to do that at that stage, because he hadn't had the fire shape. And the intent was – as soon as he had the fire shape, he was able to do those.*³⁹

He informed the Special Inquiry that later during Operational Period 2, the planning team produced predictive maps which were used in the preparation of the IAP for the next shift.⁴⁰ The Situational Analysis – Values and Objectives part of that IAP, prepared at 1700 hours on 7 January 2016, indicated a high threat to a number of townsites, including Yarloop.⁴¹ The Planning Officer confirmed for the Special Inquiry that:

*Yes. The work that they'd done on their predictions had showed that ... Yarloop was going to be impacted by fire.*⁴²

The above demonstrates that, despite the initial lack of predictive information available on 7 January 2016, some predictions were developed later in the day.

The lack of availability of intelligence at night due to darkness restricting the use P&W spotter aircraft, and the lack of information available from staff on the ground clearly hindered the IMT's ability to track and predict the fire's movement and behaviour.

³⁸ Towers, R., Hearing, 16 March 2016

³⁹ Carter, J., Hearing, 1 April 2016

⁴⁰ Ibid

⁴¹ Incident Action Plan, Shift 3, 7 January 2016, p. 11

⁴² Carter, J., Hearing, 1 April 2016

The WA Police submission to the Special Inquiry noted that ‘WA Police air assets may assist with night time fire mapping on request’.⁴³ This was elaborated upon at a hearing with a WA Police Commander who informed the Special Inquiry that one of the agency’s helicopters or the Cessna Airvan could be used.⁴⁴

The Special Inquiry discussed the potential for utilisation of the WA Police air resources during the evening of 6 January 2016 and morning of 7 January 2016 with the relevant IC. He advised that:

*We discussed, for example, the use of the police helicopter with the forward looking infrared camera, but we – we didn’t seek that, because – we actively discussed it, but we didn’t seek it because there’s a – there’s too much of a timeline between when you ask for that to occur and even when the photography is taken and when you get access to that.*⁴⁵

It appears to the Special Inquiry that the IMT was left blind to the fire’s behaviour and progression overnight. This – paired with the unexpected spot fires in Waroona meant the incoming IMT for Operational Period 2 was left scrambling for intelligence to inform their tactics and strategy for the day of 7 January 2016. The Special Inquiry does not comment on whether WA Police air resources should have been engaged for the purpose of gathering aerial intelligence during the Waroona Fire. It was an operational decision made by the IC at the time, and there are known limitations to the use of the forward looking infrared camera at night during a fire.

The Special Inquiry notes that WA does not have aerial support with infrared line scan capacity. Infrared line scan is an effective tool for obtaining aerial intelligence during the day and at night. Line scanning is undertaken from aircraft flying over the fire area. An infrared picture is taken of the fire. It is then analysed for differences in the heat rising from the earth’s surface to determine the fire’s edge. This information can be transposed onto a map; a useful intelligence tool for IMTs.⁴⁶

Aerial support with infrared line scan is available from New South Wales and Victoria, and could be in Western Australia approximately 12 hours following a request (subject to resource availability). The deployment of infrared line scan technology during the evening of 6 January 2016 or anytime during 7 January 2016 may have provided the IMT with vital information on fire shape, size and spread.

Opportunity 5: The Departments of Fire and Emergency Services and Parks and Wildlife (and, when established, the proposed Rural Fire Service) to investigate options for improving aerial and satellite based bushfire intelligence gathering. In particular, to investigate the provision of Infra-Red Linescan capability.

⁴³ Submission of WA Police

⁴⁴ Tuttle, J., Hearing, 29 March 2016

⁴⁵ Low, K., Hearing, 16 March 2016

⁴⁶ Royal Commission into Victoria's Bushfires, McLeod, R. N., Pascoe, S. M., & Teague, B. G., *Final report: Volume 2*, 2010, Melbourne, Government Printer for the State of Victoria, p. 119

Aerial attack

The Special Inquiry has received a number of submissions which suggest aerial support, or an increased level of aerial support, could have been called in to assist in suppression efforts earlier.

The Special Inquiry notes that aerial support was, importantly, part of the initial resource deployment by P&W. P&W requested fixed wing water bombers and helitaks very soon after the fire was detected on 6 January 2016.⁴⁷

Aerial support was maintained over the course of the fire; fixed wing water bombers, helitaks and an aircrane were used in suppression efforts. A summary of the aerial suppression deployment during the initial stages of the Waroona Yarloop fire is detailed in Table 8.1.

Date	Start Time	Air attack	Fixed wing	Helitak	Aircrane	Air Intel	Total
6 January	0754h	2	4	2	1		9
7 January	0615h	3	4	2	1	1	11
8 January	0615h	4	4	4	1	1	14
9 January	0613h	6	8	4	1	1	20
10 January	06h23	3	6	2	1	1	13

Table 8.1: Aerial Fire Suppression Deployment Summary during 6-10 January 2016⁴⁸

With respect to aerial support, a number of submissions to the Special Inquiry have questioned whether LAT or VLAT could have been requested from the Eastern States of Australia to provide additional aerial fire suppression support.

National arrangements are in place for the request of LAT and VLAT; these resources are contracted under the National Aerial Firefighting Centre procurement arrangements, and may be deployed between Australian jurisdictions at any time, by negotiation.

The Special Inquiry was informed that during the period of 6 January 2016 to 19 January 2016 that one VLAT from NSW was available for deployment,⁴⁹ and two LATs were available for deployment – one from NSW, the other from Victoria – to WA if requested.⁵⁰

There are a number of logistical considerations such as available, appropriate runways, and retardant mixing capabilities and supplies related to the deployment of LAT/VLAT. There are also operational considerations, as the deployment of LAT/VLAT can affect the use of the State's aerial firefighting assets. DFES noted that:

It is estimated that the available State fleet would have completed more drops, impacted a greater range of targets and dropped more water/ suppressant without a LAT/ VLAT than if a LAT/ VLAT was added to the fleet.⁵¹

⁴⁷ Pasotti, M., Hearing, 16 March 2016

⁴⁸ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 38.

⁴⁹ With the exception of 14 January 2016 when it was utilised in a NSW fire.

⁵⁰ Email from Stuart Ellis to Special Inquirer, 23 March 2016

⁵¹ DFES paper on the use of VLAT provided to Special Inquiry, 13 April 2016, p. 7

The potential use of the LAT/VLAT was considered by DFES during the Waroona fire, and an operational assessment was made they were not required. The FES Commissioner emphasised that the decision not to employ the LAT or VLAT was not based on cost:

*The Department would have made an appropriate decision based on the effectiveness of the response. Cost would not have been an issue. And I say that notwithstanding the fact that there is some debate around the return on investment.*⁵²

The Special Inquiry has received a paper prepared by DFES detailing the rationale for not engaging the LAT/VLAT. The paper notes that the LAT/VLAT would not have been considered suitable for deployment until 0942 hours on the 7 January 2016, when the fire entered pastoral land and a ‘long lineal target’ was identifiable.⁵³ The LAT/VLAT would not have arrived in WA for deployment prior to Yarloop being impacted if requested at this time.

The Special Inquiry accepts the operational decision made in respect to LAT/VLAT.

However, the Special Inquiry also notes that there is not a lot of experience or capability familiarity with LAT/VLATs amongst fire management personnel (from both DFES and P&W). Therefore the fact that the IMT officers did not request the LAT or VLAT aircraft is hardly surprising.

The view of the Special Inquiry is that the mere fact that individual officers on the IMT did not request the aircraft does not preclude DFES, as the HMA for fire, from considering or proactively requesting them as a resource that could have been made available either for this fire, or in the event of another fire.

The transition to Waroona Incident Control Centre

While there are benefits in an incident being managed as close as possible to where the incident is taking place,⁵⁴ it has been recognised that the relocation of the ICC to Waroona impacted the IMT operations in the transition period.

The Joint Agency Operational Audit (JAOA) noted that the mobile P&W ICC deployment and associated infrastructure in Waroona appeared to have met the IMT’s requirements;⁵⁵ nevertheless, it is also noted that the ICC was temporarily compromised by highway closures and the possibility that the fire could have overrun the ICC itself.⁵⁶

It is recognised that proximity to the fire ground is generally an advantage when managing an incident – however, there was potential for the ICC to become isolated in the event the fire had a greater impact on Waroona than it did.⁵⁷ Following the fire, Operations Officer A commented to the Special Inquiry that:

When the northern flank was overrun that night [7 January] ... it looked like that fire was actually going to overrun the town of Waroona and cut the southwest highway to

⁵² Gregson, W., Hearing, 6 April 2016

⁵³ DFES paper titled ‘Consideration of whether the provision of Large Air Tankers (LAT) during the Waroona Incident would have affected the extent and impact of the fire’ supplied to Special Inquiry, 14 April 2016, p. 7

⁵⁴ Low, K., Hearing, 16 March 2016

⁵⁵ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 46

⁵⁶ *Ibid*, p. 62

⁵⁷ *Ibid*, p. 43

*the north of Waroona as well, which would have meant that the ICC was isolated from the rest of the world as well as Waroona, so it had a potential to cut power, services and access to the control point.*⁵⁸

Additionally the JAOA also recognises that there were issues with the location chosen for mobile ICC.

As a result of road closures, which were put in place when the fire crossed the South Western Highway and the Forrest Highway, some of the Red IMT members had difficulty accessing Waroona for shift commencement at 0600 hours on 7 January 2016. This resulted in a handover that was staggered between P&W Mundaring office and the Waroona ICC. Much of the handover between the outgoing and incoming IMT staff members occurred by phone and email between approximately 0700 and 1000 on 7 January 2016.⁵⁹

The Special Inquiry understands that there was a proposal to bus members of the outgoing IMT to Waroona to brief the members of the incoming IMT. However, this did not eventuate.⁶⁰

Incident Controller B who was initially working from the P&W Mundaring Office advised the Special Inquiry that the handover to the IMT at the Waroona ICC:

*... wasn't an ideal handover for two reasons. One was that we weren't face to face. And the other was that it occurred in terms of discussion of substantive issues ... when [the incoming Level 3 IC] had effectively been in situ and had received a lot of situational awareness on-site at Waroona before we spoke.*⁶¹

It is noted in the JAOA that existing offices of key combat agencies are not designed to operate as Level 3 ICCs and that pre-identified locations for possible Level 3 ICCs have not yet been developed.⁶²

The Special Inquiry makes the following observations regarding the Waroona ICC:

- It is unclear to the Special Inquiry whether consideration was given to changing the location of the ICC at Waroona Oval (prior to it being completely established) given spot fires had broken out around the town on the evening of 6 January 2016 and during the night parts of the Forrest and Southwest Highway were closed.⁶³
- There was little overlap in the operation of the Mundaring ICC and the Waroona ICC – ideally there should have been some overlap in operation to ensure Waroona was up and running before downscaling Mundaring.
- The ICC transfer occurred at the same time as an IMT shift change. This didn't allow for any continuity in the IMT or for ideal handovers between staff.

⁵⁸ Pasotti, M., Hearing, 16 March 2016

⁵⁹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 43

⁶⁰ Mair, G., Hearing, 26 April 2016

⁶¹ Low, K., Hearing, 16 March 2016

⁶² DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 62

⁶³ Incident Action Plan, Shift 2, 7 January, p. 4

Can the operation of Incident Management Teams be improved?

Incident Action Plans

It is a minimum P&W requirement that an IAP be prepared for Level 2 and 3 incidents within four hours of IMT assembly.⁶⁴ P&W SOP 003 details the minimum standards for the content, preparation, timeliness and usefulness of P&W prepared IAPs. IAPs are required for each shift to deal with the changing situation.⁶⁵

It is recognised by the Special Inquiry that the initial P&W IC prepared an IAP during the first three and a half hours of the fire being detected – while it was a Level 1 incident. While this allowed for early consideration of strategy, tactics, resourcing and triggers by the IMT, the Special Inquiry heard from Incident Controller A that:

It can be a very time-consuming effort and often, in the initial stages of a fire, you're still building up your resources and your staffing so it's an issue that a planning officer, an initial planning officer would need to do with perhaps some minor assistance

... [T]here needs to be, I think, a template with standard drop-down boxes and things like this so that the whole process is very streamlined and it very much prompts you to provide the information that others will need ... [I]t's a very important document but it needs to be streamlined in the process of doing it and it can be – you know, it is electronic at the moment. You've got a spreadsheet there but I would like to see, you know, things like drop-down boxes and also the information that's in it to be reviewed.⁶⁶

Incident Controller B concurred with the Incident Controller A's sentiments, informing the Special Inquiry:

[O]verall, our incident action plans, I think, are clunky and cumbersome, and we need to look at a more succinct version, particularly to go out into the field.⁶⁷

The utility of four hour IAPs in their current form was discussed with many witnesses who appeared before the Special Inquiry. As a result, the Special Inquiry is of the opinion that there is potential to review the suite of current planning documents which make up the four-hour IAP in order to produce a more concise report that could more easily be prepared within that four-hour period.

A more streamlined IAP would allow the IMT to concert their efforts on managing the initial response to the incident. This was recognised by the MIR of the Esperance district fires,

⁶⁴ P&W SOP 077 – 'Deployment of Mobile Incident Management Facilities and Support Equipment', 1 December 2015

⁶⁵ P&W SOP 003 – 'Minimum requirements for incident actions plans', 1 December 2015

⁶⁶ Ridley, J., Hearing, 17 March 2016

⁶⁷ Mair, G., Hearing, 18 March 2016

which recommended that IAP formats and processes are reviewed to ensure they are appropriate to the nature of the emergency response.⁶⁸ The MIR noted that:

*IAP formats and processes need to take into account the phase of the response, and must ensure fire responders receive appropriate information. Fire agencies may consider different levels of complexity of IAPs depending on the phase of the response. During the escalation of a fire, there may be shorter more focused IAPs that communicate the key safety and operational information that is needed by crews on the ground.*⁶⁹

Similar to the above, the Special Inquiry is of the view exploration should occur as to whether the initial four hour IAP requirements in the AIIMS system could be refined. This should be undertaken by DFES and P&W, in conjunction with the Australasian Fire & Emergency Service Authorities Council (AFAC).

Opportunity 6: The Departments of Fire and Emergency Services and Parks and Wildlife, in conjunction with Australasian Fire & Emergency Service Authorities Council, to explore the development of a standardised approach and content for an ‘initial (4 hour)’ Incident Action Plan.

Use of the Incident Controller’s time

The Special Inquiry notes that a large amount of the Level 3 ICs’ time particularly during Operational Period 2 was consumed by attending various meetings, included an IMT meeting at 0923 hours, immediately followed by an Incident Support Group (ISG) meeting at 1030 hours, immediately followed by a community meeting in Waroona at 1130 hours (which the IC was five minutes late arriving, due to the ISG meeting), a pre-recorded interview with the ABC at 1253 hours, a community meeting in Pinjarra at 1400 hours and some media interviews at 1700 hours.⁷⁰

Incident Controller C gave evidence to the Special Inquiry that:

*... the travel in between [incident management team meetings, incident support group meetings and community meetings] is very consuming and it would take me out of the incident control centre for extended periods of time ... [D]riving to Pinjarra from Waroona was a 25, 30 minute drive. So there’s an hour straight just in the travel then the time at the meeting.*⁷¹

He went on to advise the Special Inquiry that there is there is an expectation in the community that someone senior, preferably the IC, attends community meeting, and that a similar expectation exists among the agencies present on the incident support group. The IC noted that he can be perceived as seeing these tasks as unimportant by sending a junior officer.⁷²

⁶⁸ Nous Group, *Major Incident Review of the Esperance district fires: Department of Fire and Emergency Services*, 8 March 2016, p. 63

⁶⁹ Ibid., p 63

⁷⁰ Mair, G., Hearing, 16 April 2016

⁷¹ Mair, G., Hearing, 18 March 2016

⁷² Ibid

He also suggested to the Special Inquiry that his Deputy IC was “less comfortable in doing community work, the media work, and the ISG Local Government and agency work, than I was.”⁷³

Incident Controller C informed the Special Inquiry that the division of roles between the IC and the Deputy IC was “a five minute conversation on the run, first up in the morning, to actually identify roles and responsibilities between myself and my deputy.”⁷⁴

With such a large scale, dynamic and demanding fire as the Waroona fire, it appears to the Special Inquiry that the IC’s attendance at community and incident support group meetings took critical time at a period where the IC was getting a grasp on the overall situation. The IC reinforced that, in his mind, the IC needs to be available to attend these public briefings personally so that he is able to hear their concerns directly and that they can hear the IC’s briefings. This is acknowledged and respected. However, there is a potential that the IC may be distracted from developing and monitoring strategy at a crucial phase of the fire.

The Special Inquiry believes that, with the benefit of hindsight, some of the IC’s duties in his first work period, in particular attendance at community meetings, could have been delegated to the Deputy IC or the most relevantly qualified person within the IMT. This would have eliminated the travel time and time spent in meetings, allowing the IC to spend more time with the IMT establishing the strategy for the day.

The Special Inquiry is not suggesting the IC’s involvement in community meetings and ISG meetings affected his abilities or the outcome of the Waroona fire. It is simply stating that an IC’s time in any Level 3 incident is precious and it is best used on developing strategy and ensuring resources are properly tasked. Therefore, there needs to be an option that other senior members can attend community briefings as a back-up plan in case the IC is unable to personally attend a particular community briefing.

Considerations for 24-hour Incident Controller and Incident Management Team shifts

In WA, AIIMS is generally implemented in a manner which provides for two 12 hour shifts in a 24 hour period. This was evidenced in the Waroona fire where, other than for Operational Period 1, the remainder of the Operational Periods were 12 hours in length, with an incident action plan required for each shift.

The current practice was discussed with the Incident Controller B:

The first IC might do a 24 hour shift, as all the resources in the incident may well do – their first shift might be a 24 hour shift, in terms of the time from when they start – commenced work on the day that the fire commenced.

Generally ... it’s not practical to have a shift change on the evening of the first day, so we will work everyone, including the incident controller through that night. So they might have only been on the fire for, you know, 15 or so hours, but they have had a 24 hour shift, working shift ...

⁷³ Ibid

⁷⁴ Ibid

*[A]fter that, we will usually fall back to a default of notional 12 hour shifts. There has been some discussion of 24 hour shifts [and] models which would allow an incident controller to remain the IC of an incident on an ongoing basis, but where they had a deputy that could deputise sufficiently for them to have the rest periods that they need.*⁷⁵

The Special Inquiry has considered whether there is opportunity for 24 hour shifts to be undertaken by ICs and IMT members to ensure continuity of coordination. Several Australian jurisdictions have adopted 24 hour shifts for IMT members as standard practice during significant incidents. Further, the practice is common practice in parts of the United States of America and Canada. This idea was tested with a number of witnesses.

When asked by the Special Inquiry about his familiarity with different ways of undertaking incident management in Australia and North America, the Planning Officer C noted:

[The] 24-hour shift has a lot of advantages. I should say the 12-hour shift works well for the incident management team when it's based in one location and you're reasonably close to your accommodation ... I can see a lot of benefit of having 24-hour shifts and having a planning officer and a deputy planning, incident controller, deputy incident controller staggering their shift starts and finishes so you have that familiarity of – over that 24 hours. You're not changing from one person to another person... [H]aving the continuity is very beneficial.

*In this fire here as opposed to fires in previous years, I think the ... continuity wasn't too bad for those 12-hour shifts. You had the same people coming back on in between shifts. Where it has failed, I think, is where you get a planning officer on one shift and he only does one shift or two shifts, [he] doesn't build up that knowledge of the incident ... [T]hen you get a new person in and they have to start learning from the start. I think that's a real danger and a real risk to incident management.*⁷⁶

The Special Inquiry also heard from the Operations Officer B that having a 24 hour shift, accompanied by a 24 hour IAP would “iron out so many – so many problems”.⁷⁷ In particular, a 24 hour shift would allow the IMT focus more on the incident, rather than being preoccupied with preparing an IAP for the next shift's arrival, relatively early on, as occurs in a 12 hour shift.

The Special Inquiry believes that the merits and disadvantages of the IC and IMT work cycle being extending over a 24 hour period (but still allowing for individual rest times in line with fatigue policy) for all shifts should be investigated by DFES and P&W.

Opportunity 7: The Departments of Fire and Emergency Services and Parks and Wildlife to assess the merits and disadvantages of Incident Controller and Incident Management Team work cycle extending over a 24 hour period (but still allowing for individual rest times in line with fatigue policy).

⁷⁵ Low, K., Hearing, 16 March 2016

⁷⁶ Carter, J., Hearing, 1 April 2016

⁷⁷ Chick, J., Hearing, 1 April 2016

Network of Western Australian Government agency personnel

The Special Inquiry heard that a number of qualified Incident Management personnel from P&W have gone on to pursue career opportunities with other government agencies. Such a move often precludes them from continuing with their IMT role. An example provided to the Special Inquiry was an employee with GIS experience who had transferred to the Department of Planning and was no longer able to participate in IMTs.

The Special Inquiry heard that, arising from the split of Department of Environment and Conservation (DEC) into P&W and the Department of Environment Regulation, staff have been specifically dissuaded from participating in IMT roles.

Ultimately this is a question for Government and the relevant agency heads. However, it seems to make sense that, in times of major emergency, all relevant government agency staff are ready and utilised.

Natural disasters are set to increase in prevalence and impact. Policy encourages a philosophy of “Shared Responsibility” and asks citizens to act on their own risk. It seems logical that government agencies themselves should be ready and share the Incident Management workload through their agency staff. If nothing else, this would set an example that government is prepared to commit all the resources it has during times of major crisis or emergency.

Recommendation 7: The State Government to establish an arrangement to develop a ‘network’ of Western Australian State Government agency personnel who can be called upon for bushfire and emergency incident management capability within Western Australia. The arrangement will be led by the State Emergency Management Committee and modelled on systems used by the Department of Parks and Wildlife.

The need for multi-agency pre-formed Incident Management teams

The concept of multi-agency pre-formed IMTs is well established in many jurisdictions.

Research from the Bushfire Cooperative Research Centre suggests that pre-formed incident management teams perform better on a number of measures, including timeliness of decision making, and the level of team situational awareness, than those established for the first time on the day of an incident.⁷⁸

The Special Inquiry is concerned that there are no pre-formed Level 3 IMTs which involved substantial numbers of both P&W and DFES personnel (inter-agency pre-formed IMTs). The Red IMT which was initialised for Operational Period 2 had limited representation from DFES.

⁷⁸ Hayes, P, & Omodei, M, *Getting the best bang for your buck: Ad hoc or pre-formed incident management teams?*, Proceedings of 3rd Human Dimensions of Wildland Fire, April 17 - 19, 2012, Seattle, Washington, USA, International Association of Wildland Fire, Missoula, Montana, USA

The JAOA recognised the lack of local inter-agency pre-formed IMTs (including DFES, P&W, LG, functional area specialists) as an ‘emerging issue’ that did not directly impact on the incident, but has the potential to adversely impact bushfire operations in WA.⁷⁹

The Special Inquiry considers the lack of inter-agency pre-formed IMTs to be an ongoing rather than an ‘emerging’ issue. The need for inter-agency pre-formed IMTs was discussed in the MIR of Toodyay Fire December 2009,⁸⁰ and the PIA for the 2011 Margaret River Bushfire.⁸¹

The MIR of Toodyay Fire stated that FESA (now DFES) should incorporate the development of pre-formed multi-agency IMTs into preparedness activities to ensure that appropriate structures are in place early in the incident. It was recommended that:

FESA establishes a process (and associated systems and policies) to mobilise staff to an incident, incorporating pre-formed multi-agency Incident Management Teams.

The development of Incident Management Teams should align with the principles of seamless and integrated escalation of command and control arrangements, and be based on a whole of capability approach (people, organisations, systems, training, procedures etc.).⁸²

The absence of pre-formed inter-agency IMTs was again noted in the PIA for the 2011 Margaret River Bushfire. It identified that a lesson learnt as a result of the fire was that DEC’s (now P&W) fire management expertise should be augmented by multi-agency IMTs that incorporate the expertise of other agencies and in fast developing situations the appropriate decisions will need to be made early. The PIA recommended that there be an increase in frequency of multi-agency exercises and ensures debriefings cover effective deployments and update doctrine and training to reflect changes.⁸³

The Special Inquiry notes that attempts were made to establish inter-agency IMTs. Until 2013/14, a small number of DFES regional personnel were members of P&W pre-formed IMTs.⁸⁴

More recently, the ‘Major Incident Review of the Esperance district fires’ recommended that there needs to be ‘pre-formed flexible multi-agency IMTs’. The Review recognised that:

Establishing multi-agency pre-formed IMTs would make it easier to deploy adequate IMT resourcing to major incidents. The benefits of pre-formed IMTs have been identified by agencies and in research, primarily relating to the development of strong working relationships between IMT members.⁸⁵

⁷⁹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016 p. 62

⁸⁰ Noetic Solutions, *Major Incident Review of Toodyay Fire December 2009*, August 2010

⁸¹ Noetic Solutions, *Post Incident Analysis for Blackwood Fire 8 – Ellensbrook – Gnarabup*, 23/24 November 2011, 2012

⁸² Noetic Solutions, *Major Incident Review of Toodyay Fire December 2009*, August 2010, p. 16

⁸³ Noetic Solutions, *Post Incident Analysis for Blackwood Fire 8 – Ellensbrook – Gnarabup*, 23/24 November 2011, 2012

⁸⁴ Submission of P&W

⁸⁵ Nous Group, *Major Incident Review of the Esperance district fires: Department of Fire and Emergency Services*, 8 March 2016, p. 62

The P&W submission to the Special Inquiry notes that the arrangements work well from the perspective of P&W. However, due to operational and other departmental requirements, DFES ceased participation in the pre-formed teams.

The P&W submission to the Special Inquiry notes that efforts by both agencies to develop integrated inter-agency pre-formed IMTs since 2013/14 have not overcome interdepartmental issues including: differing industrial, rostering and funding arrangements; difference in the range of tenures and hazards dealt with by the departments; and the associated availability requirements of personnel throughout the year.⁸⁶

Despite these barriers, P&W's submission to the Special Inquiry indicates P&W's support for the concept of multi-agency pre-formed teams for major bushfire incident management. The submission recognises that the establishment of the teams needs to take into account of the cultures, resources, businesses and non-fire responsibilities of DFES, P&W, other agencies and Local Government.⁸⁷

The FES Commissioner advised the Special Inquiry of his own frustrations experienced when trying to maintain inter-agency pre-formed IMTs:

*A range of barriers have been encountered, including differences in the employment award conditions and the different agency – of different agency employees – my all-hazard requirements, when, for example, Parks and Wildlife, although fully committed to fire as a hazard, have no capacity or interest in IMT teams responding to flood or cyclone or other hazards, and also the inability to be able to secure adoption within Parks and Wildlife to introduce WebEOC as a multi-agency incident management system.*⁸⁸

The FES Commissioner indicated his strong support for a recommendation by the Special Inquiry that there be a renewal of inter-agency pre-formed IMTs for bushfire in WA, adding, when asked about the potential recommendation:

*I would support it even more greatly if you put 'to be completed by the next bushfire season' as part of your recommendation.*⁸⁹

The Special Inquiry notes the condition emphasised by the FES Commissioner that any IMT arrangement reflects "my all-hazard requirements". The immediate need is to move to multi-agency pre formed IMTs for bushfire in the first instance. The Special Inquiry strongly suggests that prior to developing an all-hazards approach, multi-agency pre-formed IMTs for bushfire are established. Ensuring the model is right for bushfire first is important before the concept is extended to all hazards.

It is noted that the SEMC's O'Sullivan and Lower Hotham Bushfires Review was released in February 2016 and recommended that:

While recognising that workforce management, resourcing and geographical constraints present significant challenges, DFES and Parks and Wildlife should

⁸⁶ Submission of P&W

⁸⁷ Ibid

⁸⁸ Gregson, W., Hearing, 6 April 2016

⁸⁹ Ibid

*consider alternative approaches to determine how they will establish flexible multi-agency pre-formed IMTs, at both Levels 2 and 3, to be prepared for forecast levels of bushfire risk.*⁹⁰

The Special Inquiry supports this recommendation. It is noted that the recent release of the Review means the recommendation is still under consideration by the Departments.⁹¹

The Special Inquiry is of the view that the lack of cohesion between DFES and P&W displayed at times during the Waroona Fire could be bridged by the formation and ongoing promotion of inter-agency pre-formed IMTs, paired with regular training exercises of the teams to provide experience and increase expertise.

The Special Inquiry strongly believes that there needs to be inter-agency pre-formed Level 3 bushfire Incident Management teams for the Perth Hills and the South West. The difficulties experienced to date are recognised by the Special Inquiry, however, these need to be overcome for the sake of rural fire capability and community safety in WA.

The Special Inquiry notes the supportive views expressed by both the FES Commissioner and the Director General of P&W, and is of the view that inter-agency pre-formed IMTs need to be in place for the 2016/17 bushfire season.

Recommendation 8: The Departments of Parks and Wildlife and Fire and Emergency Services to adopt the policy that all bushfire Level 3 Incident Management Teams in the Perth Hills and the South West will be integrated and pre-formed from the start of the 2016/17 fire season with substantial involvement of both the Departments of Parks and Wildlife and Fire and Emergency Services personnel on all teams.

Are we ‘working as one’ in incident management?

Location of the Waroona Incident Control Centre and Department of Fire and Emergency Services Incident Control Vehicle

The JAOA notes that during a teleconference on 6 January 2016 between the incoming Level 3 IC, the DFES Duty Assistant Commissioner and the incoming Deputy IC, consideration was given to splitting the fire and associated responsibilities between two ICs. A decision was made not to split the responsibility and it was agreed that a single IC would maintain command.⁹²

Despite this decision, it appears that there was some division in command and structure.

Responsibility for the fire was split into divisions, with east of Southwest Highway becoming P&W responsibility, and west of South Western Highway being DFES responsibility. In addition to this division, the Special Inquiry has received evidence that there was some physical separation in P&W and DFES operations.

While the P&W IMT established the Waroona ICC on the Waroona Oval, evidence has been given that DFES briefly established their command at the Waroona Council Offices before

⁹⁰ Recommendation 3.2.1 of SEMC, *O’Sullivan and Lower Hotham Review Report*, 2016, p. 16

⁹¹ Submission of P&W

⁹² DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 12

moving to the Waroona Fire Station.⁹³ The DFES Incident Control Vehicle (ICV) was initially located outside the Waroona Fire Station. Incident Controller C informed the Special Inquiry that, at the time the Waroona ICC was established:

I made it very clear there is only one ICC and that is the one that we were setting up and that everything needs to be pulled into that ...

I wasn't 100 per cent comfortable with the fact that the van [the ICV] was in the main street and a little bit of separation from us [the Waroona ICC], and that is why I also sought assurance from our operations officer that they were all talking and working.⁹⁴

The distance between the two was approximately 100 to 150 metres, and it was reported to the Special Inquiry that this created a disconnect between the P&W IMT and those working in the DFES ICV.⁹⁵ There was a need for IMT staff to engage in 'to'ing and fro'ing' between the ICC and the ICV to ensure coverage of both sides of the fire.⁹⁶

Relocation of the DFES ICV to a position closer to the Waroona ICC had been suggested on the morning of 7 January 2016; however due to the ongoing fire management priorities, it was unable to occur until the morning of 8 January 2016.⁹⁷

Incident Controller C informed the Special Inquiry:

I think it was one of the night shift, probably ... the nightshift IC, [who] directed that [the] van, the DFES [ICV] van, be moved in off the highway away from the fire shed and be part of the setup we had inside the oval.⁹⁸

The Special Inquiry heard that the relocation of the ICV to the Waroona ICC, and the subsequent inclusion of the DFES Deputy Operations Officer in the same mobile office as the P&W Operations Officers more effective from the P&W staff's point of view.⁹⁹ Despite this, it was observed by Incident Controller C that:

I did notice that a couple of days later, it was back out ... on the highway. I don't know the circumstances to that.¹⁰⁰

Incident Controller C considered this matter again in his written submission to the Special Inquiry:

The movement of the [ICV] into and out of the Waroona Incident Control Centre complex on several occasions was curious and I trust this was only for practical reasons.¹⁰¹

⁹³ Low, K., Hearing, 16 March 2016

⁹⁴ Mair, M., Hearing, 18 March 2016

⁹⁵ Todd, B., Hearing, 16 March 2016

⁹⁶ Ibid

⁹⁷ Ibid

⁹⁸ Mair, G, Hearing 18 March 2016

⁹⁹ Todd, B, Hearing 17 March 2016

¹⁰⁰ Mair, G, Hearing 18 March 2016

¹⁰¹ Supplementary information, Mair, G, 6 April 2016

The DFES witnesses before the Special Inquiry explained that the ICV was originally set up at the Waroona fire station (originally the Council offices) as the set-up of the mobile ICC on the Waroona Oval was not complete. Later, the ICV became the divisional headquarters for the division west of the South Western Highway.¹⁰²

The Special Inquiry also received a submission from a member of a Volunteer Bush Fire Brigade deployed to the Waroona fire. He advised the Special inquiry that during his second deployment on 15 January 2016:

There was a clear lack of cohesion between DFES, [P&W] and volunteer BFBs at this fire. When we arrived at the control point in Waroona on the morning of the 15th we searched around to find where to book in and lodge our t-cards. We visited the central area ... and spoke to the Operations Officer, a [P&W] officer ... and a number of other people. We asked where we should book in and no one was able to tell us.

What struck me about this was that no-one in the central command area knew where the DFES people were set up, 9 days into the fire. The Ops Officer didn't know ... The distance between the central Ops area, and the fire station, is approximately 130m as the crow flies. It [was] as if some form of apartheid was in operation, with the [P&W] people using one set of facilities and the DFES people another. I'm not entirely sure how they were communicating with each other.¹⁰³

The reported lack of cohesion between the departments, not only in the first day of the Waroona ICC operation but a number of days into the firefighting effort, is of concern to the Special Inquiry.

In addition to the separation of the ICC and ICV, the Special Inquiry also received evidence that a separate, somewhat independent fire command was set up by Bush Fire Brigade Volunteers at Cookernup Fire Station.¹⁰⁴ The Special Inquiry understands this was set up due to the Harvey CBFCA's frustrations with the central commands in Waroona, and due to road closures making it difficult for him and his teams to 'check in' at Waroona prior to fighting the fire.¹⁰⁵ One volunteer fire fighter working from Cookernup Fire Station informed the Special Inquiry that:

[W]e kind of became our little control point.¹⁰⁶

Despite the formal incident management and command structure in place in Waroona, this set up was able to evolve on its own, outside of the established structure.

Given that, as a Level 3 fire, overall control of the fire automatically falls to the FES Commissioner, and that a P&W IC had been appointed, it would be anticipated that there would be a high level of coordination between the two agencies on the fire ground, and with the volunteers from Bush Fire Brigades, to ensure both agencies were aware of what was happening.

¹⁰² Wegwermer, T, Hearing 21 April, Delaney, R, Hearing 29 March 2016, Norman, P, Hearing 24 March 2016

¹⁰³ Submission of member of the public 13

¹⁰⁴ Penny, P., Hearing, 4 April 2016

¹⁰⁵ Penny, P., Hearing, 10 March 2016

¹⁰⁶ Lawrence, R., Hearing, 4 March 2016

The State Operations Centre, Metropolitan Operations Centre and Regional Operations Centre in operation during the Waroona fire

The Special Inquiry received evidence that there was some breakdown in the line of control with:

- resource deployments and command being made without IC or IMT's knowledge;
- resource requests being made without the IC or IMT's knowledge; and
- situational awareness information being provided to the SOC or the MOC before, or even instead of, being provided to the IC or IMT.

Additionally, the role of the ROC and SOC could have had in reviewing the IAPs, offering resources and providing a check for the IMT was not recognised or undertaken.

Resource tasking by the State Operations Centre

The Special Inquiry received evidence that the line of control was not being followed, and it was unclear how decisions on deployment and tasking were being made. A submission to the Special Inquiry stated:

The CBFCO was advised that crewing was the responsibility of the Incident [Management] Team, who would advise the SOC, who would in turn advise the SW ROC, who was required.

*However, across the period, the CBFCO (and others) received requirements from Sector Commanders, the ICT and SW ROC that were sometimes (enough times that it was a problem) untimely and inconsistent.*¹⁰⁷

The impact of this was significant:

*[It] resulted in crews being sent to the wrong Divisional Control, ... crews being demobilised (after arriving at the ICV) only to be remobilised again some hours later after arriving home, and being deployed to another ICV by a separate sector. This had impacts on crew planning and caused an excessive number of crew changes and calls to be required by brigades – on top of hundreds already made getting crews. This communication issue reflects on DFES planning and management.*¹⁰⁸

Deputy Operations Officer B was not aware of this occurring:

SPECIAL INQUIRER: Is it ever – have you ever seen where the SOC will come in and say, “Where are you? Move from this location to that location”?

*WITNESS: Never. No. Left to the IMT.*¹⁰⁹

¹⁰⁷ Submission of Dardanup Volunteer Bush Fire Brigade

¹⁰⁸ Ibid

¹⁰⁹ Norman, P., Hearing, 24 March 2016

The FES Commissioner, when asked about the situation described above, informed the Special Inquiry that he would:

... find that surprising. I would say that as a matter of record, if the State Operation Centre were to give a specific directive to resources to intercede in a response area that would be most unusual, it – I'm not saying it could never occur, but I would find it very, very unusual ...

*I would find it, however, most unusual... and to an extent inappropriate, depending on the circumstances, for the SOC to task resources to an area...*¹¹⁰

The Special Inquiry received evidence indicating that the SOC directly intervened in incident management; resources were tasked and controlled on the fire ground without the knowledge of the IMT. An example of this was the deployment by the MOC of the Rockingham Pumper (along with a Task Force) directly to Lake Clifton. This vehicle was subsequently burnt over by the fire and destroyed, with DFES personnel suffering minor injuries.¹¹¹ The Incident Controller at the time only learned of this burn over after he left the fire and returned to his home location days later.¹¹² This is discussed in more detail in Chapter 10.

The correct line of control and process for resource tasking should be reinforced among DFES and P&W staff.

Resource requests and deployment

The JAOA notes there were some reports of resource deployments being made to the incident in the absence of a request from, or without the IMT's knowledge. The JAOA notes that this has occurred at previous Level 3 bushfire incidents, including the February 2015 O'Sullivan fire.¹¹³

It is also noted in the JAOA that the flow of resource request information from the IMT to the ROC was hindered, as some personnel were not operating according to defined protocol. There were instances of resource requests being sent directly from the IMT to either the SOC or MOC, rather than through the ROC as required by protocol.

The JAOA suggests this may be attributed to a lack of understanding of DFES operational structure by some regional personnel, and may be due to ongoing differences between the agencies understanding of IMT responsibilities. These issues were recorded in the SOC at 2200 hours on 7 January 2016 and were resolved at 2340 hours on 7 January 2016.¹¹⁴

¹¹⁰ Gregson, W., Hearing, 6 April 2016

¹¹¹ DFES, Internal report Rockingham pumper burn over investigation, provided to the Special Inquiry 20 March 2016, p. 19

¹¹² Mair, G., Hearing, 26 April 2016

¹¹³ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 46

¹¹⁴ *Ibid*

Evidence presented to the Special Inquiry also suggests that resources were being sent to the Waroona fire by the SOC and ROC without a request being made by the IC or IMT:

*State [Operations Centre] don't advise the IMT who's coming and who they are to replace that well. That needs to improve.*¹¹⁵

If the IMT is not informed of the incoming resources, resources may arrive at the fire without IMT having the opportunity to consider where they would be best tasked, leading to inefficiency.

The Special Inquiry is of the view that the process for requesting resources during a Level 3 incident needs to be reaffirmed with DFES and P&W staff. The IMT should be informed of all resource deployments to an incident by the SOC, MOC, or ROC, which are not initiated by the IC or IMT. This will allow for the IMT to give adequate forethought to the tasking of deployed resources.

Provision of information to the State Operations Centre ahead of the Incident Management Team

The Incident Controller C informed the Special Inquiry that there were instances during the Waroona Fire where:

*... information that should come to incident control centre to the IMT, goes to SOC or a ROC, and – and then it's either a delay, or we don't get it.*¹¹⁶

He elaborated:

*Some of that is compounded by – DFES has very much a central reporting tendency ... That has got to be sorted out, you know, how the SOC and ROC actually function, and what their role is in an incident needs to be much, much clearer than what it is now.*¹¹⁷

The Special Inquiry strongly agrees with the statement that the function and role of the ROC and the SOC needs to be clarified.

Planning Officer C relayed similar concerns to the Special Inquiry:

We have had issues, and we're still having issues ... a lot of the times ... our intelligence ... would come up with a fire shape. That [information] would then be transmitted to the state operations centre, the SOC... And there would be a delay in getting that information back to the ICC, to our intelligence unit, our intelligence mappers, to create a map.

*So there was, especially in that early stages, the first couple of shifts or first couple of days – there was a lack – a lag time of getting that current information back to the ICC.*¹¹⁸

¹¹⁵ Norman, P. Hearing, 24 March 2016

¹¹⁶ Mair, G., Hearing, 18 March 2016

¹¹⁷ Ibid

¹¹⁸ Carter, J., Hearing, 1 April 2016

When asked whether he knew what caused the delay, the Planning Officer informed the Special Inquiry that:

I believe that at the SOC they had their own mappers getting the information and creating a map, and then provide the data back to the incident. So they were doing – almost duplicating what was happening at the incident control centre, I believe ...

It's not ideal ... we need and we demand the information immediately. As soon as it comes available, we should be getting it, so we have the current information and we can use it how we need to. The other issue is – of not having the currency – is that if you've got duplication of roles, you may have one person doing a similar sort of role, but coming out with a different product.¹¹⁹

It is not appropriate for the Special Inquiry to speculate on what effect the delays in the provision of information had on operations. However, in any fire situation – let alone a fire as fluid and unpredictable as the Waroona fire – current and accurate information is vital to ensure the IC and the IMT have situational awareness and can formulate appropriate strategies.

Information needs to be provided to the IMT as a matter of priority. Clarification of the process of the SOC receiving information and sharing it with the IC and IMT should be undertaken to ensure the IMT has the most up to date information at all times.

This again throws the spotlight on the role of the SOC and the ROC and their respective reporting lines. The FES Commissioner has indicated that AFAC is currently working with jurisdictions to develop a common approach to the line of control from a State level to the IMT.

¹¹⁹ Ibid

Chapter Nine – Resource Efficiency

We can't run fires as a single entity in this state while we don't have across-agency interoperability.¹

Observations on resource management over the course of the fire

The Special Inquiry has considered the following key points in relation to resource management:

- reports of idle equipment and personnel;
- the deployment of equipment to the fireground which may not have been suitable for the rural-urban interface fire being fought;
- the need for private firefighting resources to be recognised and utilised; and
- the lack of a common or interoperable resource management system between P&W and DFES.

Tasking, deployment and response – “Firefighters should fight fires”

While much evidence presented to the Special Inquiry has focussed on deficits with the response to the Waroona fire, it is important to recognise where a job was well done. A Waroona resident provided the Special Inquiry with a copy of the email of thanks she sent to a DFES officer she received assistance from:

I raced ... to inform you that my husband and two young sons were near our house ... and needed assistance. You were by yourself and made radio contact, and [was] advised to take a meal break. Your response was “Negative, I require units”.

Within minutes you had 2 or 3 light vehicles – Wanneroo Units which were low on water but happy to follow me back to our farm and refill with our high pressure irrigation system and be directed back out to where they could cross the paddock to assist my family. Your third unit was waiting on Buller Road for us and followed them out. By the time I got back to your corner you had organised some heavy units, passed on a message from my husband regarding a tractor and assured me that you would send my boys home. This was a relief as it meant my sons could patrol our western boundary for spot fires.

Not once did you doubt my request or hesitate to help. The firies that filled up with water at our farm before heading out talked to me and kept me calm and gave me such confidence. I believe they were Wanneroo [and Perth] volunteers ... using Kalbarri units. Please let these people know how much I appreciated their actions that night...²

Unfortunately, the negative stories outnumbered the positive causing the Special Inquiry to consider reports of idle equipment, the appropriateness of deployed equipment, and delays in tasking of available resources.

¹ Mair, G., Hearing, 18 March 2016

² Submission of member of the public 100

Reports of idle equipment

The Special Inquiry received numerous accounts from members of the public about firefighting equipment which was idle or refused to provide assistance, despite the presence of nearby or specific requests from local residents. One submission to the Special Inquiry from a Cookernup resident recounted:

We then moved onto the next property in a convoy, which consisted of two farm units, a loader, and [a] water truck. This was the first time we saw fire trucks, but instead of feeling relief, we felt disgust as they were all stationary, parked in a neat half circle, facing the fire and taking photos of the fire or themselves with their mobile phones.

We looked over and saw farm fire units, fighting the front of the fire. Not one fire truck was in the fire line assisting these farmers. We left shaking our heads and moved onto the next property.³

Another submission from a Waroona resident informed the Special Inquiry that:

On several occasions I asked the DFES crews to come and help put out the fire and work in conjunction with us, however, they gave the same response as they had with [another Waroona resident] the previous night. They said their orders were to defend property and infrastructure only, not to put out fires in paddocks or bush.⁴

During a hearing, a Waroona resident whose family suffered significant losses as a result of the Waroona fire expressed his anger at the lack of support by emergency services. After recounting his experience he said:

I'm still asking what we pay [the Emergency Services Levy] for because I didn't get any help, we didn't get any help.⁵

In addition to reports of a lack of assistance, a number of submissions advised the Special Inquiry emergency services personnel were advising those seeking assistance that priority was being given to protecting infrastructure. For example:

Firefighter crews (not from local area) said they were told not to fight agricultural fires just secure infrastructure.⁶

In a hearing with the Special Inquiry, the Harvey CBFCO shared his experience:

... [T]ake the Yarloop and Waroona fire ... we had sector commanders that were telling crews they couldn't go off the bitumen. They had to wait for the fire to come to them... [H]ence the reason it hit the coast.... [T]here was, really, in one sense, no attempt by DFES to actually pull that fire up.⁷

³ Submission of member of the public 81

⁴ Submission of member of the public 118

⁵ Tyler, L. M., Hearing, 22 March 2016

⁶ Submission of member of the public 33

⁷ Penny, P., Hearing, 4 April 2016

This issue was discussed by the Special Inquirer with Incident Controller C. The Special Inquirer asked whether the IC was aware of situations like those described above. He advised:

*No. If where they were being expected to go was unsafe or unsuitable for that vehicle, I could understand it ... [W]hat I have heard is sometimes with the DFES people there's a focus on asset – structural protection, I should say, perhaps to the detriment of putting the fire out.*⁸

The Special Inquiry recognises the importance of occupational safety and the priority of primacy of life, including firefighters' lives. It is understood that, for occupational safety reasons, some of the incidents observed by members of the public may have been too dangerous for firefighters to attempt to fight.

However, the Special Inquiry has received evidence that the DFES two wheel drive pumpers require a hard surface in order to operate (that is bitumen or a hard limestone surface). Therefore, these pumpers are ordinarily unable to be taken into paddocks.⁹ This may account for some of the observations made by members of the public.

Whilst the Special Inquiry agrees that all vehicles should only be operated in a manner which is safe to do so and in accordance with the operational parameters of the vehicle, the inability for the two wheel drive pumpers to be taken off hard roads does call into question their suitability in a rural fire setting.

Each two wheel drive pumper is ordinarily also accompanied by a four wheel drive light tanker. The Special Inquiry considered whether these four wheel drive light units can be used separately from the two wheel drive pumpers during a hearing with one of the Deputy Operations Officers:

SPECIAL INQUIRER: [H]ypothetically, if the taskforce commander is in situation he's got, say, five light units ... and there's a fire trickling along in the paddock and he sees no issues with that, then, potentially, those [four wheel drive] vehicles could leave the formed road, drive through the paddock and put out the trickling fire ... [T]here's no standing operating procedure that precludes the task force commander making that decision?

*WITNESS: No... that's generally what would happen ... Instead of sitting idle, waiting, they would go on any active fire that's impacting the property that they are protecting and they would go and extinguish it ... [i]f possible.*¹⁰

Evidence received by the Special Inquiry suggests this practice did not regularly occur. That is, the four wheel drive light tankers, for the most part, remained with their respective two wheel drive pumpers. This resulted in an ineffective use of deployed resources; a tactic which should be reconsidered.

⁸ Mair, G., Hearing, 18 March 2016

⁹ Anderson, L., & Jolly, K., Hearing, 24 March 2016; Hamill, A., Hearing, 14 April 2016; Delaney, R., Hearing, 29 March 2016; Norman, P., Hearing, 24 March 2016

¹⁰ Norman, P., Hearing, 24 March 2016

Two submissions from Waroona residents observed that:

*The strategy of keeping all fire fighting resources on the road and not allowing them to go to the fire and meet it in low fuel areas is flawed.*¹¹

*Firefighters should fight fires ... redefine the mission statement by stating crews are there to fight fires wherever/whenever the present.*¹²

The Special Inquiry agrees with these remarks. Firefighters are specially trained, clothed and equipped in purpose built vehicles. At times they will take additional risks – but these are measured in order that they are acceptable. But there needs to be a bias to action. Crews should take action, even when they are unable to communicate with their leader. Fire control is largely a perimeter exercise. If the perimeter is not controlled, the fire continues to get bigger and threaten more people and more resources. There will be times where the fire is so intense and so ferocious, that the most prudent thing is to hold back and to focus exclusively on protecting life and property. However, in most situations, there will be a range of tasks – all serving the community in need – that can be safely and effectively carried out. The most important thing though, is that our firefighters and the community expect work to be carried out if there is work to be done.

Appropriateness of deployed vehicles

The Special Inquiry received evidence that DFES equipment deployed to rural fires, including in Waroona, is unsuited to a rural fire context and therefore is of limited value in a large moving grass, scrub or forest fire. The Association of Volunteer Bush Fire Brigades described the fit for purpose vehicles and equipment as an “absolute joke”, and that vehicles were built to a city standard and not suitable to take off road.¹³

This view was corroborated by the WA Volunteer Fire and Rescue Services Association, who advised the Special Inquiry that due to the “one size fits all approach” a vast majority of their brigades are equipped with a Heavy Specialist Response vehicle which is not designed to be a bushfire fighting appliance. The equipment on the vehicle, such as breathing apparatus and road crash rescue, adds weight to the vehicle (reducing the capacity for carrying water) and makes it unsuitable for off road conditions.¹⁴

One submission asserted that the lack of suitable rural fire equipment deployed by DFES is evidence of inflexibility, and “the fact that the FRS have continued employing two wheel drives when half their fires are bushfires speaks volumes.”¹⁵

The FES Commissioner advised the Special Inquiry that it is the responsibility of the IC to request specific types of resources:

[T]he request for resources would come from the incident controller. So if, for example, he wanted assets – appliances to protect critical infrastructure, he might

¹¹ Submission of member of the public 70

¹² Submission of member of the public 83

¹³ Gossage, D., & Papafili, T., Hearing, 31 March 2016

¹⁴ Submission of the Volunteer Fire and Rescue Services Association

¹⁵ Submission of member of the public 13

request that capability. If he requires assets to do more bushfire firefighting, he would request a different capability.

... If you're looking for a strike force for paddock fighting or bushfire firefighting or whatever else, then you would send the appropriate appliances.

We have sufficient appliances in the metropolitan area to send such support as is requested notwithstanding it denudes your capability elsewhere. But there is no limitation on the support that's provided to the incident controller's request.¹⁶

However, as discussed in Chapter 8, there were instances of DFES resources being dispatched to the fire by DFES central command – the SOC, MOC or ROC – without specific request from the IC or IMT. This may have resulted in inappropriate vehicles being sent to the fireground.

The nature of the rural-urban interface in towns like Waroona, Yarloop, Hamel and Cookernup lends to fighting the fire in the 'rural', paddocks, fields and agricultural land, rather than just in the townships themselves:

... [I]t is a fact that not many farmhouses are built close to bitumen roads so these vehicles need to be able to access these houses.¹⁷

The Special Inquiry recognises the benefit of deploying two wheel drive pumpers to provide structure fire protection and suppression, especially in townsites. There is no question that two wheel drive pumpers were needed during the Waroona fire. However, the question is whether they were tasked appropriately, and whether more suitable equipment, such as four wheel drive vehicles could have been deployed.

The deployment of two wheel drive pumpers and four wheel drive light vehicles – generally the composition of taskforces deployed from the metropolitan or urban areas – is somewhat inflexible, particularly if the four wheel drive light tankers don't leave two wheel drive pumpers under low risk situations.

The suitability of Scania trucks to the rural context is particularly contentious, with a CBCFO advising the Special Inquiry that this "has been one of the biggest criticisms I've received from the community".¹⁸

During the Waroona fire, a burnover of a Scania truck occurred in the Western Division, near Lake Clifton on 7 January 2016. In this incident the Scania was completely destroyed, and minor injuries were sustained by the crew. DFES conducted an internal investigation of this incident, which found that MOC directed the Task Force to Lake Clifton. The report notes:

This is traditionally not normal practice but seems to be becoming more prevalent with the larger incidents when RUI [Rural Urban Interface] practices are required.¹⁹

¹⁶ Gregson, W., Hearing, 6 April 2016

¹⁷ Submission of member of public 100

¹⁸ Twaddle, J., Hearing, 4 March 2016

¹⁹ DFES, Internal report Rockingham pumper burn over investigation, provided to the Special Inquiry 20 March 2016, p. 19

However, the report then finds that the location in question was a rural environment rather than an urban fire interface. Key factors in this environment were unsealed access roads, restricted availability of local water supply and extreme fire intensity. The report found that:

*Evidence Points to RUI Immediate Street Assessments and Structural Defence tactics may not be appropriate tactics to be employed in rural settings using urban fire appliances, where there are potential fuel loadings that may result in extreme fire intensity.*²⁰

The Special Inquiry questions whether a highly specialised two wheel drive urban pumper appliance was fit for the purpose for which the crews were being tasked. In the Special Inquiry's view, the consequences for the crew in this situation could have been far worse.

The Special Inquiry has noted that it is DFES practice to send Task Forces of appliances, including two wheel drive urban pumpers, to developing bushfires. Where this occurs, it may not be as a result of a specific request from the IC. Rather, pumper appliances may be sent in anticipation of the potential for rural urban Interface tactics to be employed.

The practice of sending out of area Task Forces can provide much needed assistance during the developing stages of a major fire. However it is imperative that these should either be requested by the IC or, alternately, the ROC or SOC discuss the need and application of such resources with the IC prior to dispatch.

Opportunity 8: The Department of Fire and Emergency Services to review the policy of dispatching task force resources from Perth metropolitan and regional urban locations to bushfires to ensure that only vehicles that are fit for purpose and appropriate to the task are deployed.

The Special Inquiry has noted both DFES and P&W are proposing to retrospectively re-engineer bushfire burnover and safety specifications on rural tankers. This follows the major incident review of the tragic burnover at the Black Cat Creek fire in October 2012 where a P&W employee died and others were injured.

The provision of crew burnover protection systems on rural tankers will then set a need to re-evaluate the fitness for purpose of two wheel drive pumper vehicles.

Use of private resources – Farmers, foresters and contractors

*The town of Waroona has one of the highest ratios of earthmoving equipment to resident population in Australia.*²¹

*Landholders, particularly farmers, who are generally going to stay and defend their property and who usually have good fire fighting equipment, including fire units and ploughs ... Through their local knowledge and assets these landholders can and do make a huge difference.*²²

²⁰ Ibid., p. 20

²¹ Parliament of Western Australia Legislative Council, *Motion – Bushfire Management*, 18 February 2016, p. 416

²² Submission of Uduc Volunteer Bush Fire Brigade

*If local farmers and earthmoving contractors were seen as a resource instead of a problem, then firefighting capacity is enhanced.*²³

Currently, the use of private firefighting resources during a large scale incident is managed in an ad-hoc manner. There are farmers, foresters and private contractors, with large amounts of private vehicles and plant, available to support fire fighting efforts.

The Special Inquiry received a number of submissions that stated private resources were available, and not used, during the Waroona fire.

*... a forest harvesting contractor was within 5 kilometres of the ignition point of the fire and could have responded to contain the fire at its critical early stages but was not called upon.*²⁴

*There were assets ready and available to assist the firefighting efforts... these additional resources could have been instrumental in assisting the firefighting efforts in Waroona and Yarloop.*²⁵

It is recognised that some resources may not have been used because the IMT were not aware of their existence, and because of limitations in the current resource management processes of DFES and P&W. The JAOA found that:

*The extent to which private fire appliances were used during the Waroona fire is unclear, although there is some documented evidence (in WebEOC) of their use once the fire reached the coastal plain.*²⁶

The value that the farming, forestry and private business can bring to the response to bushfires needs to be recognised and harnessed, as suggested in submissions to the Special Inquiry:

*Forest Industry crews should be considered in the early stages of fire suppression given the heavy equipment capability that can be made available at reasonably short notice.*²⁷

*[T]here are pine harvesting contractors, native forest harvesting contractors, a large contingent of blue gum harvesting contractors. Collectively, they already are required under their various contracts with the employers... they are required to have certain minimum levels of firefighting equipment, including trucks and pumps and hoses... but if that was to be a bit more formalised into sort of a harvesting, logging sector brigades, that would be a good thing.*²⁸

²³ Submission of member of the public 70

²⁴ Submission of Forest Industries Federation WA

²⁵ Submission of WA Farmers Federation

²⁶ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, pp. 29, 30

²⁷ Submission of Forest Industries Federation WA

²⁸ Clarke, J., Hearing, 3 March 2016

In respect to farmers, a submission observed that:

In situations where fire is affecting or threatening farming properties the likelihood of owners staying and defending is high. They have considerable investment in assets as well as needing to protect and save livestock. They also have mobile firefighting equipment, tractors, discs, ploughs and front-end loaders ...

It is suggested that, rather than dismissing or ignoring such assistance, given that the reality is, farmers will remain at the fire front for the reasons above, whether they are recognised or not, there is invaluable local knowledge and committed assistance which can be a useful resource to those on the ground.²⁹

Farmers, landowners and volunteers possess vast knowledge in firefighting practices, but also hold invaluable local knowledge of the landscape itself as well as contacts for people within the locality. Capturing this local knowledge and expertise can prove essential in combating fires.³⁰

The AVBFB expressed the view that discouraging the use of private units on the fireground is disempowering, and contrary to the goal of building community resilience.³¹

The United Firefighters Union expressed concerns about the use of private resources in firefighting efforts, stating in their submission:

There are significant risks associated with the use of private firefighting units. There are no systems in place to guarantee quality control, the registration of competencies held, there are no checklists for the currency of alleged competencies held, the tracking of such appliances and crews and there is no quality control related to standard operational procedures or standard equipment or standard protective clothing.³²

Despite some parties already engaging in training and maintaining safety standards, the Special Inquiry was advised that their resources were still not called upon often as they could be:

The plantation industry participates in industry training and resources sharing however find it difficult to be accepted into the DFES fire suppression system.³³

The Special Inquiry believes these concerns can be addressed through implementation of a system which allows for the registration of private resources. Such a system needs to ensure adequate safety standards are maintained.

The WA Farmers Federation put the following to the Special Inquiry:

WA Farmers proposes that a register of people be kept with certified firefighting units; this will allow the Incident Control Manager to see what local assets are

²⁹ Submission of member of the public 102

³⁰ Submission of WA Farmers Federation

³¹ Gossage, D., & Papafili, T., Hearing, 31 March 2016

³² Submission of United Firefighters Union of Australia WA Branch

³³ Submission of Forest Industries Federation WA

*available in the immediate area. The benefit of this is that the fire front will be able to be extinguished from a far greater range of target points, leading to the containment of the fire in a shorter timeframe.*³⁴

As noted by the WA Forest Industries Federation:

*The State would benefit from the better coordination of both State and private resources in the response to a fire threatening private property, plantation assets and State managed land.*³⁵

Recommendation 9: State Emergency Management Committee, in consultation with Western Australian Farmers Federation, the Association of Bush Fire Brigades, the Contractors Association of WA and the Forrester Industries Federation of WA, to establish systems for the voluntary registration of:

- farmer fire fighting units;
- contractor firefighting resources;
- forestry industry brigades.

The purpose of the arrangement is to facilitate the safe, efficient and effective recognition, organisation, deployment, management and coordination of farmer, contractor and forestry firefighting resources.

The systems would include a process for enabling access through traffic management points during bushfires. Progress towards establishing these systems is to be reported by State Emergency Management Committee in its annual preparedness report.

Maps – ‘We had no maps’

The Special Inquiry received evidence from numerous witnesses regarding the lack of suitable maps. Those affected ranged from members of the IMT, to out of town Volunteer Bush Fire Brigade members. In all cases, the lack of a suitable map impacted on the ability of the individual to perform their respective role.

Significant issues were encountered by members of the incoming IMT on 7 January 2016 in obtaining a suitable map.

The DFES South West Region Emergency Services Directory (ESD) did not extend to cover most of the Shire of Waroona. The ESD is a map book provided to all agency and volunteer emergency services personnel, providing a common location reference tool. In particular, there is no ESD for the P&W Swan Region. Further, the IMT needed to use multiple ESD books in order to create one useable map of part only of the fireground.

P&W generates series of electronic maps, known as Conservation Operations Graphics maps (COG maps). Whilst useful for that area of the fire falling within P&W managed land, the COG maps were not as useful for those areas in the coastal plain west of the South Western Highway. In particular, the COG maps did not provide sufficient details of

³⁴ Submission of WA Farmers Federation

³⁵ Submission of Forest Industries Federation WA

the townsites and roads.³⁶ Further, the COG maps did not clearly show all road names (even when the zoom function was used) which caused difficulties for members of the Public Information Team.

Volunteer Bush Fire Brigade members also commented on the lack of suitable maps:

Better maps need to be handed out. Those given to sector commanders were on too large a scale and not detailed enough. This has also been the case at other fires that Uduc [Bush Fire Brigade] members have attended.³⁷

The control point doesn't always issue maps that are readable especially when you are driving and more so at night. Some of the maps are out of date or have missing information.

We had no maps of the area and as a GPS unit ... is not supplied by DFES. [P]ersonnel were using Google maps on their own phones to find out where they were.³⁸

Maps – this is something that needs addressing as many accounts of the maps were very old and in the case of when I arrived it was 4 days old.³⁹

For those brigades located outside of the region, a suitable map is vital to enable the brigade to attend the correct location quickly and safely.

The adequacy and availability of maps need to be addressed by both DFES and P&W as part of the resource management system. Personnel at all levels must have access to maps that are recent and suitable if they are to operate safely and efficiently.

Resource management arrangements - “Our resource management system is abysmal”

We can't run fires as a single entity in this state while we don't have across-agency interoperability.⁴⁰

[If] we're going to be there on the fire line together, we need to have the same systems that we know can work together.⁴¹

Every person and every piece of equipment on that fire ground should be represented by an icon on a big screen.⁴²

There is no single resource management system for incident management in WA, nor is there a single system used by the two bushfire response agencies, DFES and P&W.

³⁶ Wegwermer, T., Hearing, 21 April 2016

³⁷ Submission of Uduc Volunteer Bush Fire Brigade

³⁸ Submission of member of the public 36

³⁹ Submission of member of the public 49

⁴⁰ Mair, G., Hearing, 18 March 2016

⁴¹ Carter, J., Hearing, 1 April 2016

⁴² Submission of member of the public 139

SEMC has endorsed the use of WebEOC⁴³ as the preferred platform for Western Australia's all-of-government common crisis information system for interagency communications. However, the use of WebEOC during large scale, joint agency bushfire incidents in WA is problematic, as while DFES and a number of other WA Government use WebEOC, P&W do not. The SEMC Emergency Preparedness Report states:

*The mechanism for DFES and DP&W to share WebEOC is available, as evidenced by the WebEOC partnerships between Main Roads WA and PTA, and WA Health and St John Ambulance. However, technological interoperability between these agencies is yet to be fully achieved.*⁴⁴

The Special Inquiry understands that P&W has previously investigated the adoption of WebEOC. However, it was found that adoption of the system would require substantial additional resources.⁴⁵

WebEOC is not a resource management system and will not meet all agency expectations into the future. The current way which resource management is undertaken during a large scale, multiagency fire is what can best be described as piecemeal and inefficient. A Planning Officer from the IMT told the Special Inquiry:

*We don't have an overall management system that everyone is using and the current system now is a mixture of emails, whiteboards, shift registers and none of them are capable of dealing with an incident of [the Waroona fire] magnitude.*⁴⁶

The Special Inquiry has discussed future whole of government emergency information technology requirements with the WA Chief Government Information Officer (CGIO).⁴⁷ The Special Inquiry understands that the SEMC has developed an Emergency Services Communication Strategy for the consideration of Government. One of the key themes of the Strategy is interoperability.

The Special Inquiry also understands from correspondence with the CGIO that the SEMC is developing a proposal to implement a joint agency Crisis Information Management System based on WebEOC that will be hosted by WA Police and connect the existing siloed implementations of WebEOC.⁴⁸ These actions are supported.

Resource management at the Waroona fire

The Special Inquiry received a number of negative comments from members of the IMT about the resource management system in place during the Waroona fire.

This is alarming. If those who are expected to strategise, deploy resources and ensure the safety of personnel and the community are dissatisfied with the systems available, how is it possible for resource management – and therefore the overall response to the fire – to be effective?

⁴³ WebEOC is a web-enabled system which used for incident management, emergencies and planned events.

⁴⁴ SEMC, *Emergency Preparedness Report 2015*, October 2015, p. 47

⁴⁵ Submission of P&W

⁴⁶ Carter, J., Hearing, 1 April 2016

⁴⁷ Letter from Office of the Chief Government Information Officer to Special Inquirer, 1 April 2016

⁴⁸ Ibid

Operations Officer A commented that one of the big issues faced in the response to the Waroona fire was the resource management system:

We don't have a good resource management system, and it creates all sorts of problems down the line for operations and logistics and everyone suffers as a result.

I think there needs to be – across both agencies – a system for managing people and trucks that works, and that can work at that level, where it's complicated and there's five staging areas and we have got crews coming in from all over the place ... [We] need something that can manage that.⁴⁹

Operations Officer B relayed his experience of trying to manage resources across P&W and DFES during the fire:

[T]he Parks and Wildlife structure was always up on the whiteboard. You could come in, you could look at it – that shift, the next shift – and it was always managed.

I kept asking [the DFES Deputy Operations Officer at the time], "Look, I need that for, you know, the rest of the fire," namely, all the DFES and the brigades. I asked for it a lot and he said, "Yes. We've got it all. It's in the ICV," and I said, "Well, you know, we need a copy of it so, you know, everything is up in front of us."

I never saw it once and I'm not saying that they didn't have it or they didn't know where all the DFES personnel was, because I knew where all the div[isional] com[manders] were....

I never got that bit of paper or presentation.⁵⁰

The inability for the Operations Officer to quickly see the location of all resources both P&W and DFES deployed to the fire is a concern to the Special Inquiry. The operation of two separate systems is inefficient and a potential risk to the safety of personnel on the fireground.

The absence of a single system led to resource requests getting 'lost', and there is an inability to assure they have been considered. Planning Officer C informed the Special Inquiry that:

We don't use [WebEOC]. We use email, so I was emailing to the ROC. They would put the information on to WebEOC. That would go up to the SOC... [T]here's no tracking of that information... [Q]uite often we were seeking information ... and not getting any feedback on resource requests. They would just get lost in the system...⁵¹

In addition to the operation of independent resource management systems by P&W and DFES, the Special Inquiry received a large amount of evidence concerning two specific aspects of resource management: the need for automatic vehicle location systems and the inadequacy in the mapping of the fire progression.

⁴⁹ Pasotti, M., Hearing, 16 March 2016

⁵⁰ Chick, J., Hearing, 1 April 2016

⁵¹ Carter, J., Hearing, 1 April 2016

Automatic vehicle location capability – ‘a very, very good tool’

P&W currently have an automatic vehicle location (AVL) capability installed in some P&W resources, including the heavy fleet (trucks), P&W owned machinery, select contact machinery and some light fleet vehicles.⁵²

Special Inquiry heard that it is a ‘very, very good tool’ as it gives the Operations team visual representation of where all the appliances are at a particular point in time.⁵³

DFES, on the other hand, do not have AVL on their vehicles. The JAOA notes this as an emerging issue:

*There were issues with the appropriateness of certain DFES vehicles on the fireground, particularly given the absence of vehicle location systems and crew protection in some appliances.*⁵⁴

The Special Inquiry does not consider this to be an emerging issue as the need for AVL on DFES vehicles has been identified in the past. The ‘Parkerville Stoneville Mt Helena Bushfire Review’ 2014 report recommended that:

*Automatic Vehicle Location technology should be adopted to enable a better appreciation of the deployment and location of appliances at an incident in order to increase situational awareness.*⁵⁵

Installing AVL on DFES vehicles is a work in progress. The Special Inquiry understands from information provided by DFES that, as at February 2016:

- the AVL functional specifications for DFES vehicles are being finalised;
- a number of technical options remain to be analysed and risk assessed prior to going to market – this work is expected to be completed by June 2016; and
- the GPS/AVL tracking system will then be tendered.

AVL is important for the safety of personnel, and is a very effective resource management tool. The Special Inquiry believes that the future resource management system adopted by P&W and DFES must incorporate AVL.

Recognition of need

The need for a common or interoperable resource management system which addresses all of the concerns above was recognised in the P&W submission to the Special Inquiry:

*Previous reviews and inquiries have emphasised the need for a computerised integrated interagency resource management system ... P&W supports these recommendations as resource management is a major challenge each season.*⁵⁶

⁵² Todd, B., Hearing 16 March 2016

⁵³ Ibid

⁵⁴ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 62

⁵⁵ SEMC, *Parkerville Stoneville Mt Helena Bushfire Review*, 2014, p. 42

⁵⁶ Submission of P&W

Also recognised by the JAOA:

*A limitation to the effective coordination of incidents between agencies is that there are no common incident information management systems.*⁵⁷

The need for improved resources management by DFES and P&W has been recognised in previous reviews of bushfire incidents. The O’Sullivan and Lower Hotham Bushfires Review stated that:

*Full interoperability between agencies is fundamental to achieving effective interagency collaboration and incident management.*⁵⁸

That review identified opportunities for improvement in respect to resource management, specifically:

DFES and Parks and Wildlife should jointly undertake a review of available resource management systems which could be readily integrated into their current human resources, vehicle and equipment systems.

*Develop an integrated inter-agency resource management system. An integrated system will improve the response to fire by supporting agencies to identify potential resources, tract resources and plan deployments more effectively. Incidents will be sufficiently resourced and deployed resources will be used appropriately while minimising risk.*⁵⁹

The Special Inquiry found members of the IMT during the Waroona fire to be highly cognisant of the need for improved resource management system. Incident Controller C was very frank:

*[O]ur resource management is abysmal when we get to a big fire like that. We don’t have a resource management system in the state, that is common to all our agencies, that works. And that causes all sorts of grief, because if you can’t manage the people, you don’t know who’s there, we end up with fatigue issues. Questions about, well, do you know who is on the fire ground?” How do we accommodate them? How do we feed them? How do we rest them?*⁶⁰

Operations Officer A informed the Special Inquiry that “greater efficiency could be gained if there was a better and more effective resource management system in place”.⁶¹ This was reinforced by comments from Planning Officer B:

The system is very complicated and it’s one of the least attractive tasks within an incident management team and – yes – the people that we put into running it are often, you know, finding themselves at the – getting the rough end of the stick.

⁵⁷ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 44

⁵⁸ SEMC, *O’Sullivan and Lower Hotham Review Report*, 2016, p. 16

⁵⁹ *Ibid.*, p. 32

⁶⁰ Mair, G., Hearing, 18 March 2016

⁶¹ Todd, B., Hearing, 16 March 2016

[T]hey're playing catch up from what has ... happened in the previous shift or with staggered changes – changeovers between shift – trying to get on top of it and trying to come up with a concise picture so that you can plan resourcing for subsequent shifts and for fatigue management purposes.⁶²

There is significant danger in not having a unified resource management system, as discussed with the Special Inquiry by Planning Officer C:

Resource management is something that we do very poorly. [I'm] not saying that from a people point of view but we don't have a resource management system across the state and that is, I think, a real weakness and it is something that I think could lead ... to fatalities.

We don't know who's out there, we don't know how long they've been working, we don't know where they are well enough.⁶³

Without an adequate resource management system that is common, or interoperable between, DFES and P&W, ICs and IMT members are being set up for failure. In addition to this, the primacy of life is not being recognised as lives of personnel on the ground and the community generally are put at risk because a global view of the resources deployed to an incident is not available.

What is needed?

There is a real need for a single resource management system, or the adoption of fully interoperable systems, by DFES and P&W. As wisely put by Incident Controller C:

We can't run fires as a single entity in this state while we don't have across-agency interoperability.⁶⁴

The Special Inquiry does not propose to specify in detail what such a system should look like, but believes there are some key elements to it: it should enable the registration, tasking, tracking, management and coordination of emergency management personnel, vehicles, plant and aircraft.

The 'bigger picture' of resource availability, coordination and monitoring must be available to incident management personnel when tackling bushfires if we wish for them to be successful.

A common system will improve public safety. If the primacy of life is the ultimate consideration when managing an incident, the tools available to manage the incident should enable the protection of life. An adequate resource management system will eliminate many of the current risks including: delays in relaying information between departments; lost resource requests; and the lack of visibility of resources on the fireground.

⁶² Towers, R., Hearing, 16 March 2016

⁶³ Carter, J., Hearing, 1 April 2016

⁶⁴ Mair, G., Hearing, 18 March 2016

The costs associated with implementing such a system are recognised. However, the Special Inquiry believes that the long term benefits for the State, particularly in respect to protecting the community and improving incident management, outweigh the short term costs to develop or procure the required system.

As mentioned earlier, the Special Inquiry understands from correspondence with the CGIO that an Emergency Services Communication Strategy has been developed. As the strategy is currently with Government for consideration by Cabinet, the Special Inquiry has not been privy to its contents. The CGIO assures the Special Inquiry that one of the key themes of it is interoperability, and that the strategy is ‘current, achievable, and in line with the new whole of government State ICT Strategy’.⁶⁵

Notwithstanding this, the Special Inquiry recommends that DFES and P&W investigate and adopt an emergency services resource management system as a matter of priority. The system should enable the registration, tasking, tracking, management and coordination of emergency management personnel, vehicles, plant and aircraft.

Recommendation 10: The Departments of Fire and Emergency Services and Parks & Wildlife to investigate and adopt an emergency services resource management system that will enable the registration, tasking, tracking, management and coordination of emergency management personnel, vehicles, plant and aircraft.

⁶⁵ Letter from Office of the Chief Government Information Officer to Special Inquirer, 1 April 2016

Chapter Ten – Information, Alerts and Warnings

*... to this day [I] have NOT received any warnings, alerts, messages of any kind to tell me that Yarloop was under threat...*¹

Introduction

Emergency warnings play a crucial role in the protection and resilience of communities. When implemented appropriately, they have the potential to reduce the effect of disasters on communities and properties, especially when combined with the community's understanding of environmental risks and disaster preparedness.²

The Special Inquiry received extensive and varying evidence regarding the effectiveness of the alerts and warnings issued in the Waroona fire. Two particular points in time have been the subject of most of the evidence, being the warnings issued in relation to Waroona on the afternoon/evening of Wednesday 6 January 2016, and the warnings issued in relation to Yarloop on Thursday 7 January 2016.

Policy framework

Prior to considering the warnings issued in relation to the Waroona fire, it is first necessary to describe the applicable policy framework.

The *Emergency Management Act 2005* allows for HMAs to be prescribed by regulations.³ A HMA is a public authority or other person who, because of their specialised knowledge, expertise and resources, is to be responsible for emergency management in respect of a particular hazard. A HMA is responsible for all aspects of the particular hazard, in accordance with relevant legislation and SEMC policies and plans.

The FES Commissioner is prescribed as the HMA for Fire.⁴

A Controlling Agency is the agency with responsibility, either through legislation or by agreement with the HMA, to control the response activities to an incident,⁵ including the provision and management of the emergency public information function.⁶

In this incident, P&W was the Controlling Agency.

State Emergency Management Policy 4.6 – *Emergency Public Information* (SEMP 4.6), Westplan - Emergency Public Information and Westplan - Fire provide the framework for the provision of public information during an emergency.

DFES and P&W have entered into agreement in relation to the dissemination of public information during a bushfire.⁷ By way of overview, for Level 1 and 2 incidents, DFES and

¹ Submission of member of the public 160

² Attorney General's Department, *Australia's Emergency Warning Arrangements*, April 2013, p. 3

³ Section 4 of the *Emergency Management Act 2005*

⁴ Reg.17(2)(h) of the *Emergency Management Regulations 2006*

⁵ SEMC, SEMP 4.1 – *Operational Management*, 2013, p 34

⁶ State Emergency Management Committee, *Westplan - Emergency Public Information*, 2012

⁷ *Public Information for Bushfire: Fire Agencies Agreement*, dated May 2013.

P&W are separately responsible for the dissemination of public information. However, for all Level 3 incidents, all dissemination of public information falls under the overall control of the DFES Manager, Media and Public Affairs. The agreement details precisely how this will occur.

The purpose of the provision of information to the public during an emergency is to furnish the public with consistent, adequate and timely information and instructions, so that people are be aware of the situation and can take appropriate actions to safeguard life and property.⁸

Types of Emergency Information

Public information is disseminated in a number of different ways during a bushfire.

First, community alerts are issued for bushfires that threaten lives and property. The following table (Table 10.1) of alert levels are issued to the community in Western Australia to assist in providing timely advice on the specific emergency at hand.

Alert Level	Detail
Advice (Blue) Be aware and keep up to date. Issued at 11am and 4pm unless the situation changes	These messages are to keep people informed and up to date with developments.
Watch and Act (Yellow) Put your preparations into action – do not wait and see. Issued every two hours unless the situation changes	These messages are identified as supporting the need for people to be aware of their situation and to take action to prepare and protect themselves.
Emergency Warning (Red) Take immediate action to survive – you will be impacted by fire. Issued every hour unless the situation changes	These messages are the highest level of risk to life and are aligned to the principle message that the safest option is to not be near the fire. A siren sound called Standard Emergency Warning Signal (SEWS) may be used on radio and television.
All Clear (Grey) Take care to avoid any dangers and keep up to date. Issued when the threat has passed	This alert indicates for people to still remain vigilant in case the situation changes and it may not be safe to return home.

Table 10.1: Alert Levels

The DFES website provides a description of alert levels, the circumstances when each alert will be issued and what community members should do in response. The alerts themselves may also provide extensive information around fire behaviour, options for evacuation or staying to defend, road and recreation or building closures as well as contact numbers and locations of community meetings.

⁸ State Emergency Management Committee, Westplan - *Emergency Public Information*, 2012, p. 5

P&W issues the same alert levels as DFES for fires on parks and other lands it manages or where the department is the agency managing the incident. There are minor differences with alert level colourings and the inclusion of small icons against each alert. P&W provide a link from their website to the DFES and ABC emergency alerts information pages.

Methods of communicating alert levels include broadcast radio, television, DFES and P&W websites, some social media (Twitter) and the 13DFES (13 3337) emergency information line. The Special Inquiry is satisfied that these alert levels are well documented for members of the public.

The Special Inquiry has noted the alert levels are in line with the *National Framework for Scaled Advice and Warnings to the Community* (for bushfire), and other states such as Victoria use similar alert levels.

Secondly, the Emergency Alert tool is the national telephone based warning system used to send verbal messages to land lines and verbal or text messages to mobile phones within a specified area based on either the billing address or the actual location. It is not necessary to register to receive an Emergency Alert.

Thirdly, the Standard Emergency Warning System (SEWS) is a distinctive siren sound played at the request of the Controlling Agency for five seconds at the beginning of a radio broadcast, alert or important message relating to a major emergency or disaster. The signal is intended to draw listeners' attention to the emergency warning that follows and is used by the Controlling Agency in imminent life-threatening circumstances only. Conditions and procedures for the use of SEWS are detailed in SEMC Operational Procedure 5 – *Standard Emergency Warning Signal*.

Fourthly, Fire Danger Ratings (FDR) are used by DFES and P&W as a warning to advise people about current fire conditions. The FDR is based on the Fire Danger Index. The Fire Danger Index is a numerical scale that has been developed that correlates to the fire intensity, damage potential and difficulty of suppression. There is a Grassland Fire Danger Index (GFDI) and a Forest Fire Danger Index (FFDI). The FDI tables were developed by CSIRO researchers in the 1970's. The original tables had an index a numerical value of 0 to 100. Following the 2009 Victorian bushfires, it was concluded that there was insufficient sensitivity at the higher end of the scale. As a result the index was extended to over 150. The Fire Danger Index, and therefore the Fire Danger Rating, is an algorithm that takes account of:

- seasonal dryness;
- Fuel condition;
- the last rain;
- temperature;
- relative humidity; and
- wind speed

The following table summarises the FDR and their meaning:

Category	Fire Index Rating	What should I do?
Catastrophic	100+	Act Now
Extreme	75-99	Get Ready to Leave
Severe	50-74	
Very High	32-49	Be Aware
High	12-31	Check your bushfire survival plan. Monitor conditions. Action may be needed. Leave if necessary.
Low-Moderate	0-11	

Table 10.2: Fire Danger Index

Fifthly, the declaration of a Total Fire Ban (TFB) is another prevention measure used to warn members of the public against lighting any fires in the open air and any other activities that may start a fire. A TFB declaration prohibits certain actions from taking place in the open air (such as welding, grinding, lightning campfires) and sets heavy penalties for breaches. A decision to invoke a Total Fire Ban is primarily made following consideration of the forecast Fire Danger Index (FDI) (Table 10.2) and the resultant Fire Danger Rating (FDR) for BoM fire weather districts as well as potential impacts on existing suppression resources in the event of response to further events or incidents.

Finally, the departments and/or members of the IMT may engage in other awareness and/or media related activities, including attendances at community meetings and radio or television interviews.

Information issued to residents of Waroona – 6 January 2016

A total of 177 bushfire alerts were issued over a period of 17 days for the Waroona fire with majority of the alerts (133) being issued during the period of 6 – 11 January 2016.⁹ The Special Inquiry has focussed on the warnings issued to residents of Waroona and Yarloop in the period 6-7 January 2016.

Community Alerts

Both P&W and DFES issued a variety of community alerts on Wednesday 6 January 2016.

The Special Inquiry understands that for Level 1 and 2 bushfires, DFES and any controlling agency are responsible for issuing their own separate community alerts. A system is in place that community alerts that are published to the P&W web site are concurrently published on the DFES web site. Once the bushfire becomes a Level 3 bushfire, all community alerts are issued through DFES.

⁹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 53

In relation to P&W issued alerts, whilst the bushfire was managed from the P&W Mundaring Office, the IMT Planning Officer, in consultation with the Incident Controller, was responsible for issuing the community alerts.

The first community alert issued by P&W in relation to the bushfire was an Advice alert issued by P&W at 0850 hours directed to ‘people near Lane Poole Reserve, 25 kilometres south-east of Dwellingup, in the Shires of Waroona and Boddington’. The Advice specified that a bushfire was burning in the Lane Poole Reserve in the Shire of Waroona. This Advice was repeated throughout the day of 6 January 2016, with additional details added during the day concerning the specific localities affected as the bushfire developed.

The Planning Officer’s initial concern in relation to community warnings and alerts was to ensure that any campers in the area of the bushfire were warned. In addition to issuing warnings, the Planning Officer also ensured that all campsites were physically checked.¹⁰

The Special Inquiry understands that from around 1600 hours on 6 January 2016, the Waroona Chief Bush Fire Control Officer held some concerns that the warnings issued to this point did not adequately cater for Hamel, Yarloop or Cookernup. When the Chief Bush Fire Control Officer contacted DFES media to attempt to amend the alert, he was advised that DFES could not do this as it was a P&W managed fire.¹¹

At 2100 hours, P&W issued a Watch and Act community alert for:

... people bounded by Willowdale Road, South Western Highway and Nanga Brook Road west of the Murray River in Lane Poole Reserve and the Alcoa mine site, excluding the Waroona townsite, in the Shire of Waroona.

At the same time, a bushfire Advice alert was issued for:

...people in Waroona townsite and State forest adjoining Lane Poole Reserve in the Shire of Waroona.

Members of the IMT relied upon a range of information to gain an appreciation of the size, location and rate of spread of the bushfire. That information included weather forecasts (including predicted wind), information and intelligence from spotter aircraft, the nature of the terrain and the description of the smoke cloud. The IMT also had access to fire prediction modelling, in the form of the Vesta calculations.

Based on all the above information, as at 1700 hours on 6 January 2016, the IMT estimated that the bushfire was moving at a rate of one to one and a half kilometres per hour.¹² Until 1900 hours on 6 January 2016, the fire behaviour accorded with the predicted rate of spread. However, the information received at 1900 hours suggested that the bushfire was spreading at a rate of two kilometres per hour.¹³

¹⁰ Todd, B., Hearing, 16 March 2016

¹¹ Twaddle, J., Hearing, 4 March 2016

¹² Todd, B., Hearing, 16 March 2016; Pasotti, M., Hearing, 16 March 2016

¹³ Pasotti, M., Hearing, 16 March 2016

The above rates of spread would result in a possible impact on the town of Waroona in six to eight hours (if spreading at rate of two kilometres per hour) or 10 to 12 hours (if spreading at a rate of one kilometre per hour).¹⁴ It would normally be expected that the weather conditions (and therefore fire behaviour) overnight would ease (due to cooler temperatures and increasing relative humidity).

As at 1900 hours, the IMT understood that the bushfire was approximately 13 kilometres from the town of Waroona.¹⁵

As dusk approached, aircraft (some of which would have been observing the fire from the air) returned to their respective locations because they are largely unable to carry out operations in the dark.

The above information was relied upon by the IMT members when issuing all community alerts, including the Watch and Act alert at 2100 hours.

Shortly after issuing the 2100 hours Watch and Act alert, the Planning Officer received a telephone call from Ian Curley, Chief Executive Officer of the Shire of Waroona, advising that the bushfire was impacting on Waroona.¹⁶

The Incident Controller also recalled receiving a similar telephone call some time after 2000 hours from John Twaddle, Chief Bushfire Control Officer for the Shire of Waroona.¹⁷

The Special Inquiry has also heard other evidence from members of the public that Waroona was being impacted by the fire at this time.¹⁸

Given the predicted rate of spread and the last known location of the fire, members of the IMT were very surprised by this information.¹⁹

Upon receiving this information, the Planning Officer immediately commenced upgrading the Watch and Act alert to an Emergency Warning,²⁰ which was issued at 2225 hours on 6 January 2016 for:

... people bounded by Willowdale Road, Johnston Road, Somers Road, Coronation Road and Nanga Brook Road including Waroona townsite in the Shire of Waroona..

At the same time, the previous Watch and Act alert ceased to be issued.

The Emergency Warning provided that affected persons were in danger and needed to act immediately to survive. The Emergency Warning then went on to provide information about what people were to do if located east of South West Highway (it being too late to leave) and West of the South West Highway (by providing a description of a safe routes to leave the

¹⁴ Todd, B., Hearing, 16 March 2016; Pasotti, M., Hearing, 16 March 2016; Ridley, J., 17 March 2016

¹⁵ Ridley, J., Hearing, 17 March 2016.

¹⁶ Todd, B., Hearing, 16 March 2016

¹⁷ Ridley, J., Hearing, 17 March 2016

¹⁸ Submission of member of the public 33 and 11

¹⁹ Todd, B., Hearing, 16 March 2016; J. Ridley, Hearing, 17 March 2016

²⁰ Ibid

area). The Emergency Warning also specified that an evacuation centre had been established at the Murray Leisure Centre in Pinjarra.

This Emergency Warning was reissued by P&W in an unchanged wording at 2330 hours on 6 January 2016 and 0035 hours on 7 January 2016.

At 2300 hours and 0015 hours the DFES Media Unit also issued an Emergency Warning. This Emergency Warning also specified a number of roads and localities. However, these were not the same as the earlier P&W Emergency Warning. Accordingly, the Special Inquiry notes that for a period of time there were some differences in wording and areas covered by the community alerts issued by DFES and P&W respectively. The Special Inquiry is of the view that it is preferable that consistent wording is used during a bushfire, to ensure that the community receives consistent advice.

From approximately 0105 hours on 7 January 2016, all community alerts were prepared and approved by members of the IMT, but issued through DFES.²¹

Investigations after the bushfire have been unable to conclusively account for the fast spread of the bushfire to Waroona on the evening of 6 January 2016. As discussed in Chapter 6, the Special Inquiry finds that the origin of the fires that threatened the township of Waroona on the evening of the 6 January 2016 are more likely to have been from cloud to ground lightning from a fire induced cloud over the fire (as opposed to have been from either the main fire of Fire 68 or spotfires emanating from Fire 68). This conclusion is reached based on reports from two eyewitnesses who saw a lightning strike originating from the pyrocumulonimbus cloud that had developed over the fire. These eyewitnesses saw the lightning start new fires.

The Special Inquiry is satisfied that members of the IMT appropriately considered all available information when preparing and issuing community alerts and warnings on 6 January 2016. The Special Inquiry is satisfied that it was the sudden occurrence of a separate fire near Waroona which resulted in the lack of an emergency warning alert being issued to people in the Waroona prior to the fire reaching Waroona.

Smoke Alerts

In addition to these alerts, at 1630 hours on 6 January 2016, P&W also issued a Smoke Alert for 'Waroona, Yarloop, Preston Beach and surrounds'. Further, at 1935 hours P&W expanded this Smoke Alert to 'Mandurah to Bunbury, including Waroona, Yarloop Preston Beach and surrounds'. The Smoke Alerts were issued because the bushfire was generating a lot of smoke over a broader area than would fall within a Watch and Act alert.²²

Emergency Alerts

The first Emergency Alert was issued on 6 January 2016 at 2208 hours and stated that 'People in Waroona should seek shelter now and actively defend' and notes the severity of the situation as 'Warning. Too late to leave'.

²¹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 12. Although the Special Inquiry notes that references were still being made to the Emergency Warnings being issued by P&W until 0300 on 6 January 2016.

²² Todd, B., Hearing, 16 March 2016

The next Emergency Alert was issued at 2236 hours and had a slightly different message being, ‘People in Waroona. If the way is clear, you should leave now for a safer place’.

The timing of these Emergency Alert campaigns is consistent with the Emergency Warning community alert issued by P&W 2225 hours. For the reasons discussed above, the Special Inquiry is satisfied that it was the sudden occurrence of a separate fire near Waroona caused by lightning which resulted in the lack of an Emergency Alert being issued to people in the Waroona prior to the fire reaching Waroona.

Standard Emergency Warning Signal

SEWS were issued with each of the Emergency Warnings issued by P&W and DFES on 6 January 2016 and until 0600 hours on 7 January 2016.

Fire Danger Rating

The Spot Weather Forecast for the fire issued at 0923 hours by the BoM indicated a maximum FFDI of 25 and a maximum GFDI of 15 (both at 1600 hours on 6 January 2016).

Total Fire Ban

A TFB was not in place on 6 January 2016. The Special Inquiry has reviewed the criteria for the declaration of a Total Fire Ban and is satisfied that the decision not to make a declaration is within the criteria.

Information issued to residents of Yarloop on 6-7 January 2016 – Overview

Community Alerts – Emergency Warning

By the morning of 7 January 2016, all community alerts were prepared and approved by the P&W IMT, and distributed through DFES media.

Prior to the bushfire impacting on the town of Yarloop at approximately 1930 hours on 7 January 2016, the town of Yarloop was the subject, in part, of a number of warnings. The report first identifies the various alerts and warnings that were in place, and then secondly analyses the extent to which these alerts meet the objectives set out in Westplan - Emergency Public Information and the explanation and reasons provided in this respect.

The Emergency Warning issued by P&W at 2225 hours on 6 January 2016 covered a specified geographical area. That geographical area specified Johnston Road as one of the boundaries. Johnston Road runs east – west through the northern part of the town of Yarloop. Accordingly, the Emergency Warning covered part only of the town of Yarloop.

At 0105 hours on 7 January 2016, the Emergency Warning geographical area was amended, extending the area covered east to Forrest Highway, as follows:

... people bounded by Willowdale Road, Johnston Road, Forrest Highway, Dorsett Road, Coronation Road and Nanga Brook Road including Waroona townsite in the Shire of Waroona.

At 0205 hours on 7 January 2016, the Emergency Warning geographical area was further amended, extending the area covered north - east, as follows:

... people bounded by Willowdale Road, Johnston Road, Forrest Highway, Dorsett Road, Williamson Road, Mayfield Road and Nanga Brook Road including Waroona townsite in the Shire of Waroona.

No amendments were made to extend the Emergency Warning any further south.

At 0300 hours the Emergency Warnings were amended to include the town of Preston Beach. An Emergency Warning containing the same geographical description (but no express reference to the town of Yarloop) continued to be issued throughout 7 January 2016 at the following times: 0400 hours, 0440 hours, 0555 hours, 0655 hours, 0755 hours, 0855 hours, 0910 hours, 1010 hours and 1110 hours.

At 1210 hours on 7 January 2016, the Emergency Warning was amended to include:

... people in the Harvey townsite and surrounding areas in the Shire of Harvey.

The Emergency Warning was reissued in similar terms at 1330 hours, 1435 hours, 1535 hours, 1635 hours, 1735 hours and 1835 hours.²³

At 1935 hours, the Emergency Warning was amended to include the towns of Wagerup, Yarloop and Cookernup. The wording was amended to read as follows (amendments marked in underline):

... people in the Harvey townsite and surrounding areas in the Shire of Harvey. This includes the towns of Wagerup, Yarloop and Cookernup.

At 2035 hours a completely amended and consolidated Emergency Warning and Advice Warning was issued covering the entire area impact by the bushfire, and the areas immediately to the north and south. For the purposes of Yarloop, the town was expressly mentioned in the Emergency Warning.

Community Alerts – Watch and Act

At 0555 hours on 7 January 2016, a Watch and Act alert was issued for the following geographical area:

... people bounded by Johnston Road, Willowdale Road, Forrest Highway, Riverdale Road and Logue Brook Dam and Clark Road to Nanga Road in the Shire of Waroona.

This description covers the remaining geographical area of the town of Yarloop south of Johnston Road, and also at least part of the town of Cookernup. However, the Special Inquiry notes that the Watch and Act alert refers only to the Shire of Waroona, when the majority of this Watch and Act alert covers an area in the Shire of Harvey.

²³ Whilst there were some amendments to the Emergency Warning over this period, none address the issues identified by the Special Inquiry as being of significance.

This Watch and Act alert continued to be issued with this description at the following times: 0655 hours, 0755 hours, 0855 hours, 0910 hours, 1010 hours, 1110 hours, 1210 hours, 1330 hours, 1435 hours, 1535 hours, 1635 hours, 1735 hours, 1835 hours and 1935 hours.

At 2035 hours, when the completely amended Emergency Warning and Advice Warning was issued, the Watch and Act advice ceased to be issued.

Smoke Alerts

The Smoke Alerts issued at 1630 hours and 1935 hours on 6 January 2016 covered the town of Yarloop and also specifically mentions the town. It is understood that these smoke alerts were issued following concerns raised by the Waroona Chief Bush Fire Control Officer about the adequacy of existing warnings to Hamel, Yarloop and Preston Beach.

Community Alerts – Summary

By way of summary:

- between 2225 hours on 6 January 2016 – 1930 hours on 7 January 2016, that part of the town of Yarloop north of Johnston Road fell within an Emergency Warning area. However, there was no express reference to the town of Yarloop;
- between 1210 hours on 7 January 2016 – 1930 hours on 7 January 2016, an Emergency Warning covering the town of Harvey and surrounding areas in the Shire of Harvey existed. However, there was no express reference to the town of Yarloop;
- from 1935 hours on 7 January 2016 Yarloop and Wagerup were expressly mentioned in an Emergency Warning;
- between 0555 hours – 2030 hours on 7 January 2016, that part of the town of Yarloop south of Johnston Road, fell within a Watch and Act advice. However, there was no express reference to the town of Yarloop, and the Watch and Act advice referred to the Shire of Waroona (but not the Shire of Harvey); and
- from 1630 hours on 6 January 2016 the town of Yarloop fell within the Smoke Alert area.

Community Alerts – Discussion

The Special Inquiry received many submissions regarding the timing or lack of a specific warning for the town of Yarloop. As outlined above, the town of Yarloop was not mentioned specifically in any warning (other than the Smoke Alert) until 1935 hours on 7 January 2016, by which time the bushfire was already impacting on the town of Yarloop.

On 6 January 2016, the IMT did not consider Yarloop to be in an area of immediate threat of impact from the fire, and therefore did not consider Yarloop in the context of warnings.²⁴

The incoming IMT commencing on the morning of 7 January 2016 consisted of a Public Information Team (PIT), comprising (relevantly) a Public Information Officer, an Alerts Officer and a Media Liaison Officer. The PIT also utilised the services of the DFES community liaison section to undertake the community liaison function. Two community liaison teams operated, one supporting the Murray Leisure Centre in Pinjarra, and the other

²⁴ Ridley, J., Hearing, 17 March 2016

the Leschenault Recreation Centre in Australind. The PIT provided information to the DFES community liaison teams, and in turn the PIT was kept informed by the community liaison teams.²⁵

The Alerts Officer explained to the Special Inquiry that the usual process for issuing a community warning or alert is for the Alerts Officer to speak to all relevant members of the IMT to obtain an understanding of the fire behaviour and any changes that have occurred in relation to the fire so alerts and warnings can be considered, and amended if needed. The Alerts Officer may speak to the IC, Deputy Incident Controller (DIC), Planning Officer, Operations Officer and the intelligence section.²⁶ The alerts officer will then draft the wording of the community alerts, which are all based on templates. Either the IC or the DIC will approve the wording of alerts and any amendments.²⁷ The Warnings officer types up the necessary wording and it is emailed to DFES media to be published (after appropriate checking).²⁸

The incoming IMT suffered from a number of delays during the morning of 7 January 2016. Most of the IMT team members were due to commence their shift at around 0600 hours. Many had left their homes around 0400 hours in order to arrive.²⁹ However, those members of the incoming IMT located to the south of Waroona (being the majority of P&W officers) faced delays in the form of Vehicle Control Points. The IC did not arrive until 0900 hours,³⁰ whilst the Public Information Officer and Alerts Officer arrived between 0800 hours³¹ 0850 hours.³²

During the evening of 6 January 2016 and the early morning of 7 January 2016, the ICC was moved from the P&W Mundaring Office to the Waroona Oval in order to be closer to the fire. This necessitated the establishment and full mobilisation of the mobile ICC.

Both necessarily affected the effectiveness of handover processes and the smooth commencement of this shift of the IMT.

Upon arrival, the Alerts Officer had significant difficulty in obtaining a sufficient map of the entire fire area. The Alerts Officer explained that without such a map, she was unable to obtain a visual picture of the area covered by the various alerts and warnings. Further, without a sufficient map, the PIT was unable to identify and specify the appropriate geographical area to be included in any warnings.

The difficulty facing the IMT was that the fire was of such a size that it covered too large an area for one map, and those maps that were electronically available were of such a scale that it was not possible to properly identify all the various road names. Whilst the IMT did include mapping officers, all those officers were busy producing maps for other members of

²⁵ Henderson, P., Hearing, 18 March 2016

²⁶ Hill, C., Hearing, 18 March 2016

²⁷ Ibid

²⁸ Hill, C., Hearing, 18 March 2016, Henderson, P., Hearing, 18 March 2016

²⁹ Hill, C., Hearing, 18 March 2016

³⁰ Mair, G., Hearing, 18 March 2016

³¹ Henderson, P., Hearing, 18 March 2016

³² C. Hill., Hearing, 18 March 2016

the IMT, including for the IAP.³³ The Alerts Officer did not obtain a suitable map until approximately 1630 hours.³⁴

Upon arrival at the ICC, the members of the PIT attempted to gather as much information as they could. The PIO also attended the IMT meeting at 0932 hours.

However, the first time the PIT was given specific information about the appropriate alerts and warnings to issue was at 1129 hours, when the IC spoke to the PIT in their office. Prior to this point in time, the Alerts Officer had been attempting to obtain information from speaking to other members of the IMT, and previously issued community alerts had simply been routinely reissued.³⁵

The IC had limited time to speak to the PIT, as he was leaving the ICC to attend a community meeting in Pinjarra. The IC advised the PIT that the Wagerup refinery was under threat, Logue Brook was under threat and needed to be closed, the South West Highway had been closed at Harvey, the fire was in Cookernup and that an Emergency Warning for the Harvey townsite and surrounds needed to be issued.³⁶

The Alerts Officer recalls the PIT being requested to issue an Emergency Warning for the Harvey townsite and the surrounding area. The Alerts Officer understood that the reason for this was the belief that the fire had reached the town of Cookernup and it was too late for Harvey residents to leave the town.³⁷ The Public Information Officer recalls the thinking at the time being that if the fire was in Cookernup, it had already gone through Yarloop.

Ultimately, it was established that the fire in Cookernup was a transformer fire and not the main fire.³⁸

Notwithstanding the incorrect initial information regarding Cookernup, the PIT issued the Emergency Warning for Harvey and surrounding areas at 1210 hours.³⁹ The Alerts Officer explained that this was undertaken without having the map to identify a geographical area, and it is for this reason that the amendment inserted the reference to the Harvey townsite and surrounding areas.⁴⁰

When questioned about the meaning of the term “and surrounding areas” the Alerts Officer advised the Special Inquiry that it is, “a common terminology, especially when you’re talking areas ... not the major towns ... in the South West.” The Alerts Officer explained that you might have, “lots of little towns, little subdivisions and things like that.”⁴¹ The Public Information Officer was of the view that the Emergency Warning extended to the town of Harvey and all areas in between, including Yarloop.⁴²

³³ Hill, C., Hearing, 18 March 2016

³⁴ Hill, C., Hearing, 18 March 2016; DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016 p. 55

³⁵ Henderson, P., Hearing, 18 March 2016

³⁶ Ibid

³⁷ Hill, C., Hearing, 18 March 2016

³⁸ Henderson, P., Hearing, 18 March 2016

³⁹ Hill, C., Hearing, 18 March 2016

⁴⁰ Ibid

⁴¹ Ibid

⁴² Henderson, P., Hearing, 18 March 2016

Once the Alerts Officer obtained the required map, the Alerts Officer commenced the process of marking out the areas covered by the various alerts and warnings in place. The Alerts Officer then used a copy of the community alert issued at 1730 hours and marked up a series of amendments to that wording. Once the geographical area was identified, the various towns falling within that area were identified.⁴³

The amended wording was then approved by either the IC or the DIC. The Alerts Officer then emailed the wording of the community alert to DFES media and it was issued. The Emergency Warning specifically mentioning Yarloop was issued at 1935 hours (having missed the timing for the 1835 hours issue).⁴⁴

The Alerts Officer advised the Special Inquiry that at no time was she ever asked to include the towns of Yarloop or Cookernup.⁴⁵

Emergency Alerts

The Special Inquiry is not aware of any Emergency Alerts being issued on 7 January 2016 that specifically refer to Yarloop, or include Yarloop in the geographical area to which the Emergency Alert applies.

The Special Inquiry notes that only part of Yarloop was included in the geographical area to which the Emergency Alert issued at 2036pm on 6 January 2016 targeting the residents of Waroona.

Emergency Alerts were issued on 7 January 2016, however these largely focussed on the geographical area surrounding Preston Beach and Waroona. The Special Inquiry also notes that Emergency Alerts were issued to residents of the Harvey townsite on 8 January 2016.

Community Alerts and Emergency Alerts – Findings

The Special Inquiry accepts that it was reasonable for the IMT on 6 January 2016 to focus on warnings for the town of Waroona as opposed to Yarloop. The Special Inquiry accepts that the question of warnings extending to the town of Yarloop fell more properly to be considered by the IMT on 7 January 2016.

The Special Inquiry notes that the town of Yarloop was not specifically mentioned in any warnings (other than Smoke Alerts) prior to 1935 hours on 7 January 2016.

The Special Inquiry accepts that there are several ways of reading the earlier Emergency Warnings in regards to their application to the town of Yarloop. Part of the town of Yarloop, being that part north of Johnston Road, falls within the geographical area identified in all Emergency Warnings issued from 2225 hours on 6 January 2016. However, the town of Yarloop is not specifically mentioned.

From 1210 hours on 7 January 2016, an Emergency Warning is applicable to the Harvey townsite and surrounding areas. The phrase ‘surrounding areas’ is subject to different meanings in a rural context. On one hand, it is possible to read the phrase as referring to

⁴³ Hill, C., Hearing, 18 March 2016

⁴⁴ Ibid

⁴⁵ Ibid

small surrounding towns, such as Yarloop and Cookernup. On the other hand, it is possible to read the phrase as applying to smaller subdivisions or localities.

The fact that there are multiple possible interpretations of the phrase leads the Special Inquiry to the conclusion that the wording was not as clear as it could have been. The Special Inquiry is fortified in this regard by the fact that at 1935 hours the town of Yarloop was expressly referenced in the Emergency Warning issued at that time.

The Special Inquiry also considers that the wording of the Watch and Act advice first issued at 0555 hours was confusing, given that it referred to the Shire of Waroona and did not mention the Shire of Harvey.

The purpose of the provision of information to the public during an emergency is to furnish the public with consistent, adequate and timely information and instructions, in order that people will be aware of the situation and take appropriate actions to safeguard life and property. In order to achieve this objective, it is necessary that warnings and alert be issued, and that the wording of all alerts and warnings be as clear and as timely as possible.

FINDING: On the evening of Thursday 7 January 2016, there was a delay in issuing a Bushfire Emergency Warning that was specific to Wagerup and the townships of Yarloop and Cookernup. An Emergency Warning was issued at 1935 hours. There was no Emergency Alert telephone warning that specifically mentioned Yarloop or Cookernup issued on 7 January 2016.

Standard Emergency Warning Signal

SEWS were issued with each of the Emergency Warnings issued by P&W and DFES on 7 January 2016.

For completeness, the Special Inquiry notes some inconsistencies with the use of SEWS and alignment to Emergency Warnings on some days. For example all Emergency Warnings issued between the period of 20.25pm on 6 January 2016 – 11.15pm on 8 January 2016 had a SEWS alert notification included in the alert. However, on 9 January 2016, 24 emergency warnings were issued of which eight (8) had SEWS notifications attached and out of 23 emergency warnings issued on Sunday 10 January 2016, none had SEWS attached.

Although falling outside the period of time the Special Inquiry has focussed on, the Special Inquiry draws this to the attention of DFES and P&W.

Fire Danger Rating

The Spot Weather Forecast issued by the Bureau of Meteorology at 2151 hours on 6 January 2016 for Waroona was for a maximum FFDI of 33 at 1600 hours on 7 January 2016 and a maximum GFDI of 28 at 0700 on 7 January 2016.

Total Fire Ban

A TFB was not in place on 7 January 2016.⁴⁶ On 7 January 2016 the decision not to impose a TFB was made due to the regional indicators not being reached as per DFES SAP 3.5A – Total Fire Bans. The Special Inquiry has reviewed the criteria for the declaration of a TFB. It is a matter of conjecture whether the declaration of a TFB on the day would have enhanced community understanding of the bushfire risk for the day. The Special Inquiry is satisfied that the decision not to make a declaration is within the criteria.

Other Media and Information

The IMT provided information to the community in other forms, including at community meetings and in the media.

A number of community meetings were held between 7 – 13 January 2016 in Waroona, Pinjarra and Australind. The Special Inquiry understands that all were well attended by community members.

On Thursday 7 January 2016 the IC attended community meetings in Waroona (in the morning) and Pinjarra (in the afternoon) and was able to reinforce and clearly communicated the seriousness of the fire to those who attended.⁴⁷

The Special Inquiry notes that the IC recognised the need for his presence at community meetings and to participate in media interviews.

A community meeting was held at the Pinjarra evacuation centre at 1400 hours on 7 January 2016. At that meeting, the IC advised members of the community that the focus was now on Yarloop.⁴⁸

The IC was only able to attend community meetings in Waroona and Pinjarra, due to Vehicle Control Points restricting his ability to attend community meetings in the Leschenault Leisure Centre in Australind.

The Special Inquiry encourages the continual use of community meetings as a forum for communication information to members of the public.

The Special Inquiry also notes the usefulness of media interviews and reports in providing members of the public with information during a bushfire. The IC gave a pre-recorded interview to the ABC at 1253 hours on 7 January 2016, in which the IC stated that, ‘the fire is bearing down on the townships of Yarloop, Cookernup and Harvey’. Unfortunately, that interview was never played.⁴⁹

The P&W Media Liaison Officer participated in a radio interview to the ABC at 1317 hours in which he emphasised that the fire was still very dynamic and strong overnight winds had

⁴⁶ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 13

⁴⁷ Mair, G., Hearing, 18 March 2016

⁴⁸ Submission of member of the public 11

⁴⁹ Mair, G., Hearing, 18 March 2016; DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016

pushed the fire onto the coastal plain. The Media Liaison Officer stated that the priority was to protect life and property particularly around Yarloop.⁵⁰

The IC also participated in a live to air interview to ABC radio at approximately 1500 hours, in which he again emphasised the seriousness of the fire.⁵¹

The Special Inquiry has received evidence which suggests that information over the radio is most effective when it is in the form of interviews, the IC speaking directly on the radio or when announcers ‘localised’ warnings by noting changes they identified in warnings from previously read or received warnings.

The Special Inquiry encourages the work of the community and media liaison teams in relation to the dissemination of public information during a bushfire.

General issues regarding the wording of Community Alerts

The Special Inquiry has received evidence from various sources that the wording of the community alerts was confusing and difficult to follow.

Stacking

Some of the community alerts and warnings that were issued combined more than one alert. For example, the community alert issued 0150 hours on Friday 8 January 2016 contained three different Emergency Warnings, one Watch and Act Alert and one bushfire Advice. This is known as ‘stacking’ of alerts.

Each of the various alerts contains information on what to do, bushfire behaviour, contact numbers and identification of evacuation centre. Many also contain extended geographical area descriptions.

Whilst all information in a community alert is important, the stacking of alerts results in a very long community alert, and many people may not realise that more than one community alert is included. It also makes the community alert very difficult to be read out over the radio or on television.⁵²

Length and Geographical Descriptions

The Special Inquiry also received evidence that the warnings were often long and verbose and difficult to understand.⁵³

In particular, the lengthy geographical descriptions used in the community warnings were confusing. In particular, by not using relevant townsites, points of interest and by repeating the same road names in the boundary descriptions of more than one alert level.⁵⁴

⁵⁰ Department of the Premier and Cabinet, Media Monitoring Unit summary, 7 January 2016

⁵¹ Mair, G., Hearing, 18 March 2016

⁵² Hill, C., Hearing, 18 March 2016

⁵³ Submission of member of the public 5

⁵⁴ Submission of member of the public 92

*I think the other thing is that we need a better way of describing the alert areas. When you're talking a very large fire, the number of roads that are involved, they just go on and on and on.*⁵⁵

The lack of the inclusion of a suitable map in the community alerts issued on the DFES website was also the subject of submissions received by the Special Inquiry. Those submissions stated that the map which was included was a Google map with a general indication of the location of the warning area only. This was insufficient to enable members of the public to properly judge the actual location of the fire.⁵⁶ The Special Inquiry has heard evidence that information in the form of a map as to whether the current fire front would also be of assistance in the warning.⁵⁷

Some submissions have suggested that the Landgate FireWatch satellite on the Landgate website⁵⁸ is of more assistance, and queried whether DFES can include a link to that website on its community alerts.⁵⁹

The Special Inquiry supports any review of the wording used in community alerts and the inclusion of other information/links which help make the community alerts more user friendly for members of the public.

Further, the Special Inquiry sees merit in considering a system where successive public information messages highlight new information (eg: by colour, emboldening or font). In this way the reader can have their attention drawn to what information is new or changed since the last alert.

General issues regarding maps

Alert boundaries are drawn onto maps to enable a visual description of the areas that a particular community warning or Emergency Alert apply to. This can be a fairly simple task in an urban context or where there are a number of identifiable roads. However, it can be more difficult in a rural setting due to unmarked roads.

Significant issues were encountered by the PIT on 7 January 2016 in defining roads for alert boundaries due to the DFES South West Region Emergency Services Directory (ESD)⁶⁰ not extending to cover most of the Shire of Waroona. The ESD is a map book provided to all agency and volunteer emergency services personnel, providing a common location reference tool. In particular, there is no ESD for the P&W Swan Region. Further, the IMT needed to use multiple ESD books in order to create one useable map of part only of the fire ground.

P&W have their own series of electronic maps, known as Conservation Operations Graphics maps (COG maps). However, these maps did not clearly show all road names (even when the zoom function was used).

⁵⁵ Hill, C., Hearing, 18 March 2016

⁵⁶ Confidential submission

⁵⁷ Submissions of members of public and Hill, C., Hearing, 18 March 2016

⁵⁸ Landgate, *FireWatch*, at <http://srss.landgate.wa.gov.au/fire>

⁵⁹ Confidential Submission

⁶⁰ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 55

*Without that map it was proving extremely difficult to get a visualisation of where the alerts were.*⁶¹

Mapping officers were able to produce suitable maps by the late afternoon on 7 January 2016, which allowed the Alerts Officer to improve and identify the mapping of boundary areas for alerts.

It would appear to the Special Inquiry that an increased emphasis should be placed on the Public Information function and the importance of providing the PIT with current maps.

Emergency Alert system

The current Emergency Alert system used by DFES is a web based system designed for the purpose of delivering community warnings regarding emergencies to fixed land lines (based on service address) and mobile phone (based on address or phone location) in a defined area.⁶² The area subject to the Emergency Alert is determined by the agency authorising the message.

The Special Inquiry has received evidence that many community members did not receive any Emergency Alert messages at all; that some received one or two SMS very early in the fire, and others received messages after the fire had passed.

The Special Inquiry also notes the significant number of failed and undelivered SMS and landline messages. It is unclear to the Special Inquiry what caused these delays and failed and undeliverable Emergency Alerts. However, the Special Inquiry notes there are a number of limitations of the system.

In particular, the system depends on a geographical warning area being accurately identified. Accordingly, it is crucial that the geographical area be accurately identified. Further, if the last known location of a mobile telephone handset is not in the warning area, then the message will not be received. The system will also not work if the mobile telephone handset is switched off, if the network has been affected, for example by the loss of power.

During the fire the Yarloop Telstra exchange was undamaged, however 18 mobile sites lost AC mains power and some optic fibre serving the mobile sites was also damaged.⁶³ This caused some access restrictions which affected the areas of Waroona, Lake Clifton and Yarloop.

Whilst all attempts should be made by agencies to utilise the Emergency Alerts system in a timely and accurate manner, the Special Inquiry considers that it is important for members of the public to be aware of the technological limitations of this system, particularly in a bush fire, and not put off making decisions regarding evacuation until receiving an Emergency Alert.

⁶¹ Hill, C., Hearing, 18 March 2016

⁶² DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p.52

⁶³ Submission of Telstra

Critical Messaging System

Recommendation 34 of the 2011 Perth Hills Bushfire Report, recommended:

FESA develop, in partnership with other emergency service agencies, a ‘one-source-one-message’ multilayered system similar to that recommended by the Victoria Bushfires Royal Commission.

The Special inquiry understands that currently, DFES and P&W use an application called Newsletter Manager Pro to generate alert messages which are then distributed to email lists. The messages are then manually pasted onto the DFES and P&W websites.⁶⁴ In addition to this, DFES media manually updates pre-recorded public information telephone line message files. This process is repeated every hour during a major incident and duplicated for P&W warnings.⁶⁵

A review of the current system determined that the processes are time consuming, ineffective and open to human error.⁶⁶

Unlike Victoria and other States, Western Australia does not have a Critical Message System (CMS). Victoria utilises a CMS app called ‘Fire Ready’ which includes a live incident map, watch zones, GPS integration and advice information. It also gives users the ability to share incidents and warnings with friends and family.

In furtherance of the 2011 Perth Hills Bushfire Report recommendation, DFES is currently proceeding with the purchase of a CMS to replace the existing software. The CMS will accept automatic and manual feeds of information to generate communications which standardises messages. It then catalogues and publishes messages instantaneously across a range of mediums including emergency information websites, Twitter, Facebook, phone lines and news alerts. It can also archive and expire old information which assists in the management, production and distribution of public information during emergencies and other related communications⁶⁷.

The introduction of a CMS would fulfil recommendation 34 from the 2011 Perth Hills Bushfire Report and assist in providing the community with a ‘one stop shop’ of emergency information and an ‘at a glance’ holistic picture of emergency events across the state in real time including an interactive map. It would also streamline processes and provide efficient distribution of public information through the removal of multiple systems to manage a single message, resulting in reduced duplication and manual errors.

In addition, a CMS will ensure a live incident feed that will automatically publish information as soon as an incident is recorded on the Computer Aided Dispatch system. It will include the ability to view prescribed burns information alongside alerts and warnings. The DFES website’s default interface will also be an interactive map.

⁶⁴ Department for Fire and Emergency Services, *Critical Messaging System Business Case*, p. 5

⁶⁵ *Ibid*, p. 6

⁶⁶ *Ibid*, p. 5

⁶⁷ DFES, *Project Options Paper: CSB064 Critical Messaging*, p. 5

The purchase of a CMS has been the subject of a tender process, with a contract being awarded to Whispir on 8th February 2016.⁶⁸ DFES are funding the initial development and establishment of the CMS on behalf of all government agencies and P&W anticipates becoming a user of the system once it is established.⁶⁹

The Special Inquiry supports the prompt establishment of the CMS.

'Fire Ready' App

Whilst the DFES website can be accessed by handheld devices such as mobile telephones and tablets, DFES does not currently have a smart phone application (app) service whereby members of the public can 'opt in' to receive community alerts and other information direct to their smart phones and other mobile devices.

The Special Inquiry notes that a number of other Australian States use a smart device application that enables a subscriber to receive fire information and warnings. By subscribing to a 'Fire Ready App' the subscriber can set up a mobile phone (or other smart device) to:

- receive general warnings regarding fire danger and Total Fire Bans;
- receive warnings and advice messages regarding 'fires near me'; and
- receive specific location based warnings within a radius of a nominated 'watch zone'.

The system is geo-referenced using a scalable Google map base. Where an incident occurs within a watch zone, the subscriber can see whether vehicles are attending and the control status of the incident. The App is also a social media touch point.

The Special Inquiry has received evidence that in the 2016-17 financial year DFES proposes to establish a Digital Communications and Social Media Team to take advantage of new technology. It is also proposed that this team will be tasked with expanding DFES social media engagement, developing the CMS and also investigating and delivering an app for handheld devices. Whilst specific details of the app have not yet been finalised, DFES proposes to deliver the app by 2017-18.⁷⁰

Recommendation 11: The Department of Fire and Emergency Services to investigate and adopt a system that will allow the public to opt in, monitor and receive, through a 'push mechanism', bushfire and other emergency warnings, maps and information using a wide variety of devices including personal hand held smart devices.

The Special Inquiry notes that the Shire of Yilgarn is a user of the app 'Whispir', an 'opt in' service. Feedback received from the Shire indicates the app is used primarily to advise the community of fire and harvest bans and they have not received any complaints from the community that the messages are not being received by relevant persons or in a timely manner.⁷¹

⁶⁸ DFES, *Project Status Report 20160229: Critical Messaging*

⁶⁹ Letter from DFES to P&W dated 20 January 2016

⁷⁰ DFES, information provided in response to Special Inquiry summons dated 7 April 2016

⁷¹ Shire of Yilgarn email to the Special Inquiry dated 12 April 2016

Finally, the Special Inquiry notes that DFES is also working with WALGA to incorporate the delivery of alerts and warnings via its 'LocalEye' app in the near future. If this proceeds, this will allow people to register with the 'LocalEye' app to receive alerts and warnings in their area.⁷² The Special Inquiry notes that no specific timeframe has been put on such a project, but encourages DFES to take steps to have this project ready for the commencement of the 2016-17 bushfire season.

Social media

Social media has been recognised as playing an increasing role in the efficient and effective method of dissemination information during crisis events such as the 2011 Queensland floods, Christchurch earthquakes and the 2013 Boston Marathon bombings.⁷³

The use of social media within emergency management is still being developed and appears to lack coordination across agencies. The Australia-New Zealand Emergency Management Committee is coordinating the development of a national framework for the use of social media in crisis communication which aims to improve knowledge sharing across the Australian emergency management organisations about the effective use of social media.

Unlike some agencies DFES does not have a dedicated Facebook page. However, DFES utilises a Twitter account which disseminates alerts and warnings, FDRs, TFBs and media releases at intervals after they appear on the DFES website. These notifications are based on Really Simple Syndication (RSS) feeds which is a data format for syndicating news and other information from websites. RSS feeds are by subscription and provide free updates to a computer at designated intervals when content is updated on a website.

P&W has a Facebook presence for general news/media releases of agency activities in the community, fire mitigation works, such as prescribed burning and bushfire alerts. P&W also utilise Twitter and YouTube to some extent.

A further example of a social media platform that may assist the community is the Facebook Safety Check function. During a major disaster, Safety Check can assist to:

- let friends and family know you are safe;
- check on others in an affected area; and
- mark friends or family members as safe.

In evidence received by the Special Inquiry, community members note that the use of social media would have been an additional and effective method of communication to assist in the distribution of information relating to the incident, alerts and warnings.⁷⁴ Often, members of the public took it upon themselves to share official information on social media.

The Special Inquiry encourages the use of social media by DFES, P&W and local government to disseminate public emergency information during a bushfire. The Special Inquiry notes that in the 2016/17 year DFES proposes to establish a Digital

⁷² DFES, information provided in response to Special Inquiry summons dated 7 April 2016.

⁷³ Flew, T., et al, *Support Frameworks for the Use of Social Media by Emergency Management Organisations: Policy Report*, Queensland University of Technology, November 2015

⁷⁴ Confidential Submission

Communications and Social Media Team, and one task for this new team will be to expand DFES social media engagement. The Special Inquiry encourages this development.

*Many people were going to Facebook for information.*⁷⁵

Power issues

The loss of power to residents within the Shires of Waroona and Harvey from early on Thursday 7 January 2016 caused significant disruption to essential services including telecommunications.

Unless community members utilised battery operated or non-powered technology, the capacity to make use of some the warning systems such as ABC radio, television, internet and some telecommunication service providers was significantly reduced or, in many cases, completely unavailable.

The Special Inquiry notes the limitations of many of the modern methods of providing public information during an emergency. It is for this reason that the Special Inquiry considers it appropriate to give consideration to the use of emergency sirens.

Sirens

There are a variety of reasons why modern methods of providing public information may not be received, including the lack of mobile network coverage and power outages.

An alternative which is used effectively in Victoria and many European countries (such as Austria) is the use of emergency warning sirens. These fixed sirens are used to alert a community to an imminent emergency. It is the responsibility of individual community members to seek further information on the specific emergency.

The Special Inquiry is not aware of any community alert sirens used in Western Australia, however in both written and oral evidence received by the Special Inquiry many individuals suggested that the use of an emergency warning siren would have assisted them, specifically as most methods of communication and warning notifications had failed:

*A warning siren would be brilliant ... I grew up in country New South Wales and we had warning sirens on our fire station. And they had different warning sirens, different tones for different things. So we knew that if a certain siren rings then it's – it's time to start packing your car...*⁷⁶

Emergency warning sirens could be used in addition to other warning methods such as emergency alerts provided by mobile and landlines, website updates and other emergency broadcasting methods.

Sirens will not be suitable for every community and there are factors that may inhibit their effectiveness and appropriateness. Local Governments should determine if their communities would benefit from using a siren as a form of additional warning. A Policy or guideline to

⁷⁵ Submission of member of the public 11

⁷⁶ Colebrook, M., Hearing, 4 March 2016

assist in this determination should developed in conjunction with consultation from key community representative groups such as WALGA.

Opportunity 9: The State Emergency Management Committee to develop policy guidance for local governments regarding the installation of bushfire and emergency community warning sirens in ‘at risk’ communities.

Being alert and situationally aware.

There are a range of warning methods and technologies that are available. Simple as it may seem, we should not dismiss the importance of situational awareness. Being generally aware of the FDR, and vigilant on days of elevated fire danger are simple and effective actions for everyone to consider. Bushfires can and do start suddenly and travel quickly. Developing and issuing warnings takes time. The importance of a periodic walk around the house or the workplace, and a scan of the horizon for smoke, should not be dismissed.

Importance of reinforcing the role of warnings

It is noted that the doctrine around warnings and public information advice during an emergency includes SEMC policies, Westplan – Emergency Public Information, Westplan – Fire, the DFES WAFESM and the P&W Bushfire Manual.

The criticality of issuing warnings that are timely, accurate and relevant is self-evident. It is imperative that key guidance by agency heads continually drill the importance of doctrine about warnings to all those involved in the response to bushfires.

This lesson was brought home to Victorian fire agencies in the aftermath of the 2009 Victorian bushfires. The inability of key agency leaders and ICs to place priority consideration to warnings has been harshly reinforced.

The Victorian Bushfires Royal Commission concluded that the Chief Officers:

...should have done more in relation to warnings, supporting incident management teams and statewide planning. To the extent that they relied on their subordinates to perform these tasks, this reliance was ineffective. Responsibility for the failure of the chain of command must rest at the top.

Further, that the Chief Officers:

...were in a unique position—with the ability to oversee and assess the potential of multiple fires as they developed across the state and to monitor the progress of the south-westerly wind change—to appreciate the need for a strong emphasis on warnings to the public and for increased support for incident management teams that would inevitably be sorely stretched by events on the day. ... there was little of greater strategic importance than monitoring the passage of the wind change because of its deadly potential. This was not done in a manner that would have led to the maximum advantage being gained from the meteorological information.⁷⁷

⁷⁷ Royal Commission into Victoria's Bushfires, McLeod, R. N., Pascoe, S. M., & Teague, B. G., 2010. *Final report: Volume 2*. Melbourne, Government Printer for the State of Victoria, p. 81

The Victorian Bushfires Royal Commission went on to identify a number of relatively simple practices that they believe would have greatly assisted “in identifying shortcomings in warnings and in the composition and effectiveness of incident management teams”:

- *Once a fire had been reported, requiring the responsible incident management team to provide to the iECC as soon as practical an incident action plan summary, which should have been used to ascertain whether critical matters such as warnings, resourcing and firefighter safety were being factored into the strategy for the fire.*
- *Requiring provision of predictive maps—either by the IMT or by the fire behaviour analysis unit within the iECC itself—and a list of all warnings issued for an incident (and updated as required).*
- *On the basis of the predictive map and the list of warnings – confirming that communities in the probable path of the fire had been warned – ensuring that the warnings took adequate account of known weather information, such as forecast wind changes – issuing additional warnings as required.*
- *On the basis of predictions for all the fires, developing priorities for the fires according to the greatest threat to life and safety and allocating state resources with that in mind.⁷⁸*

Further, the Victorian Bushfires Royal Commission reinforced the need to inculcate mindfulness about warnings:

Traditionally, and unsurprisingly, the fire agencies’ focus has been the suppression of fires, which goes some way towards explaining why insufficient priority was given to warnings on 7 February. This lack of prominence attached to warnings should also be seen in the context of the ‘Prepare, Stay and Defend or Leave Early’ policy, which, with its emphasis on individual fire plans and making decisions in advance of a fire, tends to diminish the importance given to the provision of targeted warnings to communities in the potential path of a fire. A central message of the Prepare, Stay and Defend or Leave Early policy is that householders are ‘on their own’ in terms of their individual safety because the fire authorities will be fully engaged in fire suppression. On a day such as 7 February 2009—when the predictions were for a day more dangerous in terms of fire behaviour than any previously faced in Victoria—the fire agencies needed a change in mindset to recognise that the most effective way of protecting communities would not be through fire suppression (which would probably prove ineffective) but by giving much more prominence to timely and accurate warnings. The tragic outcome of the fires brought this need for a change in priorities into sharp focus.⁷⁹

In addition to the responsibilities of the IC and the PIT, the SOC and ROC also have a role to play. It is reasonable to expect that one of the functions of these two layers in the line of control, in a Level 3 bushfire, is to overview and provide analysis of the IMT plans, including the community warnings emergency alerts. It is not evident to the Special Inquiry that staff

⁷⁸ Ibid

⁷⁹ Royal Commission into Victoria's Bushfires, McLeod, R. N., Pascoe, S. M., & Teague, B. G., 2010. *Final report: Volume 2*. Melbourne, Government Printer for the State of Victoria, p. 82

at either facility critically reviewed the community warnings and alerts prior to issuing the same.

The Special Inquiry considers that there is room for improvement by reinforcing the primacy of warnings during bushfire events to all those involved in the response to a Level 3 bushfire. In particular, the Special Inquiry considers that the role of the ROC and the SOC needs to be revisited to ensure that a facilitating, supporting and enquiring role in relation to the dissemination of public emergency information is clearly defined.

Public expectation

Finally, a consistent issue which has been identified by the Special Inquiry is managing public expectations concerning alerts and warnings.

The Special Inquiry notes the importance in providing public emergency information during a bushfire. It is essential to provide communities with information that is timely, accurate and consistent. This enables members of the community to make informed decisions based on the current and likely impact of the incident as well as up to date advice about evacuation. Agencies should continue to make improvements to the manner in which public emergency information is disseminated.

However, the unpredictability of bushfire behaviour, and a reliance on mains electricity for technology and communications, are inherent problems for agencies trying to balance community expectations of timely, reliable and effective warnings.

There is also a risk of over communicating warnings, which has the potential to lead to compliancy, message fatigue and general confusion. It is essential that members of the public are proactive in considering their own safety, and do not rely only on information from departments.

The Special Inquiry notes that community alerts and warnings are merely one method by which members of the community obtain information during an emergency. The Special Inquiry does not consider that members of the public should only rely on community warnings and alerts. In this case, the Special Inquiry notes that there were a number of warnings in place which should have indicated a level of vigilance by members of the public in Yarloop was required. This is reflected by the fact that some members of Yarloop had already evacuated. Further, during the afternoon of 7 January 2016, smoke from the fire was also visible in Yarloop.

Comments received in several written submissions to the Special Inquiry indicated that due to specific town sites not being mentioned in alerts, community members did not feel that action was required. The Emergency Alert Australia website⁸⁰ advises individuals to not wait to receive a warning message before acting and this message is also promoted in the DFES Community Engagement Bushfire Strategy. The Special Inquiry endorses this message.

As the technology, timing and content of emergency information and warnings continue to be enhanced, so too the expectations of the community increase. In attempting to meet all of the (varying) needs of community there needs to be a balance. There is a risk of a “learned

⁸⁰ Emergency Alert Australia website, <http://www.emergencyalert.gov.au>

helplessness”. That is, some individuals will choose not to proactively seek information or to act on information until they are told or shown directly by the emergency services. Consistent with the theme of ‘Shared Responsibility’, the aim of warnings and advice should be to empower the public to act on their own, to the greatest degree possible.

The Special Inquiry considers that continued emphases should be placed on education around warning and alert meanings and limitations. Further, self-reliance and preparedness should continue to be encouraged for people living in bushfire prone areas.

Chapter Eleven – Evacuation and Shelter Issues

Evacuation Framework

Evacuation can be defined as the immediate and urgent act or process to move people away from a threat or actual occurrence of a hazard for reasons of safety.

Evacuation of people from an area affected by a hazard is one of the strategies that may be employed by emergency managers to mitigate the potential loss of, or harm to, life.¹

The policy in relation to evacuations is detailed in State Emergency Management Policy 4.7 ‘*Community Evacuation*’ (SEMP 4.7). SEMP 4.7 provides for two types of controlled evacuations: directed and recommended. A directed evacuation is where the Controlling Agency of an emergency situation issues a direction for the community to evacuate from a specified area as it is believed that there is an imminent and real threat to life should they remain.² Persons may also choose to self-evacuate.

A recommended evacuation is where the Controlling Agency provides advice to the community suggesting that they evacuate, but does not require them to do so. A recommended evacuation is applied when it is needed to mitigate the potential effects of an emergency on a community, based on the agency’s risk assessment at that time, but where the risk is not perceived as extreme/imminent.³

The decision to issue a directed or recommended evacuation during an emergency rests with the Controlling Agency. The criteria to be considered prior to an evacuation decision being made are outlined in the WA Community Evacuation in Emergencies guide.⁴

When an evacuation is to occur, the Controlling Agency advises community members of the most suitable location they should evacuate to (e.g. evacuation centre, refuge site, place of last resort).⁵ The operation of evacuation centres is discussed in more detail in Chapter 13 – Transition to Recovery when welfare issues related to the Waroona fire are considered more generally.

The Controlling Agency is also responsible for communicating guidance about evacuation through timely warnings and advice to the community.⁶ Warning systems are discussed in more detail in Chapter 9.

Westplan – Fire provides that the WA Police are to assist in the conduct of evacuations, as requested by the Controlling Agency.⁷

Further, information and education regarding warning and evacuation should form part of local government’s emergency management planning and preparedness process. This

¹ SEMC, SEMP 4.7 - *Community Evacuation*, 2014, [3]

² *Ibid.*, [1.2]

³ *Ibid.*, [1.3]

⁴ *Ibid.*, [16]

⁵ *Ibid.*, [23]

⁶ *Ibid.*, [18]

⁷ SEMC, Westplan – Fire, 2013, p. 53

information and evacuation plans should be communicated to the local community. The community engagement strategies should be documented in the local government's Local Emergency Management Arrangements (LEMA).

Evacuations during the Waroona fire

Recommended evacuations were conducted from an early stage in the Waroona fire. The IAP for Operational Period 1 noted the need to protect of users of the Bibbulmun Track and Murray campsite.⁸ The Special Inquiry understands that on 6 January 2016 the IMT contacted the Lake Navarino campsite advising that the campers there should evacuate.⁹ Approximately 120 people were evacuated. At approximately midnight on 7 January 2016, a 000 call was received from two campers who remained at the site; they were assisted from the fire ground at 0128 hours, 7 January 2016.¹⁰

The Special Inquiry also understands that on Thursday 7 January 2016 around 200 people were evacuated from the communities of Preston Beach and Yarloop.

The Special Inquiry understands that initially an evacuation of Preston Beach by road was conducted when egress from the only road in to and out of town was still possible. A member of the IMT noted difficulties in this evacuation of people from the Preston Beach township:

... we tried to evacuate Preston Beach, and we provided the safe route out of Preston Beach the following day, and I think 37 vehicles left and 200 people remained in the town, in spite of us trying to get them out. So, you know, I think – I think the potential of a fire like this is underestimated by the community. How would a community know what it's going to be like until it actually happens to them, physically?¹¹

Later, some of the remaining people sheltering on Preston Beach were evacuated from Preston Beach by boat on the morning of 8 January 2016. The evacuation included assistance from the Volunteer Marine Rescue Service. However, many people chose to stay.

This example demonstrates the enormity of the challenge when considering evacuation. In the case of Preston Beach, many people left it until too late to leave, then lacked confidence to shelter in place, and subsequently had to resort to sheltering in the Preston Beach car park from the afternoon of 7 January 2016 as the fire was closing in on the town and the only access/egress road had been cut off.

There were also a number of community members who were in Yarloop on 7 January 2016 when the fire began to bear down on the town. The Special Inquiry understands there was confusion as to whether the emergency warnings applied to Yarloop, and if so when or where they should evacuate to. A resident of Yarloop informed the Special Inquiry that at approximately 1700 hours on 7 January 2016 she was advised to evacuate by emergency services personnel; however she was not advised where to evacuate to:

WITNESS: ... and the senior ladies, our neighbours, were saying that, "You should get a warning from the police or from the fire brigade to evacuate and which way to go..."

⁸ Incident Action Plan, Shift 1, 6 January 2016

⁹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 60

¹⁰ Ibid

¹¹ Delaney, R., Hearing, 29 March 2016

[T]he big fire truck come down and he said, "You had better get out of here right away," but there was no sirens, never heard..."

SPECIAL INQUIRER: So the person who said to evacuate didn't tell you where to go?

*WITNESS: No.*¹²

As with Preston Beach, many people in Yarloop were unable to evacuate safely. They took shelter on the Yarloop Oval, protected by firefighters and water from the oval's reticulation, as the fire passed through the town.

In addition to the specific evacuations listed above, many people heeded the advice of emergency warnings suggesting they leave if they were not intending to defend their property and chose to self-evacuate. These people generally sheltered at evacuation centres or with family and friends in safer areas.

A recommended evacuation of the township of Harvey occurred on 9 January 2016. WA Police door knocking occurred between 1430 hours and 2025 hours on 9 January 2016. The WA Police informed the Special Inquiry that between 250 to 400 people chose not to heed the direction to evacuate.¹³

A WA Police Commander explained the complexities associated with undertaking door knock evacuations to the Special Inquiry:

So when we come to a directed evacuation that's where the Incident Controller says I want this place evacuated and there's some things we put in place around how we would do that, what's the trigger point, what time are we – we need a certain amount of time to do it, all those sorts of things. But, I mean, basically, our uniforms are what I'm wearing in front of you. It's not – it's not protective clothing.

*We have no expectation that our officers put themselves at risk of death or serious injury. And there's incidents throughout this event where we have knocked on people's doors and we have advised them to go, and some have gone and some have not. So if it's practical, if it's possible, we will do it. But if it's of a magnitude that we can't do it or, I mean, it – and I guess the complexity in this is it's not like running down a row of terraced houses and knocking on someone's door. It's knowing where the house is on the property – all those sorts of things. So it's certainly – we have done that, but putting ourselves in harm's way or serious harm's way is not what we've instructed our officers to do.*¹⁴

The Special Inquiry notes the complexities associated with evacuations.

¹² Archer, A., Hearing, 22 March 2016

¹³ Tuttle, J., Hearing, 29 March 2016

¹⁴ Ibid.

Shelter options during a bushfire

In addition to evacuation centres, other locations may be identified as places community members can evacuate to quickly and safely during an emergency situation. These are often known as sheltering in place, assembly areas or places of last resort.

Westplan – Fire provides that where it is not possible to evacuate in time, then the ‘Protect in Place’ procedure should be used.¹⁵ The early identification of vulnerable locations, facilities and groups is important in ensuring that the evacuation effort and objectives are implemented on a priority basis.

Westplan – Fire also provides that the development of evacuation procedures is the responsibility of controlling agencies for bushfire and should be detailed in the local BRMP and referenced in the local government’s LEMA. Facilities and community groups are to ensure that appropriate actions are taken to ensure the best possible safety of the community. This may include the identification of refuges and safer places as required.¹⁶

Neither the Shire of Harvey or the Shire of Waroona’s LEMA have specifically pre-identified ‘Places of Bushfire Last Resort’ or community refuges. While the Shire of Waroona does nominate several ‘designated assembly areas’, in addition to evacuation centre locations in its LEMA, it is not clear how well these locations were communicated to the community. This is a matter which had recently been identified by the Shire of Harvey as requiring attention.¹⁷

As the Waroona fire was a major incident, the Shires of Waroona and Harvey will be required to review and update their LEMA’s. The Special Inquiry considers this to be an opportune time to consider and investigate options for ‘Places of Bushfire Last Resort’.

It is important for the community to be aware of safe places they can go to during a bushfire, along with how they can safely get there. During the Waroona fire, the Emergency Warning bushfire advice alert was utilised on multiple occasions. The alert contains evacuation advice under the heading of ‘Places of Last Resort’. It stated:

*If you cannot shelter in your home, a safe place you can go to is a local open space, a shed, swimming pool, dam or building where you may go to seek shelter from a bushfire. This will give you some protection from the effects of a bushfire. Take water, woollen blankets and wear protective clothing.*¹⁸

The Special Inquiry notes that specific places are not identified in the warning, and there is not an existing list of approved or agreed safe places.

DFES publishes a *Safer places in a bushfire* factsheet which is aimed at individuals who are considering their own bushfire survival plans.¹⁹ This document encourages community members to consider the use of a safer place in the event that they cannot stay and defend

¹⁵ SEMC, Westplan – Fire, 2013, p. 29

¹⁶ Ibid., p. 17

¹⁷ Letter from Shire of Harvey to Special Inquiry dated 11 March 2016

¹⁸ Bushfire Emergency Warning message issued at 2225 hours on 6 January 2016

¹⁹ DFES, *Safer Places in a Bushfire* fact sheet, at http://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireFactsheets/DFES_Bushfire_Factsheet-Safer_Places_in_a_bushfire.pdf

their property. A safer place is somewhere they can go with the expectation of a reasonable level of safety and shelter until the immediate threat of bushfire has passed.

Places of Bushfire Last Resort

During the Waroona fire, there were two instances of places of last resort being used by the community to shelter from the fire: Preston Beach and the Yarloop Oval.

The Special Inquiry understands that there was only one access route in and out of the Preston Beach townsite. As there were no pre-identified 'Places of Bushfire Last Resort', the car park was used as a place to shelter due to its proximity to the ocean. A Preston Beach resident stated:

A lot of the local people have chosen to stay, we know if things get a bit hairy we can go down to the beach.²⁰

Further, it is understood that throughout the day and evening of 7 January 2016, there was uncertainty as to whether residents of Yarloop should evacuate. Some of this confusion resulted from the warnings and alerts that were issued over the course of the fire – this is discussed in Chapter 9.

This lack of early evacuation resulted in a number of people having to flee the township at the last minute, and take shelter on the Yarloop Oval. The Special Inquiry understands that approximately 79 people were sheltering on Yarloop Oval as the fire impacted the town.²¹ One Yarloop resident recounted to the Special Inquiry:

So we went along and got in our cars and headed down towards the oval because we didn't know where to go, what road to take out or anything.²²

The Preston Beach car park and the Yarloop Oval have not officially been assessed as appropriate 'Places of Bushfire Last Resort'. They were not pre-identified places of last resort, but due to the seriousness of the fire, members of the community took refuge in them as they did not know of a safer alternative.

The Special Inquiry considers there is opportunity to embrace 'Places of Bushfire Last Resort' more formally within high risk areas in Western Australia. Appropriate locations for such places should be identified and assessed, then communicated to the public prior to and during emergencies.

The Special Inquiry discussed the use of 'Places of Bushfire Last Resort' with the CEO of the Shire of Waroona, who agreed that it would be advantageous to have these identified.²³

The Special Inquiry also discussed this with the FES Commissioner, who agreed that standards could be established for safe places.²⁴

²⁰ Coast Live, *Residents evacuated off Preston Beach*, 7 January 2016, at <http://www.coastlive.com.au/residents-evacuated-off-preston-beach-shore/>

²¹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 15

²² Archer, A., Hearing, 22 March 2016

²³ Curley, I., Hearing 4 April 2016

²⁴ Gregson. W., Hearing, 6 April 2016

‘Places of Bushfire Last Resort’ are a feature of other Australian jurisdictions’ emergency management policies. New South Wales, Victoria and South Australia have policies which clearly identify, register and communicate ‘Places of Bushfire Last Resort’.

Identification of ‘Places of Bushfire Last Resort’ in Western Australia

The Special Inquiry considers that ‘Places of Bushfire Last Resort’ could be more clearly identified and communicated in WA. This may prevent community members taking shelter in places which have not been identified as be safe. As the name suggests, these are to be places of last resort during an emergency and should not replace early evacuation.

The Special Inquiry recommends that DFES work with the Department of Planning and local governments to adopt a policy which enables local governments to identify, register and communicate ‘Places of Bushfire Last Resort’ in settlements and townsites where the life risk from bushfire is very high or greater.

Recommendation 12: The Department of Fire and Emergency Services to work with the Department of Planning and Local Governments to adopt a policy which enables Local Governments to identify, register and communicate, ‘Places of Bushfire Last Resort’ in settlements and townsites where the life risk from bushfire is very high or greater.

Bushfire refuges

It appears to the Special Inquiry that that there were no pre-identified community bushfire refuges.

While leaving early is always the safest option, the Special Inquiry recognises that not everyone will leave when there is a recommended evacuation. Many people will opt to stay and defend their property. This means that there may be members of the community who will remain in place until the very last minute. If their attempts to stay and defend are unsuccessful, they then have to seek temporary refuge from the fire until they can safely travel to an evacuation centre.

It is noted within SEMP 4.7 that there are various forms of ‘shelter’. A shelter is defined as ‘a dynamic social process providing for the temporary respite of evacuees, including immediate sheltering, temporary sheltering and temporary housing’.²⁵

A temporary refuge can be in the form of sheltering on their property, or at a refuge within the community. The places used by people as shelter in a bushfire therefore need to be built and maintained to an appropriate standard.

It was recognised by the 2009 Victorian Bushfires Royal Commission that a well designed and constructed shelter on a person’s property (sometimes referred to as a bushfire bunker) may provide a temporary place of refuge during a fire.²⁶ However, the use of such facilities must be undertaken with caution and be fully incorporated into a person’s bushfire survival plan.

²⁵ SEMC, SEMP 4.7 – *Community Evacuation*, 2014, p. 2

²⁶ Royal Commission into Victoria's Bushfires, McLeod, R. N., Pascoe, S. M., & Teague, B. G., 2010. *Interim Report*. Melbourne, Government Printer for the State of Victoria.

Further, from a planning perspective, a bushfire shelter can be taken into account when considering a development application – for example the presence of a community shelter in a subdivision or a household refuge with a property development application – but the presence of a shelter should not be used as justification for development in a high flame zone area. If development in a locality is not allowed generally because the bushfire risk is too high, development should not simply be approved because of the presence of a bushfire shelter.

The Special Inquiry considers that work should be undertaken to provide guidance to landowners on the adoption of bushfire shelter options. The Special Inquiry notes that the Victorian CFA and the NSW Rural Fire Service, in conjunction with the relevant government departments for building and planning in each jurisdiction, have undertaken similar work.^{27 28}

Opportunity 10: The Department of Fire of Emergency Services to lead, in collaboration with the Department of Planning and the Building Commission, the development of a policy and guidance to landholders on a range of bushfire shelter options, including household bushfire refuges and community bushfire refuges.

Building Protection Zones

To support household bushfire refuges being a viable shelter option, the Special Inquiry considers that the ability for landholders to establish Building Protection Zones around houses needs to be considered. The physical removal of vegetation from within a defined area around a house or other infrastructure makes it a more suitable place to shelter, and is one of the simplest bushfire prevention strategies.

The examples of Yarloop Primary School, the West Australian Rifle Association and the Log Fence Pony Club support this point. These facilities survived the Waroona fire with limited damage. The management and removal of vegetation in and around infrastructure likely aided the survival of the buildings on these sites.

Identifying a method to deal with vegetation around homes and critical infrastructure was identified in the 2011 Perth Hills Bushfire Report:

*Local Government institute a comprehensive program to assess fuel loads and bushfire preparedness on private properties. The program should give reference to the creation and maintenance of a Building Protection Zone, in line with FES Guidelines.*²⁹

The current requirements for land clearing are contained in the *Environmental Protection Act 1986* (EP Act). The EP Act recognises the need to clear vegetation for fire protection and prevention purposes through exemptions outlined in Schedule 6 to the EP Act.

²⁷ Country Fire Authority Victoria, *Private Bushfire Shelters or Bunkers*, at <http://www.cfa.vic.gov.au/prepare/private-bushfire-shelters-or-bunkers/>

²⁸ New South Wales Rural Fire Service, *Fast Fact: Private Bush Fire Shelters*, at http://www.rfs.nsw.gov.au/_data/assets/pdf_file/0017/4607/Fast-Fact-Private-Bush-Fire-Shelters.pdf

²⁹ Government of Western Australia, *A Shared Responsibility: The Report of the Perth Hills Bushfires February 2011 Review*, 2011

An example of an exemption is a section 33 notice issued by local government under the *Bush Fires Act 1954*. In most cases, such notices require landowners to clear perimeter firebreaks and the area within 20 metre of a building. Guidance for the establishment of fire breaks is also provided by the *Guidelines for Planning in Bushfire Prone Areas* issued by the Department of Planning. These guidelines recommend the creation of a minimum 20 metre asset protection zone and an 80 metre hazard separation zone surrounding a house. Also relevant is the Department for Environmental Regulation *Fact Sheet on Bushfire Protection Zones* which recommends the establishment of a 20 metre BPZ.

It is apparent that land clearing around assets is an ongoing problem. The Special Inquiry received evidence that regulatory process for a landowner to clear land for bushfire protection is burdensome. The reason being is that no uniform approach for land clearing exists across all local governments. Without a permit, and without falling into any of the exemptions listed under Schedule 6 to the EP Act, a landholder is not able to conduct land clearing.

The Special Inquiry considers that an ‘as of right’ policy to clear vegetation around dwellings within a designated bushfire prone area for all landholders needs to be considered. The WA State Map of Bushfire Prone Areas could form the basis of the ‘as of right’ designated areas.

In Victoria a 10/30 rule for clearing without a permit was introduced in 2009. This rule allows a landholder to clear any vegetation including trees within 10 metres of a house and any vegetation except trees within 30 metres of a house for bushfire protection.³⁰ This rule exists as a right for landholders. A similar rule could be considered in Western Australia in accordance with current State policies.

It is understood by the Special Inquiry that the draft consolidated *Fire and Emergency Services Bill* proposes to give the FES Commissioner power to issue ‘guidelines’ concerning the ability to clear vegetation surrounding a dwelling over and above existing land clearing entitlements. The intent of this section appears to be well supported by other departments.³¹

Opportunity 11: The Departments of Fire and Emergency Services, Planning and Environment Regulation to consider policy options with respect to the clearing of vegetation by landholders within a specified distance of an asset or dwelling, for the purposes of bushfire protection.

³⁰ Department of Environment and Primary Industries Victoria, *Preparing for Bushfire: 10/30 Rule, 10/50 Rule and fence line clearing*, at http://www.depi.vic.gov.au/__data/assets/pdf_file/0016/221308/1030-Rule,-1050-Rule-and-fence-line-clearing-factsheet-Frequently-Asked-Questions-.pdf

³¹ Letter from Director General, Department of Planning to the Special Inquiry dated 13 April 2016; Letter from Director General, Department of Environment Regulation, to the Special Inquiry dated 18 April 2016

Chapter Twelve – Traffic Management

He said, “I can arrest you if you go through a police road block.” I said, “You can do what you bloody like but I’m going home.”¹

During the course of the Special Inquiry the single most common complaint was around the operation of Vehicle Control Points (VCPs). People already traumatised by the damage the fire had caused, were obstructed from returning to their homes to start to deal with stock and property losses. Others were thwarted from carrying out their livelihood.

Farmers that have all the local knowledge and equipment to assist were stopped at road blocks.²

There was no flexibility at the road block.³

This road block was so far north of the fire that it cut off a large part of the Murray Shire that was not even under a bushfire ‘advice’ level warning. This is not only ridiculous it then turns law abiding citizens into people trying to find ways around the law.⁴

The road block seem to have no discretion about who they let through, there were fuel and water tankers trying to reach the airfield to supply the water bombing aircraft stopped for hours.⁵

A core issue for traffic management during emergency situations is recognising the tension that exists between the need for people to return to, and access their property, whilst also assessing and managing the risks to the safety of the community and essential services workers. Balancing these competing demands is not easy.

I understand, you know, that they’ve got to keep the rubberneckers out. I understand that. But if someone is coming in with a fire-fighting unit on the back or they’re coming in with a stock truck – they’re not going in to be rubberneckers, they’re going in there to – they’ve got a job.⁶

The Special Inquirer is fully cognisant of the difficulties in traffic management in bushfires; in particular, the challenge of assessing when it is safe for residents to return. The role of police and others who attend these VCPs is also recognised as being a difficult one. It is noted that in previous incidents across Australia, including Western Australia, there has been loss of life arising from decisions to allow residents and others access to a fire area too soon.

Notwithstanding it would seem that the management of a number of the VCPs established for the Waroona fire failed the public interest test. From the evidence available (see the quotes above), traffic management during the Waroona fire invoked the anger and amazement of

¹ Ierace, L., Hearing, 10 March 2016

² Submission of member of the public 60

³ Submission of WA Pork Producers Association

⁴ Submission of member of the public 60

⁵ Submission of member of the public 60

⁶ Kaw, A., Hearing, 22 March 2016

many people that spoke to the Special Inquiry. An IC surmised, more delicately, during a hearing with the Special Inquiry that:

*The current system of managing road access in and around bushfires isn't working satisfactorily.*⁷

Even though a policy for traffic management during emergencies is in place in Western Australia, based on the feedback to the Special Inquiry, the policy clearly does not adequately balance the need to return to one's property with safety. This is compounded when the policy is poorly implemented.

Current Legislative and Policy Framework

There are several documents which guide traffic management during an emergency in Western Australia. These are:

- *Bush Fires Act 1954*;
- *Emergency Management Act 2005*;
- State Emergency Management Policy (SEMP) - 4.1 and 4.8;
- SEMC 'Traffic Management during Emergencies Guide'; and
- Community Evacuation in Emergency Guide 2014.

The legislative basis for traffic management during a bushfire comes from section 14B(2) of the *Bush Fires Act 1954*. This provides that when a section 13 authorisation is in place for a bushfire under that Act, an authorised person or a member of WA Police may do all or any of the following:

- direct, or by direction prohibit, the movement of persons, animals and vehicles within, into, out of or around the affected area or any part of the affected area;
- direct the evacuation and removal of persons or animals from the affected area or any part of the affected area; or
- close any road, access route or area of water in or leading to the affected area.

Section 67 of the *Emergency Management Act 2005* provides similar powers in an emergency situation or state of emergency.

The application of these legislative provisions at the operational level is supported by State level policy.

The operational management of emergency incidents is detailed in SEMP 4.1 '*Incident Management*'. During any emergency, the responsible agency for the hazard – in the case of bushfire, DFES – will appoint an IC. The IC has full operational control of the incident and has a number of powers under legislation, including the power to close roads. All incident response actions, including the traffic management strategy, must be approved by the IC.

The policy underpinning any traffic management strategy implemented by an IC during an emergency is detailed in SEMP 4.8 '*Traffic Management During Emergencies*'. SEMP 4.8 provides the minimum considerations for agencies when conducting emergency related traffic

⁷ Mair. G., Hearing, 18 March 2016

management activities. These include planning, implementation and welfare considerations, as well as considerations for deciding to return control of the road to the asset owner (being Main Roads WA or the local government, in most cases).

SEMP 4.8 is supported by the '*Traffic Management during Emergencies Guide*' (Traffic Management Guide). The Traffic Management Guide is intended for use by emergency management agencies, Main Roads WA staff, local government staff and traffic management contractors. It provides that traffic management at emergency situations should be directed towards the achievement of the following objectives:

1. Ensure the safety of road users and emergency responders by:
 - a. Establishing and maintaining vehicle control
 - b. Restricting access to the area through the use of road closures
 - c. Establishing controlled transit of the incident site
2. To provide unrestricted road egress for casualty or community evacuations.
3. To provide unrestricted road access for emergency responders.
4. To establish detours to by-pass the incident area.
5. To promote driver behaviour to avoid the incident area.⁸

Traffic management during the Waroona fire

During a bushfire a Traffic Management Plan (TMP) is developed by the IMT and approved by the IC. The TMP documents traffic objectives including road closures, VCPs, evacuation routes, detours and traffic signals. Government agencies including WA Police, Main Roads WA and local government contractors may be requested to assist in implementing a TMP.

There were a number of road closures in place during the Waroona fire. These increased in number as the fire grew in size. The first key access road authorised to be closed was Nanga Road, Dwellingup at 1330 hours 6 January 2016.⁹ The fire then impacted on major roads, including the South Western Highway and the Forrest Highway, causing sections of them to be closed. The Special Inquiry understands 181 roads in total were affected by the Waroona fire.¹⁰

The Special Inquiry recognises that there are numerous risks to road users which may necessitate the closure of roads during a bushfire. These include:

- flames, embers and smoke across the road;
- falling trees;
- debris (including burning debris) on the road pavement;
- the presence and movement of firefighters, fire and emergency vehicles, plant and machinery and other emergency services personnel;
- damaged road infrastructure (such as bridges, signage);

⁸ SEMC, *Traffic management during emergencies guide*, October 2015, p. 7

⁹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 10

¹⁰ Submission of Main Roads WA

- the presence of live fallen power lines and other live electrical assets; and
- wandering stock.

WA Police may assess the need to close a road for security reasons, such as to provide protection from looting, or to protect the integrity of a crime scene or a scene for a Coroner's investigation.

The Special Inquiry is cognisant of the 2007 Boorabbin fire in which three truck drivers died following a decision to allow transport vehicles through a partial road closure on the Great Eastern Highway.

There is little doubt that the Boorabbin event and the subsequent criticism stemming from it, weighs heavily on the minds of WA Police, Main Roads WA, DFES and P&W staff. The Special Inquiry considers that there may now be an overly risk averse approach when dealing with traffic management at bushfires, underpinning many of the issues detailed below.

Notwithstanding the circumstances which necessitate traffic restrictions during a bushfire, and the impact of the 2007 Boorabbin fire, the Special Inquiry received far too many reports of poor implementation of traffic management policy. This warrants consideration of the issues brought to the Special Inquiry's attention in detail. Specifically, these are:

- the rigid enforcement of VCPs;
- the imposition of inappropriate detours; and
- the management of Restricted Access Permits.

Vehicle Control Points

VCPs are a full or partial road closure through which all vehicle access is controlled. VCPs are established following a risk assessment for all or some of the following reasons:

- to prevent road access to the incident area for the prime purpose of safety;
- to provide controlled access/egress for emergency responders, casualties or evacuees;
- to provide controlled transit of a road past an incident; and
- to monitor a system of restricted access.¹¹

The SEMC Traffic Management Guide provides that:

- all VCPs are to be permanently staffed;
- vehicles or persons (or classes of vehicles or persons) explicitly authorised by the IC may proceed after validation by the traffic controller manning the VCP;
- persons requesting access permission who are not specifically authorised by the IC are held at the VCP pending permission/exclusion to enter the incident area.¹²

During the Waroona fire, WA Police developed a number of 'Interim TMPs' on behalf of, and for the endorsement of the IC. These focussed on police resources and instructions for "refusing/allowing access at police managed VCPs".¹³

¹¹ SEMC, *Traffic management during emergencies guide*, October 2015, p. 10.

¹² *Ibid.*, p. 5

¹³ Submission of WA Police

The Special Inquiry has identified a number of issues with the implementation of VCPs during the Waroona fire. The term– ‘vehicle control point’ – is indicative of an approach focused on the control of vehicles rather than their management.

Rigid Enforcement of VCPs

The Special Inquiry received evidence of instances where a strict adherence to protocol and a lack of discretion resulted in persons with a legitimate need to pass through a VCP being unable to do so. These people included:

- volunteer firefighters attempting to join their Brigades;¹⁴
- local residents who left their properties to attend a community meeting, but after the community meeting were challenged when trying to pass the VCP;¹⁵
- Bush Fire brigade captains who were prevented from obtaining fuel required to sustain their firefighting vehicles;
- those seeking to tend to stock, including veterinarians needing to euthanize animals;¹⁶
- industries seeking to transport goods, such as milk in a time critical manner;¹⁷ and
- a mother who was prevented from passing the VCP in order to evacuate children who were home alone.

In addition an IC expressed his frustration in a hearing with the Special Inquiry about the way in which WA Police managed VCPs.¹⁸

Notwithstanding the need to carefully weigh up risks when enabling re-entry into a fire area, it would appear that a range of people and resources – including resources that could have been effectively used during the fire and in the immediate aftermath and recovery phase – were denied access or were unnecessarily slowed and impeded when the risk of re-entry was either negligible or not evident.

Community

The enforcement of VCPs (colloquially referred to as ‘road blocks’) was the subject of much commentary:

*We have some very traumatic altercation with non-sensible police that seemed very rigid and arrogant in their handling of what we were doing.*¹⁹

*The road blocks made no allowance for the fact that farmers had livestock which needed to be taken care of, let along the ‘people welfare’ aspect for farmers in the area. There doesn’t seem to have been any consideration given to the needs of livestock and farmers during this period.*²⁰

¹⁴ Submission of member of the public 5

¹⁵ Mair. G., Hearing, 18 March 2016

¹⁶ Submission of the Livestock and Rural Transport Association of WA

¹⁷ Ibid.

¹⁸ Mair. G., Hearing, 18 March 2016

¹⁹ Submission of member of the public 108

²⁰ Submission of member of the public 152

During the whole of this process that they set up there, their tent city in Waroona on the oval and no expense was spared in feeding these people and I think that's really good. I've got no problem with that. But the roadblock prevented the local supermarket from being resupplied, prevented the other shops from being resupplied. And when we did get to town we got two litres of UHD milk, no bread. I can't make sandwiches. And, you know, what's going on? Why are these people able to organise all of the copious quantities of food to come into the town but we can't feed the town? There's a problem here.²¹

The Special Inquiry heard accounts of residents accessing back roads where the risks – such as fallen power lines – were unknown. This may be as a result of the rigid enforcement of traffic management. For example:

One of my neighbours, an 80 year old women, was prevented from using the road and was forced to drive cross country over rough paddocks and ditches in order to be able to get to and from her own property.²²

Another source of frustration was the intransigence of officers at road blocks where common sense was not applied. For example milk tankers were denied access to a property less than 1km from the road block, forcing the driver to take back roads to gain access whilst the fire was still 30km away.²³

Another submission to the Special Inquiry stated:

I was not on my farm when the fire was first reported and was then denied access... It also appears during this time granting of access to properties was haphazard and inconsistent. A neighbour was granted access on the basis of needing to feed livestock I was refused access on this basis. On Sunday 10th January I entered against advice using less known access routes. Despite no power... I didn't leave my property for a further several days in case I was prevented from returning by poorly informed police officers.²⁴

In addition to people using back roads as a measure of last resort to access their property, the Special Inquiry has heard accounts of persons being threatened with arrest should they contravene the VCP:

I've tooted the horn on the ute, because I had a heap of jerrycans on the back, and he looked – the cop looked. I said, "Just going into town to get some fuel, if I can I will come back." Never said who, nay or nothing.

15 minutes later I come back, "Where do you think you going?"

I said, "I just told you I was coming out to bloody get some fuel." Said, "No, you can't go through there." I said, "Well, how am I going to get home?" I said, "I've got my wife, I've got my two girls there. How am I going to get home?" Said, "You can't go

²¹ Submission of member of the public 70

²² Submission of member of the public 152

²³ Submission of Livestock and Rural Transport Association of WA

²⁴ Submission of member of the public 75

through, this is a road block.” I replied, “I will go through the paddock, I will go through the bush, I’m going home.

He said, “I can arrest you if you go through a police road block.” I said, “You can do what you bloody like but I’m going home.”²⁵

In another circumstance, the driver of a truck from Geraldton that arrived to help evacuate 7,000 cattle was arrested after attempting to go through a VCP. The driver was subsequently released with the assistance of a CBFCA.²⁶

The Special Inquiry has been asked on a number of occasions, in many different ways: *Why are we forced to break the law to save our property or help out our neighbours? It is wrong that people should be made to feel criminals and risk arrest, all for wanting to access their properties, defend their homes or tend to their farms.* In order for people to effectively stay to defend their property, or to ensure their livelihood survives post-fire, they need to be able to access their property in a timely manner.

The Special Inquiry believes that application of VCPs needs to be flexible, and enforcement needs to be comparative to the risk present at any given time. There needs to be a tiered system which recognises level of need and considers granting access accordingly.

Firefighting personnel

In addition to comments from members of public regarding VCPs, the Special Inquiry heard anecdotal evidence at a meeting with Cookernup and Yarloop Bush Fire Brigades that Bush Fire Brigade members were, on a number of occasions, refused passage through VCPs when travelling in private vehicles to effect a change-over of crews on their Brigade tankers. This was despite the Brigade members explaining they were on their way to the fire station to report to duty. In some instances, they were in their Bush Fire Brigade uniform or protective clothing.

Some personnel were able to pass the VCPs by presenting their DFES identification card which had expired as they are no longer issued.

The Special Inquiry was informed that the Harvey CBCO had attempted to order windscreen identification stickers for his Brigade members from the local government prior to the onset of the 2015/16 bushfire season. However, he was told that the printing company was waiting for more requests in order to meet minimum print run requirements.

The Special Inquiry understands that since the Waroona fire DFES has issued Standard Administrative Procedure 3.3.C ‘Vehicle Identifiers’. This document provides for the issuing of vehicle identifier stickers to some classes of firefighting vehicle. These stickers can be affixed to the windscreen of a vehicle for the purpose of identifying it as a private vehicle owned by a person who is authorised by local government to assist with incident management operations.²⁷

²⁵ Ierace, L., Hearing 10 March 2016

²⁶ Submission of member of public 5

²⁷ DFES, SAP 3.3.C – *Vehicle Identifiers*, February 2016, p. 1

There is a need for a system which allows for the recognition of personnel and their vehicles needing to pass through VCPs with ease. This is particularly important to ensure resources, in the form of personnel and equipment, that can be utilised in incident management are not unduly held up or restricted from reaching their destination.

The Special Inquiry believes that this should be in the form of a DFES issued identification card.

Recommendation 13: The Department of Fire and Emergency Services to issue a photo identification card to DFES members, members of Bush Fire Brigades, volunteer emergency services, Incident Management Teams, forestry industry brigade members and Networked Government Emergency Agency members. DFES also to consider temporary windscreen signage to identify vehicles carrying such personnel.

Agriculture industry

Significant issues were experienced by those seeking to tend to stock or transport agricultural produce.

Examples of this were reported to the Special Inquiry:

*One day trucks carrying pellets could enter, but trucks carrying hay couldn't, despite trucks carrying hay being allowed to enter the day before. There was no change in condition during that time.*²⁸

A member of the WA Farmers Federation recounted for the Special Inquiry:

I spent all of Friday trying to get permission for two trucks to go into a feed lot. Now, there's 6,000 cattle in this feed lot. They normally get feed or feed deliveries once or twice a day.

On the Friday night we eventually – the fellow I had been dealing with from the feed lot rang me and said, "Have you heard anything more" and I said, "No I haven't." Luckily enough, he rang me back and he just said, "Right, we're going in through the back ways then, if that's the case."

10 minutes later he rang me back and he said, "The good news is we've actually got permission to go through." Now, this had taken us all day because we had started very early – well, we had actually started the day before but I had only been involved from that morning.

*We – so he got through two trucks on – at 6 o'clock on that evening. Well, no, it might have been a little bit later than that. But he said to them, "Right, we will be back at 6 o'clock tomorrow morning to come through with another two loads." They arrived at 6 o'clock the next morning and weren't allowed to go through.*²⁹

²⁸ Submission of Livestock and Rural Transport Association of WA

²⁹ Park, D., Hearing, 17 March 2016

The dairy industry in particular was also impacted. Milk was unable to be transported from farms to suppliers and in some cases cows had to be milked by hand as generators were not able to be transported through VCPs:

WITNESS: ... [M]y son, didn't go [when the others evacuated] – didn't have any sleep for 72 hours. He never went – he milked the cows twice a day with a worker, never had any sleep.

SPECIAL INQUIRER: And when you say “milked the cows” what happened to the milk? It wasn't collected.

WITNESS: Well, we threw out two days – but we have been paid for it... [T]he processor has paid for it. We had to chuck out two days milk – 14,000 litres of milk got poured down the drain.

We had no power. We actually didn't milk the cows one day, which is a disaster – we had no power – and the ridiculous part of it was there's a friend of mine who is an electrician. He is a semi-retired electrician. We've got a big generator. The police wouldn't let him through to come out and hook our generator up and we're only a kilometre from town.³⁰

Location of Vehicle Control Points and inappropriate detours

In addition to commentary on the operation of VCPs, the Special Inquiry heard that the location of the VCPs and the detours that put in place were not ideal.

The stupid placement of road blocks caused huge problems. This lack of common sense caused people to break the law, swimming across rivers, crossing private lands.³¹

The road block at the roundabout on SW highway South of Pinjarra in the recent fire. This block could have been located one or two kilometres north of Waroona to allow access for local farmers and the Placid Ark house. The fire was always to the south of Waroona and was being driven by an easterly wind. In the event of change conditions the block could be shifted.³²

The Special Inquiry heard of instances where inappropriate detours were put in place. Vehicles, including trucks were diverted down unknown roads and several accidents are reported to have occurred.³³

³⁰ Pitter, V., Hearing, 10 March 2016

³¹ Submission of member of public 149

³² Submission of member of public 25

³³ Submission of Transafe WA

Compounding this problem, it was reported to the Special Inquiry that truck drivers were directed onto roads that were not part of the heavy vehicle network. Routing trucks on non-approved routes is dangerous as it can lead to structural collapse or road pavement damage.³⁴ In evidence presented to the Special Inquiry it was reported that trucks directed down non-approved routes were apprehended by Main Roads WA inspectors.³⁵

Transportation of workers to the Wagerup refinery

The Special Inquiry was concerned by visual evidence it received showing a bus carrying Alcoa workers passing through the fire area to the Wagerup Refinery. The footage appears to show flames coming within metres of the bus.

The Special Inquiry understands that the background to this occurrence was due to the need for a shift change at the refinery.

The IMT was informed by an Alcoa representative of the risks posed by fire getting into the Wagerup refinery and the risks that were faced if the refinery had to shut down for any reason; “it wasn’t an option” to completely close the refinery.³⁶

Alcoa’s submission to the Special Inquiry stated:

Wagerup refinery’s production was significantly reduced during the fire (the nature of the process means the refinery cannot simply be ‘turned off’) and only essential personal required to ensure minimum safe operating conditions were deployed to the refinery.³⁷

The Special Inquiry notes that Operations Officer B suggested to the Alcoa representative that the staff already at the refinery do a double shift to eliminate the need to transport them at a risky point in time. However, the staff at the refinery had already completed a double shift.³⁸ The Operations Officer stated:

[I]t was a real – was very real issue.... [I]t became apparent that not doing a shift change wasn’t an option. So I had to facilitate the Alcoa guys getting in and out of the refinery. And that was when, you know, Yarloop was under threat and it – you know, the whole fire, basically, exploded.³⁹

As a result a shift change was organised on the morning of 8 January 2016. The refinery remained protected by DFES personnel trained in the protection of critical infrastructure.

³⁴ Main Roads WA, Heavy Vehicle Operations: *Standard Restricted Access Vehicle Route Assessment Guidelines*, July 2014,

[https://www.mainroads.wa.gov.au/Documents/Standard%20Restricted%20Access%20Vehicle%20\(RAV\)%20Route%20Assessment%20Guidelines.RCN-D14%5E23493459.PDF](https://www.mainroads.wa.gov.au/Documents/Standard%20Restricted%20Access%20Vehicle%20(RAV)%20Route%20Assessment%20Guidelines.RCN-D14%5E23493459.PDF)

³⁵ Submission of Livestock and Rural Transport Association of WA

³⁶ Chick, J., Hearing, 1 April 2016

³⁷ Submission of Alcoa

³⁸ Chick, J., Hearing, 1 April 2016

³⁹ Ibid.

The Special Inquiry understands that the Alcoa workers were transported to the Wagerup refinery by bus, with protection from Fire and Emergency Service personnel. A spokesperson for Alcoa publicly stated:

All transportation of employees to and from the refinery on Thursday (January 7) and Friday (January 8) was undertaken only after permission was granted by the authorities, and buses taking workers in and out were escorted by Department of Fire and Emergency personnel.⁴⁰

Concerns have been raised about the appropriateness of workers being transported through the fireground. The Special Inquiry understands that WorkSafe has commenced an investigation into the matter. Consequently, the Special Inquiry does not intend to comment on the appropriateness of the transportation of staff to the Wagerup refinery; WorkSafe is best placed to consider and report on the occupational health and safety implications of the event.

Previous recommendations regarding traffic management

Previous reports on bushfires have considered traffic management issues and have made recommendations which recognise the need to balance the need for people to access their property whilst also upholding community safety standards.

The 2011 Perth Hills Bushfire Report recognised that Victoria, subsequent to the 2009 Victorian Bushfires Royal Commission, developed a Traffic Management System to manage entry to fire grounds; this system included the issue of a return permit. Recommendation 32 of the Perth Hills Bushfire Report stated:

The Western Australian Police and the Fire and Emergency Services Authority jointly examine the Traffic Management System developed as a result of the Victorian Bushfires Royal Commission and seek its adaptation to use in Western Australia with additional attention to the access and egress by bona fide residents to areas that are evacuated.⁴¹

The Special Inquiry understands that following the 2011 Perth Hills Bushfire Report, a Traffic Management Working Group was established to examine and report on this recommendation. The final report to the SEMC that examined the Traffic Management System utilised in Victoria was considered at the SEMC meeting of 13 March 2012. The report recommended that Western Australia should not adopt the Victorian Traffic Management model as it was considered cumbersome.

The Special Inquiry understands that SEMP 4.8 – Traffic Management During Emergencies has not been updated since the Keelty Perth Hills Report, but the Traffic Management Guide During Emergencies is a post-Keelty document.

⁴⁰ Campbell, C., *AMWU claims Alcoa endangered its workers' lives by bussing them through Waroona bushfire zone*, 15 January 2016, PerthNow, <http://www.perthnow.com.au/news/western-australia/amwu-claims-alcoa-endangered-its-workers-lives-by-bussing-them-through-waroon-bushfire-zone/newsstory/299b2735afead289b47cd95033cb2fc1>

⁴¹ Government of Western Australia, *A Shared Responsibility: The Report of the Perth Hills Bushfires February 2011 Review*, 2011, p. 121

Restricted Access Permits during the Waroona fire

The Parkerville Bushfire Review recommended that a Restricted Access Permit (RAP) system for the entry/re-entry of residents, be developed. In response DFES developed the ‘Restricted Access Permit System’. Both the Parkerville recommendation and DFES RAP system emerged out of recognition that once an immediate threat has passed it may be appropriate for property owners to return to their properties:

- for a short duration to collect valuables and pets;
- to return to their properties during day light hours; or
- to return to properties until the permit is revoked, this point is particularly relevant to rural holdings where livestock may require food, water or tending to.

RAP was utilised to some extent during the Waroona bushfire. However, evidence presented to the Special Inquiry demonstrated that the RAP was not effectively implemented.

In some cases people were left waiting hours to receive a permit.⁴² Others waited all day. The Special Inquiry heard anecdotes such as the following:

*I spent all of Friday trying to get permission for two trucks to go into a feed lot.*⁴³

A Waroona resident explained the inefficiencies of the permit system he witnessed while waiting to obtain a RAP:

The thing with the passes – when we went in there, you’ve got a young lady there. She has got a clipboard, pen and paper taking details from people and to me, in this age of technology, I thought it was pretty poor because the majority of people have got smartphones.

You could have had a whiteboard there and state, “This is the information we need. We need your driver’s licence information and your addresses – whatever”. “Okay”. You could have paper there, fill out your sheet – your details on the sheet – hand it in and you’ve got all the details. Or take a photo of your driver’s licence – whatever, you know.

*You would have thought, possibly, if you want this information there could have been a laptop, you know, the girl could have had a laptop, put the information straight into a laptop and then you’ve got it on permanent record, not handwritten notes. So – and of course you can imagine how long it takes if you’re coming – you’re in a queue of people and this girl has to repeat the questions to every individual as it goes on and on and on, so it becomes very, very frustrating.*⁴⁴

⁴² Submission of member of public 70

⁴³ Park, D., Hearing, 17 March 2016

⁴⁴ Lalor, G., Hearing, 22 March 2016

It is clear that attempts to implement a permit solution in the Waroona fire failed. There is need for a more streamlined process for issuing permits to avoid any duplication of work.

The need for an improved permit system was recognised by Incident Controller C:

I think we do need some form of identification and permit system; the sooner, the better. We do need to deal with community needs and we do need to deal with business continuity. It's not satisfactory to say to someone who has got 800 head in a feed lot, for example, "No, you can't come in" – just blanket "no" because that's the easy way of dealing with it, apparently. You know, if it's safe for them to go in and we can facilitate them, that's what we should be doing...⁴⁵

If permits are to be used, they need to be used in a coherent manner and issued efficiently.

Other recommendations within the Rural Fire Capability chapter of this report deal with systems for registering private firefighting resources and enabling fireground access which will complement a permit system.

The need to fix the traffic management policy

Traffic management during an emergency is about risk management. It is not about restricting access completely. It is about effectively managing who, where and when people are allowed to enter and the circumstances in which they are allowed to enter.

The examples cited in this chapter are amongst many examples of inflexible and impractical traffic management presented to the Special Inquiry.

The current policy requires urgent review involving a wider representation of stakeholders. There is great merit, consistent with the theme of continuous improvement, in conducting annual reviews so that the policy can reflect recent experience and maintain its currency.

Along with a review of traffic management during emergencies, the Special Inquiry believes that consideration should also be given to increasing the training of WA Police, Main Roads WA and local government staff and contractors in traffic management planning within the IMT.

Finding: The application of the traffic management policy at some locations during the Waroona fire did not meet the expectations of the community. On this basis, the policy is inadequate and its application requires review.

⁴⁵ Mair, G., Hearing, 18 March 2016

Recommendation 14: The State Emergency Management Committee to review the policy for traffic management at emergency incidents so it reflects national ‘best practice’. This includes the production and issuing of an aide-memoire to guide traffic management, emergency and incident management personnel.

The policy should provide a practical balance between risk to life and the public value of enabling the timely restoration of livelihoods and the movement of critical resources, (including essential services, critical businesses and livestock welfare services), through traffic management points.

The review will involve a range of stakeholders including the Departments of Fire and Emergency Services, Parks and Wildlife, Agriculture and Food WA, WA Police, Main Roads WA, WA Farmers Federation, WA Local Government Association, Forest Industries Federation, and the Transport Industry and ensure that the views of the community are considered.

Chapter Thirteen – Essential Services

The first priority for Incident Action Planning (IAP) will address the protection of community members and keeping them informed. The protection of property, critical infrastructure and community assets will be the next priority. Protection of conservation and environmental values are to be factored into IAPs as the subsequent priority.¹

During the Waroona fire critical infrastructure was impacted leading to incidences where the both emergency services and communities lost access to essential services including power, transport, water and communications.

Water Infrastructure

Yarloop Town Water Supply

Yarloop is supplied with potable drinking water by the Water Corporation, from the Southern Seawater Desalination Plant and the Stirling Dam. The water is pumped from the dams through the Stirling Trunk Main pipeline to a 225,000L ground tank.

The water is then moved from the ground tank, re-chlorinated and pumped to two 225,000L service tanks. These service tanks provide water to Yarloop and Wagerup.

Under normal operating conditions the two service tanks that supply Yarloop with potable water have sufficient storage to supply the town for 20 hours without replenishment.

Extreme water demand on a local Town Water Supply during a major bushfire event can result in up to four times normal daily consumption due to:

- Residential customers using multiple taps within a single property at the maximum rate for several hours and /or evacuating their properties with the water services continuing to operate.
- Water services (operating infrastructure; connections and exposed pipework) damaged as a consequence of the fire, causing water to run free at full capacity.
- Multiple fire hydrant connection points used simultaneously at maximum capacity.

From late 6 January 2016² the vulnerability of water supplies to the impacted areas were a concern for the IMT, Regional Operations Centre and the State Operations Centre. The IMT noted at 2330 hours that there was a need to protect the Hamel water pumping station.

At 0726 hours on 7 January 2016, power and telemetry³ communications to the Yarloop Water Complex, were lost as a result of electrical infrastructure being impacted by the fire. This occurrence is not unexpected in a bushfire.

¹ SEMC, Westplan – Fire, 2013

² DFES and P&W, Joint Agency Operational Audit, 11 March 2016 p. 44

³ Telemetry is an automated communications process which is used to transmit data in real time to server based databases and applications with interfaces allowing monitoring and control.

Once power was lost water could not be pumped from Yarloop's ground tank to the service tanks. At this time it was estimated by the Water Corporation that the service tanks would be empty within four to five hours.

In the period until the water tanks were depleted, all customers serviced by the water complex would experience a reduction in water pressure as water demand increase beyond the Town Water Supply capacity.

At 1030 hours on 7 January 2016 during the Incident Support Group (ISG) meeting the Water Corporation discussed the impact of the power loss on water supply to Yarloop and requested access to install power generators.⁴

At 1144 hours on 7 January 2016 the first report of low water pressure in Yarloop was noted by the IMT Planning Officer.⁵

At 1300 hours on 7 January 2016 the ISG informed the Water Corporation Liaison Officer that their request to access Yarloop to install power generators had been denied as the situation remained unsafe.

At 1424 hours on 7 January 2016, the first 'no water' contact for Yarloop was received by the Water Corporation's Operation Centre.

The Special Inquiry received submissions from residents of Yarloop which noted that water pressure was lost, and that the shortly after water supply ceased in Yarloop. For example,

*... I constantly stayed on my property watering because I thought unpredictable and with the weather conditions, etcetera, etcetera, keep watering and watering.... but the water stopped at 4 o'clock, saving half pressure. By 4.30 not one drop of water.*⁶

Restoration of Water services

On 10 January 2016 the Water Corporation entered Yarloop with DFES escort and installed two temporary taps for use near the oval where the remaining residents that were based.

It was not until 20 January 2016 that the Water Corporation was able to enter the Yarloop Water Complex to conduct a full asset inspection and restore power to the Town Water Supply through the installation of generators.

The delay in restoring services can be attributed to a number of factors, including the closure of roads that were impacted by the fire and the occupational health and safety risks posed by the presence of asbestos and risk of falling trees.

On 25 January 2016 the Water Corporation had reinstated the water supply to all properties in Yarloop. The temporary installed taps and tanks on Johnson Road also remained.

⁴ Incident Support Group minutes meeting at 1030 hours, 7 January 2016

⁵ DFES and P&W, Joint Agency Operational Audit, 11 March 2016 p. 45

⁶ Holbrey, L., Hearing, 22 March 2016

Other Considerations

The Special Inquiry considers it important to note that:

- The water supply to the town of Yarloop was not turned off for any reason by the Water Corporation during the Waroona fire. The water supply to Yarloop was lost due to power failure.
- Water was not redirected to another water service priority.
- Water was not redirected to the Wagerup refinery. The Water Corporation does not have any water supply infrastructure linked to the Wagerup refinery.
- Prior to the fire, the Town Water Supply was operating in accordance with all relevant standards.
- Prior to the fire there were no reports received, nor evidence of, any systemic operational or maintenance issues with the Town Water Supply.

FINDING: At around 0726 hours the power to the Water Corporation Yarloop Town Water Supply was lost. This resulted in an inability to pump water to fill two 225,000 litre service tanks that gravity feed the Wagerup and Yarloop Town Water Supplies. This event, associated with the extreme water demand from Wagerup and Yarloop customers on 7 January 2016, resulted in the service tanks running empty and the water supply in Yarloop failing from around 1424 hours.

Fire hydrants

There are 31 standard fire hydrants in Yarloop. As of December 2015 there were no outstanding maintenance work orders for any of the 31 hydrants.

Harvey Water

Harvey Water is an independent water supply utility which provides irrigation water to customers in the Waroona and Harvey Shires. Harvey Water also supplies 717 gravity fed irrigation Supply Points (SP) and has installed 42 Community Supply Points (CSP).

CSP's are used to provide a pressurised and rapid fill water supply in the event of an emergency or for when water is needed when undertaking community infrastructure works.

The use CSP's in Yarloop, Waroona, Cookernup and Wagerup was mixed, with some being used regularly whilst others were used sparingly or not at all. While the Yarloop Bush Fire Brigade was aware of the locations of CSP, it would appear that other fire appliances, especially those from out of area and the IMT were not.⁷

The Special Inquiry understands that since the Waroona fire Harvey Water has undertaken the following measures to improve the use of CSP's during a fire:

- provided updated maps to DFES, local Shires and the local fire brigades;
- plans to provide marker posts next to the road verge near the CSP;
- plans to put in place more CSP on advice from local fire brigades;

⁷ Delaney, R., Hearing, 29 March 2016

- fabricated a special fitting for each fire brigade in the area that will enable fire fighters to convert air valves on the pipelines into emergency supply points, and provide training on how to operate the fitting; and
- reviewed its own practices and procedures relating to bushfire preparedness.⁸

It is self-evident that water supply is critical for fire services to operate. Fire services must continually practice drills on the sourcing setting up and use of water points. Where firefighting resources from out of the local area are deployed into a township it should be a priority that an experienced local person, knowledgeable on local water sources, is allocated the task of briefing incoming resources on the location and use of such water points.

Community awareness of the potential loss of water supply during a fire

It is important that persons living in or near bushland ensure they have an independent water supply and pumping capability should they choose to stay and defend their property. This position has been reaffirmed in successive bushfire inquiries, including the Victorian Bushfire Royal Commission and the Keelty “*A Shared Responsibility*” report.

The Special Inquiry received evidence of some property owners being well prepared for bushfires by maintaining their own water supply. A Waroona family provided evidence that:

[F]or preparation, we had blocked the gutters and everything – or blocked the downpipes, filled the gutters, so there were no leaves or anything. There was water in the gutters. We’ve got a certain amount of lawn and fruit trees around the house and so we’ve got a dam – quite a large dam – just in front of the house and with the genset, we’ve got 50 millimetre pipe running both sides of the house and that has got a number of outlets, so once we had a genset running and the pump running, we had plenty of water around the house to damp everything down so we thought we were pretty well prepared.⁹

As a result of their preparedness, this family’s property survived.

Another person provided similar evidence:

SPECIAL INQUIRER: And you were able to save your house?

WITNESS: We saved all our house and all our dwelling with no help from the authorities at all and I mean that with no hesitation I don’t know where they all were but they were not there. ... And I dare say we had three high-pressure hoses going. We wetted everything down, including ourselves because the heat was unbearable in some – for about 20 minutes it lasted – and she just went over the top.

SPECIAL INQUIRER: And you talked about having three high-pressure hoses. You obviously had your own generator and pumping system.

WITNESS: Yes. No, I had three water sources. First, the power went out. I knew that was going to happen so that put out the irrigation – the house system out.

⁸ Submission of Harvey Water

⁹ Lalor, A., Hearing, 22 March 2016

WITNESS: But I've got the two fire fighters and I've got an irrigation pumps that I use for irrigation system and I relied on the diesel and the two little Hondas and they served us well.

WITNESS: So the significance there is that you had a plan but you also had some back up. You were able to duplicate yours by - - -

WITNESS: I had a back up for a back up. There's no room for mistake, mate.¹⁰

The Special Inquiry recognises that maintaining an independent water supply may not be an option for all persons. However, the community needs to be reminded that water supply cannot be guaranteed during an emergency.

This point is already emphasised in all Water Corporation bushfire community materials and is included in DFES material including '*Prepare. Act. Survive*'¹¹ and the '*The Homeowner's Bushfire Survival Manual*.'¹²

Communication Infrastructure

For the purpose of protecting life and property during bushfires, it is crucial that timely, relevant and tailored alerts and advice are issued to potentially affected communities. Due to the severity of the Waroona fire, a number of warnings and alerts were issued. These rely on a functioning communications network.

Telstra

During the Waroona fire, Telstra worked actively with DFES to support the communications requirements of emergency agencies by: identifying infrastructure at risk; organising Telstra products and services as required; and prioritising restoration activities for emergency service organisations, hospitals and critical infrastructure sites.

Telstra advised the Special Inquiry that during the course of the Waroona fire:

- the Yarloop exchange was undamaged;
- 18 mobile sites lost mains power;
- some optic fibre servicing the mobile sites was damaged;
- 13 long-run generators were deployed to the mobile sites after five sites had mains power restored. In all cases the generators were connected as soon as possible after being allowed access to the sites by emergency services; and
- emergency service restrictions did prevent some access but this was limited to Waroona, Lake Clifton and Yarloop.¹³

¹⁰ Ierace, L., Hearing., 10 March 2016

¹¹ DFES, *Prepare. Act. Survive*, at <http://areyouready.wa.gov.au/documents/14467-PAS-2014-WEB.PDF>

¹² DFES, *The Homeowner's Bushfire Survival Manual*, September 2014

¹³ Submission of Telstra

Telstra believed its network performed well throughout the Waroona Yarloop fire due to forward planning, and cooperation with emergency services and the engagement of Telstra's back-up systems.

Telstra also confirmed that there were considerable issues with the loss of the Mt William Tower and the adjoining Telstra Tower being completely inaccessible. Two of the three fibre optic cables were also damaged by the fire, leaving mobile services dependant on a third cable only. The mobile phone network had some localised failures, which were mainly attributable to the loss of mains power and battery backup discharging.¹⁴

Telstra noted in its submission that its mobile network is not immune from damage and cautions its customers that services may be compromised.

Other telecommunications companies

As Telstra is the primary provider of telecommunications in the region affected by the Waroona fire, the Special Inquiry does not discuss in detail the operations of other landline and mobile phone networks during the fire. However it is noted that:

- there were some problems with gaining access to the Optus system status information and an appropriate Optus interagency contact was not established until late into the incident; and
- the National Broadband Network (NBN) reported only minimal service disruption to their clients in the affected area.¹⁵

Radio and mobile phone communications

Communication plans were identified within the IAPs, with the primary Command Channel 648 utilised during the course of the Waroona fire, supported by tactical Division and Sector Channels. However, these appear not to have been clearly defined until several days into the incident.

The destruction of the main VHF Repeater (Channel 351) at Mt William by the fire, saw mobile and landline phones being used as an alternative communication method by emergency services personnel until radio communications were restored within a 24 hour period. This added a layer of uncertainty to critical communications.¹⁶

Witnesses informed the Special Inquiry:

...The particular issue was we still experienced some communications issues with the – with the network. So we reverted back to phone call communication between myself and the team leaders, the strike team leaders for rural urban interface, liaising with the Waroona chief, as he had a good handle on where the bushfire resources were throughout that course.¹⁷

¹⁴ DFES and P&W, Joint Agency Operational Audit, 11 March 2016 p. 45

¹⁵ Ibid

¹⁶ Ibid., p 44

¹⁷ Wegwermer, T., Hearing, 21 April 2016

*Yes, pretty much, and as – one of the biggest problems we had was the fact that once control was set up at the oval, there seemed to be a complete break in communication and, yes, we, you know, since started to fend for ourselves because we couldn't get to talk to anybody...*¹⁸

The Special Inquiry understands that the use of the mobile phone network, while providing a means of communication during the outage, restricted the distribution of information and situational awareness across the broader fire ground provided by operational radio network communication and limited any post incident interrogation of information being passed between and across functional areas.

Power Infrastructure

Electricity is supplied by Western Power to the towns of Waroona, Hamel, Yarloop, Cookernup and Preston Beach through an overhead wood pole distribution network.

The Western Power electricity network is designed to automatically detect and isolate faults, which is a key element of maintaining system safety. During bushfire seasons, Western Power makes the system more sensitive to faults. This means that when there is a fault or other interference, power is interrupted faster than usual and that power will remain off instead of being automatically restored. This reduces the likelihood of a fire starting because of the electrical network, it results in more frequent outages that last longer.

Where there is a very high FDR or a TFB, Western Power will not restore power until a repair crew can access the area and visually inspected the power line.

From 0002 hours on 7 January 2016, reports were received by the IMT that the electricity distribution network was being impacted. The Special Inquiry understands that at 0200 hours on 7 January 2016, Western Power personnel were requested to attend the DFES State Operations Centre. By 0327 hours on 7 January 2016, the IMT had noted that power had been lost in Waroona.¹⁹

The ISG minutes of the meeting held at 1030 hours on 7 January 2016 recorded that Western Power:

*Would like to get an idea of the fire shape so they can put some isolators in place. Some assets lost already. Preston without power, recon crews started about 1hr ago. Requested a copy from DFES of asset losses and damage assessment when this is over. DFES will work with WP on this.*²⁰

At the 1700 hours ISG meeting on 7 January 2016 the minutes the reference to Western Power recorded that:

*Damage to transmission network, and wider spread outages. 35000 without power 600 in Harvey/Yarloop back up generators getting into town to help with fuel/groceries etc.*²¹

¹⁸ Penny, P. Hearing., 10 March 2016

¹⁹ DFES and P&W, Joint Agency Operational Audit, 11 March 2016 p. 45

²⁰ Incident Support Group minutes meeting at 1030 hours, 7 January 2016

²¹ Incident Support Group minutes meeting at 1030 hours, 7 January 2016

Over the course of the next 24 hours, many reports of power outages were noted by the IMT and ISG; these outages were the result of both fire damaged infrastructure and purposeful isolation of the electricity network in areas in order to provide a safe work environment for firefighters.²² In the days that followed, multiple outages occurred on transmission and distribution across the area impacted by the Waroona fire.

The electricity outages that resulted from the Waroona fire impacted the communities of Preston Beach, Dwellingup, Coolup, Lake Clifton, Waroona, Pinjarra and some surrounding areas. The restoration times were lengthy due to by the magnitude of repair work required and difficulties in accessing areas where Vehicle Movement Bans were in place. The Special Inquiry understands that, as an interim measure, Western Power provided the towns of Waroona, Preston Beach and Hamel with low and high voltage emergency generators in areas deemed essential for community support.

Western Power informed the Special Inquiry that between 6 January 2016 and 14 January 2016, the following Western Power infrastructure was damaged:

- 993 distribution poles;
- 121 transmission poles;
- 107 transformers; and
- 50 kilometres of overhead conductor over an area totalling almost 70,000 hectares.²³

The impact of the Waroona fire on the electrical infrastructure of Western Power was significant. Its submission to the Special Inquiry noted that the initial estimated cost of the fire to Western Power was \$26 million.²⁴ The restoration effort involved the deployment of more than 80 Western Power trucks and 300 personnel. Western Power informed the Special Inquiry that power was restored to almost all of the 3,500 affected customers within three weeks of being granted access to the site.

The Special Inquiry understands that not all damaged electrical network assets were replaced like-for-like. Western Power noted in its submission that repairs to the network were to current design standards or, in some cases, to a higher standard. For example, approximately 6.5 kilometres of overhead power lines between Forrest Highway and the outskirts of Preston Beach town site were replaced with underground power. This enhances the reliability of the electrical network for this vulnerable area.²⁵

Western Power noted in its submission to the Special Inquiry that, in recognition of the impact of the Waroona fire, the company waived electricity reconnection fees for households affected by the fire. Additionally, efforts were undertaken to distribute a significant amount of fire damaged, but still structurally sound, wood poles and other hardware to farmers for utilisation in fence replacement and repair work.²⁶

²² DFES and P&W, Joint Agency Operational Audit, 11 March 2016 p. 46

²³ Submission of Western Power

²⁴ Ibid

²⁵ Ibid

²⁶ Ibid

The Special Inquiry recognises that the damage to electrical infrastructure was an unprecedented event and has resulted in Western Power incurring a significant expense in order to undertake the required repairs. This extraordinary post-incident cost reinforces the need for a greater focus to be put on bushfire prevention to ensure bushfires, and the consequences of them, do not become a regular occurrence.

Road Infrastructure

The Waroona fire affected 181 roads; of these, three were within the jurisdiction of Main Roads Western Australia (Main Roads). These were the South Western Highway, Forrest Highway and the Old Coast Road. The other public roads are the responsibility of Local Government.

The roles and activities undertaken by Main Roads in an emergency are defined within Westplan – Fire and the SEMP 4.8. Activities undertaken by Main Roads in support of DFES and P & W are at the request and approval of the relevant IC.

Road infrastructure was also lost during the fire; the most serious being the collapse of the South Western Highway's timber bridge over Samson Brook. It is estimated that this occurred sometime between 2200 hours on 6 January 2016 at 0800 hours on 7 January 2016. Further losses included roadside vegetation, guideposts, signs and minor damage to the bitumen seal of road surfaces.

The vulnerability of bridges during fire was recognised by in the 2011 Perth Hills Bushfire Report. Recommendation 30 of the Report states that:

*Main Roads Western Australia undertake more frequent examinations of its bridges located in areas prone to bushfire and ensure that the risk posed to loss of infrastructure in a fire is understood by local authorities.*²⁷

In its submission to the Special Inquiry Main Roads advised that as a consequence of this recommendation, a State-wide inspection of all timber bridges (including other bridge owner's assets) was undertaken by Main Roads to assess the risk associated with bushfires. A report finalised in September 2012 includes a spreadsheet identifying all timber bridges and their bushfire assessment. A copy of a spreadsheet was sent to all bridge owners on 31 August 2012.²⁸

The Special Inquiry understands that for the South West Region a prioritised list of bridge vegetation clearing was developed to reduce risk. To date all bridges with a high risk rating have been cleared to a prescribed 10 metre clearance zone. In addition for the South West Region, Main Roads carries out annual visual inspections on all bridge assets which include the identification of vegetation issues (e.g. regrowth, debris in the river channel). The Samson Brook Bridge is included in the annual inspection process after initial vegetation clearance was undertaken during the 2012-13 financial year.²⁹

²⁷ Government of Western Australia, *A Shared Responsibility: The Report of the Perth Hills Bushfires February 2011 Review*, 2011, p. 19

²⁸ Submission of Main Roads WA

²⁹ Submission of Main Roads WA

The Special Inquiry notes that following the Waroona fire Main Roads assisted in the recovery process make safe road infrastructure. This included the clean-up and construction repair and reconstruction of bridge assets and signage as well as assisting in the damage assessment for claims.

The Special Inquiry was made aware of new fire suppressant agents that are entering the market. These are in the form of retardant slurries and fire gels. These new technologies have been demonstrated to provide a significant barrier protection to structures in event of a significant bushfire. It is suggested that the owners and operators of critical infrastructure, investigate the relevance of such technology to the seasonal task of vegetation hazard treatment around structures.

Concluding comment on infrastructure

The need to protect critical infrastructure during an emergency or a disaster is self-evident. The task of the emergency services, and of those who have chosen to stay and defend their properties, becomes several orders of magnitude more difficult when essential services are interrupted.

With an increasingly uncertain future, where a changing climate and more severe weather events are becoming the norm, essential service and utility agencies must continue to imagine the future and to plan, as much as possible, for minimal service interruption. Key elements of essential service planning include:

- Having a current and exercised crisis response plan.
- Understanding vulnerabilities.
- Ensuring customers are aware of the vulnerabilities to supply.
- Continual research and investment in technology that ‘hardens’ the service infrastructure and architecture.

On the evidence available, the Special Inquiry concludes that essential services performed within their service standards. This, however, should not be a reason for complacency. The cost arising from essential service interruptions to commercial businesses and their ability to get back to normal operations is inextricably linked the resilience of infrastructure and its rapid restoration when damaged.

Continually improving and hardening such infrastructure is good crisis management, sound business and is the expectation of customers and the community.

Chapter Fourteen – Transition to Recovery

*The capacity of a local government to deal with those challenges is limited when they are confronted with them on a large scale...*¹

*There's a great deal going on because we have to build a capacity from zero...*²

Terms of Reference

A comprehensive consideration of the recovery from the Waroona fire does not fall within the Special Inquiry's Terms of Reference. It should also be noted that at the time of writing, the recovery process following the Waroona fire is still underway.

However, Terms of Reference 1(g)(iii), (iv) and 1(h) require the Special Inquiry to consider a number of issues associated with the beginnings of the recovery effort (provision of welfare support, management of people seeking to return to their properties and livestock and companion animal management and welfare issues). Accordingly, the Special Inquiry has considered the transition between the response phase of the fire and the recovery phase of the fire, otherwise known as the 'transition to recovery'.

Recovery Framework

Recovery is the support of emergency affected communities in the reconstruction and restoration of physical infrastructure, the environment and community, psychosocial and economic wellbeing.³

The relevant State level policies governing recovery are SEMP 4.4 – Recovery Coordination and Westplan – Recovery Coordination. These documents prescribe the strategic arrangements for recovery from an emergency.

Under the *Emergency Management Act 2005*,⁴ it is a function of local government to manage recovery following an emergency affecting the community in its district.

However, in some circumstances, it may be necessary for the State Government to assume responsibility for coordinating the recovery process at a whole-of-government level. This higher-level coordination operates only to ensure that the affected community has appropriate access to available resources. The management of recovery, including the establishment of a Local Recovery Coordinating Committee where appropriate, are still determined at the local government level.⁵

The decision to initiate State Government involvement is based on consideration of a number of factors including: the impact of the emergency; the capacity of the affected local

¹ Hay, B., Hearing, 24 March 2016

² Ibid

³ Section 3 of *Emergency Management Act 2005*

⁴ Ibid, section 36

⁵ SEMC, SEMP 4.4 – *Recovery Coordination*, December 2014, [12] and [13]

governments to manage the recovery; the complexity of the recovery required; and the likely duration of the recovery.⁶

In the case of the Waroona fire the responsibility for recovery has become that of the State Government.

In instances where State Government involvement is required, the State Recovery Coordinator can consider recommending to the Police Commissioner that the State Recovery Coordination Group (SRCG) be convened. Once convened, the SRCG is responsible for State level recovery coordination and facilitation in complex or prolonged recovery operations.⁷

The SRCG may consider recommending that the Premier appoint a State Recovery Controller (SRC). The role of a SRC is to ensure the provision of coordinated recovery support to emergency affected communities through the direction and coordination of the resources made available by public authorities and other persons. The SRC is assisted in their duties by the State Recovery Coordinator.⁸

The Waroona fire is the first Western Australian emergency which has resulted in the establishment of the SRCG and the appointment of an SRC.⁹ The Premier appointed, in consultation with the WA Police Commissioner, former Governor of Western Australia Dr Ken Michael AC to the role of SRC.¹⁰ The experience of other Australian jurisdictions suggests that appointing a known and respected leader to lead recovery efforts can work well.¹¹

In addition to local government, the SRCG and the SRC, a Controlling Agency in any emergency also has recovery functions. In particular, the Controlling Agency must initiate recovery activity during the response to that emergency. The Controlling Agency is also responsible for ensuring that in combating the effects of the emergency, activities have regard for the need to facilitate recovery.¹²

Finally, the Controlling Agency is also responsible for the coordination of assessment of all impacts relating to all recovery environments prior to cessation of the response, including a risk assessment and treatment plan to provide for safe community access to the affected area.¹³

Commencement of Recovery

There are four phases of effective emergency management: Prevention, Preparedness, Response and Recovery. These phases should not be considered to be mutually exclusive.

⁶ SEMC, SEMP 4.4 – *Recovery Coordination*, December 2014, [15]; SEMC, Interim Westplan - *Recovery Coordination*, March 2016, p. 9 and Appendix D

⁷ *ibid*, [23]; *Ibid*, p. 9

⁸ *Ibid*, [24]-[26]; *Ibid*, p. 11

⁹ *Ibid*, pp. 7, 9-10; Hay, B., Hearing, 24 March 2016

¹⁰ Hay, B., Hearing, 24 March 2016

¹¹ For example, the appointments of General Stretton post Cyclone Tracy and the appointment of General Cosgrove post Cyclone Yasi.

¹² SEMC, SEMP 4.4 – *Recovery Coordination*, December 2014, [19]-[20]; SEMC, Interim Westplan - *Recovery Coordination*, March 2016, p. 8

¹³ *Ibid*, [21]; *Ibid*, p. 8

In an emergency, recovery should commence during the response phase; it should not be an afterthought for dealing with once the immediate emergency is over.

Early consideration of recovery is required as plans may need to be made for the systematic removal of immediate risks during the response phase of a fire in order for recovery to commence. These risks can include:

- falling trees;
- damaged or obstructed roads and related infrastructure (such as bridges, signage);
- the presence of live fallen power lines and other live electrical assets;
- wandering stock and companion animals;
- unstable buildings;
- asbestos;
- effluent; and
- in situ hazardous materials.

The phrase ‘transition to recovery’ has been previously used to describe the process of shifting into recovery after the response phase of an emergency. The Special Inquiry acknowledges State policy is moving away from this terminology in favour of a focus on recovery coordination. However, it is evident from this Waroona fire that in practice there still appears to be two distinct, rather than concurrent phases of emergency management.

The Special Inquiry believes recovery can, and should, commence earlier in the response to an emergency. As response activities wind down and phase out, recovery activities can increase in tempo and resourcing.

Emergency services’ role in recovery

The Special Inquiry understands that a Deputy Incident Controller for Recovery was appointed to the Incident Management Team by DFES during the Waroona fire. The first indication of this appointment the Special Inquiry is aware of is the Incident Action Plan for Operational Period 8 (0600 hours – 1800 hours, 10 January 2016).¹⁴

DFES commenced some recovery related actions in the days following the fire’s passage through Yarloop. These immediate hazard mitigation actions were primarily in relation to the asbestos risk present, and included installation of hazard warning signage, the spraying of a stabilising solution on damaged properties and putting in place arrangements required for air quality monitoring.¹⁵

By 14 January 2016, DFES had completed both a Rapid Damage Assessment and an initial impact assessment to identify the initial recovery requirements. These documents are discussed in more detail below.

Further, DFES produced a formal Transition to Recovery Plan which detailed the transition planning arrangements for the handover of control from the controlling agency to the Shires

¹⁴ Incident Action Plan, Shift 8, 10 January 2016

¹⁵ Information provided to the Special Inquiry by DFES, 11 March 2016

of Harvey and Waroona.¹⁶ The document outlined the impact of the fire, as well high level considerations of recovery requirements and the financial impact of the fire.

The Transition to Recovery Plan was formally handed over to the Shires of Harvey and Waroona on 20 January 2016, with notification of the handover sent to the State Recovery Coordinator the same day.

Impact Assessment

Some emergency services agencies (based on procedures developed originally for Urban Search and Rescue) have developed procedures and tools to undertake ‘rapid damage assessments’ and ‘initial impact assessments’ whilst a bushfire incident is still active. This enables an early assessment of risks and estimated damage.

Often, rapid impact assessments are carried out by emergency services and combat organisation personnel because they are specially clothed and equipped to deal with the risks of working in a ‘hot zone’ or a ‘warm zone’. Emergency services personnel also have wide ranging powers (and protections) that provide a legal authorising environment to act in a wide range of circumstances during or immediately after an emergency.

Both a rapid damage assessment and an initial impact assessment were completed by DFES for the Waroona fire.

The rapid damage assessment was finalised by DFES at 1030 hours on 14 January 2016. This documents the assessment undertaken following the fire in affected areas and identifies the properties which have been damaged or destroyed by the fire, as well as those properties which were undamaged.¹⁷

The first initial impact assessment for the Waroona fire was completed by DFES at 1800 hours on 12 January 2016.¹⁸ The initial impact assessment covered the impact of the fire on the following:

- property losses, including buildings, fencing and stock losses;
- essential services, such as water, power and communications;
- infrastructure, such as roads, bridges, rail and hospitals;
- critical industries and agricultural industries;
- recreational facilities and tourism generally; and
- the environment.

It appears to the Special Inquiry that this document was continually reviewed and updated, and was then used as the comprehensive impact assessment informing the DFES Transition to Recovery Plan.

¹⁶ Ibid.

¹⁷ DFES, *Rapid Damage Assessment*, 14 January 2016.

¹⁸ DFES, *Initial impact assessment 'Waroona BF INC No 323128'*, provided to the Special Inquiry 11 March 2016

The CEO of the Shire of Harvey advised the Special Inquiry that the principal building surveyor for the Shire of Harvey undertook the Shire's own impact assessment:

He knows the area very well and was able to pick up certain things that weren't picked up in that rapid assessment process. I think he being with them [the DFES staff undertaking the initial impact assessment] would have helped and ... saved time for us and saved time for everybody.¹⁹

The Special Inquiry agrees with the proposition that it would be beneficial to have a local person involved in the completion of rapid damage assessments or initial impact assessments, and believes this should be explored by DFES, in conjunction with WA Local Government Association. Local knowledge is immensely valuable during an emergency and should be harnessed to make the process more efficient.

Opportunity 12: The Department of Fire and Emergency Services to engage with the WA Local Government Association to explore opportunities for Local Government personnel to be included in the make-up of Rapid Damage Assessment Teams.

Participation in recovery

In addition to the Controlling Agency there are a number of key agencies and organisations which can be involved in recovery. In the case of the Waroona fire, these included (but were not limited to):

- Local government;
- Department of Food and Agriculture WA (DAFWA);
- Department for Child Protection and Family Support;
- Main Roads WA;
- Department of Environment Regulation
- Utilities (gas, water, power, telephones);
- WA Police; and
- Insurance Council of Australia.

Handover to local government

The Special Inquiry understands that the CEOs of the Shires of Waroona and Harvey had concerns about the handover of the Transition to Recovery Plan from DFES to the local governments.

The Transition to Recovery Plan was handed to the Shires on 20 January 2016, with notification of handover sent to the State Recovery Coordinator the same day. The Special Inquiry heard from the Shire of Waroona's CEO that:

... the day of the handover, that's it, the whole of the State just debunked and left in a hurry and we haven't [as at the hearing on 4 April 2016] seen them since.²⁰

¹⁹ Parker, M. Hearing, 31 March 2016

²⁰ Curley, I., Hearing, 4 April 2016

Similar sentiments were expressed by the Shire of Harvey's CEO about the nature of the handover of recovery. He stated during a hearing with the Special Inquiry:

[T]he handing over ... to the Shire, look, we were disappointed with ... what appeared to be unseemly haste that that process occurred in, and, again, I think it's time, place and circumstance.

The size of this fire, the impact on our volunteers, the impact on the shire and its staff ... was, I don't believe, sufficiently taken into account and we did argue the point and I have to say my colleagues elsewhere have often commented, when they've been involved in similar circumstances, be very careful about this handover process because it happens quickly, you're often not aware of things that you're getting left with that could well have been handled differently if you had been aware of.

So we were conservative in terms of wanting to accept taking back control of this situation and I think there needs to be better transition if I can put it that way.²¹

The CEO added the following example of an aspect of the handover:

WITNESS: We were contacted in the afternoon of the handover day or the day before to say – you know, to get vehicle control points manned at Yarloop because, “We're pulling out at 6 o'clock tonight,” and I said, “Hold the bus, hang on, we need a little bit more notice than that,” but basically that was it and the police were pulling out someone from metro and rang me to advise me that this was happening and you had better get hold of some contractors if you can't do it yourself. Sorry, in – what we were dealing with, that could have been handled better and that's just an example, I think, of - - -

SPECIAL INQUIRER: Was the incident controller involved in that discussion or was it just police ...

WITNESS: The call came, from my recollection, from police, the person in charge of the people that were on the vehicle control points at the time, and, like I said, we had had some animated discussions with regard to the timing of this with DFES prior to that.²²

The CEO emphasises the lack of overlap between response and recovering, adding:

There's certainly a lack of continuity between the response and the recovery phase and that's what you've just alluded to there as well. I think it was a lack of understanding of local government's capacity, particularly in this case given the size of the incident. Now, we don't shy away from the fact that we understand that we're responsible for recovery.²³

²¹ Parker, M., Hearing, 31 March 2016

²² Ibid

²³ Ibid

The general capability, including the financial capacity, of local government to undertake recovery activities was drawn to the Special Inquiry's attention. Local governments can vary greatly in size – in terms of both Shire office staffing and the number of residents – meaning some are better positioned than others to undertake recovery:

Often the effects – the impacts of natural hazards occur in more remote areas, areas which are the responsibility of quite small local government organisations.

*Their resources are very thin when compared to public sector agencies which are engaged in the response.*²⁴

Whilst the State Government, through the SRC, is coordinating the post-Waroona recovery, there has still been significant impact on the local governments. The Shire of Waroona's CEO expressed his frustration to the Special Inquiry:

[I]t's very hard to say, "No, the shire can do that." And that's the attitude, I believe, from the State "No, no. Recovery is the shire's responsibility. We will help you where we can or can be bothered," but there's no genuine attempt at help.

*In fact, the feeling that I get is that it's a case of, "Don't offer them anything. If they ask for it, try and avoid giving them anything," and we just get absolutely frustrated at even having to deal with them.*²⁵

The handover process to the local government by emergency services was not ideal. More time needed to be spent ensuring all parties were comfortable with the handover, and that the decision to handover was informed by the capability of the affected local government to undertake the required recovery roles. As the State Recovery Coordinator stated in evidence to the Special Inquiry:

*[T]he decision to stand down an Incident Management Team needs to have regard for not technically what is the responsibility of the [Hazard Management Agency] or the Local Government, but also the capacity at that point in time for the Local Government to pick up those responsibilities.*²⁶

This issue has been highlighted during other fires in Western Australia's recent history:

*So if we go back to events over the last few years and we look at the fires in Toodyay or Perth Hills or Margaret River or Parkerville or the fires in the south last year down around Manjimup, we see repeated challenges relating to unstable structures, hazardous materials, often, most often asbestos, ... burnt out vehicles, littered loose cladding, tin, which could become airborne, and so on.*²⁷

²⁴ Hay, B., Hearing, 24 March 2016

²⁵ Curley, I., 4 April 2016

²⁶ Hay, B., Hearing, 24 March 2016

²⁷ Ibid

This comment is particularly relevant to the Waroona fire – the presence of asbestos in Yarloop presents an enormous challenge for recovery, as explained by the State Recovery Coordinator:

*The capacity of a Local Government to deal with those challenges is limited when they are confronted with them on a large scale, and it's not feasible for Local Governments to develop or retain a capacity to deal with those sorts of events.*²⁸

Emergency response agencies are often well equipped to deal with some of the recovery issues before they decamp; their expertise and resources could be better applied before the handover is completed.

State's role in recovery of Yarloop

The State Government, through the convening of the State Recovery Coordination Group and the appointment of a SRC, has taken charge of the post-Waroona fire recovery efforts.

The Special Inquiry acknowledges the scale of the task at hand – the impact of the Waroona fire requires the largest recovery effort the State has ever undertaken.

The Special Inquiry is not proposing to make an assessment on the way the recovery issue is being managed as the recovery effort is still ongoing and it is not within the Inquiry's Terms of Reference. However, there has been evidence received by the Special Inquiry about the State's recovery efforts which should be noted.

The timeliness of the recovery effort has been commented on:

And I think the capacity for the State to move quickly has – their lack of capacity to move quickly has surprised us. ...

[W]e were able to get in place – with their assistance ... prior to them taking over – site stabilisation and the monitoring ... in Yarloop ...

*[O]nce they did take over, there seemed to be a hiatus to get in place contractors to move in. And, of course, the community was saying, "Well, what's happening? We've - - -" you know, "Since the stabilisation nothing has happened." And I understand completely the logistics behind that, but I would have thought that in this situation some state of emergency provisions could have been evoked to ensure that we could get a quicker procurement of contractors.*²⁹

²⁸ Hay, B., Hearing, 24 March 2016

²⁹ Parker, M., Hearing, 31 March 2016

One of the key issues brought to the Special Inquiry's attention is that there are no pre-existing contracts, approved tenders or panels of contractors that can be immediately drawn on to assist with recovery efforts. The usual State Government processes for procurement have generally applied to, and have in some ways hindered, the recovery efforts. The Special Inquiry heard that:

Indeed, in Western Australia, there isn't even a contracting community regionally that could be drawn on to respond to the challenges at an event such as that which hit Yarloop, ...

So following the fire, the impact on Yarloop was extensive, as you know. There's a good deal of contamination. The contamination was identified by the Health Department and the Department of Environmental Regulation. There was advice received from the Health Department about the need to stabilise that contamination.

It would have been helpful if we had in place an existing contract for the provision of those services. There are a limited number of companies that can provide that service.³⁰

The State Recovery Coordinator elaborated with:

So I think in a – with hindsight, the availability of some panel contracts or pre-existing contracts, which would enable us to deploy immediately – and on pre-agreed terms – competent contractors to undertake those tasks – the testing, stabilisation and then the remediation of the hazard would give people the option – the opportunity to return to surviving homes. And I believe it would also give comfort to the community, the affected community, including those whose homes were totally destroyed, that everything was being done that could be done to move quickly to address the tragedy which has beset them.³¹

In explaining the timeliness of the recovery effort and the appearance that 'there's nothing going on', the State Recovery Coordinator informed the Special Inquiry that:

I believe we've, in this instance, seen outstanding performance from our utilities. Western Power responded very effectively and very quickly and a significant cost to the government. Water Corp also. Main Roads was able to provide a workaround for the destroyed bridge and quickly get that highway functioning for heavy traffic. We then appear to be stationary, dead in the water, because the clean-up is apparently inactive. There's nothing going on. In fact, there's a great deal going on because we have to build a capacity from zero. We don't have a state agency responsible for demolition...

We have to go and seek, for example, approvals from our State Tenders Committee to directly engage without going through a lengthy tender process. You know, there are a series of requirements which could have been anticipated and for which facilities could have been developed ahead of the game.³²

³⁰ Hay, B., Hearing, 24 March 2016

³¹ Ibid

³² Ibid

The lack of a pre identified body to undertake demolition, and the need go through a tender process to engage contractors, has slowed the recovery efforts. Hopefully, this will become a “lesson learnt” and will be addressed once the Waroona fire recovery is reflected upon by Government.

Recovery needs to start earlier

Recovery was not at the front of the IMTs mind. The Special Inquiry heard from a member of the IMT that:

*But at the end of the day you're trying to put a fire out, you know. And that – on the back of that there's all this other stuff. But once you put the fire out you can change hats and put your recovery hat on ...*³³

The Special Inquiry heard from another member of the IMT that:

*[S]hift 4 was a little bit early to talk about recovery...*³⁴

The Special Inquiry believes there is a need for recovery to be elevated in the priorities of the IMT. This could be through the inclusion of personnel with the IMT – whose sole focus is recovery – from the earliest stage of the fire. Recovery should not start ‘once you put the fire out’ – it must start earlier for the benefit of the community.

In respect to the consideration of recovery during the Waroona fire, the Joint Agency Operational Audit noted an emerging issue of:

*There was insufficient attention given to recovery in IAPs from this incident during the period under review. The IAPs must ensure that the needs of the communities affected are being addressed earlier in the incident.*³⁵

While a Deputy Incident Controller for Recovery was appointed for Operational Period 8, which was on 10 January 2016, the Special Inquiry believes that a suitably qualified Deputy Incident Controller for Recovery must be appointed earlier. As the transition continues and the response activities cease, this role can then transition to Incident Controller Recovery.

Opportunity 13: The State Emergency Management Committee to develop an aide-memoire for Incident Controllers to guide the initial recovery considerations during an incident. The aide-memoire to include triggers for the initiation of rapid impact assessment and the escalation of the recovery function; immediate and likely future community health, welfare and safety considerations. These triggers will inform the Incident Controller/s when considering the discretionary appointment of ‘Deputy Incident Controller, Recovery’ during an incident that impacts on the community. Role of ‘Deputy Incident Controller, Recovery’ would be (with the Incident Controller) to consider the initiation of the recovery process and to manage the transition from incident response to the recovery phase.

³³ Chick, J., Hearing, 1 April 2016

³⁴ Towers, R., Hearing, 16 March 2016

³⁵ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016 p. 62

Welfare considerations

Return of residents

The Special Inquiry understands that in the immediate aftermath of the fire there were significant obstacles to local residents returning to their homes and properties. The need to review the policy on traffic management during emergencies is dealt with elsewhere in this Report.

In particular, residents of Yarloop have experienced significant recovery issues which have delayed the return of residents whose homes were significantly damaged. The delay in the ability for residents to return to Yarloop was explained by the State Recovery Coordinator:

Yarloop illustrates also that if we are not prepared to respond quickly to those challenges, then we run the risk of needing to exclude people from surviving homes which might otherwise be suitable for habitation. So the scale and extent of the contamination has made it necessary to us to caution people and advise them not to reside in certain properties. And, of course, that is – makes it very difficult for them. They would like to reside in their home.³⁶

The Special Inquiry understands that progress has been made by the SRC in the recovery of Yarloop, and demolition works have commenced at the time of this report.³⁷

Provision of welfare support during the Waroona fire

The Department for Child Protection and Family Support (CPFS) has responsibility for the overall control and coordination of the emergency welfare response.³⁸

Broadly speaking, this involves providing services in the following six areas:³⁹

- emergency accommodation;
- emergency catering;
- emergency clothing and personal requisites;
- personal support services;
- registration and reunification; and
- financial assistance.

Two evacuation centres were established during the fire: the Murray Leisure Centre in Pinjarra (Shire of Murray) and the Leschenault Leisure Centre in Australind (Shire of Harvey). An initial evacuation centre in Harvey was closed when Harvey came under direct threat from the fire and the Australind centre opened at this point.

The Special Inquiry understands that CPFS registered and provided support to 1,759 evacuees. Approximately 220 - 250 people stayed in evacuation centres overnight during the Waroona fire.⁴⁰

³⁶ Hay, B., Hearing, 24 March 2016

³⁷ Taylor, R., *Yarloop demolition work begins on bushfire-ravaged buildings*, ABC News, 30 March 2016, at <http://www.abc.net.au/news/2016-03-30/demolition-of-yarloop-buildings-commences/7285680>

³⁸ SEMC, Westplan – Welfare, January 2014

³⁹ Submission of Child Protection and Family Support

⁴⁰ Ibid

Subsequent to the response phase of the Waroona fire, CPFS has provided support services on a case management basis to people affected by the fire. This has included the provision of personal support, counselling, financial assistance, information, and practical assistance.⁴¹

The Special Inquiry did not receive evidence of any significant issues with the provision of welfare support from members of the public. This reflects well on the operation of the evacuation centres and the level of support received by those who utilised the available services. The Special Inquiry commends CPFS and the Shires of Harvey and Waroona for the comprehensive welfare support services provided to all those affected by the fire.

In addition, the Special Inquiry notes that the Murray Leisure Centre falls outside the Shire of Waroona and is instead located within the Shire of Murray. Notwithstanding this, both the Shire of Murray and the City of Mandurah provided extensive welfare support and assistance to those affected by the fire⁴² and should also be commended.

Some concerns regarding the provision of staff and financial impacts were, however, highlighted in the Shire of Murray's submission to the Special Inquiry. The Shire hosted the Pinjarra evacuation centre.⁴³ The Special Inquiry will pass these concerns on to CPFS for consideration.

Livestock and companion animals

There is an expectation from the community that emergency management arrangements will allow for a coordinated approach to the management of companion animals, livestock and wildlife, and associate animal welfare issues.⁴⁴ Animal welfare can be broken down into two categories; the management and welfare of livestock, such as poultry, horses and cows; and the management and welfare of companion animals, such as dogs and cats.

Current policy regarding animals during emergencies

Western Australia does not currently have specific plans or policies for the management and welfare of animals in emergencies. There are national planning principles for animals in disasters which "provide a complete set of achievable, best-practice guidelines for animal welfare emergency plans that take into account the experience of multiple jurisdictions in the past 20 years, and aligns with the 2011 National Strategy for Disaster Resilience".⁴⁵

The Special Inquiry notes that a working group has been established under the governance of the SEMC's Response and Capability sub-committee to consider animal management and welfare in emergencies in Western Australia. This working group consists of key stakeholder groups, including the Department of Agriculture and Food WA (DAFWA).

⁴¹ Ibid

⁴² Submission of Shire of Murray; Submission of City of Mandurah

⁴³ Submission of Shire of Murray

⁴⁴ National Advisory Committee for Animals in Emergencies, *National Planning Principles for Animals in Disasters*, May 2014

⁴⁵ Submission of the Australian Veterinary Association WA

Animal welfare and management during the Waroona fire

*The importance that farmers put on livestock and animal welfare and farm assets does not appear to be taken into account by people in control.*⁴⁶

Animals at evacuation centres

The Special Inquiry understands that not all evacuation centres are able to accommodate companion animals or livestock. The reasons for this include: lack of appropriate facilities to house animals, health and safety considerations, and insurance and liability concerns. As evacuation centres are generally local government facilities utilised by CPFS to house evacuees, these facilities are not designed solely for the purpose of evacuation, and there are also local government requirements regarding the presence of animals that must be considered.

DAFWA noted in their submission that there are challenges in finding appropriate facilities for long term evacuation of animals:

*[W]here [the Department of Agriculture and Food WA] was dealing with commercial livestock, there are animal welfare issues which actually become people welfare issues. Not only companion animals but in the peri-urban area you tend to get farmyard animals associated with these properties; say, donkeys and llamas and guinea pigs and, you know, it's not merely the dog or the cat. And we lack a facility to deal with those where we're wanting to evacuate people for their safety and can be a long-term evacuation.*⁴⁷

The evacuation centre established at the Leschenault Leisure Centre within the Shire of Harvey was able to accommodate companion animals. The Shire of Harvey informed the Special Inquiry that the Shire:

*Established a secure location on one indoor basketball court to accommodate people's pet animals together with a food supply. This area had an external access way separate to the main entrance, so pets did not go through the evacuation centre area, Shire Ranger staff attended and assisted with these arrangements.*⁴⁸

Rangers from the City of Mandurah, and the Shires of Waroona and Murray undertook welfare checks on animals in the Shire of Waroona in the first few days of the fire. Rangers also attended community meetings and liaised with people evacuated to access their properties and check on their animals. The Royal Society for the Prevention of Cruelty to Animals Western Australia and DAFWA also undertook animal welfare checks in the initial period after the fire.⁴⁹

⁴⁶ Submission of member of public 70

⁴⁷ Hay, B., Hearing, 24 March 2016

⁴⁸ Supplementary submission of Shire of Harvey

⁴⁹ Information provided to the Special Inquiry by Shire of Waroona, 10 March 2016; Submission of City of Mandurah

Rangers also assisted with the care of companion animals brought to the Pinjarra evacuation centre. This was either caring for the animals at no cost at the Shire of Murray's animal management facility, or through other appropriate facilities in the region.⁵⁰

Donated companion animal food was collected at the Council office and Waroona Community Centre, and distributed by the Shire of Waroona to affected persons.⁵¹

The Special Inquiry did not receive evidence to suggest the arrangements for companion animals at evacuation centres were inadequate during the Waroona fire. However, the Special Inquiry heard that, as animals were not able to be accommodated inside the evacuation centre, some people chose to remain outside with their animals:

*I stayed almost the week at Australind there, but because I had animals, my dog, and my son had his dog, we stayed in the car park.*⁵²

As discussed above, there is a SEMC subcommittee currently examining the policy around animals in emergencies in WA. The Special Inquiry therefore doesn't consider it necessary to make specific observations on this matter.

Veterinarian care of animals and access to animals during and after the fire

The Special Inquiry received evidence commending the numerous veterinarians who responded immediately to meet the needs of affected animals and displaced people who had animals with them that required veterinary attention. Much of this work was completed on a pro bono basis, supported by public donations to assist with the costs of veterinary supplies.⁵³

These efforts were often affected by road closures. The Special Inquiry received evidence that there were issues in respect to:

*...veterinarians and others trying to access animals in need, and returning to the area after obtaining necessary supplies to assist animals due to coordination and communication problems. There did not appear to be a responsible agency to manage the response...*⁵⁴

The Special Inquiry understands that some difficulties accessing animals during the Waroona fire occurred due to road closures and the heavy handed implementation of vehicle control points, as discussed in more detail in Chapter 11. Other difficulties experienced related to the provision of feed or to attend to the immediate needs of agriculture, such as the milking of dairy cows, as well as accessing livestock in immediate need of treatment or euthanasia due to significant injury or burns.

⁵⁰ Submission of Shire of Murray; Submission of City of Mandurah

⁵¹ Submission of Shire of Waroona

⁵² Holbrey, L., Hearing, 22 March 2016

⁵³ National Advisory Committee for Animals in Emergencies, *National Planning Principles for Animals in Disasters*, May 2014

⁵⁴ Submission of Australian Veterinary Association WA

One submission to the Special Inquiry stated:

The heavy handed approach of making it nearly impossible for people to return to protect their assets and stock, regardless of the competency and local knowledge of the person trying to get in, can only lead to frustration, anger and maybe unnecessary losses for the property owner.⁵⁵

A submission from a Cookernup resident recounted difficulty experienced while taking supplies to animals in need:

Several occasions I had to stop and explain my reasons for movement (which I was happy to abide), but, when we were taking emergency supplies to distribute to animals housed in a fully burnt out area (which was not in danger due to nothing left) was ridiculous (especially when we were returning home to a possibly dangerous area).

We were proven locals helping locals and providing a duty of care to manage and protect the welfare of animals. In one instance we were told to turn around, we had to get friends (who lost everything) to drive to our place hook on the trailer full of supplies, take it back to their property, unload it, return to us and unhook again at our place.⁵⁶

These difficulties were echoed by the Livestock and Rural Transport Association of WA in a submission to the Special Inquiry:

The process for transporters to obtain access permits so animals could be transported out, and feed could be transported in, appeared to be ad hoc and not follow any particular process. There was more than one occasion where transporters followed the process they had been advised to follow only to arrive at the police checkpoint to be told the permit was not valid and access would not be allowed.⁵⁷

Livestock is the livelihood for many people in rural areas, such as the area affected by the Waroona fire. It is important that the importance of tending to animals and livestock, which in turn ensures sustaining a person's livelihood, is recognised by those managing emergency situations.

The Special Inquiry hopes that the work being undertaken by SEMC in relation to animals during emergencies, in conjunction with the work required to address Recommendation 14 of this report, will address the issues detailed above.

⁵⁵ Submission of member of public 69

⁵⁶ Submission of member of public 81

⁵⁷ Submission of Livestock and Rural Transport Association of WA Submission

Chapter Fifteen - Rural Fire Capability

The bushfire system in WA is without policy leadership. It is fragmented in terms of the number of people who are involved, the number of Government agencies who have a finger in the pie.¹

The FRS (Fire and Rescue Service) culture is one that prioritises structural firefighting over any other type of fire, that favours incident response rather than hazard reduction, and which focusses on the Perth metropolitan area rather than the entire State.²

Bushfire is a growing problem in Western Australia. As discussed in Chapter 7, in order to meet future challenges, there is a need to focus greater effort and investment into bushfire prevention, mitigation and community preparedness. At the same time there will be a need for an improved capability to respond, including through the adoption of new technologies. This multi-pronged approach is necessary in order to deliver a more effective service to the rural areas of the State.

Rural fire management across Australia

The Special Inquiry does not intend to undertake a detailed analysis of the arrangements in other jurisdictions. However, it is noted that there is no common approach to the question of a separate rural fire organisation.

Table 15.1 below is adapted from the Report of the Victoria Fire Services Review³ and compares governance arrangements for fire services across Australia.

Jurisdiction	Service	Led By	Reporting to	Nature of service	Board oversight
ACT	ACT Fire & Rescue ACT Rural Fire Service	Chief Officers	Commissioner of Emergency Service	Government agency	N/A
NSW	Fire and Rescue NSW NSW Rural Fire Service	Commissioners	Minister for Police and Emergency Services	Statutory authorities	N/A
NT	NT Fire and Rescue Service	Chief Fire Officer / Director	Commissioner of Police / Chief Executive Officer	Part of Government tri-service	N/A
QLD	QLD Fire and Rescue Service	Commissioner	Minister for the Police, Fire and Emergency Services	Operational unit of Government department	N/A

¹ Underwood, R., Hearing, 11 March 2016

² Submission of member of the public 13

³ O'Byrne, D., *Report of the Victorian Fire Services Review: Drawing a line, building stronger services*, 2016

Jurisdiction	Service	Led By	Reporting to	Nature of service	Board oversight
SA	Country Fire Service Metropolitan Fire Service	Chief Officers	Minister for Emergency Services and SAFECOM Board	Statutory authorities	SAFECOM Board
TAS	Tasmania Fire service	Chief Officer	Minister for Police and Emergency Management	Statutory authority	Governance group of State Fire Commission
VIC	Country Fire Authority Metropolitan Fire and Emergency Services Board	Chief Executive Officers	Boards	Statutory authorities	CFA Board MFB Board
WA	Department of Fire and Emergency Services	Commissioner	Minister for Emergency Services	Government department	N/A

Table 15.1: Governance arrangements for fire services across Australia

From the perspective of rural fire management, the experience of New South Wales, South Australia and Victoria are particularly relevant to Western Australia.

New South Wales

New South Wales has separate statutory bodies for rural fire (New South Wales Rural Fire Service) and urban fire (Fire and Rescue New South Wales). Both are well established as separate organisations and each has a Commissioner.

Of note, in NSW there still exists a strong tie between the Rural Fire Service (RFS) and local government. All RFS assets are vested in the council. A structure of local government Bushfire Management Committees link to a State Bushfires Coordinating Committee. In 2001 a transition started whereby local government bushfire staff exited their local council employment to take up employment with the RFS. In the main, this has been a successful partnership. Many RFS employees are still accommodated in local council facilities.

South Australia

In South Australia there are separate bodies in the Metropolitan Fire Service, the Country Fire Service and the SES. Each is headed by a Chief Officer. The Chief Officers all report to a Minister and to a board. There is an overarching organisation called the SA Fire and Emergency Services Commission, headed by a CEO, who provides shared corporate and administrative services to each of the emergency services organisations, but has no direct operational role. It is also relevant to note that in 2015 the then Minister developed a proposal whereby the fire and emergency services would be amalgamated into one body with one operational head and one CEO heading the organisations. In May 2016, following sustained criticism, the idea was abandoned.

Victoria

Victoria has separate fire services for rural fire (Country Fire Authority), Melbourne urban fire district (Metropolitan Fire Brigade) and the SES. Each is a separate body, headed by a Board who appoint a CEO to run the business and a Chief Officer who runs the operations. Following criticisms made in the 2009 Victorian Bushfires Royal Commission a new position of Fire Services Commissioner was created to be the most senior fire officer in the State.

In 2013, following a review and a white paper, the Government moved to establish Emergency Management Victoria, led by a CEO and a Commissioner for Emergency Services (subsuming the former Fire Services Commissioner role). The Commissioner for Emergency Services has broad responsibilities for a whole of government approach to prevention, preparedness, response and recovery for a wide range of non-terrorism emergencies.

It is noteworthy that Victoria is one of only a few jurisdictions in the world with “integrated brigades”. In integrated brigades there is a membership of both career firefighters and volunteer firefighters. Whilst not without its challenges, the integrated model yields significant community benefit as the volunteer firefighters can be supported by career staff. Also, there is a significant surge capacity created for major incidents (be they of an urban or a rural nature). An indirect benefit of the integrated model is the ‘blending’ of cultures and approach, and closer connections to the community.

In July 2015 the Minister for Emergency Services commissioned a review into the resourcing, operations, management and culture of Victoria’s Metropolitan Fire and Emergency Services (MFB) and Country Fire Authority (CFA). The recommendations of the Report, *Drawing a line, building stronger communities*, were accepted by the Government with the exception of recommendations 13 and 14, which propose the reinstatement of the position of Chief Fire Officer as the head of each fire service and the establishment of a single governing board for the CFA and the MFB.

The Report noted that:

*At times, the relationship between the leadership and firefighters seems like trench warfare ... "It is evident to the review that there is a serious and fundamental disconnect between the senior management and operational firefighters. In the case of the MFB, this has become an almost uncrossable chasm."*⁴

The Minister for Emergency Services released the following statement in response to the Report:

*The Government has made it clear we would not amalgamate the CFA and MFB at any level. Additionally, the complexity and size of these community organisations requires both executive business leadership and operational leadership.*⁵

⁴ O’Byrne, D., *Report of the Victorian Fire Services Review: Drawing a line, building stronger services*, 2016, p.32

⁵ Minister for Emergency Services Victoria, *Government Response to Fire Services Review*, 16 March 2016 <http://www.premier.vic.gov.au/government-response-to-fire-services-review/>

Industrial Relations

In every State and Territory the urban fire agency has a strongly unionised workforce which sets out distinctive remuneration and work conditions of its members. Paid staff who manage and coordinate rural fire volunteers are covered variously by either separate awards with the firefighters union, or by public sector, technical or local government employee based unions.

By comparison, the rural fire and SES volunteers are represented by volunteer associations.

Land management agencies

Finally, each jurisdiction also has arrangements that see the parks management and public land forest management agencies formally involved in fire. These arrangements vary. In Victoria, the relevant Department has a Chief Fire Officer who leads a network of government organisations who have a part time fire management capability. In South Australia, the land management agency resources are recognised as formal “Brigades” within the Country Fire Service structure. In other jurisdictions, land managers are incorporated through fire prevention and bushfire coordination committees at local, regional or state level.

General observations

An overview of the structures and industrial issues across Australia enables the Special Inquiry to make following observations:

- a number of governments have found emergency services organisational reform to be difficult, with many pitfalls (including adverse political consequences). The most successful reforms seen to have been following a critical review after a major fire or emergency; for example, structural changes which occurred following the Canberra 2003 bushfires and the Black Saturday bushfires of 2009;
- with the exceptions of the CFA in Victoria and in Tasmania, fire and emergency services volunteers are in separate bodies to career fire services fire station staff;
- the industrial implications of any proposed fire agency mergers is an important consideration; and
- the risk of any proposed reform must consider, foremost, the longer term effect on volunteers and their connection to rural communities.

History and framework – Rural Fire Management in Western Australia

Chapter 7 of this Report discusses the fire prevention responsibilities of a number of Government agencies and their predecessors, including the Department of Environment and Conservation and the Forests Department.

At this juncture it is useful to briefly outline the history to the current framework for bush fire management and volunteer brigades in Western Australia.

From 1885 to 1954 several Acts pertaining to bush fire management were enacted, which amongst other things, established prohibited burning times and the registration of Bush Fire Brigades.

The *Bush Fires Act 1954*, at the time of enactment, outlined processes for fire prevention, and the responsibilities of local governments and Bush Fire Brigades with respect to the control and extinguishment of bush fires. The Act also established the Bush Fires Board, which was responsible for administering the *Bush Fires Act*, providing advice the Minister in relation to the prevention and extinguishment of fires, and carrying out fire prevention measures.

The *Fire and Emergency Services Act 1998* (FES Act) formally established FESA, replacing the Bush Fires Board and the Metropolitan Fire Brigades Board, which had been established in 1898. This brought together volunteer services and career staff under the one board and one CEO.

Under the FES Act, FESA Consultative Committees provided input on strategic issues and advice in relation to policy and planning within FESA operation portfolio. These Committees included:

- Bush Fire Service Consultative Committee;
- Fire and Rescue Consultative Committee;
- SES consultative Committee; and
- Volunteer Marine Rescue Services Committee.

The *Fire and Emergency Services Legislation Amendment Act 2012* commenced on 1 November 2012. The Act abolished FESA, which was replaced by DFES, headed by a Fire and Emergency Services Commissioner. The activities of DFES with respect to the prevention, control and extinguishment of fires are set out in the Act, along with provision for the creation of Volunteer Advisory Committees, replacing the former Committee structure under FESA.

In accordance with the *Emergency Management Act 2005*, DFES is also the Hazard Management Agency for fire across the whole of the State. This was discussed in detail in Chapter 8 of this Report.

Capability - Department of Fire and Emergency Services does not tailor its service to the rural fire environment

Expertise in Rural Fire

A range of stakeholders have expressed concern that DFES staff do not have sufficient expertise in rural fire management. One volunteer described this as “the biggest problem we’ve got in Western Australia.”⁶

Another submission observed:

*DFES has been run by career Fire and Rescue staff out of Perth who have very little knowledge of, or exposure to, country emergency services. The impact of this has seen a great divide being developed between country and metro.*⁷

Several submissions also suggested that whilst there may have previously been staff within DFES with bushfire experience, many of these people have now left the organisation.

⁶ Lawrence, R., Hearing, 4 March 2016

⁷ Submission of member of the public 164

The perception of inexperience in rural fire management within DFES also applies to staff at higher levels with management responsibility:

*Many of the FRS personnel who end up in charge of major bushfires have limited bushfire experience, as they have spent their entire careers in the metropolitan area responding to relatively small local bushfire incidents, with limited opportunity to attend major fires. These officers have limited experience at combatting large scale broadacre or forest fires.*⁸

These perceptions were put to the FES Commissioner in his oral hearing before the Special Inquiry, where he expressed the view that there is “a good balance of personnel in the Department across the range of hazards that we have to deal with.”⁹

In the view of the Special Inquiry, it is imperative that bushfire skillsets are incorporated into succession planning. In a general sense, in an organisation where the principal means of entry level recruitment into operational positions is through urban fire stations, there will be a resultant effect on the culture and approach of that organisation. In the absence of a clear policy on lateral entry, applicants for more senior operational positions are assessed against competencies that are primarily gained through urban career fire experience.

This succession planning deficiency can be addressed by building a broader set of skills and experience into the selection criteria for key rural and general fire management positions. Examples might be to recognise volunteer service, local government fire experience, actual rural firefighting experience and seeking out applicants with a broader range of qualifications, including tertiary qualifications in land, agricultural, forestry and emergency management.

Training in Rural Fire

In addition to there being a perceived lack of experienced persons in rural fire management in DFES, there was also the suggestion put to the Special Inquiry that the agency does not provide adequate training to their staff in bushfire management, and emphasises theory rather than practical experience.

The State Emergency Services Volunteers Association expressed the view that this issue is not confined to bushfire skills:

*... what is becoming increasingly apparent to SES volunteers throughout the State is that DFES staff have no training in the (natural hazard) roles they take over and the events are not managed efficiently with many problems occurring.*¹⁰

Opportunity 14: The Department of Fire and Emergency Services training for Fire and Rescue career staff (at LFF and S/O training courses) to include enhanced training in natural hazard incident management; hazard reduction burning; rural and forest fire behaviour and the P&W use of fire as a management tool.

⁸ Submission of member of the public 13

⁹ Gregson, W., Hearing, 6 April 2016

¹⁰ SES Volunteers Association of Western Australia (Inc), Hearing, 9 March 2016

Different strategies

Experience in rural fire fighting and management is crucial as the strategies applied in that context greatly differ to strategies in the urban environment. These strategies include suppression techniques, asset protection and most crucially, the management of emergency services volunteers.

The Special Inquiry heard evidence that DFES staff, both during the Waroona fire and generally, do not always demonstrate an appreciation of these strategic differences.

They don't understand fire behaviour in the country... Bush firefighters will aggressively go and attack a fire through a paddock. Fire and rescue people say wait till it comes to the top of the road and we'll stop it there. Now, you'll never stop it at the road because it's still burning in the paddock. So you need to put it into the road merge and the attack it from both sides at once. So they don't understand that firefighting capacity.¹¹

In addition to the method in which the fire is fought, another aspect of the strategic differences in the urban and rural context relates to the prioritisation of assets which are protected. For example, in a rural area, a farmer's livelihood may be dependent on the equipment in their shed and/or stock, and thus they may be willing to sacrifice their home before their assets. Such a scenario is less likely to arise in a metropolitan area.

As discussed in Chapter 9, the Special Inquiry received accounts of DFES fire fighters prioritising house protection to the detriment of other assets, despite residents expressing a view that their shed or stock was more important to them.

Training and advancement of bushfire volunteers in the Department of Fire and Emergency Services

As noted by the Auditor General in his recent report *Support and Preparedness of Fire and Emergency Services Volunteers*, volunteers are a critical part of the State's response to fires and emergencies, particularly in regional and remote Western Australia. Of the 800 volunteer service groups across the State, around 700 are located outside of the Perth metropolitan area.¹²

DFES is directly responsible for the following volunteer organisations:

- Volunteer Fire and Rescue Service;
- State Emergency Service;
- Volunteer Marine Rescue Services;
- Volunteer Emergency Service; and
- Volunteer Fire Service.

Whilst local governments are directly responsible for Bush Fire Service volunteers, DFES provides support in the areas of administration, training and funding.

¹¹ Twaddle, J., Hearing, 4 March 2016

¹² Western Australian Auditor General, *Support and Preparedness of Fire and Emergency Services Volunteers*, 2015, p. 5

Training

DFES provides training to paid staff and volunteers through the Professional Pathways Project, which includes leadership, technical and operational training.

The FES Commissioner advised the Special Inquiry that volunteers have been “intimately involved” with the structuring of the Professional Pathways project, which will deliver increased volunteer capabilities. The FES Commissioner also expressed support for volunteers obtaining nationally accredited training “because it gives them mobility and recognition in the industry and other areas”¹³.

Not all stakeholders share the view that volunteers are benefiting from the Pathways Project, and have suggested that it has “been designed to suit the paid staff”¹⁴.

In particular there is concern that modules required to be undertaken are lengthy and delivered during business hours. The courses, and pre-requisite subjects, also fail to recognise pre-existing knowledge and training (some of which was undertaken well prior to the Pathways Project being adopted).

At the core of volunteerism is the need to offer training that is relevant and tailored to the needs and availability of volunteers, many of whom are employees or self-employed. The scheduling of courses during normal working hours fails to appreciate the limited time which volunteers have available.

For those volunteers who live in rural and remote areas, training should, wherever possible, be taken to the volunteers rather than the volunteer having to travel long distances.

It would appear that the application of the Professional Pathways project exemplifies the general approach of DFES in relation to the management of volunteers. Rather than involving volunteers with the development of the project “from the ground up”, the process appears to have been developed for career staff, then retrofitted to volunteers. As a result, the project does not always meet volunteer needs and they feel a lack of ownership.

Incident Management Team role advancement in the Department of Fire and Emergency Services

The Special Inquiry also received evidence that bushfire volunteers are less likely to be promoted within the DFES-led Incident Management Teams, due to a perceived preference for staff with a metropolitan background. For example:

*Under the DFES structure... they've entrenched all the fire and rescue city centric union controlled people into the system that you can't – unless you've gone through their school of knowledge, you can't get above a D/O level.*¹⁵

This sentiment was echoed by the Emergency Services Volunteer Association:

*We believe there's a cap in there. If you don't come from the fire and rescue side of the school, you don't rise any higher than a certain rank.*¹⁶

¹³ Gregson, W., Hearing, 6 April 2016

¹⁴ Association of Volunteer Bush Fire Brigades WA Inc., Hearing, 31 March 2016

¹⁵ Ibid

¹⁶ Emergency Services Volunteers Association, Hearing, 9 March 2016

The FES Commissioner, whilst acknowledging there is a “limited engagement” of volunteers in Level 3 incident management roles, expressed the view that there is an increasing engagement “of volunteers at Level 1 and 2 incidents.”¹⁷

The active promotion of volunteers onto IMT roles would go some way to rebuilding the bushfire expertise of DFES, which as discussed above, is perceived to be lacking.

Volunteers within the Incident Management Team during the Waroona fire

Timeliness of deployment

The Special Inquiry received reports of Bushfire Brigades not being deployed to the Waroona fire, and that firefighting resources were sent from Perth first. This left some volunteer firefighters feeling underutilised.

During the initial attack on the fire, there were some who suggested that P&W did not engage local Bush Fire Brigades sufficiently early. The Special Inquiry heard from the initial IC that:

There was a discussion later in the morning [of 6 January] about whether or not we utilised brigade assistance, and, in fact, there were several discussions about it ...

*[T]he discussion was, really, between myself and [Operations Officer A], and at that time, we were a little concerned that if we got brigade assistance, they may be sitting [idle]. We would be unable to deploy them, because, in that environment ... the fire was separate from roads and tracks, so the initial attack is really with machinery, to establish a fire line ...*¹⁸

The Special Inquiry believes the reasoning behind the decision not to request Bush Fire Brigades during the initial attack is sound.

The Special Inquiry understands that the first request for Bush Fire Brigade assistance occurred at the time the spot fires around Waroona started on the evening of 6 January 2016. At the same time, resources from DFES were also requested by P&W.¹⁹

The Special Inquiry understands that personnel and resources from the metropolitan area were deployed –in some cases, ahead of Bush Fire Brigades – as they were required for specialised purposes, including the protection of infrastructure and structural assets – a role generally not undertaken by Bush Fire Brigades.

Evidence received by the Special Inquiry suggests that there may have been opportunity for earlier deployment of some Bush Fire Brigade resources, particularly once the fire reached Waroona on the evening of 6 January 2016.

¹⁷ Gregson, W., Hearing, 6 April 2016

¹⁸ Ridley, J., Hearing, 17 March 2016

¹⁹ DFES and P&W, *Joint Agency Operational Audit*, 11 March 2016, p. 50

The Fire Control Officer for the Coolup Volunteer Bush Fire Brigade – located approximately 13 kilometres north of Waroona – informed the Special Inquiry in a submission that:

On Wednesday night [6 January], a steady stream of fire trucks raced down the South West Hwy past our station while our 3 trucks stayed inside one of which was a 15000lt bulk tanker, what a wasted resource.²⁰

The City of Mandurah relayed the sentiments of the Mandurah Southern Districts Bush Fire Brigade – who were not activated during the first four days of the fire – in a submission to the Special Inquiry:

The decision not to activate the Southern Districts VBFB was disappointing for their membership. They spend many hours training and preparing for the opportunity to assist their community. It must be understood that under-utilising a brigade can have detrimental impacts on morale, recruitment and retention of volunteers.

Despite the CBFCA participating in the Metro Operations Centre conference calls and advising of available resources, the brigade [was] still not used within the first 4 days of the incident.²¹

The submission went on to state:

The City [of Mandurah] is not questioning the operational decision made, just the importance of communicating with the brigade the reasons for their lack of deployment, particularly when they are one of the closest brigades to the incident. Members were extremely upset when eastern states counterparts were arriving and they had themselves not been utilised.²²

While there may have been operational reasons that the Special Inquiry is not aware of regarding the delay in deploying volunteers, the tactic employed when fighting a fire should be to ‘hit it hard and hit it fast’ – the speedy utilisation of Bush Fire Brigade volunteers from surrounding districts may have assisted with this.

In the view of the Special Inquiry, Regional and State Operations Centres should ensure that there is both a reserve maintained, and a reasonable commitment of local resources to the fire. Whilst it is understood that the SOC may be guided by response tables, it is important that such tables are not so slavishly applied that they compromise the principle of ‘nearest and fastest’. The requirement for the ROC and SOC to develop critical oversight, foresight and strategic coordination (as distinct from intervention) is vital.

Self-deployment of local resources

A particular issue which can arise when managing Volunteer Bush Fire Brigades is self-deployment, which can inhibit the ability of the IMT to monitor the number and locations of crews on the fireground. Self-deployment may occur in the absence of critical regional

²⁰ Submission of member of the public 59

²¹ City of Mandurah Submission, 4 March 2016

²² Ibid

oversight, and coordination discussed above. The Special Inquiry received evidence of self-deployment occurring during the Waroona fire.

Self-deployment can stem from volunteers feeling underutilised, or not being aware of the strategy they are helping fulfil:

*Apart from joining all the other [Volunteer Bushfire Brigade] participants in being very frustrated at not being utilised at all in the morning (20 or more trucks patrolling Cookernup was utter overkill). We and many of the other trucks just went out to where there was smoke and started protecting assets without any instructions from Central Control.*²³

To address this issue, the Incident Controller for Operational Period 2 suggested in a submission to the Special Inquiry that:

*Additional information and training for brigades to improve the knowledge and understanding of AIIMS and the bushfire command structure may be beneficial to improving [integration of brigades into the fire structure].*²⁴

The Special Inquiry concurs with this observation. It would appear that the majority of the Division and Sector Command roles relevant to volunteer brigades were performed by Fire and Rescue Officers. A general observation from the evidence provided at hearings was that these officers had good understanding of what Fire and Rescue appliances they had under their control. The Sector Commanders were less certain however about the number, deployment and tasking of Bush Fire Brigade appliances in their Sectors.

There is a need for increased communication between Sector Commanders and with Bush Fire Brigades under their control to ensure there is awareness of the ‘bigger picture’ when fighting a large scale fire, and for a shared understanding of large command structures.

Instances of Volunteer Bush Fire Brigades self-deploying without instruction from Divisional or Sector Commanders is a safety risk. The IMT should have visibility of all available resources at all times during an incident: the need for automatic vehicle location capability, and for an interoperable resource management system are discussed later in this chapter.

Utilisation of local knowledge

Volunteer firefighters are invaluable resources. Bush Fire Brigade volunteers, including Fire Control Officers and CBFEO, possess local knowledge that needs to be listened to and utilised by the IMT.

When asked about the value of Bush Fire Brigade members by the Special Inquiry, the IC for Operational Period 2 advised that they are:

*immensely valuable ... [and] very good at their local patch, very good at knowing the nooks and crannies in their area, and the people – and what ... assets ... need to be protected [or] could be at risk.*²⁵

²³ Submission of member of the public 7

²⁴ Email from Greg Mair to the Special Inquiry dated 6 March 2016

²⁵ Mair, G., Hearing 18 March 2016

The Planning Officer for Operational Period 2 advised the Special Inquiry that:

*Ideally ... the Chief Bushfire Control Officer, if they've got the skills, should come in and be part of the incident management team.*²⁶

As to the type of role suitable for a CBFCO, the IC for Operational Period 2 expressed the following view:

*I would not put a Chief Bush Fire Control Officer as a sector Commander. Their value in an incident of the magnitude of this one is at a much higher level in the incident management team... they should have been somewhere in more of a advisory fire management role over viewing and providing input at a whole range of levels, the decision making, the local community, the operations.*²⁷

During the Waroona fire, the CBFCO for the Shire of Waroona was located at the ICC at times acting in a liaison role for the IC. The IC for Operational Period 2 told the Special Inquiry that:

I don't think he was particularly comfortable; it was a very steep learning curve for him. Sometimes even experienced people aren't comfortable, but he was the – sort of on my hip to talk about local matters, and provide advice to me on local matters, where I knew more universal, global things about the structure; he knew the detail in town ...

*I have a view that we can't do business ... effectively without local government, broadly, in emergency management of bushfires, and specifically without local input from the brigades, and the Chief [Bush Fire Control Officer].*²⁸

The Special Inquiry heard from the CBFCO for the Shire of Harvey – who spent his time on the fire ground with his brigade members – that he was in regular contact with the CBFCO for the Shire of Waroona when he was the liaison officer in the IMT. However:

SPECIAL INQUIRER: Now, after [the Chief Bushfire Control Officer for Waroona] left the [IMT] at 11 o'clock [in the morning] on Thursday [7 January], were there any other communications by you back to either on the radio or face to face or you going back into Waroona [ICC]?

*WITNESS: No. Basically once [the Chief Bushfire Control Officer for Waroona] had left, as I say, that was pretty much the – you know, the last time I sort of spoke to anybody in there.*²⁹

²⁶ Carter, J., Hearing 1 April 2016

²⁷ Mair, G., Hearing, 26 April 2016

²⁸ Mair, G., Hearing, 18 March 2016

²⁹ Penny, P., Hearing, 4 April 2016

Evidence presented to the Special Inquiry suggests that having a volunteer presence in the IMT can have a number of benefits, foremost the sharing of local knowledge with the IMT. It also allows for communication, in both directions, from the IMT and volunteers on the ground.

The reported problems with communication between the IMT and Bushfire Brigades, as well as the self-deployment of Bush Fire Brigades to the fire ground, could be mitigated through the engagement of volunteers within the IMT and as Sector Commanders.

Placing appropriate qualified volunteers into Sector Commander roles will allow their local knowledge and bushfire fighting expertise to be effectively applied by themselves and those under their command on the fire ground. This will ensure that the IMT is best informed about the fire, and that resources are most appropriately deployed.

The recent Major Incident Review of the Esperance fires recommended that:

The fire agencies will need to ensure that there is sufficient support for structures to incorporate local knowledge. This should include the availability, and potentially funding, of training for local volunteers and government agency staff to enable them to participate in IMT roles.³⁰

The Special Inquiry supports this recommendation, and believes that DFES and P&W should agree to minimum targets for volunteer participation as Sector Commanders and in IMT positions.

Opportunity 15: The Departments of Fire and Emergency Services and Parks and Wildlife (and, when established, the Rural Fire Service) to agree on minimum targets for volunteer participation as Sector Commanders, and in Incident Management Team positions and develop strategies to meet those targets.

State Wide Operational Response Division

The Special Inquiry notes that amongst the volunteers who contributed to the Waroona fire, personnel were provided by the State Wide Operational Response Division (SWORD). The SWORD is a body of volunteers based in Forrestfield and overseen by career fire and rescue personnel, which can be deployed to incidents in regional areas.

The Special Inquiry understands that the SWORD do not have dedicated vehicles, rather they borrow vehicles from the high season pool. The Captain of the SWORD suggested to the inquiry that if the SWORD had a dedicated fleet of heavy and light tankers, large capacity water tanker, an ICV, and IC vehicles it could then respond to any level 3 incident in Western Australia, and fulfil leadership roles at a Division and/or Sector level.³¹

The SWORD concept builds a flexible reserve that provides a contingent capacity, should local resources be stretch by a fire (or some other emergency). The concept of SWORD is very appealing and should be further explored and developed. It is fully supported by the Special Inquiry.

³⁰ Nous Group, *Major Incident Review of the Esperance District Fires*, 8 March 2016, p. 61

³¹ Submission of member of the public 165

Provision of food to volunteers

The Special Inquiry received evidence that whilst the catering for volunteer firefighters at Brunswick Junction was well managed, the catering resources at Waroona, particularly in the first 24 hours of a crew's shift, were poor.³²

A volunteer Bush Fire Brigade member who worked at the Waroona fire recounted to the Special Inquiry an instance where he had worked from approximately 12 hours, and was not provided with food at the Control point, aside from lettuce. He stated he was also not provided with any fuel, and advised to go to a service station, despite the stations being closed at the time of his request (approximately 2130 hours).³³

The provision of food to initial shift personnel should be achieved by having pre-planned ration packs and drinking water stored on every appliance. Thereafter, provision of food and water becomes the responsibility of the IC.

The identification of resources deployed to a Sector, and the subsequent briefing, tasking, feeding and watering of those resources is not discretionary, it is a primary duty of care. Where this does not occur, it is a fundamental failing of the system of resources management.

Volunteer Fatigue Management

As noted by the Auditor General in his recent report *Support and Preparedness of Fire and Emergency Services Volunteers*, fatigue can be physically and mentally hazardous for volunteers, and it is "not unusual for volunteers to respond to an incident after already having worked a full day of paid employment".³⁴ It is therefore essential that this is managed appropriately, with a full understanding of the hours committed by volunteers both in the incident and in their outside work.

The Special Inquiry received evidence that during this incident, there was not appropriate fatigue management for volunteers. For example, the Special Inquiry is aware of at least one instance where a volunteer Sector Commander and his resources left the fireground on day two of this fire because they had had no rest for 24 hours.

The Special Inquiry also received evidence that some brigade members undertook overnight 12-14 hour shifts, and were then asked to drive home from Waroona to Perth at the end of their shifts.³⁵

³² The WA Volunteer Fire and Rescue Services Association (Inc), Submission

³³ Lawrence, R., Hearing, 4 March 2016

³⁴ Western Australian Auditor General, *Support and Preparedness of Fire and Emergency Services Volunteers*, 2015, p. 8

³⁵ Submission of member of the public 13

In his Report, the Auditor General found that existing DFES policies do not specifically address volunteer fatigue, and as a result volunteers must self-manage their fatigue. By purporting to include volunteers under standard policies and procedures drafted for career staff, DFES is not demonstrating an adequate appreciation of volunteer needs. The Special Inquiry concurs with the following recommendation made by the Auditor General:

*The Department of Fire and Emergency Services should, within 12 months, develop specific policies and procedures, including fatigue management, consistent with the Guidelines for Successful Partnerships between Public Sector Agencies and Volunteers.*³⁶

The Special Inquiry is of the view that recommendation 15 of this report, relating to the issuing of ID cards, will not only assist with traffic management as discussed in chapter 12, but also in the effective utilisation of volunteers in an IMT. An electronic ID card system in particular, will ensure greater visibility of the number and location of volunteers, thereby informing decisions around the provision of food and fatigue management.

The Chair of the SEMC acknowledged that volunteers find the paper based system of logging in and out frustrating, and expressed the view that the State has a responsibility to improve the way this is managed.³⁷

Opportunity 16: The Departments of Fire and Emergency Services (and, when established, the Rural Fire Service), and the Volunteer Associations to develop fatigue management guidelines for emergency service volunteers.

Opportunity 17: The Department of Fire and Emergency Services (and, when established, the Rural Fire Service), to measure and report annually on the volunteer fire and emergency service worker contribution.

Retired firefighting vehicles

The Special Inquiry understands that CBFCOs are expected to provide their own vehicles for their role, with reimbursement from the Shire for fuel expenses.

This is problematic as vehicles may not have the appropriate markings to travel as an emergency vehicle, meaning that they need to adhere to speed limits and other traffic rules when in an emergency situation.

Given the turnover of DFES vehicles, it is proposed that CBFCOs and landowners as part of brigades, be given preference in purchasing vehicles.

*The reality is that a lot of those trucks do very, very few kilometres in their 20 to 30 year lifetime and they're a resource which is probably under-utilised.*³⁸

³⁶ Western Australian Auditor General, *Support and Preparedness of Fire and Emergency Services Volunteers*, 2015, p. 5

³⁷ Edwards, F., Hearing, 30 March 2016

³⁸ WA Farmers, Hearing, 17 March 2016

Assisting landowners to purchase retired firefighting vehicles would increase community resilience, enable greater participation in volunteer brigades and ensure there was a larger number of resources to call upon during a bushfire incident.

Opportunity 18: The Department of Fire and Emergency Services (and, when established, the Rural Fire Service) and in consultation with the Association of Bush Fire Brigade Volunteers, to review the policy for disposal of ‘retired’ firefighting vehicles to first make disposed vehicles available to landowners who are sponsored by the local Brigade. Such vehicles to be subject to a limited decommissioning process.

Industrial Relations issues in rural fire management

Department of Parks and Wildlife Employee Fatigue Management

The Special Inquiry received submissions and heard evidence from the two industrial bodies that cover P&W: the Community and Public Sector Union covering public servants, and the Australian Workers Union covering the technical workforce. Both industrial bodies put forward the need to consider employing more P&W fire management personnel on the basis of concerns about fatigue management.

The Special Inquiry was impressed with the quality of responses from these two industrial bodies when they were asked to provide evidence supporting their claims.

It is not the intention of this Special Inquiry to make specific recommendations about the P&W workforce. Notwithstanding this, there was concerning evidence presented to the Special Inquiry which indicates that during the initial attack phase of a developing fire, P&W staff and crews are regularly expected to be working up to, and in some cases over 24 hours. The Special Inquiry also heard that a combination of firefighting, standby and commitment to hazard reduction burns, some which require significant out of area travel, has resulted in some employees having no days “off” (call, duty, work) for many weeks.

With the expectation that P&W will be undertaking more hazard reduction burning into the future, and that these operations are likely to extend into late autumn and early winter, there is a need to ensure fatigue levels are recorded and monitored and a more strategic approach adopted.

Opportunity 19: The Department of Parks and Wildlife, in consultation with their workforce and the Community and Public Sector Union (CPSU) and the Australian Workers Union (AWU), to carry out a workforce workload analysis of its fire program (covered by both the CPSU and the AWU workforce). The analysis to have a particular emphasis on the management of workload fatigue in employees involved in the fire program.

Fire and Rescue Career staff

Fire and Rescue career staff are covered by industrial agreements between DFES and the United Firefighters Union of WA (UFU). These arrangements require strict adherence to maintenance of sufficient staff to operate career fire stations in the Perth metropolitan area and in a number of regional locations. The nature of this industrial agreement presents some challenges when using these staff in major bushfires or other incidents.

The Special Inquiry considers that there is potential to further integrate Fire and Rescue staff into rural operations and P&W hazard reduction burning. This should be a consideration at the next negotiation of their enterprise agreement.

There may also be a case for more firefighters overall. The UFU has proposed that due to the changing climate; increasing vulnerability in the rural-urban interface and a growth in Perth's population, more career firefighters are necessary. The UFU's submission used an urban response time to justify this view.

It is the view of the Special Inquiry that it is more likely that these would be forest firefighters under P&W or under a rural fire body and more volunteers, rather than more firefighters in Fire and Rescue brigades. On the evidence available (from DFES Annual Reports) it appears that the number of structure fires is declining and that initial response times are largely at or within the Standards of Fire Cover.

The Special Inquiry notes that urban response time is a poor measure of rural fire performance. The Australasian Fire and Emergency Services Authorities Council (AFAC) has recently proposed new measures of effectiveness in both rural and urban fire contexts. Such measures focus on performance outcomes rather than inputs and outputs. It would be worth DFES building these measures into their performance reporting.

Notwithstanding this, there is merit in assessing career pathways for urban firefighters into rural fire management roles. This includes greater utilisation of Career Fire Rescue personnel in P&W prescribed burn planning teams.

Further, it may be instructive to evaluate Enterprise Agreements in use interstate to see whether greater flexibility of the Career Fire Rescue workforce might be achieved in prescribed burn operations and during periods of major emergency or extended incidents.

Opportunity 20: The Department of Fire and Emergency services to investigate, with the United Firefighters Union, an 'emergency roster' arrangement that enables the temporary adoption of extended firefighter shift arrangements to enable more career firefighters to be made available for duty during significant emergencies.

The Volunteer Voice

Relationship between the Department of Fire and Emergency Services and Volunteers

The Special Inquiry has received written and oral submissions that recognise the very high quality of skills in the career Fire and Rescue staff. Many people observed that these firefighters are highly trained and experienced in urban fires and emergencies.

It has already been noted that when these staff are deployed outside the metropolitan area, there are some challenges. These are covered in more detail throughout this Chapter.

The Special Inquiry is deeply concerned however about the relationship between Bush Fire volunteers and DFES. One submission to the Special Inquiry observed that "the trust between Bush Fire Brigades and DFES is at its lowest ebb ever."³⁹

³⁹ Fire For Life submission, 25 February 2016

Another submission asserted that volunteers in regional areas “do not have any confidence in DFES administratively or operationally”.⁴⁰

This lack of trust and confidence raises questions about the ability of volunteers to effectively advocate their views to or within DFES.

In accordance with section 25 of the *Fire and Emergency Services Act 1998*, Volunteer Advisory Committees (VACs) can be established, reporting either to the Minister, the Fire and Emergency Services Commissioner, or both on any issue that may impact the operation or administration of their particular volunteer service.

The Special Inquiry is not aware of the Bush Fire Services VAC having met, but understands that there was a call for nominations in February 2016. In his report, the Auditor General also noted that Bush Fire Services does not yet have an operational VAC, despite VACs for other services being established in mid-2014.⁴¹

The Bush Fire Services VAC has been a contested issue between the Association of Volunteer Bush Fire Brigades (AVBFB) and the Government (the Minister for Emergency Services and the Fire and Emergency Services, in particular). The AVBFB would like to see the VAC utilised as a way of representing volunteer views to the Minister, and is disappointed by its understanding that the VAC for bushfire volunteers will report to the FES Commissioner only:

*(the VAC) for us demonstrates a culture that we hear regularly about... the perception of bullying and intimidation of people into submission. And to me, that's a classic example of that culture that's in the department that we, as volunteers, don't believe is in the interest of volunteerism.*⁴²

By contrast, several witnesses before the Special Inquiry spoke highly of the former Bushfires Board, which was a predecessor to the VAC system.

*You actually got to talk to people within the structure and they assimilated very well with the people on the ground, the local governments especially and provided great, great support to local governments.*⁴³

Opportunity 21: The Department of Fire and Emergency Services (and when established, the Rural Fire Service) to implement (and act on) a volunteer emergency service worker consultation framework to promote effective and meaningful ongoing consultation with fire and emergency services volunteers on matters that affect volunteer systems of work, equipment and health, welfare and safety.

⁴⁰ Submission of Jim McNamara, 29 March 2016

⁴¹ Western Australian Auditor General, *Support and Preparedness of Fire and Emergency Services Volunteers*, 2015, p. 17

⁴² Association of Volunteer Bush Fire Brigades WA Inc., Hearing, 31 March 2016

⁴³ Association of Volunteer Bush Fire Brigades WA Inc., Hearing, 31 March 2016

Relationship between the United Firefighters Union and Volunteers

The Special Inquiry is further concerned about the attitude of the UFU towards bushfire volunteers. The Special Inquiry understands that the UFU issued a Circular to its members in December 2015 that asserted, amongst other things:

- Union members should prioritise the safety of fellow Union members above other personnel in an IMT; and
- Union members should only take direction from Fire and Rescue Service members, irrespective of the positions under the AIIMS structure.

Whilst the Special Inquiry did not receive specific evidence that this Circular adversely impacted the operations of the IMT during the Waroona fire, sufficient evidence was received to indicate that the directions in the Circular are consistent with the general perception of Union attitudes towards volunteers.

I've been told that they're not allowed to take orders from volunteers. Their union has said that... and their station officers become sector commanders and tell the volunteers what to do, which causes a lot of anxiety amongst volunteers”⁴⁴

“It has also been reported that they (the UFU) have also made a number of proclamations during the past two fire seasons that career staff should not take orders from volunteer firefighters, and I have personally experienced career FRS firefighters refusing to take instruction from suitably qualified volunteer BFB sector commanders at fires.”⁴⁵

The Special Inquiry acknowledges that the UFU’s concerns with respect to volunteers in IMTs relate to the difficulty in ascertaining their competency and training, rather than a lack of general support for the utility of volunteers. Nonetheless, it is evident that bushfire volunteers face difficulties operating in the current environment. This must be borne in mind in any consideration of an appropriate service delivery for rural fire management, discussed below.

Relationship between the Department of Parks and Wildlife and Volunteers

The Special Inquiry understands that the relationship between Bush Fire Brigades and P&W is generally positive, and has improved as the Department has made significant efforts to address shortcomings identified in earlier reports.

There used to be some elements of conflict in the past but they've – the department listened to what the community was saying and the brought in what they call a good neighbour policy...they're working with the community.”⁴⁶

Many volunteers indicated that they would much prefer an alignment to P&W than to DFES.

The Special Inquiry has discussed with P&W the merits of P&W depot work centres becoming “Industrial Bush Fire Brigades” of DFES. Such an arrangement works well in

⁴⁴ Twaddle, J., Hearing, 4 March 2016

⁴⁵ Name withheld

⁴⁶ Association of Volunteer Bushfire Brigades WA Inc., Hearing, 31 March 2016

South Australia. After discussion with P&W senior officers and consideration of the merits and disadvantages of such an arrangement, the Special Inquiry is satisfied that such an arrangement is not right for now in Western Australia. The matter may be worthy of reconsideration at a later time.

Opportunity 22: The Departments of Fire and Emergency Services and Parks and Wildlife, (and when established, the Rural Fire Service), in consultation with relevant stakeholders including the Public Sector Commission and the Volunteer Associations, to conduct (and act on) an annual culture survey amongst paid and career staff and volunteer emergency service workers.

A Rural Fire Service for Western Australia

*DFES is a failure. It has attempted to impose an inappropriate suppression-only approach to rural fire management, it has failed to address the fuel buildup problem, and it has antagonised volunteer bush firefighters. We need a rural fire management to be in the hands of people who know what they are doing and who have no other agendas.*⁴⁷

Across both the written and oral submissions, the systemic issue most commonly raised by stakeholders was the need for a rural fire service in Western Australia. The Special Inquiry is of the view that the creation of such a service would assist in addressing the deficiencies in rural fire capability in this State, discussed in this chapter.

The Culture, Approach and Methodology of Rural Fire Management

The Special Inquiry read and heard many people who referred to differences in “culture”. It is relevant to make some observations on this subject.

Rural firefighting in Western Australia, (as has been the case in most of Australia) has evolved out of necessity. Bushfire risk is endemic to the Australian climate and vegetation. Fire is a part of the natural environment, with the traditional owners applying (even mastering) the use of fire for hunting and gathering.

European settlement in the bush saw a greater number of people becoming vulnerable to bush fires. The early efforts at rural firefighting were community based. The motivation was to put out fires on your neighbour’s property before they threaten your property and other neighbours.

Following the Second World War ex-servicemen returned to the land, but with a higher understanding of the need for coordination and organisation of rural firefighting resources. Across the country, to varying degrees and in different ways, systems of organised rural firefighting emerged. The essential elements of these systems were:

- arrangements were developed and implemented by local leaders;
- common goals, values and priorities were accepted;
- resource allocation matched the risk;

⁴⁷ Submission of member of the public, 4 March 2016

- local decision makers and leaders were empowered (eg: legislation); and
- communication systems were established to enable operational command and control of resources.

Over the years, even though the common goal between rural and urban fire services is prevention and suppression, there have been quite differences in approach and methodology adopted. The table following attempts to describe these differences in approach as two ends on a continuous spectrum each suited to the context in which they operate. Table 15.2 extends the “approach and methodology” concept to styles of command, control and coordination.

Rural approach and methodology	Urban approach and methodology
Community volunteer ethos	Paid career staff ethos
Country / rural base	City / urban base
Decentralised leaders with a “distributed leadership” approach	Centrally led. Centralised decision making
Leaders elected from community based on demonstrated competence and experience	Career staff attain rank based on formal competency assessments and experience in urban fire
Command by position	Command authority by rank
Fire prevention seen as integral to the role	Tendency for a “suppression” focus
Emphasis on local planning, simplicity of procedures and decentralised administration	Emphasis on central planning, standardised procedures and centralised administration
Doctrine recognises the need for initiative, diversity and flexibility	Doctrine is risk averse and tendency to be a rigid approach
Understanding the needs of the rural land owner land manager	Understanding of needs of building owner
Comfortable engaging multiple agencies and Departments in response	Operates with few other agencies
Tendency to being values and principles based	Tendency to prescription – “rules based”
Do what works	Do what I am told

Table 15.2: Rural and urban approach and methodology

There are distinct differences between the Bush Fire Brigade approach and methodology compared to that of career Fire and Rescue brigades, and these presently exist in Western Australia:

One is based on “Command and Control” versus the other which is based on “Trust and Respect”, this cultural difference will always be there, and it is noted that there are separate services around Australia that work more efficiently than the current model in Western Australia.⁴⁸

⁴⁸ Association of Volunteer Bushfire Brigades WA Inc. Submission, 16 March 2016

It is through understanding these differences that relationships can be improved and a common culture evolve. This will take time.

A Structure to Meet Future Needs

The Special Inquiry, when considering the structure of rural fire management was of the view that the focus should be less on the current environment but more about readying the organisation (and the State) for the expectation of future vulnerability. There is little value in organising “for the last war”. How do we create an organisation that will maximise our readiness for the next extreme event? How do we prepare for something that might be beyond our imagination?

The focus must be on using foresight and imagination to anticipate what the future risks and possibilities might be, and what organisational structure might best fit that future.

In his submission to the 2009 Victorian Bushfires Royal Commission, Mr Herman (“Dutch”) B. Leonard, a crisis management academic from the John F Kennedy School of Government and Harvard Business School, discusses the relative merits of centralised versus decentralised control.⁴⁹ Mr Leonard recognises the “largely decentralised function” of wildland (rural) firefighting with “... self-reliance a key virtue and distributed capability and training a key performance requirement.”⁵⁰

Leonard goes on to consider the evolution of new technologies that have led to the growth of more centralised functions and organisations in firefighting. Leonard says that: “The fact that we might be able to use new technologies to create centralized command and direction of extreme fire events does not, however, necessarily imply that it would be a good idea to do so. These technologies could just as easily be used to provide greater coordination and support...”⁵¹

Leonard suggest that, in organising for extreme events, “... the defining characteristic is the necessity for improvisation. ... Effective leadership in such situations will require creative improvised actions to cope as well as is reasonably possible with an event for which there is no full precedent, and for which there is therefore, no fully developed action script.”⁵²

Leonard suggests that, whilst there is no definitive answer, decentralization “...tends to offer significant advantages in such situations.”⁵³ He says that a centralised team (because decision making has not been delegated) is vulnerable to being “buried under the flow of variable problems coming to it for resolution,”⁵⁴ and is therefore subject to system overload. Leonard warns against a dangerous tendency to imagine the upside of more central command and control and to forget the likely downside.

⁴⁹ Leonard, H., *Organizing Response to Extreme Emergencies: A Submission to the Victorian Bushfires Royal Commission*, 25 April 2010, https://amsa.gov.au/forms-and-publications/environment/publications/NP-Reports/documents/Leonard_2010%20Bushfires%20Testimony.pdf

⁵⁰ Ibid., p 3

⁵¹ Ibid

⁵² Ibid., p 5

⁵³ Ibid., p 6

⁵⁴ Ibid

He suggests that an effective organisation might demonstrate the following features:

- forward leaning with authorisation to operate locally;
- the ability to request resources;
- a central oversight organisation with a coordination and support focus;
- trained local leaders;
- local leaders empowered to respond effectively without having to await guidance; and
- distributed teams.

Leonard's observations are considered very relevant in the Special Inquiry's analysis of options for the future structure for rural fire management in Western Australia.

Why consider a Rural Fire Service?

It is the view of the Special Inquiry that the capability of the current system that leads and administers the delivery of rural fire services - particularly bushfire prevention and suppression - in Western Australia is deficient. This questions the adequacy of the current capability and organisational arrangements for a hotter, drier future. These capability deficiencies cannot be remedied by one policy change, or project, or Special Inquiry recommendation. Rather, the *management* of rural fire capability needs to be reframed. The most effective way of doing this is to create a dedicated service that can drive changes in methodology, governance, resourcing, capability and focus.

The new rural fire management framework, driven by the Rural Fire Service, will deliver the following outcomes to the community:

- consolidate the current rural fire capability: people, training, equipment and doctrine;
- identify gaps, set appropriate and tailored targets, and provide the basis for an enhanced service delivery to the community of Western Australia in the future;
- enhance the priority given to preparedness, mitigation and community capacity building, and ensure that priority is reflected in policy, targets and resourcing;
- engage and empower local communities through regionally based offices, inclusive policy development and adaptable approaches; and
- specifically acknowledge and foster the expertise of emergency services volunteers.

The Special Inquiry proposes that capability building needs to be phased. Whatever form a Rural Fire Service might take, it is important that a 2 year review is factored into the arrangement. Depending on the progress and success of the capability building, there may be triggers to consider a step to re-enter to DFES or a continuation of the arrangement.

Structure for a New Rural Fire Service

Much of the evidence provided to the Special Inquiry which related to the creation of a new Rural Fire Service was detailed in its consideration of different governance structures. Whilst there appears to be general consensus as to the need to reinvigorate the delivery of rural fire services in the State, the point of difference relates primarily to whether this structure should be as a new Department; formed as a division within DFES; or be in another form.

Whilst there are clear benefits to centralised and coordinated command in an urban context, an agency delivering a service to the regional areas needs to be able to sufficiently engage with the community. It is also essential that the Rural Fire Service created covers all aspects of rural fire management, including prevention, preparedness, response and recovery, in a way that engages local communities and that has the full range of necessary powers and responsibilities.

Structure: different views

The AVBFB expressed the view that as a consequence of having a centralised single agency in DFES, the community has become completely disconnected from the decision making process.⁵⁵ The AVBFB therefore advocate for the creation of an independent agency focussed on rural fire at the local level “to ensure local government and their communities are resourced, supported and empowered.”⁵⁶

The Bush Fire Front also strongly advocate for the need for a separate structure focussed on rural fire management:

*We also believe there is a serious problem with having rural bushfire operations in the hands of what is essentially a metropolitan fire brigade. And we would like to see the creation of a rural fire service, which is operating independently of the Department of Fire and Emergency Services and is concerned basically with bushfire management in rural and semi rural areas.*⁵⁷

The UFU expressed concern at the possible creation of a dedicated Government department to rural fire:

*we believe the creation of yet another Government department or agency will not effectively deliver the resources that are required, particularly in regional Western Australia and on the periphery of the Perth metropolitan area.*⁵⁸

The FES Commissioner explicitly expressed to the Special Inquiry that he would not support the creation of another Government department or structure outside of DFES. Rather, the FES Commissioner is of the view that DFES should remain as the single agency with responsibility for fire, and that there be a division within dedicated to rural fire. The FES Commissioner explained:

*One possible option is where a rural fire command is established within the Department of Fire and Emergency Services because I believe that is one option that would allow you to leverage off the benefits of unification, standardisation and also not break that nexus between the Department of Fire and Emergency Services and local government.*⁵⁹

⁵⁵ Association of Volunteer Bushfire Brigades WA Inc., Hearing, 31 March 2016

⁵⁶ Association of Volunteer Bushfire Brigades WA Inc. Submission, 16 March 2016

⁵⁷ Bushfire Front Inc., Hearing, 11 March 2016

⁵⁸ United Firefighters Union of Australia, West Australia Branch, Hearing, 24 March 2016

⁵⁹ Gregson, W., Hearing, 6 April 2016

The Western Australia Volunteer Fire and Rescue Services Association suggested strengthening the rural fire capabilities within DFES, via the expansion of the Country Operations section, would deliver a “faster and more cost effective overall solution”.⁶⁰

Structure: the Special Inquiry’s view

It is the view of the Special Inquiry that the needs of the community will best be met by the creation of a Rural Fire Service as an entity separate to DFES, working collaboratively with all relevant Departments and stakeholders. To avoid any unnecessary duplication of services, the department could utilise the administrative and corporate services of an existing Government Department.

Whilst the creation of a new Government Department may be the first option to arise in any discussion of a new fire service, the Special Inquiry acknowledges that it may not be the most effective way to deliver the outcomes intended. A number of unintended consequences may arise from the creation of a new Government Department, including:

- a new Department of itself will not address any ‘siloeing’ that already occurs in fire management, and may lead to a worsening in this situation;
- there are high costs associated with establishing a new Department, and services (particularly corporate services) may be unnecessarily duplicated; and
- there will still be a need to address firefighting on the rural urban fringe which would not fit neatly within a separate new Department focussed on rural fire.

Therefore, as an alternative, the Rural Fire Service could be established as a sub-department of DFES, with its own budgetary allocation and ability to exercise its own powers and responsibilities separate to the head department (in this instance, DFES).

The creation of a service sitting wholly within the structure of DFES is also not recommended by the Special Inquiry. As outlined in this Chapter, DFES has not demonstrated a sufficient capability to manage rural fire, and as an agency adopts methodology and approaches which are unsuited to the rural fire context. It is also a unionised environment, and does not sufficiently involve or utilise volunteer bush fire brigades, which are the backbone of rural fire management.

The Special Inquiry is of the view that ultimately the exact form of the Rural Fire Service should be a matter for Government to determine. However, it must achieve the intended outcome: the enhancement of the capability for all aspects of rural fire management and bushfire risk management at a State, regional and local level.

In the Special Inquiry’s view, it is difficult to envisage a structure within DFES, other than a sub-department acting with relative autonomy and independence that can deliver rural fire services across the spectrum of prevention, preparedness and response in a more effective way than is currently the case.

Following the establishment of the Rural Fire Service, as either a separate entity to DFES or a sub-department of DFES, the Special Inquiry further recommends that its structure and

⁶⁰ WA Volunteer Fire and Rescue Services Association (Inc), submission, 10 March 2016

operations be reviewed within two years, to ensure that the intended outcomes identified by this Special Inquiry are being achieved.

Recommendation 15: The State Government to create a Rural Fire Service to enhance the capability for rural fire management and bushfire risk management at a State, regional and local level. The proposed Rural Fire Service will:

- be established as a separate entity from the Department of Fire and Emergency Services or, alternatively, be established as a sub-department of the Department of Fire and Emergency Services;
- have an independent budget;
- be able to employ staff;
- have a leadership structure which, to the greatest degree possible, is regionally based and runs the entity;
- be led by a Chief Officer who reports to the responsible Minister on policy and administrative matters; and to the Commissioner for Fire and Emergency Services during operational and emergency response;
- have responsibilities and powers relating to bushfire prevention, preparedness and response; and
- operate collaboratively with the Department of Fire and Emergency Services, the Department of Parks and Wildlife, Local Government and volunteer Bush Fire Brigades.

In creating the Rural Fire Service, the State Government to consider whether back office and corporate support services could be effectively provided by an existing Department, such as the Department of Fire and Emergency Services or the Department of Parks and Wildlife.

The State Government to review the creation of the Rural Fire Service two years after its establishment, to assess whether its structure and operations are achieving the intended outcome.

The Rural Fire Management Framework

The proposed Rural Fire Service will sit within a new Rural Fire Framework, guided by overarching bushfire policy developed in a collaborative manner. The regional focus will empower local communities, and ensure policies and training addresses local needs.

There will also be a need to ensure rural fire services are adequately and sufficiently resourced and funded on establishment, and into future.

Relationship with Local Governments

Importantly, the creation of a rural fire service is not intended to disempower local governments with respect to their responsibilities for managing Bush Fire Brigades.

Following a trial conducted in 2013, four local governments in the Kimberley region of Western Australia have transferred control for Bush Fire Brigades to DFES. The Special Inquiry does not view this as indicative that all local governments may wish to do the same, and it is satisfied that the current legislative arrangement, which enables local governments who do wish to transfer control for Bushfire Brigades to do so, is appropriate.

The Special Inquiry concurs with the view expressed by the AVBFB:

*It's important that the local cultures and behaviours are reflected in the – in the structures, because what happens in – in the Kimberley is different to what happens in Esperance, different to what happens in Perth.*⁶¹

Further, it is essential that the relationship between local governments and volunteers is retained:

*We as Bush Fire Brigade... firefighters feel that we've been totally let down by the Government, by DFES and we're treated like second class citizens... it's the Shire – the Harvey Shire back the brigade in so many ways.*⁶²

The Special Inquiry notes that in New South Wales there is a continuing effective relationship between the New South Wales Rural Fire Service and local governments. Councils own the buildings, appliances and infrastructure. In the early 2000s council bushfire staff transitioned to the Rural Fire Service. The two organisations are linked by fire prevention and bushfire coordination committees.

The Special Inquiry is satisfied that a new Rural Fire Service with a leadership structure of persons with a background in rural fire management, and officers of all levels based in regions as much as possible, will be able to develop and maintain strong working relationships with local governments.

Rural Training Facility

Within the rural fire management framework, all career and volunteer firefighters should have adequate skills in the prevention and suppression of rural fires, and have opportunities for advancement available to them. It is the view of the Special Inquiry that this will be achieved through the creation of a Western Australian Centre for Rural Fire Excellence.

Such a facility would include teachings in hazard reduction burns, addressing the following proposition suggested by the Bush Fire Front:

*We think there is an important need in Western Australia to set up a property training facility, which we've called the Centre for Excellence in Fuel Reduction Burning, which will provide training to Government officers, local government, to brigades and to members of the public and landowners and how – the understanding of bushfire science, how to plan and how to safely conduct a fuel reduction burn which will do the job of fuel reduction without posing additional risks to the community.*⁶³

Opportunity 23: When established, the Rural Fire Service, in conjunction with the Departments of Parks and Wildlife and Fire and Emergency Services, to establish a Western Australian Centre for Excellence in Rural and Forest Fire Management. The Centre to include a networked capability for research, planned burning, lessons learned and facilitating training for rural firefighters, especially for members of volunteer Brigades

⁶¹ Association of Volunteer Bushfire Brigades WA Inc., Hearing, 31 March 2016

⁶² Lawrence, R., Hearing, 4 March 2016

⁶³ Bush Fire Front Inc., Hearing, 11 March 2016

Lack of Statewide Bushfire policy

As noted in Chapter 7, fuel management and prevention is currently undertaken in a disparate manner. Whilst the Bushfire Risk Management Planning Process will go some way to address this, there remains a policy vacuum with respect to State level targets and priorities for fuel management and prevention.

The development of Statewide policies pertaining to bushfire risk management will guide the direction of all agencies, and particularly assist the proposed Rural Fire Service in ensuring that it can focus on the delivery of localised services.

Wide stakeholder engagement would be necessary in the development of the Statewide Policy, and it would also need to be informed by the risk management work currently undertaken by the SEMC Secretariat and OBRM.

Recommendation 16: The State Emergency Management Committee to establish a State Bushfire Coordinating Committee as a sub-committee of SEMC. The State Bushfire Coordinating Committee will be chaired by the Director of the Office of Bushfire Risk Management and will have the primary responsibility to:

- develop a State Bushfire Management Policy and a set of long term bushfire risk management objectives;
- provide a forum for key bushfire risk management stakeholder agencies;
- advise the SEMC on matters pertaining to bushfire, in particular, to report against the investment in, and achievement of the bushfire risk management objectives;
- provide advice and support to the proposed Chief Officer of the Rural Fire Service on bushfire risk management matters; and
- report to SEMC and to the community on bushfire risk management matters on at least an annual basis.

Emergency Services Levy

As noted in Chapter 5, many submissions to the Special Inquiry raised concerns with the administration of the Emergency Services Levy (ESL). Indeed the AVBFB expressed the view that DFES are disempowering local governments through the administration of the ESL⁶⁴.

In light of the structural changes proposed by the Special Inquiry, it is considered appropriate for Government to review the funding arrangements to ensure an equitable and efficient distribution of funds between agencies with responsibilities in emergency management. The proposed Rural Fire Service is to be included in this consideration.

It is also considered appropriate to review the ESL within the context of a greater proportion of funds being directed towards prevention and preparedness activities than is currently the case.

⁶⁴ Association of Volunteer Bushfire Brigades WA Inc., Hearing, 31 March 2016

As discussed in Chapter 5, the review of the ESL was the subject of recommendation in the Perth Hills Report. In reporting on the implementation of these recommendations to the BRIG and then SEMC, the view has been taken that this recommendation has been sufficiently addressed.

The Special Inquiry is of the view that the consideration of this Recommendation was not effective, and that an independent review encompassing a broad range of stakeholders, in the context of the establishment of a Rural Fire Service, and a greater emphasis on bushfire prevention and mitigation, is now necessary.

Recommendation 17: The Department of Premier and Cabinet to conduct an independent review of the current arrangement for the management and distribution of the Emergency Services Levy. The review will have the specific purpose of:

- seeking input from key entities including the Departments of Treasury, Finance, Fire and Emergency Services, Lands, and Parks and Wildlife, WA Local Government Association, and the Office of Bushfire Risk Management;
- ensuring the arrangement has the flexibility and agility to deal with emerging bushfire risk priorities; and
- establishing a budget process that enables a shift in investment towards prevention, mitigation and building community resilience and capability.

Chapter Sixteen – Concluding Comments

It is tempting to describe the Waroona fire as an “out of scale” fire. Witnesses, including experienced fire managers, have described the intensity of the fire and the capricious nature of its impact. For the first three days, there were long periods where the fire was unstoppable because of its fury. This Report is testament to the complexity of organising to warn the community, fight the flames and manage the response. Without doubt, aspects of this fire and its impact have been extreme.

But there is a caution here. Labelling the fire as an “out of scale” event should not be either an excuse or an explanation for any shortcomings that occurred. Is it not part of the role of fire and emergency managers to anticipate, plan and be ready for extreme and “out of scale” events? The adequacy of the emergency management system should not be judged just on its performance against “the last fire”. When plans have an over-reliance on what happened in the past, the risk is that one misses the potential for a future that is different, unseen, and unimaginable. Hindsight, learning the lessons of the past, is necessary, but planning should be driven also by imagination and foresight. Are we planning for the next fire? Or are we planning for the next “firestorm”? What do we think that will look like? In this setting, the greatest failure may well be the failure to imagine.

Planning for an unknown future may make us – all of us – feel uncomfortable, even uneasy. Fostering a sense of wariness is not necessarily a bad thing. We all need to be driven by a future that is volatile, uncertain, complex and ambiguous. If everyone feels uncomfortable, then there is less chance of complacency.

At the centre of all this is the community. If individual citizens, families, neighbourhoods and interest groups strive for understanding, self-reliance and empowerment, then they will develop social capacity and cohesion to cope better by themselves. Over time, shared responsibility shifts to shared resilience. The role of agencies shifts away from an over-reliance on response to a role that emphasises prevention, empowerment through information and facilitating a community that is ready.

This calls for a shift in thinking and a reframing of the way in which rural fire is managed in the State. Traditional doctrine and rigid structures that may have worked well in the past need to be challenged. In this setting, it would seem that the characteristics that are more likely to be effective in “out of scale” events will include:

- an emphasis on distributed leadership;
- connected and empowered communities;
- a culture of enquiry and imagination;
- flexibility, agility and adaptiveness for an uncertain future;
- thinking and acting with humility.

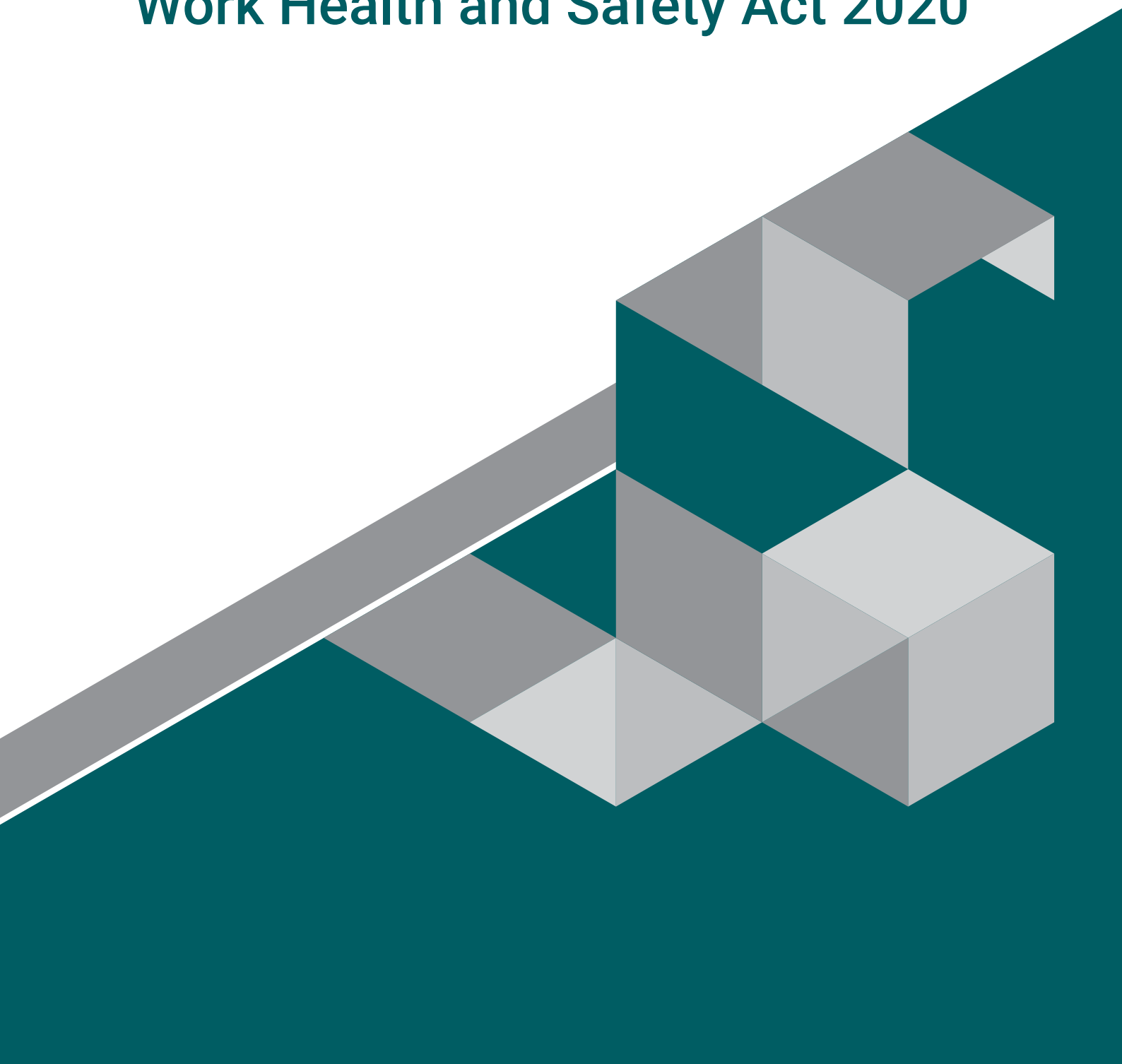
The future is, collectively, in our hands.



Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**



Overview of
**Western Australia's
Work Health and Safety Act 2020**



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Introduction	1
Format of the WHS Act.....	1
Overview of the WHS legislation.....	1
Key features of the WHS Act	2
The WHS Act and its purpose (sections 1-3)	4
WHS regulations, codes of practice and other supporting guidance(sections 274-276) 5	
WHS regulations	5
Codes of practice.....	5
Interpretive guidelines.....	5
Key terms and definitions	6
Selected terms (sections 4-8)	6
Definition of reasonably practicable (section 18).....	7
Work health and safety duties	8
General principles (sections 13-17).....	8
Multiple and shared duties (sections 14-16).....	8
Duties of a PCBU.....	9
Duty of officers (section 27)	10
Duty of workers (section 28)	11
Duties of other persons at the workplace (section 29)	11
Volunteers (section 34).....	11
Further duties of upstream PCBUs (designers, manufacturers, importers and suppliers) .	11
Incident notification (sections 35-39)	15
Notifiable incident.....	15
Serious injury or illness.....	15
Dangerous incident.....	17
Notification process	17
Consultation with workers and representation of workers	18
Consultation with workers (sections 47-49)	18
Representation and participation of workers.....	19
Health and Safety Representatives (HSRs)	19
Health and safety committees (sections 75-79)	24
Issue resolution (sections 80-82A)	24
Discriminatory, coercive or misleading conduct (sections 104-115)	25
The regulator	27
Role of the regulator (sections 152-154).....	27
Power of the regulator to require documents and information (sections 155-155B)	27
Powers to copy and retain documents (section 155C).....	28

Securing compliance	29
Functions and powers of inspectors (sections 160-162, 171, 172).....	29
Warning to be given (section 173)	30
Power to require name and address (section 185)	30
Powers of entry for inspectors (sections 163-166)	30
Entry warrants (sections 166A-169)	31
Enforcement measures.....	32
Improvement notices (sections 191-194).....	32
Prohibition notices (sections 195-197).....	32
Non-disturbance notices (sections 198-201).....	33
Display of notices (section 210)	33
Remedial action (sections 211-213)	33
WHS undertakings (sections 216-222)	33
Review of decisions (sections 223-229B).....	34
Offences and penalties.....	36
Health and safety duty offences (sections 30A-33).....	36
Maximum penalties for breach of health and safety duty offences	36
Exceptions (section 34)	36
Alternative penalty options	37
Other offences	37
Prosecutions (section 229C-232A)	40
Procedure if prosecution is not brought (section 231)	40
Limitation period for prosecutions (section 232)	40
Admission of evidence obtained unlawfully (section 232A)	40
Authorisations.....	41
Plant and substances (section 42).....	41
Work (section 43)	41
Prescribed qualification and experience (section 44).....	41
Statutory offices and bodies	42
Functions and committees (section 12A).....	42
Transitional provisions	43

Introduction

On 12 July 2017, the Premier announced that work would commence to develop modernised work health and safety (WHS) laws for Western Australia.

Western Australia's *Work Health and Safety Act 2020* (WHS Act) was passed by Parliament on 3 November 2020 and assented to by the Governor on 10 November 2020.

When implemented in 2022, all Western Australian workplaces will come under this single Act, which will replace the following legislation:

- *Occupational Safety and Health Act 1984*
- the work health and safety elements of the following Acts, covering mining and petroleum
 - *Mines Safety and Inspection Act 1994*
 - *Petroleum and Geothermal Energy Resources Act 1967*
 - *Petroleum (Submerged Lands) Act 1982*
 - *Petroleum Pipelines Act 1969*.

The new laws are largely based on the national model WHS Act used in other states and territories (except Victoria), so companies will have similar obligations and requirements across Australia.

Transitional arrangements will provide sufficient time for duty holders to adapt their safe systems of work to the new requirements.

Note: Levies to cover the cost of regulating health and safety will continue to be collected and used for these purposes, under the Mines Safety and Inspection Act 1994 and the Petroleum and Geothermal Energy Safety Levies Act 2011, and supporting regulations.

Format of the WHS Act

Some sections of the model WHS Act were tailored for Western Australia following extensive consultation. Where possible, the new laws align with the Part, Division and section numbers of the model WHS Act, with the term 'Not used' replacing any clauses that do not apply in Western Australia.

Other changes include terminology and areas of the model WHS Act that intersect with non-WHS laws, such as industrial relations legislation.

To guide interpretation of some segments of the Act, Parliament has included 'Notes for this section' at various points.

The Act comprises 16 parts with further Divisions and subsections.

Overview of the WHS legislation

The WHS Act covers all workplaces within the natural jurisdiction of Western Australia, including mines, petroleum and geothermal energy operations. There are a number of exceptions where other legislation applies.

Some of the differences include:

- major hazard facilities and dangerous goods storage and handling will continue to be regulated separately under the *Dangerous Goods Safety Act 2004*
- petroleum and geothermal energy operations are included in the WHS Act, supported by a dedicated set of regulations.

Note: Commonwealth Government workers and some self-insured licensees are covered by Comcare under the Work Health and Safety Act 2011 (Cth). Comcare is responsible for workplace safety, rehabilitation and compensation in the Commonwealth jurisdiction, and is a federal statutory authority.

The WHS Act will be supported by three sets of regulations:

- Work Health and Safety (General) Regulations – applies to all workplaces except those covered by the other two sets of regulations [WHS General Regulations]
- Work Health and Safety (Mines) Regulations – applies to mining and mineral exploration operations [WHS Mines Regulations]
- Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations – applies to onshore and offshore petroleum, pipeline and geothermal energy operations [WHS PAGEO Regulations].

The WorkSafe Commissioner, an independent statutory office reporting directly to the Minister for Industrial Relations, will be responsible for performing the functions and exercising the powers of the regulator under the WHS Act.

The Department of Mines, Industry Regulation and Safety will assist the regulator in the administration of the WHS Act, including the provision of inspectors and other staff to secure compliance with the legislation.

Key features of the WHS Act

- The primary duty holder is the ‘person conducting a business or undertaking’ (PCBU) which is intended to capture a broader range of contemporary workplace relationships.
- A primary duty of care requiring PCBUs to, so far as is reasonably practicable, ensure the health and safety of workers and others who may be affected by the carrying out of work.
- Duties of care for persons who influence the way work is carried out, as well as the integrity of products used for work, including the providers of WHS services.
- A requirement that ‘officers’ exercise ‘due diligence’ to ensure compliance.
- The new offence of industrial manslaughter, which provides substantial penalties for PCBUs where a failure to comply with a WHS duty causes the death of an individual, in circumstances where the PCBU knew the conduct could cause death or serious harm.
- The voiding of insurance coverage for WHS penalties, and imposition of penalties for providing or purchasing this insurance.
- The introduction of WHS undertakings, which are enforceable, as an alternative to prosecution.
- Reporting requirements for ‘notifiable incidents’ such as the serious illness, injury or death of persons and dangerous incidents arising out of the conduct of a business or undertaking.
- A framework to establish a general scheme for authorisations such as licences, permits and registrations (for example, for persons engaged in high risk work or users of certain plant or substances), including provisions for automated authorisations.

- Provision for consultation on WHS matters, participation and representation.
- Provision for the resolution of WHS issues.
- Protection against discrimination for those who exercise or perform or seek to exercise or perform powers, functions or rights under the Act.
- Provision for enforcement and compliance, including a compliance role for WHS inspectors.
- Establishment of Western Australia's peak tripartite consultative bodies:
 - Work Health and Safety Commission (WHSC), replacing the Commission for Occupational Safety and Health (COSH)
 - Mining and Petroleum Advisory Committee (MAPAC), replacing the Mining Industry Advisory Committee (MIAC), which covered mining only.

The WHS Act and its purpose (sections 1-3)

The formal title of the Act is the *Work Health and Safety Act 2020*.

The WHS Act and accompanying regulations will commence in March 2022.

The WHS Act provides a framework to protect the health, safety and welfare of workers in Western Australian workplaces, and of other people who might be affected by the work.

The WHS Act aims to:

- protect the health and safety of workers and other people by eliminating or minimising risks arising from work or workplaces
- ensure fair and effective representation, consultation and cooperation to address and resolve health and safety issues in the workplace
- encourage unions and employer organisations to take a constructive role in improving work health and safety practices
- assist businesses and workers to achieve a healthier and safer working environment
- promote information, education and training on work health and safety
- provide effective compliance and enforcement measures
- deliver continuous improvement and progressively higher standards of work health and safety.

In furthering these aims, regard must be had to the principle that workers and other persons should be given the highest level of protection against harm to their health, safety and welfare from hazards and risks arising from work as is reasonably practicable.

For these purposes, 'health' includes psychological health as well as physical health.

WHS regulations, codes of practice and other supporting guidance (sections 274-276)

WHS regulations

The three sets of WHS Regulations specify the way in which some duties under the WHS Act must be met, and prescribes procedural or administrative requirements to support the WHS Act (for example, requiring licences for specific activities and the keeping of records).

Codes of practice

Codes of practice provide practical guidance on how to meet the standards set out in the WHS Act and the WHS Regulations. Codes of practice are admissible in proceedings as evidence of whether or not a duty under the WHS laws has been met. They can also be referred to by an inspector when issuing an improvement or prohibition notice.

It is recognised that equivalent or better ways of achieving the required work health and safety outcomes may be possible. For that reason, compliance with codes of practice is not mandatory providing that any other method used provides an equivalent or higher standard of work health and safety than suggested by the code of practice.

Interpretive guidelines

Interpretive guidelines are a formal statement on how the WHS regulator believes key concepts in the WHS Act will operate and provide an indication of how the laws will be enforced.

Key terms and definitions

The following terms are used throughout this publication.

Selected terms (sections 4-8)

Duty holder – refers to any person who owes a work health and safety duty under the WHS Act including a PCBU, designer, manufacturer, importer, supplier, installer of products or plant used at work (upstream duty holders), an officer and workers. More than one person can concurrently have the same duty in which case the duty is shared. Duties cannot be transferred.

Health and safety committee (HSC) – a group established under the WHS Act that facilitates cooperation between a PCBU and workers to provide a safe place of work. The committee must have at least 50 per cent of members who have not been nominated by the PCBU – that is, workers or health and safety representatives.

Health and safety representative (HSR) – a worker who has been elected by a work group under the WHS Act to represent them on health and safety issues.

Officer – an officer within the meaning of section 9 of the *Corporations Act 2001* (Cth) other than each partner within a partnership. Broadly, an officer is a person who makes, or participates in making, decisions that affect the whole, or a substantial part, of the organisation's activities. This does not include a local government member acting in that capacity or a minister of a state, territory or the Commonwealth.

An officer can also be an officer of the Crown or a public corporation if they are a person who makes, or participates in making, decisions that affect the whole, or a substantial part, of the business or undertaking of the Crown or public corporation.

Each partner within a partnership is not an officer but a PCBU in their own right.

Person conducting a business or undertaking (PCBU) – a person conducting a business or undertaking alone or with others, whether or not for profit or gain. A PCBU can be a sole trader (for example, a self-employed person), each partner within a partnership, company, unincorporated association, government department or public corporation (including a local or regional government).

A local government member acting in that capacity is not a PCBU.

A 'volunteer association' that does not employ anyone is not a PCBU. If it becomes an employer it also becomes a PCBU for purposes of the WHS Act.

A 'strata company' responsible for any common areas used only for residential purposes is not a PCBU, unless it engages a worker as an employee.

Plant – includes any machinery, equipment, appliance, container, implement or tool, and any component or anything fitted or connected to these things.

Structure – anything that is constructed, whether fixed or moveable, temporary or permanent and includes buildings, masts, towers, framework, pipelines, transport infrastructure and underground works (shafts or tunnels). Includes any component or part of a structure.

Substance – any natural or artificial substance in the form of a solid, liquid, gas or vapour.

Supply – supply and re-supply of a thing provided by way of sale, exchange, loan, lease, hire or hire-purchase arrangement, whether as principal or agent.

Volunteer – a person who acts on a voluntary basis regardless of whether they receive out of pocket expenses.

Volunteer association – a group of volunteers working together for one or more community purposes – whether registered or not – that does not employ anyone to carry out work for the association.

Worker – any person who carries out work for a PCBU, including work as an employee, contractor, subcontractor, self-employed person, outworker, apprentice or trainee, work experience student, employee of a labour hire company placed with a ‘host employer’ and volunteers.

Work group – a group of workers represented by an HSR who in many cases share similar work conditions (for example, all the electricians in a factory, all people on night shift, all people who work in the loading bay of a retail storage facility).

Workplace – any place where a worker goes or is likely to be while work is carried out for a business or undertaking. This may include offices, factories, shops, construction sites, vehicles, ships, aircraft or other mobile structures on land or water such as offshore units and platforms (that are not already covered under the Commonwealth’s offshore WHS laws).

Definition of reasonably practicable (section 18)

A guiding principle of the WHS Act is that all people are provided the highest level of health and safety protection from hazards arising from work, so far as is reasonably practicable.

The term ‘reasonably practicable’ means what could reasonably be done at a particular time to ensure health and safety measures are in place.

In determining what is reasonably practicable, there is a requirement to weigh up all relevant matters including:

- the likelihood of a hazard or risk occurring (the probability of a person being exposed to harm)
- the degree of harm that might result if the hazard or risk occurred (the potential seriousness of injury or harm)
- what the person concerned knows, or ought to reasonably know, about the hazard or risk and ways of eliminating or minimising it
- the availability of suitable ways to eliminate or minimise the hazard or risk
- the cost of eliminating or minimising the hazard or risk.

Costs may only be considered after assessing the extent of the risk and the available ways of eliminating or minimising the risk.

Cost will not ordinarily be the key factor in determining what it is reasonably practicable for a duty holder to do unless it can be shown to be ‘grossly disproportionate’ to the risk.

Work health and safety duties

General principles (sections 13-17)

The WHS Act sets out work health and safety duties for PCBUs, officers, unincorporated associations, government departments and public corporations, workers and other people at a workplace.

The WHS Act covers:

- people who carry out work in any capacity for a person conducting a business or undertaking including employees, contractors, subcontractors, self-employed persons, outworkers, apprentices and trainees, work experience students and volunteers who carry out work
- other people at a workplace like visitors and customers at a workplace.

The WHS Act has limited application to 'volunteer associations' who do not employ anyone.

Multiple and shared duties (sections 14-16)

A person may have more than one duty. For example, the working director of a company has duties as an officer of the company and also as a worker.

More than one person may have the same duty. A duty cannot be transferred to another person.

If more than one person has a duty for the same matter, each person retains responsibility and must discharge their duty to the extent to which the person has the capacity to influence and control the matter – disregarding any attempts to 'contract out' of their responsibility.

Examples

- A labour hire company hires out its employees to 'host employers' to carry out work for them. Both the labour hire company and the 'host employer' owe a duty of care to those employees. In such cases both are fully responsible for meeting that duty to the extent to which they have capacity to influence and control the matter. It is not possible to 'contract out' work health and safety duties.
- A principal contractor and a subcontractor for construction work must ensure, so far as is reasonably practicable, the provision of adequate facilities for the welfare of the workers carrying out the construction work. This does not mean that two sets of facilities need to be provided by each duty holder. The principal contractor may agree to provide facilities for all workers and visitors to the site as part of their contractual arrangement for the construction work. The subcontractor need only be satisfied the arrangement is in place and the facilities are suitable for their workers.

Duties of a PCBU

Primary duty of care (section 19)

The WHS Act requires all PCBUs to ensure, so far as is reasonably practicable, the health and safety of:

- workers engaged, or caused to be engaged by the person
- workers whose activities in carrying out the work are influenced or directed by the person while the workers are at work in the business or undertaking.

This primary duty of care requires duty holders to ensure health and safety, so far as is reasonably practicable, by eliminating risks to health and safety. If this is not reasonably practicable, risks must be minimised so far as is reasonably practicable.

PCBUs owe a similar duty of care to other people who may be at risk from work carried out by the business or undertaking.

Self-employed persons must ensure their own health and safety while at work, so far as is reasonably practicable.

Primary duty of care, 'upstream' duties and duties of 'officers', workers and other persons (sections 19-28)

Under the primary duty of care, a PCBU must ensure, so far as is reasonably practicable:

- the provision and maintenance of a working environment that is safe and without risks to health, including safe access to and exit from the workplace
- the provision and maintenance of plant, structure and systems of work that are safe and do not pose health risks (for example, providing effective guards on machines and regulating the pace and frequency of work)
- the safe use, handling, storage and transport of plant, structure and substances (for example, toxic chemicals, dusts and fibres)
- the provision of adequate facilities for the welfare of workers at work (for example, access to washrooms, lockers and dining areas)
- the provision of information, instruction, training or supervision to workers needed for them to work without risks to their health and safety and that of others around them
- that the health of workers and the conditions of the workplace are monitored to prevent injury or illness arising out of the conduct of the business or undertaking
- the maintenance of any accommodation owned or under their management and control to ensure the health and safety of workers occupying the premises.

Duty to consult, cooperate and coordinate (sections 46-49)

The WHS laws require duty holders with shared responsibilities to work together to make sure someone does what is needed. This requires consultation, cooperation and coordination between duty holders.

For example, there may be a number of different duty holders involved in influencing how work is carried out (that is suppliers, contractors and building owners). If more than one person has a health and safety duty in relation to the same matter, they must consult, cooperate and coordinate activities so far as is reasonably practicable in relation to the matter. Each must share health and safety-related information in a timely manner and cooperate to meet their shared health and safety obligations.

The duty to 'consult' does not require agreement, although each duty holder retains responsibility for discharging their health and safety duty.

Each PCBU must, so far as is reasonably practicable, consult with workers and HSRs (if any) about matters that directly affect them. This duty extends to consulting with all kinds of workers not just the PCBU's own employees, including any contractors and their workers, employees of labour hire companies, students on work experience, apprentices and trainees.

Duty of PCBUs with management or control of workplaces (section 20)

A PCBU with management or control of a workplace must ensure, so far as is reasonably practicable, that the workplace and anything arising from the workplace does not put at risk the health or safety of any person.

Duty of PCBUs with management or control of fixtures, fittings or plant at workplaces (section 21)

A PCBU with management or control of fixtures, fittings or plant at a workplace must ensure, so far as is reasonably practicable, that the fixtures, fittings and plant do not put at risk the health and safety of any person.

A PCBU that installs, erects or commissions plant or structures must ensure all workplace activity relating to the plant or structure including its decommissioning or dismantling is, so far as is reasonably practicable, without risks to health and safety.

Duty of PCBUs providing services relating to work health and safety (section 26A)

A PCBU who provides services relating to work health and safety must ensure, so far as is reasonably practicable, that the services are provided so that any 'relevant use' of them at, or in relation to a 'workplace', will not put at risk the health and safety of persons at the workplace.

The duty applies only to services that could potentially pose a risk in the workplace (for example, measures to eliminate a specific hazard or control a risk), and will most commonly apply to WHS services provided to a specific PCBU and tailored to the circumstances of a particular workplace.

While it will depend on the circumstances, it is unlikely that general advice or training would be considered a WHS service for the purposes of section 26A.

If the WHS service is incorrectly used, or not used for its intended purpose, by the recipient of the service (in other words, the service is not applied to its 'relevant use'), the WHS service provider cannot be held responsible.

Note: The provision of a WHS service does not relieve a PCBU of their duties under the WHS Act.

Duty of officers (section 27)

Officers of corporations and other organisations must manage corporate risks – including work health and safety risks.

Under the WHS Act, an officer of a PCBU must exercise due diligence to ensure the PCBU complies with its health and safety duties. This duty relates to the strategic, structural, policy and key resourcing decisions – that is, how the place is run.

Due diligence includes taking reasonable steps to:

- acquire and keep up to date knowledge on work health and safety matters
- understand the nature and operations of the work and associated hazards and risks
- ensure the PCBU has, and uses, appropriate resources and processes to eliminate or minimise risks to work health and safety
- ensure the PCBU has appropriate processes to receive and consider information about work-related incidents, hazards and risks, and to respond in a timely manner
- ensure the PCBU has, and implements, processes for complying with their duties and obligations (for example, reports notifiable incidents, consults with workers, complies with notices, provides appropriate training and instruction and ensures HSRs receive training entitlements)
- verify the provision and use of the relevant resources and processes.

An officer may be charged with an offence under the WHS Act whether or not the PCBU has been convicted or found guilty of an offence under the Act.

Duty of workers (section 28)

While at work, workers must take reasonable care for their own health and safety and that of others who may be affected by their actions or omissions. They must also:

- comply, so far as they are reasonably able, with any reasonable instruction given by the PCBU to allow the PCBU to comply with WHS laws
- cooperate with any reasonable policy or procedure of the PCBU relating to health or safety at the workplace that has been notified to workers.

Duties of other persons at the workplace (section 29)

Similar duties apply to other persons at a workplace. Any person at a workplace, including customers and visitors, must take reasonable care of their own health and safety and that of others who may be affected by their actions or omissions. They must also comply, so far as they are reasonably able, with any reasonable instruction that is given by the PCBU to comply with WHS laws.

Volunteers (section 34)

Volunteers that owe duties under the WHS laws cannot be prosecuted except in relation to their worker's duty.

Further duties of upstream PCBUs (designers, manufacturers, importers and suppliers)

Designers, manufacturers, importers and suppliers of plant, structures or substances can influence the safety of these products before they are used in the workplace. These businesses or undertakings have a responsibility to ensure, so far as is reasonably practicable, that their products are without risks to health and safety when used at a workplace – throughout their entire lifecycle.

Duty holder	Duty to ensure health and safety in the workplace	Duty to test	Duty to provide information
<p>Designers of plant, structures or substances (section 22)</p>	<p>A PCBU who is a designer of a plant, structure or substance that is to be used, or could reasonably be expected to be used, at a workplace must ensure all workplace activity relating to it including its handling or construction, storage, dismantling and disposal is designed, so far as is reasonably practicable, to be without risks to health or safety when used for its intended purpose.</p>	<p>Designers of the plant, structure or substance must carry out tests and examinations sufficient to ensure that when used for its intended purpose the plant, structure or substance meets work health and safety requirements.</p>	<p>Adequate information must be given to those for whom the plant, structure or substance was designed about its intended purpose, test results and any conditions necessary to ensure that it is safe and without risks to health or safety, when used for its intended purpose.</p> <p>Current relevant information must also be provided, so far as reasonably practicable, to other end users at a workplace upon request.</p>
<p>Manufacturers of plant, structures or substances (section 23)</p>	<p>A PCBU who is a manufacturer of any plant, structure or substance which is manufactured to be used, or could reasonably be expected to be used, at a workplace must ensure all workplace activity relating to it including its handling, storage and disposal or dismantling is so far as is reasonably practicable without risks to health or safety when used for its intended purpose.</p>	<p>Manufacturers must carry out or arrange tests and examinations sufficient to ensure that the plant, structure or substance is manufactured to meet work health and safety requirements when used for a purpose for which it was manufactured.</p>	<p>Adequate information must be given to any person to whom the product is provided about the purpose for which it was manufactured, test results and any conditions necessary to ensure that when used for its intended purpose it is safe and without risks to health or safety.</p> <p>Current relevant information must also be provided, so far as reasonably practicable, to other end users at a workplace upon request.</p>

Duty holder	Duty to ensure health and safety in the workplace	Duty to test	Duty to provide information
<p>Importers of plant, substances or structures (section 24)</p>	<p>A PCBU who is an importer of any plant, substance or structure which is to be used, or could reasonably be expected to be used, at a workplace must ensure all workplace activity relating to it including its handling, storage and disposal or dismantling is, so far as is reasonably practicable, without risks to health or safety when used for its intended purpose.</p>	<p>Importers must carry out or arrange tests and examinations sufficient to ensure that the imported plant, structure or substance meets work health and safety requirements when used for its intended purpose.</p> <p>Alternatively, importers must ensure that these tests and examinations have been carried out.</p>	<p>Adequate information must be given to any person who the importer supplies with the plant, structure or substance about its intended purpose, test results and any conditions necessary to ensure that when used for its intended purpose it is safe and without risks to health or safety.</p> <p>Current relevant information must also be provided, so far as reasonably practicable, to other end users at a workplace upon request.</p>
<p>Suppliers of plant, substances or structures (section 25)</p>	<p>A PCBU who is a supplier of any plant, substance or structure that is to be used, or could reasonably be expected to be used, at a workplace must ensure all workplace activity relating to it including its handling, storage and disposal or dismantling is, so far as is reasonably practicable, without risks to health or safety when used for its intended purpose.</p>	<p>Suppliers must carry out or arrange tests and examinations sufficient to ensure that the supplied plant, structure or substance meets work health and safety requirements when used for its intended purpose.</p> <p>Alternatively, suppliers must ensure that these tests and examinations have been carried out.</p>	<p>Adequate information must be given to any person who the supplier supplies with the plant, structure or substance about its intended purpose, test results and any conditions necessary to ensure that when used for its intended purpose it is safe and without risks to health or safety.</p> <p>Current relevant information must also be provided, so far as reasonably practicable, to other end users at a workplace upon request.</p>

Duty holder	Duty to ensure health and safety in the workplace	Duty to test	Duty to provide information
<p>People installing, constructing or commissioning plant or structures (section 26)</p>	<p>A PCBU who installs, constructs or commissions plant or structures must also ensure, so far as is reasonably practicable, all workplace activity relating to the plant or structure including its decommissioning or dismantling is without risks to health or safety.</p>	<p>Not applicable</p>	<p>Not applicable</p>
<p>WHS service providers (section 26A)</p>	<p>A PCBU who provides services relating to work health and safety must ensure, so far as is reasonably practicable, the WHS services are provided so that any 'relevant use' of them at, or in relation to a 'workplace', will not put at risk the health and safety of persons at the workplace.</p>	<p>Not applicable</p>	<p>Not applicable</p>

Incident notification (sections 35-39)

Notifiable incident

A PCBU must notify the regulator as soon as they become aware of a death, serious injury or illness or dangerous incident that arises out of the conduct of the business or undertaking.

Serious injury or illness

Trigger	Examples
Immediate treatment as an in-patient in a hospital	<ul style="list-style-type: none"> Admission into a hospital as an in-patient for any duration, even if the stay is not overnight or longer <p>It does not include:</p> <ul style="list-style-type: none"> out-patient treatment provided by the emergency section of a hospital (i.e. not requiring admission as an in-patient) and immediate discharge subsequent corrective surgery such as that required to fix a fractured nose
Immediate treatment for the amputation of any part of the body	<ul style="list-style-type: none"> Amputation of a limb such as arm or leg, body part such as hand, foot or the tip of a finger, toe, nose or ear
Immediate treatment for a serious head injury	<ul style="list-style-type: none"> Fractured skull Loss of consciousness Blood clot or bleeding in the brain Damage to the skull to the extent that it is likely to affect organ or face function Head injuries resulting in temporary or permanent amnesia
Immediate treatment for a serious eye injury	<ul style="list-style-type: none"> Injury that results in or is likely to result in the loss of the eye or total or partial loss of vision Injury that involves an object penetrating the eye (for example, metal fragment, wood chip) Exposure of the eye to a substance which poses a risk of serious eye damage <p>It does not include:</p> <ul style="list-style-type: none"> eye exposure to a substance that merely causes irritation
Immediate treatment for a serious burn	<ul style="list-style-type: none"> A burn requiring intensive care or critical care which could require compression garment or a skin graft <p>It does not include:</p> <ul style="list-style-type: none"> a burn that merely requires washing the wound and applying a dressing
Immediate treatment for the separation of skin from an underlying tissue	<ul style="list-style-type: none"> Separation of skin from an underlying tissue such that tendon, bone or muscles are exposed (de-gloving or scalping)
Immediate treatment for a spinal injury	<ul style="list-style-type: none"> Injury to the cervical, thoracic, lumbar or sacral vertebrae, including the discs and spinal cord

Trigger	Examples
Immediate treatment for the loss of a bodily function	<ul style="list-style-type: none"> • Loss of consciousness • Loss of movement of a limb • Loss of the sense of smell, taste, sight or hearing • Loss of function of an internal organ <p>It does not include:</p> <ul style="list-style-type: none"> • mere fainting • a sprain, strain or fracture
Immediate treatment for serious lacerations	<ul style="list-style-type: none"> • Serious lacerations that cause muscle, tendon, nerve or blood vessel damage or permanent impairment • Deep or extensive cuts • Tears of wounds to the flesh or tissues – this may include stitching to prevent loss of blood and/or other treatment to prevent loss of bodily function and/or infection
Medical treatment within 48 hours of exposure to a substance	<ul style="list-style-type: none"> • ‘Medical treatment’ is treatment provided by a registered medical practitioner • ‘Exposure to a substance’ includes exposure to chemicals, airborne contaminants and exposure to human or animal blood and body substances
Medical treatment following urgent transfer from remote location	<ul style="list-style-type: none"> • Includes any injury or illness not specified previously that cannot be treated at or near the site of the incident • A remote location is any location that is not served by ordinary ambulance services, and may include mines and offshore facilities, rail camps, geological surveys, and isolated holiday facilities • A medical facility includes a hospital and any other facility that provides medical services
Injury or illness that, in the opinion of a medical practitioner, is likely to prevent the person from being able to do their normal work for at least 10 days	<ul style="list-style-type: none"> • Captures any illness or injury not specified previously that prevents a person from doing their normal work for at least 10 days • This determination may only be made by a medical practitioner and may be in the form of a medical certificate or letter • Notification must be provided even if the worker is capable of light duties (e.g. a warehouse worker who is moved to desk duties for the duration of their recovery)

Note: There will be additional notification requirements under the WHS regulations.

‘Treatment’ means the kind of treatment that would be required for a serious injury or illness and includes ‘medical treatment’ by a registered medical practitioner, treatment by a paramedic or treatment by a registered nurse practitioner.

Dangerous incident

The regulator must also be notified immediately of any dangerous incident that exposes a person to a serious health or safety risk from immediate or imminent exposure to:

- the uncontrolled escape, spillage or leakage of a substance
- an uncontrolled implosion, explosion or fire
- an uncontrolled escape of gas, steam or a pressurised substance
- an electric shock
- the fall or release from height of any plant, substance or thing
- the collapse, overturning, failure or malfunction of, or damage to, plant that is required to be licensed or registered
- the collapse or partial collapse of a structure, including an excavation or of any shoring supporting an excavation
- the inrush of water, mud or gas into an underground excavation or tunnel
- the interruption of the main system of ventilation to an underground excavation or tunnel
- other incidents as stated in the three sets of WHS regulations.

Notification process

Notice of an incident must be given by the fastest possible means, by telephone or in writing (including electronic means, where available). If notice is given by telephone, the regulator may request follow-up written notice of the incident. This must be provided within 48 hours of the request.

A record of each notifiable incident must be kept by the PCBU for at least five years.

The person with management or control of a workplace at which a notifiable incident has occurred must ensure the site of the incident is not disturbed until an inspector arrives at the site or directs otherwise. This does not prevent any action required to protect a person's health or safety, help someone who is injured or make the site safe.

There will be additional notification requirements under the mines and PAGEO regulations.

Consultation with workers and representation of workers

PCBUs are responsible for making decisions regarding health and safety, but may not have a full understanding of the finer detail or subtleties of the work or working conditions. It is important that PCBUs obtain information from their workers before making changes or implementing measures which may adversely affect health and safety. It is also important that the workers are informed of those measures and their significance to health and safety so that they can implement them and also understand the importance of doing so. This requires an ongoing exchange of information between the PCBUs and their workers, directly or through their representatives.

Given the importance of consultation in contributing to work health and safety, the WHS Act prescribes a general duty to consult.

Consultation with workers (sections 47-49)

PCBUs must, so far as is reasonably practicable consult with workers who carry out work for the business or undertaking who are, or are likely to be, directly affected by a matter relating to health and safety. This includes giving workers a reasonable opportunity to express their views or raise issues about work health and safety at the workplace.

Consultation is a collaborative process between PCBUs and their workers. It involves sharing information about work health and safety and ensuring that views of workers are taken into account when making decisions about health and safety at the workplace. It does not require agreement to be reached.

If there is an agreed consultation procedure then the consultation must be in accordance with those procedures.

If an HSR represents workers, the consultation must involve the HSR so far as is reasonably practicable. The PCBU must make all reasonable efforts to consult at times, places and in ways that are convenient for the workers and the HSR.

A PCBU must consult with workers and take their views into account when:

- identifying hazards and assessing risks arising from work
- proposing changes that may affect the health and safety of workers
- whenever specifically required to do so under particular regulations

and when considering making decisions about:

- ways to eliminate or minimise risks
- the adequacy of facilities for workers' welfare at work
- procedures for consulting with workers
- procedures for resolving health and safety issues
- procedures for monitoring the health of workers or workplace conditions
- how to provide health and safety information and training to workers.

The views of workers must be taken into account when consulting under these provisions but there is no requirement for agreement to be reached.

Workers who have been consulted under these provisions must be advised of the outcome in a timely manner. There is no particular way this advice must be given – for example, it could be given at a ‘toolbox’ meeting or posted as an intranet news item.

Representation and participation of workers

Workers are entitled to:

- elect a health and safety representative if they wish to be represented by one
- request the formation of a health and safety committee if they wish
- cease unsafe work in certain circumstances (see below for more information)
- have health and safety issues at the workplace resolved in accordance with an agreed issue resolution procedure
- not be discriminated against for raising health and safety issues.

Health and Safety Representatives (HSRs)

Any worker can ask the PCBU for whom they are carrying out work to facilitate the election of one or more Health and Safety Representatives (HSR) for the workplace.

An HSR is elected by a work group to represent the health and safety interests of the work group (and must be a member of that work group). There can be as many HSRs and deputy HSRs as needed after consultation, negotiation and agreement between workers and the PCBU.

Once determined, the PCBU must keep a current list of all HSRs and deputy HSRs for the workplace(s) and display a copy at the relevant workplace.

Work groups (sections 50-59)

A work group is a group of workers who share a similar work situation. For example, a work group might consist of all workers in the office part of a manufacturing complex, or it might consist of people of the same trade, or it might consist of all people on the night shift. If agreed, workers from multiple businesses can be part of the same work group which might include contractors, labour hire staff, outworkers and apprentices.

A work group is set up for the purposes of electing – and being represented by – one or more HSRs.

If a request is made for the election of an HSR, the PCBU must start negotiations with workers within 14 days to determine the:

- number and composition of the work group(s)
- number of HSRs and deputy HSRs
- workplace(s) to which the work group(s) apply.

The PCBU must negotiate about work groups with a worker’s representative (for example, union) if asked by a worker. The PCBU must also notify workers as soon as practicable of the outcome of the negotiations.

The parties to a work group agreement may negotiate to change the size or membership of the work group at any time – for example, if it could be reorganised to provide for more effective representation.

Negotiations for the determination and variation of work groups must be aimed at ensuring workers are grouped in a way that most effectively and conveniently enables their WHS interests to be represented and allows an HSR to be readily accessible to each worker in the work group.

If negotiations fail in establishing or varying a work group any person who is a party to the negotiations can request an inspector to assist in deciding the matter (or if the matter involves multiple businesses, to assist the negotiations).

Powers and functions of HSRs (sections 68-69)

HSRs:

- represent their work group members in matters relating to work health and safety at the workplace
- monitor risk control measures put into place at the workplace to protect their work group members
- investigate complaints from their work group members relating to work health and safety
- inquire into anything that appears to be a risk to the health or safety of work group members.

In limited circumstances, HSRs may represent another work group or work group member for the business or undertaking, or work groups in other PCBUs at the workplace if:

- there is a serious risk to the health or safety of other workers from an immediate hazard, or
- a worker in another work group asks for their assistance and the HSR for that other work group is not available.

Each HSR must be allowed to spend such time as is reasonably necessary to exercise their powers or perform their functions under the WHS Act. This must be paid time based on the rate they would have otherwise been paid at the time.

In exercising their powers or functions, an HSR can:

- inspect the workplace or any area where work is carried out by a worker in the work group
 - at any time after giving relevant notice, or
 - at any time without notice in the event of an incident or any situation involving a serious risk to health or safety emanating from an immediate or imminent exposure to a hazard
- accompany an inspector during an inspection of an area where a work group member works
- be present at an interview with a worker that the HSR represents (with their consent) and the PCBU or an inspector about work health and safety issues – if the interview involves more than one worker, only the consent of one of the HSR's work group members is required
- receive information about work health and safety of work group members— but not any personal or medical information that directly or indirectly identifies a worker without the worker's consent
- request a health and safety committee be established
- issue a provisional improvement notice (PIN) or direct a person to cease unsafe work in certain circumstances, but only if they have completed the approved training.

Note: Workers may also cease work in certain circumstances without direction from an HSR.

Whenever necessary, an HSR may request the assistance of any person. The PCBU is not required to meet the associated costs. Where an HSR's assistant requires access to the workplace to provide assistance to the HSR, the HSR is required to give at least 24 hours' notice, but not more than 14 days' notice, of the assistant's proposed access. This information must be given to the PCBU and the person with management or control of the workplace. Access to the workplace by the HSR's assistant may be refused by the PCBU on reasonable grounds, in which case the regulator may be asked to appoint an inspector to resolve the access issue (see sections 70(1)(g), 71(3) and 71(6)).

An HSR is not personally liable for anything done or not done in good faith while carrying out their role.

Election and eligibility of HSRs (sections 50, 60-67)

The members of a work group elect their own HSR. All members are entitled to vote in an election. To be eligible for election as an HSR a person must be a member of the work group and not be disqualified from acting as an HSR.

A deputy HSR may also be elected for a work group to take on the HSR role if the HSR for that work group ceases to hold office or is unable (because of absence or any other reason) to exercise the powers or perform the functions of an HSR.

The PCBU must provide any resources, facilities and assistance that are reasonably necessary to carry out the election. Members of a work group decide how the election will be conducted. The election may be conducted with the assistance of a union or other person or organisation, if supported by a majority of work group members.

Elections for a deputy HSR are carried out in the same way as for an HSR.

Elections are not needed when the number of candidates is the same as the number of vacancies.

The term of office for an HSR or deputy HSR is three years. They cease to hold office if:

- they leave the work group
- they are disqualified from being an HSR
- they resign as an HSR by written notice, or
- the majority of members of the group agree the person should no longer represent them and they are removed from office in accordance with the WHS Regulations.

HSRs and deputy HSRs can be re-elected.

Any person adversely affected by a decision or action of an HSR can apply to have them disqualified in circumstances where an HSR has exercised powers or performed functions improperly or where an HSR has used or disclosed information for purposes not related to their role as an HSR.

Training (section 72)

If requested, a PCBU must allow HSRs and deputy HSRs to attend a work health and safety course or training approved by the Work Health and Safety Commission (approved course) and chosen by the HSR or deputy HSR. The PCBU cannot refuse to allow an HSR to attend an approved course.

As soon as practicable and within three months of the request, the PCBU must give the HSR paid time off to attend the course. The PCBU must pay the course costs plus reasonable expenses.

In some circumstances, costs associated with the course selected by the HSR, including course fees, may be significantly higher than other courses that are conveniently available to the HSR (for example, if the HSR chooses to attend a course requiring air travel and accommodation when a similar course is provided locally). The PCBU is only required to pay reasonable costs for the course.

If an agreement cannot be reached on the course timing and costs, either party may ask the regulator to appoint an inspector to decide the matters in dispute. The parties will be bound by the inspector's determination, and non-compliance by the PCBU would constitute an offence.

An obligation to share costs applies if multiple PCBUs are involved. Timely consultation between all relevant PCBUs should be arranged to ensure responsibilities are clear.

HSRs must complete the approved training before they can issue a provisional improvement notice (PIN) or direct a person to cease unsafe work.

Whether or not the HSR has undergone training, the PCBU must provide the HSR with the resources, facilities and assistance that are reasonably necessary to enable them to carry out their functions.

Provisional improvement notices (sections 90-102)

A PIN is a written notice issued by an HSR requiring a contravention against the WHS Act or Regulations to be remedied within a certain period or a likely contravention to be prevented. Only an HSR who has completed the approved training may exercise this power.

Before issuing a PIN, the HSR must first consult with the person who is to receive the proposed notice. This could be the PCBU or a worker, if the PIN is proposed to be issued to a worker.

If consultation is unsuccessful, a PIN may be issued in writing. It must state:

- that the HSR believes that a provision of the WHS Act or Regulations is being contravened or has been contravened in circumstances that make it likely that the contravention will continue or be repeated
- the section of the WHS Act or Regulations considered to have been contravened and how the section is being or has been contravened
- the date (at least eight days from the issue date) by which the contravention must be remedied.

A PIN may also include recommendations that may be taken to remedy a contravention. These recommendations may refer to a code of practice and offer the person a choice of solutions. It is not an offence to fail to comply with any recommendations in a PIN as a PIN can be complied with by taking alternative actions to those recommended in the PIN to remedy the contravention.

However, the PIN must be complied with within the time specified in the notice.

A PIN cannot be issued to override an inspector's decision on a matter (subsection 90(5)).

A person issued with a PIN must display it in a prominent place in the workplace, or part of the workplace, at which work is being carried out that is affected by the notice. It is an offence to intentionally remove, destroy, damage or deface the notice, while it is in force.

Within seven days of being issued with a PIN, the affected person (including the PCBU if the person issued with the PIN is a worker) can ask the regulator to have the notice reviewed by an inspector. If no review is sought, the PIN must be complied with – that is, the contravention must be remedied within the time allowed or prevented from occurring in the first place (whichever applies).

If a request is made to review the PIN it ceases to have effect until the inspector makes a decision on the review. The inspector must either confirm the PIN (with or without changes) or cancel it. A review may still occur even if the time specified for compliance with the PIN has expired. A confirmed PIN (with or without changes) must be complied with.

The inspector will give a copy of their decision to the person who applied for the review and the HSR who issued the notice.

A provisional improvement notice that is confirmed (with or without changes) by an inspector is taken to be an improvement notice issued by the inspector under the Act.

Worker's right to cease unsafe work (sections 84-89A)

If a worker has a reasonable concern about a serious risk to their health or safety from immediate or imminent exposure to a hazard, or the health and safety of any other person, they may cease or refuse to carry out work that would expose them, or any other person, to that hazard.

An exception is provided in section 84(2) for police officers, where the refusal to carry out work could adversely affect a covert or dangerous operation. This exclusion does not relieve WA Police of any other duties under the WHS Act.

A worker who ceases work must notify the PCBU as soon as practicable. Workers can be redirected to suitable alternative work at their workplace or at another site until they can resume normal duties.

An affected person including the PCBU, HSR or worker may request an inspector to attend the workplace to assist in resolving an issue relating to the cessation of work.

A worker cannot be discriminated against in their engagement (for example, have pay deducted) for exercising their right to cease unsafe work under the WHS Act. Issues arising in relation to the continuity of engagement of a worker may be referred to the Work Health and Safety Tribunal for resolution, regardless of whether or not an inspector was appointed to resolve the matter.

Direct workers to cease unsafe work (sections 85-89A)

An HSR who has completed the approved training may direct that unsafe work cease in circumstances where they have a reasonable concern that to continue to carry out the work would expose a work group member to a serious risk to their health or safety, emanating from an immediate or imminent exposure to a hazard.

An HSR cannot direct a police officer to cease unsafe work if the request could adversely affect a covert or dangerous operation.

Before issuing a direction however the HSR must first attempt to resolve the matter with the relevant PCBU. This does not have to happen if the risk is so serious and immediate or imminent that it is not reasonable to consult first. In this case the HSR must consult the PCBU as soon as practicable after giving the direction.

The HSR must inform the relevant PCBU of any direction given by them to workers under the WHS Act. Workers do not need to separately notify the PCBU of the cessation of work in these circumstances. Workers can be redirected to suitable alternative work at their workplace or at another site until they can resume normal duties.

Any affected person may request an inspector to attend the workplace to assist in resolving an issue relating to the cessation of work.

A worker cannot be discriminated against in their engagement (for example, have pay deducted) for exercising their rights to cease unsafe work or direct that unsafe work cease under the WHS Act. Issues arising in relation to the continuity of engagement of a worker may be referred to the Work Health and Safety Tribunal for resolution, regardless of whether or not an inspector was appointed to resolve the matter.

Health and safety committees (sections 75-79)

A health and safety committee (HSC) is a formal committee established under the WHS Act to facilitate cooperation between a PCBU and workers in developing and carrying out measures to ensure health and safety at work. This includes health and safety standards, rules and procedures for the workplace.

A PCBU at a workplace must set up an HSC for the workplace within two months of being requested to do so by an HSR for the workplace, or by five or more workers at the workplace.

A PCBU can also establish an HSC on their own initiative.

The constitution of the HSC is determined by agreement between the PCBU and workers at the workplace although some minimum requirements apply.

At least half of the members of an HSC must be workers that have not been nominated by the PCBU. An HSR for the workplace can join the committee if they wish and, if a workplace has more than one HSR, they can choose one or more HSRs to join the committee (if they consent).

At least one member of the HSC must be a representative of the PCBU with sufficient authority to ensure compliance with the duties under section 79, including taking action to ensure a decision of the committee is implemented without unreasonable delay. If the PCBU is an individual, that individual must be a member of the HSC.

If agreement cannot be reached on how the HSC should be constituted, any party can ask the regulator to appoint an inspector to decide the matter. An inspector may decide the constitution of the HSC or that the HSC should not be established.

An HSC must meet at least once every three months and at any reasonable time at the request of at least half of the members of the committee.

No formal training requirements apply for committee members.

Each committee member must be allowed to spend such time as is reasonably necessary to attend meetings of the committee or carry out functions as a member of the committee. This must be paid time based on the rate they would have otherwise been paid at the time.

Issue resolution (sections 80-82A)

Issue resolution procedures apply under the WHS Act if a matter about work health and safety arises at a workplace or from the conduct of a business or undertaking and the matter is not resolved after discussions between parties.

If the matter is not resolved, the relevant parties must make reasonable efforts to achieve a timely, final and effective resolution of the issue in accordance with an agreed procedure or the default procedure set out in the WHS Regulations.

Relevant parties are:

- the PCBU or their representative
- each PCBU or their representative if the issue involves more than one PCBU
- the HSR for a work group or their representative – if the worker(s) affected by the issue are in a work group
- the worker(s) or their representative – if the worker(s) affected by the issue are not in a work group.

The PCBU's representative must not be an HSR and must have an appropriate level of seniority and be sufficiently competent to act as the person's representative.

A worker's representative may enter the workplace for the purpose of attending discussions with a view to resolving the issue.

If the issue remains unresolved, any party may ask the regulator to appoint an inspector to attend the workplace to assist in resolving the issue. The regulator may refuse the request to appoint an inspector, if the parties making the request have not made reasonable efforts to resolve the issue.

While this process is underway, workers may still exercise their right to cease unsafe work and HSRs who have completed the approved training may continue to exercise their powers to issue a PIN or direct that unsafe work cease.

Inspectors will not undertake conciliation or mediation to resolve the issue but may exercise any of their compliance powers under the WHS Act to resolve any underlying work health or safety issues.

No later than two days after the day on which the request is made, an inspector must make a decision resolving the issue. If this time is insufficient, the regulator may apply to the Work Health and Safety Tribunal for an extension of the deadline. The Tribunal will provide any affected parties the opportunity to make submissions before setting a new deadline.

Discriminatory, coercive or misleading conduct (sections 104-115)

Anti-discrimination provisions protect workers, prospective workers and others who perform safety-related functions or activities under the WHS Act, or raise health and safety issues or concerns at the workplace.

It is an offence for a person to engage in discriminatory conduct for a prohibited reason in the course of work. A person only commits an offence if the prohibited reason was the dominant reason for the discriminatory conduct.

Discriminatory conduct includes dismissing or refusing to engage a worker, terminating a contract for services with a worker, detrimentally altering the position of a worker or otherwise injuring them in their engagement (for example, by demoting them, or reducing their overtime or ordinary hours of work) because they:

- are, have been, or propose to be an HSR or member of an HSC
- exercise a right or perform a function as an HSR or HSC member
- undertake, have undertaken or propose to undertake a role under the Act
- exercise, have exercised or propose to exercise (or refrain from exercising) a power under the Act
- assist, have assisted or propose to assist a person to exercise a power or perform a function under the Act

- raise, have raised or propose to raise an issue or concern about work health and safety
- are involved in, have been involved in or propose to be involved in resolving a work health and safety issue, or
- made a complaint or taken other action to get another person to comply with their duties or obligations under the Act.

It is also unlawful to terminate or refuse to enter into a commercial arrangement with another person for any of these reasons.

It is unlawful to engage in, threaten or organise to take any of the above actions, or to ask, authorise, assist or encourage another person to do this.

It is unlawful to organise or take, or threaten to organise or take, any action against another person with intent to coerce or induce the person, or a third person to exercise their rights under the WHS Act in a particular way.

It is unlawful for a person to knowingly or recklessly make a false or misleading representation to another person about their:

- rights or obligations under the Act
- ability to initiate, or participate in, a process or proceeding under the Act, or
- ability to make a complaint or inquiry to a person or body empowered under the Act to seek compliance with the Act.

Offences may be prosecuted by the regulator or alternatively an affected person or their representative may apply to the Work Health and Safety Tribunal for a civil remedy.

In civil proceedings a person may be found to have engaged in discriminatory conduct for a prohibited reason only if the reason was a substantial reason for the conduct.

Civil proceedings relating to alleged discriminatory conduct must be lodged within a year after the date on which the applicant knew or ought to have known that the cause of action accrued.

A broad range of remedies is available, including imposing a penalty or reinstatement.

A person may not initiate multiple actions in relation to the same matter under two or more laws of that jurisdiction.

The regulator

Role of the regulator (sections 152-154)

The WorkSafe Commissioner is the regulator under the WHS Act.

The WorkSafe Commissioner will be responsible to the Minister for Industrial Relations for the administration of the WHS Act and any other law relating to work health and safety administered by the Minister.

The regulator has a broad range of functions, including:

- monitoring and enforcing compliance with the WHS Act (and regulations)
- investigating and reporting on matters relating to work health and safety, including particular types of hazards and matters relating to particular industries or particular businesses or undertakings
- providing advice and information on work health and safety to duty holders and the community
- collecting, analysing and publishing statistics relating to work health and safety
- fostering a cooperative, consultative relationship between duty holders and the people to whom they owe work health and safety duties, and their representatives
- promoting and supporting education and training on matters relating to work health and safety
- engaging in, promoting and coordinating the sharing of information to achieve the object of the WHS Act, including the sharing of information with other work health and safety regulators
- conducting and defending legal proceedings under the WHS Act.

Power of the regulator to require documents and information (sections 155-155B)

The regulator has powers to obtain information by written notice if it reasonably believes a person is capable of giving information, providing documents or giving evidence:

- in relation to a possible contravention of the WHS Act, or
- that will assist in monitoring or compliance.

The written notice must be served on the person, requiring them to do one or more of the following:

- provide a signed statement on the required matters within the time and in the manner specified in the notice
- produce the required documents, including to request a copy or reproduction of documents that are stored in an electronic format
- appear before a person appointed by the regulator at a reasonable time and place determined by that person and specified in the notice, and provide the required evidence orally, in writing or provide the documents.

The regulator may only require a person to appear in person after taking all reasonable steps to obtain the required information by other means.

The regulator may also, by written notice, require a PCBU to provide an independent report on WHS matters at a workplace.

It is an offence to refuse or fail to comply with a request without reasonable excuse. However, a person may refuse to produce a document or information that is subject to legal professional privilege.

While the regulator may compel answers, self-incriminating answers to questions or information provided cannot be used as evidence against an individual in proceedings, other than proceedings arising out of the false or misleading nature of the answer, information or document.

Powers to copy and retain documents (section 155C)

Documents provided to, or obtained by the regulator, may be retained for the period considered necessary by the regulator. The regulator may also take extracts, and make copies or reproductions of documents.

Securing compliance

The Department of Mines, Industry Regulation and Safety is the WHS department that will assist the regulator in the administration of the WHS Act, including the provision of inspectors and other staff to secure compliance with the legislation.

Functions and powers of inspectors (sections 160-162, 171, 172)

Inspectors have general functions and powers to:

- provide information and advice about how to comply with the WHS Act and regulations
- help resolve work health and safety issues at workplaces
- review disputed PINs
- require compliance with the WHS Act by issuing notices
- investigate contraventions and assist to prosecute offences
- investigate and report on matters relating to WHS, including particular types of hazards and matters relating to particular industries or particular businesses or undertakings.

Inspectors are subject to the regulator's directions in the exercise of their compliance powers.

In performing their functions and exercising powers, an inspector at a workplace may require a person to answer their questions, submit to an interview or produce documents or information. The information must be provided in a form that is capable of being understood by the inspector, particularly in relation to electronically stored documents.

The inspector may make copies of or take extracts from a document given to them or keep the document for the period the inspector considers necessary. While in the inspector's custody it must be made available to the person who produced the document, the document's owner, or a representative of either, at all reasonable times.

It is an offence for a person to refuse or fail to comply with the inspector's request without reasonable excuse. However the person may refuse to produce a document or information that is subject to legal professional privilege.

While inspectors may compel answers, self-incriminating answers to questions or information provided cannot be used as evidence against an individual in proceedings, other than proceedings arising out of the false or misleading nature of the answer, information or document.

Warning to be given (section 173)

An inspector may obtain and use information voluntarily given to them in their official capacity by any person.

If a person is however required to answer a question or provide information or a document as explained above, the inspector must first:

- identify themselves to the person as an inspector by producing their inspector's identity card or in some other way
- warn the person that failure to comply with the requirement or to answer the question, without reasonable excuse, would constitute an offence
- warn the person that they are not excused from answering a question or providing information or a document on the ground that they may incriminate themselves
- advise the person that legal professional privilege may be claimed.

It is not an offence for a person to refuse to cooperate on grounds that they may incriminate themselves if the inspector has not first given them the required warning.

Power to require name and address (section 185)

An inspector may require a person to provide their name and residential address if:

- the inspector finds them committing an offence against the WHS Act
- the inspector finds them in circumstances that leads the inspector to reasonably believe they have committed an offence against the WHS Act, or
- the inspector reasonably believes that the person may be able to assist in the investigation of an offence against the WHS Act.

In making the request the inspector must explain the reasons for the requirement and warn the person that it is an offence to refuse or fail to comply without reasonable excuse.

If the inspector reasonably believes that the name or residential address is false, they may require the person to provide further evidence as to its correctness.

It is an offence for a person to fail to comply with these requirements without reasonable excuse.

Powers of entry for inspectors (sections 163-166)

In performing their functions and exercising powers, an inspector may enter a workplace or a suspected workplace at any time without prior notice, with or without the consent of the person with management or control. If it is not a workplace, then they must leave immediately unless they are authorised by an entry warrant to be there or the person with management or control consents. They may also pass through places used for residential purposes at a reasonable time if it is the only known way to access a workplace.

An inspector must identify themselves on request, by showing their identity card or by another way, prescribed in the WHS regulations, such as a departmental letter or email, or confirmation with the department by telephone.

An inspector must take all reasonable steps to advise the relevant PCBU, person with management or control of the workplace and any relevant HSRs they have entered the workplace as soon as practicable. This is not needed if it would defeat the purpose of entry or cause unreasonable delay.

An inspector entering a workplace can:

- inspect, examine and make inquiries
- inspect, examine and seize anything, including documents, and may analyse or test a seized thing or arrange for another person to do so
- bring and use any equipment or materials they may need
- take measurements, conduct tests, and make sketches or recordings (for example, photographs, films, audio and video)
- take and remove samples for analysis.

An inspector can require a person at a workplace to give them reasonable help to do these things. A person asked to assist must not, without reasonable excuse, refuse or fail to comply. This may include the supply of transport (for example, flights to/from the workplace being inspected), accommodation and meals.

Inspectors may be accompanied by other persons including an interpreter to assist them, if this is considered to be necessary.

Entry warrants (sections 166A-169)

An inspector may apply to a Justice of the Peace (JP) for an entry warrant. An entry warrant may be issued if:

- there are reasonable grounds for suspecting that there is a thing or activity at the place that may be evidence of an offence against the WHS Act, or may enable access to evidence of an offence against the WHS Act
- the warrant is reasonably necessary to enable an inspector to exercise compliance powers.

An entry warrant may be executed by any inspector, but the inspector must produce the warrant, or a copy of it.

Enforcement measures

Improvement notices (sections 191-194)

An improvement notice is a written notice issued by an inspector requiring a contravention against the WHS Act or Regulations to be remedied within a certain period or a likely contravention to be prevented (that is, if there are circumstances that make it likely that a contravention will continue or be repeated).

An inspector may issue an improvement notice requiring a person to remedy the contravention, prevent a likely contravention from happening or remedy the things or operations causing the contravention or likely contravention.

The notice must state the inspector's belief about the contravention or likely contravention, identify the provision the inspector believes is being or has been contravened, how the provision is being or has been contravened and a reasonable date by which to fix the contravention.

An improvement notice may also include directions and/or recommendations about how to fix or prevent a contravention.

A person issued with an improvement notice must comply with the notice.

A person issued with an improvement notice may seek to extend the compliance period for the notice, but only if the period has not ended.

Prohibition notices (sections 195-197)

A prohibition notice is a notice issued by an inspector prohibiting an activity at a workplace from continuing or being carried out in a specific way.

An inspector may issue a prohibition notice if they reasonably believe the activity involves a serious risk to a person's health or safety from an immediate or imminent exposure to a hazard.

The notice is issued to the person with control over the activity. It may include directions on how to remedy the risk and remains in place until an inspector is satisfied the risk has been fixed.

At first the notice may be given orally but must be confirmed by written notice issued to the person as soon as practicable.

A person issued with a prohibition notice must comply with the notice (including any notice given orally). It remains in force until an inspector is satisfied the underlying risk has been fixed – see also the section on reviews.

An inspector cannot give a direction if compliance with the direction would adversely affect a covert or dangerous operation of the WA Police.

Non-disturbance notices (sections 198-201)

A non-disturbance notice is a written notice issued by an inspector requiring a person with management or control of a workplace to preserve a 'notifiable incident' site or prevent disturbance of a particular site (including the operation of plant) in certain circumstances. It may only be issued if the inspector reasonably believes that it is necessary to do so to facilitate the exercise of their compliance powers.

A notice may require the person to preserve the site or prevent disturbance for up to seven days, and must include the measures to be taken to do so.

One or more subsequent non-disturbance notices may be issued to a person if an inspector considers this necessary.

A non-disturbance notice does not prevent any action required to protect a person's health or safety, help someone who is injured or make the site safe.

A person issued with a non-disturbance notice must comply with the notice unless they have a reasonable excuse for not doing so.

Display of notices (section 210)

A person issued with a notice must as soon as possible display a copy of the notice in a prominent place at or near the workplace where work affected by the notice is being carried out.

It is an offence to intentionally remove, destroy, damage or deface a notice that is required to be displayed while the notice is in force.

Note that the operation of the notice may be stayed if the decision to issue the notice is under formal review (see below).

Remedial action (sections 211-213)

The regulator may take any reasonable remedial action to make a workplace or situation safe if a person fails to take reasonable steps to comply with a prohibition notice. To do so it must give written notice to the person of the regulator's intention and information about the owner's or person's liability for the costs of that action.

The regulator may also take remedial action if a prohibition notice cannot be issued because the person with management or control of the workplace cannot be found.

Costs of remedial action may be charged to the person who was issued with the initial prohibition notice or would have been, had they been found.

WHS undertakings (sections 216-222)

A person may give the regulator an undertaking about a contravention or alleged contravention by the person, other than industrial manslaughter or a Category 1 offence.

If accepted, no enforcement proceedings may be brought (or continued) against a person in relation to a matter covered in a WHS undertaking, providing the WHS undertaking has been completely discharged.

The giving of a WHS undertaking is not considered to be an admission of guilt. The regulator must consider any undertaking, taking into account guidelines published on the acceptance of WHS undertakings, and provide the person with a written notice of its decision to accept or reject it (including reasons).

A WHS undertaking takes effect and becomes enforceable when the regulator's decision to accept it is given to the person or as specified in the decision.

A person who has made a WHS undertaking may withdraw or vary the undertaking with the written agreement of the regulator.

If a WHS undertaking is contravened, the regulator may apply to the Magistrate's Court for a remedy. In addition to imposing a penalty, the court may make orders directing compliance with the WHS undertaking or discharging the undertaking altogether. Additionally the court may order the person to pay the costs of the proceedings plus the regulator's reasonable costs of monitoring compliance with the WHS undertaking in the future.

If a WHS undertaking is contravened, the regulator may also seek to prosecute the underlying contravention or alleged contravention of the Act to which the WHS undertaking relates.

Review of decisions (sections 223-229B)

Certain decisions made by inspectors and the regulator can be reviewed. The WHS Act outlines which decisions can be reviewed and who can apply to have them reviewed.

These are decisions that relate to:

- the failure to commence negotiations for work groups
- training of health and safety representatives
- PINs issued by HSRs
- forfeiture and return of goods or things
- issue of improvement, prohibition or non-disturbance notices and subsequent notices
- variation or cancellation of notices
- extension of time to comply with improvement notices.

A union may apply for a review of a decision on behalf of a union member or members, without identifying the union member or members, and without providing evidence of their authority to act on their behalf.

Internal review

Inspectors' decisions are initially subject to internal review by the regulator. Applications must be brought within the time allowed or a longer period permitted by the regulator.

The time allowed is:

- in relation to a decision to issue an improvement notice – the period specified in the notice for compliance or 14 days, whichever is the lesser, or
- in any other case, 14 days.

The internal reviewer cannot be the person responsible for the initial decision. The internal reviewer must make a decision within 14 days after receiving a valid application, although additional time is allowed if further information is required.

The internal reviewer must confirm the initial decision, vary it, or set it aside in favour of another course of action. A written decision must be sent to the applicant as soon as practicable.

The initial decision is taken to be confirmed if the internal reviewer does not make a review decision in the time allowed, or the applicant fails to provide any additional information required by the reviewer within time.

External review

If a person is dissatisfied with the internal review decision, they may apply to the Work Health and Safety Tribunal for an external review of that decision within the time allowed.

Prescribed decisions made under the WHS Act by the regulator are also externally reviewable.

The application must be made:

- if the decision was to forfeit a thing – within 28 days of the day the decision first came to the applicant's notice
- in any other case – within 14 days after the day the decision first came to the applicant's notice, or
- if the regulator is required by the external review body to give the applicant a statement of reasons – within 14 days after the day the statement is provided.

In general, the Work Health and Safety Tribunal's practices and procedures will apply to the external review.

The Work Health and Safety Tribunal is required to:

- review a decision (unless the application is withdrawn)
- conduct the review with a 'hearing de novo' (approaching the decision afresh), and may consider material not available to the internal review
- confirm, vary or substitute another decision.

Stays of reviewable decisions

If an application for review is made, this generally imposes a stay on the operation of the decision until there is an outcome.

However, there is no automatic stay of a decision to issue a prohibition notice or a non-disturbance notice. In this case, the reviewer may stay the decision on its own initiative or upon application. The reviewer must make the decision on an application for a stay within one working day after receiving the application, otherwise the application is taken to have been granted.

A stay of a decision pending internal review operates until the time allowed for making an external review expires or an application for external review is made, whichever is earlier.

If an application is made for an external review of a decision, the Work Health and Safety Tribunal may stay the operation of a decision, cancel, or vary the stay.

Offences and penalties

Health and safety duty offences (sections 30A-33)

The WHS Act provides for the following categories of offences for breach of health and safety duties. The maximum penalties are different depending on the category of the offence and whether the offender is an individual (e.g. a worker, or a PCBU), an officer (as defined) or a body corporate.

Industrial manslaughter – applies to those with a WHS duty where their conduct in failing to comply with that duty caused a death. Only PCBUs and their officers can be charged with industrial manslaughter. The prosecution must establish, beyond reasonable doubt, that the person knew their conduct was likely to cause the death of, or serious harm to, an individual and they acted in disregard of that likelihood.

Category 1 – applies to those with a WHS duty where their conduct in failing to comply with that duty caused the death of, or serious harm to, a person.

Category 2 – applies to those with a WHS duty where their conduct in failing to comply with that duty exposed a person to the risk of death, injury or harm to health.

Category 3 – applies to those with a WHS duty who failed to comply with that duty.

Maximum penalties for breach of health and safety duty offences

Offence	Duty holder		
	Body corporate	Individual as a PCBU or officer	Individual as worker or other
Industrial manslaughter	\$10 000 000	\$5 000 000, 20 years in jail	Not applicable
Category 1	\$3 500 000	\$680 000, 5 years in jail	\$340 000, 5 years in jail
Category 2	\$1 800 000	\$350 000	\$170 000
Category 3	\$570 000	\$120 000	\$55 000

Note: Where a penalty provides for a fine or term of imprisonment, the Court may impose a sentence that includes either or both penalties.

Exceptions (section 34)

Volunteers are not liable for a failure to comply with a health and safety duty except in their capacity as a worker (section 28) or other person at a workplace (section 29).

An unincorporated association is not liable for prosecution although its officers (except volunteers) may be prosecuted for a failure to comply with an officer's duty (section 27). Its members may owe duties in their capacities as workers (section 28) or other persons at a workplace (section 29).

Alternative penalty options

In addition to imposing a penalty, courts may impose alternative remedies including:

- adverse publicity orders
- restoration orders
- work health and safety project orders
- court-ordered WHS undertakings
- training orders.

Other offences

There are a number of other offences under the WHS Act that relate to specific requirements and carry their own individual penalties.

Offences in relation to incident notification (sections 38, 39)

It is an offence to:

- fail to notify the regulator of a 'notifiable incident' (section 38)
- fail to keep a record of a 'notifiable incident' for the prescribed period (section 38)
- fail to preserve an incident site until an inspector arrives (section 39).

Offences in relation to authorisations (sections 41-45)

It is an offence to:

- carry on a business or undertaking at an unauthorised workplace, if it is required to be authorised (section 41)
- use unauthorised plant, equipment and substances at a workplace, if there is a requirement that it be authorised (section 42)
- carry out work without the required licence, permit or authorisation (section 43)
- carry out work without the required prescribed qualifications or experience, or carry out unsupervised work where supervision by a person with prescribed qualifications or experience is required (section 44)
- not comply with the conditions of any licence, permit or authorisation (section 45).

Offences in relation to consultation (sections 46, 47)

It is an offence to:

- not consult with other duty holders on work health and safety matters as required (section 46)
- not consult with workers on work health and safety matters as required (section 47).

Offences in relation to the establishment of work groups (sections 52, 53, 56, 57)

It is an offence to:

- fail to negotiate with workers or their representative regarding the formation of work groups at a workplace (sections 52, 56)
- fail to notify workers of the outcome of negotiations regarding the formation of work groups at a workplace (sections 53, 57).

Offences in relation to health and safety representatives (sections 61, 70, 71, 72, 74, 97, 99)

It is an offence to:

- fail to consult with an HSR on work health and safety matters as required (section 70)
- fail to provide an HSR with access to information the person has relating to hazards affecting their work group members and work health and safety of work group members (section 70)
- fail to allow an HSR to attend interviews that they are entitled to attend as representatives (section 70)
- fail to provide resources, facilities and assistance that are reasonably necessary for the election of HSRs or to allow HSRs to carry out their health and safety duties (sections 61, 70)
- prevent an HSR from accompanying an inspector during an inspection of a place that affects work health and safety of work group members (section 70)
- deny a person assisting an HSR access to the workplace in accordance with entitlements (section 70)
- fail to allow an HSR time off with pay that is reasonably necessary to attend to their health and safety duties (section 70)
- allow an HSR to have access to any personal or medical information concerning a worker without the worker's consent, unless the information does not identify the worker (section 71)
- refuse to allow an HSR to attend an approved training course they are entitled to attend (section 72)
- fail to keep an up-to-date list of HSRs at the workplace and ensure it is readily accessible to all workers (section 74)
- fail to display a PIN (section 97)
- contravene a PIN (section 99).

Offences in relation to health and safety committees (sections 75, 79)

It is an offence to:

- fail to establish an HSC within two months of being requested to do so (section 75)
- fail to allow members of the committee time off with pay that is reasonably necessary to attend committee meetings and carry out functions as a committee member (section 79).
- fail to provide an HSC with access to information the person has relating to hazards affecting their workplace and the work health and safety of workers at the workplace (section 79)
- allow an HSC to have access to any personal or medical information concerning a worker without the worker's consent, unless the information does not identify the worker (section 79)
- fail to or unreasonably delay considering any recommendation or other decision made by the HSC within the scope of the HSC's functions that requires the person's agreement if it is to be implemented (section 79)
- fail to or unreasonably delay providing a response to the HSC stating the extent to which the person agrees to the implementation of the recommendation or other decision (section 79)
- fail to or unreasonably delay taking any agreed action required to be taken for the purposes of the implementation of a recommendation or decision (section 79)
- unreasonably withhold agreement to the implementation of a recommendation or other decision (wholly or partly) (section 79).

Offences in relation to discriminatory, coercive or misleading conduct (sections 104-108)

It is an offence to:

- engage in discriminatory conduct for a reason prohibited under the WHS Act (section 104)
- request, instruct, induce, encourage, authorise or assist another person to engage in discriminatory conduct (section 107)
- organise or take, or threaten to organise or take, any action against another person with intent to coerce or induce that person, or a third person, to exercise or not exercise a power or perform or not perform a function under the WHS Act (section 108)
- knowingly or recklessly make a false or misleading representation to another person regarding their rights, obligations or abilities under the WHS Act (section 109).

Part 6 of the WHS Act also enables a person affected by discriminatory, coercive or misleading conduct to initiate civil proceedings for a civil remedy.

Offences in relation to the regulator and inspectors (sections 155-190)

It is an offence to:

- refuse or fail to answer questions and provide information and documentation requested by the regulator without reasonable excuse (section 155)
- refuse or fail to assist an inspector in the performance of their compliance powers without reasonable excuse (section 165)
- refuse or fail to comply with an inspector's request to answer questions, verify those answers by statutory declaration, submit to an interview, record an interview, or produce a document without reasonable excuse (section 171)
- tamper with a thing the access to which has been restricted by an inspector or fail to comply with an inspector's request to take it to a stated place within a stated time or remain in control of it at the stated place (section 177)
- refuse or fail to comply with a direction from an inspector, including refusing to provide one's name and address (section 185)
- intentionally hinder or obstruct an inspector while they are carrying out their duties, or to induce or attempt to induce another person to do so (section 188)
- impersonate an inspector (section 189)
- assault, threaten or intimidate an inspector or a person assisting an inspector (section 190)
- fail to comply with an improvement notice (section 193)
- fail to comply with a prohibition notice (section 197)
- fail to comply with a non-disturbance notice (section 200)
- intentionally remove, destroy, damage or deface a notice required to be displayed (section 210)
- fail to comply with a WHS undertaking (section 219)
- fail to comply with a court order (section 242)
- give false or misleading information in complying or purportedly complying with the WHS Act (section 268)
- disclose confidential information obtained while exercising a power or function under the WHS Act (section 271)

- enter into, or offer to enter into, an insurance policy or indemnify a person that seeks to cover WHS Legislation fines imposed under the WHS Act (section 272A)
- impose a levy or charge on a worker for anything done or provided in relation to work health and safety (section 273).

Prosecutions (section 229C-232A)

Proceedings for an offence against the WHS Act can only be brought by the regulator or public service officer working in the Department of Mines, Industry Regulation and Safety.

Industrial manslaughter offences under section 30A may only be prosecuted by the Director of Public Prosecutions.

The department will publish on its website general guidelines about the prosecution of offences against the WHS Act and the acceptance of WHS undertakings.

Procedure if prosecution is not brought (section 231)

If an individual (complainant) considers an industrial manslaughter, Category 1 or Category 2 offence has occurred but no prosecution has been brought in the period six to twelve months after the alleged offence, they can make a written request to the regulator to bring a prosecution.

The regulator must respond to the request within three months after receiving the request. It must advise on the status of the investigation and, if complete, whether a prosecution has been or will be brought, including reasons. The regulator must also notify the alleged offender of these matters.

Limitation period for prosecutions (section 232)

Proceedings for an offence must be commenced:

- within two years after the offence first came to the regulator's attention
- within one year after a finding in a coronial or other official inquiry that the offence has occurred
- within six months of a WHS undertaking being contravened, or when the regulator becomes aware of a contravention or agrees to withdraw the undertaking.

After the standard limitation period, proceedings may commence for Category 1 offences if fresh evidence is discovered and the court is satisfied the evidence could not reasonably have been discovered within the relevant limitation period.

There is no limitation period for industrial manslaughter. If the Director of Public Prosecutions decides not to bring proceedings for industrial manslaughter, proceedings for another offence may be brought by the regulator within six months of the Director's decision.

Admission of evidence obtained unlawfully (section 232A)

Under some circumstances, a court may consider admitting evidence into proceedings that was obtained as a result of unlawful conduct. This might occur, for example, where an inspector inadvertently exceeds the parameters of an entry warrant.

Authorisations

Authorisations (for example, licences, permits, registrations) are required for the use of some plant and substances, and certain types of work.

Plant and substances (section 42)

A PCBU must not direct or allow a worker to use plant or a substance if the WHS regulations require it, or its design, to be authorised and it is not.

The WHS regulations will list the items of plant requiring registration of their design.

The WHS regulations will list the items of plant and equipment required to be registered.

Work (section 43)

A PCBU must not direct or allow a worker to carry out work if it is required to be done by an authorised person and the worker is not authorised.

The WHS regulations will list certain high risk work that must only be performed by people who have been authorised (for example, licensed) to carry out that type of work.

Prescribed qualification and experience (section 44)

The WHS regulations will require certain types of work to be carried out only by, or supervised by, a person with prescribed qualifications or experience.

Note: Other non-WHS legislation may include licensing, registration or similar requirements for some occupations.

Statutory offices and bodies

Functions and committees (section 12A)

The WHS Act makes provision for the establishment of the:

- WorkSafe Commissioner
- Chief Inspector of Mines
- Chief Inspector Petroleum Safety
- Work Health and Safety Commission (WHSC)
- Mining and Petroleum Advisory Committee (MAPAC)
- Work Health and Safety Tribunal.

Transitional provisions

In general, transitional arrangements will be put in place where duties are new or substantially changed from existing requirements. The approach taken will be broadly consistent with the transition principles agreed by Safe Work Australia.



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Arrangements for Management of Volunteer Bush Fire Brigades: Proposed Advocacy Position

May 2022




Table of Contents

Table of Contents	1
Executive Summary	2
How to Comment on This Paper	2
Introduction	3
Background	4
Current Arrangements in WA	5
Considerations for Future Bush Fire Brigade Management Arrangements	5
<i>Local Government Views</i>	5
<i>Recommendations of Previous Reviews</i>	6
<i>Work Health and Safety Act 2020</i>	6
<i>Volunteer Insurance</i>	7
<i>Sector Capacity, Capability and Resourcing</i>	7
<i>Bush Fire Service and Volunteerism</i>	7
Options for future management of BFBS	8
Proposed Position	8
Management of Bush Fire Brigades	9
How to Provide a Response to this Paper and Proposed Position	10
APPENDIX ONE - Proposed Emergency Management Advocacy Position Statements	11

Acknowledgement

The WA Local Government Association (WALGA) acknowledges the Traditional Owners of the land and pays respects to Elder's past, and present. WALGA acknowledges the continuing knowledge and cultural practices that they bring to the Local Government and Emergency Management sectors to support resilient and sustainable land management on WA landscapes.



Executive Summary

Western Australian Local Governments have extensive roles and responsibilities prescribed in the State Emergency Management Framework (State Framework) across the emergency management activities of prevention, preparedness, response, and recovery. Relevantly, pursuant to the *Bush Fires Act 1954*, Local Governments have responsibility for bushfire and the management of volunteer Bush Fire Brigades (BFBs).

This Paper proposes a new Advocacy Position on the management of BFBs to guide the Association's emergency management advocacy on behalf of Local Government, and in particular its engagement with the State Government on the development of the *Consolidated Emergency Services Act* which is expected to be released for stakeholder consultation in early 2023.

How to Comment on This Paper

Local Governments are encouraged to provide a written response to this Paper or to complete the [survey](#). Formal Council resolutions will assist the Association understand the sentiment of the sector on this important issue.

The Paper outlines the proposed Advocacy Position, followed by the background and rationale for the new position.

Questions are provided at the end of the Paper to guide feedback.

For further information please contact WALGA's Resilient Communities Policy Manager, Susie Moir via 9213 2058 or smoir@walga.asn.au

Feedback should be provided in response to the questions via email to em@walga.asn.au by **5pm Friday 8 July 2022**.

Introduction

This Paper seeks Local Government's views on a new WALGA Advocacy Position on the management of volunteer bush fire brigades (BFBs).

WALGA Advocacy Positions guide WALGA's policy, advocacy and capacity building activities and support a consistent and whole-of-sector approach.

The introduction of the *Work Health and Safety Act 2020* has shone a spotlight on Local Government responsibilities for managing BFBs. In addition, the State Government is currently drafting the *Consolidated Emergency Services Act*, which consolidates the *Fire Brigades Act 1942*, *Bush Fires Act 1954* and *Fire and Emergency Services Act 1998* into a single piece of legislation, anticipated to be released as a Green Bill in early 2023. Therefore consultation on a new Advocacy Position with respect to management of BFBs is timely.

In 2012, 2019 and 2021, WALGA undertook comprehensive consultation with Local Government in relation to emergency management matters.

In 2021 WALGA undertook a comprehensive [Local Government Emergency Management Survey](#) to ascertain the sector's sentiment with respect to their emergency management responsibilities. 104 Local Governments responded to the Survey. Responses were provided by:

- 36 Chief Executive Officers
- 18 Community Emergency Services Managers
- 50 Local Government officers

As part of the survey Local Governments were asked about their level of satisfaction with current arrangements for managing BFBs. 92 Local Governments (69 of which manage BFBs) provided the following feedback:

- 93% were not wholly satisfied with the current arrangements for the management of BFBs; and
- 51% expressed that their Local Government does not support the requirements for Local Governments to manage BFBs.

These Survey responses reinforce that it is timely to engage with the sector on this issue.

WALGA has been undertaking a process to update our Advocacy Positions, and as a result has prepared eight new Advocacy Position Statements relating to Emergency Management, which will be considered at the July 2022 State Council meeting, as listed in Appendix 1. These new Advocacy Positions are based on previous State Council endorsed submissions, recommendations from significant reviews and inquiries, and information and priorities captured in sector-wide consultations.

A comprehensive Advocacy Position regarding the *Consolidated Emergency Services Act*, is outlined in Appendix 1, Advocacy Position 8.4.

Background

FESA (now the Department of Fire and Emergency Services (DFES)) was established in 1999 for the purpose of improving coordination of the State's emergency services, replacing the Fire Brigades and Bush Fires Boards¹. DFES provides strategic leadership for emergency services across WA. DFES manages the career fire and rescue service, as well as a number of volunteer emergency services: Volunteer Fire and Emergency Services (VFES); Volunteer Fire and Rescue Service (VFRS); State Emergency Services (SES); and Marine Rescue Western Australia.

Around Australia:

- WA is the only State in Australia in which Local Governments manage bushfire volunteers (pursuant to the *Bush Fire Act 1954*).
- In New South Wales, the NSW Rural Fire Service, which makes up the world's largest firefighting volunteer services, is managed by the NSW Government².
- Similarly, the Victorian Government manages the Country Fire Authority which manages regional fire services in Victoria³.
- In South Australia, the *Fire and Emergency Services Act 2005* (SA) provides for the South Australian Country Fire Service (SACFS) being established as a body corporate, currently managing 14,000 volunteers. The SACFS is responsible to the Minister for Emergency Services⁴.
- In Queensland, the *Fire and Emergency Services Act 1990* (Qld) provides for the establishment of rural fire brigades, with the Commissioner responsible for the efficiency of rural fire brigades⁵.
- The Tasmanian Fire Service sits under the State Fire Commission, established under the *Fire Service Act 1979*⁶, with more than 200 fire brigades across Tasmania, 350 career firefighters and 5000 volunteers.
- The ACT Rural Fire Service sits under the ACT Emergency Services Agency⁷ and is responsible for all bush and grass fires in rural ACT areas, through 450 volunteers in eight brigades.
- Bushfires NT is a division of the Department of Environment, Parks and Water Security, which is responsible for administration of the *Bushfires Management Act 2016*⁸. The Minister appoints members of the Bushfires Council and regional bushfires committees.

¹ <https://www.dfes.wa.gov.au/site/about-us/corporate-information/corporate-history/corporate-history.html>

² <https://www.rfs.nsw.gov.au/about-us/history>

³ <https://www.cfa.vic.gov.au/about-us/who-we-are>

⁴ [Part B 2015 South Australian Country Fire Service.pdf \(audit.sa.gov.au\)](#)

⁵ [Fire and Emergency Services Act 1990 \(legislation.qld.gov.au\)](#)

⁶ [TFSAAnnualReport2021.pdf \(fire.tas.gov.au\)](#)

⁷ [Emergencies Act 2004 | Acts](#)

⁸ [Legislation Database \(nt.gov.au\)](#)

Current Arrangements in WA

In Western Australia 111 Local Governments manage 563 BFBs involving approximately 20,000 volunteers. The Bush Fire Service is the largest volunteer emergency service by a significant margin:

- Bush Fire Service: 19,639 volunteers
- Fire and Rescue Service: 2,486 volunteers
- State Emergency Services: 2001 volunteers
- Volunteer Fire and Emergency Services: 926 volunteers
- Emergency Services Cadet Corps: 2,261 volunteers
- Marine Rescue Service: 1,559 volunteers⁹.

The number of BFBs managed by Local Governments varies from one up to 20. For example, the Shire of Cranbrook, which has a population of 1000 people, annual revenue of \$8 million and 29 employees manages 11 BFBs. The City of Mandurah, population 88,000, annual revenue of \$116 million and 678 employees, manages one BFB.

DFES also manages some BFBs. This includes seven bushfire brigades within the Kimberley and seven bushfire brigades within the Pilbara regions, under Memorandums of Understanding (MOU) with relevant Local Governments which make DFES responsible for the day-to-day management of the BFB and all response activities, excluding in relation to land tenure managed by the Department of Biodiversity, Conservation and Attractions.

Under this arrangement, Local Governments maintain responsibility for administering the *Bushfires Act* and carry out activities such as inspecting fire breaks and issuing burning permits.

The Local Government Grants Scheme (LGGS) Manual ([Appendix 1](#)) outlines five different 'profiles' for Bush Fire Brigades, as follows:

- Farmer Response Rural Brigades
- Pastoral Emergency Management
- Rural Brigades
- Settlement Brigades (Rural/Semi Rural)
- Urban Brigades (Defensive/Structural/Breathing Apparatus).

Considerations for Future Bush Fire Brigade Management Arrangements

Local Government Views

As part of WALGA's 2021 Emergency Management Survey, Local Governments were asked about their level of satisfaction with current arrangements for managing BFBs. 92 Local Governments (69 of which manage BFBs) provided the following feedback:

- 93% were not wholly satisfied with the current arrangements for the management of BFBs; and
- 51% expressed that their Local Government does not support the requirements for Local Governments to manage BFBs.

⁹ DFES Volunteering, April 2022

Detailed comments provided in the WALGA survey indicated a strong preference for the State Government to be responsible for all emergency management matters in Western Australia, including the management of BFBs.

Recommendations of Previous Reviews

Over the years there have been many calls for transformational change to the State Emergency Management Framework, in particular rural fire management.

The [Ferguson Report](#) on the 2016 Waroona Bushfire recommended that the State Government establish a rural fire service to address perceived issues in rural fire management, including insufficient capacity and unsuitable governance to deliver rural fire services. In 2017 the State Government hosted a bushfire mitigation summit at which a number of options were considered by stakeholders: a rural fire service operated within DFES; a rural fire service operated within DFES with autonomy; and a dedicated rural fire service that operated independently. Options to transfer the management of all BFBs under one umbrella – DFES or other – were also explored.

The 2017 [Economic Regulation Authority Review of the Emergency Services Levy \(ESL\)](#) considered the extent to which the ESL should be available to fund the administrative and/ or operational costs of a rural fire service, although it was outside the terms of reference for the ERA to examine the merits of a rural fire service or form a view on the best model of a rural fire service¹⁰. A number of Local Governments provided submissions to the ERA Review that supported the creation of a rural fire service¹¹.

Work Health and Safety Act 2020

The requirements of the *Work Health and Safety Act 2020*, enacted in March 2022, have heightened concerns in the sector regarding risk and liability in the management of BFBs, resourcing requirements and training and competency.

The shared responsibility for the health and safety of BFB volunteers adds further complexity to the management of BFBs and responsibilities. Local Governments, DFES, and in some cases the Department of Biodiversity, Conservation and Attractions (DBCA), have a shared duty of care to BFB volunteers due to Controlling Agency activities at incidents, and funding mechanisms (LGGs) for BFB operations and capital equipment.

DFES has a role as the lead fire and emergency services agency in WA for preparing training resources and standard operating procedures. DFES is currently developing additional resources suited to each of the above BFB 'profiles', specifically the management and training of BFBs. These additional resources will be discussed further with the sector in the coming months.

Whether the management structure for BFBs could be aligned to reflect the current operations of different brigade 'profiles', as provided in the LGGs Manual and outlined on Page 5 of this Paper, would require further discussion between DFES and the Local Government sector. This could allow for scalability of BFBs depending on location, resources and capabilities.

¹⁰ [ERA Review of the ESL, 2017, pg 185](#)

¹¹ [ERA ESL Review – summary of submissions to issues paper and draft report](#)

Volunteer Insurance

Local Governments are responsible for providing compensation for injury caused to present and former BFB volunteers as a result of their duties. The commercial insurance market ceased writing injury insurance for volunteers in 2012, therefore a self-insurance mutual scheme was implemented to ensure that Local Governments continue to meet this obligation.

Since 2012, due to the high cost of claims, the aggregate limit of liability has increased from \$250,000 to \$750,000. In addition, the annual cost of insurance has nearly doubled (92%) from \$47.50 to \$91.20 per volunteer, and it is expected that this trend will continue¹².

Sector Capacity, Capability and Resourcing

Local Governments vary in their capability, capacity, and resources to manage BFBs, as well as their other extensive legislative responsibilities and requirements¹³.

By way of overview, Local Governments in Western Australia:

- vary in size from less than 1.5 to over 370,000 square kilometres;
- have populations of just over 100 to more than 220,000 people;
- employ fewer than 10 to over 1000 staff; and
- have revenue (2019-20) ranging from just over \$2 million to just over \$225 million¹⁴.

Bush Fire Service and Volunteerism

The localised culture and history of BFBs in WA has had a large influence on the way that Local Governments engage with and manage BFBs. Many BFBs operate in an independent and self-sufficient way, which Local Governments encourage and support, as this contributes to expansion of the volunteer network in the local community, while also building community networks and resilience.

Communities, and therefore many Local Governments, have a significant interest in volunteering and BFBs, with some Local Governments very involved in the establishment, management and operation of their local BFBs. Therefore it is essential that any future management arrangements, including the transfer of responsibility for management of BFBs to the State Government, should be a voluntary process available to Local Governments that do not have the capacity, capability or resources to manage BFBs. It is also essential that the integrity of the Bush Fire Service is maintained, whatever the arrangements for the management of BFBs.

¹² Data provided by LGIS, 17 May 2022

¹³ 2021 Local Government Emergency Management Capability report - SEMC

¹⁴ [Department of Local Government, Sport and Cultural Industries](#)

Options for future management of BFBs

Four options are identified for the future management of BFBs:

1. Status quo - continue with the current arrangements for management of BFBs whereby the majority are managed by Local Government and transfer arrangements are negotiated on an ad hoc basis between DFES and Local Governments (or their BFBs).
2. Improvements - continue with the current arrangements for Local Government management of BFBs with additional support provided by the State Government with respect to increased funding and better access to training resources and other support.
3. Hybrid Model - Local Government continues to manage BFBs where they have the capacity, capability and resources to do so; however where they do not have the capacity, capability and resources, responsibility for management of BFBs is transferred to DFES.
4. Transfer - Responsibility for management of all BFBs is transferred to the State Government, consistent with the arrangements in other States and Territories.

Proposed Position

Based on the feedback received from Local Governments in the WALGA Emergency Management Survey and the other considerations outlined above, it is considered appropriate for the Association to **support a hybrid model** for the management of BFBs.

A hybrid model would enable the continued management of BFBs by those Local Governments with capacity, capability and resources to do so, while providing a framework for the transfer of the management of BFBs to the State Government where a Local Government does not.

Whatever the arrangements for future management of BFBs, it is apparent that Local Governments with responsibility for management of BFBs require **additional support and resourcing** which should be provided by the State Government, including:

- development of a suite of guidelines and resources to assist Local Governments in their management of BFBs, particularly with respect to the discharge of obligations under the *Work Health and Safety Act 2021*;
- expansion of the Community Emergency Services Manager Program (CESM) so that every Local Government with responsibility for managing BFBs has access to the Program if they wish to participate;
- universal access to DFES training for BFBs; and
- development of mandatory and minimum training requirements including recognition of competency for volunteers.

Based on the previous commentary, the following Advocacy Position is proposed:

Management of Bush Fire Brigades

1. The Association advocates that the State Government must provide for:
 - a) A clear pathway for Local Governments to transfer responsibility for the management of Bush Fire Brigades to the State Government when ongoing management is beyond the capacity, capability and resources of the Local Government;
 - b) The co-design of a suite of relevant guidelines and materials to assist those Local Governments that manage Bush Fire Brigades;
 - c) Mandatory and minimum training requirements for Bush Fire Brigade volunteers supported by a universally accessible training program managed by the Department of Fire and Emergency Services (DFES); and
 - d) The recognition of prior learning, experience and competency of Bush Fire Brigade volunteers.
2. That a Working Group comprising representatives of WALGA and DFES be established to develop a process and timeline for the transfer of responsibility for Bush Fire Brigades in accordance with 1(a).
3. Where management of Bush Fire Brigades is transferred to DFES in accordance with 1(a), DFES should be resourced to undertake the additional responsibility.

How to Provide a Response to this Paper and Proposed Position

WALGA strongly encourages all Local Governments, and particularly those with responsibility for managing Bush Fire Brigades to provide a response to this Paper and the proposed Advocacy Position. Council endorsed responses are preferred but not essential.

The following questions are provided for Local Governments to consider:

1. Does your Local Government manage BFBs?
2. Does your Local Government support the proposed Advocacy Position on arrangements for the management of Bush Fire Brigades? Why or why not?
3. Does your Local Government have any further suggestions or changes to the proposed Advocacy Position?
4. For Local Governments that manage BFBs, is your Local Government's preference to continue to manage BFBs or to transfer responsibility to the State Government?
5. Is your response endorsed by Council? If so, please include the Council paper and resolution.
6. Do you have any further comments to make?

Responses can be provided by way of written submission or by completion of the online [survey](#).

Please provide written submissions by **5pm Friday 8 July 2022** to em@walga.asn.au (Subject line: Bush Fire Brigade Advocacy Position).

WALGA will review the feedback received and prepare a report for consideration by WALGA Zones and State Council in September 2022.

APPENDIX ONE - Proposed Emergency Management Advocacy Position Statements

(Positions to be considered at July 2022 State Council Meeting)

8 Emergency Management

Local Governments in Western Australia play a significant role in emergency management. Both Commonwealth and State Government policy identify Local Government as a key player in community disaster resilience, preparedness and response. Local Governments however face a few challenges in addressing their emergency management responsibilities, and these challenges differ greatly across the State.

8.1 Emergency Management Principles

1. The State Government bears fundamental responsibility for emergency management and has the role of providing strategic guidance, support and services for emergency management activities in Western Australia.
2. The State Government should provide financial and resourcing support as necessary to enable Local Governments to adequately deliver their extensive emergency management roles and responsibilities under the State Emergency Management Framework.
3. The Local Government Sector should be engaged as a partner in policy and legislative reviews that impact Local Government emergency management roles and responsibilities.

8.2 State Emergency Management Framework

Local Governments are supported to undertake their emergency management responsibilities by a simple and streamlined State Emergency Management Framework with the primary objectives of:

1. Protecting people, the economy, and the natural environment from disasters;
2. Supporting communities in preventing, preparing for, responding to and recovering from emergencies;
3. Clearly outlining roles, responsibilities and accountabilities for Local Government and other emergency management stakeholders;
4. Scalability and adaptability that supports Local Governments of varied capacity and capability; and
5. Supporting agency interoperability through common systems and approaches to key activities including data management, communications, and hazard management.

8.3 Sustainable Grant Funding Model for Emergency Management

Local Government should be empowered to discharge its emergency management responsibilities through sustainable grant funding models that support a shared responsibility and all hazards approach to prevention, preparedness, response and recovery from natural disasters. A sustainable grant funding model for Local Government emergency management:

1. empowers Local Governments to undertake proactive approaches to preparedness, prevention, response and recovery;

2. supports the resilience of local communities through capacity-building activities and programs;
3. is responsive to the variations in Local Government resourcing and context
4. develops the skills, capacity and capability of the emergency management workforce; and
5. is consistent, flexible, timely, accessible, scalable, strategic and the guidance provided is comprehensive.

8.4 Consolidated Emergency Services Act

1. The Association advocates for the development of a Consolidated Emergency Services Act to provide a comprehensive and contemporary legislative framework to support the effective delivery of emergency services in Western Australia. The Legislation should clearly define the roles and responsibilities of all emergency management stakeholders including Local Government.
2. The Local Government sector seeks ongoing engagement in the scoping and co-design of the Act and associated Regulations and supporting materials such as Guidelines and fact sheets.
3. The Association advocates for DFES to undertake a full costing analysis of the new Act and to provide to Local Government details of the cost implications prior to the release of any Exposure Draft Bill.
4. Any new or increased responsibilities placed on Local Government by the Consolidated Emergency Services Act must be accompanied by funding and resource support to enable Local Governments to adequately discharge those responsibilities.
5. The Association recognises that in addition to the Consolidated Emergency Services Act, the Regulations and other supporting materials that are developed to support it provide a key resource for Local Governments in understanding and discharging their legislative obligations.
6. The Association advocates for the Act to provide clear guidelines for the process for transferring responsibility for bushfire incident response from Local Government to DFES.

8.5 Resource Sharing

Local Governments and the Association support resource sharing across the Local Government Sector for the purpose of emergency management, to support Local Governments to undertake effective and timely response and recovery to emergencies as well as conduct business as usual. The Association will endeavour to facilitate support to the sector in undertaking resource sharing arrangements.

8.6 Lessons Learnt Management

The Association advocates for the implementation of a transparent and contemporary assurance framework for emergency management lessons management overseen by the State Emergency Management Committee. Findings from inquiries and reviews, and progress on implementation of recommendations, should be publicly reported regularly and consistently.

8.7 Emergency Services Levy

Local Government requests the implementation of the recommendations from the 2017 Economic Regulation Authority (ERA) Review of the Emergency Services Levy, which supported increased transparency and accountability in the administration and distribution of the ESL through:

1. Expansion of the ESL to fund Local Government emergency management activities across prevention, preparedness and response.
2. Administration of the ESL by an independent organisation that is funded through consolidated revenue, with regular independent reviews of expenditure and assessment of the effectiveness of ESL funding expenditure to support prevention, preparedness and response activities.
3. The ESL administration fee should recompense Local Governments for the complete cost of administering the ESL.
4. Public disclosure of the allocation and expenditure of the ESL.
5. Public disclosure by the State Government on the progress of implementation of each of the ERA Review recommendations.
6. A review of the role, responsibilities and reporting arrangements of the Community Emergency Services Manager (CESM) Program.

8.8 Local Government Grants Scheme (LGGS)

Local Government supports:

1. A full, independent review of the LGGS to investigate and analyse how ESL funds are allocated to Local Government via the LGGS;
2. A redesign of the LGGS to remove the ineligible and eligible list and create a sustainable, modern, equitable grants program that funds Local Government emergency management activities across prevention, preparedness and response
3. An audit of existing buildings, facilities, appliances, vehicles, and major items of equipment for both Local Government Volunteer Bushfire Brigades (BFB) and State Emergency Services (SES) to inform the preparation of a Comprehensive Asset Management Plan and to guide future funding requests;
4. in the interim, an immediately increase in the quantum of State Government funding to enable the provision of funding of operating and capital grant applications in full, to provide all resources necessary for the safe and efficient operation of Local Government Bushfire Brigades, in accordance with obligations of the Work Health and Safety 2020 legislation.

8.9 Expansion of the Community Emergency Services Manager (CESM) Program

That the Association advocates for an expansion of the Community Emergency Service Manager (CESM) Program, as follows:

1. All Local Governments should have the option of participating in the CESM Program.
2. The full cost of the CESM Program should be funded through the Emergency Services Levy.

8.10 Management of Bush Fire Brigades

To be developed.



To: All Local Governments **From:** Susie Moir, Resilient Communities Policy Manager

Date: 20 May 2022

Reference: 05-024-02-0059SM **Priority:** High

Subject: Proposed Advocacy Position on Arrangements for Management of Volunteer Bushfire Brigades

Operational Area:	CEO, Emergency Management
Key Issues:	<ul style="list-style-type: none">The Association is consulting the Local Government sector on a proposed Advocacy Position on the arrangements for management of volunteer Bush Fire Brigades.Responses to the proposed Advocacy Position Paper are requested by 8 July 2022.Sector feedback will inform a final position to be considered by WALGA State Council in September 2022.
Action Required:	<ul style="list-style-type: none">Local Governments are encouraged to provide a written response or submit a response through the survey.A formal Council resolution will assist the Association understand the sentiment of the sector.

Background

Western Australian Local Governments have extensive roles and responsibilities embedded in the State Emergency Management Framework across the emergency management spectrum of prevention, preparedness, response, and recovery. Under the *Bush Fires Act 1954*, Local Governments have responsibility for bushfire and the management of volunteer Bush Fire Brigades (BFBs). 111 Local Governments manage 563 BFBs involving approximately 20,000 volunteers.

As part of WALGA's 2021 Emergency Management Survey, Local Governments were asked about their level of satisfaction with current arrangements for managing BFBs. 92 Local Governments (69 of which manage BFBs) provided the following feedback:

- 93% were not wholly satisfied with the current arrangements for the management of BFBs; and
- 51% expressed that their Local Government does not support the requirements for Local Governments to manage BFBs.

The State Government is currently drafting the *Consolidated Emergency Services Act (CES Act)*, which consolidates the *Fire Brigades Act 1942*, *Bush Fires Act 1954* and *Fire and Emergency Services Act 1998* into a single piece of legislation, anticipated to be released as a Green Bill for consultation in early 2023.

The introduction of the *Work Health and Safety Act 2020* has also shone a spotlight on Local Government responsibilities for managing volunteer BFBs.

Comment

The development of the CES Act represents a important and timely opportunity for the sector to determine its position on the management of volunteer BFBs. An endorsed advocacy position will guide the Association in its engagement with the State Government on this issue.

WALGA has prepared the attached proposed Advocacy Position for the sector's consideration.

An six week period for sector consultation is designed to enable Local Governments to engage with relevant stakeholders, including volunteers, and for Councils to consider their position. Feedback on the proposed position will be reviewed and inform a final position to be considered by WALGA State Council in September 2022.

Further information

Please contact WALGA's Resilient Communities Policy Manager, Susie Moir smoir@walga.asn.au or 9213 2058.



Understanding WHS Obligations for Bushfire Volunteers

A practical guide to assist local government
leaders meet their obligations

CONTENTS

UNDERSTANDING WHS OBLIGATIONS FOR BUSHFIRE VOLUNTEERS	1
INTRODUCTION.....	3
1 KEY WORK HEALTH AND SAFETY TERMS	4
1.1 What is Work Health and Safety	4
1.2 Duties under WHS	5
1.3 Activities covered by WHS.....	7
1.4 What is a duty of care.....	7
1.5 What is reasonable instruction	8
1.6 What is reasonably practicable	8
2 CORE VOLUNTEER REQUIREMENTS	9
2.1 A safe and healthy workplace	9
2.2 Consultation arrangements.....	12
2.3 Communication arrangements.....	13
2.4 Training and instruction arrangements.....	14
2.5 Provision of Personal Protective Equipment (PPE)	15
2.6 Private equipment.....	15
2.7 Facility considerations	15
3 INCIDENT RESPONSE CONSIDERATIONS.....	17
3.1 A notifiable incident	17
3.2 Injury management	17
3.3 Public Liability.....	18
3.4 Supervision	18
3.5 Bullying, harassment, discrimination and equal opportunity	19
3.6 Issue resolution	20
3.7 Prosecution.....	20
3.8 Support.....	20
4 RESOURCES.....	21
4.1 An organisational work health and safety system checklist	21
4.2 A risk assessment	23
4.3 A facility inspection checklist	24

INTRODUCTION

With the introduction of the *Workplace Health and Safety Act 2020* (WHS Act), there are changes to the workplace health and safety laws in Western Australia.

This guide has been developed to support local governments provide and maintain a workplace free from physical and psychological hazards. This guide provides advice about operational hazards and the processes local governments can adopt in order to comply with the WHS Act with respect to the volunteer bushfire brigades (BFB) they manage and who work under their control.

Members should remember that if they already have good risk management and safety practices in place the legislative changes in the WHS Act will have minimal impact on day to day operations. The WHS Act has further formalised the safety responsibilities of employer's which were in some respects implied but not explicitly stated in the previous occupational health and safety legislation.



1 KEY WORK HEALTH AND SAFETY TERMS

This section provides an overview of the key WHS terms as they apply to volunteer BFBs.

1.1 What is Work Health and Safety

The WHS Act applies to all workplaces (both private and government operations) within the natural jurisdiction of Western Australia. The WHS Act provides a framework to protect the health, safety and welfare of both those persons undertaking work and those persons who might be affected by that work.

1.1.1 PCBU – Person Conducting a Business or Undertaking

The concept of a **Person Conducting a Business or Undertaking (PCBU)** replaces the term ‘employer’ in the WHS Act. Workers are not considered **PCBU**’s.

- A **PCBU** has a duty of care to keep workers and others safe “as far as reasonably practicable”.
- Local governments are defined as a **PCBU**.

1.1.2 Key features relating to volunteering

- The concept of the ‘person conducting a business or undertaking’ (**PCBU**) is intended to capture a broad range of contemporary workplace relationships including volunteering activities.
- A primary duty of care requires **PCBUs** to, so far as is reasonably practicable, ensure the health and safety of workers and others who may be affected by the carrying out of work.
- Duties of care apply to persons who influence the way work is carried out, as well as the integrity of products used for work, including providers of WHS services.
- It is a requirement that ‘officers’ exercise ‘due diligence’ to ensure compliance with the WHS Act.
- Reporting requirements apply for ‘notifiable incidents’ such as the serious illness, injury or death of persons and dangerous incidents arising out of the conduct of a business or undertaking
- Consultation on WHS matters with workers is a requirement under the WHS Act
- Procedures for the resolution of WHS issues.

1.2 Duties under WHS

The **PCBU** (*local government*) has a primary duty of care to ensure, as far as is reasonably practicable, that the health and safety of persons is not put at risk from work conducted as part of the business or undertaking.

1.2.1 Volunteer organisation or association

An organisation will have WHS duties as a person conducting a business or undertaking (**PCBU**) under the WHS Act where one or more persons are employed to carry out work for the organisation, including paid and unpaid positions. A person may be employed by either:

- The organisation itself
- The organisation's members, whether alone or jointly with any other members.

Example:

- Bushfire brigades engaged under the relevant local government

A volunteer association is a group of volunteers working together for one or more community purposes and none of the volunteers, either separately or jointly, or the association itself employ a person to carry out any work for the association.

The WHS Act does not apply if the organisation is a 'volunteer association' (whether incorporated or unincorporated).

Example:

- A social sporting group formed and engaged by individual volunteers

1.2.2 Volunteers

Under the WHS Act a volunteer is a person who works for an organisation without payment or financial reward (but who may receive out of pocket expenses). The law also recognises volunteers as workers. Meaning the **PCBU** must provide the same protections to its volunteers as it does to its paid workers.

1.2.3 Spontaneous volunteers

A spontaneous volunteer is usually not associated with an existing bushfire brigade, but more likely to be a member of the community offering assistance in response to an event. These individuals may not have been screened or trained in accordance with procedures.

The management of spontaneous volunteers is a joint responsibility between all stakeholders. It should also be recognised that the majority of public offers of assistance come during the recovery phase of an emergency, which the local government manages on behalf of its community, and which is a positive step in the recovery process.

The *Bush Fires Act (1954)* states that the Chief Bushfire Control Officer can:

“Employ a person or use the voluntary services of a person to assist him, subject to his directions in the exercise of any of the foregoing powers.”

In taking that action, responsibility should be assessed in regards to the suitability of each individual for the task to be performed. All stakeholders – the organisations, government agencies and authorities – have a mutual duty of care.

The following principles should be **APPLIED BY ALL** organisations, authorities, government agencies, and local governments when utilising spontaneous volunteers.

- Spontaneous volunteers should be added to the volunteer register and sign in and out after each shift.
- Spontaneous volunteers should only be assigned generalist tasks.
- Spontaneous volunteers should **NOT** be deployed to high risk activities.
- Spontaneous volunteer activities are supervised.
- Spontaneous volunteers are provided appropriate information to ensure activities are carried out safely.
- Provide adequate and appropriate personal protective equipment and personal protective clothing.

Your **local emergency management arrangements** will assist in identifying the various volunteering organisations that as a local government you may engage with.

1.2.4 Officer

Officers are those individuals within an organisation who make (or participate in) decisions that affect the whole or a substantial part of the organisation, such as the Chief Executive Officer.

It's important to note that whether a person is a paid employee or a volunteer is inconsequential for the purpose of determining if they are an officer under the WHS Act.

An officer is someone who influences the organisation as a whole, rather than a particular function performed by the individual. This will determine if you have organisation-wide, strategic responsibility, as opposed to operational responsibility.

Factors include whether the role has the ability to recruit, commit funds, and determine the reporting structure, involvement in, or developed policy, process or procedures relevant to the operations undertaken.

1.3 Activities covered by WHS

Only work activities are covered by the WHS Act. Activities that are purely domestic, social, recreational or private in nature are not included. Whether an activity is considered work may depend on specific circumstances. The following criteria may help determine if an activity is work under the WHS Act:

- The activity involves physical or mental effort or the application of particular skills for the benefit of someone else or for themselves (if self-employed), whether or not for profit or payment
- Activities where someone would ordinarily be paid may be considered work
- Activities that are part of an ongoing process or project may be work if some of the activities are paid
- An activity may be more likely to be work if someone is managed or controlled by another person when they undertake that activity
- Formal, structured or complex arrangements may be considered to be work more than ad hoc or unorganised activities.

The activity may be work even though one or more of the criteria are absent.

Examples of activities that may be considered work include:

- Maintenance of the things needed to enable an organisation to carry out its work. For example, maintenance work on a shed where a volunteer group meets.
- Activities that people are ordinarily paid to do but are carried out for the organisation by a volunteer. For example, driving plant and equipment to service centres.
- Activities that the organisation has a great degree of direction or influence over.
- Activities carried out in accordance with formal or structured arrangements.

1.4 What is a duty of care

One principle that has evolved from common law is the concept of duty of care, which imposes a duty to ensure we do not cause a reasonably foreseeable risk of harm to others for whom we owe a duty. Breach of duty of care can result in a finding of liability (e.g. negligence) which can have significant financial and reputational consequences for local governments.

Under the WHS Act, the primary duty of care relating to S.19 states a PCBU must ensure, so far as is reasonably practicable –

- (1) the health and safety of
 - (a) workers engaged, or caused to be engaged, by the person; and
 - (b) workers whose activities in carrying out work are influenced or directed by the person while the workers are at work in the business or undertaking.
- (2) that other persons are not put at risk from work carried out as part of the conduct of the business or undertaking

- (3) A person conducting a business or undertaking must ensure:
- (a) The provision and maintenance of a work environment without risks to health and safety
 - (b) The provision and maintenance of safe plant and structures
 - (c) The provision and maintenance of safe systems of work
 - (d) The safe use, handling and storage of plant, structures and substances
 - (e) Adequate facilities for the welfare of workers in carrying out work for the business or undertaking, including ensuring access to those facilities
 - (f) Any information, training, instruction or supervision that is necessary to protect all persons from risks to their health and safety arising from work carried out
 - (g) That the health of workers and the conditions at the workplace are monitored for the purpose of preventing illness or injury of workers arising from the conduct of the business or undertaking

To comply a person must exercise their duty of care over others where reasonably able to do so.

1.5 What is reasonable instruction

While at work, a worker must comply, so far as reasonably able, with any reasonable instruction that is given and cooperate with any reasonable policy or procedure of the PCBU relating to the health or safety at the workplace that has been notified to workers.

1.6 What is reasonably practicable

As per the WHS Act, ensuring health and safety means doing what is, or was reasonably able to be done at a particular time, taking into account all relevant matters, including:

- (a) the likelihood of the hazard or the risk concerned occurring
- (b) the degree of harm that might result from the hazard or the risk
- (c) what the person concerned knows, or ought reasonably to know, about
 - i. the hazard or the risk
 - ii. ways of eliminating or minimising the risk
 - iii. the availability and suitability of ways to eliminate or minimise the risk
- (d) the cost associated, including whether the cost is grossly disproportionate to the risk.

2 CORE VOLUNTEER REQUIREMENTS

A **volunteer organisation** has duties as a PCBU under the WHS Act and must ensure, so far as is reasonably practicable, the health and safety of all of its workers, including volunteers. This means that the organisation must provide the same protections to its volunteers as it does to its paid workers. The protection covers the physical safety and mental health of all workers, including volunteers.

2.1 A safe and healthy workplace

The legislation does not set out specific steps to show what is considered 'reasonably practicable' in ensuring the safety and health of their volunteers. Therefore, it will depend on the circumstances of each case.

Generally, to ensure the safety of volunteers' activities, it would be reasonable and practicable for a local government to:

- Ensure volunteer work areas are free of hazards
- Ensure that volunteers understand their duties and responsibilities
- Develop policies and procedures governing on-boarding, screening, training guides and supervision of volunteers
- Allocate sufficient resources to ensure the effective management and development of volunteer programs
- Communicate and consult with volunteers on occupational safety and health issues
- Induct and train/instruct volunteers in their tasks

2.1.1 Identify foreseeable hazards

This is the process of finding, recognising, and describing risks. In conjunction with relevant stakeholders, answer the following questions and capture the information within a risk register:

- What can go wrong? What are areas of uncertainty? (Risk description)
- How may this risk eventuate? (Potential causes)
- What are the current measurable activities that mitigate this risk from eventuating? (Controls)
- What are the potential consequential outcomes of the risk eventuating? (Consequences)

Unidentified risks can cause major losses through missed opportunities or adverse events occurring.

Bushfire volunteers in Australian local government areas are likely to be exposed to the following hazards:

- Bushfire
- Building/industrial fire
- Cyclone
- Storm
- Flood
- Tsunami (coastal inundation/river system flooding)
- Earthquake
- Hazardous materials
- Car accidents and traffic management

These hazards present numerous risks and can include:

- Exposure to high heat
- Fume inhalation
- Carbon monoxide exposure
- Dehydration
- Reduced visibility
- Damage to structures

2.1.2 Assess the activity (analysis and evaluation)

Use a risk assessment to assess each hazard, the likelihood and consequence of the potential risk occurring, and the suitability of current controls.

- Are you doing what is reasonably expected of you under the circumstances? (Existing control ratings)
- Determine relevant consequence categories and rate how bad it could be if the risk eventuated with existing controls in place (consequence)
- Determine how likely it is that that the risk will eventuate to the determined level of consequence with existing controls in place (likelihood)
- Combine the measures of consequence and likelihood, determine the risk rating (level of risk)

The risk owner is to verify the risk analysis and make a risk acceptance decision based on:

- Controls assurance (i.e. are the existing controls in use, effective, documented, up to date and relevant)
- Level of risk
- Risk acceptance criteria
- Risk versus reward/opportunity

The risk acceptance decision needs to be documented and acceptable risks are then subject to the monitor and review process.

2.1.3 Minimise impacts

There are generally two requirements following the assessment of risks.

1. In all cases, regardless of the residual risk rating, controls rated 'inadequate' must have a treatment plan (action) to improve the control effectiveness to at least 'adequate'.
2. If the residual risk rating is high or extreme, treatment plans must be implemented to either:
 - Reduce the consequence of the risk materialising
 - Reduce the likelihood of occurrence
 - Improve the effectiveness of the overall controls to 'effective' and obtain delegated approval to accept the risk as per the risk acceptance criteria

2.1.4 Review practices and lessons learnt

Risk owners are to review their acceptable risks on a regular reoccurring basis or if triggered by one of the following:

- Changes to the context
- A treatment is implemented
- An incident occurs
- Audit or regulator findings

Risk owners are to monitor the status of risk treatment implementation and report on actions, as required.

2.2 Consultation arrangements

Participation in consultative meetings should occur with volunteers and identified stakeholders to provide up to date safety and health information. This consultation should also facilitate planning or reviewing tasks and activities, as well as building comradery amongst the brigades and resolving operational issues – a fundamental component of volunteering together safely.

Examples of Consultative arrangements include but not limited to:

- Bushfire advisory committee meetings
- Bushfire advisory group meetings
- Bushfire sector command meetings
- Brigade meetings
- Brigade debriefing sessions
- Local emergency management committees

2.3 Communication arrangements

Communication is essential to ensure volunteers are given consistent and up to date information as it relates to planned tasks and activities being undertaken, as well as ensuring brigades are able to operate in an effective manner.

It is also vital to have multiple means of maintaining effective communication when associated with remote or isolated work, due to the nature of work, time or location, as well as in an emergency situation.

Briefing formats may follow the Australasian Inter-service Incident Management System (AIIMS) 'SMEACS' Incident Planning & Briefing Aid:

- Situation
- Mission
- Execution
- Administration and logistics
- Command and communication
- Safety

Examples of communication arrangements include:

- Bushfire advisory committee meeting
- Bushfire advisory group meeting
- Bushfire sector command meeting
- Brigade meeting
- Training day
- Briefing schedule (initial deployment/situation update/delegation briefing/handover)
- Information briefing

2.3.1 Informing diverse parties

When delivering information, training or instruction it must be provided in a way that is readily understandable by any person to whom it is provided.

It is vital to ensure that the information, training and instruction provided is suitable and adequate for the nature of work undertaken in each role, the associated risks, and control measures available.

This should be considered in relation to an individual's ability to perform the inherent requirements and responsibilities of the role, suitable adjustments, or alternative roles.

2.4 Training and instruction arrangements

In relation to the *National Standards for Involving Volunteers in Not-for-Profit Organisations*, the intent is for the organisation to establish a systematic program that provides needs-based training to volunteers. This is achieved by training volunteers in both job performance skills and organisational development skills such as teamwork, communication and problem solving.

Training for each role requires a different level of training, varying from online course, formal training sessions or exercises to weekly or fortnightly participation at your brigade, group or unit.

The specific requirements where a PCBU involves volunteers shall clearly specify and control the work of volunteers and ensure that their place of work is conducive to preserving their health, safety, general wellbeing, and will focus on:

- Developing policies and procedures that detail the organisation's approach to volunteer training and development
- Allocating responsibility and resources to training and development
- Providing training to address identified needs
- Monitoring the work of volunteers and providing appropriate feedback
- Recognising, formally and informally, the contribution made by volunteers to the organisation and to the community

With relation to the WHS Act, the PCBU must ensure that information, training and instruction provided to a worker is suitable and adequate having regard to:

- The nature of the work carried out by the worker
- The nature of the risks associated with the work at the time the information, training or instruction is provided
- The control measures implemented
- Information, training and instruction is provided in a way that is readily understandable by any person to whom it is provided
- Records of training is kept for a period of seven years in relation to hazardous chemicals to which the worker is likely exposed

2.5 Provision of Personal Protective Equipment (PPE)

Where PPE is identified as a control for mitigating risks to the hazards volunteers will likely be exposed to, as a direct result of the nature of their work, is required to be provided to workers (unless the personal protective equipment has been provided by another PCBU).

There is no need to double up in the provision of PPE. However when directing the work to be undertaken, the PPE must be suitable – including size, fit, and being reasonably comfortable for the worker to use and wear. It should be maintained, repaired or replaced as required to ensure it is clean, hygienic and in good working order for use.

Adequate supervision or readiness checks should incorporate assessing the appropriate use and wear of equipment provided and having available provisions for replacements.

2.6 Private equipment

The *Bushfire Act 1954* states that at different times private equipment may be used *“in connection with a bush fire, which is necessary for, directed towards, or incidental to, the control or suppression of the fire or the prevention of spread of the fire, or in any other way necessarily associated with the fire including travelling and support services, such as meals and communication systems”*.

It is important to communicate clearly when an individual is operating of their own accord, or commences operating as a volunteer. This means that when emergency services are activated, the personnel, plant, and equipment being provided (even if privately owned) are under the control of the local government. Therefore, the provision of reasonable information, training, and instruction needs to be established at that time (prior to engaging the equipment), through reasonable means to ensure the health and safety of involved parties.

2.7 Facility considerations

There are over 540 listed brigades (as of 2022) which all have individual workplace facilities. These facilities are required to be maintained so as to allow for persons to enter, exit and move about without risk to health and safety in both normal working conditions and in an emergency situation.

Considerations must be made to how facilities are maintained to allow for work to be carried out, safe storage of plant and equipment, safe means of evacuation, appropriate ventilation, mitigating the extremes of heat or cold, and accessible facilities (toilets, drinking water, washing and eating facilities).

A workplace inspection tool can be a suitable way of ensuring these aspects are monitored and maintained in relation to the nature of hazards at the workplace, size, location and nature of the business undertakings.

2.7.1 Fire protection and firefighting equipment

If hazardous chemicals are stored, handled or used on site, emergency equipment must always be available for use in an emergency.

The PCBU is to ensure fire protection and firefighting equipment is properly installed, tested and maintained, and where unserviceable or inoperative alternatively managed and returned to full operation as soon as practicable.

2.7.2 Fuel and chemical storage

When chemicals are stored onsite, a risk assessment should be undertaken to identify what is required, including signage, bunding, traffic management, training, security, and readily accessible, up to date material safety data sheets (within 5 years).

2.7.3 Containing and managing spills

If safety equipment is required to control an identified risk in relation to using, handling or storing hazardous chemicals, safety equipment is to be provided, maintained and accessible at the workplace.

Spill kits are a common way of ensuring adequate provisions are available when storing or using hazardous chemicals on site.

3 INCIDENT RESPONSE CONSIDERATIONS

To ensure a consistent approach in managing the workplace and responding to a workplace incident or injury, it is important to apply your specific local government's processes. LGIS provides support in regard to reporting WHS hazards, reportable workplace incidents and diseases, injury management, and undertaking the relevant and required actions as soon as possible.

3.1 A notifiable incident

The Department of Mines, Industry Regulation and Safety requires work related deaths and certain types of injuries and diseases to be reported to WorkSafe. Failure to report could lead to prosecution. Reporting must be done by the relevant local government whenever these occur in connection with their business, and an internal process should be outlined within internal WHS documentation.

For example, a resource sharing arrangement or activity undertaken by multiple local governments where a notifiable incident occurs would require all parties to separately report the incident to WorkSafe. Assistance and support can be provided individually to each local government by LGIS.

3.2 Injury management

Injury management is a workplace managed process to facilitate a quick and safe return to work following a workplace injury. Injury management is essentially about effective communication and coordination between claims and rehabilitation practitioners, employers, workers and medical practitioners, to ensure that injured workers are provided support and assistance to return to the workplace.

The LGIS injury management team can provide a variety of proactive injury management solutions to ensure you are meeting your legislative responsibilities and providing the highest standard of injury management support for injured workers within the sector.

To assist workers with gaining a greater understanding of the injury management process we encourage our members to make the [LGIS Injury Management and the Worker \(pdf\)](#) document readily available to a worker after an injury.



3.3 Public Liability

To enable LGIS to act on your behalf after receiving notification of an incident where a member of public has suffered an injury, financial loss or property damage which they claim you are responsible for, we require the following from the third party:

A written request (letter/fax/email) request addressed to the PCBU (referred to as a 'letter of demand') that includes:

- Details of the circumstances of the incident
- Time and date of the incident
- The address or location of the incident
- A specific request asking you to compensate or reimburse the third party for any loss suffered

Please note:

- The third party should not be encouraged to submit a letter of demand if they have not already indicated that they wish to be compensated in some way. If you are notified of an incident and the person does not indicate that they want to be compensated, you may wish to submit a 'report only' claim - this is denoted on the front page of the [Public Liability claim form \(pdf\)](#) or [Professional Indemnity claim form \(pdf\)](#). This will advise us of the incident in case any claim is submitted in the future.
- We recommend that you do not ask the third party to supply quotes or invoices, as some claimants assume they will automatically be reimbursed. In the event that LGIS Liability decides to settle a claim, we will request quotes/invoices prior to settlement negotiations.
- No 'forms' of any kind (e.g. Incident Report Form etc.) can be used in place of a 'letter of demand'.

What we require from you:

- Completed [Public Liability claim form \(pdf\)](#) or [Professional Indemnity \(pdf\)](#) claims form (pages 1 and/or 2) and signed (page 4)
- Page 3 of the [Public Liability claim form \(pdf\)](#) to be completed and signed by the relevant overseer/engineer/supervisor
- The third party's original letter of demand (or a copy)

The following information, if available, should be provided:

- A report describing all relevant details of the incident from your perspective
- Photographs of the incident site / alleged hazard, preferably before any hazards are repaired
- Copies of any relevant documentation related to the incident.

3.4 Supervision

Supervision of the volunteer is the same as for a worker; performance management should be structured and allow for two-way communication. Volunteers who are not performing should be

offered training and other appropriate forms of support. All performance management meetings and decisions should be documented. Volunteers should follow the grievance and complaints policy and procedure as adopted by the local government.

3.5 Bullying, harassment, discrimination and equal opportunity

3.5.1 Bullying or harassment

To ensure not only the physical wellbeing of the volunteers but also their mental wellbeing, the workplace must take all reasonable steps to ensure volunteers are not exposed to workplace bullying, harassment and discrimination.

Bullying in the workplace is repeated, unreasonable or inappropriate behaviour directed towards a worker, or a group of workers, that creates a risk to the individual's health, safety and wellbeing.

Volunteers also have a duty under the WHS Act to ensure that their actions do not constitute a risk to their own health and safety or that of other people in the workplace.

The organisation needs to clearly communicate that bullying will not be tolerated and provide information to volunteers about the process and who they can contact if they are bullied in the workplace. This may incorporate communication within the induction, training process, or brigade communication arrangements on the local government's code of conduct.

3.5.2 Discrimination

It is sometimes a difficult decision for the coordinator of volunteers to reject a volunteer as unsuitable for a chosen volunteer position. The local government is subject to the same anti-discrimination legislation as applies to selecting paid staff.

It is therefore imperative that the local government has clearly defined position descriptions and selection criteria documented. The interview process should also be documented in case the rejection is challenged. Ideally, the reason for the rejection should be explained to the volunteer and if appropriate alternative positions should be offered. The local government needs to demonstrate that they have been reasonable and practical in their assessment of the volunteer.

3.5.3 Equal Opportunity

It is recommended that local governments have regard for equal opportunity objectives when developing policies and procedures governing recruitment, screening, training and supervision of volunteers.

3.6 Issue resolution

Teamwork is fundamental to achieving common goals. When issues arrive it is vital they are managed effectively in a proactive manner. To support this, following your health and safety resolution process or procedure for managing consolation and communication is one tool for ensuring action is taken, and the opportunity for action to be taken afforded to the relevant stakeholders.

3.7 Prosecution

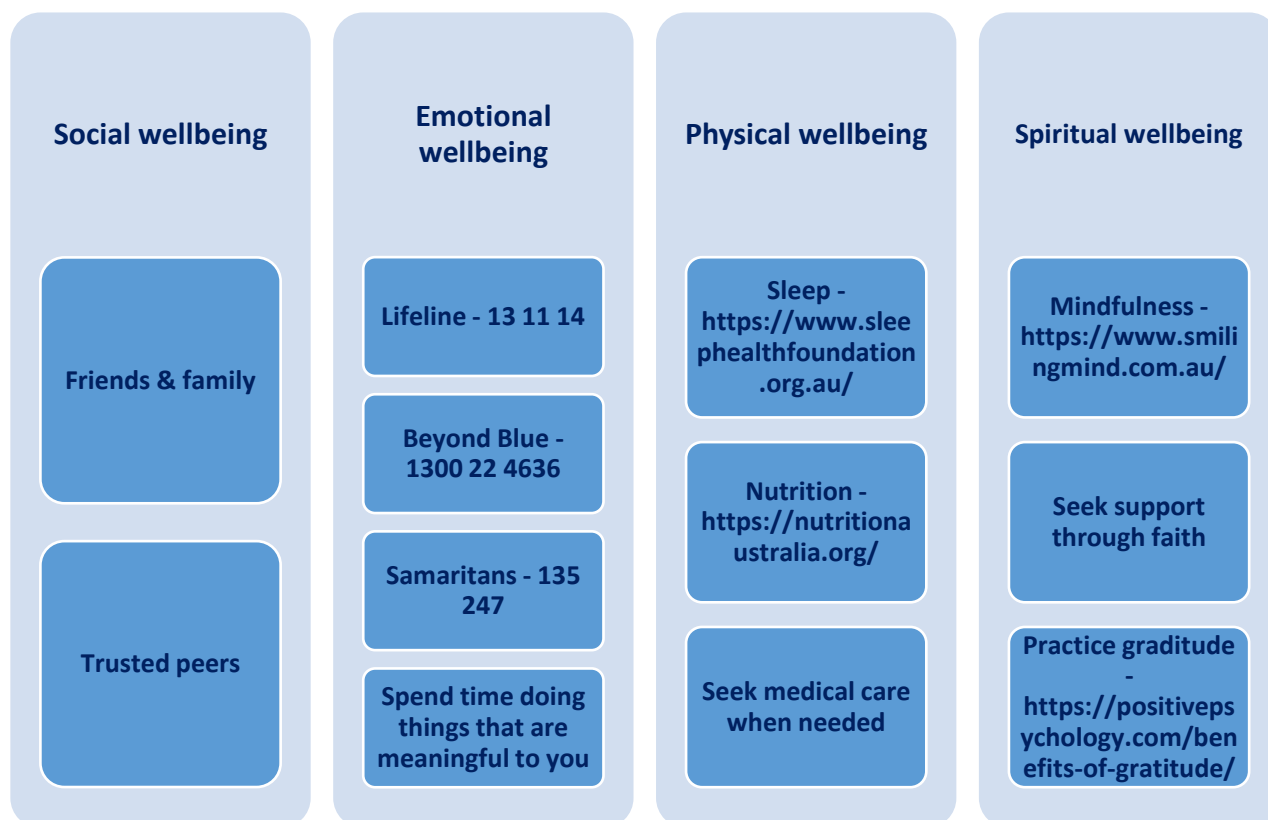
If volunteers comply with the health and safety duties when carrying out work for the organisation, they cannot be fined or prosecuted under the WHS Act.

3.8 Support

The nature of this type of activity can present significant emotional demands for bushfire volunteers. Emotional demands can be defined as work/situations that are emotionally challenging, due to high emotional involvement, or having to regularly disguise emotion in the moment.

Demands can arise through working within your own community, coping with the loss of life (human and animal), defending your own properties and/or properties of other families, viewing the loss of livelihoods, and being confronted with life threatening situations.

When emotional demands are coupled with additional demands, this can lead to adverse outcomes on health and wellbeing, such as psychological strain, burnout, and issues with sleeping. So, it's really important that volunteers are proactive in managing their own mental health and wellbeing, to be in the best frame of mind when responding to events. Support is available and may include:



4 RESOURCES

The below templates may assist in the implementation and maintenance of volunteer arrangements.

4.1 An organisational work health and safety system checklist

DOCUMENTATION	N/A	YES	NO
Work health and safety plan and policy			
Risk register (foreseeable high risk tasks/activities)			
Documented safe operating procedures			
Contractor OSH management process. Contractors provide Certificates of Currency for Public Liability, Professional Indemnity, Motor Vehicle and Workers' Compensation. Subcontractors also produce Certificates of Currency when required.			
Incident/injury/hazard/near miss management procedure/form			
Electrical isolation procedure/form			
Site security plan (arrangements)			
Site traffic management plan			
Establish roles and responsibilities			
DOCUMENTATION	N/A	YES	NO
Site inductions			
PPE policy/procedure and register			
Emergency preparedness and response plans including site maps/muster point/s, first aiders and emergency contacts			
Plant and equipment risk assessments			
Plant maintenance records			
Work health and safety policy			
Fitness for work policy			
Workers' compensation and rehabilitation policy			
Issue resolution process			
Material safety data sheet register			
Activation/call out/permit to work procedure			
TRAINING	N/A	YES	NO
Training competencies and licenses documented and recorded			
Emergency preparedness and response training provided (fire warden/s, chief fire warden, first aiders and firefighting equipment)			
Health and safety representative training			
List of Inducted workers			

SIGNAGE		N/A	YES	NO
Hazardous substances				
Designated speed restrictions				
Plant/pedestrian directional movement requirements				
Potable water				
Emergency exit signs				
PLANT & EQUIPMENT		N/A	YES	NO
Maintained first aid kits				
Personal protective equipment				
Hazardous substances banded in designated secure area				
Installed and maintained firefighting equipment				
Plant and equipment secure storage area				
Out of service and danger tags				
RCD's on electrical power boards and equipment				
Lockable electrical power boards				
Tagged (in date) electrical equipment				
ACTION PLAN ITEM	ACTION DATE	RESPONSIBLE PERSON/S		

4.2 A risk assessment

This risk assessment example is to be used in conjunction with your enterprise risk management framework and risk matrix.

STEP 1 BACKGROUND															
Directorate/department:															
Activity being assessed:															
STEP 2 DOCUMENTATION (Relevant legislation/standards/documentation)															
Is the activity/task/equipment or plant required to be registered				Yes <input type="checkbox"/>		No <input type="checkbox"/>		Is this involving new plant or equipment or impact other tasks?				Yes <input type="checkbox"/>		No <input type="checkbox"/>	
Are instruction manuals accessible?				Yes <input type="checkbox"/>		No <input type="checkbox"/>		Is a Safe Work Procedure or Safe Work Method Statement required?				Yes <input type="checkbox"/>		No <input type="checkbox"/>	
STEP 3 RISK ASSESSMENT (Use the Local Government Enterprise Risk Framework when assessing and controlling hazards)															
Activity/step/ process	Hazard description	Risk and potential impacts	Likelihood	Consequence	Risk rating	Priority	Description and evidence of controls/corrective actions	Date controls in place	Likelihood	Consequence	Residual risk rating	Effectiveness of the control in place	Responsible person	Additional controls or changes made	
1)															
2)															
3)															
4)															
5)															
6)															
Assessment conducted by:							Signature:					Date:			

4.3 A facility inspection checklist

DOCUMENTATION	N/A	YES	NO
Visible WHS Policy			
Incident/injury/hazard/near miss management procedure/form available			
Site evacuation plan and diagram available			
Brigade standard operating procedures available			
Issue resolution procedure available			
Material safety data sheets available			
PPE available			
Emergency contacts information available			
Out of service and danger tags			
SIGNAGE	N/A	YES	NO
Hazardous substances signage			
Designated speed and vehicle movement signage			
Emergency equipment and exit signs			
Potable water signage			
PLANT & EQUIPMENT	N/A	YES	NO
Access restricted to plant and equipment			
PPE in good working order, clean and hygienic for use			
Facilities clean and free from slip, trip, and fall hazards			
Hazardous substances banded in designated secure area			
Firefighting equipment tested and tagged			
Maintained first aid kits			
RCD's on electrical power boards and equipment			
Tagged (in date) electrical equipment and batteries isolated			
Facilities, plant and equipment operational, clean, hygienic and tidy			
Stored food and drinks in-date and not spoiled			
Plant and equipment in good working order and state of readiness			
ACTION PLAN ITEM	ACTION DATE		RESPONSIBLE PERSON/S

PROPRIETARY NATURE OF PROPOSAL

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SHIRE OF CORRIGIN

ANNUAL BUDGET

FOR THE YEAR ENDED 30 JUNE 2023

LOCAL GOVERNMENT ACT 1995

TABLE OF CONTENTS

Statement of Comprehensive Income by Nature or Type	2
Statement of Cash Flows	3
Rate Setting Statement	4
Index of Notes to the Budget	5

SHIRE'S VISION

Strengthening our Community now to grow and prosper into the future

SHIRE OF CORRIGIN
STATEMENT OF COMPREHENSIVE INCOME BY NATURE OR TYPE
FOR THE YEAR ENDED 30 JUNE 2023

	NOTE	2022/23 Budget	2021/22 Actual	2021/22 Budget
		\$	\$	\$
Revenue				
Rates	2(a)	2,839,634	2,722,103	2,730,415
Operating grants, subsidies and contributions	10	1,424,913	3,126,973	1,409,081
Fees and charges	14	769,902	854,548	694,792
Interest earnings	11(a)	106,231	21,452	41,660
Other revenue	11(b)	4,985,477	159,452	114,766
		10,126,157	6,884,528	4,990,714
Expenses				
Employee costs		(2,502,157)	(2,334,674)	(2,332,392)
Materials and contracts		(6,126,557)	(1,388,138)	(1,867,137)
Utility charges		(265,020)	(236,505)	(288,875)
Depreciation on non-current assets	6	(3,624,516)	(3,189,266)	(3,398,229)
Interest expenses	11(d)	(64,389)	(68,431)	(68,432)
Insurance expenses		(259,216)	(229,462)	(235,165)
Other expenditure		(170,109)	(462,419)	(159,278)
		(13,011,964)	(7,908,895)	(8,349,508)
		(2,885,807)	(1,024,367)	(3,358,794)
Non-operating grants, subsidies and contributions	10	3,814,138	3,081,296	4,343,146
Profit on asset disposals	5(b)	112,282	9,028	88,304
Loss on asset disposals	5(b)	(54,941)	(2,780)	(66,977)
		3,871,479	3,087,544	4,364,473
Net result for the period		985,672	2,063,177	1,005,679
Other comprehensive income				
<i>Items that will not be reclassified subsequently to profit or loss</i>				
Changes in asset revaluation surplus		0	0	0
Total other comprehensive income for the period		0	0	0
Total comprehensive income for the period		985,672	2,063,177	1,005,679

This statement is to be read in conjunction with the accompanying notes.

SHIRE OF CORRIGIN
STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED 30 JUNE 2023

	NOTE	2022/23 Budget	2021/22 Actual	2021/22 Budget
		\$	\$	\$
CASH FLOWS FROM OPERATING ACTIVITIES				
Receipts				
Rates		2,839,634	2,732,804	2,730,415
Operating grants, subsidies and contributions		1,424,913	2,968,977	1,409,081
Fees and charges		769,902	865,054	694,792
Interest received		106,231	21,452	41,660
Goods and services tax received		0	(7,043)	0
Other revenue		4,985,477	159,452	114,766
		10,126,157	6,740,696	4,990,714
Payments				
Employee costs		(2,502,157)	(2,260,461)	(2,332,392)
Materials and contracts		(6,126,557)	(1,473,679)	(1,530,650)
Utility charges		(265,020)	(236,505)	(288,875)
Interest expenses		(64,389)	(68,431)	(68,432)
Insurance paid		(259,216)	(229,462)	(235,165)
Other expenditure		(170,109)	(462,419)	(219,275)
		(9,387,448)	(4,805,170)	(4,674,789)
Net cash provided by (used in) operating activities	4	738,709	1,935,526	315,925
CASH FLOWS FROM INVESTING ACTIVITIES				
Payments for purchase of property, plant & equipment	5(a)	(1,584,550)	(1,060,174)	(2,102,821)
Payments for construction of infrastructure	5(a)	(4,710,973)	(3,535,710)	(5,126,934)
Non-operating grants, subsidies and contributions		3,814,138	3,081,296	4,141,580
Proceeds from sale of property, plant and equipment	5(b)	428,501	126,001	351,400
Net cash provided by (used in) investing activities		(2,052,884)	(1,388,587)	(2,736,775)
CASH FLOWS FROM FINANCING ACTIVITIES				
Repayment of borrowings	7(a)	(90,164)	(86,121)	(86,121)
Proceeds on disposal of financial assets at amortised cost - term deposits		0	3,051,023	0
Net cash provided by (used in) financing activities		(90,164)	2,964,902	(86,121)
Net increase (decrease) in cash held		(1,404,339)	3,511,839	(2,506,971)
Cash at beginning of year		6,701,524	3,189,685	6,258,612
Cash and cash equivalents at the end of the year	4	5,297,185	6,701,524	3,751,641

This statement is to be read in conjunction with the accompanying notes.

SHIRE OF CORRIGIN
RATE SETTING STATEMENT
FOR THE YEAR ENDED 30 JUNE 2023

	NOTE	2022/23 Budget	2021/22 Actual	2021/22 Budget
		\$	\$	\$
OPERATING ACTIVITIES				
Net current assets at start of financial year - surplus/(deficit)	3	980,910	574,085	597,236
		980,910	574,085	597,236
Revenue from operating activities (excluding rates)				
Operating grants, subsidies and contributions	10	1,424,913	3,126,973	1,409,081
Fees and charges	14	769,902	854,548	694,792
Interest earnings	11(a)	106,231	21,452	41,660
Other revenue	11(b)	4,985,477	159,452	114,766
Profit on asset disposals	5(b)	112,282	9,028	88,304
		7,398,805	4,171,453	2,348,603
Expenditure from operating activities				
Employee costs		(2,502,157)	(2,334,674)	(2,332,392)
Materials and contracts		(6,126,557)	(1,388,138)	(1,867,137)
Utility charges		(265,020)	(236,505)	(288,875)
Depreciation on non-current assets	6	(3,624,516)	(3,189,266)	(3,398,229)
Interest expenses	11(d)	(64,389)	(68,431)	(68,432)
Insurance expenses		(259,216)	(229,462)	(235,165)
Other expenditure		(170,109)	(462,419)	(159,278)
Loss on asset disposals	5(b)	(54,941)	(2,780)	(66,977)
		(13,066,905)	(7,911,675)	(8,416,485)
Non-cash amounts excluded from operating activities	3(b)	3,611,912	3,193,524	3,427,358
Amount attributable to operating activities		(1,075,278)	27,387	(2,043,288)
INVESTING ACTIVITIES				
Non-operating grants, subsidies and contributions	10	3,814,138	3,081,296	4,343,146
Payments for property, plant and equipment	5(a)	(1,584,550)	(1,060,174)	(2,102,821)
Payments for construction of infrastructure	5(a)	(4,710,973)	(3,535,710)	(5,126,934)
Proceeds from disposal of assets	5(b)	428,501	126,001	351,400
Amount attributable to investing activities		(2,052,884)	(1,388,587)	(2,535,209)
FINANCING ACTIVITIES				
Repayment of borrowings	7(a)	(90,164)	(86,121)	(86,121)
Transfers to cash backed reserves (restricted assets)	8(a)	(88,781)	(2,388,762)	(164,900)
Transfers from cash backed reserves (restricted assets)	8(a)	467,475	2,094,890	2,099,103
Amount attributable to financing activities		288,530	(379,993)	1,848,082
Budgeted deficiency before general rates		(2,839,632)	(1,741,193)	(2,730,415)
Estimated amount to be raised from general rates	2(a)	2,839,634	2,722,103	2,730,415
Net current assets at end of financial year - surplus/(deficit)	3	0	980,910	0

This statement is to be read in conjunction with the accompanying notes.

INDEX OF NOTES TO THE BUDGET

Note 1	Basis of Preparation	6
Note 2	Rates	9
Note 3	Net Current Assets	11
Note 4	Reconciliation of cash	14
Note 5	Fixed Assets	15
Note 6	Asset Depreciation	17
Note 7	Borrowings	18
Note 8	Reserves	20
Note 9	Revenue Recognition	21
Note 10	Program Information	22
Note 11	Other Information	23
Note 12	Elected Members Remuneration	24
Note 13	Trust	25
Note 14	Fees and Charges	26

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

1 (a) BASIS OF PREPARATION

The annual budget has been prepared in accordance with Australian Accounting Standards (as they apply to local governments and not-for-profit entities) and interpretations of the Australian Accounting Standards Board, and the *Local Government Act 1995* and accompanying regulations.

The *Local Government Act 1995* and accompanying Regulations take precedence over Australian Accounting Standards where they are inconsistent.

The *Local Government (Financial Management) Regulations 1996* specify that vested land is a right-of-use asset to be measured at cost. All right-of-use assets (other than vested improvements) under zero cost concessionary leases are measured at zero cost rather than at fair value. The exception is vested improvements on concessionary land leases such as roads, buildings or other infrastructure which continue to be reported at fair value, as opposed to the vested land which is measured at zero cost. The measurement of vested improvements at fair value is a departure from AASB 16 which would have required the Shire to measure any vested improvements at zero cost.

Accounting policies which have been adopted in the preparation of this annual budget have been consistently applied unless stated otherwise. Except for cash flow and rate setting information, the budget has been prepared on the accrual basis and is based on historical costs, modified, where applicable, by the measurement at fair value of selected non-current assets, financial assets and liabilities.

Financial reporting disclosures in relation to assets and liabilities required by the Australian Accounting Standards have not been made unless considered important for the understanding of the budget or required by legislation.

The local government reporting entity

All funds through which the Shire of Corrigin controls resources to carry on its functions have been included in the financial statements forming part of this annual budget.

In the process of reporting on the local government as a single unit, all transactions and balances between those Funds (for example, loans and transfers between Funds) have been eliminated.

All monies held in the Trust Fund are excluded from the financial statements. A separate statement of those monies appears at Note 13 to the annual budget.

2021/22 actual balances

Balances shown in this budget as 2021/22 Actual are estimates as forecast at the time of preparation of the annual budget and are subject to final adjustments.

Budget comparative figures

Unless otherwise stated, the budget comparative figures shown in the budget relate to the original budget estimate for the relevant item of disclosure.

Comparative figures

Where required, comparative figures have been adjusted to conform with changes in presentation for the current financial year.

Initial application of accounting standards

During the budget year, the below revised Australian Accounting Standards and Interpretations are expected to be compiled, become mandatory and be applicable to its operations.

- AASB 2020-3 Amendments to Australian Accounting Standards - Annual Improvements 2018-2020 and Other Amendments
- AASB 2020-6 Amendments to Australian Accounting Standards - Classification of Liabilities as Current or Non-current - Deferral of Effective Date

It is not expected these standards will have an impact on the annual budget.

New accounting standards for application in future years

The following new accounting standards will have application to local government in future years:

- AASB 2021-2 Amendments to Australian Accounting Standards - Disclosure of Accounting Policies or Definition of Accounting Estimates
- AASB 2021-6 Amendments to Australian Accounting Standards - Disclosure of Accounting Policies: Tier 2 and Other Australian Accounting Standards

It is not expected these standards will have an impact on the annual budget.

Judgements, estimates and assumptions

The preparation of the annual budget in conformity with Australian Accounting Standards requires management to make judgements, estimates and assumptions that effect the application of policies and reported amounts of assets and liabilities, income and expenses.

The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances; the results of which form the basis of making the judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The balances, transactions and disclosures impacted by accounting estimates are as follows:

- estimated fair value of certain financial assets
- estimation of fair values of land and buildings and investment property
- impairment of financial assets
- estimation uncertainties and judgements made in relation to lease accounting
- estimated useful life of assets

Rounding off figures

All figures shown in this statement are rounded to the nearest dollar.

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

1 (b) KEY TERMS AND DEFINITIONS - NATURE OR TYPE

REVENUES

RATES

All rates levied under the *Local Government Act 1995*. Includes general, differential, specified area rates, minimum rates, interim rates, back rates, ex-gratia rates, less discounts and concessions offered. Exclude administration fees, interest on instalments, interest on arrears, service charges and sewerage rates.

SERVICE CHARGES

Service charges imposed under Division 6 of Part 6 of the *Local Government Act 1995*. Regulation 54 of the *Local Government (Financial Management) Regulations 1996* identifies these as television and radio broadcasting, underground electricity and neighbourhood surveillance services.

Excludes rubbish removal charges. Interest and other items of a similar nature received from bank and investment accounts, interest on rate instalments, interest on rate arrears and interest on debtors.

PROFIT ON ASSET DISPOSAL

Profit on the disposal of assets including gains on the disposal of long term investments. Losses are disclosed under the expenditure classifications.

OPERATING GRANTS, SUBSIDIES AND CONTRIBUTIONS

Refer to all amounts received as grants, subsidies and contributions that are not non-operating grants.

NON-OPERATING GRANTS, SUBSIDIES AND CONTRIBUTIONS

Amounts received specifically for the acquisition, construction of new or the upgrading of non-current assets paid to a local government, irrespective of whether these amounts are received as capital grants, subsidies, contributions or donations.

FEES AND CHARGES

Revenue (other than service charges) from the use of facilities and charges made for local government services, sewerage rates, rentals, hire charges, fee for service, photocopying charges, licences, sale of goods or information, fines, penalties and administration fees. Local governments may wish to disclose more detail such as rubbish collection fees, rental of property, fines and penalties, other fees and charges.

INTEREST EARNINGS

Interest and other items of a similar nature received from bank and investment accounts, interest on rate instalments, interest on rate arrears and interest on debtors.

OTHER REVENUE / INCOME

Other revenue, which can not be classified under the above headings, includes dividends, discounts, and rebates. Reimbursements and recoveries should be separated by note to ensure the correct calculation of ratios.

EXPENSES

EMPLOYEE COSTS

All costs associated with the employment of person such as salaries, wages, allowances, benefits such as vehicle and housing, superannuation, employment expenses, removal expenses, relocation expenses, worker's compensation insurance, training costs, conferences safety expenses, medical examinations, fringe benefit tax, etc.

MATERIALS AND CONTRACTS

All expenditures on materials, supplies and contracts not classified under other headings. These include supply of goods and materials, legal expenses, consultancy, maintenance agreements, communication expenses, advertising expenses, membership, periodicals, publications, hire expenses, rental, leases, postage and freight etc. Local governments may wish to disclose more detail such as contract services, consultancy, information technology, rental or lease expenditures.

UTILITIES (GAS, ELECTRICITY, WATER, ETC.)

Expenditures made to the respective agencies for the provision of power, gas or water. Exclude expenditures incurred for the reinstatement of roadwork on behalf of these agencies.

INSURANCE

All insurance other than worker's compensation and health benefit insurance included as a cost of employment.

LOSS ON ASSET DISPOSAL

Loss on the disposal of fixed assets includes loss on disposal of long term investments.

DEPRECIATION ON NON-CURRENT ASSETS

Depreciation and amortisation expense raised on all classes of assets.

INTEREST EXPENSES

Interest and other costs of finance paid, including costs of finance for loan debentures, overdraft accommodation and refinancing expenses.

OTHER EXPENDITURE

Statutory fees, taxes, provision for bad debts, member's fees or State taxes. Donations and subsidies made to community groups.

1 (c) KEY TERMS AND DEFINITIONS - REPORTING PROGRAMS

In order to discharge its responsibilities to the community, Council has developed a set of operational and financial objectives. These objectives have been established both on an overall basis, reflected by the Shire's Community Vision, and for each of its broad activities/programs.

OBJECTIVE

Governance

To provide a decision making process for the efficient allocation of scarce resources

General purpose funding

To collect revenue to allow for the provision of services

Law, order, public safety

To provide services to help ensure a safer and environmentally conscious community

Health

To provide an operational framework for environmental and community health

Education and welfare

Provide services to the elderly, children, youth and disadvantaged

Housing

To provide and maintain staff and rental housing

Community amenities

To provide services required by the community

Recreation and culture

To establish and effectively manage infrastructure and resources which will help the social wellbeing of the community

Transport

To provide safe, effective and efficient transport services to the community.

Economic services

To help promote the shire and its economic wellbeing.

Other property and services

To monitor and control council's overhead operating accounts

ACTIVITIES

Administration and operation of facilities and services to members of council; other costs that relate to the tasks of assisting elected members and ratepayers on matters which do not concern specific Council services.

Rates, general purpose government grants and interest revenue

Supervision and enforcement of various Acts, regulations and by-laws relating to fire prevention, animal control and other aspects of public safety including emergency services

Inspection of food outlets and their control, provision of meat inspection services, noise control and waste disposal compliance. Administration of the RoeROC health scheme and provision of various medical facilities.

Maintenance of the child minding and playgroup facility. Assistance with the occasional Day care centre and playgroup as well as donations to other voluntary services. Provision and/or support of community care programs and youth services and provision of services provided by the Community Resource Centre

Provision and maintenance of staff, aged, rental and joint venture housing

Rubbish collection services, operation of rubbish disposal sites, litter control, administration of town planning schemes. Administration and maintenance of cemetery and public conveniences and Shire water drainage and community bus.

Maintenance of public halls, aquatic centres, recreation centres and various sporting facilities. Provision and maintenance of parks, gardens, reserves and playgrounds. Provision of library services and the support of other heritage and cultural facilities and services.

Construction and maintenance of roads, streets, footpaths, depots, airstrip, bridges and traffic control. Cleaning of streets and maintenance of street trees, street lighting, etc. Provision of police licensing services.

The regulation and provision of tourism, area promotion, building control and noxious weeds.

Private works, plant repair and operation costs, public works overheads and administration costs.

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

2. RATES AND SERVICE CHARGES

(a) Rating Information

Rate Description	Basis of valuation	Rate in	Number of properties	Rateable value	2022/23 Budgeted rate revenue	2022/23 Budgeted interim rates	2022/23 Budgeted back rates	2022/23 Budgeted total revenue	2021/22 Actual total revenue	2021/22 Budget total revenue
		\$		\$	\$	\$	\$	\$	\$	\$
(i) Differential general rates or general rates										
Townsites	Gross Rental Valuation	0.09707	416	4,372,380	424,405	0	0	424,405	407,215	415,426
Rural	Unimproved Valuation	0.01114	350	213,936,838	2,382,829	0	0	2,382,829	2,279,338	2,279,439
Sub-Total			766	218,309,218	2,807,234	0	0	2,807,234	2,686,553	2,694,865
		Minimum								
		\$								
Townsites		450	48	86,629	21,600	0	0	21,600	24,750	24,750
Rural		450	24	325,027	10,800	0	0	10,800	10,800	10,800
Sub-Total			72	411,656	32,400	0	0	32,400	35,550	35,550
			838	218,720,874	2,839,634	0	0	2,839,634	2,722,103	2,730,415
Total amount raised from general rates								2,839,634	2,722,103	2,730,415
Ex-gratia rates										
Cooperative Bulk Handling	Storage Capacity		5	564,022	42,773	0	0	42,773	41,128	41,128
Total ex-gratia rates				564,022	42,773	0	0	42,773	41,128	41,128
Total rates								2,882,407	2,763,231	2,771,543

The Shire did not raise specified area rates for the year ended 30th June 2023.

All land (other than exempt land) in the Shire of Corrigin is rated according to its Gross Rental Value (GRV) in townsites or Unimproved Value (UV) in the remainder of the Shire of Corrigin.

The general rates detailed for the 2022/23 financial year have been determined by Council on the basis of raising the revenue required to meet the deficiency between the total estimated expenditure proposed in the budget and the estimated revenue to be received from all sources other than rates and also considering the extent of any increase in rating over the level adopted in the previous year.

The minimum rates have been determined by Council on the basis that all ratepayers must make a reasonable contribution to the cost of local government services/facilities.

2. RATES AND SERVICE CHARGES (CONTINUED)

(b) Interest Charges and Instalments - Rates and Service Charges

The following instalment options are available to ratepayers for the payment of rates and service charges.

Instalment options	Date due	Instalment plan admin charge	Instalment plan interest rate	Unpaid rates interest rates
		\$	%	%
Option one				
Single full payment	2/09/2022	0	0.0%	7.0%
Option two				
First instalment	2/09/2022	0	0.0%	7.0%
Second instalment	2/11/2022	10	5.5%	7.0%
Third instalment	2/01/2023	10	5.5%	7.0%
Fourth instalment	2/03/2023	10	5.5%	7.0%

	2022/23 Budget revenue	2021/22 Actual revenue	2021/22 Budget revenue
	\$	\$	\$
Instalment plan admin charge revenue	3,500	3,300	5,000
Instalment plan interest earned	7,000	6,505	4,600
Unpaid rates and service charge interest earned	10,450	6,613	10,450
	20,950	16,418	20,050

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

3. NET CURRENT ASSETS

		2022/23 Budget 30 June 2023	2021/22 Actual 30 June 2022	2021/22 Budget 30 June 2022	
Note		\$	\$	\$	
(a) Composition of estimated net current assets					
Current assets					
	Cash and cash equivalents - unrestricted	4	(135,169)	890,476	450,995
	Cash and cash equivalents - restricted	4	5,432,354	5,811,048	3,300,646
	Receivables		550,292	550,292	290,751
	Inventories		91,658	91,658	162,704
			5,939,135	7,343,474	4,205,096
Less: current liabilities					
	Trade and other payables		(188,689)	(188,687)	(730,845)
	Contract liabilities		(587,050)	(587,050)	(304,723)
	Unspent non-operating grants, subsidies and contributions liability		0	0	201,566
	Long term borrowings	7	0	(90,164)	0
	Employee provisions		(302,829)	(302,829)	(345,627)
			(1,078,568)	(1,168,730)	(1,179,629)
	Net current assets		4,860,567	6,174,744	3,025,467
	Less: Total adjustments to net current assets	3.(c)	(4,860,567)	(5,193,834)	(3,025,467)
	Net current assets used in the Rate Setting Statement		0	980,910	0

3. NET CURRENT ASSETS (CONTINUED)

EXPLANATION OF DIFFERENCE IN NET CURRENT ASSETS AND SURPLUS/(DEFICIT)

Items excluded from calculation of budgeted deficiency

When calculating the budget deficiency for the purpose of Section 6.2 (2)(c) of the *Local Government Act 1995* the following amounts have been excluded as provided by *Local Government (Financial Management) Regulation 32* which will not fund the budgeted expenditure.

(b) Non-cash amounts excluded from operating activities

The following non-cash revenue or expenditure has been excluded from amounts attributable to operating activities within the Rate Setting Statement in accordance with *Financial Management Regulation 32*.

		2022/23 Budget 30 June 2023	2021/22 Actual 30 June 2022	2021/22 Budget 30 June 2022	
Note		\$	\$	\$	
Adjustments to operating activities					
	Less: Profit on asset disposals	5(b)	(112,282)	(9,028)	(88,304)
	Add: Current Assets - Joint venture		0	10,506	0
	Add: Loss on disposal of assets	5(b)	54,941	2,780	66,977
	Add: Depreciation on assets	6	3,624,516	3,189,266	3,398,229
	Movement in current employee provisions associated with restricted cash		44,737	0	50,456
	Non cash amounts excluded from operating activities		3,611,912	3,193,524	3,427,358

(c) Current assets and liabilities excluded from budgeted deficiency

The following current assets and liabilities have been excluded from the net current assets used in the Rate Setting Statement in accordance with *Financial Management Regulation 32* to agree to the surplus/(deficit) after imposition of general rates.

Adjustments to net current assets

	Less: Cash - restricted reserves	8	(4,845,304)	(5,223,998)	(2,995,923)
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SHIRE OF CORRIGIN**NOTES TO AND FORMING PART OF THE BUDGET****FOR THE YEAR ENDED 30 JUNE 2023**

Less: Current assets not expected to be received at end of year

- Land held for resale

Add: Current liabilities not expected to be cleared at end of year

- Current portion of borrowings

- Current portion of employee benefit provisions held in reserve

Total adjustments to net current assets

(60,000)	(60,000)	(80,000)
0	90,164	0
44,737	0	50,456
(4,860,567)	(5,193,834)	(3,025,467)

3 (d) NET CURRENT ASSETS (CONTINUED)

SIGNIFICANT ACCOUNTING POLICIES

CURRENT AND NON-CURRENT CLASSIFICATION

An asset or liability is classified as current if it is expected to be settled within the next 12 months, being the Shire's operational cycle. In the case of liabilities where the Shire does not have the unconditional right to defer settlement beyond 12 months, such as vested long service leave, the liability is classified as current even if not expected to be settled within the next 12 months. Inventories held for trading are classified as current or non-current based on the Shire's intentions to release for sale.

TRADE AND OTHER PAYABLES

Trade and other payables represent liabilities for goods and services provided to the Shire prior to the end of the financial year that are unpaid and arise when the Shire of Corrigin becomes obliged to make future payments in respect of the purchase of these goods and services. The amounts are unsecured, are recognised as a current liability and are normally paid within 30 days of recognition.

PREPAID RATES

Prepaid rates are, until the taxable event has occurred (start of the next financial year), refundable at the request of the ratepayer. Rates received in advance are initially recognised as a financial liability. When the taxable event occurs, the financial liability is extinguished and the Shire recognises revenue for the prepaid rates that have not been refunded.

INVENTORIES

General

Inventories are measured at the lower of cost and net realisable value.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

Superannuation

The Shire of Corrigin contributes to a number of superannuation funds on behalf of employees.

All funds to which the Shire of Corrigin contributes are defined contribution plans.

LAND HELD FOR RESALE

Land held for development and sale is valued at the lower of cost and net realisable value. Cost includes the cost of acquisition, development, borrowing costs and holding costs until completion of development. Finance costs and holding charges incurred after development is completed are expensed.

Gains and losses are recognised in profit or loss at the time of signing an unconditional contract of sale if significant risks and rewards, and effective control over the land, are passed on to the buyer at this point.

GOODS AND SERVICES TAX (GST)

Revenues, expenses and assets are recognised net of the amount of GST, except where the amount of GST incurred is not recoverable from the Australian Taxation Office (ATO).

Receivables and payables are stated inclusive of GST receivable or payable. The net amount of GST recoverable from, or payable to, the ATO is included with receivables or payables in the statement of financial position.

Cash flows are presented on a gross basis. The GST components of cash flows arising from investing or financing activities which are recoverable from, or payable to, the ATO are presented as operating cash flows.

TRADE AND OTHER RECEIVABLES

Trade and other receivables include amounts due from ratepayers for unpaid rates and service charges and other amounts due from third parties for goods sold and services performed in the ordinary course of business.

Trade receivables are recognised at original invoice amount less any allowances for uncollectible amounts (i.e. impairment). The carrying amount of net trade receivables is equivalent to fair value as it is due for settlement within 30 days.

Trade receivables are held with the objective to collect the contractual cashflows and therefore measures them subsequently at amortised cost using the effective interest rate method.

Due to the short term nature of current receivables, their carrying amount is considered to be the same as their fair value. Non-current receivables are indexed to inflation, any difference between the face value and fair value is considered immaterial.

The Shire applies the AASB 9 simplified approach to measuring expected credit losses using a lifetime expected loss allowance for all trade receivables. To measure the expected credit losses, rates receivable are separated from other trade receivables due to the difference in payment terms and security for rates receivable.

PROVISIONS

Provisions are recognised when the Shire has a present legal or constructive obligation, as a result of past events, for which it is probable that an outflow of economic benefits will result and that outflow can be reliably measured.

Provisions are measured using the best estimate of the amounts required to settle the obligation at the end of the reporting period.

EMPLOYEE BENEFITS

Short-term employee benefits

Provision is made for the Shire's obligations for short-term employee benefits. Short term employee benefits are benefits (other than termination benefits) that are expected to be settled wholly before 12 months after the end of the annual reporting period in which the employees render the related service, including wages, salaries and sick leave. Short-term employee benefits are measured at the (undiscounted) amounts expected to be paid when the obligation is settled.

The Shire's obligations for short-term employee benefits such as wages, salaries and sick leave are recognised as a part of current trade and other payables in the statement of financial position. The Shire's obligations for employees' annual leave and long service leave entitlements are recognised as provisions in the statement of financial position.

CONTRACT LIABILITIES

An entity's obligation to transfer goods or services to a customer for which the entity has received consideration (or the amount is due) from the customer. Grants to acquire or construct recognisable non-financial assets to be controlled by the Shire are recognised as a liability until such time as the Shire satisfies its obligations under the agreement.

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

4. RECONCILIATION OF CASH

For the purposes of the Statement of Cash Flows, cash includes cash and cash equivalents, net of outstanding bank overdrafts. Estimated cash at the end of the reporting period is as follows:

Note	2022/23 Budget	2021/22 Actual	2021/22 Budget
	\$	\$	\$
Cash at bank and on hand	451,881	1,477,526	755,718
Term deposits	4,845,304	5,223,998	2,995,923
Total cash and cash equivalents	5,297,185	6,701,524	3,751,641
Held as			
- Unrestricted cash and cash equivalents	3(a) (135,169)	890,476	450,995
- Restricted cash and cash equivalents	3(a) 5,432,354	5,811,048	3,300,646
	5,297,185	6,701,524	3,751,641
Restrictions			
The following classes of assets have restrictions imposed by regulations or other externally imposed requirements which limit or direct the purpose for which the resources may be used:			
- Cash and cash equivalents	5,432,354	5,811,048	3,300,646
	5,432,354	5,811,048	3,300,646
The restricted assets are a result of the following specific purposes to which the assets may be used:			
Financially backed reserves	8 4,845,304	5,223,998	2,995,923
Contract liabilities	587,050	587,050	506,289
Unspent non-operating grants, subsidies and contribution liabilities	0	0	(201,566)
	5,432,354	5,811,048	3,300,646
Reconciliation of net cash provided by operating activities to net result			
Net result	985,672	2,063,177	1,005,679
Depreciation	6 3,624,516	3,189,266	3,398,229
(Profit)/loss on sale of asset	5(b) (57,341)	(6,248)	(21,327)
(Increase)/decrease in receivables	0	(336,462)	0
(Increase)/decrease in inventories	0	56,617	(60,000)
Increase/(decrease) in payables	0	(67,945)	336,490
Increase/(decrease) in contract liabilities	0	118,417	0
Increase/(decrease) in unspent non-operating grants	0	0	(201,566)
Non-operating grants, subsidies and contributions	(3,814,138)	(3,081,296)	(4,141,580)
Net cash from operating activities	738,709	1,935,526	315,925

SIGNIFICANT ACCOUNTING POLICES

CASH AND CASH EQUIVALENTS

Cash and cash equivalents include cash on hand, cash at bank, deposits available on demand with banks, other short term highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value and bank overdrafts.

Bank overdrafts are shown as short term borrowings in current liabilities in Note 3 - Net Current Assets.

FINANCIAL ASSETS AT AMORTISED COST

The Shire classifies financial assets at amortised cost if both of the following criteria are met:

- the asset is held within a business model whose objective is to collect the contractual cashflows, and
- the contractual terms give rise to cash flows that are solely payments of principal and interest.

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

5. FIXED ASSETS

(a) Acquisition of Assets

The following assets are budgeted to be acquired during the year.

Asset class	Reporting program											2022/23 Budget total	2021/22 Actual total	2021/22 Budget total	
	Governance	General purpose funding	Law, order, public safety	Health	Education and welfare	Housing	Community amenities	Recreation and culture	Transport	Economic services	Other property and services				
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
<i>Property, Plant and Equipment</i>															
Buildings - specialised				30,000				71,543		18,243			119,786	450,129	777,821
Furniture and equipment	25,000												25,000		
Plant and equipment				35,000			110,000		1,088,764		206,000		1,439,764	610,045	1,325,000
	25,000	0	0	65,000	0	0	110,000	71,543	1,088,764	18,243	206,000		1,584,550	1,060,174	2,102,821
<i>Infrastructure</i>															
Infrastructure - roads									3,601,789				3,601,789	2,397,984	3,156,759
Infrastructure - footpaths													0	103,345	84,336
Infrastructure - parks and ovals													0	340,299	374,240
Infrastructure - Other										1,024,184	85,000		1,109,184	694,082	1,511,599
	0	0	0	0	0	0	0	0	3,601,789	1,024,184	85,000		4,710,973	3,535,710	5,126,934
Total acquisitions	25,000	0	0	65,000	0	0	110,000	71,543	4,690,553	1,042,427	291,000		6,295,523	4,595,884	7,229,755

A detailed breakdown of acquisitions on an individual asset basis can be found in the supplementary information attached to this budget document as follows:

SIGNIFICANT ACCOUNTING POLICIES

RECOGNITION OF ASSETS

Assets for which the fair value as at the date of acquisition is under \$5,000 are not recognised as an asset in accordance with *Financial Management Regulation 17A (5)*. These assets are expensed immediately.

Where multiple individual low value assets are purchased together as part of a larger asset or collectively forming a larger asset exceeding the threshold, the individual assets are recognised as one asset and capitalised.

SHIRE OF CORRIGIN
 NOTES TO AND FORMING PART OF THE BUDGET
 FOR THE YEAR ENDED 30 JUNE 2023

5. FIXED ASSETS

(b) Disposals of Assets

The following assets are budgeted to be disposed of during the year.

	2022/23 Budget Net Book Value	2022/23 Budget Sale Proceeds	2022/23 Budget Profit	2022/23 Budget Loss	2021/22 Actual Net Book Value	2021/22 Actual Sale Proceeds	2021/22 Actual Profit	2021/22 Actual Loss	2021/22 Budget Net Book Value	2021/22 Budget Sale Proceeds	2021/22 Budget Profit	2021/22 Budget Loss
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
By Program												
Law, order, public safety		0	0	0	39,613	45,455	5,842	0	44,620	0	0	(44,620)
Health	31,865	30,000	0	(1,865)	40,962	38,182	0	(2,780)	77,357	60,000	0	(17,357)
Community amenities	66,705	70,001	25,282	(21,986)		0	0	0	60,000	78,900	18,900	0
Transport	196,979	220,000	50,000	(26,979)		0	0	0	85,596	155,000	69,404	0
Other property and services	75,611	108,500	37,000	(4,111)	39,178	42,364	3,186	0	62,500	57,500	0	(5,000)
	371,160	428,501	112,282	(54,941)	119,753	126,001	9,028	(2,780)	330,073	351,400	88,304	(66,977)
By Class												
<i>Property, Plant and Equipment</i>												
Plant and equipment	371,160	428,501	112,282	(54,941)	119,753	126,001	9,028	(2,780)	330,073	351,400	88,304	(66,977)
	371,160	428,501	112,282	(54,941)	119,753	126,001	9,028	(2,780)	330,073	351,400	88,304	(66,977)

SIGNIFICANT ACCOUNTING POLICIES

GAINS AND LOSSES ON DISPOSAL

Gains and losses on disposals are determined by comparing proceeds with the carrying amount. These gains and losses are included in profit or loss in the period which they arise.

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

6. ASSET DEPRECIATION

By Program

Governance
Law, order, public safety
Health
Education and welfare
Housing
Community amenities
Recreation and culture
Transport
Economic services
Other property and services

By Class

Buildings - specialised
Furniture and equipment
Plant and equipment
Infrastructure - roads
Infrastructure - footpaths
Infrastructure - drainage
Infrastructure - parks and ovals
Infrastructure - Other

2022/23 Budget	2021/22 Actual	2021/22 Budget
\$	\$	\$
1,011	928	1,011
14,471	13,282	15,153
71,942	66,029	40,982
79,290	72,773	92,684
111,489	101,774	101,659
30,291	27,801	27,127
787,586	722,129	739,884
1,898,635	1,604,939	1,736,435
169,947	157,790	147,519
459,854	421,821	495,775
3,624,516	3,189,266	3,398,229
952,858	873,992	820,534
32,198	29,551	31,938
372,388	341,535	380,193
1,456,180	1,198,850	1,307,478
27,221	24,983	38,260
338,894	311,040	338,894
161,926	149,703	196,768
282,851	259,612	284,164
3,624,516	3,189,266	3,398,229

SIGNIFICANT ACCOUNTING POLICIES

DEPRECIATION

The depreciable amount of all fixed assets including buildings but excluding freehold land, are depreciated on a straight-line basis over the individual asset's useful life from the time the asset is held ready for use. Leasehold improvements are depreciated over the shorter of either the unexpired period of the lease or the estimated useful life of the improvements.

The assets residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Major depreciation periods used for each class of depreciable asset are:

Asset Class	Useful life
Buildings	30 to 50 years
Furniture and equipment	10 years
Plant and equipment	5 to 15 years
- Heavy Vehicles	15 years
- Light Vehicles	7.5 years
Infrastructure Parks and Ovals	30 to 50 years
Infrastructure Other	30 to 50 years
Sealed roads and streets	not depreciated
Clearing and earthworks	not depreciated
Construction/roadbase	50 years
Original surfacings and major resurfacing	
- bituminous seals	20 years
- asphalt surfaces	25 years
Gravel roads	
Gravel sheet	15 years
Formed Roads (Unsealed)	
Footpaths - slab	40 years
Sewerage piping	100 years
Water supply piping and drainage systems	75 years

AMORTISATION

The depreciable amount of all intangible assets with a finite useful life, are depreciated on a straight-line basis over the individual asset's useful life from the time the asset is held for use.

The assets residual value of intangible assets is considered to be zero and useful live and amortisation method are reviewed at the end of each financial year.

Amortisation is included within Depreciation on non-current assets in the Statement of Comprehensive Income.

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

7. INFORMATION ON BORROWINGS

(a) Borrowing repayments

Movement in borrowings and interest between the beginning and the end of the current financial year.

Purpose	Loan Number	Institution	Interest Rate	Budget	2022/23	Budget	2022/23	Actual	2021/22	2021/22	Actual	2021/22	Budget	2021/22	Budget	2021/22	
				Principal 1 July 2022	Budget Principal Repayments	Principal outstanding 30 June 2023	Budget Interest Repayments	Principal 1 July 2021	Actual New Loans	Actual Principal Repayments	Principal outstanding 30 June 2022	Actual Interest Repayments	Principal 1 July 2021	Budget New Loans	Budget Principal Repayments	Principal outstanding 30 June 2022	Budget Interest Repayments
Recreation and culture				\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
Community Recreation & Events Centre	102	WATC	4.6%	1,409,971	(90,164)	1,319,807	(64,389)	1,496,092	0	(86,121)	1,409,971	(68,431)	1,496,092		(86,121)	1,409,971	(68,432)
				1,409,971	(90,164)	1,319,807	(64,389)	1,496,092	0	(86,121)	1,409,971	(68,431)	1,496,092	0	(86,121)	1,409,971	(68,432)

All borrowing repayments, other than self supporting loans, will be financed by general purpose revenue.

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

7. INFORMATION ON BORROWINGS

(b) New borrowings - 2022/23

The Shire does not intend to undertake any new borrowings for the year ended 30th June 2023

(c) Unspent borrowings

The Shire had no unspent borrowing funds as at 30th June 2022 nor is it expected to have unspent borrowing funds as at 30th June 2023.

(d) Credit Facilities

	2022/23 Budget	2021/22 Actual	2021/22 Budget
	\$	\$	\$
Undrawn borrowing facilities credit standby arrangements			
Bank overdraft limit	100,000	100,000	100,000
Bank overdraft at balance date	0	0	0
Credit card limit	20,000	20,000	20,000
Credit card balance at balance date	0	(2,842)	0
Total amount of credit unused	120,000	117,158	120,000
Loan facilities			
Loan facilities in use at balance date	1,319,807	1,409,971	1,409,971

SIGNIFICANT ACCOUNTING POLICIES

BORROWING COSTS

Borrowing costs are recognised as an expense when incurred except where they are directly attributable to the acquisition, construction or production of a qualifying asset. Where this is the case, they are capitalised as part of the cost of the particular asset until such time as the asset is substantially ready for its intended use or sale.

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

8. FINANCIALLY BACKED RESERVES

(a) Financially Backed Reserves - Movement

	2022/23 Budget Opening Balance	2022/23 Budget Transfer to	2022/23 Budget Transfer (from)	2022/23 Budget Closing Balance	2021/22 Actual Opening Balance	2021/22 Actual Transfer to	2021/22 Actual Transfer (from)	2021/22 Actual Closing Balance	2021/22 Budget Opening Balance	2021/22 Budget Transfer to	2021/22 Budget Transfer (from)	2021/22 Budget Closing Balance
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
(a) Employee Entitlements Reserve	171,488	4,034		175,522	171,090	398		171,488	171,090	0	0	171,090
(b) Staff Housing Reserve	368,069	8,659		376,728	347,261	20,808		368,069	347,261	20,000	0	367,261
(c) Office Equipment Reserve	31,659	745	(25,000)	7,404	21,609	10,050		31,659	21,609	10,000	0	31,609
(d) Plant Replacement Reserve	1,232,462	28,994	(235,000)	1,026,456	1,229,600	2,862		1,232,462	1,229,600	0	0	1,229,600
(e) Swimming Pool Reserve	211,533	4,976		216,509	181,112	30,421		211,533	181,112	30,000	0	211,112
(f) Roadworks Reserve	298,232	7,016	(160,000)	145,248	297,539	693		298,232	297,539	0	0	297,539
(g) Land Subdivision Reserve	91,831	2,160		93,991	91,617	214		91,831	91,617	18,900	0	110,517
(h) Townscape Reserve	17,767	418		18,185	12,738	5,029		17,767	12,738	5,000	0	17,738
(i) Medical Reserve	34,928	822		35,750	24,870	10,058		34,928	24,870	10,000	0	34,870
(j) LGCHP Long Term Maintenance Reserve	12,625	297		12,922	10,269	2,356		12,625	10,269	0	0	10,269
(k) Rockview Land Reserve	7,940	1,187		9,127	6,924	1,016		7,940	6,924	1,000	0	7,924
(l) Senior Citizens Reserve	43,650	1,027		44,677	43,549	101		43,650	43,549	0	0	43,549
(m) Town Hall Reserve	110,079	2,590	(27,475)	85,194	109,823	256		110,079	109,823	0	0	109,823
(n) Recreation and Events Centre Reserve	269,150	6,332	(20,000)	255,482	423,726	60,502	(215,078)	269,150	423,726	60,000	(220,000)	263,726
(o) Bendering Tip Reserve	85,721	7,017		92,738	79,296	6,425		85,721	79,296	10,000	0	89,296
(p) Grants and Contributions Reserve	2,236,864	12,507		2,249,371	1,879,103	2,237,573	(1,879,812)	2,236,864	1,879,103	0	(1,879,103)	0
	5,223,998	88,781	(467,475)	4,845,304	4,930,126	2,388,762	(2,094,890)	5,223,998	4,930,126	164,900	(2,099,103)	2,995,923

(b) Financially Backed Reserves - Purposes

In accordance with Council resolutions in relation to each reserve account, the purpose for which the reserves are set aside are as follows:

Reserve name	Anticipated date of use	Purpose of the reserve
(a) Employee Entitlements Reserve	Ongoing	To be used to fund employee entitlement requirements.
(b) Staff Housing Reserve	Ongoing	To be used for the construction and maintenance of staff housing.
(c) Office Equipment Reserve	Ongoing	To be used for the purchase of office equipment.
(d) Plant Replacement Reserve	Ongoing	To be used for the purchase of major plant items
(e) Swimming Pool Reserve	Ongoing	To be used for the construction and maintenance of the swimming pool facility.
(f) Roadworks Reserve	Ongoing	To be used to fund the construction of roads and or verge/footpaths within the Shire of Corrigin.
(g) Land Subdivision Reserve	Ongoing	To be used to fund the purchase and development of land for subdivision and other purposes that benefits the community.
(h) Townscape Reserve	Ongoing	To be used for the continual upgrade of townscape facilities.
(i) Medical Reserve	Ongoing	To be used for the continual upgrade of medical facilities with the Shire of Corrigin.
(j) LGCHP Long Term Maintenance Reserve	Ongoing	To be used to fund the long term maintenance of the joint venture housing.
(k) Rockview Land Reserve	Ongoing	To be used to fund the development of the Rockview land project.
(l) Senior Citizens Reserve	Ongoing	To be used for the construction of aged care accomodation and facilities within Corrigin.
(m) Town Hall Reserve	Ongoing	To be used for the planning, maintenance and upgrade of the Corrigin Town Hall building.
(n) Recreation and Events Centre Reserve	Ongoing	To be used for the planning, maintenance and upgrade of the Recreation and Events Centre.
(o) Bendering Tip Reserve	Ongoing	To be used for the continual upgrade and expansion of the Bendering Tip site.
(p) Grants and Contributions Reserve	Ongoing	To be used to quarantine any unspent grant and contribution funds received during the financial year until funds are required.

SHIRE OF CORRIGIN
NOTES TO AND FORMING PART OF THE BUDGET
FOR THE YEAR ENDED 30 JUNE 2023

9. REVENUE RECOGNITION

SIGNIFICANT ACCOUNTING POLICIES

Recognition of revenue is dependant on the source of revenue and the associated terms and conditions associated with each source of revenue and recognised as follows:

Revenue Category	Nature of goods and services	When obligations typically satisfied	Payment terms	Returns/Refunds/Warranties	Determination of transaction price	Allocating transaction price	Measuring obligations for returns	Revenue recognition
Rates	General Rates	Over time	Payment dates adopted by Council during the year	None	Adopted by council annually	When taxable event occurs	Not applicable	When rates notice is issued
Specified area rates	Rates charge for specific defined purpose	Over time	Payment dates adopted by Council during the year	Refund in event monies are unspent	Adopted by council annually	When taxable event occurs	Not applicable	When rates notice is issued
Service charges	Charge for specific service	Over time	Payment dates adopted by Council during the year	Refund in event monies are unspent	Adopted by council annually	When taxable event occurs	Not applicable	When rates notice is issued
Grant contracts with customers	Community events, minor facilities, research, design, planning evaluation and services	Over time	Fixed terms transfer of funds based on agreed milestones and reporting	Contract obligation if project not complete	Set by mutual agreement with the customer	Based on the progress of works to match performance obligations	Returns limited to repayment of transaction price of terms breached	Output method based on project milestones and/or completion date matched to performance obligations as inputs are shared
Grants, subsidies or contributions for the construction of non-financial assets	Construction or acquisition of recognisable non-financial assets to be controlled by the local government	Over time	Fixed terms transfer of funds based on agreed milestones and reporting	Contract obligation if project not complete	Set by mutual agreement with the customer	Based on the progress of works to match performance obligations	Returns limited to repayment of transaction price of terms breached	Output method based on project milestones and/or completion date matched to performance obligations as inputs are shared
Grants with no contract commitments Licences/ Registrations/ Approvals	General appropriations and contributions with no reciprocal commitment Building, planning, development and animal management, having the same nature as a licence regardless of naming.	No obligations	Not applicable	Not applicable	Cash received	On receipt of funds	Not applicable	When assets are controlled
Pool inspections	Compliance safety check	Single point in time	Full payment prior to issue	None	Set by State legislation or limited by legislation to the cost of provision	Based on timing of issue of the associated rights	No refunds	On payment and issue of the licence, registration or approval
Other inspections	Regulatory Food, Health and Safety	Single point in time	Equal proportion based on an equal annually fee	None	Set by State legislation	Applied fully on timing of inspection	Not applicable	Revenue recognised after inspection complete based on a 4 year cycle
Waste management collections	Kerbside collection service	Over time	Full payment prior to inspection	None	Set by State legislation or limited by legislation to the cost of provision	Applied fully on timing of inspection	Not applicable	Revenue recognised after inspection event occurs
Waste management entry fees	Waste treatment, recycling and disposal service at disposal sites	Over time	Payment on an annual basis in advance	None	Adopted by council annually	Apportioned equally across the collection period	Not applicable	Output method based on regular weekly and fortnightly period as proportionate to collection service
Airport landing charges	Permission to use facilities and runway	Single point in time	Payment in advance at gate or on normal trading terms if credit provided	None	Adopted by council annually	Based on timing of entry to facility	Not applicable	On entry to facility
Property hire and entry	Use of halls and facilities	Single point in time	Monthly in arrears	None	Adopted by council annually	Applied fully on timing of landing/take-off	Not applicable	On landing/departure event
Memberships	Gym and pool membership	Over time	In full in advance	Refund if event cancelled within 7 days	Adopted by council annually	Based on timing of entry to facility	Returns limited to repayment of transaction price	On entry or at conclusion of hire
Fees and charges for other goods and services	Cemetery services, library fees, reinstatements and private works	Over time	Payment in full in advance	Refund for unused portion on application	Adopted by council annually	Apportioned equally across the access period	Returns limited to repayment of transaction price	Output method Over 12 months matched to access right
Sale of stock	Aviation fuel, kiosk and visitor centre stock	Single point in time	Payment in full in advance	None	Adopted by council annually	Applied fully based on timing of provision	Not applicable	Output method based on provision of service or completion of works
Commissions	Commissions on licencing and ticket sales	Single point in time	In full in advance, on 15 day credit	Refund for faulty goods	Adopted by council annually, set by mutual agreement	Applied fully based on timing of provision	Returns limited to repayment of transaction price	Output method based on goods
Reimbursements	Insurance claims	Over time	Payment in full on sale	None	Set by mutual agreement with the customer	On receipt of funds	Not applicable	When assets are controlled
		Single point in time	Payment in arrears for claimable event	None	Set by mutual agreement with the customer	When claim is agreed	Not applicable	When claim is agreed

10. PROGRAM INFORMATION

Income and expenses	2022/23 Budget	2021/22 Actual	2021/22 Budget
Income excluding grants, subsidies and contributions	\$	\$	\$
Governance	171,000	485	1,500
General purpose funding	3,005,138	2,811,954	2,831,203
Law, order, public safety	3,433,711	93,144	9,600
Health	34,118	24,357	31,298
Education and welfare	47,700	46,293	43,082
Housing	130,509	132,859	134,890
Community amenities	414,913	350,074	307,071
Recreation and culture	53,605	58,932	49,655
Transport	1,350,643	24,979	97,704
Economic services	97,089	96,127	81,834
Other property and services	75,100	127,379	82,100
	8,813,526	3,766,583	3,669,937
Operating grants, subsidies and contributions			
General purpose funding	1,021,901	2,689,073	876,319
Law, order, public safety	52,570	57,865	47,023
Health	0	0	189,091
Education and welfare	111,737	106,820	111,737
Recreation and culture	12,000	91,455	6,855
Transport	189,705	181,760	178,056
Other property and services	37,000	0	0
	1,424,913	3,126,973	1,409,081
Non-operating grants, subsidies and contributions			
Law, order, public safety	0	464,800	450,000
Recreation and culture	0	291,370	324,115
Transport	2,869,954	2,100,126	2,134,647
Economic services	944,184	225,000	1,434,384
	3,814,138	3,081,296	4,343,146
Total Income	14,052,577	9,974,852	9,422,164
Expenses			
Governance	(838,131)	(660,626)	(836,098)
General purpose funding	(101,138)	(65,217)	(76,649)
Law, order, public safety	(3,329,753)	(600,840)	(228,699)
Health	(469,929)	(393,315)	(664,802)
Education and welfare	(371,255)	(324,833)	(383,027)
Housing	(191,615)	(156,833)	(164,313)
Community amenities	(690,786)	(646,575)	(693,600)
Recreation and culture	(1,791,367)	(1,618,945)	(1,712,776)
Transport	(4,494,512)	(2,508,996)	(3,043,437)
Economic services	(496,100)	(375,319)	(470,995)
Other property and services	(292,319)	(560,176)	(142,089)
Total expenses	(13,066,905)	(7,911,675)	(8,416,485)
Net result for the period	985,672	2,063,177	1,005,679

11. OTHER INFORMATION

	2022/23 Budget	2021/22 Actual	2021/22 Budget
	\$	\$	\$
The net result includes as revenues			
(a) Interest earnings			
Investments			
- Reserve funds	82,781	7,327	21,610
- Other funds	1,000	1,007	5,000
Late payment of fees and charges *	5,000	0	0
Other interest revenue (refer note 1b)	17,450	13,118	15,050
	106,231	21,452	41,660
* The Shire has resolved to charge interest under section 6.13 for the late payment of any amount of money at 5%.			
(b) Other revenue			
Reimbursements and recoveries	4,985,477	159,452	114,766
	4,985,477	159,452	114,766
The net result includes as expenses			
(c) Auditors remuneration			
Audit services	50,000	45,900	45,900
Other services	5,000	6,133	5,000
	55,000	52,033	50,900
(d) Interest expenses (finance costs)			
Borrowings (refer Note 7(a))	64,389	68,431	68,432
	64,389	68,431	68,432
(e) Write offs			
General rate	25,000	145	200
	25,000	145	200

12. ELECTED MEMBERS REMUNERATION

	2022/23 Budget	2021/22 Actual	2021/22 Budget
	\$	\$	\$
Cr Desmond Hickey			
President's allowance	7,500	7,500	7,500
Meeting attendance fees	7,100	7,100	7,100
ICT expenses	1,000	1,000	1,000
	15,600	15,600	15,600
Cr Scott Coppen			
Deputy President's allowance	1,875	234	0
Meeting attendance fees	3,700	3,700	3,733
ICT expenses	1,000	1,000	1,000
	6,575	4,934	4,733
Cr Michael Weguelin			
Deputy President's allowance	0	1,641	1,875
Meeting attendance fees	3,700	3,700	3,733
ICT expenses	1,000	1,000	1,000
	4,700	6,341	6,608
Cr Claire Steele			
Meeting attendance fees	3,700	2,775	2,775
ICT expenses	1,000	750	750
	4,700	3,525	3,525
Cr Brydon Fare			
Meeting attendance fees	3,700	2,775	2,775
ICT expenses	1,000	750	750
	4,700	3,525	3,525
Cr Matthew Dickinson			
Meeting attendance fees	3,700	3,700	3,733
ICT expenses	1,000	1,000	1,000
	4,700	4,700	4,733
Cr Sharon Jacobs			
Meeting attendance fees	3,700	3,700	3,733
ICT expenses	1,000	1,000	1,000
	4,700	4,700	4,733
Cr Janeane Mason			
Meeting attendance fees	0	925	959
ICT expenses	0	250	250
	0	1,175	1,209
Cr Frederick Gilmore			
Meeting attendance fees	0	925	959
ICT expenses	0	250	250
	0	1,175	1,209
Total Elected Member Remuneration	45,675	45,675	45,875
President's allowance	7,500	7,500	7,500
Deputy President's allowance	1,875	1,875	1,875
Meeting attendance fees	29,300	29,300	29,500
ICT expenses	7,000	7,000	7,000
	45,675	45,675	45,875

13. TRUST FUNDS

Funds held at balance date which are required by legislation to be credited to the trust fund and which are not included in the financial statements are as follows:

Detail	Balance 30 June 2022	Estimated amounts received	Estimated amounts paid	Estimated balance 30 June 2023
	\$	\$	\$	\$
Community Funds Held	102,125	30,000	(20,000)	112,125
Edna Stevenson Educational Trust	877,957		(5,000)	872,957
Police Licensing	4,373	500,000	(504,373)	0
Westrail Bus Ticketing	81	800	(881)	0
BCITF	0	50	(50)	0
	984,536	530,850	(530,304)	985,082

14. FEES AND CHARGES

	2022/23 Budget	2021/22 Actual	2021/22 Budget
	\$	\$	\$
By Program:			
General purpose funding	59,273	68,400	59,128
Law, order, public safety	8,800	132,711	9,600
Health	34,098	24,143	31,298
Education and welfare	43,000	40,312	36,050
Housing	130,509	132,859	134,890
Community amenities	294,631	255,930	233,171
Recreation and culture	50,855	51,147	47,155
Transport	25,300	24,870	25,300
Economic services	92,936	93,380	77,700
Other property and services	30,500	30,796	40,500
	769,902	854,548	694,792

The subsequent pages detail the fees and charges proposed to be imposed by the local government.

Capital & Project Budget for the 2022/2023 Financial Year

By Class

Land And Buildings

Bulyee Hall	Installation of new toilet block and demolition of existing	11,260	13,880	25,140														25,140
Gorge Rock	Installation of toilet block		18,243	18,243														18,243
Town Hall	Recommission front steps and install accessible ramp	2,475	3,928	0													6,403	6,403
CREC	Enclose I-Beams and construct portico at entrance	40,000		20,000			20,000											40,000
Dental Surgery & Residence	Refurbishment of Dentist Residence	30,000		30,000														30,000
		83,735	36,051	93,383	0	0	20,000	6,403	0	0	0	0	0	0	0	0	0	119,786

Furniture & Equipment

Council Chambers	Upgrade IT and teleconferencing equipment	0	25,000	0			25,000											25,000
		0	25,000	0	0	0	25,000	0	0	0	0	0	0	0	0	0	0	25,000

Property, Plant & Equipment

CEO Vehicle	Trade 2021 Toyota Prado (CR1)	71,000		13,500														57,500	71,000
DCEO Vehicle	Trade 2019 Nissan X Trail 2WD (2CR)	45,000		23,000														22,000	45,000
ROE EHO	Trade 2020 Isuzu MU-X (4CR)	35,000		5,000														30,000	35,000
Roads & Civil	Trade 2014 Volvo L90E Loader - CR14	250,000		130,000														120,000	250,000
Roads & Civil	Carryover Trade 2005 Hino Dutro 8500 (CR23), Purchase Jetpack Road Maintenance Unit	25,000	500,000	450,000	25,000													50,000	525,000
Roads & Civil	Carryover Trade 2011 Iveco Powerstar and purchase Mack Anthem Prime Mover (Council Res 25/2022)		303,764	103,764	150,000													50,000	303,764
Community Bus	Trade 2012 Mitsubishi Rosa Bus CR103	110,000		0	60,000													50,000	110,000
Parks & Gardens	Trade 2013 Toyota Hilux CR24	35,000		23,000														12,000	35,000
Building Officer	Purchase Enclosed trades trailer	20,000		20,000															20,000
Parks & Gardens	Trade 2013 Toro Z Master CR15228	35,000		18,000														17,000	35,000
Roads & Civil	Repairs to Low Loader CR2233	10,000		10,000															10,000
		636,000	803,764	796,264	235,000	0	0	0	0	0	0	0	0	0	0	0	0	408,500	1,439,764

Infrastructure - Roads

Bulyee - Quairading Rd	SLK 0.00 - 14.40 Reseal with single coat (10mm) S45R Crumbed Rubber Seal	241,056		0					241,056										241,056
Bilbarin - Quairading Rd	SLK 25.90 - 28.85 Shoulder Reconditioning on narrow sealed pavement to attain a minimum 10.0m wide carriageway.	140,229		0						140,229									140,229
Corrigin South Rd	SLK 7.00 - 12.28 Reseal with single coat (10mm) S45R Crumbed Rubber Seal	90,000		0								90,000							90,000
Yealering Kulin Rd	SLK 0.16 - 2.50 Reseal remaining section that didn't get sealed in 2021/22	39,172		17,284								21,888							39,172
Old Kulin Road	SLK 0.00 - 6.22 Gravel Resheet pavement to attain a minimum 9.0m wide carriageway.	209,901		0								209,901							209,901
Pontifex Road	SLK 0.00 - 3.34 Gravel Resheet pavement to attain a minimum 9.0m wide carriageway.	113,486		0								113,486							113,486
Rabbit Proof Fence Road	SLK 22.42 - 27.87 Reconstruct , include stabilising, culverts and intersections	2,205,444		147,765	50,000												2,057,679		2,255,444
Corrigin - Quairading Road	SLK 4.81 - 6.80 Reconstruct and widen existing pavement including upgrade drainage, signage and clear zones.	475,141		158,380	110,000							316,761							585,141
Corrigin - Quairading Road	SLK 6.80 - 7.90, SLK 8.90 - 10.60 Final seal	87,360		29,120								58,240							87,360
		3,601,789	0	352,549	0	160,000	0	0	0	241,056	140,229	375,001	435,275	0	0	0	2,057,679	0	3,761,789

Infrastructure - Other

Rotary Park	Main Play Space and Landscaping	80,000	944,184	80,000														944,184	1,024,184
Administration	Server room and cabling refurbishment	35,000		35,000															35,000
Administration	Upgrade main server	50,000		50,000															50,000
				0															0
				0															0
		165,000	944,184	165,000	0	0	0	0	0	0	0	0	0	0	0	0	0	944,184	1,109,184

		4,486,524	1,808,999	1,407,196	235,000	160,000	25,000	20,000	6,403	241,056	140,229	375,001	435,275	0	0	0	2,057,679	1,352,684	6,455,523
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							446,403						3,249,240					1,352,684	5,048,327
							Reserves						Grants						1,407,196
																			6,455,523



2022 - 2023

Schedule of Fees and Charges



Strengthening our community now to grow and prosper into the future

www.corrigin.wa.gov.au

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

General Purpose Funding	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Property Enquiry Fees								
Statement of rates (financial)- written		LGA S6.16	03121	C	\$ 54.55	\$ 5.45	\$ 60.00	
Full Requisition including rates (settlement agents)			03121	C	\$ 122.73	\$ 12.27	\$ 135.00	
Reprint of rate notice - current year			03121	C	\$ 5.45	\$ 0.55	\$ 6.00	
Reprint of rate notice - each previous year			03121	C	\$ 7.27	\$ 0.73	\$ 8.00	
Rate Fees and Debt Recovery								
		Local Govt Act 1995						
Rate instalment fee (cost for 3 instalments \$33.00)	Per instalment	LGA6.45 (3)	03119	F			\$ 10.00	
Dishonour fee (includes administration fee)		LGA S6.16	14453	C	\$ 32.73	\$ 3.27	\$ 36.00	
Debt recovery fee - administration fee		LGA S6.16	03119	C	Actual Cost			
Issue of notice of discontinuance		LGA S6.16	03113	C	Actual Cost			
Penalty interest on rate & service charges - arrears		LGA S6.51 FM 70-71	03115		7%			
Penalty interest on rate & service charges - current		LGA S6.51 FM 70-71	03115		7%			
Penalty interest on current rates - instalments		LGA S6.45 (3)	03115		5.5%			
Debtor Fees and Debt Recovery								
		Local Govt Act 1995						
Penalty interest on overdue sundry debtor invoices		LGA S6.13	03208		5.5%			
Rate Book								
Full listing - email (excel document)		LGA S6.16	03121	C	\$ 68.18	\$ 6.82	\$ 75.00	
<i>Note: Before purchase a statutory declaration must be made stating that it will not be copied, used for any commercial purpose, and/or provided to any other person</i>								

Note: Statutory fees are subject to change without notice if regulations are amended

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

Governance	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Publications - Council		Local Govt Act 1995						
Note: All public documents can be downloaded free of charge from www.corrigin.wa.gov.au								
Council minutes, including postage	Per annum	LGA S6.16	04150	C	\$ 92.73	\$ 9.27	\$ 102.00	
Sale of Electoral Roll			04150	C	\$ 45.45	\$ 4.55	\$ 50.00	
Sale of Shire District Map (B&W):			04150	C	\$ 16.36	\$ 1.64	\$ 18.00	
Sale of Shire District Map (colour):			04150	C	\$ 31.82	\$ 3.18	\$ 35.00	
Administration Fees								
Record (history) search fee - such as building plans, cemetery information	Per hour		04150	C	\$ 30.00	\$ 3.00	\$ 33.00	
Enquiries not of a general nature requiring research	Per hour		04150	C	\$ 50.00	\$ 5.00	\$ 55.00	
Freedom of Information								
		FOI Act 1992						
Application fee under Section 12(1)(e) of Act	Per application	FOI S.16.(1)	04150	C	\$ 27.27	\$ 2.73	\$ 30.00	
Per hour charge for staff dealing with FOI application	Per hour	FOI S.16.(1)	04150	C	\$ 27.27	\$ 2.73	\$ 30.00	
Per hour charge for supervised access	Per hour	FOI S.16.(1)	04150	C	\$ 27.27	\$ 2.73	\$ 30.00	
Per hour charge for staff time photocopying	Per hour	FOI S.16.(1)	04150	C	\$ 27.27	\$ 2.73	\$ 30.00	
Per page charge for photocopying	Per page	FOI S.16.(1)	04150	C	\$ 0.18	\$ 0.02	\$ 0.20	
Per hour charge for staff transcribing information from a tape or other device	Per hour	FOI S.16.(1)	04150	C	\$ 27.27	\$ 2.73	\$ 30.00	
Charge for duplicating a tape, film or computer information		FOI S.16.(1)	04150		Actual cost			
Delivery, packaging & postage		FOI S.16.(1)	04150	C	Actual cost			
For an applicant who is a) impecunious in the opinion of the agency or b) the holder of a current valid pensioner concession the charge is reduced by 25%	Per application	FOI S.16.(1)	04150	C	\$ 20.45	\$ 2.05	\$ 22.50	
Advanced deposit which may be required by an agency under section 18(1) or 18(4) of the Act, expressed as a percentage of the estimated charges which will be payable in excess of the application fee		FOI S.18(1)	04150		25%			
Further advance deposit: which may be required by an agency under section 18(4) of the Act, expressed as a percentage of the estimated charges which will be payable in excess of the application fee		FOI S.18(4)	04150		75%			
Election Nomination Fee								
Nomination by candidate (to be refunded if candidate receives at least 5% of total number of the votes included in the count.)		LG (Elections) Regs 26.1	T15	F	\$ 80.00	\$ -	\$ 80.00	

Note: Statutory fees are subject to change without notice if regulations are amended

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

Law, Order, and Public Safety	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Ranger After Hours Call Out Fee								
Applicable in cases of livestock wandering on roads, attacking dogs, injured animals and illegal burning off	Per incident	Local Govt. Act 1995 s6.16	05204	C	\$ 227.27	\$ 22.73	\$ 250.00	
*note that in addition to the above fee, labour private rate maybe applicable to recoup time taken to address this issue at hand.								
Abandoned Vehicles Impound Fees								
Control of Vehicles Act 1978 (as Amended) Nov 2016								
Impound fee	Per vehicle		05312	C	\$ 54.55	\$ 5.45	\$ 60.00	
Storage Fee	Per day		05312	C	\$ 6.36	\$ 0.64	\$ 7.00	
Cartage and storage - within Corrigin town site	Per vehicle		05312	C	\$ 163.64	\$ 16.36	\$ 180.00	
Cartage and storage - outside of Corrigin town site	Per vehicle		05312	C	\$ 227.27	\$ 22.73	\$ 250.00	
Pound Fees and Charges								
Local Govt Act 1995 S6.16								
Dogs								
Dog Reg. 2013								
Seizure and return of dog without impounding	Per dog		05203	C	\$ 36.36	\$ 3.64	\$ 40.00	
Seizure and impounding of a dog	Per dog		05203	C	\$ 59.09	\$ 5.91	\$ 65.00	
Sustenance of dog in pound per day - week day	Per dog/day		05203	C	\$ 16.36	\$ 1.64	\$ 18.00	
Sustenance of dog in pound per day - Sat & Sun	Per dog/day		05203	C	\$ 32.73	\$ 3.27	\$ 36.00	
Return of impounded dog normal hours (8.30am - 3.30pm)	Per dog		05203	C	\$ 36.36	\$ 3.64	\$ 40.00	
Return of impounded dog outside normal hours	Per dog		05203	C	\$ 63.64	\$ 6.36	\$ 70.00	
Destruction/disposal of dog	Per dog		05203	C	Actual cost + 20%			
Any vet fees where such attention is necessary			05203	C			Actual cost + 20%	
Surrender of a dog	Per dog		05203	C	\$ 27.27	\$ 2.73	\$ 30.00	
Cats								
Cat Reg. 2012								
Seizure and return of cat without impounding	Per cat		05203	C	\$ 36.36	\$ 3.64	\$ 40.00	
Seizure and impounding of a cat	Per cat		05203	C	\$ 59.09	\$ 5.91	\$ 65.00	
Sustenance of cat in pound per day - week day	Per cat/day		05203	C	\$ 16.36	\$ 1.64	\$ 18.00	
Sustenance of cat in pound per day - Sat & Sun	Per cat/day		05203	C	\$ 32.73	\$ 3.27	\$ 36.00	
Return of impounded cat normal hours (8.30am- 3.30pm)	Per cat		05203	C	\$ 36.36	\$ 3.64	\$ 40.00	
Return of impounded cat outside normal hours	Per cat		05203	C	\$ 63.64	\$ 6.36	\$ 70.00	
Destruction/disposal of cat	Per cat		05203	C	Actual cost + 20%			
Any vet fees where such attention is necessary			05203	C			Actual cost + 20%	
Surrender of a cat	Per cat		05203	C	\$ 27.27	\$ 2.73	\$ 30.00	

Law, Order, and Public Safety		Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Animal trap			Local Govt Act 1995 S6.16						
Animal trap hire - per week (maximum 2 weeks)	Per week			05204	C	\$ 18.18	\$ 1.82	\$ 20.00	▲
Animal trap hire - bond only	Per trap			T12	N	\$ 50.00	\$ -	\$ 50.00	
Dog Registration/Licence Fees			Dog Reg. 2013						
Note: Statutory fees are subject to change without notice if regulations are amended									
Dogs kept in approved kennel establishment licenced under section 27 of the Act, where not otherwise registered - Annual Fee									
	Per annum		Dog Reg. 2013 S17(3)(2g)	05202	F	\$ 200.00	\$ -	\$ 200.00	
Lifetime registration - sterilised dog	Per dog		Dog Reg. 2013 S17(3)(2e)(ii)		F	\$ 100.00	\$ -	\$ 100.00	
Lifetime registration - unsterilised dog	Per dog		Dog Reg. 2013 S17(3)(2f)(ii)		F	\$ 250.00	\$ -	\$ 250.00	
3 years - unsterilised dog	Per dog		Dog Reg. 2013 S17(3)(2d)(ii)		F	\$ 120.00	\$ -	\$ 120.00	
1 year - unsterilised dog	Per dog		Dog Reg. 2013 S17(3)(1a)		F	\$ 50.00	\$ -	\$ 50.00	
1 year - unsterilised dangerous dog	Per dog		Dog Reg. 2013 S17(3)(1b)		F	\$ 50.00	\$ -	\$ 50.00	
3 years - sterilised dog	Per dog		Dog Reg. 2013 S17(3)(2c)(ii)		F	\$ 42.50	\$ -	\$ 42.50	
1 year sterilised dog	Per dog		Dog Reg. 2013 S17(3)(2b)(ii)		F	\$ 20.00	\$ -	\$ 20.00	
Pensioner concession as defined for dog	Per dog					50% of fee			
Droving/farm dog concession as defined	Per dog					25% of fee			
Guide dog registration fee	Per dog					No Charge			
Registration after 31 May in any year, for that registration year	Per dog					50% of fee			
Cat Registration/Licence fees			Cat Reg. 2012						
Note: Statutory fees are subject to change without notice if regulations are amended									
Fee for application for grant or renewal of approval to breed cats - Per breeding Cat (male or female)	Per cat		Cat Reg. 2012 S1(4)	05207	F	\$ 100.00	\$ -	\$ 100.00	
Lifetime registration - sterilised cat	Per cat		Cat Reg. 2012 Sch.1 item(3)		F	\$ 100.00	\$ -	\$ 100.00	
3 years - sterilised cat	Per cat		Cat Reg. 2012 Sch.1 item(2)		F	\$ 42.50	\$ -	\$ 42.50	
1 year sterilised cat	Per cat		Cat Reg. 2012 Sch.1 item(1(b))		F	\$ 20.00	\$ -	\$ 20.00	
Registration after 31 May in any year, for that registration year	Per cat		Cat Reg. 2012 Sch.1 item(1(a))		F	\$ 10.00	\$ -	\$ 10.00	
Pensioner concession as defined for cat	Per cat					50% of fee			
Dog Local Law			Dog Local Law 2021						
Failing to provide means for effectively confining a dog	Per dog		Dog Local Law 2021 Sch3	05203	F	\$ 50.00	\$ -	\$ 50.00	
Failing to provide means for effectively confining a dangerous dog	Per dog		Dog Local Law 2021 Sch3	05203	F	\$ 200.00	\$ -	\$ 200.00	
Failing to comply with the conditions of a licence	Per dog		Dog Local Law 2021 Sch3	05203	F	\$ 200.00	\$ -	\$ 200.00	
Dog excreting in prohibited place	Per dog		Dog Local Law 2021 Sch3	05203	F	\$ 100.00	\$ -	\$ 100.00	
A licensee who does not comply with the conditions of a licence commits an offence	Penalty		Dog Local Law 2021 S4.9	05203	F	\$ 5,000.00	\$ -	\$ 5,000.00	
A licensee who does not comply with the conditions of a licence commits an offence	Penalty per day		Dog Local Law 2021 S4.10	05203	F	\$ 100.00	\$ -	\$ 100.00	

Law, Order, and Public Safety	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
<u>Animals, Environment and Nuisance</u>		Shire of Corrigin Animals Environment Nuisance Local Law						
Cattery - annual registration fee	Per annum	AEN Local Law S2.4(7)(c)	05204	F	\$ 30.00	\$ -	\$ 30.00	
Keeping of bees permit	Per permit	AEN Local Law S2.13(d)	05204	C	\$ 27.27	\$ 2.73	\$ 30.00	
Application for a permit to keep farm animals	Per application	AEN Local Law S2.22(d)	05204	C	\$ 27.27	\$ 2.73	\$ 30.00	
Keeping a miniature horse - annual registration fee	Per annum	AEN Local Law S2.27(1)	05204	C	\$ 27.27	\$ 2.73	\$ 30.00	
Keeping of miniature pig - annual registration fee	Per annum	AEN Local Law S2.28(4)	05204	C	\$ 27.27	\$ 2.73	\$ 30.00	
Failure to keep premise free from excrement, filth, food waste and other matter likely to be offensive or injurious to health, or likely to attract vermin or insects	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.2(a)	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failure to keep premises clean and disinfected when directed by an EHO	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.2(b)	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failure to keep premises free of flies, or when directed by an EHO, spray premises with residual insecticide or use other means to kill or repel flies	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.2(c)	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failure to maintain adequate enclosures	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.3	05203	F	\$ 150.00	\$ -	\$ 150.00	
Keeping more than 3 cats over the age of 6 months without exemption from the local government	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.4(1)	05203	F	\$ 150.00	\$ -	\$ 150.00	
Establish or maintain a cattery on any lot within the district without approval	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.4(7)(a)	05203	F	\$ 150.00	\$ -	\$ 150.00	
Fail to maintain cattery in compliance with conditions of approval	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.4(7)	05203	F	\$ 150.00	\$ -	\$ 150.00	
Keep, or permit to be kept, any poultry, not in accordance with conditions of these local laws	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.5	05203	F	\$ 150.00	\$ -	\$ 150.00	
Keep, or suffer to remain in a residential area, a rooster, turkey, goose or geese, or peafowl	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.7	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failing to keep cages, enclosures and lofts maintained to minimum standard specified in the Code of Practice	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.8	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failing to prevent pigeons nesting or perching	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.9	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failing to keep aviary birds in accordance with conditions of this local law	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.10	05203	F	\$ 150.00	\$ -	\$ 150.00	
Keeping birds so as to create a nuisance	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.11	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failure to obtain a permit to keep bees	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.12(1)	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failure to comply with a condition of a permit to keep bees	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.14(2)	05203	F	\$ 150.00	\$ -	\$ 150.00	

Law, Order, and Public Safety	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Creation of a nuisance from keeping of bees or beehives	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.19	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failure to comply with a notice to remove bees or beehives for contravention of local law	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.20(1)	05203	F	\$ 150.00	\$ -	\$ 150.00	
Keeping a farm animal without a valid permit	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.21(a)	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failure to comply with the conditions for keeping farm animals	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.26	05203	F	\$ 150.00	\$ -	\$ 150.00	
Keeping a miniature horse on land without approval	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.27	05203	F	\$ 150.00	\$ -	\$ 150.00	
Keeping a miniature pig on land without approval	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.28	05203	F	\$ 150.00	\$ -	\$ 150.00	
Permitting livestock to stray, or be at large in a street, public place or private property without consent	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.30	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failing to keep property fenced in a manner capable of confining livestock	Penalty	AEN Local Law S6.5 (Sch.1) Clause 2.31	05203	F	\$ 150.00	\$ -	\$ 150.00	
Failure to provide or maintain a refuse receptacle on a building or development site	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.1	05203	F	\$ 250.00	\$ -	\$ 250.00	
Failure to control refuse on a building or development site	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.2	05203	F	\$ 250.00	\$ -	\$ 250.00	
Unauthorised storage of materials	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.3(1)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Release or escape of dust or liquid waste from land	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.4	05203	F	\$ 250.00	\$ -	\$ 250.00	
Commencing works involving clearing of land without an approved Dust Management Plan	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.5	05203	F	\$ 250.00	\$ -	\$ 250.00	
Storing, or allow to remain on land, more than one vehicle, vessel or machinery in a state of disrepair	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.8(a)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Storing, or allow to remain on land, any vehicle, vessel or machinery in a state of disrepair for a period in excess of 1 month	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.8(b)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Storing, or allow to remain on land, any vehicle, vessel or machinery parts (including tyres)	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.8(c)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Wreck, dismantle or break up any vehicle part or body, vessel or machinery not inside a building	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.8(d)(i)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Wreck, dismantle or break up any vehicle part or body, vessel or machinery not behind a sufficient fence or wall	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.8(d)(ii)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Wreck, dismantle or break up a vehicle, vessel or machinery so as to cause a nuisance	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.8(e)	05203	F	\$ 250.00	\$ -	\$ 250.00	

Law, Order, and Public Safety	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Disposing of disused refrigerator or similar container with door/lid that can be fastened without removing the door, lid, lock, catch, hinge and rendering the door/lid incapable of being fastened, or without removing refrigerant.	Penalty	AEN Local Law S6.5 (Sch.1) Clause 3.9	05203	F	\$ 250.00	\$ -	\$ 250.00	
Erection or use of lighting installations other than in accordance with this local law	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.1	05203	F	\$ 250.00	\$ -	\$ 250.00	
Emitting light so as to create or cause a nuisance	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.2	05203	F	\$ 250.00	\$ -	\$ 250.00	
Permitting the escape of smoke, fumes, odours and other emissions so as to cause a nuisance	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.5	05203	F	\$ 250.00	\$ -	\$ 250.00	
Parking a livestock vehicle in an urban area or townsite in excess of 30 minutes	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.6(1)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Starting or driving a truck on residential land, or adjoining residential land, without consent of the local government	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.7	05203	F	\$ 250.00	\$ -	\$ 250.00	
Discharging swimming pool backwash onto adjacent land so as to cause a nuisance or cause damage	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.8(1)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Failure to ensure that all rainwater or storm water received by a lot and any building, house or structure on the lot, is contained within the lot or discharged directly to a stormwater drain or road	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.9(1)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Conducting an amusement so as to create a nuisance	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.10	05203	F	\$ 250.00	\$ -	\$ 250.00	
Placement of advertisement, bill posting or junk mail where a "no junk mail", or equivalent, sign is displayed	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.12(2)	05203	F	\$ 100.00	\$ -	\$ 100.00	
Feeding a bird which causes a nuisance	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.14(1)(a)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Feeding a bird a food/substance that is not a natural food	Penalty	AEN Local Law S6.5 (Sch.1) Clause 4.14(1)(b)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Failure to comply with notice	Penalty	AEN Local Law S6.5 (Sch.1) Clause 6.4(1)(b)	05203	F	\$ 250.00	\$ -	\$ 250.00	
Offences against the Bush Fires Act		Bush Fire Act 1954						
1st inspection (free of charge)				C	\$ -	\$ -	\$ -	
1st and final notice				C	\$ -	\$ -	\$ -	
Registered final notice	Per notice		05116	C	\$ 45.45	\$ 4.55	\$ 50.00	
Administration / inspection fee per hour or part thereof	Per hour		05116	C	\$ 68.18	\$ 6.82	\$ 75.00	
Administration / inspection fee for issuing a final demand	Per notice		05116	C	\$ 22.73	\$ 2.27	\$ 25.00	
Administration / inspection fee for preparing an enforcement certificate in relation to an infringement notice	Per notice		05116	C	\$ 18.18	\$ 1.82	\$ 20.00	

Note: Statutory fees are subject to change without notice if regulations are amended

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

Education and Welfare	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Resource Centre Fees - Annual memberships								
		Local Govt. Act 1995 s6.16						
Seniors/school students/concession card holders	Per annum		08250	C	\$ 22.73	\$ 2.27	\$ 25.00	
Sporting & community groups	Per annum		08250	C	\$ 22.73	\$ 2.27	\$ 25.00	
Individuals/businesses	Per annum		08250	C	\$ 31.82	\$ 3.18	\$ 35.00	
Internet & computer use								
		Local Govt. Act 1995 s6.16						
Seniors, school students & concession card holders - ½ hour (min)	Per 1/2 hour		08251	C	\$ 1.82	\$ 0.18	\$ 2.00	
Seniors, school students & concession card holders - 1 hour	Per hour		08251	C	\$ 3.64	\$ 0.36	\$ 4.00	
Non member - ½ hour (min)	Per 1/2 hour		08251	C	\$ 3.64	\$ 0.36	\$ 4.00	
Non member - 1 hour	Per hour		08251	C	\$ 6.36	\$ 0.64	\$ 7.00	
Member - ½ hour (min)	Per 1/2 hour		08251	C	\$ 2.73	\$ 0.27	\$ 3.00	
Member - 1 hour	Per hour		08251	C	\$ 5.45	\$ 0.55	\$ 6.00	
Email checking (10 minutes)	Per 10 mins		08251	C	\$ 1.82	\$ 0.18	\$ 2.00	
Computer and internet use	Per day		08251	C	\$ 27.27	\$ 2.73	\$ 30.00	▲
Wireless internet access with own device	Per day		08251	C	\$ 18.18	\$ 1.82	\$ 20.00	▲
Wireless hotspot	Per 1/2 hour		08251	C	\$ 3.64	\$ 0.36	\$ 4.00	
Wireless hotspot	Per hour		08251	C	\$ 7.27	\$ 0.73	\$ 8.00	
Secretarial services - larger jobs quoted on								
		Local Govt. Act 1995 s6.16						
Non member - ¼ hour (min)	Per 1/4 hr		08252	C	\$ 11.82	\$ 1.18	\$ 13.00	
Non member - ½ hour	per 1/2 hr		08252	C	\$ 22.73	\$ 2.27	\$ 25.00	
Non member - 1 hour	per 1 hr		08252	C	\$ 45.45	\$ 4.55	\$ 50.00	
Member - ¼ hour (min)	Per 1/4 hr		08252	C	\$ 10.91	\$ 1.09	\$ 12.00	
Member - ½ hour	per 1/2 hr		08252	C	\$ 20.91	\$ 2.09	\$ 23.00	
Member - 1 hour	per 1 hr		08252	C	\$ 40.91	\$ 4.09	\$ 45.00	
Digital								
		Local Govt. Act 1995 s6.16						
Non members - CD burning - done by staff (includes cost of CD)	Each		08252	C	\$ 15.45	\$ 1.55	\$ 17.00	
Members - CD burning - done by staff (includes cost of CD)	Each		08252	C	\$ 10.91	\$ 1.09	\$ 12.00	
CD-R Sale (including cover)	Each		08252	C	\$ 9.09	\$ 0.91	\$ 10.00	

Education and Welfare	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Digital photography (completed by staff)		Local Govt. Act 1995 s6.16						
Non member - ¼ hour (min)	Per 1/4 hr		08252	C	\$ 14.55	\$ 1.45	\$ 16.00	
Member - ¼ hour (min)	Per 1/4 hr		08252	C	\$ 10.91	\$ 1.09	\$ 12.00	
Scanning / emailing		Local Govt. Act 1995 s6.16						
Non member - Co-ordinator scans - Per 15 Minutes	Per 1/4 hr		08252	C	\$ 11.82	\$ 1.18	\$ 13.00	
Member - Co-ordinator scans - Per 15 Minutes	Per 1/4 hr		08252	C	\$ 10.91	\$ 1.09	\$ 12.00	
Laminating		Local Govt. Act 1995 s6.16						
Non member - 1st Metre	Per metre		08252	C	\$ 20.00	\$ 2.00	\$ 22.00	
Non member - Per metre over 1m	Per metre		08252	C	\$ 15.45	\$ 1.55	\$ 17.00	
Non member - A3	Per metre		08252	C	\$ 5.45	\$ 0.55	\$ 6.00	
Non member - A4	Per metre		08252	C	\$ 3.64	\$ 0.36	\$ 4.00	
Non member - Business cards	Per card		08252	C	\$ 1.82	\$ 0.18	\$ 2.00	
Member - 1st metre	Per metre		08252	C	\$ 15.45	\$ 1.55	\$ 17.00	
Member - Per metre over 1m	Per metre		08252	C	\$ 10.91	\$ 1.09	\$ 12.00	
Member - A3	Per metre		08252	C	\$ 4.55	\$ 0.45	\$ 5.00	
Member - A4	Per metre		08252	C	\$ 3.64	\$ 0.36	\$ 4.00	
Member - Business cards	Per card		08252	C	\$ 0.91	\$ 0.09	\$ 1.00	
Binding		Local Govt. Act 1995 s6.16						
Non member - Plastic comb (up to 100 pgs)	Each		08253	C	\$ 6.36	\$ 0.64	\$ 7.00	
Non member - Plastic comb (up to 240 pgs)	Each		08253	C	\$ 8.18	\$ 0.82	\$ 9.00	
Member - Plastic comb (up to 100 pgs)	Each		08253	C	\$ 4.55	\$ 0.45	\$ 5.00	
Member - Plastic comb (up to 240 pgs)	Each		08253	C	\$ 6.36	\$ 0.64	\$ 7.00	
Folding		Local Govt. Act 1995 s6.16						
Non member - Per 100 pages	Each		08253	C	\$ 14.55	\$ 1.45	\$ 16.00	
Member - Per 100 pages	Each		08253	C	\$ 10.91	\$ 1.09	\$ 12.00	

Education and Welfare	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Photocopies (black & white)		Local Govt. Act 1995 s6.16						
Non member - A4	Per copy		08253	C	\$ 0.27	\$ 0.03	\$ 0.30	
Non member - A4 paper supplied	Per copy		08253	C	\$ 0.23	\$ 0.02	\$ 0.25	
Non member - A3	Per copy		08253	C	\$ 0.55	\$ 0.05	\$ 0.60	
Non member - A3 paper supplied	Per copy		08253	C	\$ 0.50	\$ 0.05	\$ 0.55	
Non member - A4 (dbl.sided)	Per copy		08253	C	\$ 0.55	\$ 0.05	\$ 0.60	
Non member - A4 (dbl.sided) paper supplied	Per copy		08253	C	\$ 0.50	\$ 0.05	\$ 0.55	
Non member -A3 (dbl.sided)	Per copy		08253	C	\$ 1.36	\$ 0.14	\$ 1.50	
Non member -A3 (dbl.sided) paper supplied	Per copy		08253	C	\$ 1.32	\$ 0.13	\$ 1.45	
Member - A4	Per copy		08253	C	\$ 0.18	\$ 0.02	\$ 0.20	
Member - A4 paper supplied	Per copy		08253	C	\$ 0.14	\$ 0.01	\$ 0.15	
Member - A3	Per copy		08253	C	\$ 0.45	\$ 0.05	\$ 0.50	
Member - A3 paper supplied	Per copy		08253	C	\$ 0.41	\$ 0.04	\$ 0.45	
Member - A4 (dbl.sided)	Per copy		08253	C	\$ 0.45	\$ 0.05	\$ 0.50	
Member - A4 (dbl.sided) paper supplied	Per copy		08253	C	\$ 0.41	\$ 0.04	\$ 0.45	
Member - A3 (dbl.sided)	Per copy		08253	C	\$ 0.91	\$ 0.09	\$ 1.00	
Member - A3 (dbl.sided) paper supplied	Per copy		08253	C	\$ 0.86	\$ 0.09	\$ 0.95	
Facsimiles (sending)		Local Govt. Act 1995 s6.16						
Non member - 1st page	Per page		08253	C	\$ 2.73	\$ 0.27	\$ 3.00	
Non member - Additional pages (per page)	Per page		08253	C	\$ 0.27	\$ 0.03	\$ 0.30	
Non Member - International number (per page)	Per page		08253	C	\$ 6.36	\$ 0.64	\$ 7.00	
Member - 1st page	Per page		08253	C	\$ 1.82	\$ 0.18	\$ 2.00	
Member - Additional pages (per page)	Per page		08253	C	\$ 0.23	\$ 0.02	\$ 0.25	
Member - International number (per Page)	Per page		08253	C	\$ 4.55	\$ 0.45	\$ 5.00	
Facsimiles (receiving)		Local Govt. Act 1995 s6.16						
Non member - Per page	Per page		08253	C	\$ 0.55	\$ 0.05	\$ 0.60	
Member - Per page	Per page		08253	C	\$ 0.36	\$ 0.04	\$ 0.40	

Education and Welfare	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Colour Printing (laserprinter)		Local Govt. Act 1995 s6.16						
Non member - A4	Per page		08253	C	\$ 1.18	\$ 0.12	\$ 1.30	
Non member - A4 paper supplied	Per page		08253	C	\$ 1.14	\$ 0.11	\$ 1.25	
Non member - A3	Per page		08253	C	\$ 2.27	\$ 0.23	\$ 2.50	
Non member - A3 paper supplied	Per page		08253	C	\$ 2.23	\$ 0.22	\$ 2.45	
Non member - A4 (dbl.sided)	Per page		08253	C	\$ 2.32	\$ 0.23	\$ 2.55	
Non member - A4 (dbl.sided) paper supplied	Per page		08253	C	\$ 2.27	\$ 0.23	\$ 2.50	
Non member - A3 (dbl.sided)	Per page		08253	C	\$ 4.50	\$ 0.45	\$ 4.95	
Non member - A3 (dbl.sided) paper supplied	Per page		08253	C	\$ 4.45	\$ 0.45	\$ 4.90	
Member - A4	Per page		08253	C	\$ 0.91	\$ 0.09	\$ 1.00	
Member - A4 paper supplied	Per page		08253	C	\$ 0.86	\$ 0.09	\$ 0.95	
Members - A3	Per page		08253	C	\$ 1.82	\$ 0.18	\$ 2.00	
Members - A3 paper supplied	Per page		08253	C	\$ 1.77	\$ 0.18	\$ 1.95	
Non Member - A4 (dbl.sided)	Per page		08253	C	\$ 2.18	\$ 0.22	\$ 2.40	
Non Member - A4 (dbl.sided) paper supplied	Per page		08253	C	\$ 2.14	\$ 0.21	\$ 2.35	
Non Member - A3 (dbl.sided)	Per page		08253	C	\$ 4.36	\$ 0.44	\$ 4.80	
Non Member - A3 (dbl.sided) paper supplied	Per page		08253	C	\$ 4.32	\$ 0.43	\$ 4.75	
Colour photo printing		Local Govt. Act 1995 s6.16						
Non member - A4	Per page		08253	C	\$ 6.82	\$ 0.68	\$ 7.50	
Member - A4	Per page		08253	C	\$ 5.91	\$ 0.59	\$ 6.50	
Non member - 5" x 7"	Per page		08253	C	\$ 3.18	\$ 0.32	\$ 3.50	
Member - 5" x 7"	Per page		08253	C	\$ 2.73	\$ 0.27	\$ 3.00	
Non member - 4" x 6"	Per page		08253	C	\$ 1.36	\$ 0.14	\$ 1.50	
Member - 4" x 6"	Per page		08253	C	\$ 1.14	\$ 0.11	\$ 1.25	

Education and Welfare	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
3D printer		Local Govt. Act 1995 s6.16						
First hour of printing	Per hour		08253	C	\$ 4.55	\$ 0.45	\$ 5.00	▲
Each subsequent hour	Per hour		08253	C	\$ 2.27	\$ 0.23	\$ 2.50	▲
Cricut		Local Govt. Act 1995 s6.16						
Design fee	Per 1/4 hour		08253	C	\$ 11.82	\$ 1.18	\$ 13.00	▲
Design fee	Per 1/2 hour		08253	C	\$ 22.73	\$ 2.27	\$ 25.00	▲
Design fee	Per hour		08253	C	\$ 45.45	\$ 4.55	\$ 50.00	▲
Vinyl Stickers		Local Govt. Act 1995 s6.16						
Extra small	Per sticker		08253	C	\$ 2.73	\$ 0.27	\$ 3.00	▲
Small	Per sticker		08253	C	\$ 9.09	\$ 0.91	\$ 10.00	▲
Medium	Per sticker		08253	C	\$ 18.18	\$ 1.82	\$ 20.00	▲
Large	Per sticker		08253	C	\$ 27.27	\$ 2.73	\$ 30.00	▲
Extra large	Per sticker		08253	C	\$ 40.91	\$ 4.09	\$ 45.00	▲
Cake Topper		Local Govt. Act 1995 s6.16						
CakeTopper	Each		08253	C	\$ 13.64	\$ 1.36	\$ 15.00	▲
Invitations		Local Govt. Act 1995 s6.16						
Single sided style	Each		08253	C	\$ 4.55	\$ 0.45	\$ 5.00	▲
Card/folded style	Each		08253	C	\$ 7.27	\$ 0.73	\$ 8.00	▲

Education and Welfare	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Equipment hire (20% deposit for non members)(10% discount for members)		Local Govt. Act 1995 s6.16						
Half day - white board	Per half day		08254	C	\$ 13.64	\$ 1.36	\$ 15.00	
Half day - data projector	Per half day		08254	C	\$ 40.91	\$ 4.09	\$ 45.00	
Half day - laptop computer	Per half day		08254	C	\$ 40.91	\$ 4.09	\$ 45.00	
Half day - easel whiteboard	Per half day		08254	C	\$ 9.09	\$ 0.91	\$ 10.00	
Half day - portable projector screen	Per half day		08254	C	\$ 13.64	\$ 1.36	\$ 15.00	
Half day - engraver	Per half day		08254	C	\$ 13.64	\$ 1.36	\$ 15.00	
Half day - digital scanner	Per half day		08254	C	\$ 24.55	\$ 2.45	\$ 27.00	
Full day - white board	Per full day		08254	C	\$ 27.27	\$ 2.73	\$ 30.00	
Full day - overhead projector	Per full day		08254	C	\$ 27.27	\$ 2.73	\$ 30.00	
Full day - data projector	Per full day		08254	C	\$ 68.18	\$ 6.82	\$ 75.00	
Full day - laptop computer	Per full day		08254	C	\$ 68.18	\$ 6.82	\$ 75.00	
Full day - easel whiteboard	Per full day		08254	C	\$ 18.18	\$ 1.82	\$ 20.00	
Full day - portable projector screen	Per full day		08254	C	\$ 27.27	\$ 2.73	\$ 30.00	
Full day - engraver	Per full day		08254	C	\$ 27.27	\$ 2.73	\$ 30.00	
Full day - digital scanner	Per full day		08254	C	\$ 27.27	\$ 2.73	\$ 30.00	
NLIS hire - 3 day hire	Per 3 days		08254	C	\$ 13.64	\$ 1.36	\$ 15.00	
Conference room hire (10% discount to members)		Local Govt. Act 1995 s6.16						
1 hour - minimum	Per hour		08255	C	\$ 27.27	\$ 2.73	\$ 30.00	
Half day - local hirer	Per half day		08255	C	\$ 45.45	\$ 4.55	\$ 50.00	
Full day - local hirer	Per full day		08255	C	\$ 68.18	\$ 6.82	\$ 75.00	
Half day - non local	Per half day		08255	C	\$ 68.18	\$ 6.82	\$ 75.00	
Full day - non local	Per full day		08255	C	\$ 136.36	\$ 13.64	\$ 150.00	
1 hour - minimum - non local	Per hour		08255	C	\$ 40.91	\$ 4.09	\$ 45.00	
Video conference / room hire		Local Govt. Act 1995 s6.16						
IP video conferencing - 1 hour	Per hour		08255	C	\$ 27.27	\$ 2.73	\$ 30.00	
Hire of video conference room only - 1 hour	Per hour		08255	C	\$ 27.27	\$ 2.73	\$ 30.00	
Hire of video conference room only - half day	Per half day		08255	C	\$ 36.36	\$ 3.64	\$ 40.00	
Hire of video conference room only - full day	Per full day		08255	C	\$ 45.45	\$ 4.55	\$ 50.00	
Hire of video conference room required before 9am and after 4.30pm will be charged an additional hourly rate for time occur outside these hours	Per hour		08255	C	\$ 72.73	\$ 7.27	\$ 80.00	
Administration / sec services including new platform, testing connection and liaising with IT tech specialist	Per hour		08255	C	\$ 45.45	\$ 4.55	\$ 50.00	
Administration / sec services including existing platform, sending VC details	Per half hour		08255	C	\$ 22.73	\$ 2.27	\$ 25.00	

Education and Welfare	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Training room hire		Local Govt. Act 1995 s6.16						
6 computers (broadband internet) - half day	Per half day		08255	C	\$ 136.36	\$ 13.64	\$ 150.00	
6 computers (broadband internet) - full day	Per full day		08255	C	\$ 181.82	\$ 18.18	\$ 200.00	
Hire of training room required before 9am and after 4.30pm will be charged an additional hourly rate for time occur outside these hours	Per hour		08255	C	\$ 72.73	\$ 7.27	\$ 80.00	
Office hire - desk/chair/phone		Local Govt. Act 1995 s6.16						
1 hour (minimum)	Per hour		08255	C	\$ 27.27	\$ 2.73	\$ 30.00	
1- 4 hours	Per time		08255	C	\$ 36.36	\$ 3.64	\$ 40.00	
4 plus hours	Per time		08255	C	\$ 50.00	\$ 5.00	\$ 55.00	
Weekly	Per week		08255	C	\$ 136.36	\$ 13.64	\$ 150.00	
Hire of office room required before 9am and after 4.30pm will be charged an additional hourly rate for time occur outside these hours	Per hour		08255	C	\$ 72.73	\$ 7.27	\$ 80.00	
Room hire catering		Local Govt. Act 1995 s6.16						
Tea / coffee - per head	Per head		08255	C	\$ 1.82	\$ 0.18	\$ 2.00	
Morning / afternoon tea - includes tea, coffee & biscuits - per head	Per head		08255	C	\$ 3.64	\$ 0.36	\$ 4.00	
Catering is cost plus 30%			08255				Actual costs + 30%	

Education and Welfare	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Computer training		Local Govt. Act 1995 s6.16						
Non member - 1/2 hour	Per 1/2 hr		08255	C	\$ 22.73	\$ 2.27	\$ 25.00	
Member - 1/2 hour	Per 1/2 hr		08255	C	\$ 20.91	\$ 2.09	\$ 23.00	
Non member - 1 hour	per 1 hr		08255	C	\$ 45.45	\$ 4.55	\$ 50.00	
Member - 1 hour	per 1 hr		08255	C	\$ 40.91	\$ 4.09	\$ 45.00	
BBQ trailer hire		Local Govt. Act 1995 s6.16						
BBQ trailer hire bond - payable by all users	Per hire		T13	N	\$ 200.00	\$ -	\$ 200.00	
Community groups	Per hire		08254	C	\$ 45.45	\$ 4.55	\$ 50.00	
Businesses	Per hire		08254	C	\$ 63.64	\$ 6.36	\$ 70.00	
Commercial	Per hire		08254	C	\$ 90.91	\$ 9.09	\$ 100.00	
Cleaning fee - per hour	Per hour		08254	C	\$ 59.09	\$ 5.91	\$ 65.00	
Phone book advertising		Local Govt. Act 1995 s6.16						
Business listing only	Per listing			C	\$ 13.64	\$ 1.36	\$ 15.00	
Half page advert	Per advert			C	\$ 45.45	\$ 4.55	\$ 50.00	
Full page advert	Per advert			C	\$ 90.91	\$ 9.09	\$ 100.00	

Education and Welfare	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Sale of other items		Local Govt. Act 1995 s6.16						
Sale of phone books	Per book		08256	C	\$ 7.73	\$ 0.77	\$ 8.50	
Sale of postcards	Per book		08260	C	\$ 1.36	\$ 0.14	\$ 1.50	
Sale of wrapping paper	Per sheet		08260	C	\$ 1.82	\$ 0.18	\$ 2.00	
Sale of eco bags - small	Per bag		08260	C	\$ 2.27	\$ 0.23	\$ 2.50	
Sale of eco bags - large	Per bag		08260	C	\$ 3.64	\$ 0.36	\$ 4.00	
Movie Club membership		Local Govt. Act 1995 s6.16						
Annual membership			08261	C	\$ 40.91	\$ 4.09	\$ 45.00	
Visitor (per session)			08261	C	\$ 4.55	\$ 0.45	\$ 5.00	
Room / building rentals		Local Govt. Act 1995 s6.16						
Toy Library annual rental of CRC room	Per annum		08264	C	\$ 363.64	\$ 36.36	\$ 400.00	
Giggle Pots Building Rental as per lease			08350		\$1 annually on demand			

Note: Statutory fees are subject to change without notice if regulations are amended

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

Health	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Annual Registration - Offensive Trades		Health (Offensive Trades Fees) Regulations 1976 Amended 2014						
Registration of the offensive trades specified in schedule 2 of the Act. Or any process or class of trade declared to be an offensive trade under section 186 of the Act.								
Slaughterhouses			07350	F	\$ 298.00	\$ -	\$ 298.00	
Piggeries			07350	F	\$ 298.00	\$ -	\$ 298.00	
Artificial manure depots			07350	F	\$ 211.00	\$ -	\$ 211.00	
Bone mills			07350	F	\$ 171.00	\$ -	\$ 171.00	
Places for storing, drying or preserving bones			07350	F	\$ 171.00	\$ -	\$ 171.00	
Fat melting, fat extracting or tallow melting establishments			07350	F				
1. Butcher shops and similar			07350	F	\$ 171.00	\$ -	\$ 171.00	
2. Larger establishments			07350	F	\$ 298.00	\$ -	\$ 298.00	
Blood drying			07350	F	\$ 171.00	\$ -	\$ 171.00	
Gut scraping, preparation of sausage skins			07350	F	\$ 171.00	\$ -	\$ 171.00	
Fellmongeries			07350	F	\$ 171.00	\$ -	\$ 171.00	
Manure works			07350	F	\$ 211.00	\$ -	\$ 211.00	
Fish curing establishments			07350	F	\$ 211.00	\$ -	\$ 211.00	
Laundries, dry cleaning establishments			07350	F	\$ 147.00	\$ -	\$ 147.00	
Bone merchant premises			07350	F	\$ 171.00	\$ -	\$ 171.00	
Flock factories			07350	F	\$ 171.00	\$ -	\$ 171.00	
Knackeries			07350	F	\$ 298.00	\$ -	\$ 298.00	
Poultry processing establishments			07350	F	\$ 298.00	\$ -	\$ 298.00	
Poultry farming			07350	F	\$ 298.00	\$ -	\$ 298.00	
Rabbit farming			07350	F	\$ 298.00	\$ -	\$ 298.00	
Any other offensive trade not specified			07350	F	\$ 298.00	\$ -	\$ 298.00	
Notification & Registration of a food premises business								
Registration of a food premises business - one off fee applicable on registration only	Per premises	Food Act 2008 and Food Regulations 2009	07452	F	\$ 165.00	\$ -	\$ 165.00	
Receival of written notification in respect of food premises to conduct a food business to a Local Government *	Per premises	Food Act 2008 (s107)	07452	F	\$ 60.00	\$ -	\$ 60.00	
*This fee is not applicable to community and charitable groups that handle low risk foods.								

Health	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Notification of a new proprietor (Should the food business change hands and the food premises conducts the same type of business)		Food Act 2008 (s107, s113). LGA S6.16	07452	C	\$ 59.09	\$ 5.91	\$ 65.00	
Food Business Inspection Fees								
Inspection pursuant to a Food Act 2008	Per annum	LGA. S6.16 Div 5						
Annual Inspection of a food premises business - Low Risk* Charitable and community groups are exempt	Per annum		07452	C	\$ 54.55	\$ 5.45	\$ 60.00	
Annual Inspection of a food premises business - Medium / High Risk	Per annum		07452	C	\$ 100.00	\$ 10.00	\$ 110.00	
*That sell only pre-packaged non-potentially hazard food (eg: newsagents selling pre-packaged confectionary or hairdressers service tea/coffee in connection with another service)								
Other Food related fees								
Food spoilt (supervision of destruction) - per hour	Per hour	LGA. S6.16	07452	C	\$ 63.64	\$ 6.36	\$ 70.00	
Cost of destruction or disposal of forfeited item		Food Act 2008 (s54)	07452		At Costs			
Trading in Public Places (includes Itinerant Food Vendors)								
		Local Govt Act S6.16						
Stall holder - single events	Per application		07754	C	\$ 9.09	\$ 0.91	\$ 10.00	
Stall holder - community / non-for profit group	Per application		07754	C	\$ -	\$ -	\$ -	
Trading - application fee	Per application		07754	C	\$ 18.18	\$ 1.82	\$ 20.00	
Trading - single event / 1 week	Per application		07754	C	\$ 36.36	\$ 3.64	\$ 40.00	
Trading - up to 1 month	Per application		07754	C	\$ 72.73	\$ 7.27	\$ 80.00	
Trading - up to 6 months	Per application		07754	C	\$ 136.36	\$ 13.64	\$ 150.00	
Trading - annual	Per application		07754	C	\$ 272.73	\$ 27.27	\$ 300.00	
Health Local Law								
		Shire of Corrigin Health Local Law						
Application for registration - lodging house	Per application	Health Local Law S8.3	07452	C	\$ 181.82	\$ 18.18	\$ 200.00	
Renewal of registration of a lodging house	Per annum	Health Local Law S8.7	07452	C	\$ 90.91	\$ 9.09	\$ 100.00	
Failure to comply with notice	Per notice	Health Local Law S8.6	07452	C	\$ 27.27	\$ 2.73	\$ 30.00	
Onsite Effluent Disposal								
		Health (Treatment of Sewage and Disposal of Liquid Waste) Regulation 1974						
Application fee for the approval of an apparatus by local government under regulation 4			10350	F	\$ 118.00	\$ -	\$ 118.00	
Issuing of a permit to use an apparatus (i.e. inspection fee)			10350	F	\$ 118.00	\$ -	\$ 118.00	

Health	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Caravan Park		Caravan Parks & Camping Grounds Act 1995 & Regs 1997 Sch 3						
Caravan park (minimum charge)		Regs. 45. (sch 3 (1a))	13250	F	\$ 200.00	\$ -	\$ 200.00	
or fee based on number of sites as per the following (whichever is the greater);		Regs. 45. (sch 3 (1b))	13250					
1. Long and short stay sites (per site)		Regs. 45. (sch 3 (1b))	13250	F	\$ 6.00	\$ -	\$ 6.00	
2. Camp sites (per site)		Regs. 45. (sch 3 (1b))	13250	F	\$ 3.00	\$ -	\$ 3.00	
3. Overflow sites (per site)		Regs. 45. (sch 3 (1b))	13250	F	\$ 1.50	\$ -	\$ 1.50	
Transfer of caravan park licence		Regs. 55. (sch 3 (4))	13250	F	\$ 100.00	\$ -	\$ 100.00	
Additional fee for renewal after expiry		Regs. 53. (sch 3 (2))	13250	F	\$ 20.00	\$ -	\$ 20.00	
Caravan Park lease	Per annum	As per lease	13250	As per lease + CPI increase pa				
Public Buildings		Health (Public Building) Regulations 1992						
New public building inspection fee			07453	C	\$ 100.00	\$ 10.00	\$ 110.00	
New public building - not for profit / community group - inspection fee			07453	C	\$ 18.18	\$ 1.82	\$ 20.00	
Health and Amenity Administration								
Sampling - food / water / asbestos		Local Govt Act 1995 s6.16	07453	C	At Costs			
EHO hourly rate	Per hour	Local Govt Act 1995 s6.16	07453	C	\$ 86.36	\$ 8.64	\$ 95.00	
A EHO hourly rate will be applied to any application process where it has been determined that the amount of time taken to obtain required information and conduct inspections has been deemed excessive to normal time provisions								
Property rental		Local Govt Act 1995 s6.16						
Dental Surgery	Per week		07751	C	\$ 63.64	\$ 6.36	\$ 70.00	
Wellness Centre	Per day		07750	C	\$ 54.55	\$ 5.45	\$ 60.00	
Wellness Centre - permanent user	Per week		07750	C	\$ 109.09	\$ 10.91	\$ 120.00	

Note: Statutory fees are subject to change without notice if regulations are amended

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

Housing	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Housing:		Residential Tenancies Act 1987						
32 Camm Street	Per week		09150	T	\$ 350.00	\$ -	\$ 350.00	▲
36 Camm Street	Per week		09157	T	\$ 350.00	\$ -	\$ 350.00	▲
11 Courboules Cresscent	Per week		09253	T	\$ 350.00	\$ -	\$ 350.00	▲
14 Courboules Cresscent	Per week		09252	T	\$ 350.00	\$ -	\$ 350.00	▲
51 Goyder Street	Per week		09252	T	\$ 350.00	\$ -	\$ 350.00	▲
3 Janes Drive	Per week		09252	T	\$ 350.00	\$ -	\$ 350.00	▲
10 Lawton Way	Per week		09156	T	\$ 300.00	\$ -	\$ 300.00	▲
15 McAndrew Avenue	Per week		09158	T	\$ 300.00	\$ -	\$ 300.00	▲
23 McAndrew Avenue	Per week		09154	T	\$ 300.00	\$ -	\$ 300.00	▲
25 Seimons Avenue	Per week		09151	T	\$ 350.00	\$ -	\$ 350.00	▲
1 Spanney Street	Per week		09155	T	\$ 300.00	\$ -	\$ 300.00	▲
2 Spanney Street	Per week		09152	T	\$ 300.00	\$ -	\$ 300.00	▲
*** House provided to employees as part of their employee package or contract as per Council's Housing Policy 5.14.								
Security Bond equivalent to 4 weeks rent and (where applicable) a pet bond of \$200 which may be paid as a lump sum or garnished from wages over a 10 week period.			T10	T				
Employees who resigned will be allowed 4 weeks to vacate the property with rental at the current rate as per the tenancy agreement, rates will be increased to market value for any tenancy passed 4 weeks (or as approved by the CEO)								
4x2 Residential property - market value	Per week			T	\$ 350.00	\$ -	\$ 350.00	▲
3x1 / 3x2 Residential property - market value	Per week			T	\$ 300.00	\$ -	\$ 300.00	▲

Housing	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Other Housing:		Residential Tenancies Act 1987						
Single Persons Units - Jose Street - new agreements*	Per week		09251	T	\$ 155.00	\$ -	\$ 155.00	
Single Persons Units - Seimons Ave - new agreements*	Per week		09250	T	\$ 195.00	\$ -	\$ 195.00	
***Rental subject to Joint Venture Conditions - rental not to be more that 25% of tenants income or market value, whichever is less.								
Security Bond equivalent to 4 weeks rent and (where applicable) a pet bond of \$200 which may be paid as a lump sum or garnished from wages over a 10 week period.			T11	T				

Note: Statutory fees are subject to change without notice if regulations are amended

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

Community Amenities	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Rubbish Service Charges:								
		Waste Avoidance & Resource Recovery Act 2007. S67						
Domestic rubbish service - 1st service - includes 120L bin + 240L recycling bin	Per service		10150	F	\$ 475.00	\$ -	\$ 475.00	▲
Holder of pensioner card Domestic rubbish service	Per service		10150	F	\$ 368.75	\$ -	\$ 368.75	▲
Commercial rubbish service - 1st service - includes 240L bin + 240L recycling bin	Per service		10150	F	\$ 535.00	\$ -	\$ 535.00	▲
For a 2nd 120L normal bin	Per bin		10150	F	\$ 425.00	\$ -	\$ 425.00	▲
For a 2nd 240L normal bin	Per bin		10150	F	\$ 485.00	\$ -	\$ 485.00	▲
Extra recycling service - 240 litre bin	Per bin		10150	F	\$ 355.00	\$ -	\$ 355.00	▲
Replacement bins / lids - Avon Waste replace parts due to normal wear & tear or charge owner for repairs or replacement bin								
Corrigin Tip Disposal Charges								
		Local Govt. Act 1995 s6.16						
Waste oil disposal	Per litre		10156	C	\$ 0.18	\$ 0.02	\$ 0.20	
Loads - greater than a tonne	Per tonne		10156	C	\$ 54.55	\$ 5.45	\$ 60.00	
Wrapped asbestos waste - per cubic metre and part of thereof	Per cubic metre		10156	C	\$ 68.18	\$ 6.82	\$ 75.00	
Septic trench disposal	Per litre		10156	C	\$ 0.05	\$ 0.01	\$ 0.06	
Bendering Waste Site								
		Local Govt. Act 1995 s6.16						
Bulk commercial / industrial waste	Per tonne		07850	C	\$ 47.27	\$ 4.73	\$ 52.00	▲
Bulk demolition waste	Per tonne		07850	C	\$ 47.27	\$ 4.73	\$ 52.00	▲
Wrapped asbestos waste - per cubic metre and part of thereof	Per cubic metre		07850	C	\$ 104.55	\$ 10.45	\$ 115.00	▲
Contaminated waste soil	Per cubic metre		07850	C	\$ 104.55	\$ 10.45	\$ 115.00	▲
Contaminated asbestos soil	Per cubic metre		07850	C	\$ 42.73	\$ 4.27	\$ 47.00	▲
Minimum charge for wrapped asbestos waste	Per cubic metre		07850	C	\$ 42.73	\$ 4.27	\$ 47.00	▲
Plus asbestos mobilisation / treatment fee (or cost price plus 30% which ever is greater)	Once only		07850	C	\$ 199.09	\$ 19.91	\$ 219.00	▲
Gravel	Per cubic metre		07850	C	\$ 1.00	\$ 0.10	\$ 1.10	▲
Refuse delivery - Western Areas - rubbish	Per tonne		07850	C	\$ 51.82	\$ 5.18	\$ 57.00	▲
Refuse delivery - skip bins - 3m3	Per bin		07850	C	\$ 19.09	\$ 1.91	\$ 21.00	▲
Refuse delivery - skip bins - 4.5m3	Per bin		07850	C	\$ 23.64	\$ 2.36	\$ 26.00	▲
Refuse delivery - hook bins - 10m3	Per bin		07850	C	\$ 47.27	\$ 4.73	\$ 52.00	▲
Refuse delivery - hook bins - 12m3	Per bin		07850	C	\$ 57.27	\$ 5.73	\$ 63.00	▲
Refuse delivery - hook bins - 15m3	Per bin		07850	C	\$ 70.91	\$ 7.09	\$ 78.00	▲
Power poles (with and without butt ends)	Per pole		07850	C	\$ 51.82	\$ 5.18	\$ 57.00	▲
Putrescible waste	Per 1m3		07850	C	\$ 14.55	\$ 1.45	\$ 16.00	▲
Admin / supervision fee	Per hour		07850	C	\$ 90.00	\$ 9.00	\$ 99.00	▲

Community Amenities		Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Planning									
Schedule 2 - Maximum fees for certain planning services (r47)									
			Planning & Development Act 2005						
1	Determining a development application (other than for an extractive industry) where the estimated cost of development is:		Planning Bulletin 93/2013						
	(a) not more than \$50,000		Planning & Development	10650	F	\$ 147.00	\$ -	\$ 147.00	
	(b) more than \$50,000 but not more than \$500,000		Regulations 2009 (Part 7 Local	10650		0.32% of estimated cost of development (no GST)			
	(c) more than \$500,000 but not more than \$2.5 million		Government Planning Charges)	10650		1,700 + 0.257% for every \$1 > \$500,000 (no GST)			
	(d) more than \$2.5 million but not more than \$5 million			10650		7,161 + 0.206% for every \$1 > \$2.5 million (no GST)			
	(e) more than \$5 million but not more than \$21.5 million			10650		12,633 + 0.123% for every \$1 > \$5 million (no GST)			
	(f) more than \$21.5 million			10650	F	\$ 34,196	\$ -	\$ 34,196	
2	Determining a development application (other than for an extractive industry) where the development has commenced or been carried out			10650		The fee in item 1 plus, by way of penalty, twice that fee (no GST)			
3	Determining a development application for an extractive industry where the development has not commenced or been carried out			10650	F	\$ 739.00	\$ -	\$ 739.00	
4	Determining a development application for an extractive industry where the development has commenced or been carried out			10650		The fee in item 3 plus, by way of penalty, twice that fee (no GST)			
5A	Determining an application to amend or cancel development approval			10650	F	\$ 295.00	\$ -	\$ 295.00	
5	Provision of a subdivision clearance								
	(a) not more than 5 lots		Per lot	10650	F	\$ 73.00	\$ -	\$ 73.00	
	(b) more than 5 lots but not more than 195 lots			10650		\$73 per lot for first 5 lots & then \$35 per lot (no GST)			
	(c) more than 195 lots			10650	F	\$ 7,393	\$ -	\$ 7,393	
6	Determining an initial application for approval of a home occupation where the home occupation has not commenced			10650	F	\$ 222.00	\$ -	\$ 222.00	
7	Determining an initial application for approval of a home occupation where the home occupation has commenced			10650		The fee in item 6 plus, by way of penalty, twice that fee (no GST)			
8	Determining an application for the renewal of an approval of a home occupation where the application is made before the approval expires			10650	F	\$ 73.00	\$ -	\$ 73.00	
9	Determining an application for the renewal of an approval of a home occupation where the application is made after the approval has expired			10650		The fee in item 8 plus, by way of penalty, twice that fee (no GST)			
10	Determining an application for a change of use or for an alteration or extension or change of a non conforming use to which item 1 does not apply, where the change or the alteration, extension or change has not commenced or been carried out			10650	F	\$ 295.00	\$ -	\$ 295.00	

Community Amenities		Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
11	Determining an application for a change of use or for an alteration or extension or change of a non conforming use to which item 2 does not apply, where the change or the alteration, extension or change has not commenced or been carried out			10650				The fee in item 10 plus, by way of penalty, twice that fee (no GST)	
12	Providing a zoning certificate			10650	F	\$ 73.00	\$ -	\$ 73.00	
13	Reply to a property settlement questionnaire			10650	F	\$ 73.00	\$ -	\$ 73.00	
14	Providing written planning and/or engineering advice (Note1) per hour, or part thereof			10650	F	\$ 73.00	\$ -	\$ 73.00	
	<i>Note 1: Written planning advice includes, but is not limited to, the following:</i>			10650	F	\$ -	\$ -		
	- the issue of advice in response to the submission of urban water management plans								
	- the issue of advice in response to the submission of dust management plan								
	- the issue of advice in response to the submission of landscape plans								
	- the issue of advice in response to the submission of engineering drawings								
	Such fees are not payable where the above mentioned documents are required to satisfy development/subdivision approval conditions or as part of a local structure plan								
	Costs and expenses of any specific assessment advice, title searches, technical resources or equipment that is required in relation to the assessment of a planning application (e.g. environmental assessment, legal advice, heritage advice, urban design, acoustic assessments, retail assessments, traffic assessments, or modelling etc) will be billed once costs and expenses are incurred and are payable prior to the determination of the proposal								
Scheme Amendments, Local Structure Plan & Amendments									
Scheme Amendments									
			Planning & Development Regs 2009						
	(a) Upon lodgement of the Scheme Amendment request with the local government.		Reg. 47	10650	C	\$ 1,350	\$ 135	\$ 1,485	
	(b) following initiation of Scheme Amendment by the local government and prior to referral to the EPA for environmental clearance		Reg. 47	10650	C	\$ 1,350	\$ 135	\$ 1,485	
Structure Plan									
	(a) upon lodgement of the Structure Plan with the local government								
	Structure Plans, Activity Centre Plans or Development Plans								
	(a) upon lodgement of the Structure Plan, Activity Centre Plan or Development Plan with the local government.			10650	C	\$ 1,350	\$ 135	\$ 1,485	
	(b) following adoption of the Structure Plan, Activity Centre Plan or Development Plan by the local government and prior to public advertising.			10650	C	\$ 1,350	\$ 135	\$ 1,485	

Community Amenities	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Cemetery fees		Cemeteries Act 1986 S53						
Grant of Right of Burial								
Grant of Right of Burial & grave reservation			10756	N	\$ 130.00	\$ -	\$ 130.00	
Copy of Grant of Right of Burial			10756	N	\$ 25.00	\$ -	\$ 25.00	
Renewal of expired Grant of Right of Burial			10756	N	\$ 90.00	\$ -	\$ 90.00	
Reissue of Grant of Right of Burial / registration of assigned grant - after 25 year period			10756	N	\$ 75.00	\$ -	\$ 75.00	
Transfer of Grant of Right of Burial			10756	N	\$ 50.00	\$ -	\$ 50.00	
Interment fee (including grave diggings)		Cemeteries Act 1986 S53						
Standard burial, digging of grave (2.1 depth - standard)			10750	C	\$ 818.18	\$ 81.82	\$ 900.00	
Standard burial, digging of grave (2.4 depth - standard) - 1st interment			10750	C	\$ 1,000.00	\$ 100.00	\$ 1,100.00	
Standard burial, existing grave (2.4 depth - standard) - 2nd interment			10750	C	\$ 1,000.00	\$ 100.00	\$ 1,100.00	
Digging of an infant grave			10750	C	\$ 272.73	\$ 27.27	\$ 300.00	
*standard grave= to accommodate standard casket (2040 x 600 x 350) - oblong or oversize caskets occur additional fees - see penalty fee section								
Exhumation		Cemeteries Act 1986 S53						
Exhumation and reinterment fee			10750	C	\$ 909.09	\$ 90.91	\$ 1,000.00	
Monumental Work		Cemeteries Act 1986 S53						
Annual licence fee			10750	C	\$ 63.64	\$ 6.36	\$ 70.00	
Permission to erect monument fee			10750	C	\$ 36.36	\$ 3.64	\$ 40.00	
Additional works / clean-up required by Shire	At cost			C	\$ -	\$ -	\$ -	
Funeral Directors Licence		Cemeteries Act 1986 S53						
Funeral Directors licence - annual			10750	C	\$ 136.36	\$ 13.64	\$ 150.00	
Funeral Directors licence - per funeral			10750	C	\$ 63.64	\$ 6.36	\$ 70.00	
Repository for Disposal of Ashes		Cemeteries Act 1986 S53						
Niche wall reservation, single (non refundable) includes Grant of Right of Burial			10750	C	\$ 63.64	\$ 6.36	\$ 70.00	
Niche wall reservation, double (non refundable) includes Grant of Right of Burial			10750	C	\$ 109.09	\$ 10.91	\$ 120.00	
Niche wall reservation transfer			10750	C	\$ 63.64	\$ 6.36	\$ 70.00	
Niche wall (single) interment (to be completed by staff)			10750	C	\$ 136.36	\$ 13.64	\$ 150.00	
Niche wall (double) 1st interment (to be completed by staff)			10750	C	\$ 181.82	\$ 18.18	\$ 200.00	
Niche wall (double) 2nd interment (to be completed by staff)			10750	C	\$ 163.64	\$ 16.36	\$ 180.00	
Transfer of ashes to new position			10750	C	\$ 50.00	\$ 5.00	\$ 55.00	
Family in attendance at plaque fitting			10750	C	\$ 45.45	\$ 4.55	\$ 50.00	
Ashes removal			10750	C	\$ 181.82	\$ 18.18	\$ 200.00	
Niche Wall plaque and freight cost (price on application and to be paid by customer prior plaque is ordered)			10751	C			actual costs + 20%	

Community Amenities	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Additional fees (chargeable in addition to scheduled fees)		Cemeteries Act 1986 S53						
Insufficient notice (less than 48 hours notice)			10750	C	\$ 272.73	\$ 27.27	\$ 300.00	
Interment after 2:30pm per hour or part thereof	Per hour			C	\$ 68.18	\$ 6.82	\$ 75.00	
Interment of oblong or oversized casket	Per interment		10750	C	\$ 227.27	\$ 22.73	\$ 250.00	
Interment on Saturday			10750	C	\$ 363.64	\$ 36.36	\$ 400.00	
Interment on Sunday or Public Holiday			10750	C	\$ 545.45	\$ 54.55	\$ 600.00	
Additional works / clean-up required by Shire	Per hour		10750	C	\$ 72.73	\$ 7.27	\$ 80.00	
Installation of ashes at head of existing grave			10750	C	\$ 272.73	\$ 27.27	\$ 300.00	
Re-opening of grave			10750	C	\$ 590.91	\$ 59.09	\$ 650.00	
Hand digging of grave (within restricted plots where plant does not fit)	At cost		10750	C	\$ -	\$ -	\$ -	
Grave number plate			10750	C	\$ 40.91	\$ 4.09	\$ 45.00	
Search fees (involving staff)		Local Govt. Act 1995 s6.16						
For up to two interments or memorial locations only			10750	C	\$ 50.00	\$ 5.00	\$ 55.00	
For each additional location enquiry or search requiring information additional to location			10750	C	\$ 40.91	\$ 4.09	\$ 45.00	
Photocopies of records (per copy)			10750	C	\$ 0.45	\$ 0.05	\$ 0.50	
Digital photograph sent via email			10750	C	\$ 9.09	\$ 0.91	\$ 10.00	
Each additional photo in any format			10750	C	\$ 9.09	\$ 0.91	\$ 10.00	
Community Bus		Local Govt. Act 1995 s6.16						
Community bus hire (hirer to refill bus on return)	Per km		10753	C	\$ 0.68	\$ 0.07	\$ 0.75	
Insurance claim excess fee, on the event of damage, payable by hirer	Per claim		10753	C	\$ 454.55	\$ 45.45	\$ 500.00	
Cleaning fee	Per hour		10753	C	\$ 59.09	\$ 5.91	\$ 65.00	

Note: Statutory fees are subject to change without notice if regulations are amended

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

Recreation & Culture	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Equipment								
PA system hire	Per day	LGA S6.16	11353	C	\$ 63.64	\$ 6.36	\$ 70.00	
Portable stage hire	Per day		11150	C	\$ 90.91	\$ 9.09	\$ 100.00	
Swimming Pool								
Season Pass								
Season Pass - Family (2 adults, 2 children) extra children charged as child pass	Per pass		11250	C	\$ 227.27	\$ 22.73	\$ 250.00	
Season Pass - Family (2 adults, 2 children) - concession - 25% discount	Per pass		11250	C	\$ 170.45	\$ 17.05	\$ 187.50	
Season Pass - Adult	Per pass		11250	C	\$ 100.00	\$ 10.00	\$ 110.00	
Season Pass - Adult - concession -25% discount	Per pass		11250	C	\$ 75.00	\$ 7.50	\$ 82.50	
Season Pass - Child under 16 years	Per pass		11250	C	\$ 63.64	\$ 6.36	\$ 70.00	
Season Pass - Child under 16 years - concession -25% discount	Per pass		11250	C	\$ 47.73	\$ 4.77	\$ 52.50	
Prices for seasonal passes are halved from 15 January								
General Admission								
General Admittance - Adult	Per admission		11250	C	\$ 3.64	\$ 0.36	\$ 4.00	
General Admittance - Adult - concession - 25% discount	Per admission		11250	C	\$ 2.73	\$ 0.27	\$ 3.00	
General Admittance - Child / student	Per admission		11250	C	\$ 2.73	\$ 0.27	\$ 3.00	
General Admittance - Child / student - concession - 25% discount	Per admission		11250	C	\$ 2.05	\$ 0.20	\$ 2.25	
General Admittance - 3 years and under	Per admission		11250	C	\$ -	\$ -	\$ -	
General Admittance - Spectator (no swimming)	Per admission		11250	C	\$ 2.27	\$ 0.23	\$ 2.50	
Indoor Heated Pool								
Indoor Heated Pool - Adult	Per session		11250	C	\$ 6.36	\$ 0.64	\$ 7.00	
Indoor Heated Pool - Adult - concession - 25% discount	Per session		11250	C	\$ 4.77	\$ 0.48	\$ 5.25	
Indoor Heated Pool - Child up to 4 years	Per session		11250	C	\$ 3.18	\$ 0.32	\$ 3.50	
Indoor Heated Pool - Child up to 4 years - concession - 25% discount	Per session		11250	C	\$ 2.36	\$ 0.24	\$ 2.60	
Indoor Heated Pool - Child / student 4 to 16 years	Per session		11250	C	\$ 4.55	\$ 0.45	\$ 5.00	
Indoor Heated Pool - Child / student 4 to 16 years - concession - 25% discount	Per session		11250	C	\$ 3.41	\$ 0.34	\$ 3.75	
Indoor Heated Pool - Bulk pass (10 admissions)	Per pass		11250	C	\$ 54.55	\$ 5.45	\$ 60.00	
Indoor Heated Pool - Bulk pass (10 admissions) - concession - 25% discount	Per pass		11250	C	\$ 40.91	\$ 4.09	\$ 45.00	
Indoor Heated Pool - Carer (accompanying) - no charge					\$ -	\$ -	\$ -	
Swimming Lessons								
Swimming lessons - 1st child	Per 1/2 hour / child		11250	C	\$ 13.64	\$ 1.36	\$ 15.00	
Swimming lessons - 2nd or more children	Per 1/2 hour / child		11250	C	\$ 12.73	\$ 1.27	\$ 14.00	
Private swimming lesson	Per 1/2 hour		11250	C	\$ 36.36	\$ 3.64	\$ 40.00	

Recreation & Culture	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Other Classes								
Aqua aerobics	Per class		11250	C	\$ 13.64	\$ 1.36	\$ 15.00	
Aqua aerobics - concession - 25% discount	Per class		11250	C	\$ 10.23	\$ 1.02	\$ 11.25	
Aqua aerobics (10 classes)	Per course		11250	C	\$ 127.27	\$ 12.73	\$ 140.00	
Aqua aerobics (10 classes) - concession - 25% discount	Per course		11250	C	\$ 95.45	\$ 9.55	\$ 105.00	
***To be eligible for a concession, must hold a Health Care card or Pension card.								
Hall & Pavilion Hire fees & charges								
		LGA S6.16						
Town Hall - Community Groups, Clubs & School								
Receptions, dinners, private parties etc.	Less than 4 hours		11150	C	\$ 68.18	\$ 6.82	\$ 75.00	
Receptions, dinners, private parties etc.	Full day		11150	C	\$ 131.82	\$ 13.18	\$ 145.00	
Meetings, seminars etc.	Per hour (2 hours min)		11150	C	\$ 18.18	\$ 1.82	\$ 20.00	
Use of kitchen facilities only	Per hour		11150	C	\$ 13.64	\$ 1.36	\$ 15.00	
Use of kitchen facilities only	Less than 4 hours		11150	C	\$ 50.00	\$ 5.00	\$ 55.00	
Use of kitchen facilities only	Full day		11150	C	\$ 100.00	\$ 10.00	\$ 110.00	
Sporting events - Badminton, Yoga, etc.	Per hour		11150	C	\$ 13.64	\$ 1.36	\$ 15.00	
Set up / rehearsal	Per hour (min 2 hours)		11150	C	\$ 18.18	\$ 1.82	\$ 20.00	
Town Hall - Commercial / Private								
Receptions, dinners, private parties etc.	Less than 4 hours		11150	C	\$ 100.00	\$ 10.00	\$ 110.00	
Receptions, dinners, private parties etc.	Full day		11150	C	\$ 196.36	\$ 19.64	\$ 216.00	
Meetings, seminars etc.	Per hour (2 hours min)		11150	C	\$ 27.27	\$ 2.73	\$ 30.00	
Use of kitchen facilities only	Per hour		11150	C	\$ 18.18	\$ 1.82	\$ 20.00	
Use of kitchen facilities only	Less than 4 hours		11150	C	\$ 68.18	\$ 6.82	\$ 75.00	
Use of kitchen facilities only	Full day		11150	C	\$ 131.82	\$ 13.18	\$ 145.00	
Sporting events - Badminton, Yoga, etc.	Per hour		11150	C	\$ 18.18	\$ 1.82	\$ 20.00	
Set up / rehearsal	Per hour (min 2 hrs)		11150	C	\$ 27.27	\$ 2.73	\$ 30.00	
CWA Hall Hire - Community Groups, Clubs & School								
Hire of CWA hall	Per hour		11150	C	\$ 4.55	\$ 0.45	\$ 5.00	
Hire of CWA hall	Less than 4 hours		11150	C	\$ 18.18	\$ 1.82	\$ 20.00	
Hire of CWA hall	Full day		11150	C	\$ 32.73	\$ 3.27	\$ 36.00	
Set up / rehearsal	Per hour		11150	C	\$ 4.55	\$ 0.45	\$ 5.00	
CWA Hall Hire - Commercial Private								
Hire of CWA hall	Per hour		11150	C	\$ 5.45	\$ 0.55	\$ 6.00	
Hire of CWA hall	Less than 4 hours		11150	C	\$ 22.73	\$ 2.27	\$ 25.00	
Hire of CWA hall	Full day		11150	C	\$ 40.91	\$ 4.09	\$ 45.00	
Set up / rehearsal	Per hour		11150	C	\$ 7.27	\$ 0.73	\$ 8.00	
CWA Hall Equipment hire								
Hire of plastic trestle tables	Per table		11150	C	\$ 5.00	\$ 0.50	\$ 5.50	
Hire of plastic chairs	Per chair		11150	C	\$ 1.00	\$ 0.10	\$ 1.10	

Recreation & Culture	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Corrigin Recreation & Events Centre - Community Groups, Clubs & School								
Function room, includes kitchen - reception, dinners, private parties etc.	Less than 4 hours		11351	C	\$ 118.18	\$ 11.82	\$ 130.00	
Function room, includes kitchen - reception, dinners, private parties etc	Full day		11351	C	\$ 236.36	\$ 23.64	\$ 260.00	
Meeting or office rooms	Per hour (min 2 hours)		11351	C	\$ 13.64	\$ 1.36	\$ 15.00	
Meeting or office rooms	Per day		11351	C	\$ 45.45	\$ 4.55	\$ 50.00	
Use of kitchen facilities only	Per hour		11351	C	\$ 18.18	\$ 1.82	\$ 20.00	
Use of kitchen facilities only	Half day - less than 4 hours		11351	C	\$ 45.45	\$ 4.55	\$ 50.00	
Use of kitchen facilities only	Full day		11351	C	\$ 90.91	\$ 9.09	\$ 100.00	
Kiosk only	Per day		11351	C	\$ 36.36	\$ 3.64	\$ 40.00	
Kiosk plus kitchen hire	Per day		11351	C	\$ 109.09	\$ 10.91	\$ 120.00	
Set up / rehearsal	Per hour (min 2 hours)		11150	C	\$ 22.73	\$ 2.27	\$ 25.00	
Corrigin Recreation & Events Centre - Commercial / Private								
Function room, includes kitchen - reception, dinners, private parties etc.	Less than 4 hours		11351	C	\$ 181.82	\$ 18.18	\$ 200.00	
Function room, includes kitchen - reception, dinners, private parties etc	Full day		11351	C	\$ 363.64	\$ 36.36	\$ 400.00	
Meeting or office rooms	Per hour (min 2 hours)		11351	C	\$ 18.18	\$ 1.82	\$ 20.00	
Meeting or office rooms	Per day		11351	C	\$ 90.91	\$ 9.09	\$ 100.00	
Use of kitchen facilities only	Per hour		11351	C	\$ 27.27	\$ 2.73	\$ 30.00	
Use of kitchen facilities only	Half day - less than 4 hours		11351	C	\$ 68.18	\$ 6.82	\$ 75.00	
Use of kitchen facilities only	Full day		11351	C	\$ 131.82	\$ 13.18	\$ 145.00	
Kiosk only	Per day		11351	C	\$ 72.73	\$ 7.27	\$ 80.00	
Kiosk plus kitchen hire	Per day		11351	C	\$ 181.82	\$ 18.18	\$ 200.00	
Set up / rehearsal	Per hour (min 2 hours)		11150	C	\$ 27.27	\$ 2.73	\$ 30.00	
Low impact classes - yoga etc - ***Once 100hrs have been booked/paid a discounted rate of \$20.00/hr will apply thereafter	Per hour (min 1 hour)		11150	C	\$ 22.73	\$ 2.27	\$ 25.00	
Indoor Court area								
Sports Hall - Sporting Activity - ***Once 100hrs have been booked/paid a discounted rate of \$20.00/hr will apply thereafter	Per hour		11351	C	\$ 22.73	\$ 2.27	\$ 25.00	
Sports hall - reception - price on application - to be approved by the CEO	POA*		11351	C	\$ -	\$ -		
Squash Court								
Squash court	Per hour		11351	C	\$ 13.64	\$ 1.36	\$ 15.00	
Squash Court Membership								
Membership - Individual	Monthly		11351	C	\$ 31.82	\$ 3.18	\$ 35.00	
Membership - Individual	Quarterly		11351	C	\$ 81.82	\$ 8.18	\$ 90.00	
Membership - Individual	Annually		11351	C	\$ 290.91	\$ 29.09	\$ 320.00	
Membership - Family	Monthly		11351	C	\$ 116.36	\$ 11.64	\$ 128.00	
Membership - Family	Quarterly		11351	C	\$ 283.64	\$ 28.36	\$ 312.00	
Membership - Family	Annually		11351	C	\$ 763.64	\$ 76.36	\$ 840.00	
Change Rooms								
Change rooms only	Per day		11351	C	\$ 45.45	\$ 4.55	\$ 50.00	

Recreation & Culture	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Miscellaneous Fee								
Swipe card deactivation / activation fee			11351	C	\$ 27.27	\$ 2.73	\$ 30.00	
* In the event that a CREC swipe key is not returned within the required timeframe and the swipe card is deactivated to ensure security of the building, the above key deactivation fee will apply. Should the key be returned and the swipe card re-activated, the above fee will be applicable again								
Key Bonds								
Key bonds - applicable to all facilities	Per key		T13	N	\$ 50.00	\$ -	\$ 50.00	
Lost key replacement fee (key bond withheld to cover fee)	Per key			C	\$ 45.45	\$ 4.55	\$ 50.00	
If Council determines that due to a lost key that locks to the facility need to be replace, the hirer, in addition to the above fee will be charged Actual for replacing locks and keys plus the replacement key fee.								
				C	Actual Costs + Lost key replacement fee			
Other fees - All facilities								
Basic cleaning Fee	Per hour			C	\$ 59.09	\$ 5.91	\$ 65.00	
Back up booking fee	Per booking			C	\$ 22.73	\$ 2.27	\$ 25.00	
<i>*back up booking fee (non-refundable) is applicable where a venue is temporary booked as a back up facility. Should the facility be used, this fee will be deducted from the Hire Fee</i>								
Call out fee - Lock / unlock, activate / deactivate alarm				C	\$ 227.27	\$ 22.73	\$ 250.00	
Annual Rentals of Main Oval & Recreation facilities								
Corrigin Football Club	Per season		11350	C	\$ 3,636.36	\$ 363.64	\$ 4,000.00	
Corrigin Hockey Club	Per season		11350	C	\$ 1,818.18	\$ 181.82	\$ 2,000.00	
Corrigin Cricket Club	Per season		11350	C	\$ 1,363.64	\$ 136.36	\$ 1,500.00	
Corrigin Netball Club	Per season		11350	C	\$ 1,818.18	\$ 181.82	\$ 2,000.00	
Corrigin Swimming Club Levy	Per season		11350	C	\$ 209.09	\$ 20.91	\$ 230.00	
Corrigin Agricultural Society	Per show		11350	C	\$ 272.73	\$ 27.27	\$ 300.00	
Corrigin Squash Club	Per season		11350	C	\$ 272.73	\$ 27.27	\$ 300.00	
Corrigin Basketball Club - Junior	Per season		11350	C	\$ 227.27	\$ 22.73	\$ 250.00	
Storage Cage Fee	Per season		11350	C	\$ 272.73	\$ 27.27	\$ 300.00	
Oval, Oval & Netball Court Lights:								
Oval hire only	Per day		11352	C	\$ 72.73	\$ 7.27	\$ 80.00	
Oval hire with cricket pitch preparation	Per day		11352	C	\$ 227.27	\$ 22.73	\$ 250.00	
Sporting carnivals, includes use of oval, change rooms kitchen / kiosk	Per day		11352	C	\$ 90.91	\$ 9.09	\$ 100.00	
Football oval lights half power	Per hour		11352	C	\$ 45.45	\$ 4.55	\$ 50.00	
Football oval lights full power	Per hour		11352	C	\$ 90.91	\$ 9.09	\$ 100.00	
Hockey oval lights half power	Per hour		11352	C	\$ 27.27	\$ 2.73	\$ 30.00	
Hockey oval lights full power	Per hour		11352	C	\$ 72.73	\$ 7.27	\$ 80.00	
Netball court lights	Per hour		11352	C	\$ 27.27	\$ 2.73	\$ 30.00	

Recreation & Culture	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Sale of Tourism Books		Local Govt. Act 1995 s6.16						
Corrigin Pioneering Days & Beyond	Per book		11651	C	\$ 11.82	\$ 1.18	\$ 13.00	
History of Parraclu	Per book		11651	C	\$ 31.82	\$ 3.18	\$ 35.00	
Yealering Book	Per book		11651	C	\$ 18.18	\$ 1.82	\$ 20.00	
Tin Horse Highway	Per book		11651	C	\$ 9.09	\$ 0.91	\$ 10.00	
A Heritage ingrained (CBH)	Per book		11651	C	\$ 18.18	\$ 1.82	\$ 20.00	
Corrigin History Book	Per book		11651	C	\$ 10.00	\$ 1.00	\$ 11.00	
Moments in Time	Per book		11651	C	\$ 31.82	\$ 3.18	\$ 35.00	
Moments in Time, including postage	Per book		11651	C	\$ 50.00	\$ 5.00	\$ 55.00	
Property rental		Local Govt Act 1995 s6.16						
Tennis Club as per agreement							Nil as per contract	
Bowling Club as per agreement							\$1 annually on demand	
Golf Club as per agreement							\$1 annually on demand	
Rifle Club as per agreement							\$1 annually on demand	
Practical Pistol Club as per agreement							\$1 annually on demand	
Speedway as per lease							\$2 annually on demand	

Note: Statutory fees are subject to change without notice if regulations are amended

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

Economic Services	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Building Fees		Department of Commerce - Building Act Fees 2019/20						
Certified Application for a Building Permit - Building Classification 1 & 10 - Minimum Fee	Minimum fee	S.16 (1)	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Certified Application for a Building Permit - Building Classification 1 & 10	\$ * %				0.19%			
Certified Application for a Building Permit - Building Classification 2-9 - Minimum Fee	Minimum fee	S.16 (1)	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Certified Application for a Building Permit - Building Classification 2-9	\$ * %			F	0.09%			
Uncertified Building Application	Minimum fee	S.16 (1)	13350	F	\$ 97.70		\$ 110.00	▲
Uncertified Building Application	\$ * %			F	0.32%			
Demolition Permit								
Demolition Permit - 1 & 10		S.16 (1)	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Demolition Permit 2-9	Per storey	S.16 (1)	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Application to extend the time during which a building of demolition permit has effect		S.32 (3)(f)	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Other Building Fees							\$ 110.00	▲
Application for an occupancy permit for completed buildings		S.46	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Application for a temporary occupancy permit for incomplete buildings		S.47	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Application for modification of an occupancy permit for additional use of building on a temporary basis		S.48	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Application for a replacement occupancy permit for permanent change of building's use, classification		S.49	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Application to replace an occupancy permit for an existing building	Minimum fee	S.52 (1)	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Application for occupancy certificate for a building in respect of which unauthorised work has been done	Minimum fee	S.51 (2)		F	\$ 110.00	\$ -	\$ 110.00	▲
Application for occupancy certificate for a building in respect of which unauthorised work has been done	\$ * %			F	0.18%	\$ -		

Economic Services	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Application for a building approval certificate for a building where unauthorised work has been done	Minimum fee	S.51 (3)	13350	F	\$ 97.70		\$ 110.00	▲
Application for a building approval certificate for a building where unauthorised work has been done	\$* %		13350	F	0.38%	\$ -		▲
Application for a building approval certificate for an existing building where unauthorised work has not been done	Minimum fee	S.52 (2)	13350	F	\$ 97.70		\$ 110.00	▲
Application to extend the time during which an occupancy permit or building approval certificate has effect		S.65 (3)(a)	13350	F	\$ 110.00	\$ -	\$ 110.00	▲
Application as defined in regulation 31 (for each building standard in respect of which a declaration is sought)		S.31	13350	F	\$ 2,160.15	\$ -	\$ 2,160.15	▲
Application for approval of battery powered smoke alarms		S.61	13350	F	\$ 179.40	\$ -	\$ 179.40	▲
Building Service Levy (BSL)								
Building Permit Certified or Uncertified Less then \$45,000 (includes \$5.00 BSL Admin Fee)	Minimum fee		T3	N	\$ 61.65	\$ -	\$ 61.65	
Building Permit Certified or Uncertified \$45,000 or over			T3	N	0.137%			
Demolition Licence < \$45,000 (Includes BSL Admin Fee)	Minimum fee		T3	N	\$ 61.65	\$ -	\$ 61.65	
Demolition Licence >\$45,000			T3	N	0.137%			
Occupancy Permit (Includes BSL Admin Fee)			T3	N	\$ 61.65	\$ -	\$ 61.65	
Unauthorised Building work less then \$45,000	Minimum fee		T3	N	\$ 123.30	\$ -	\$ 123.30	
Unauthorised Building work \$45,000 or over			T3	N	0.274%			
BSL Admin Fee (to be withheld by the permit authority)			13351	F	\$ 5.00	\$ -	\$ 5.00	
Contruaction Training Fund (CTF) Levy								
CTF Levy			T2	N	0.20%			
CTF Admin Fee (to be withheld by the permit authority)			13352	F	\$ 8.25	\$ -	\$ 8.25	
Private Swimming Pool Inspection fees								
One off Swimming Pool inspection - requested by owner/agent outside mandatory inspection regime			10650	C	\$ 136.36	\$ 13.64	\$ 150.00	
Mandatory Swimming Pool inspection fee - Every 4 years		Building Regs, S53	10650	C	\$ 53.14	\$ 5.31	\$ 58.45	▲
Dog Cemetery								
Dog burial fee	Per burial		13251	C	\$ 227.27	\$ 22.73	\$ 250.00	
Dog burial fee (weekends, public holidays or RDO)	Per burial		13251	C	\$ 454.55	\$ 45.45	\$ 500.00	

Economic Services	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Standpipes								
Commercial standpipe water usage - Connelly Parade North and Bullaring	Per 1000 litres		13750	F	\$ 8.35	\$ -	\$ 8.35	
Community standpipe water usage - Connelly Parade South	Per 1000 litres		13750	F	\$ 2.53	\$ -	\$ 2.53	
Bore water usage - Connolly Parade (town dam)	Per 1000 litres		13750	F	\$ 4.00	\$ -	\$ 4.00	
Bulyee Water Tanks - Bulyee Road (near hall) - for civil works	Per 1000 litres		13750	F	\$ 4.00	\$ -	\$ 4.00	
Application for standpipe access (includes swipe card)	Per application		13750	C	\$ 22.73	\$ 2.27	\$ 25.00	
Application for replacement and additional standpipe swipe card	Per card		13750	C	\$ 22.73	\$ 2.27	\$ 25.00	
Deactivating swipe card due to non payment	Per card		13750	C	\$ 31.82	\$ 3.18	\$ 35.00	
Saleyards								
Saleyards commissions (per sale/per head):	Per head		13450	C	\$ 0.50	\$ 0.05	\$ 0.55	▲
Property rental								
		Local Govt Act 1995 s6.16						
Red Cross CAC Building agreement	Per annum		13156	C	As per lease + CPI annual increase			
Bilbarin Hall as per agreement					Nil as per contract			
Bullaring Hall as per agreement					Nil as per contract			
Bulyee Hall as per agreement					Nil as per contract			
Ram Breeders shed as per agreement					Nil as per contract			
Windmill Newspaper as per agreement					Nil as per contract			
Creative Arts Club as per agreement					\$1 annually on demand			
Museum as per agreement					\$1 annually on demand			
Senior Citizens Centre as per agreement					\$2 annually on demand			

Note: Statutory fees are subject to change without notice if regulations are amended

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

Transport	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Crossover Fees		Local Govt Act 1995 s6.16						
Crossover - subsidy allowance (50% council contribution)			12254	F	\$ 850.00	\$ -	\$ 850.00	▲
Crossover inspection fee per crossover (one per block)			12254	C	\$ 29.09	\$ 2.91	\$ 32.00	
Road Closures		Road Traffic Act						
Street event - supply and removal of single road closure signage (basic signs only)		Per event	12254	C	\$ 124.05	\$ 12.40	\$ 136.45	
Street event - bond for damages to signage and road infrastructure assets			12254	N			\$ 500.00	
Application - temporary - up to 4 weeks - administration			12254	C	At Costs			
Application - permanent - administration			12254	C	At Costs			
<i>*Actual costs includes recovery of advertising, legal fees, and incidentals</i>								
Directional Signage		Local Govt Act 1995 s6.16						
Rural street numbering	Per sign		12254	C	\$ 31.82	\$ 3.18	\$ 35.00	
Sign on an existing post	Per sign		12254	C	\$ 204.55	\$ 20.45	\$ 225.00	
Sign on and new post	Per sign		12254	C	\$ 295.45	\$ 29.55	\$ 325.00	

Note: Statutory fees are subject to change without notice if regulations are amended

SHIRE OF CORRIGIN
SCHEDULE FEES & CHARGES
2022/2023

Other Property & Services	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Materials for sale		LGA S6.16						
Check supplies with depot before receipting								
Blue metal	Per tonne		14154	C	\$ 77.27	\$ 7.73	\$ 85.00	▲
Blue metal dust	Per tonne		14154	C	\$ 59.09	\$ 5.91	\$ 65.00	▲
Premix	Per tonne		14154	C	\$ 195.45	\$ 19.55	\$ 215.00	▲
Concrete - includes delivery within town site (minimum supply 2.5m ³)	Per cubic metre		14154	C	\$ 336.36	\$ 33.64	\$ 370.00	▲
Concrete - 30 MPA includes delivery within town site (minimum supply 2.5m ³)	Per cubic metre		14154	C	\$ 350.00	\$ 35.00	\$ 385.00	▲
Concrete - 40 MPA includes delivery within town site (minimum supply 2.5m ³)	Per cubic metre		14154	C	\$ 363.64	\$ 36.36	\$ 400.00	▲
Concrete - formwork	Per hour		14154	C	\$ 77.27	\$ 7.73	\$ 85.00	▲
Concrete - \$2 per km to travel out of town site			14154	C	\$ 1.82	\$ 0.18	\$ 2.00	
Top soil	Per tonne		14154	C	\$ 22.73	\$ 2.27	\$ 25.00	▲
Sand	Per tonne		14154	C	\$ 40.91	\$ 4.09	\$ 45.00	▲
Washed / creek sand	Per tonne		14154	C	\$ 45.45	\$ 4.55	\$ 50.00	▲
Mixed gravel and yellow sand	Per tonne		14154	C	\$ 31.82	\$ 3.18	\$ 35.00	▲
Normal gravel	Per tonne		14154	C	\$ 22.73	\$ 2.27	\$ 25.00	▲
Mulch / woodchips	Per cubic metre		14154	C	\$ 22.73	\$ 2.27	\$ 25.00	▲
Delivery cost per load for all materials (excluding cost of materials)	Per load		14154	C	\$ 72.73	\$ 7.27	\$ 80.00	▲
Gravel Royalties (payable to landowners when gravel is extracted from property)	Per cubic metre		14102	C	\$ 1.00	\$ 0.10	\$ 1.10	

Other Property & Services	Per	Reference (Act, Regulation, Local law, Policy)	G/L Code	GST CODE	Fees Exc GST	GST	2022/23 Fees including GST if applicable	Variance from 21/22
Plant Hire Rates - Private Works - per hour		LGA S6.16						
Graders	Per hour		14154	C	\$ 181.82	\$ 18.18	\$ 200.00	
13 tonne truck CR5	Per hour		14154	C	\$ 177.27	\$ 17.73	\$ 195.00	
6 tonne truck CR4	Per hour		14154	C	\$ 159.09	\$ 15.91	\$ 175.00	
Crew cab	Per hour		14154	C	\$ 145.45	\$ 14.55	\$ 160.00	
Ute	Per hour		14154	C	\$ 109.09	\$ 10.91	\$ 120.00	
Prime mover & tipping trailer	Per hour		14154	C	\$ 168.18	\$ 16.82	\$ 185.00	
Prime mover & lowbed trailer	Per hour		14154	C	\$ 168.18	\$ 16.82	\$ 185.00	
Concrete truck	Per hour		14154	C	\$ 213.64	\$ 21.36	\$ 235.00	
Road train	Per hour		14154	C	\$ 213.64	\$ 21.36	\$ 235.00	
Water truck	Per hour		14154	C	\$ 213.64	\$ 21.36	\$ 235.00	
Large loaders	Per hour		14154	C	\$ 186.36	\$ 18.64	\$ 205.00	
Small loaders	Per hour		14154	C	\$ 177.27	\$ 17.73	\$ 195.00	
Multi-wheel roller	Per hour		14154	C	\$ 190.91	\$ 19.09	\$ 210.00	
Pannell vibrating roller	Per hour		14154	C	\$ 177.27	\$ 17.73	\$ 195.00	
Excavator	Per hour		14154	C	\$ 181.82	\$ 18.18	\$ 200.00	
Cherry picker	Per hour		14154	C	\$ 150.00	\$ 15.00	\$ 165.00	
Skid steel loader	Per hour		14154	C	\$ 140.91	\$ 14.09	\$ 155.00	
Caterpillar forklift	Per hour		14154	C	\$ 168.18	\$ 16.82	\$ 185.00	
Mower / Slasher	Per hour		14154	C	\$ 140.91	\$ 14.09	\$ 155.00	
Spray trailer	Per hour		14154	C	\$ 140.91	\$ 14.09	\$ 155.00	
Small tractor	Per hour		14154	C	\$ 122.73	\$ 12.27	\$ 135.00	
Large tractor	Per hour		14154	C	\$ 122.73	\$ 12.27	\$ 135.00	
SP roller (small)	Per hour		14154	C	\$ 159.09	\$ 15.91	\$ 175.00	
Other small misc equipment	Per day		14154	C	\$ 72.73	\$ 7.27	\$ 80.00	
Rubbish (red) trailer bins including tip disposal fees (<i>notify finance of tip disposal for reallocating to Tip Income</i>)	Per day		14154	C	\$ 272.73	\$ 27.27	\$ 300.00	▲
**All equipment is hired as wet hire - plant & operator - if works are to be carried out outside of ordinary hours or on weekends, RDO or public holidays an increase of 30% will apply per hour								
Charges for private works carried out by Council are based on recovery of plant operating costs, employee costs and administration costs.								
Labour rates - Private Works - per additional staff required exc Plant								
Labour - ordinary hours (Mon- Friday) 7am to 4pm	Per hour		14154	C	\$ 77.27	\$ 7.73	\$ 85.00	
Overtime labour rate will be rated at 1.5* labour per hour rate (Mon-Fri-after hours)	Per hour		14154	C	\$ 115.91	\$ 11.59	\$ 127.50	
Overtime labour rate will be rated at 2* labour per hour rate (Sat & Sun)	Per hour (min 3 hrs)		14154	C	\$ 154.55	\$ 15.45	\$ 170.00	
Overtime labour rate will be rated at 3.5* labour per hour rate (public holiday)	Per hour (min 3 hrs)		14154	C	\$ 270.45	\$ 27.05	\$ 297.50	



Landfill Management Plan

Bendering Landfill

Prepared for Roe District Regional Organisation of Councils

14 July 2022

Project Number: TW21035

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Signature					
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Table of Contents

1	Introduction	4
1.1	Background	4
1.2	Project Objectives	4
2	Site Description	5
2.1	Site Location and Access	5
2.2	Surrounding Land Use and Sensitive Receptors	5
2.3	Environmental Attributes	5
2.3.1	Climate	5
2.3.2	Topography	7
2.3.3	Geology	7
2.3.4	Hydrology	8
2.3.5	Hydrogeology	8
2.4	Legislative Context	8
2.4.1	Environmental Protection (Rural Landfill) Regulations 2002 (WA).....	8
2.4.2	Victoria EPA BPEM Guidelines	9
2.4.3	Strategic Waste Management Plan for RoeROC.....	9
3	Current and Historic Landfill Operations.....	10
3.1	Waste Activities	10
3.2	Filling History.....	10
3.3	Waste Data and Projections.....	10
4	Rehabilitation Design.....	13
4.1	Current Landfill Profile	13
4.2	Proposed Landfill Development.....	13
4.2.1	Landfilling Layout	13
4.2.2	Landfill Trench Design	13
4.3	Final Profile	14
4.4	Surface Water Management.....	15
4.5	Internal Roads	16
4.6	Rehabilitation Profile Design.....	16
4.6.1	Objectives of the Capping System.....	16
4.6.2	Temporary Capping System	16
4.6.3	Cap Design.....	16
4.7	Void Space Modelling	17
4.8	Material Balance	18

4.9	Phasing of the Capping Works	19
5	Cost Estimates	21
6	Recommendations.....	23

Tables

Table 2-1: Rainfall Overview in Millimetres (1970-2020)	6
Table 2-2: Summary of Annual Exceedance Probabilities for Site (ARR2016).....	6
Table 2-3: Maximum and Minimum Temperatures at Narambeen	7
Table 2-4: Groundwater Monitoring Bores	8
Table 3-1: Summary of Population & Waste Growth Rate	11
Table 3-2: Summary of Historical Waste Growth Rate	11
Table 3-3: Summary of Waste Generation Projections	12
Table 4-1: Objectives and Associated Design Features of the Surface Water Management Plan	15
Table 4-2: Estimated Landfill Lifespan	18
Table 4-3: Approximate Material Balance Calculations for the Site	19
Table 4-4: Phasing of Capping Works for the Site.....	19
Table 5-1: Summary of Cost Estimates for the Closure and Rehabilitation of Site	21

Appendices

APPENDIX A Drawings

APPENDIX B Figures

APPENDIX C Surface Water Modelling

APPENDIX D Cost Estimates

Drawings

Drawing C-101: Stage 1 Conceptual Layout

Drawing C-103: Stage 2 and 3 Conceptual Layout

Drawing C-301: Typical Construction Details

1 Introduction

1.1 Background

Roe District Regional Organisation of Councils (RoeROC), comprising the Shires of Kondinin, Corrigin, Kulin and Narembeen, own the Bendering Landfill (the Site), which was purchased as tenants in common by the four Shires. The Site is approximately 64.8ha and is located on freehold land 240km east of Perth, on Lot 23945 Kondinin-Namenbeen Road, Bendering in the Shire of Kondinin. A Site Selection and Geotechnical Assessment was undertaken by Landform Research in June 2007 (the Site Investigation Study). RoeROC had found differing Site conditions to those outlined within the Site Investigation Study, and sought to develop a new Site plan, inclusive of closure cost estimates suitable for providing a cost estimate to an auditor.

RoeROC appointed Talis Consultants (Talis) to produce a Landfill Management Plan (LMP) to outline the current and future landfill development options for the Site, which has been operating since 2007, in addition to its closure requirements.

1.2 Project Objectives

The LMP will provide RoeROC with clear direction on operations and works required to facilitate the future development and rehabilitation of the landfill in accordance with the Western Australia Environmental Protection (Rural Landfill) Regulations, 2002, (Rural Landfill Guidelines). As WA has no landfill guidelines, the management plan will also be guided by the Victorian Environment Protection Agency (EPA), Best Practice Environmental Management 'Siting, Design, Operation and Rehabilitation of Landfills', 2015, (BPEM Guidelines), working to outline the landfill development and rehabilitation requirements to manage environmental impacts and ensure the safe and stable closure of the landfill.

The key objectives of the LMP are to provide:

1. A final restoration profile in accordance with the WA Rural Landfill Guidelines;
2. An estimate of remaining void space and lifespan calculations;
3. An estimate of the volume of material available/required for restoration;
4. A phased management plan which will form the basis of the subsequent detailed design for the whole Site and guide filling operations; and
5. Cost estimates for the development of future landfill areas and associated closure works.

2 Site Description

The following sections provide an overview of the key aspects of the Site, including its location, surrounding land uses, environmental attributes, relevant legislation, and guidelines.

2.1 Site Location and Access

The Site is located approximately 240km east-southeast of Perth, approximately 13km north of Kondinin along the Kondinin-Naremben Road on Freehold land on Lot 23945. The Site is approximately 64.8ha and is approximately 3km north-northeast of the Bendering town site. The boundary of the Site is shown in Drawing C-101 in Appendix A. Access to the Site is from the north-western corner of the Site.

2.2 Surrounding Land Use and Sensitive Receptors

The Site is located approximately 3km north-northeast of the Bendering town site, within the Shire of Kondinin, and has a Rural Land use, as classified by Map 01 of The Shire's Town Planning Scheme No. 1 (the Shire's Planning Scheme). The land surrounding the Site is predominantly agricultural and is also classified as Rural under the Shire's Planning Scheme. The western edge of the Site borders on a Site classified as Environmental Conservation, whilst the Bendering Nature Reserve is located approximately 4km to the east. Inspection of aerial imagery shows the nearest residences are approximately 1.7km to the northwest and 1.8km to the southwest.

2.3 Environmental Attributes

The following section outlines the key environmental attributes of the Site, that are particularly relevant to the landfill development, closure, and rehabilitation, including climate, topography, geology, groundwater, and surface water.

2.3.1 Climate

The local and regional climate data sources will be utilised for evaluation the Site's surface water system, including rainfall.

The Site experiences a Mediterranean climate, with hot summers and wet, cool winters. According to the Bureau of Meteorology (BOM), the closest weather station with long-term temperature data is Naremben (Station 10612), approximately 34km north-northeast of the Site. The temperature data has been sourced from this weather station and is further discussed in the Sections below.

As the available BOM data for rainfall is incomplete, this data was sourced from Scientific Information for Land Owners (SILO), a database of Australian climate data from 1889 to the present day that is hosted by the Queensland Department of Environment and Science (DES). It provides daily meteorological datasets for a range of climate variables in ready-to-use formats suitable for biophysical modelling, research, and climate applications. The datasets are constructed from observational data obtained from BOM, using mathematical interpolation techniques to infill gaps in time series and construct spatial grids. The spatial grid selected (Latitude: -32.35, Longitude: 118.30) encompasses the Site in its entirety.

2.3.1.1 Rainfall

Being in a Mediterranean Climate, rainfall is seasonal with higher rainfall generally in the months of May to August. Table 2-1 presents a summary of rainfall records, from 1970 to 2020.

Table 2-1: Rainfall Overview in Millimetres (1970-2020)

Aspect	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average	20.5	18.3	16.9	21.5	36.9	42.7	47.1	40.9	27.5	18.2	19.1	12.7	322
90th Percentile	39.6	0.8	42.1	28	72.8	44.4	48.1	34.4	36.0	28.6	28.6	24.5	428
Highest	3.0	39.2	57.7	44.2	14.2	80.3	37.8	104	38.0	25.2	21.6	14.1	479

The mean annual rainfall for the Site is calculated as 322 millimetres (mm) with the highest recorded annual rainfall at 479mm, which occurred in 1992.

2.3.1.2 Short Duration Design Rainfall

Rainfall Intensity Frequency Duration (IFD) data for the Site was obtained using the BOM Computerised Design IFD Rainfall System (CDIRS) and the Australian Rainfall and Runoff 2016 database (ARR2016). CDIRS produces a complete set of IFD curves and associated weather data based on user-defined coordinates (<http://www.bom.gov.au/water/designRainfalls/revise-ifd/?year=2016>).

Table 2-2 summarises the Annual Exceedance Probability (AEP) of storms with 1 to 120 hour durations. AEPs are required to estimate precipitation rates for a range of events.

Table 2-2: Summary of Annual Exceedance Probabilities for Site (ARR2016)

Storm Duration	1 in 1	1 in 10	1 in 20	1 in 50	1 in 100
	63%	10%	5%	2%	1%
	Rainfall Depth (mm)				
1 hour	11.8	25.0	30.3	37.8	44.2
6 hour	22.4	43.9	52.5	65.3	76.1
12 hour	28.0	55.0	66.2	83.5	98.5
24 hour	33.5	66.7	81.1	104	124
48 hour	38.2	76.4	93.4	120	144
72 hour	40.6	80.4	98.0	125	150
120 hour	44.2	84.4	101	127	152

At 1-in-20-year AEP and 1-in-100-year AEP, 24-hour duration storm events, the rainfall depth is 81.1mm and 124mm respectively.

The highest daily rainfall rate from 1970-2020 was 107.2mm in January 1990, which is approximately equivalent to a 1-in-50-year storm event. The landfill's surface water management system will therefore be designed to manage a 1-in-10-year storm event with contingencies for storms larger than a 1-in-20-year event.

2.3.1.3 Temperature

The highest mean maximum temperature is 34.0°C in January, whilst the lowest mean minimum temperature is 5.4°C in August. Table 2-3 shows the average maximum and minimum temperatures at the Narambeen weather station for years 1965 to 2021.

Table 2-3: Maximum and Minimum Temperatures at Narambeen

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Maximum Temperature (°C)	34.0	33.1	30.3	25.9	21.0	17.6	16.6	17.7	20.7	25.2	28.7	32.1	25.2
Mean Minimum Temperature (°C)	16.6	16.9	15.0	12.0	8.2	6.4	5.5	5.4	6.3	9.2	12.4	14.5	10.7

2.3.2 Topography

Topography at the Site slopes from the northwest corner down towards the southeast corner, from approximately 339m Australian Height Datum (AHD) to 312m AHD. Within Stage 1, the topography has been altered by landfilling activities, with elevations ranging from 339mAHD to 324mAHD. The majority of historical landfilling has been undertaken in trenches, however, recent operation have switched to a land raise style of landfilling. Localised high points approximately 3m high are present across the site in north south orientated bunds formed from soils excavated from the trenches.

The topography and layout of the Site is shown in Drawing C-101 in Appendix A.

2.3.3 Geology

According to NationalMap (<https://nationalmap.gov.au/>) surface geology at the Site is within the Yilgarn Region, with the north-eastern portion of the Site comprising of banded granitic gneiss, whilst the remainder of the site comprises of sand or gravel plains.

A previous Site Investigation Study¹ described the Site as comprising of a granodiorite basement overlain with a minor outcrop present near the centre of the Site. A regolith is present that increases in depth from approximately 0.5m to 6m towards the north of the Site. A geotechnical investigation, in which 6 drill holes and 5 backhoe holes were constructed, revealed soils were predominantly kaolin-based clays, with permeability ranging from 1.1×10^{-6} m/s to 1.2×10^{-10} m/s.

Trial pits undertaken in June 2021, in the footprint of the future landfill trench area highlighted in Drawing C-101, confirmed shallow cohesive soils to 1.5m below ground level overlying a weak and friable weathered granite horizon of approximately 200mm thick, before refusal.

The results of EM38 mapping undertaken in early 2022, and test holes dug in the southern portion of the Site in 2015, are presented in Appendix B.

¹ Site Selection and Geotechnical Assessment Proposed Regional Landfill, Landform Research, June 2007

2.3.4 Hydrology

A small farm dam exists immediately to the south of the Site boundary, approximately 1km from the southern edge of Stage 1, whilst another farm dam is located approximately 600m to the north of the Site. Both of these exceed the 100m separation distance to surface water bodies required by the WA Rural Landfill Regulations

According to NationalMap, a minor ephemeral watercourse passes through the southeast corner of the Site, additionally passing through the farm dam immediately to the south of the Site. The ephemeral stream ultimately joins the system of lakes located approximately 15km to the west, which includes the Kondinin and Kurrenkutten Lakes.

2.3.5 Hydrogeology

Three groundwater bores have been installed at the Site, as displayed in Drawing C-101. BL 1 is located in the northwest corner, BL 3 in the southeast corner and BL 4 in the southwest corner. It is not known if a fourth bore (BL 2) was drilled in the northeast corner of the Site, as no evidence of the bore could be found in this area of the Site.

These bores have not been monitored on a regular basis, however investigations undertaken by Talis during a Site visit in June 2021 determined the depth of the wells and depth to groundwater, presented in Table 2-4.

Table 2-4: Groundwater Monitoring Bores

Bore ID	Depth of Well (mbgl)	Depth of Groundwater (mbgl)
BL 1	20.08	Dry
BL 3	11.64	Dry
BL 4	1.36	0.87

The groundwater data indicates that there is significant separation between the shallow landfill trenches and the underlying regional water table which is over 11 to 20m below ground level, revealed by dry wells at depths of approximately 318-312m AHD. Shallow groundwater was present in BL 4, indicating either perched groundwater in the cohesive soil horizon or localised ingress into the well from significant rainfall experienced at the Site immediately prior to measurement. The shallow depth of the base of the well suggests that the base of the well does not reach the underlying granite geology and is installed within the kaolin-based clay horizon.

2.4 Legislative Context

2.4.1 Environmental Protection (Rural Landfill) Regulations 2002 (WA)

The Site has been registered as a Category 89 Prescribed Premises under Part V of the Environment Protection Act, 1986, (EPA) as the 'Eastern Districts Regional Waste Management Facility', Registration number R1959/2007/1. A Works Approval was not required at the time of submission for the development of the Site.

The Environmental Protection (Rural Landfill) Regulations 2002 (WA Rural Landfill Regulations) apply to Category 89 Prescribed Premises in Schedule 1 Part 2 of the *Environmental Protection Regulations 1987*, for a putrescible landfill site that accepts between 20 and 5,000 tonnes of waste per year.

These regulations outline requirements for the tipping area, covering and containing of waste, the control of surface water runoff, dust suppression, separation distances, disposing of asbestos and clinical waste, and a post-closure plan.

Within the requirements of the Post-Closure Rehabilitation Plan, specification of the following must be provided:

- Options for use of the Site after landfilling has ceased, including specifying a preferred option;
- Conceptual design of the required infrastructure for the preferred post-closure option;
- Estimated final contours for the Site, including allowance for settlement;
- Capping materials to be used at the Site;
- Proposed drainage system for the Site;
- Measures for environmental protection and monitoring at the Site; and
- The estimated period for which the Site will require monitoring.

These regulations have been adopted for the Site, with consideration given to the requirements in the conceptual designs presented in this LMP.

2.4.2 Victoria EPA BPEM Guidelines

The Victoria EPA *Best Practice Environmental Management: Siting, Design, Operation and Rehabilitation of Landfills, 2015*, (BPEM Guidelines) outlines specific landfilling requirements and practices, particularly with regard to the design of a final landfill profile and specifics of surface water management. In the absence of West Australian landfill guidelines, these guidelines have been used to generally guide the specification of the following aspects of the LMP:

- Final landform profile;
- Final capping system, including materials; and
- Proposed drainage system.

2.4.3 Strategic Waste Management Plan for RoeROC

A Strategic Waste Management Plan (SWMP) was first developed for the RoeROC in 2009 and outlined targets for individual Shires and the RoeROC with respect to waste diversion, adequacy of resourcing, data collection, closure of sites and introduction of recycling programs.

A review of the RoeROC SWMP was undertaken in 2013 and found that many of the goals of the initial SWMP had been achieved, including implementation of recycling programs and achieving waste diversion targets. From this review, two new targets were adopted by RoeROC:

1. 30% diversion from landfill of materials presented for collection in the districts encompassed by the RoeROC; and
2. 40% diversion from landfill of materials presented for collection in the districts encompassed by the RoeROC.

No timelines for achieving these targets were specified within the document, however strategies for implementing these targets may be implemented in the future. The RoeROC Shires currently use recycling education and Containers for Change as mechanisms for improving their waste diversion.

3 Current and Historic Landfill Operations

3.1 Waste Activities

The Site, a Category 89 Landfill, can accept the following waste types for landfilling, as defined in the *Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)*:

- Clean Fill;
- Inert Waste Type 1 – Contaminated Solid Waste meeting acceptance criteria for Class I and Class II Landfills
- Special Waste Type 1 - Asbestos
- Special Waste Type 2 – Biomedical Wastes; and
- Putrescible Waste.

The Site currently operates one day a week, receiving wastes from kerbside collection and commercial bins within the RoeROC member Shires. The Site is unmanned and is not open to the public.

Glass was removed from kerbside recycling in 2019, representing a slight increase in total landfilled waste. RoeROC have subsequently introduced a Containers for Change program that aims to recapture that waste stream.

Where wastes are ill-defined or potentially hazardous (e.g. treated power poles), it is recommended that further testing be undertaken to determine the class of waste and the most appropriate treatment/disposal solution, which may include disposal at another licenced landfill site.

3.2 Filling History

The Site was built and began accepting waste in 2009, utilising the trench design outlined in the Site Selection Report². Filling at the Site has, to date, occurred solely in Stage 1, generally progressing from east to west in trenches that have since been backfilled and temporarily capped. Landfilling currently occurs in the 'Current Landfill Trench' displayed in Drawing C-101.

Prior to FY2012-13 record keeping at the Site was limited, and the exact consumption of void space has not been tracked. From the Site Investigation Study¹ undertaken in 2007, 1,000m³ of cover soils are required for 2,000m³ of waste, representing a cover soil requirement equal to 50% of the deposited waste. This represents a high rate of cover soil usage and therefore, for the purposes of modelling, a 20% cover soils requirement has been assumed in line with common industry practice. The likely compaction rate for waste at the Site is 0.5 tonnes/m³ and will be verified as Site development progresses by tracking void fill space over time, as discussed further in Section 4.2.2.

3.3 Waste Data and Projections

The landfill accepted approximately 1,070 tonnes of waste in the 2020/21 financial year. Two waste generation scenarios were modelled to reflect the likely future upper and lower generation rates to be seen across the RoeROC Shires. These scenarios are modelled to provide a range in which the future generation rate will likely fall.

² Site Selection and Geotechnical Assessment Proposed Regional Landfill, Landform Research, June 2007

Given the correlation between the volume of waste generated in a community and its population, a generation rate per person can be applied to predicted population growth rates to determine what future volumes should be catered for at the Site. Therefore, the predicted population growth rates combined with historical waste generation rates can be utilised for modelling waste projections, which will assist in determining the remaining landfill capacity at the Site.

According to the Australian Bureau of Statistic, there were 3,593 people in the RoeROC Area for the 2016 Census. Averaging the annual population growth between census years provides an average annual population growth rate of between -0.4% and -0.7% for each Shire, as shown in Table 3-1.

Table 3-1: Summary of Population & Waste Growth Rate

Year	Population				Average Annual Growth Rate			
	Kondinin	Narembeen	Kulin	Corrigin	Kondinin	Narembeen	Kulin	Corrigin
2001	962	907	835	1,229	-	-	-	-
2006	968	906	881	1,145	+0.1%	0.0%	+1.1%	-1.4%
2011	1,045	811	825	1,063	+1.6%	-2.1%	-1.3%	-1.4%
2016	873	809	765	1,146	-3.3%	0.0%	-1.5%	+1.6%
Average Growth Rate					-0.5%	-0.7%	-0.5%	-0.4%

However, to determine the most conservative growth rate, the population growth rate was also compared to the observed growth rate in landfilled waste from each Shire.

Comparing the annual landfilled waste totals for each Shire, Talis determined the growth rate in landfilled waste between years as shown in Table 3-2.

Table 3-2: Summary of Historical Waste Growth Rate

Financial Year	Total Landfilled Waste (t)				Average Annual Growth Rate			
	Kondinin	Narembeen	Kulin	Corrigin	Kondinin	Narembeen	Kulin	Corrigin
2012	274	238	185	352	-	-	-	-
2013	286	247	191	368	+4.1%	+3.8%	+3.2%	+4.6%
2014	257	245	171	366	-10.0%	-0.6%	-10.4%	-0.8%
2015	279	257	190	366	+8.5%	+4.7%	+11.4%	+0.0%
2016	276	257	189	363	-1.0%	-0.2%	-0.5%	-0.8%
2017	270	249	191	355	-2.2%	-2.7%	+0.6%	-2.0%
2018	263	245	191	353	-2.7%	-1.8%	+0.1%	-0.8%
2019	272	250	189	363	+3.6%	+2.0%	1.0%	+2.8%
2020	273	258	183	357	+0.5%	+3.1%	-3.3%	-1.7%
Average Growth Rate					+0.1%	+1.0%	+0.0%	+0.2%

To determine the 'worst case' landfill lifespan scenario, Talis then determined the maximum growth rate for the purposes of waste generation modelling. If both the population and historical waste growth rate were negative, then a 0% growth rate was applied to ensure a conservative result. Table 3-3 shows the growth rate used for each Shire and select years of waste generation out to 2125.

Table 3-3: Summary of Waste Generation Projections

Shire	Growth Rate	Modelled Waste Generation (t)						
		2020	2030	2040	2050	2075	2100	2125
Kondinin	+0.1%	273	276	278	281	287	294	301
Narembeen	+1.0%	258	285	316	351	453	586	757
Kulin	+0.0%	183	183	183	183	184	185	185
Corrigin	+0.2%	357	363	369	376	393	411	429
RoeROC Total		1,070	1,107	1,147	1,191	1,317	1,475	1,672

As Council continues to gather data on its population and landfilled waste, these generation rate estimates should be updated, with the most conservative rate again selected for use in lifespan modelling. Use of the most conservative rate ensures that the ‘worst-case’ scenario is modelled, ensuring Council has adequate time to prepare for the landfill’s end of life at the Site.

4 Rehabilitation Design

The existing and future developments, filling history, void space, filling rate and phasing of capping works are discussed in the sections below.

4.1 Current Landfill Profile

Stage 1 of the Site comprises numerous historical trenches, an active asbestos trench, an active landfilling trench, and a future landfill trench which was excavated in June 2021. A weighbridge, shed and water tank are located in the northwest corner of the Site.

The current and future landfill trench are located centrally in Stage 1, with historical trenching occurring over much of the East of Stage 1. Historical filling also occurred in the southwest corner of Stage 1, though no other filling has occurred in the vicinity of this area.

Historical asbestos disposal occurred in the north-eastern portion of Stage 1 until 2020. These activities have since moved to the current asbestos trench, located on the north edge of Stage 1 to the west of the current landfilling trench. A new asbestos trench has been constructed in the southwest corner of Stage 1 in early 2022 to provide additional capacity from asbestos containing bushfire wastes.

The southeast corner of the historical landfill area is approximately 2m higher than surrounding ground level and has been rehabilitated and planted with trees.

The layout of the current Site is shown in Drawing C-101, available in Appendix A.

4.2 Proposed Landfill Development

4.2.1 Landfilling Layout

Future development at the Site will be guided by the WA Rural Landfill Regulations, specifically Section 5 which specifies that the tipping area of the Site must not be greater than 30 metres in length and 2 metres above ground level in height. As a result, the final landfill trench design will see a 2m raise of waste above ground height prior to installation of the capping system. Similarly, the tipping face should not exceed 2m in height during operations.

All trenches in Stage 1 and 2 will be oriented in a north-south direction, whilst Stage 3 trenches will be oriented and filled in an east-west direction. Waste filling will occur no less than 35m from the fencing of the Site to comply with Section 9 of the WA Rural Landfill Regulations.

The proposed layout of Stage 1 can be seen in Drawing C-101, available in Appendix A, whilst the layouts of Stage 2 and 3 can be seen in Drawing C-103.

4.2.2 Landfill Trench Design

Landfill trenches have been designed to facilitate easy compliance with the WA Rural Landfill Regulations and to maximise void space at the Site. Trenches will be 30m wide and dug until bedrock is reached, with depth varying depending on the depth of underlying rock and the trench length varying depending on the width of the stage. Within each trench, a number of 'internal cells' will be constructed, 30m wide by 30m long, separated by a 0.5m internal earth bund to mitigate risk in the unlikely event of a subsurface fire. The trench depth is highly dependent on the depth to the on-site granite regolith and may vary with depth increases across the Site.

Overfilling of the trenches, 2m above surrounding ground levels, will be placed above the existing trench ground level to create a trapezoidal waste profile 2m high with 1:3 (V:H) side slopes. Once the final height has been reached, the trench should be covered with intermediate capping, as discussed in Section 4.6.2. Suitable bunding should be used around the perimeter of the landfill to retain waste and divert surface water from the active tipping area.

4.3 Final Profile

It is proposed to cap the Site in a phased approach that will comply with the objectives set out in the WA Rural Landfill Regulations and BPEM Guidelines. To guide these works, key objectives adopted for the closure designs include the following:

- Design and construction of the best cap practicable to prevent pollution of groundwater and degradation of air quality;
- Minimising seepage through the landfill cap by encouraging shedding of surface water;
- Progressive rehabilitation of the landfill; and
- Final fill profile and slopes that are between 5% and 20% to:
 - Ensure the long-term stability and integrity of the capping material and containment layer;
 - Promote natural surface water run-off;
 - Provide an aesthetically acceptable landform; and
 - Minimise long-term maintenance requirements.

Drawing C-103 shows the final capping profile for Stage 1 that complies with the BPEM Guidelines and will have a maximum height of 335mAHD, approximately 3m above existing ground level at the west end of the capped area and approximately 0.8m above existing ground level at the east end of the Site.

The proposed design will deliver the following key outcomes:

- The encapsulation of all waste disposed across the landfill site;
- Facilitate the conventional rehabilitation of the Site through compliance with the WA Rural Landfill Regulations;
- The development of a best practice landfill profile and side slopes which will:
 - Provide a suitable surface for the construction of a capping system;
 - Promote the natural flow of surface water off the landfill, minimising pooling and infiltration;
 - Facilitate the development of a typical perimeter drain around the Site to cater for surface water across the capped landfill;
 - Ensure the long-term stability and integrity of the capping system and environmental control systems (gas and surface water management);
 - Minimise the long-term maintenance requirements of the capping system;
 - Provide an aesthetically acceptable landform long-term and support further post-closure land uses; and
 - Facilitate phased capping of the Landfill

4.4 Surface Water Management

Environmental risks associated with leachate and surface water will be managed through the development of a Surface Water Management System (SWMS) for the new Site landfill. To appropriately manage these risks, a SWMS has been developed for the Site landfill which achieves two key objectives including minimising leachate generation and proactively managing surface water.

These objectives, and the design features incorporated to achieve these, are shown in Table 4-1.

Table 4-1: Objectives and Associated Design Features of the Surface Water Management Plan

Objective	Design Feature
Minimise Leachate Generation	Implement a Site-specific capping and surface water management system over the landfill.
	Develop a perimeter drainage system that: <ul style="list-style-type: none"> • Maintains connectivity with the capping system; and • Includes strategically located discharge points away from the waste mass.
	Locate long-term surface water discharge points.
Proactively Manage Surface Water	Incorporate measures into the capping system to direct surface water from the landfill cap to the discharge points.
	Ensure the surface water management system is appropriately sized to manage a 1-in-10-year Average Recurrence Interval (ARI) storm event and will not result in catastrophic failures during a storm larger than a 1-in-20-year ARI event.
	Establish controlled discharge points for surface water.

The conceptual design for the final capping system of the landfill incorporates conceptual surface water management infrastructure to prevent the infiltration of surface water into the waste mass and thereby preventing the production of leachate over time.

Rainfall landing on the surface of the landfill cap will drain along capping contours into the perimeter surface water ditches, which will outfall into surface water ponds. Surface water from Stages 1 and 2, and a portion of the northern section of Stage 3, will drain via trapezoidal swales into Surface Water Pond 1 on the eastern side of the Site, with an approximate capacity of 6,500m³. Surface water from Stage 3 will drain to Surface Water Pond 2 located in the south of the Site, with an approximate capacity of 2,800m³.

Both surface water ponds will be clay lined with a 500mm layer of compacted site-won material, and both will feature a controlled overflow spillway to facilitate discharge of surface water into the natural water course in the southeast of the Site during a greater than 1-in-20-year ARI storm event.

Calculations for the sizing of the surface water ponds are presented in Appendix C.

4.5 Internal Roads

The Australian Road Research Board (ARRB) have produced a Best Practice Guide for Unsealed Roads³, providing practical advice for the development and maintenance of unsealed roads. This guide is available online for free and may be used to guide the development of future roads at the Site.

4.6 Rehabilitation Profile Design

4.6.1 Objectives of the Capping System

Following the closure of the Site, it is likely that the area will return to agricultural use, similar to other properties in the area. A landfill capping system designed to comply with the BPEM Guidelines is proposed for the Site. In accordance with BPEM Guidelines, the design of the final capping for the landfill shall:

- Minimise infiltration of surface water into the waste;
- Provide a long-term, stable barrier between waste and the environment to protect human health and the environment; and
- Provide land suitable for its intended after use.

4.6.2 Temporary Capping System

Due to the significant landfill lifespan within Stage 1, each trench will need to be temporarily capped until the permanent capping works commence. The temporary cap will need to be consistently maintained, particularly after extreme rainfall events, which could result in scouring and erosion. The temporary capping system should consist of 300mm of low permeability compacted soil layer at a minimum and should be formed such that surface water run-off is diverted away from the landfill trench. This temporary capping layer should be scraped back in the event of further waste placement or may be used as the Regulating Layer for the foundation of the capping system described in Section 4.6.3.

4.6.3 Cap Design

The proposed capping system, in order of construction, from bottom to top, is as follows:

- 150mm Regulating Layer;
- 300mm Compacted Soil Layer;
- 400mm of Restoration Layer, comprising:
 - 300mm thick site-won subsoils ; and
 - 100mm thick topsoils or growing medium/mulch;
- Vegetation Layer from wind-blown seed to reduce erosion and advance revegetation.

The elements of this capping system are discussed in further detail in the sections below, with the design shown in Drawing C-301.

³ Available at: <https://www.arrb.com.au/bestpracticeguides>

4.6.3.1 Regulating Layer

The preferred design approach for the capping system is the utilisation of a 150mm thick regulating bedding layer, consisting of site-won material to provide a smooth firm subgrade for installation of the compacted soil layer.

The regulating layer should meet the following criteria:

- Free from organic matter, perishable material or other deleterious material;
- Not contain clay with liquid limit >80% and/or plasticity index >55%; and
- Have a maximum particle size <50mm.

The material for the regulating layer may be sourced on site from existing stockpiles of excavated soils created during the development of the trenches. Where found to be of suitable material and depth, the temporary cap described in Section 4.6.2 may form part of the regulating layer.

4.6.3.2 Compacted Soil Layer

The 300mm thick low permeability Compacted Soil Layer will be formed from clayey material won from the excavation works during the corresponding trench development. The material should be compacted to reduce the permeability as much as practicable for the material. If limited low permeability soils can be won from the site during trench development, additional borrow pits may be constructed to source additional material.

4.6.3.3 Restoration Layer

The 400mm Restoration Layer will mostly consist of site-won material from the excavation works during the corresponding trench excavation. The lower revegetation layer will comprise of a minimum 300mm of subsoils, which may be Site-won overburden soils. The upper surface of the revegetation layer will comprise of 100mm topsoil, which could be mixed with mulch supplied and placed by RoeROC Shires if available.

The topsoil will promote the growth of the vegetation on the surface of the capping system, which will help minimise erosion. Due to the low-risk nature of the Site, it is anticipated that wind-blown seed will be adequate for establishing a vegetation layer, however this may be supplemented with tube stock planting or application of a seed mix in areas where natural vegetation is taking longer to establish. If agricultural grazing is not pursued, then the applications of grass/seed mix will be based on species native to the region.

4.7 Void Space Modelling

Void space modelling has been undertaken to determine the available filling capacity for the proposed landfill cell development using the calculated waste projections outlined in Section 3.3. This will ensure that the Site can cater for future long-term waste management demands, and the results can be used to project key capital works over the various financial years going forward. This will assist RoeROC Shires with future budgeting works and ensure continued operations at the Site to cater for the communities' disposal requirements.

For the purposes of this modelling, the worst-case scenario must be considered where there is no introduction of significant waste diversion programs that would diminish the tonnages delivered to Site for disposal. In addition, the density of waste after placement is assumed to be 0.5t/m³ and the

cover material requirements is assumed to be 20% of the total available void space volume, a commonly used industry standard.

Based on the trench designs across Stage 1, 2 and 3 the void space for the Site and its estimated lifespan are presented in Table 4-2. The Site has been split between three distinct areas: Stage 1, Stage 2, and Stage 3.

Table 4-2: Estimated Landfill Lifespan

Stage	Number of Trenches	Available Void Space (m ³)	Net Void Space ex. 20% Cover Soils (m ³)	Landfill Capacity (yrs)*
Stage 1	1	12,606	10,110	4
Stage 2	10	157,940	126,788	52
Stage 3	11	147,787	118,353	40
Total	22	318,333	255,251	96

*Assumed at 0.5t/m³ compaction rate

It is estimated that there is approximately 255,251m³ of void space remaining at the Site between the existing Stage 1 landfill and proposed Stages 2 and 3. With the ‘worst case’ waste input volumes, there is an estimated landfill lifespan of approximately 4 years remaining in Stage 1 using the compaction rate of 0.5t/m³.

The Site lifespan and void consumption rates are sensitive to changes in the amount of cover soil used, waste inputs, and the compaction rate at the Site. The on-site void consumption rate should be monitored annually to determine a more accurate representation of void consumption for lifespan modelling. Similarly, changes in waste input will impact the void consumption onsite, therefore, waste and void calculations should be updated regularly to better understand the future demand for landfill void and plan the key capital expenditure works accordingly. The spreadsheet provided by Talis aims to assist with updating these values by providing a framework for monitoring and calculating the input waste streams, cover soils, waste density and capping material availability. Instructions for using the spreadsheet are contained within the workbook.

4.8 Material Balance

A Material Balance is the calculation of the volume of materials required to carry out engineering works, daily cover activities for the landfill and its final restoration and comparing these quantities to the volume of material which can be retrieved from the Site. The balance of material requirements against supply over the life of the landfill should be considered during the conceptual design stage to ensure that the design optimises available fill to meet these requirements. If a Material Balance is not achieved over a landfill’s lifespan, the deficient material will need to be imported at additional cost.

The material required throughout the life of the landfill includes trench construction (internal and external bunds), daily cover material and capping/restoration material, which is further explained as follows:

- Daily cover material and internal bunding is assumed as 20% of the total landfill void;
- The capping material volume is calculated from the modelled three-dimensional area of the top of waste and an assumed restoration soil layer; and
- All the material available from the excavation performed at the Site is assumed suitable for landfill construction and operating activities.

Table 4-3 shows the approximate material balance for Stage 1 and estimates of the material balance for Stages 2 and 3 based on future trench design informed by historical borehole data and EM38 mapping undertaken by RoeROC in 2022.

Table 4-3: Approximate Material Balance Calculations for the Site

Item	Stage 1 Development and Closure	Stage 2 Development and Closure*	Stage 3 Development and Closure*	Surface Water Management	TOTAL
Daily cover material** (m ³)	-2,496	-31,152	-29,433	+0	-63,081
Net cut*** to create new infrastructure (m ³)	+7,800	+92,400	+84,053	+12,259	+196,512
Capping material required (m ³)	-34,000	-61,068	-60,128	+0	-155,196
Total (m³)	-28,696	+180	-5,508	+12,259	-21,765

* Values are estimates based on a 0.85m capping depth over the extent of that Stage. Soil volumes required for attaining required slopes for water shedding will be higher.

**Includes 0.5m internal bunds

*** Net cut for creating new infrastructure doesn't include the soils required for internal or external bunding

Overall, capping for each Stage is the highest material requirement for the Site, requiring a total of 34,000m³ in Stage 1, and an estimated minimum of 121,196m³ for the combined capping of Stage 2 and 3. Currently, there is an overall deficiency of 21,765m³ of materials required for the development and closure of the Site. This value is highly sensitive to the depth of trenches created, and if larger trench depths can be developed across Stage 2 and 3, the overall material deficiency for the Site can be reduced.

This soils deficiency can be made up through a variety of methods, including on-site borrow pits. Coordinating the development of Stage 2 with the closure of Stage 1 can help provide the material requirement for rehabilitation.

4.9 Phasing of the Capping Works

As described in Section 4.7, the total remaining air space of the landfill is estimated to be 318,333m³. The Site currently disposes approximately 1,069t (2,138m³) of waste annually. To improve environmental outcomes for the Site, capping should be undertaken every five to ten years, as filling rates and Council budgets allow. Table 4-4 shows the modelled phasing of the Stages at the Site and the recommended number of capping works for each stage of development.

Table 4-4: Phasing of Capping Works for the Site

Stage	Year of Completion	Recommended Number of Capping Events
Stage 1	2026	1-2
Stage 2	2078	5-11
Stage 3	2118	4-8

The schedule for the phasing of the capping works is heavily dependent on the rate of waste intake between the phases to ensure the next phased area is ready for capping works. Ideally, capping works should be scheduled within six months of completion of tipping operations where possible.

5 Cost Estimates

Talis has prepared indicative cost estimates for the capital works required for the development and closure of the Site, including construction of the surface water management system. These have been based on the proposed trench and capping design and environmental management system for surface water. The cost estimates assume material used in the restoration of the Site will be site-won. No allowance has been made for purchasing or hauling imported material. The cost estimates do not include potential maintenance works required during aftercare.

Several provisions have been allowed for local loading, professional services, and contingency. Local loading has been set at 20% for Narrogin, having regard to regional indices listed within the Rawlinson’s Australian Construction Handbook (Edition 38, 2020). The indices are a broad indication of the cost variation within WA and are considered appropriate for this project.

A Professional Services loading of 5% has been applied to cater for consultancy and specialist services required to assist with approvals, design, project management and contract administration activities, site supervision and Construction Quality Assurance. A 10% loading has been included to account for preliminaries, including mobilisation, demobilisation. In addition, a contingency of 20% has been incorporated into the capital cost estimate model.

A summary of the closure cost estimates for the Site is presented in Table 5-1.

Table 5-1: Summary of Cost Estimates for the Closure and Rehabilitation of Site

Stage	Development Cost	Closure Cost
Stage 1	\$24,960	\$331,831
Stage 2	\$344,318	\$544,292
Stage 3	\$334,865	\$535,917
Surface Water Management	-	\$45,444
<i>Subtotal</i>	<i>\$704,142</i>	<i>\$1,460,496</i>
Preliminaries (10%)	\$70,414	\$145,748
Local Loading (20%)*	\$22,907	\$283,651
Professional Services (5%)	\$35,207	\$72,874
Contingency (20%)	\$140,828	\$291,497
Total Cost (ex GST)	\$973,498	\$2,251,255

*Local Loading has only been applied where local costs were not available for use

Taking into account the local loading, professional services and contingency, the overall estimated present day capital cost for the development of the Site is approximately \$975,000, and \$2.25 million for Closure of the Site.

The most expensive element of the works is the earthworks, namely excavation and placement of capping soils. The cost estimate has assumed all soil used in the works can be site-won. If soils need to be imported this can add significant extra cost to the capping works, making this element particularly cost sensitive.

A detailed breakdown of the capital costs is enclosed in Appendix D.

The capital cost estimate has been prepared for the lifetime of the development and is based on the following assumptions:

- Quantities are based on indicative calculations, using geometric approximations for cut requirements;
- Rates are based on Talis' experience in the field and rates published in Rawlinsons Australian Construction Handbook (Edition 38, 2020) and could change depending on market conditions;
- Talis assumes that sufficient material is available onsite to undertake all construction and capping works, except where explicitly otherwise stated;
- Stages 2 and 3 are indicative costs for the 0.85m capping system undertaken from 2D modelling only;
- Professional Fees and Services of 5% has been added to the total cost;
- A 10% allowance has been made for preliminaries;
- Local loading of 20% has been added to the total cost;
- Contingency of 20% has been added to the total cost; and
- GST and inflation are not included in any of the estimates.

6 Recommendations

The continued development operation and closure of the Bendering Landfill is dependent on the careful management of onsite materials and optimised location of future landfill developments. As such, Talis recommends the following key actions:

- Excavation of trial pits better map the available airspace between the surface and the granite regolith in all future landfill areas;
- Annual updating of the spreadsheet provided to RoerOC by Talis to update the estimated closure timing and material availability for closure activities, and to help plan the timing of these expenditures;
- Implementation of the staged development plan for the Site, including phased trench development, closure and capping of active cell areas; and
- Investigation of the requirements for the development of Stage 2 and 3 under the existing Site registration.

APPENDIX A

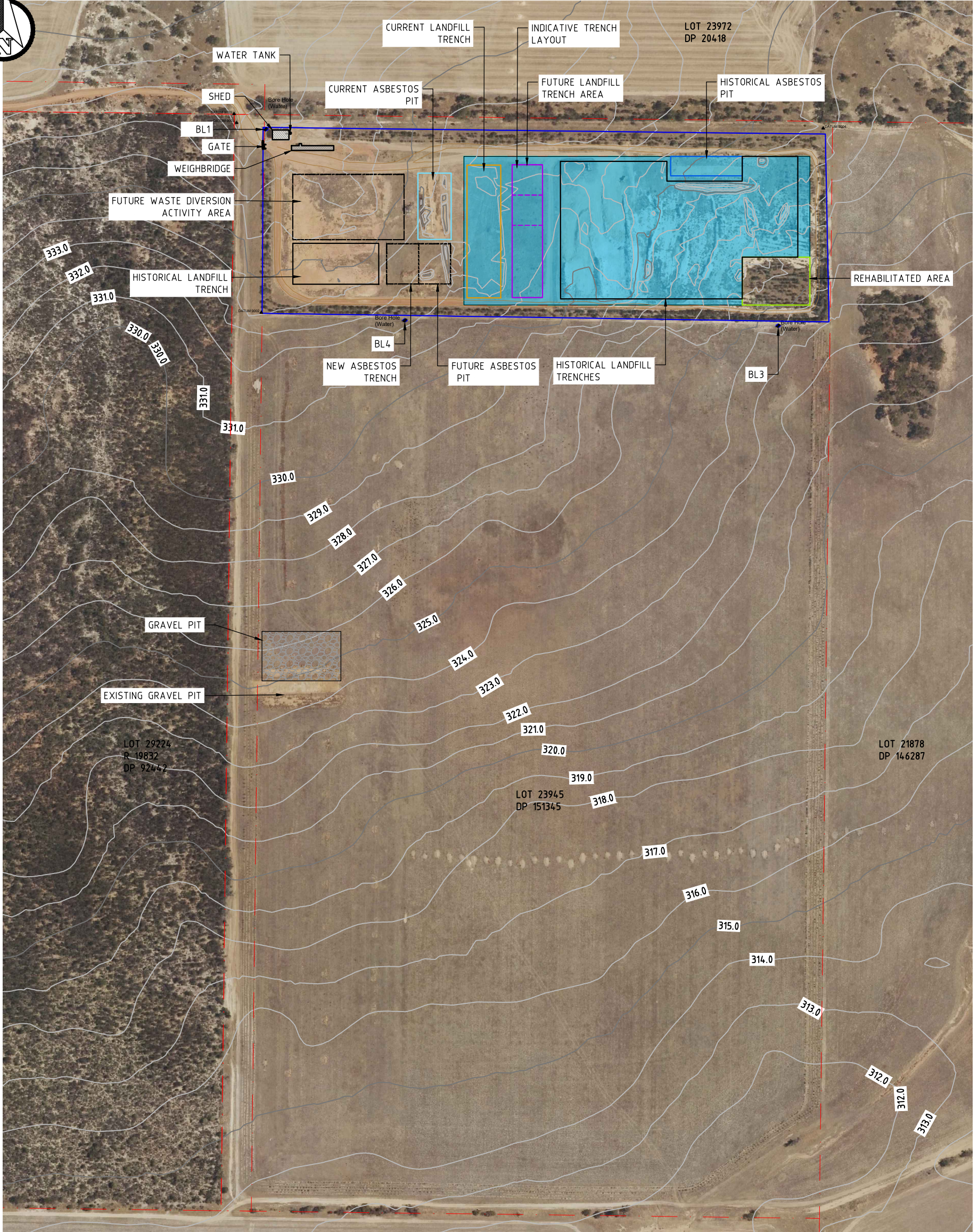
Drawings

Drawing C-101: Stage 1 Conceptual Layout

Drawing C-103: Stage 2 and 3 Conceptual Layout

Drawing C-201: Long Sections

Drawing C-301: Typical Construction Details



LEGEND:

- STAGE 1 CAPPING
- LOT BOUNDARIES

PRELIMINARY ONLY
NOT FOR CONSTRUCTION



VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM
HORIZONTAL DATUM: MGA 94 ZONE 50



ASSET
ENGINEERING
ENVIRONMENT
NOISE
SPATIAL
WASTE

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No.	Date	Drawn By	Amendment / Issue	App.
A	21.05.2021	AP	PRELIMINARY ISSUE	MH

Title: **STAGE 1 CONCEPTUAL LAYOUT**

Client:

BENDERING WASTE MANAGEMENT PLAN

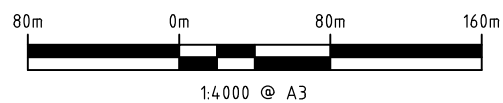
Drawn by:	AP	Job No:	TW21035
Checked by:	AB	File No:	TW21035-C-101
Approved by:	MH	Drg. No:	C-101
Scale:	1:4000 @A3	Rev:	
Date:	21.05.2021		



LEGEND:

- SURFACE WATER SWALES
- LOT BOUNDARIES

PRELIMINARY ONLY
NOT FOR CONSTRUCTION



VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM
HORIZONTAL DATUM: MGA 94 ZONE 50



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ENVIRONMENT
NOISE
SPATIAL
WASTE

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No.	Date	Drawn By	Amendment / Issue	App.
A	21.05.2021	MH	PRELIMINARY ISSUE	MH

Title:
STAGE 2 & 3 CONCEPTUAL LAYOUT



Client: SHIRE OF CORRIGIN
Project: BENDERING WASTE MANAGEMENT PLAN

Drawn by:	AP	Job No:	TW21035
Checked by:	AB	File No:	TW21035-C-103
Approved by:	MH	Drg. No:	Rev:
Scale:	1:4000 @A3	C-103	A
Date:	21.05.2021		

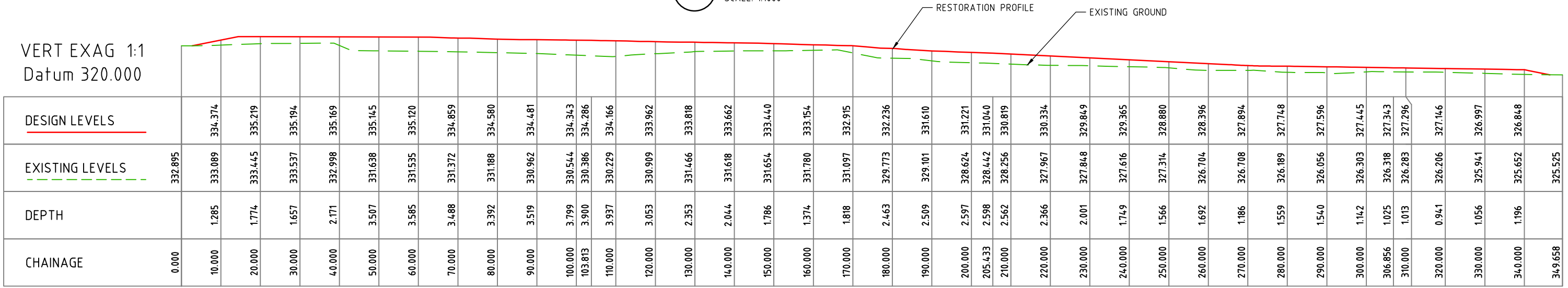
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Datum 325.000



B LONG SECTION N-S
SCALE: 1:1000

VERT EXAG 1:1
Datum 320.000



C LONG SECTION W-E
SCALE: 1:1000

PRELIMINARY ONLY
NOT FOR CONSTRUCTION

VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM
HORIZONTAL DATUM: MGA 94 ZONE 50



ASSET
ENGINEERING
ENVIRONMENT
NOISE
SPATIAL
WASTE



NOTES

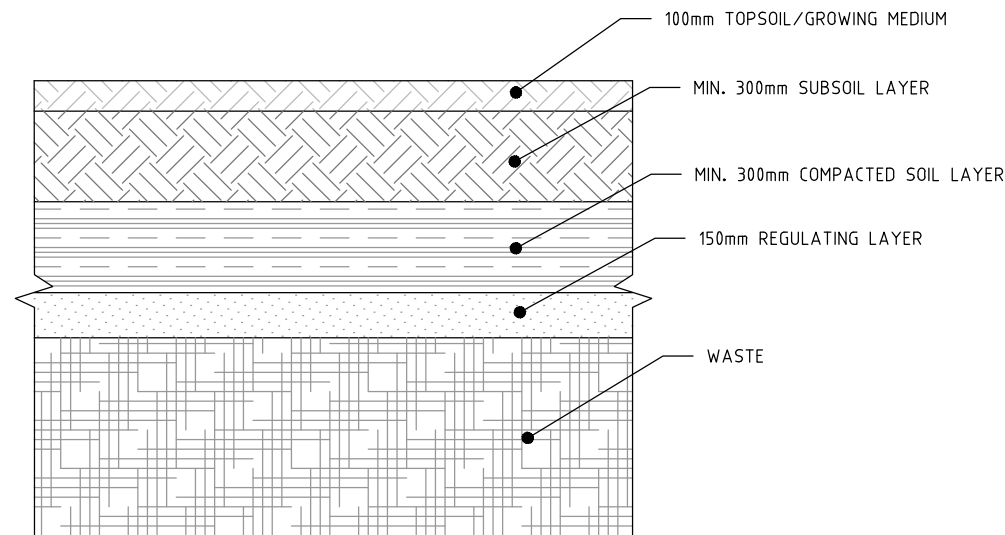
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No.	Date	Drawn	Checked	Amendment / Issue	App.
A	01.07.2021	AB	AB	PRELIMINARY ISSUE	MH

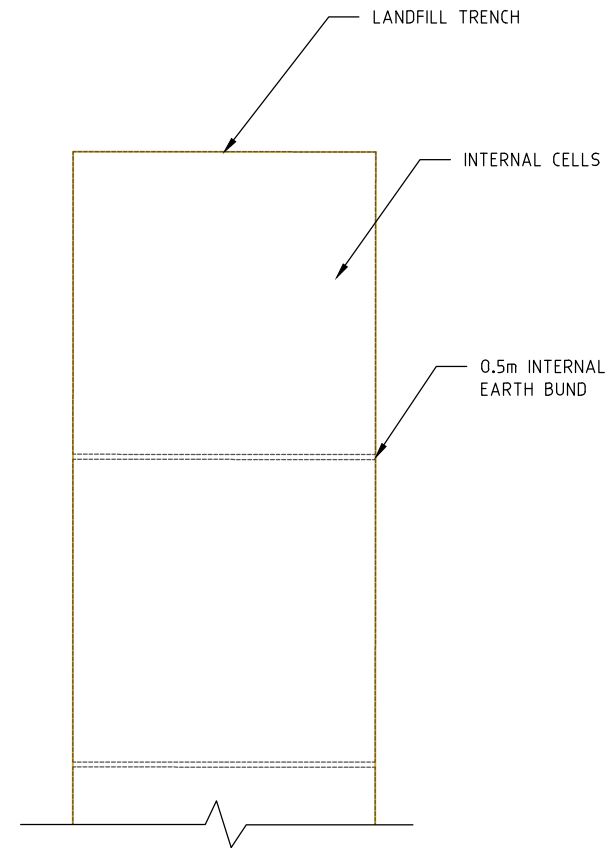
Project: **BENDERING WASTE MANAGEMENT PLAN**

Title: **LONG SECTIONS**

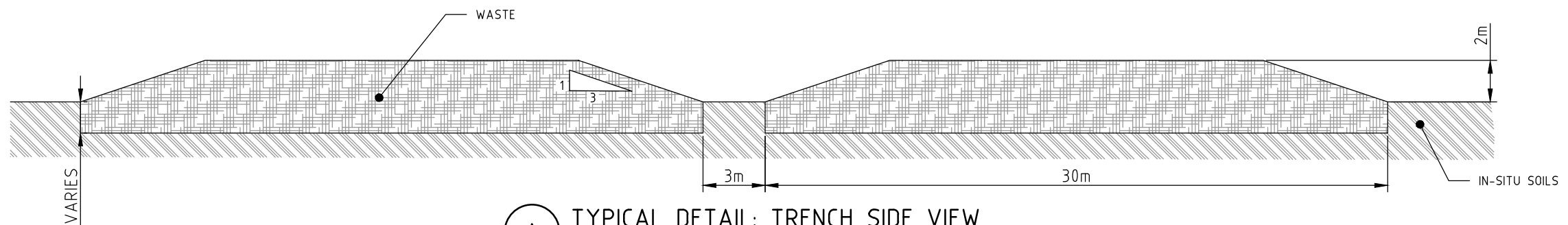
Scale: AS SHOWN @ A3	Date: 01.07.2021	
Drawn: YJ	Checked: AB	Approved: MH
Job No: TW21035	Dwg. No: C-201	Rev:
Filename: TW21035-SET.DWG		



TYPICAL DETAIL: CAPPING DESIGN
SCALE: 1:25



TYPICAL DETAIL: TRENCH PLAN VIEW
SCALE: 1:750



A TYPICAL DETAIL: TRENCH SIDE VIEW
SCALE: 1:250

REFER TO PLAN DRAWING 'C-103'
PRE-SETTLEMENT TOP OF WASTE PROFILE SHOWN

PRELIMINARY ONLY
NOT FOR CONSTRUCTION

VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM
HORIZONTAL DATUM: MGA 94 ZONE 50

talis
consultants

ASSET
ENGINEERING
ENVIRONMENT
NOISE
SPATIAL
WASTE

PERTH
604 Newcastle Street Leederville WA 6007
PO Box 454 Leederville WA 6903

www.talisconsultants.com.au T: 1300 251 070

Client:

CORRIGIN
SHIRE OF

NOTES

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No.	Date	Drawn	Checked	Amendment / Issue	App.
A	01.07.2021	AB	AB	PRELIMINARY ISSUE	MH

Project:

BENDERING WASTE MANAGEMENT PLAN

Title:

TYPICAL CONSTRUCTION DETAILS

Scale: AS SHOWN @ A3	Date: 01.07.2021	
Drawn: YJ	Checked: AB	Approved: MH
Job No: TW21035	Drg. No: C-301	Rev: A
Filename: TW21035-SET.DWG		

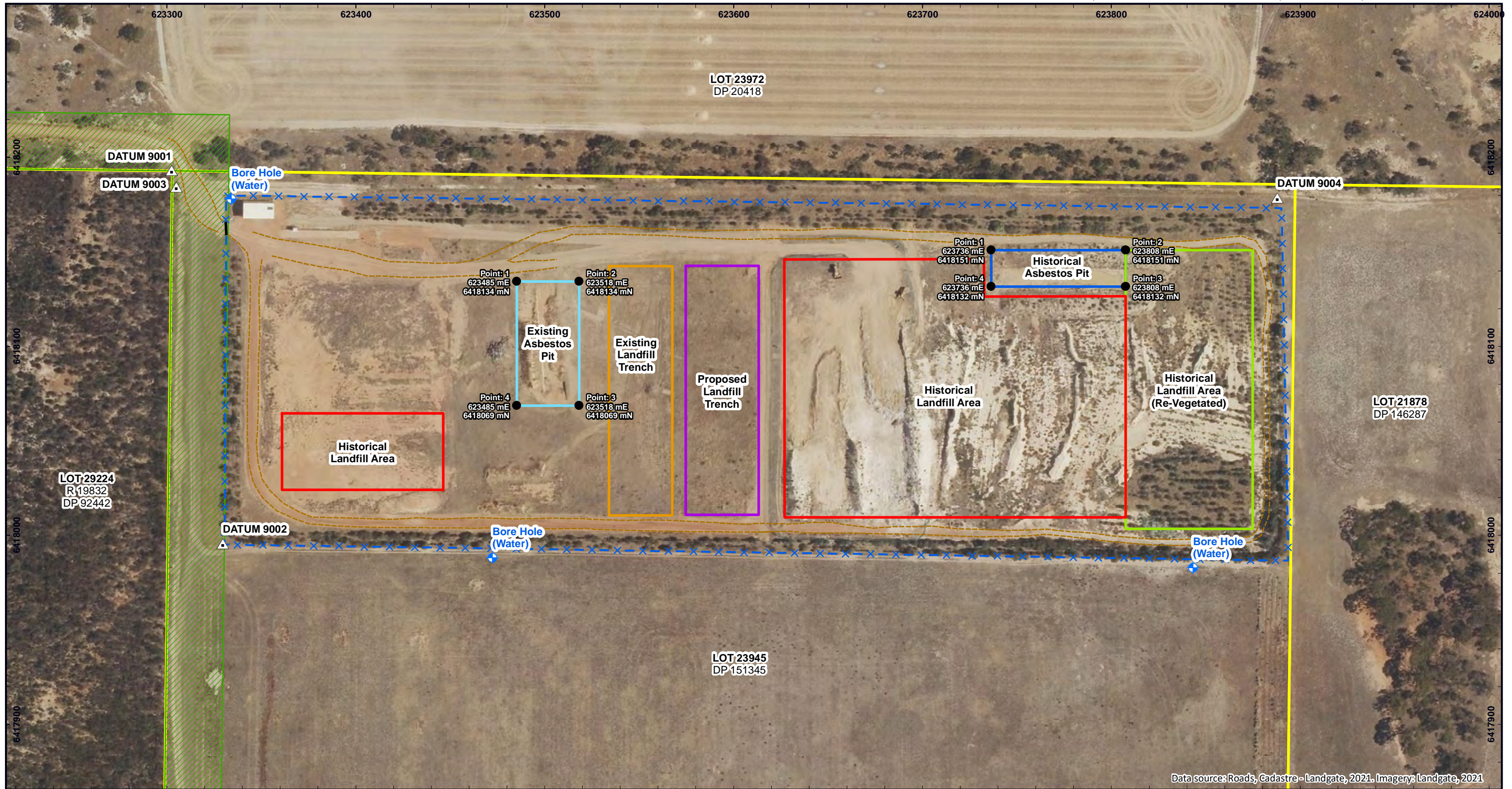
APPENDIX B

Figures

Figure 1: Site Layout

Figure 2: Borehole Locations

Figure 3: EM38 Mapping



Data source: Roads, Cadastre - Landgate, 2021. Imagery: Landgate, 2021

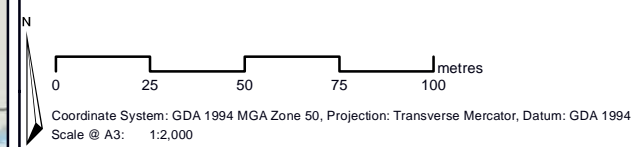
LEGEND

Landuse	Site Layout	Cadastre
Existing Asbestos Pit	Fence	Crown Allotment
Existing Landfill Trench	Gate	Easement
Historical Asbestos Pit	Track	
Historical Landfill Area	Bore Hole	
Historical Landfill Area (Re-Vegetated)	Survey Marks	
Proposed Landfill Trench		



SITE LAYOUT and LANDUSE ZONES
Bendering Landfill Closure

Kondinin
Western Australia



Prepared:	N Johnston	Date:	3/12/2021
Reviewed:	M Hobley		
Project:	TW21035		
Revision:	A		

Figure 1

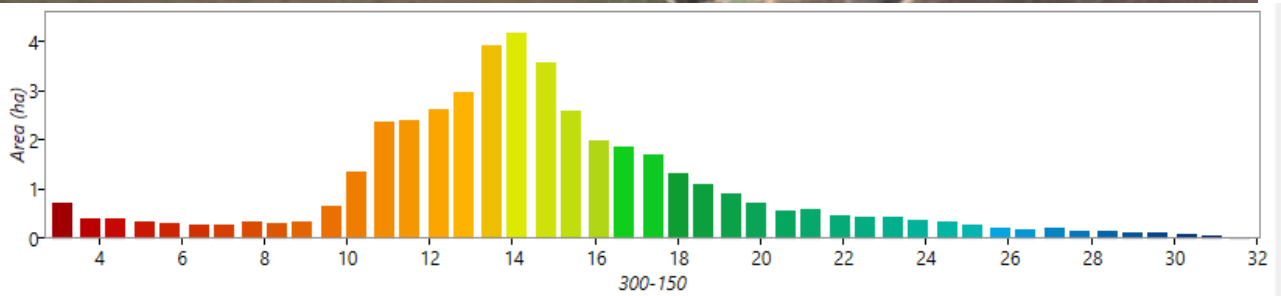
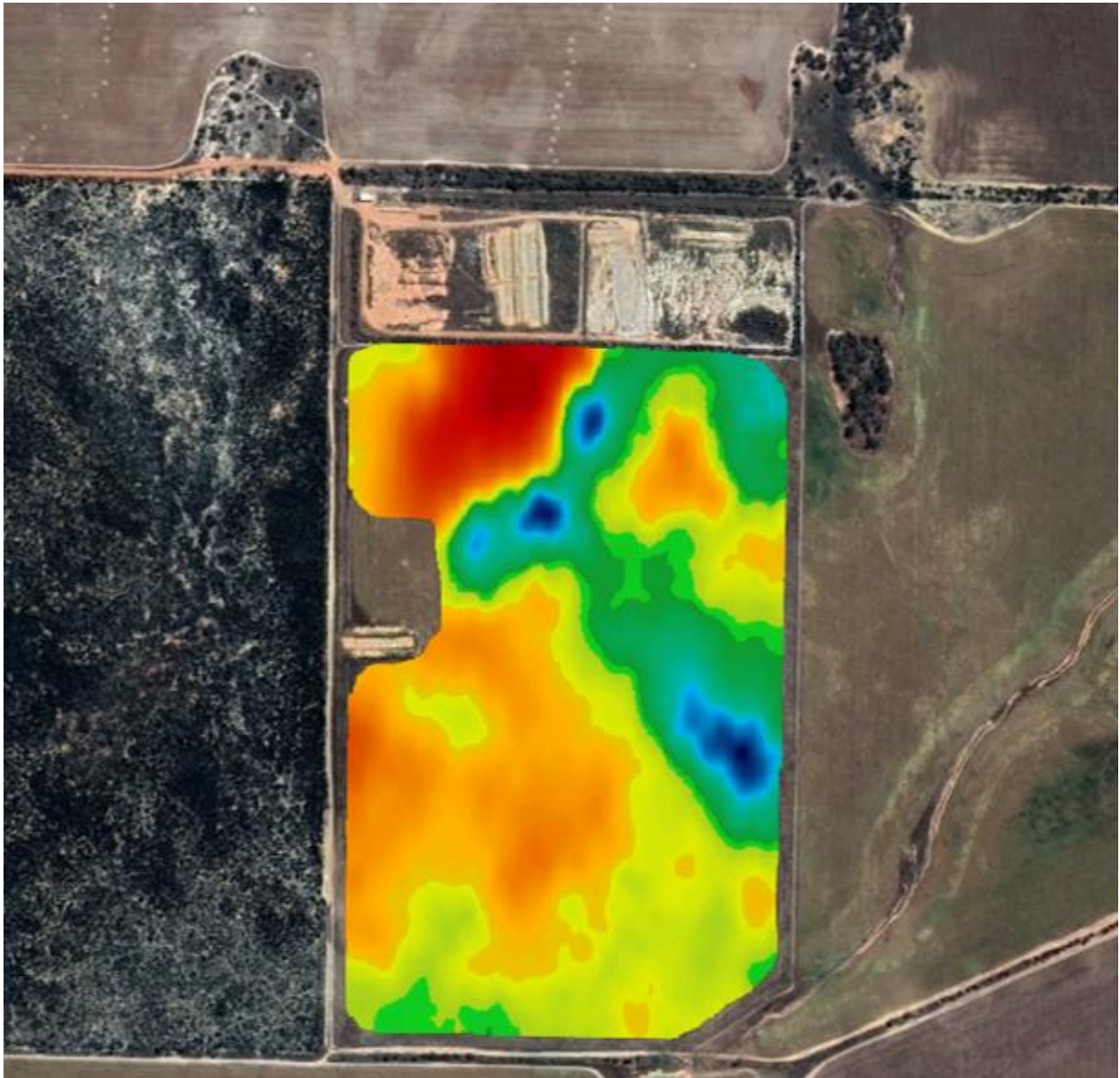


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Data source: Boreholes - Approx. Only, Client Screenshots. Cadastres - Landgate, 2021. Imagery: Landgate, 2021.

LEGEND <ul style="list-style-type: none"> Borehole Locations Landuse <ul style="list-style-type: none"> Existing Asbestos Pit Existing Landfill Trench Historical Asbestos Pit Historical Landfill Area Stages <ul style="list-style-type: none"> Stage 2 Stage 3 Historical Landfill Area (Re-Vegetated) Proposed Landfill Trench 		LOCALITY 	BOREHOLE LOCATIONS Bending Landfill Closure Kondinin Western Australia Scale @ A3: 1:3,500 Coordinate System: GDA 1994 MGA Zone 50, Projection: Transverse Mercator, Datum: GDA 1994
Prepared: N Johnston Reviewed: M Hobley Project: TW21035 Revision: A Date: 14/07/2022		Figure 2 	



APPENDIX C

Surface Water Modelling

Table 1.1: Site Details

Site Location:	Bendering Landfill
Latitude:	-32.3375
Longitude:	118.3125

Table 1.2 Rainfall AEP

Annual Exceedance Probability		Rainfall (mm)										
		63.2%	50.0%	20.0%	10.0%	5.0%	2.0%	1.0%	0.5%	0.2%	0.1%	0.05%
Duration		1:1	1:2	1:5	1:10	1:20	1:50	1:100	1:200	1:500	1:1000	1:2000
Hours	BoM											
0.02	1 min	1.25	1.45	2.18	2.74	3.34	4.23	4.98	6.03	7.56	8.93	10.5
0.03	2 min	2.17	2.5	3.62	4.47	5.36	6.56	7.58	9.01	11.3	13.3	15.7
0.05	3 min	2.91	3.36	4.91	6.07	7.3	9.01	10.5	12.5	15.7	18.5	21.8
0.07	4 min	3.52	4.08	6	7.47	9.02	11.2	13.1	15.7	19.7	23.3	27.5
0.08	5 min	4.03	4.69	6.95	8.68	10.5	13.2	15.5	18.7	23.4	27.6	32.6
0.17	10 min	5.81	6.8	10.3	12.9	15.8	20.2	23.9	29	36.3	42.9	50.6
0.25	15 min	6.96	8.16	12.3	15.6	19.1	24.4	28.9	35.1	44	52	61.3
0.33	20 min	7.83	9.18	13.9	17.5	21.4	27.3	32.3	39.2	49.1	58	68.4
0.42	25 min	8.55	10	15.1	19	23.2	29.5	34.8	42.2	52.8	62.5	73.6
0.50	30 min	9.16	10.7	16.1	20.2	24.6	31.2	36.8	44.5	55.8	65.9	77.7
0.75	45 min	10.6	12.4	18.4	22.9	27.9	35	41.1	49.6	62.1	73.4	86.5
1.00	1 hour	11.8	13.7	20.1	25	30.3	37.8	44.2	53.3	66.7	78.9	92.9
1.50	1.5 hour	13.6	15.7	22.9	28.2	34	42.2	49.1	59.1	74.1	87.5	103
2.00	2 hour	15.1	17.4	25.1	30.8	36.9	45.7	53.1	64	80.2	94.8	112
3.00	3 hour	17.5	20	28.6	35	41.8	51.7	60	72.5	90.8	107	127
4.50	4.5 hour	20.3	23.1	32.7	39.9	47.7	59	68.7	83.3	104	123	146
6.00	6 hour	22.4	25.5	35.9	43.9	52.5	65.3	76.1	92.5	116	137	162
9.00	9 hour	25.6	29.1	41	50.2	60.2	75.5	88.5	108	135	160	189
12.00	12 hour	28	31.7	44.8	55	66.2	83.5	98.5	120	150	178	210
18.00	18 hour	31.3	35.4	50.2	61.9	74.9	95.5	113	138	173	204	241
24.00	24 hour	33.5	37.9	53.9	66.7	81.1	104	124	150	188	222	262
30.00	30 hour	35.1	39.8	56.5	70.1	85.5	110	131	160	200	237	278
36.00	36 hour	36.4	41.1	58.5	72.8	88.9	114	137	166	208	246	289
48.00	48 hour	38.2	43.2	61.4	76.4	93.4	120	144	173	216	255	299
72.00	72 hour	40.6	45.8	64.8	80.4	98	125	150	177	221	260	305
96.00	96 hour	42.4	47.8	67.1	82.6	100	127	152	178	222	261	307
120.00	120 hour	44.2	49.7	69.1	84.4	101	127	152	180	224	262	309
144.00	144 hour	46.1	51.6	71.1	86.1	102	127	152	182	226	265	312
168.00	168 hour	48	53.8	73.3	87.9	103	128	153	185	229	269	316

Table 2.1 Catchment Summary

Catchments	Area (m ²)	Catchment Surface	Comments	Runoff Coefficient
Catchment A	54,550	Graded or No Plant Cover, Clayey Soil, Flat, 0 - 5%	Stage 1	0.5
Catchment B	65,312	Graded or No Plant Cover, Clayey Soil, Flat, 0 - 5%	Stage 2	0.5
Catchment C	30,591	Graded or No Plant Cover, Clayey Soil, Flat, 0 - 5%	Stage 3 North	0.5
Catchment D	33,691	Graded or No Plant Cover, Clayey Soil, Flat, 0 - 5%	Stage 3 South	0.5
Total Area (m²)	184,144		Composite Runoff Coefficient	0.500

Table 3.1 Pond Design Events

Minimum Design Event	
Design Period	1:10
Storm Duration	24 hour
Total Rainfall (mm)	66.7
Maximum Design Event	
Design Period	1:20
Storm Duration	24 hour
Total Rainfall (mm)	81.1

Table 3.2 SW Movement into Ponds

	Pond 1	Pond 2
Catchment A	YES	
Catchment B	YES	
Catchment C	YES	YES
Catchment D		YES

NOTES:

- Volume of Pond: $V=(h/6)*((LxW)+((W+W_b)*(LxL_b))+(L_b*W_b))$
- Passing Minimum Storage Requirement means Operational Capacity is not exceeded during minimum storm event
- Passing Maximum Storage Requirement means Total Capacity is not exceeded during maximum storm event

Table 3.3 Pond Design Details

Aspect	Pond 1	Pond 2
W (m)	30	30
L (m)	158	78
h (m)	1.7	1.5
Side Slope (1:V)	3	3
Freeboard (m)	0.5	0.5
Base Width (m)	19.8	21
Base Length (m)	147.8	69
Operational Width (m)	27	27
Operational Length (m)	155	75
Pond Catchment Area (m ²)	4,740	2,340
Operational Capacity (m ³)	4,256	1,731
Total Capacity (m ³)	6,487	2,822

Table 3.4 Pond Capacity Checks

Aspect	Pond 1	Pond 2
Catchment Area (m ²)	150,453	64,282
Runoff Coefficient	0.5	0.5
Minimum Storage Requirement (m ³)	5,334	2,300
Storage Check	PASS	PASS
Maximum Storage Requirement (m ³)	6,485	2,796
Storage Check	PASS	PASS

AUSROAD[®]

JETMASTER[®] TRUCKS

Submission by:
Ausroad Manufacturing Pty Ltd
Acacia Ridge, QLD

to:
Shire of Corrigin
Corrigin, WA

RFT: 02-2022

Supply and Delivery of
Road Maintenance Unit

Close date: 10 June 2022



TABLE OF CONTENTS

Letter of Introduction	Pages 1 - 2
Technical Summary	Page 3
<u>Section 1</u>	
Executive Summary	Page 4
AUSROAD Jetmaster advantages & benefits	Page 5
<u>Section 2</u>	
Council RFT Details <i>AUSROAD Response</i>	Pages 6 – 33
1. Conditions of Tendering	Pages 8 - 11
2. Specification	Pages 12 - 20
3. Tenderer's Offer	Pages 21 – 29
3.1 Form of Tender	Page 21
3.2 Selection Criteria	Pages 22 – 25
4. Project Reference Sheet	Page 26
5. Appendices	Pages 27 – 29
3.2.2 Qualitative Criteria <i>AUSROAD Response</i>	Pages 30 - 33
<u>Section 3</u>	
AUSROAD Jetmaster Specifications Overview	Page 34
Jetmaster Specifications	Pages 35 - 46
PTO, Compressor, Blower	Page 35
Hydraulic Equipment, Emulsion Systems	Pages 36 - 37
Pressurised Water Tank / Kero Tank	Page 37
Aggregate Hopper & Delivery System	Pages 37 - 38
Jetmaster Remote Control Delivery Boom	Pages 38 - 39
Jetmaster controls	Page 39
Cabin Control System	Page 40
ECOMAT Mobile Control System	Page 41
Paint & Venturi Distributor	Page 42
Aggregate Spreader	Pages 43 - 44
Spray Bar	Page 44
Multipurpose full width paving & edging attachment	Page 45
Road Broom	Page 46
AUSROAD Jetmaster unit, side & isometric views	Pages 47 - 50
AUSROAD Jetmaster unit, boom coverage diagram	Page 49
AUSROAD Jetmaster unit weight distribution diagram	Page 50
<u>Section 4</u>	
AUSROAD Jetmaster Standard Equipment	Page 51
AUSROAD Jetmaster Optional Equipment	Pages 52 - 56

Continued over...

Section 5

Additional Ausroad Information

Company Profile, Mission Statement, Quality Assurance	Pages 57 - 76
Meet some of our people	Page 57
Safety Features	Page 58
After Sales Service & Spare Parts	Page 59
Warranty	Page 60
Whole of Life Costs	Page 61
Training Program	Page 62
Ausroad Q & A	Page 63
Investing in Jetmaster technology	Pages 64 - 65
Recently commissioned AUSROAD Jetmaster Units	Pages 66 - 67
Summary of Operating Advantages	Pages 68 - 70
A great team with impressive experience	Page 71
Warranty & Guarantee	Page 71
Organisation Chart	Pages 72 - 73
Insurance Certificates of Currency	Page 74
	Pages 75 - 76

Section 6

Cab Chassis Manufacturer's Information

ISUZU FXZ 240-350 Auto Specifications	Pages 77 – 80
Organisational Capacity & Experience	Page 81
Relevant Experience	Pages 82 – 91
Local Benefit	Page 91



6m³ AUSROAD Jetmaster Road Maintenance Units
Muswellbrook Shire Council, Muswellbrook, NSW
RMS, Broken Hill, NSW



8th June 2022

Chief Executive Officer
Shire of Corrigin
PO Box 221
CORRIGIN WA 6375



via email: tenders@corrigin.wa.gov

Dear Madam,

**RE: RFT Title: SUPPLY AND DELIVERY OF ROAD MAINTENANCE UNIT
RFT Number: RFT 02-2022**

Further to the receipt of Councils Request for Tender Documents we have pleasure in offering Shire of Corrigin our submission for the supply and delivery of:

One (1) only new **6m³ AUSROAD Jetmaster®** Road Maintenance Body complete with (but not limited to):

- PTO powered (Chelsea Hot-shift)
- Jetmaster® fully hydraulic remote-control patching boom
- 6m³ aggregate hopper capacity
- 2000 litre emulsion tank
- Aggregate Spreader / Spray Bar
- Multipurpose full width paving & edging unit
- Road Broom
- Ecomat Control System.

- AUSROAD Standard & Optional Equipment as listed on pages 51 - 56.

Fitted to a new ISUZU cab chassis with automatic transmission.

6m³ AUSROAD Jetmaster® body (PTO powered)	\$356,800.00**
ISUZU FXZ 240-350 Auto Cab Chassis* (excludes on roads ie: stamp duty & registration)	\$157,940.00
Delivery to Dealer	\$10,500.00
Sub Total	\$525,240.00
Plus GST	\$52,524.00
Total (includes GST)	\$577,764.00

*Wheelbase subject to final confirmation from Ausroad.

Price remains valid for 90 days.

Ausroad submission all as per:

- Council RFT Documents
Conditions of Tendering
Specification
Tenderer's Offer
Selection Criteria
Project Reference Sheet
Appendices
- AUSROAD Specifications
Additional Information

Delivery

Our current delivery time is 48 – 52 weeks subject to availability of the cab chassis and confirmation at time of ordering. These factors need to be taken into account regarding timing of order confirmation. Actual delivery date should be confirmed at time of ordering.

Registration

Registration costs **are not** included in quoted prices. These will be invoiced separately at cost to Council by Dealer.

Payment Terms

******Deposit of 30% of AUSROAD body price will be invoiced upon order and payable within 14 days to secure critical components at current pricing.

By placing your order, Shire of Corrigin accepts these payment terms, balance of payment due upon delivery. Ausroad will provide a tax invoice with EFT bank details for balance of payment at time of delivery.

Customer is responsible for the vehicle and its insurance once delivery has been made and possession of the unit taken (even if payment has not yet been made). Proof of insurance required prior to delivery.

Late Payment

Late payment will incur and additional 0.5% charge. A revised invoice will be issued if this occurs.

With regards



Matthew Sims
National Sales Manager
Ausroad Manufacturing Pty Ltd

 Local Government
CORRIGIN
APPROVED CONTRACTOR



office ph: 07 3216 7058
e: matt@ausroad.com.au
m 0408 650 686

**Online training maybe required in place of on-site training due to travel restrictions. On-site training will be completed once travel restrictions are lifted.*

AUSROAD[®]

JETMASTER[®] TRUCKS

TECHNICAL SUMMARY

- High quality Australian built body
- 4mm high tensile steel plate hopper
- Self-tracking conveyor belt:
 - Joining link to enable easy installation.
 - Self-tracking eliminates the need for adjustment.
- Hot shift CHELSEA PTO
- ABAC B6000 Compressor, hydraulic driver (Parker Motor)
- EURUS MB 4509 Blower, variable speed hydraulic drive. 550-1000m³/hr
- Patented Venturi Distributor
 - Enables Jetmaster[®] to provide such high guaranteed production rates without excessive wear to the delivery system.
- Fully welded steel body construction
- Body will be:
 - Sand blasted to class 2.5
 - Under coated zinc etch primer
 - Top-coat 'white' two pack.
- Parker pumps
- GATES hydraulic hosing, minimum 3000 psi working pressure
- **Ecomat** control platform providing; job materials reports
machine fault diagnostics
flexible user interface



6m³ control remote AUSROAD Jetmaster[®] unit with aggregate spreader/spray bar, paving/edging attachment and road broom owned by Bega Valley Shire Council, NSW.

EXECUTIVE SUMMARY

6m³ AUSROAD Jetmaster[®] body \$356,800.00

Plus cab chassis:
ISUZU FXZ 240-350 Auto \$157,940.00

Plus Major Option (if selected per unit) pages 52 – 53.	Per Body (ex GST)
Water Spray bar mounted at front of truck (includes 240 litre capacity tank)	included
Road Broom	included
Aggregate Spreader / Spray Bar	included
Multipurpose full width paving & edging unit	included
Hydraulic Remote Outlet	\$4 465.00
Load Cells under hopper	\$8 630.00
Load Cells under emulsion tank	\$4 820.00
Automatic Greasing System	\$8 830.00
Heated spray tips on spray bar	included
Heated front nozzle emulsion ring	included
“Dragons Breath” LPG Burner mounted to front of boom	\$2 840.00

Plus Minor Options (if selected) pages 54 – 56.

Ausroad Benefits



- Fast service and backup support, refer page 60.
- Cab Chassis Supplier: South West Isuzu, Picton, WA.
- Ausroad is an Australian owned and operated Company based in Brisbane, Queensland with extensive experience in Australian conditions.
- Versatile machine with ability to be customized to suit specific requirements of Council.
- Ausroad has 30 years of experience building road maintenance equipment.
- Proven Jetmaster process for handling emulsion and fluids to provide reliable unit with minimum downtime.

Tender price includes;

- Delivery to Council Depot, Walton Street, Corrigin, WA at \$10,500.00 (ex GST).
- 2 days of Council Operators and Service Staff training by AUSROAD Trainer.
- AUSROAD Jetmaster[®] unit as per Council and AUSROAD specifications
- AUSROAD standard equipment as detailed on page 51.
- Workshop Maintenance Manual, Operators Manual, Spare Parts Manual (hard & electronic copies).
- 3 year product warranty & productivity guarantee, details pages 61, 72 – 73.
- AUSROAD staff are available at all times to discuss operational issues.



AUSROAD JETMASTER THE ULTIMATE ROAD REPAIR SYSTEM!

1. Easily remounted on future cab chassis

- PTO
- Wheelbase 4540mm ISUZU FXZ 240-350

*Wheelbase subject to final confirmation from Ausroad.

2. Remote boom - location / design

- Low straight delivery path – less wear on parts
- Less cantilevered forces on equipment
- Proven low maintenance design, no greasing of parts
- Compact smart design with very few moving parts.
- No interference with cab / tilt
- Proven durability
- Proven crash safety for head on impacts.

3. No tipping of hopper while spray sealing.

- Increased safety
- Increased visibility
- Lower centre of gravity at all times

4. Venturi (patented) delivery system

- No moving parts
- Very low maintenance
- Safe

5. Roller delivery from spreader box (optimiser)

- Simple accurate adjustment of spread rate
- Less wasted aggregate
- Spread rate will be calibrated on delivery with local materials

6. Control system (IFM)

- Proven robust IFM German control system
- Uses 'industrial quality' components
- Simplified fault finding (will self-diagnose faults)
- 'LEDS' at every connection
- 'Contactless' joystick, industrial design
- Flexible program giving operator material totals etc, for individual jobs.
- Download completed works information (optional)
 - time, date, materials used, area sealed
 - location
 - other fields available as required



Optional Load Cells under hopper and emulsion tank must be utilised to be able to have job data available



Request for Tender

Request for Tender:	Supply and Delivery of Road Maintenance Unit
Deadline:	Friday 10 June 2022 at 4.00pm
Address for Delivery:	tenders@corrigin.wa.gov.au
RFT Number:	RFT 02-2022

Table of Contents

1 Contents

1	Conditions of Tendering	3
1.1	Tender Documents.....	3
1.2	How to Prepare Your Tender.....	3
1.3	Contact Persons.....	3
1.4	Customs Duty.....	3
1.5	Lodgement of Tenders and Delivery Method	3
1.6	Rejection of Tenders	3
1.7	Late Tenders.....	4
1.8	Acceptance of Tenders	4
1.9	Disclosure of Contract Information.....	4
1.10	Tender Validity Period	4
1.11	Tenderers to Inform Themselves	4
1.12	Risk Assessment.....	4
1.13	Evaluation Process	5
1.14	Value Considerations.....	5
1.15	Regional Price Reference.....	6
1.16	Price Basis	6
1.17	Canvassing of Officials	6
2	Specification	7
2.1	Contract Requirements in Brief.....	7
2.2	Specifications	7
3	Tenderer's Offer	9
3.1	Form of Tender	9
3.2	Selection Criteria	10
3.2.1	Compliance Criteria.....	10
3.2.2	Qualitative Criteria.....	11
3.2.3	Price Information	12
3.2.4	Price Schedule	12
4	Project Reference Sheet	13
5	Appendices	14
5.1	Appendix 1 Regional Price Preference	14

1 Conditions of Tendering

1.1 Tender Documents

This Request for Tender is comprised of the following parts:

- Part 1 – Conditions of Tendering (*read and keep this part*).
- Part 2 – Specification (*read and keep this part*).
- Part 3 – Tenderer's Offer (*complete and return this part*).

1.2 How to Prepare Your Tender

Tenderers must:

- a) Carefully read all parts of this document.
- b) Ensure you understand the Requirements.
- c) Complete and return the Offer (Part 3) in all respects and include all attachments.
- d) Sign the Offer Form.
- e) Respond to all of the Selection Criteria.
- f) Lodge your Tender before the Deadline.

1.3 Contact Persons

Tenderers should not rely on any information provided by any person other than the person listed below:

Name:	Phil Burgess, Manager Works and Services
Telephone:	0429 632 203
Email:	works@corrigin.wa.gov.au
Name:	Terry Barron, Leading Hand – Roads and Civil
Telephone:	0447 137 749
Email:	roads@corrigin.wa.gov.au

1.4 Customs Duty

The Tenderer shall allow for any customs duty and primage applicable to all imported materials, plant and equipment required in connection with the works in its Tender.

1.5 Lodgement of Tenders and Delivery Method

The Tender must be lodged by **Friday 10 June 2022 at 4pm**.

The Tender is to be:

- a) emailed to tenders@corrigin.wa.gov.au

All pages must be numbered and the Tender must include supporting information such as brochures or pamphlets.

1.6 Rejection of Tenders

A Tender will be rejected without consideration of its merits in the event that:

- a) It is not submitted before the Deadline; or
- b) It is not submitted at the place specified in the Request; or
- c) It may be rejected if it fails to comply with any other requirements of the Request.

1.7 Late Tenders

Tenders received:

- a) After the Deadline; or
- b) In a place other than that stipulated in this Request

will not be accepted for evaluation.

1.8 Acceptance of Tenders

The Principal is not bound to accept the lowest Tender and may reject any or all Tenders submitted.

1.9 Disclosure of Contract Information

Documents and other information relevant to the contract may be disclosed when required by law under the *Freedom of Information Act 1992* or under a Court order.

All Tenderers will be given particulars of the successful Tenderer(s) or be advised that no Tender was accepted.

1.10 Tender Validity Period

All Tenders will remain valid and open for acceptance for a minimum period of ninety (90) days from the Deadline or forty-five (45) days from the Principal's resolution for determining the Tender, whichever is the later unless extended on mutual agreement between the Principal and the Tenderer in writing.

1.11 Tenderers to Inform Themselves

Tenderers will be deemed to have:

- a) examined the Request and any other information available in writing to Tenderers for the purpose of tendering;
- b) examined all further information relevant to the risks, contingencies, and other circumstances having an effect on their Tender which is obtainable by the making of reasonable enquires;
- c) satisfied themselves as to the correctness and sufficiency of their Tenders including tendered prices which will be deemed to cover the cost of complying with all the Conditions of Tendering and of all matters and things necessary for the due and proper performance and completion of the work described therein;
- d) acknowledged that the Principal may enter into negotiations with a chosen Tenderer and that negotiations are to be carried out in good faith; and
- e) satisfied themselves they have a full set of the Request documents and all relevant attachments.

1.12 Risk Assessment

The Principal may have access to and give consideration to:

- a) any risk assessment undertaken by any credit rating agency;
- b) any financial analytical assessment undertaken by any agency; and
- c) any information produced by the Bank, financial institution, or accountant of a Tenderer;

so as to assess that Tender and may consider such materials as tools in the Tender assessment process.

Tenderers may be required to undertake to provide to the Principal (or its nominated agent) upon request all such information as the Principal reasonably requires to satisfy itself that Tenderers are financially viable and have the financial capability to provide the Services for which they are submitting and to otherwise meet their obligations under any proposed Contract. The Principal reserves the right to engage (at its own cost) an independent financial assessor as a nominated agent to conduct financial assessments under conditions of strict confidentiality. For this assessment to be completed, a representative from the nominated agent may contact you concerning the financial information that you are required to provide.

The financial assessment is specifically for use by the Principal for the purpose of assessing Tenderers and will be treated as strictly confidential.

1.13 Evaluation Process

Tenders will be evaluated using information provided in your Tender.

The following evaluation methodology will be used in respect of this Request:

- a) Tenders are checked for completeness and compliance. Tenders that do not contain all information requested (eg completed Offer form and attachments) may be excluded from evaluation.
- b) Tenders are assessed against the Selection Criteria. Contract costs are evaluated, (eg tendered prices and other relevant whole of life costs are considered).
- c) The most suitable Tenderers may be short listed and may also be required to clarify their Tender, make a presentation, demonstrate the product/solution offered and/or open premises for inspection. Referees may also be contacted prior to the selection of the successful Tenderer.

A Contract may then be awarded to the Tenderer whose Tender is considered the most advantageous Tender to the Principal.

1.14 Value Considerations

Weighted Price Criteria

The Weighted Price method is used where price is considered to be crucial to the outcome of the contract. The price is then assessed with quality. Include any items that may affect any pricing outcomes (eg Regional Price Preference Policy).

Criteria	Weighting
Tendered Price	50%
Delivery Timeframe and Availability	10%
Operational Efficiency	15%
Breakdown and back up service	10%
Warranty Period	10%
Regional Price Preference	5%

1.15 Regional Price Reference

Tenderers for the contract may be afforded a preference in accordance with Regulation 24(A-G) of the *Local Government (Functions and General) Regulations 1996* and the Shire of Corrigin Regional Preference Policy adopted on 17 October 2017.

The Shire of Corrigin Regional Price Policy is attached in Appendix 1 and stipulates that a price preference will apply to suppliers who are based in, operate from or source goods or services from within the Shire Region in relation to all tenders invited by the Shire for the supply of goods, services and construction (building) services, unless the tender document specifically states prior to advertising of the tender that this policy does not apply.

The regional price preference enables tenders to be evaluated as if the proposed tender bid price were reduced in accordance with permitted price preferences as specified below in this policy. This policy will operate in conjunction with the purchasing considerations and procedures for tenders as outlined in the Shire's Purchasing Policy when evaluating and awarding tender contracts.

1.16 Price Basis

All prices for goods/services offered under this Request are to be fixed for the term of the Contract. Tendered prices **must include Goods and Services Tax (GST)**.

Unless otherwise indicated prices tendered must include delivery to Corrigin, Western Australia, unloading, packing, marking and all applicable levies, duties, taxes and charges. Any charge not stated in the Tender, as being additional will not be allowed as a charge for any transaction under any resultant Contract.

1.17 Canvassing of Officials

Canvassing of any of the Shire of Corrigin Officers or Councillors with a view to influencing the acceptance of any Tender may result in the Principal at its absolute discretion omitting the Tenderer from consideration..

2 Specification

2.1 Contract Requirements in Brief

The Shire of Corrigin seeks tenders for the supply of a new Road Maintenance Truck for efficient automated road maintenance including pot hole patching and edge repairs.

2.2 Specifications

Truck - Unit Isuzu or equivalent

1. Engine net power not less than 250Kw

Comply by Dealer.

2. Gross Combination Mass (GCM) not less than 45,000Kg

Comply by Dealer.

3. Auto Shift Transmission

Comply by Dealer.

4. Moulded Guards as part of body build

Comply by Ausroad.

5. Fully integrated air conditioning to cab

Comply by Dealer.

6. Air suspension seat with multiple adjustments.

Comply by Dealer.

7. Black Duck Canvas seat covers fitted.

Comply by Dealer.

8. *Shire of Corrigin* to be painted on both sides of the body (lettering at least 80mm)

Comply by Ausroad.

9. Radio/Bluetooth/Handsfree

Comply by Dealer.

10. UHF Radio (Latest GME) to be fitted to interior of cab with external antenna

Comply by Ausroad.

11. Tinted safety glass to be fitted to all cab glass panels to the maximum value allowed by WA regulations and Acts.

Comply by Dealer.

12. Power Windows

Comply by Dealer.

13. Heavy duty floor mats fitted

Comply by Dealer.

14. 2.5kg Fire extinguisher to be fitted inside cab

Comply by Dealer.

15. 9kg Fire extinguisher to be fitted outside of cab

Comply by Ausroad.

16. Powered and heated mirrors

Comply by Dealer.

17. Two (or a double) amber revolving beacon with guards for protection

Comply by Ausroad.

Four rotating flashing LED amber beacons (two front and two at rear) supplied as standard AUSROAD equipment. Additional LED strobe light on Jetmaster® boom.

18. Reversing camera / alarm system

Comply by Ausroad.

Rear-view camera and reverse alarm included.

19. Handrails to be fitted to the outside of the cab on the driver's and passenger side meeting SAE and ISO standards.

Comply by Dealer.

Standard ISUZU cab handrails included.

20. Tyres (full specification and options to be provided)

Comply by Dealer.

21. Spare rim and matching tyre with carrier to be supplied

Comply by Ausroad & Dealer.

22. Fitted quality mud flaps

Comply by Dealer.

23. Operator service, workshop and parts manuals to be supplied with the new unit

Comply by Dealer.

Maintenance Unit

1. Single joystick control (Interior, RH Side)

Comply by Ausroad.

2. Multi-function screen mounted to console.

Comply by Ausroad.

3. Pressurised water tank

Comply by Ausroad.

Aluminium water tank with a minimum capacity 240 litres and retractable hose reel for general cleaning and washing. Tap for hand washing.

4. Pressurised kerosene tank

Comply by Ausroad.

60 litre kerosene tank, plumbed into system for easy line flush.

5. Front boom not more than front bumper height.

Comply by Ausroad.

Remote control front delivery

The Jetmaster® aggregate delivery hose is mounted underneath the cab via the Jetmaster® fully hydraulic remote-control patching boom mounted at bumper bar height, in full clear vision of the operator.

Operation of the delivery boom is simple and placement of material is very accurate, so there is no need for a nozzle rotator / agitator. Heated front nozzle emulsion ring included.

Refer AUSROAD Jetmaster® specifications pages 38 – 39.

Patching boom is designed so that there is zero protrusion into oncoming traffic, refer diagram page 49 showing boom coverage.

Benefits of the Jetmaster® boom include:

1. **Less energy is required by taking aggregate in a more direct route under the cab.**
2. **Less wear on the aggregate delivery hose by taking the hose in a more direct route.**
3. **Clear visibility for the operator. No arm and delivery hose dangling down in front of wind screen.**
4. **Less moving parts giving more positive control of the boom by the operator.**
5. **Lower cab clearance enabling truck to pass under trees and other obstructions.**
6. **Mounting to chassis as per truck manufacturer's recommendations. (Approved by Isuzu and Hino Australia, Engineers)**
7. **The Jetmaster® boom has maintenance free bearings, slides on simple and effective UHMPE blocks and is built to withstand impacts. We have built over 300 of these assemblies over many years and have not had a single structural failure.**

8. **The Jetmaster® remote control boom is designed with a low profile in mind. When stowed for travel it presents no sharp edges or protrusions. It is fitted with a beacon and reflective marking strips for high visibility while operating.**
9. **Increased front impact strength.**

The remote control Jetmaster® boom:

- **Strong construction with high quality fibreglass filled epoxy bearings.**
- **Lower overall weight of boom allows greater payload.**
- **No equipment suspended over cab.**
- **No possibility of aggregate spraying over cab in event of hose failure.**
- **More efficient material delivery path, less wear on hose.**



Jetmaster® boom fully retracted and stowed for safe travel between repair jobs.



Jetmaster® boom fully extended during repair job. Movement is restricted to the right for safety.

Refer also Q & A pages 64 – 65.

6. Heated emulsion tank not less 2000 litre

Comply by Ausroad.

Emulsion tank 2000 litre capacity and fully compliant with AS 1210. Usable approximately 1900 litres, stops emulsion getting into airlines. All pressure vessels are fitted with PRV, dump valves and pressure gauges as standard. Emulsion tank is fitted with inspection hatches and dipstick.

50mm female camlock fitted as standard or fitting to suit customer.

- **240V overnight heating, included.**
- **Equipment to enable filling emulsion tanks from 210 litre drums included.**

Optional

- **Insulated tank cover, additional \$6 000.00 (ex GST), see page 55.**

7. Inline emulsion filter

Comply by Ausroad.

All Emulsion is filtered using an in-line emulsion filter.

8. Heated emulsion tank

Comply by Ausroad.

240V Overnight heating and Inline heat exchanger is supplied.

9. No less than 20m emulsion Hand Lance Kit (retractable)

Partial comply by Ausroad.

Self-retracting hose reel fitted with 10 metres of wire braided hose and a spray lance 2 metres long included.

10. Not less than 14mm stone flow

Comply by Ausroad.

Ausroad recommends using up to 10mm through the front nozzle and up to 14mm through the spreader box.

11. Aggregate spreader and spray bar

Comply by Ausroad.

Aggregate spreader

The aggregate spreader has 8 x 300mm wide gates for variable width spreading and is fully controlled from cab. Hydraulic side shift which allows the application of aggregate and emulsion outside the wheel track of the truck included.

The aggregate spreader / spray bar is controlled via the IFM Ecomat system, once the desired width and application (aggregate or emulsion or both) is selected then only one button is required to start and stop operation.

Whilst using the aggregate spreader the hopper does not have to be elevated, it remains fixed giving better vision, stability (important whilst sealing in hilly conditions, sharp corners and steeply cambered roads) and reduces the risk of hitting trees, signage etc particularly in 'built up' areas. Clearance is improved when sealing close to trees and buildings.

Refer AUSROAD Specifications pages 43 – 44.

Spray bar

2.4m wide. 8 nozzle spray bar allowed for. Nozzles are selected via ECOMAT system, spray rate application is automatic. Nozzles are controlled individually from the cab, these can be selected before or during application.

Height of spray bar is adjustable manually, not from cab. This height is set during commissioning and generally will not need to be adjusted.

Refer AUSROAD Specifications page 44.

12. Heated spray tips

Comply by Ausroad.

Heated spray tips on spray bar (heat nozzles to approximately 70C to remove blockages) included. Front nozzle includes hot water circulation system.

13. Heated front nozzle emulsion ring

Comply by Ausroad.

14. Multi-purpose full width paving and edging unit

Comply by Ausroad.

Multipurpose full width paving and edging unit

Multipurpose full width paving & edging unit included, refer pages 45 for full specifications.

Levelling board or 'screeder' is plastic, 2400 x 200 x 25mm

15. Auto broom

Comply by Ausroad.

Road broom

'Drum' type broom supplied, diameter 380mm, length 1000mm, mounted on left rear side of unit. Operation from cab, will sweep approximately 900mm wide from left side of unit.

Includes water dust suppression via water spray jets that operate automatically while sweeping. Refer AUSROAD Specifications page 46.

16. Auto pave

N/A

17. Full width water spray bar

Comply by Ausroad.

18. Heated hoses

Comply by Ausroad.

Heated hose on front nozzle.

19. No less than 1 hand washing water tank

Comply by Ausroad.

20. Spray suppression (Front and Rear)

Comply by Ausroad and Dealer.

21. Vacuum loading kit

Comply by Ausroad.

Equipment to enable filling emulsion tanks from 210 litre drums included. Drain plug on spray bar to allow collection of emulsion when cleaning.

22. Air blower

Comply by Dealer.

24. Front nozzle hotshot kit

Comply by Ausroad.

Heated front nozzle.

25. Sign patrol

Comply by Ausroad.

Cab roof mounted patrol sign 1200 x 600 double sided, heavy duty, electric raise and lower from cab. Rotating LED / amber beacon each side.

26. Sign storage rack

Comply by Ausroad.

Vertical sign rack designed for easy access and capable of holding road signs. Positioned between cab and emulsion tank, refer diagram pages 47 – 50.

27. Rear mounted camera

Comply by Ausroad.

BRIGADE' LCD Screen (heavy duty) and one camera (rear vision) fitted and supplied by AUSROAD, extra cameras available on request.

Delivery and Handover

Tender price is to include delivery to the Shire of Corrigin Depot, Walton Street, Corrigin, WA.

1. Onsite Handover

Included in AUSROAD Training.

2. Training on operation and servicing to be provided following delivery

AUSROAD Trainer will work alongside the requirements of Council and provide a guided program of theoretical and practical training over two days, or until operators can operate unit safely and with confidence. Refer page 63 for details of AUSROAD training program.

3. Full Road Maintenance Unit specifications

Refer AUSROAD:

- **Technical Summary page 3.**
- **Features & Benefits page 5.**
- **Specifications & Diagrams pages 34 – 50.**
- **Standard & Optional Equipment pages 51 – 56.**

Refer ISUZU:

- **Manufacturers Specifications pages 77 – 80.**

3 Tenderer's Offer

3.1 Form of Tender

The Chief Executive Officer
Shire of Corrigin
PO Box 221
CORRIGIN WA 6375

I/We (Registered Entity Name): AUSROAD MANUFACTURING PTY LTD
(BLOCK LETTERS)
of: 56 OVERLORD PLACE, ACACIA RDIGE QLD, 4110
(REGISTERED STREET ADDRESS)

ABN 90 602 766 530 ACN (if any) 602 766 530

Telephone No: 07 3216 7058

E-mail: matt@ausroad.com.au

In response to Request for Tender RFT02/2022 Supply of New Road Maintenance Unit


I/We agree that I am/We are bound by and will comply with this Request and its associated schedules, attachments, all in accordance with the Conditions contained in this Request signed and completed.

The tendered price is valid up to ninety (90) calendar days from the date of the tender closing or forty-five (45) days from the Council's resolution for determining the Tender, whichever is the later unless extended on mutual agreement between the Principal and the Tenderer in writing.

I/We agree that there will be no cost payable by the Principal towards the preparation or submission of this Response irrespective of its outcome.

The consideration is as provided in the prices disclosed in the prescribed format and submitted with this Tender.

Dated this 8th day of June 2022

Signature of authorised signatory of Tenderer: 

Name of authorised signatory (BLOCK LETTERS): MATTHEW SIMS

Position: National Sales Manager

3.2 Selection Criteria

3.2.1 Compliance Criteria

Please select with a Yes or No whether you have complied with the following compliance criteria:

Description of Compliance Criteria	
a) Tenderers are to provide acknowledgment that your organisation has submitted in accordance with the Conditions of Tender including completion of the Offer Form and provision of your pricing submitted in the format required by the Principal.	Yes / No
b) Compliance with the Specification contained in the Request.	Yes / No
c) Delivery date specified	Yes / No
d) Risk Assessment Tenderers must address the following information in an attachment and label it Risk Assessment	
i) An outline of your organisational structure inclusive of any branches and number of personnel. <i>Refer 'Organisation Chart' page 74.</i>	Yes / No
ii) Provide the organisation's directors/company owners and any other positions held with other organisations. Toni Dunlop, Managing Director Shari Dunlop, Director Stefan Dunlop, Director	Yes / No
iii) Provide a summary of the number of years your organisation has been in business. <i>The Ausroad Group manufacturing arm has conducted business for some 30 years.</i> <i>Recently the group has undertaken a strategic re-structure to ensure it is best positioned to move forward as a business - which includes the continued high standard of service to its clients. This re-structure has not incorporated any changes to company operational personnel and or ultimate owners.</i> <i>Going forward, the manufacturing arm of the group will be operated by Ausroad Manufacturing Pty Ltd (ABN 90 602 766 530), Ausroad Systems Pty Ltd (ABN 61 097 151 445) will be transitioned out over a period of time.</i>	Yes / No
iv) Attach details of your referees. You should give examples of work provided for your referees where possible. <i>Refer 'Recently Commissioned' pages 68 – 70.</i>	Yes / No

Part 3 COMPLETE AND RETURN THIS PART

<p>v) Are you currently engaged in litigation as a result of which you may be liable for \$50,000 or more? If Yes please provide details.</p>	<p>Yes / No</p>
<p>vi) Are you presently able to pay all your debts in full as and when they fall due?</p>	<p>Yes / No</p>
<p>vii) Will any actual or potential conflict of interest in the performance of your obligations under the Contract exist if you are awarded the Contract? If Yes, please supply in an attachment details of any actual or potential conflict of interest and the way in which any conflict will be dealt with.</p>	<p>Yes / No</p>
<p>viii) Tenderers are to supply evidence of their insurance coverage including, insurer, expiry date, value and type of insurance. A copy of the Certificate of Currency is to be provided to the Principal within 30 days of acceptance.</p>	<p>Yes / No</p>
<p><i>Refer attached 'Certificate of Currencies for Workcover & Public and Products Liability Insurance' pages 75 – 76.</i></p>	

3.2.2 Qualitative Criteria

Before responding to the following qualitative criteria, Tenderers must note the following:

- a) All information relevant to your answers to each criterion are to be contained within your Tender;
- b) Tenderers are to assume that the Evaluation Panel has no previous knowledge of your organisation, its activities or experience;
- c) Tenderers are to provide full details for any claims, statements or examples used to address the qualitative criteria; and
- d) Tenderers are to address each issue outlined within a qualitative criterion.

A. Tendered Price Tenderers must complete the Pricing Schedule at xx below.	Weighting 50%	
B. Delivery Timeframe and Availability Tenderers must address the following information in an attachment and label it Delivery Timeframe and Availability :	Weighting 10%	
Tenderer to demonstrate: <ol style="list-style-type: none"> a) Availability and Delivery to Shire of Corrigin Depot will be within a timely manner. b) Timeline/Schedule of extras on the vehicle to be carried out e.g. tinting, fitting of accessories. 	Delivery Timeframe and Availability	Tick if attached <input checked="" type="checkbox"/> <i>Refer page 30.</i>
C. Operational Efficiency Tenderers must address the following information in an attachment and label it Operational Efficiency :	Weighting 15%	
Tenderer to demonstrate the capability and efficiency of the machine.	Operational Efficiency	Tick if attached <input checked="" type="checkbox"/> <i>Refer page 30.</i>
D. Breakdown and Back Up Service Tenderers must address the following information in an attachment and label it Breakdown and Back Up Service :	Weighting 10%	
Tenderer to demonstrate: <ol style="list-style-type: none"> a) Quality and standard of service b) Timeliness of service (productivity) c) Any other issues or matters which will maximise the benefit of the machine 	Breakdown and Back Up Service	Tick if attached <input checked="" type="checkbox"/> <i>Refer pages 31 – 32.</i>
E. Warranty Period Tenderers must address the following information in an attachment and label it Warranty Period :	Weighting 10%	
Tenderer to demonstrate <ol style="list-style-type: none"> a) Ability to provide excellent warranty and extended warranty b) Evidence of warranty coverage period, specifications and conditions 	Warranty Period	Tick if attached <input checked="" type="checkbox"/> <i>Refer page 33.</i>
F. Regional Price Preference A price preference for businesses based in the Shire of Corrigin.	Weighting 5%	

Part 3 COMPLETE AND RETURN THIS PART

a) Evidence of business based in region as per Regional Price Preference Policy.	Regional Organisation	Tick if attached <input checked="" type="checkbox"/> Refer page 33.
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3.2.3 Price Information

Tenderers must complete the following Price Schedule. Before completing the Price Schedule, Tenderers should ensure they have read this entire Request.

3.2.4 Price Schedule

Tenderers must complete the entire following price schedule.

Item	Cost (ex GST)	GST	Cost (inc GST)
Base Model 2022 Isuzu Truck	\$152,520.00	\$15,252.00	\$167,772.00
Extras as per specification	\$5,420.00	\$542.00	\$5,962.00
Registration and on road costs			At Cost
Maintenance unit fitted as per specifications	\$356,800.00	\$35,680.00	\$392,480.00
Delivery to Shire of Corrigin	\$10,500.00	\$1,050.00	\$11,550.00
Total Cost to Supply and Deliver New Road Maintenance Unit as per specifications	\$525,240.00	\$52,524.00	\$577,764.00

4 Project Reference Sheet

Complete the following details and submit with your Tender labelled as **Project Reference Sheet**.

Customer	Date	Value (approx.)	Referees Name	Telephone Number
<i>Kempsey Shire Council</i>	<i>2021 – 2022</i>	<i>\$500+</i>	<i>Garick Cahill</i>	<i>0427 490 803</i>
<i>Gympie Regional Council</i>	<i>2021 – 2022</i>	<i>\$500+</i>	<i>Clint Wood</i>	<i>0400 695 370</i>
<i>Towong Shire Council</i>	<i>2021 – 2022</i>	<i>\$500+</i>	<i>Dolf Abbruzzese</i>	<i>0428 762 012</i>
<i>Dubbo Regional Council</i>	<i>2021 – 2022</i>	<i>\$500+</i>	<i>Daniel Peterson</i>	<i>0408 634 870</i>

5 Appendices

5.1 Appendix 1 Regional Price Preference

Policy Owner: Corporate and Community Services
Person Responsible: Deputy Chief Executive Officer, Manager Finance
Date of Approval: 21 June 2016
Amended: 17 October 2017

Objective: To stimulate economic activity and growth in the Shire by maximising the use of competitive local businesses in supplying goods, services and works purchased or contracted on behalf of the Shire of Corrigin (the 'Shire').

Legislative Requirements: This policy sets out the requirements that must be complied with by the Shire for the implementation and application of a regional price preference when purchasing goods and/or services through a tender process. The policy is compliant with the *Local Government (Functions and General) Regulations 1996*, as the relevant legislation.

Policy: A price preference will apply to suppliers who are based in, operate from or source goods or services from within the Shire Region in relation to all tenders invited by the Shire for the supply of goods, services and construction (building) services, unless the tender document specifically states prior to advertising of the tender that this policy does not apply.

The regional price preference enables tenders to be evaluated as if the proposed tender bid price were reduced in accordance with permitted price preferences as specified below in this policy. This policy will operate in conjunction with the purchasing considerations and procedures for tenders as outlined in the Shire's 'Purchasing Policy' when evaluating and awarding tender contracts.

Qualifying Criteria:

Regional Tenderer

A supplier of goods or services who submits a tender is regarded as being a regional tenderer if:

- a) that supplier has been operating a business continuously out of premises in the Region for at least six months before the time after which further tenders cannot be submitted. This is further defined as follows and the supplier will be required to meet all of these criteria:
 - i. the supplier to have a physical business premises (in the form of an office, depot, shop, outlet, headquarters or other premises where goods or services are being supplied from), located in the Region. This does not exclude suppliers whose registered business is located outside the Region but undertake the business from premises located in the Region;
 - ii. the physical location of the business premises in the Region has been operating on an ongoing basis for more than six months prior to the closing date for the tender;
 - iii. a business having permanent staff that are based at the business premises located in the Region;

iv. management or delivery of the majority of the tendered outcomes will be carried out from the business premises located in the Region; and
v. the business being registered or licensed in Western Australia; or

- b) some or all of the goods or services are to be supplied from regional sources. Goods and/or services that form a part of a tender submitted may be wholly supplied from regional sources; or partly supplied from regional sources, and partly supplied from non-regional sources. Only those goods or services identified in the tender as being from regional sources may be included in the discounted calculations that form a part of the assessments of a tender when the regional price preference policy is in operation.

In order for the policy to apply, the tenderer is required to provide to the Shire written evidence within the tender submission which demonstrates compliance with the above criteria. Tenderers who claim that they will use goods, materials or services supplied from regional sources in the delivery of the contract outcomes will be required, as part of the contract conditions, to demonstrate that they have actually used them.

Regional Price Preference Categories

The following levels of regional price preference will be applied (where relevant) to tenders received from a regional tenderer, as outlined above under this policy:

- ***Where the contract is for goods and services:*** Up to a 10% price preference (to a maximum price reduction of \$50,000 excluding GST) where goods and services are sourced from within the Shire Region.
- ***Where the contract is for construction (building) services:*** Up to a 5% price preference (up to a maximum price reduction of \$50,000 excluding GST) where construction (building) services are sourced from within the Shire Region.
- *Where the contract is for goods or services (including construction (building) services), if the Shire is seeking tenders for the provision of those goods or services for the first time, due to those goods or services having been, until then, undertaken by the Shire:*

Up to 5% price preference (up to a maximum price reduction of \$200,000 excluding GST) where goods or services (including construction (building) services) are sourced from within the Shire Region

Competitive Purchasing

Whilst price is a competitive consideration in the provision of goods and/or services via tender, it is only one aspect of the tender evaluation process. Value for money principles, as described within the Shire's 'Purchasing Policy', will be employed by assessing the price component in conjunction with the tender selection criteria and requirements in order to determine value for money. The tender offering the lowest price may not necessarily be successful.

Terminology

Construction (building) services: is defined as the construction of and improvement to buildings (including housing) on or over any area of land, lake, river or ocean and any services related to that activity in the Shire Region.

Goods: include tangible, quantifiable material requirements usually capable of being moved or transported that are purchased, rented, leased or hired by the Shire.

Region: for the purposes of this policy the Region is specified as the entire geographical area encompassed within the boundaries of the Shire of Corrigin.

Services: means any task, consultancy, work or advice to be performed or provided that is procured by the Shire. Included are services such as management consultancies, outsourcing, maintenance contract/agreement, cleaning, waste removal, equipment repairs, external auditors, utilities and services, public infrastructure construction and repair etc.

3.2.2. Qualitative Criteria

B. Delivery Timeframe and Availability

Tenderer to demonstrate:

- a) Availability and Delivery to Shire of Corrigin Depot will be within a timely manner.

Our current delivery time is 48 – 52 weeks subject to availability of the cab chassis and confirmation at time of ordering. These factors need to be taken into account regarding timing of order confirmation. Actual delivery date should be confirmed at time of ordering.

- b) Timeline/Schedule of extras on the vehicle to be carried out e.g. tinting, fitting of accessories.

Two days at South West Isuzu, Picton, WA.

C. Operational Efficiency

Tenderer to demonstrate the capability and efficiency of the machine.

The Jetpatching system works on the principle of moving aggregate with large volumes of low pressure air and moving emulsion with higher pressure air. When these two low cost materials are combined a strong flexible and durable repair is produced.

The Jetmaster's efficiency is second to none, high production rates and less down time result in the highest efficiency in the industry. AUSROAD Jetmaster® Units have no moving parts within the delivery system resulting in low maintenance costs and less down time.

AUSROAD Jetmaster® units are specifically designed for efficient road maintenance. The machine can accomplish a wide variety of tasks in minimum time. These include;

- ***potholes***
- ***edge breaks***
- ***road depressions***
- ***wheel path ruts***
- ***crocodile crack repairing***
- ***digouts***
- ***speed bumps***
- ***spoon drains***
- ***culverts***
- ***spray sealing is able to be carried out in one pass with the aggregate spreader / spray bar (included)***
- ***Multipurpose full width paving & edging unit (included)***
This system is very useful when repairing shoulders or depressions that are continuous in nature. Allows paving up to 2.4m wide.

AUSROAD Jetmaster® units can put through 12 cubic metres per day, equivalent to a 3km long, 500mm wide single coat strip seal, assuming no travel.

Operators of AUSROAD™ Jetmaster® remote control units are commonly laying 6 to 9m³ of aggregate per day, equivalent to 14 to 21 tonnes of hot mix per day.

D. Breakdown and Back-up Service

Tenderer to demonstrate:

- a) Quality and standard of service

Ausroad prides itself on a providing a superior quality well built road maintenance unit and first-rate support services.

AUSROAD manufactures the AUSROAD Jetmaster Road Maintenance machines in its Acacia Ridge, Brisbane workshop and offers:

- ***Full parts distribution service from Acacia Ridge, Brisbane.***
- ***Technical backup and support service (as Ausroad designs and builds all our own equipment we are well placed to provide in-depth technical advice).***
- ***A limited 3 year warranty***

The majority of AUSROAD'S customers are located Australia wide, we have almost 30 years' experience servicing and maintaining relationships with our valued customers.

Refer also South West Isuzu Corporate Information pages 81 – 92.

- b) Timeliness of service (productivity)

We understand the cost associated with downtime (as we run our own fleet of AUSROAD Jetmaster Road Maintenance Units) and actively work to minimise this for our clients. Normal hours of operation 7.00am to 4.30pm Monday to Thursday, 7.00am to 4.00pm Friday. Our skilled technicians are available at all times during business hours for advice. Manager is available via mobile phone outside of normal operating hours.

All parts for the AUSROAD Units are held in the AUSROAD Parts Store in Brisbane. A call to Owners will confirm the follow up and liaison of a small but responsible team that AUSROAD provides to clients as part of their continued and ongoing service. Ausroad provides an organised and friendly ongoing service. We are keen to maintain our record of exceptional service.

Servicing generally takes place at Customers location, if necessary AUSROAD will engage local services to carry out service and / or warranty work, if specialised service is required AUSROAD staff will travel to customer's location to undertake service and repair work.

KEY BENEFITS

- **Free After Sales Service**
Ausroad provides life-time technical support free of charge and maintain full parts inventory in Brisbane. (as Ausroad designs and builds all our own equipment we are well placed to provide in-depth technical advice).
- ***The majority of AUSROAD'S customers are located Australia wide, we have 30 years' experience servicing and maintaining relationships with our valued customers.***

- ***Our National Sales Manager travels interstate to new and existing customers on a regular basis.***
- ***AUSROAD units are designed to have minimum moving parts to reduce wear and possible breakdown.***
- ***Maintenance of the AUSROAD Jetmaster body is generally carried out by Council staff, maintenance training is included in AUSROAD'S 2 day induction training program at time of delivery.***
- ***Operators are required to complete AUSROAD training, which includes a short test covering operation, safety issues and material handling.***
- ***We take our responsibility as an equipment manufacturer seriously and work to provide a safe and efficient road maintenance machine.***

Refer also South West Isuzu Corporate Information pages 81 – 92.

- c) Any other issues or matters which will maximise the benefit of the machine

We develop and apply new technology right here in Australia to ensure we provide the world's safest and most efficient road maintenance machines. New and existing customers benefit from our dedicated and experienced team.

AUSROAD provides reliable, economical road maintenance equipment solutions by:

- ***Utilising the latest technology***
- ***Applying advanced engineering design and manufacture***
- ***Promoting innovative research and development***

With a commitment to excellent customer service, whilst increasing company growth, reputation and quality.

The Jetpatching system works on the principle of moving aggregate with large volumes of low pressure air and moving emulsion with higher pressure air. When these two low cost materials are combined a strong flexible and durable repair is produced.

Longer lasting and better looking repairs

Single layer compaction from jet air propelled material from the bottom up achieves much better void penetration and a higher density and compaction than rolled asphalt where compaction is carried out from the top down. This produces patches which not only look better but last longer than traditional patching methods.

No material wastage

No wastage with Jetmaster as just the right amount of material is prepared for the repair work. 'Plant Mix' materials used in traditional repair methods are often below standard when working away from base plant and wastage is a major problem with traditional methods.

E. Warranty Period

Tenderer to demonstrate

- a) Ability to provide excellent warranty and extended warranty

Warranty extension on Jetmaster body & Isuzu cab chassis not applicable.

- b) Evidence of warranty coverage period, specifications and conditions

AUSROAD:

Standard: 3 years, refer pages 61 & 72 for details & conditions.

AUSROAD will if necessary engage local services to carry out warranty work. If specialized service is required AUSROAD staff will travel to Corrigin, WA to undertake repairs.

ISUZU:

Standard: 6 years, 600 000km / 10000 hours

F. Regional Price Preference

- a) Evidence of business based in region as per Regional Price Preference Policy.

Ausroad Manufacturing sources cab chassis from Local Dealers, in this case Southwest Isuzu, Picton, WA. AUSROAD Jetmaster Road Maintenance body is assembled and built in AUSROAD's Brisbane (Acacia Ridge) workshop using Australian labour, all components are sourced within Australia.

AUSROAD Road Maintenance units are generally serviced by either Council or Local businesses within the area that they operate, AUSROAD staff will travel and stay at Customers location during commissioning of equipment.

ISUZU: refer 'Local Benefits' page 92.

AUSROAD[®]

JETMASTER[®] TRUCKS

AUSROAD SPECIFICATION OVERVIEW HIGH PERFORMANCE JETMASTER[®] ROAD MAINTENANCE MACHINE

The high-performance truck mounted AUSROAD Jetmaster[®] road maintenance machine is designed for street and road maintenance. The AUSROAD Jetmaster[®] Unit repairs broken edges and other sealed road surface damage and has an aggregate hopper capacity of 6m³.

The AUSROAD Jetmaster[®] road maintenance machine is capable of:

- (a) Cleaning the area to be sealed with **high volume air**
- (b) Supplying a tack coat of aggregate and emulsion to the area completely and evenly.
- (c) Compacting the applied aggregate into the depression with air velocity.
- (d) Applying a coat of clean aggregate to the finished surface.
- (e) **Remote control operation (INCLUDED)**
All of the above operations are capable of being performed by remote control from the cab by the truck driver with the delivery hose suspended out in front of the cab at in full vision of the operator/driver
- (f) **Spreader box / spray bar (INCLUDED)**
Applying up to 2400mm wide emulsion spray via a spray bar and up to 2400mm wide application of aggregate via a spreader box. Aggregate and emulsion are able to be applied both in one pass **or** in separate passes and are fully operated from the cab. The ability to change width of application from the cab whilst operating (8 x 300mm gates)
- (g) **Paving unit bar (INCLUDED)**
Apply varied widths of paving in a single pass up to 75mm in depth which is graded level with the existing road surface, via spreader box / spray bar and screeder. Rebuilding failed edges and pavement with continuously mixed aggregate and emulsion.
- (i) **Road broom (INCLUDED)**
Prepare road shoulders for repair or clearing traffic lanes of loose material. Drum style broom, in cab operation, able to sweep 1000mm wide, mounted on left rear of truck.



6m³ AUSROAD Jetmaster[®] road maintenance unit with Jetmaster[®] remote control boom, owned & operated by District Council of Copper Coast, SA.



SPECIFICATIONS DETAILS

AUSROAD JETMASTER® UNIT POWERED BY PTO VIA TRUCK ENGINE

- PTO CHELSEA
- Parker load sensing piston pumps

COMPRESSOR

ABAC B6000 Drive via hydraulic motor (Parker)

- A charge tank is fitted to ensure maintenance of pressure while spray sealing.

BLOWER

High volume low pressure EURUS MB 4509, 200- 480 CFM Blower;

- Running between 1800 and 2600 RPM delivering up to 480 C.F.M
- Fitted with air cleaner.
- Max 15 PSI.
- Hydraulic proportional drive (Parker)

Due to the unrestricted flow of air down the delivery hose, all the pressure generated by the blower is converted to kinetic energy, ie velocity of air. Unless there is a restriction, the resultant pressure will be close to zero, but the velocity and volume will be high.

The Venturi used by AUSROAD will draw in air equivalent to 60% of the blower capacity while "hole clearing".

The AUSROAD Jetmaster® blower is rated at 400 cfm at the revs used during clearing. With the additional venturi air, the total flow is 660 cfm or 18 cubic metres per minute. The resultant airflow at the nozzle is 50 metres per second.

During patching the stone dropping into the venturi reduces the amount of air drawn into the venturi, and therefore reduces the velocity at the nozzle by about 50% to 25 m /sec. This is important as a velocity significantly above this will cause the new patch to be "blown away" during patching.

HYDRAULIC EQUIPMENT

Hydraulic Pump

- Parker VP1 x 2 Load Sensor Piston Pump

Hydraulic tank

- Capacity: 200 litres with integral filters with Hydraulic Driven system.

Hydraulic Filters

- Pressure Line Filter – HYDAC 0030-D-010
- Return Line Filter – OMTF 200-10

Hydraulic Motors

- Parker

The AUSROAD Jetmaster® hydraulic system is powered via two variable displacement piston pumps, PTO driven via the Alison gearbox.

Hydraulic manifold and valves are supplied by Southcott Hydraulics, branches Australia wide.

Hydraulic Oil Cooler

- Temperature controlled Hydac Cooler
- High volume
- Fan forced cooling

EMULSION SYSTEMS

Pressurized emulsion tanks. Volume capacity nominal 2000 litres

- Vessels are built to AS 1210 1997 standards.
- Fitted with doubling pads and are stress relieved to Class 2B requirements for transportable vehicles.
- All pressurized emulsion tanks have independent safety relief valves and pressure gauges. This is separate from the regulator and gauge that is used to set pressure.
- Working pressure is 40psi with safety set at 80psi.
- All pressure tanks have non-return valves to eliminate backflow.

Emulsion Filling

- Filling the emulsion tank is quick and efficient via **female 2"** camlock.
- All operations from ground level.
- Self-contained equipment to allow filling from 210 litre drums included.

Heating of emulsion

Inline Heating (from emulsion tank to nozzle)

- Emulsion is heated via inline stainless-steel heat exchanger utilizing hot water from the truck heater system.

Overnight heating (within emulsion tank)

- 240V overnight heating included, includes IP65 control panel with ON / OFF switch, 3 pin plug socket (male) and earth leakage circuit breaker.
- **OPTIONAL** insulated tank cover, refer page 55, (additional \$6 000.00 ex GST).

Details of cleaning emulsion tank and distributing system.

- The emulsion tank has dump valves for cleaning out old emulsion/kerosene. Tanks are cleaned using kerosene, pressurizing tanks and blowing through emulsion line to nozzle.
- The AUSROAD Jetmaster machine is designed to allow cleaning and / or preheating of emulsion lines with pressurized kerosene, water and / or air via control manifold at any time. Cleaning of venturi distributor and delivery hose is fast and easy with the unit's own water.

PRESSURIZED WATER TANK / KERO TANK

Kero tank

- capacity 60 litres.
- working pressure of 40 PSI

Aluminium water tank with a minimum capacity 240 litres

- Built to AS 1210 standards as required.
- Working pressure 40 PSI incorporating safety valves.
- A retractable water hose reel is included with each machine. This enables the operators to quickly clean the truck and delivery system at the end of the day.
- A tap is included for hand washing.

AGGREGATE HOPPER AND DELIVERY SYSTEM

From the hopper the aggregate is carried by:

- Self-tracking conveyor belt feeding to polyurethane long-life belt.
- Fully pneumatic Jet-distributor (venturi principle) feeding to,
- 88mm ID specially made rubber lined flexible delivery hose,
- to nozzle

(a) Aggregate hopper - 4mm steel

- RHS welded to the top of the hopper to withstand knocks to hopper from loaders.
- Hopper size / aggregate capacity as quoted with self-tracking conveyor belt - adjustable at both ends.
- Hopper V shaped fitted with load carriers, designed to minimize weight on conveyor belt.

(b) Self tracking aggregate conveyor belt

- The self-tracking conveyor belt eliminates the need for adjustment.
- Operates in conjunction with self-tracking nylon sprockets.
- Instant stop for the conveyor at distributor feed in the unlikely event of an emergency.
- The belt has a joining link to enable easy installation.

(c) Jet-distributor (patented venturi principle)

- Uses specific lengths and diameters and utilises variable engine and conveyor speed to deliver the required amount of aggregate volume for the particular repair.
- It has no moving parts and only one adjustment that is pre-set before delivery.
- The venturi is made from tool steel and has a grill to prevent large rocks or debris causing blockage.

(d) Hose type and diameter

- Aggregate hose 88mm I.D specially manufactured flexible natural rubber.
- Oil petrol and emulsion resistant.
- These hoses are hand made specifically for AUSROAD Jetmaster® Units.

(e) Nozzle details including spray system.

- Emulsion is delivered via 'hydraulic line' to spray nozzle
- Emulsion is injected into spray ring which atomizes emulsion and coats aggregate as it passed through nozzle.
- Control is fully remote via on/off button integrated into joystick control in cab
- The nozzle assembly has four components.
- Heated front nozzle emulsion ring.

PATCHING BOOM

- The remotely controlled *Jetmaster* delivery boom is mounted at "bumper bar" height giving a considerable saving in energy (by eliminating the need to carry the aggregate and emulsion over the truck cab). Overall weight is reduced resulting in greater payload.
- The AUSROAD Jetmaster® unit with the remote control *Jetmaster* boom is the only unit available that incorporates an 'under the cab' delivery system, this eliminates the suspended over the cab boom design. Overall results are;
- Lower profile
- Cleaner design
- Straighter delivery path
- Improved efficiency
- Safer driving when not patching
- Eliminates the possibility of damaging equipment on overhanging object, ie trees, high signage etc.



Patching Boom fully retracted for travel.



Example of Patching Boom position during operation.

The boom has three components.

1. A three quarter width arm
 2. A full width arm
 3. Plus an extension to the full width arm giving an overall working radius of approx 4 metres.
See diagram page 49 of boom coverage.
- All of the booms movements are powered and controlled by hydraulics including the raising and lowering.
 - The controls are located in the cab to the right of the driver/operator on operator's armrest giving him full control of the arm via a joystick. Operation of the delivery boom is simple and placement of material is very accurate



Movements of the boom

The telescopic boom can be angled **"up and down"** plus moved from **"side to side"** as well as **"in and out"**.

The nozzle can be **"angled to left or right"** to blow across ground.



Controls



Joystick located in the cab to the right of the driver/operator giving operator full control of the arm via integrated switches. Arm rests on an ergonomically designed arm rest.

AUSROAD Jetmaster® joystick control, arm rests on an ergonomically designed arm rest.

Cabin Control System

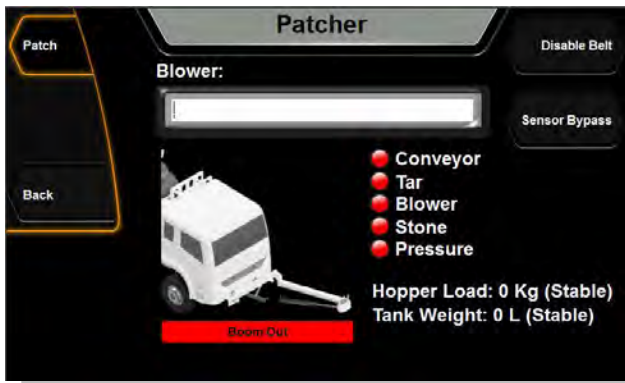


Our **Ecomat** control system has been developed in conjunction with Whitelaw and IFM. The major advantage from the operator’s point of view is at the interface in the cab.

The operator has a ‘multi-function’ screen mounted on a console to the left of the driver’s position. This screen will enable operation of all machine functions as well as adjustment of proportional hydraulics and fault reporting. Please see below for examples of screens.

The **Ecomat** system has been developed for ‘mobile’ applications (including the mining industry) and is extremely robust and reliable.

Jetmaster® IFM Screen Examples

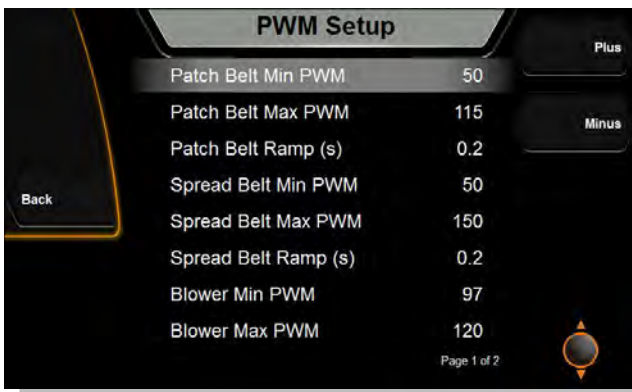
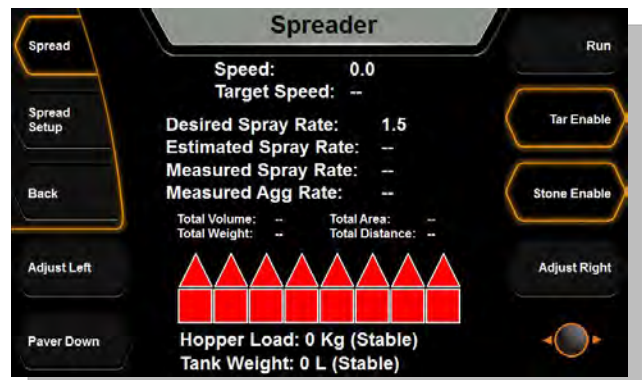


Patching screen

- Used while Jetpatching.
- Operation of beacons and work sign also on this screen.

Spray seal / paving screen

- Shows spray jets and gates selected
- Position of paver
- Allows width of seal / pave selection
- Gives spray rate information
- Will warn driver (visually & audible) if spray rate is outside of programmed rate
- Able to give operator report of aggregate spread rate (kgm²)



Setup Screen

- Allows adjustment of conveyor speeds
- Allows adjustment of aggregate spread rate
- Selection of nozzle size and aggregate size.



Ausroad® Road Maintenance Unit Control System

Ausroad Systems Pty Ltd now install the IFM produced **Ecomat Mobile Control System** equipment in all new Jetmaster® Road Maintenance units. **Ecomat** equipment is specifically designed for mobile applications with attention given to:

- » Extreme operating temperatures
- » Mechanical stress i.e. impact and shock
- » Exposure to environment i.e. dirt, water, humidity
- » Voltage fluctuations found in mobile applications
- » Shielding against radiated interference from existing electrical systems

In short this equipment is designed for, and used in mobile equipment with a huge variety of applications and flexibility. **Ecomat** enables control, management and integration of all functions of the unit.

- » Hydraulic, pneumatic and electrical operating systems i.e. valves, solenoids etc.
- » Daily works orders i.e. download works orders, collect information as job completed, upload completed works information to database i.e. "reflect" or similar
- » Report faults with hydraulic, electrical, pneumatic systems and provide information on where the fault is located on the unit
- » Provide warnings to operator if operation of unit is not within set parameters
- » Log machine operating hours and indicate when service is required



Ausroad Systems Pty Ltd // Manufacturers & Distributors //

Ausroad® Road Maintenance Units // Ausroad® HD Series Road Maintenance Units // Emulsion Spray Units // Hiring of Road Maintenance Units // Ausroad Stemming Trucks™ // Ausroad Water Trucks

PO Box 1200 Archerfield BC QLD 4108 // 3A/147 Boniface St, Archerfield QLD 4108

t: + 61 7 3216 7058 // f: + 61 7 3216 7076 // e: info@ausroad.com.au // w: www.ausroad.com.au // ABN: 33 165 889 636

PAINT

Standard ARTIC white or colour as required by Council.

Body will be:

- Sand blasted to class 2.5
- Under coated zinc etch primer
- Top coat 'white' two pack.

UNIT IS COMPLETE WITH ITEMS AS LISTED UNDER 'STANDARD EQUIPMENT' PAGE 51.

AUSROAD WILL CUSTOMIZE MACHINE TO SUIT INDIVIDUAL REQUIREMENTS

To enable the introduction of improvements from time to time, Ausroad reserves the right to make changes to the design and specification without notice.

VENTURI DISTRIBUTOR

The venturi distributor used by AUSROAD eliminates the costly time and maintenance required by the superseded rotor distributing system first developed by AUSROAD™

The Jetmaster is the only road repair machine using this venturi principle which incorporates the 'instant off' stone slide in the venturi. This alleviates the past problem of varying amounts of aggregate being delivered after the aggregate switch is shut off.

It was trialed and tested over two years before becoming commercially available. AUSROAD are confident it is the most maintenance free system available worldwide.

Advantages of the Pneumatic Jet-distributor (venturi type)

1. The venturi is made up of three pieces with the critical barrel made of tool steel and hardened to Rockwell C.62. **It has no moving parts**, i.e. does not require the changing, fitting and adjusting wear pads.
2. Saves the ongoing cost of 'O' rings and wear pads, the subsequent labor involved and lost production.
3. Will handle any material that flows (including sand) up to 12mm
4. Saves cleaning down time - able to be cleaned via onboard pressurized water system.
5. Does not require dismantling or oiling at the end of the day.
6. **AUSROAD guarantees a production rate of 3.2m³ per hour using patching function and 12m³ per hour using aggregate spreader and paving equipment**

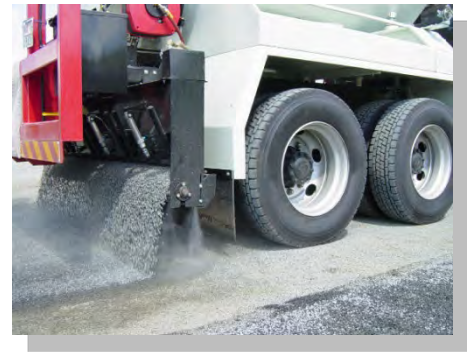
Operators of AUSROAD Jetmaster® remote control units are commonly laying 6 to 9m³ of aggregate per day, equivalent hot mix per day.

Jetmaster® - the ultimate road repair system

The AUSROAD Jetmaster® Aggregate Spreader (included)

The full width aggregate spreader is located immediately behind the rear truck wheels and at a constant height from the road, this means that it is always in position for immediate use.

AUSROAD Jetmaster® units are fitted with a 400mm wide conveyor belt. The hydraulic motor powering the belt also has the ability to travel faster or slower depending on requirements. The speed of the belt is then set for either the normal "Jetpatching" operation or at the faster speed required to feed the full width aggregate spreader.



Whilst using the aggregate spreader the **hopper does not have to be elevated**, it remains fixed giving better vision, stability (important whilst sealing in hilly conditions, sharp corners and steeply cambered roads) and reduces the risk of hitting trees, signage etc particularly in 'built up' areas. Clearance is improved when sealing close to trees and buildings.

The AUSROAD Jetmaster® aggregate spreader features a split auger (or 2 augers) each driven independently by separate hydraulic motors which ensures a constant even feed of aggregate when the box is offset from the truck or operating on cambered road. Augers and conveyor belt have independent "Auto Stop" systems to control aggregate flow.

The AUSROAD Jetmaster® aggregate spreader has **8 x 300mm wide gates** for variable width spreading fully controlled from cab. Plus the option of a hydraulic side shift which allows the application of aggregate and emulsion outside the wheel track of the truck. Width can be preset before starting run and / or changed "on the run". Spread rate is preset within **Ecomat** system and easily adjustable from cab.



Spray sealing in progress



Completed Jetmaster® spray sealing



Before shoulder sealing



After shoulder sealing

Drivers cab spreader box control

This system is controlled via the IFM **Ecomat** system so once the desired width and application (aggregate or emulsion or both) is selected then only one button is required to start and stop operation.

Rate of aggregate application is controlled by the optimizer

The patented "aggregate optimizer" gives more accurate control and a more even spread of aggregate. The aggregate is 'rolled' off the optimizer, the speed of the optimizer dictates the rate of application. This allows independent control of aggregate and emulsion spray rates and gives accurate adjustment of aggregate application rates.



Aggregate Spreader on AUSROAD™ Jetmaster® unit using one of the eight, 300mm wide gates to spray seal roadside edge break in Mildura, Victoria.

Spray Bar (included)

The spray rate (L/m²) is controlled by the nozzle size and truck speed. The **Ecomat** control system allows the operator to select the required spray rate. The system will provide accurate feed back to the operator to ensure correct spray rate.

An advantage of the 'Aggregate Optimizer' is that the aggregate rate can be varied independently of truck speed. This allows any combination of spray rate and aggregate application.

The spray bar is operated via air operated valves activated by the **Ecomat** system.

The emulsion is stored in the certified pressure vessel where it is held under pressure at 40 P.S.I. The emulsion is then directed under pressure via the emulsion hose to either the AUSROAD Jetmaster® spray nozzle or the spray bar by the appropriate valves. Nozzle heating for quick clearance of blockages

Emulsion Spraying Bar (High Flow Spray Bar)

- Standard 8 nozzle 2400 wide
- Adjustable in 300mm increments
- In cab controls of all functions

The emulsion spray system will be fitted with a high-pressure air purge, water and kerosene flush facility to adequately clean all lines and nozzles. The spray bar can be fitted on its own, or with the aggregate spreader.

Wash down system

As described above all of the emulsion lines can be purged via high pressure (110 psi) air, water or kerosene. The AUSROAD Jetmaster® has its own 240 litre water tank and retractable hose reel for general cleaning and washing.

Multipurpose full width paving & edging attachment (included)

The AUSROAD screeder can be fitted with the aggregate spreader, the aggregate is dispensed from the spreader box in the normal way but at a higher rate, then mixed with emulsion as it drops onto the road.

The AUSROAD screeder then distributes the mix to the defective area. A 5mm to 7mm aggregate that contains fines (i.e. dirty) will form a mix similar to hot asphalt, yet with the ease and safety of applying cold compounds. Because you only mix the material required for each job, there is no waste and minimal clean up.



Side Shift



Side Shift

The screeder automatically levels itself with existing road surface and forms the new material into a smooth paved surface. This system is very useful when repairing shoulders or depressions that are continuous in nature. Allows paving up to 2.4m wide.



Before wheel rutting repairs



After wheel rutting repairs

Road broom (included)



The road broom is used for preparing road shoulders for repair or clearing traffic lanes of loose material. It is a 'drum' type broom, diameter 380mm, length 1000mm, mounted on left rear side of unit. Operation from cab, will sweep approximately 900mm wide from left side of unit.

Includes water dust suppression via water spray jets that operate automatically while sweeping.

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UNLESS STATED OTHERWISE UNTOLERANCED DIMENSIONS TO BE WITHIN THE LIMITS SHOWN					
NOMINAL SIZE	UP TO 50	ABOVE 50 UP TO 150	ABOVE 150 UP TO 300	ABOVE 300 UP TO 1000	ABOVE 1000
MACHINING	± 0.1	± 0.2	± 0.3	± 0.5	± 1.0
FABRICATION	± 0.5	± 0.5	± 0.5	± 1.0	± 2.0
ASSEMBLIES	± 0.5	± 0.5	± 0.5	± 1.0	± 3.0

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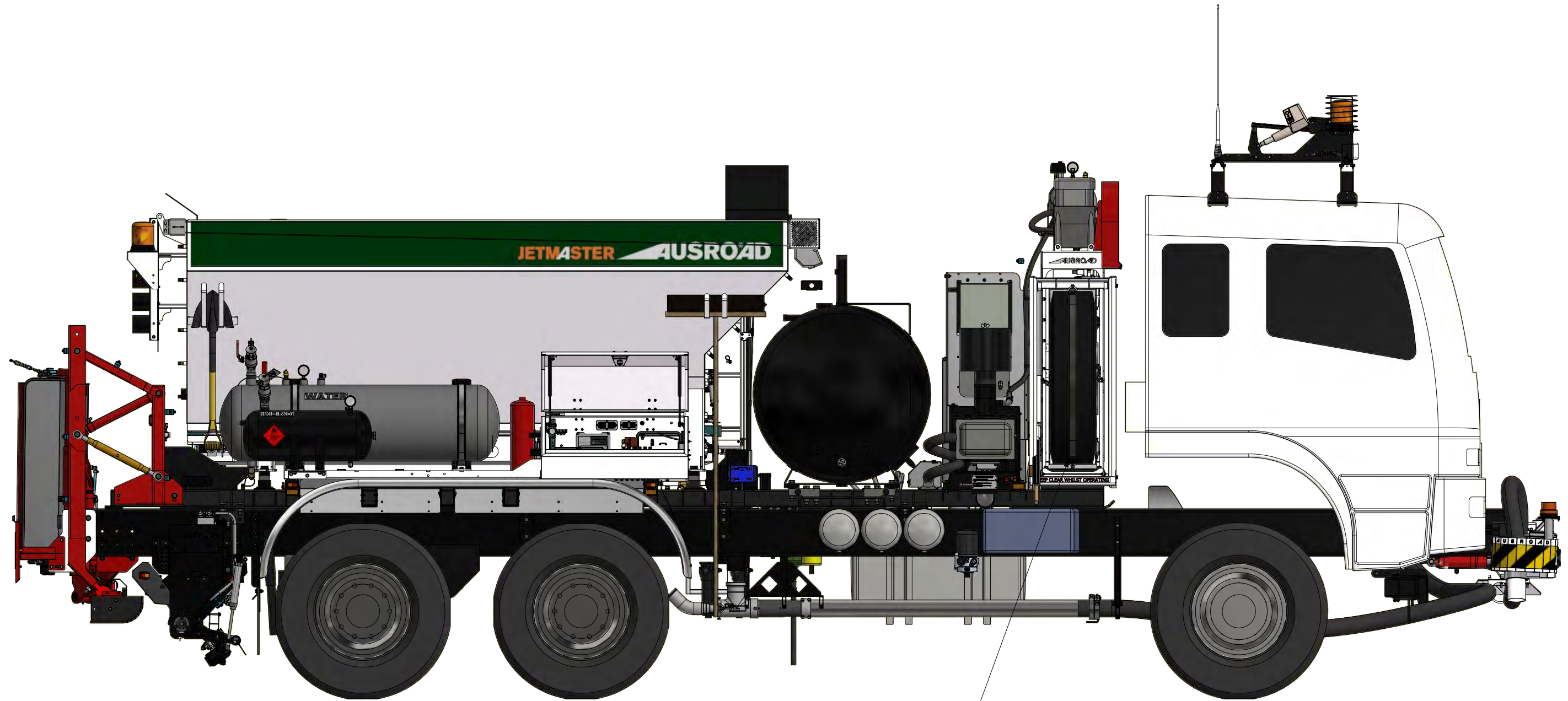
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OPTIONAL TOOLBOX IN LIEU OF SPARE WHEEL CARRIER

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MACHINING	± 0.1	± 0.2	± 0.3	± 0.5	± 1.0
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ASSEMBLIES	± 0.5	± 0.5	± 0.5	± 1.0	± 3.0

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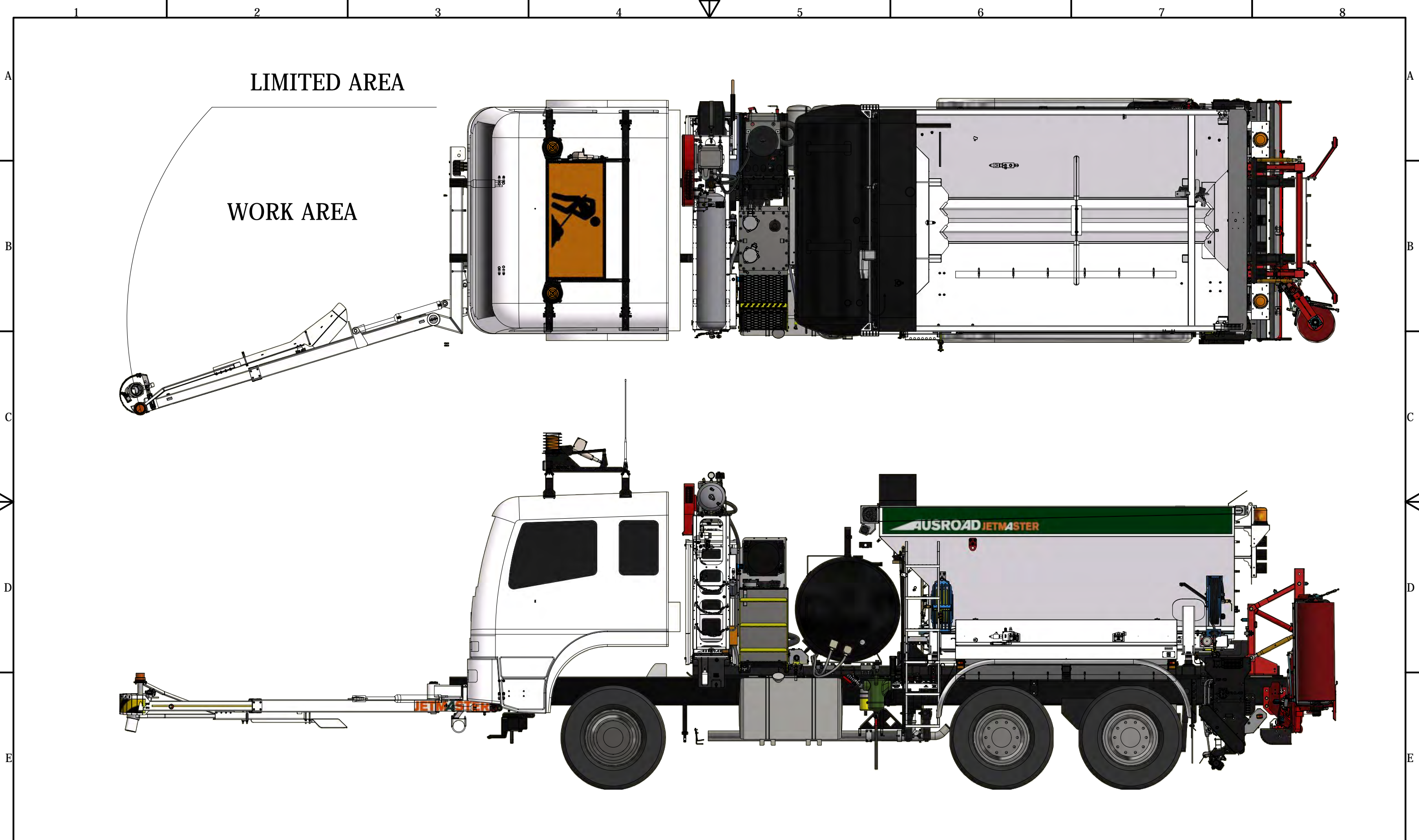
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FABRICATION	± 0.5	± 0.5	± 0.5	± 1.0	± 2.0
ASSEMBLIES	± 0.5	± 0.5	± 0.5	± 1.0	± 3.0

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	UNLADEN	LADEN
HINO	5055 KG	6000 KG
ISUZU	4920 KG	5900 KG

	UNLADEN	LADEN
HINO	6090 KG	16000 KG
ISUZU	6600 KG	16500 KG

UNLESS STATED OTHERWISE UNTOLERANCED DIMENSIONS TO BE WITHIN THE LIMITS SHOWN					
NOMINAL SIZE	UP TO 50	ABOVE 50 UP TO 150	ABOVE 150 UP TO 300	ABOVE 300 UP TO 1000	ABOVE 1000
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MATERIAL	
IF IN DOUBT ASK	

	PO BOX 1200 ARCHERFIELD QLD 4108 TELEPHONE (07) 3216 7058 FACSIMILE (07) 3216 7076	DRAWING NUMBER JM 6.0 PTO
	JM PTO 6.0	
		REVISION A
		SHEET 4 of 4
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED		This drawing and any information or descriptive matter set out hereon are the confidential and copyright property of AUSROAD SYSTEMS Pty Ltd © and must not be disclosed loaned copied or used for manufacturing tendering or for any other purpose without their written permission.

STANDARD EQUIPMENT

General

- 6m³ hopper capacity
- Remotely controlled Jetmaster delivery boom mounted at "bumper bar" height
- Mark II Delivery System incorporating 'instant off' stone slide in the venturi distributor
- 2000 litre emulsion tank with 240V overnight heating
- 240 litre water tank (aluminium)
- Heat exchanger – for emulsion
- Kero flush, water flush, air purge of emulsion lines
- Spare spray ring (hardened) x 1
- Water hose & retractable reel
- Water tap for hand washing
- Ladder
- 60 litre kero tank
- Hydraulic line for all emulsion lines
- Remote control joystick complete with integrated switches
- Proportional control hydraulic system.
- Retractable Load Cover (heavy duty mesh)

Storage

- Sign storage rack
- Lockable tool box
- Shovel racks
- Spare wheel storage

Safety Equipment

- Revolving LED amber beacons (cages included, no cage on strobe on boom)
(2 front and 2 rear, 1 x LED strobe on end of remote boom)
- LED Tail lights
- All body mounted lights LED
- All legal signage
- 9 kg Fire Extinguisher (external)

Also included:

- Ecomat control platform
- Hand-held spray lance & emulsion reel
- UHF radio GME
- Patrol sign, double sided
- Reversing camera
- Reversing alarm
- 'Shire of Corrigin' sign on both sides of body
- Equipment to enable filling emulsion tank from 210 litre drums
- 2.4m front water spray bar
- Aggregate spreader / spray bar (heated nozzles)
- Road Broom
- Multipurpose full width paving & edging unit
- Shovel chute
- Heated front nozzle emulsion ring

AUSROAD[®]

JETMASTER[®] TRUCKS

OPTIONAL EQUIPMENT

Major Options

Prices per unit

1. Water Spray Bar

2.4m wide water spray bar mounted at front of truck, includes 240 litre capacity tank *included*

2. Road Broom – includes water dust suppression with water jets

included

The Ausroad road broom is used for preparing road shoulders for repair or clearing traffic lanes of loose material. It is a 'drum' type broom supplied by Bonne Engineering, diameter 380mm, length 1000mm, mounted on left rear side of unit.



Road broom folded back for travel



Road broom in operation

3. Aggregate Spreader / Spray Bar

included

The aggregate spreader enables emulsion spraying and aggregate sealing to be completed in one pass. The full width aggregate spreader is located immediately behind the rear truck wheels and at a constant height from the road, this means that it is always in position for immediate use. Full width aggregate spreader operational from cab



Spray sealing in progress



Completed spray sealing

The spray bar allows variable width emulsion spraying and is fully operational from the cab. It is generally fitted with the aggregate spreader.

Spray Bar fully operational from cab with 2400 wide 300mm divisions, air, water, kero flush.

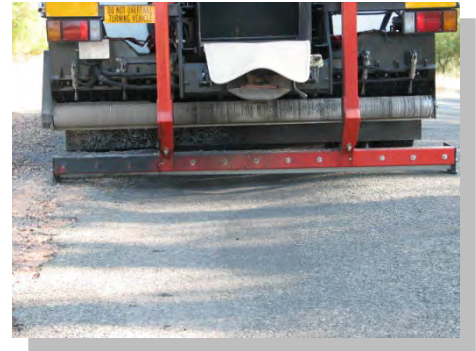
4. Multipurpose full width paving & edging unit

The Ausroad screeder can be fitted with the aggregate spreader, the aggregate is dispensed from the spreader box in the normal way but at a higher rate, then mixed with emulsion as it drops onto the road.

The screeder then distributes the mix to the defective area. A 5mm to 7mm aggregate that contains fines (i.e. dirty) will form a mix similar to hot asphalt, yet with the ease and safety of applying cold compounds. Because you only mix the material required for each job, there is no waste and minimal clean up.

The screeder automatically levels itself with existing road service and forms the new material into a smooth paved surface. This system is very useful when repairing shoulders or depressions that are continuous in nature. Allows paving up to 2.4m wide.

included



Before wheel rutting repairs



After wheel rutting repairs

5. Hydraulic Remote Outlet

With twin retractable hose reel and quick release coupling available flow up to 105 L/min **\$4 465.00**

6. Load Cells under hopper.

These have an accuracy of within 1-2% and will have read out in cab. **\$8 630.00**

7. Load Cells under emulsion tank.

These have an accuracy of within 1-2% and will have read out in cab **\$4 820.00**

To get accurate usage, load cells should be installed under the emulsion tank **and** hopper.

8. Automatic Greasing System

For all truck and body grease points (except drive shaft) **\$8 830.00**

9. Heated spray tips on spray bar

(Heat nozzles to approximately 70°C to remove blockages) **included**

10. Heated front nozzle emulsion ring

included

11. "Dragon's Breath" LPG Burner mounted to front of boom

\$2 840.00

Safety Equipment

1. Rear Mounted Camera

included

'BRIGADE' LCD Screen (heavy duty)
Extra cameras available on request

2. Traffic Director Arrow Board (rise & fall from cab)

1200 x 600 single sided panel to Australian standards
Arrow LH
Arrow RH
Double arrow
Caution Mode - Manual rise and fall

Arrow board can be mounted on cab or flush mounted on rear of hopper as shown in photo.

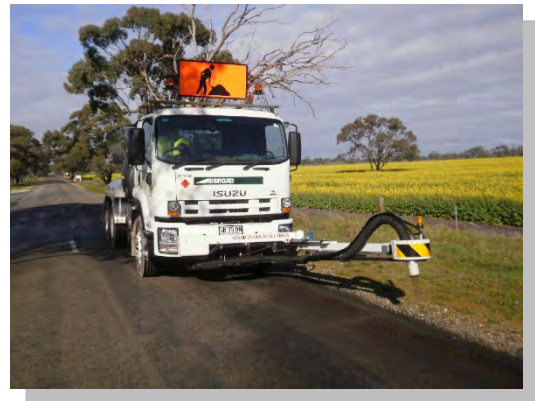
Flush mounted **\$3 960.00**
Cab mounted **\$4 925.00**



3. Patrol Sign

included

Cab roof mounted patrol sign 1200 x 600 double sided, heavy duty, electric raise and lower from cab. Rotating amber beacon each side.



4. VMS Board

\$12 800.00

Cab mounted Colour VMS Board. Single sided.



Miscellaneous

Emulsion application options

1. Hand Held Spray Lance & Emulsion Reel (10m steel 'Steel Craft' reel) *included*

Emulsion - Filters, strainers

2. Filter pot for bulk emulsion tanks **\$1 600.00**
(not installed on truck, to be installed on Council bulk emulsion tank)
3. Emulsion - filling of Pressure Vessels *included*
Equipment to enable filling emulsion tank from 210 litre drums

Emulsion Heating

4. Emulsion Heating – Provision for intank heating (dry pipe through tank)

Intank Emulsion Heating (overnight) **\$2 890.00**
240 volt heating element 2.2kw for overnight heating. This includes IP65 control panel with ON / OFF switch, 3 pin plug socket (male) and earth leakage circuit breaker.



5. Insulated tank cover **\$6 000.00**
6. Locker Linings **\$2 030.00**
Locker linings provide an extremely hard-wearing impact resistant surface, protecting tools and lockers from damage. Linings are sprayed polyurethane supplied by 'Rhino Linings' Choice of colours available.
7. Retractable Load Cover *Included*
PVC 'Ripstop' material instead of heavy duty mesh **plus \$325.00**
Hard (aluminium) hydraulic lift over cover, with warning system when open **plus \$2 365.00**

Generally a load cover is not required to keep aggregate dry. Ausroad recommends slightly damp aggregate for optimal results. Rain or excess water will be vaporized in the delivery system and can be seen at the nozzle as a fine mist. This allows road repairs to continue in wet weather.

Load covers are supplied to meet RTA (Australia) requirements to cover load.

8. Option for GPS / Material Log System

Captured Data: GPS Location
 Pothole jobs
 Edge maintenance jobs
 Reseal jobs
 Stone usage
 Emulsion usage
 Square Meterage
 Distance Covered

Downloaded captured information onto USB as an EXCEL.CSV file: **\$3 000.00**

To utilise this option the AUSROAD Jetmaster Road Maintenance Truck must have load cells on the hopper and the emulsion tank.

All Optional Equipment prices exclude GST

AUSROAD ADDITIONAL INFORMATION

Company Profile

Ausroad manufactures, distributes and hires road maintenance equipment to the Australian & Indonesian market. The Company is firmly established in the field of providing economical road maintenance solutions to Local Government, Contractors and Private Companies who maintain sealed roads.

The expertise of the organization is well established, Ausroad has been successfully supplying the Australian market since 1990.

New technology is being developed and incorporated constantly to give the most efficient and most advanced road maintenance machines worldwide.

AUSROAD Jetmaster® Road Maintenance units provide faster, longer lasting repairs to Pot Holes, Road Depressions, Edge Breaks, Wheel Path Rutting, Crack Sealing, Digouts, Speed Bumps, Drainage Bumps, and Scabbing.

Ausroad manufactures:

- AUSROAD Jetmaster® Road Maintenance Units (both remote control front delivery and rear delivery models)
Sizes: 4m³ to 6m³ hopper capacities
- AUSROAD HD (Horizontal Discharge) Series Road Maintenance Units
Sizes 2.5m³ to 6m³ hopper capacities
- AUSROAD Emulsion Spray Units (skid or trailer mounted)
200 to 2000 litre emulsion tank capacities
- Ausroad also hires AUSROAD Road Maintenance Units
- AUSROAD Stemming Trucks™

Mission Statement

Ausroad will provide reliable, economical road maintenance equipment solutions by:

- Utilising the latest technology
- Applying advanced engineering design and manufacture
- Promoting innovative research and development

With a commitment to excellent customer service, whilst increasing company growth, reputation and quality

Quality Assurance

AUSROAD takes pride in its quality control to ensure the highest standard at all times and maintains its own self assessed Quality Assurance System based on ISO AS/NZS 9002.

AUSROAD Jetmaster® body will be compliant with AS 4024.1-2006 'Safety of Machinery'.

Meet some of our people



Toni Dunlop – Managing Director

As well as being responsible for the overall running of AUSROAD, Toni takes care of our business development. He takes a very hands-on approach when it comes to customer service and particularly enjoys helping clients by sharing his technical knowledge.



Stefan Dunlop – Hiring Manager

Stefan oversees the smooth running of all hire contracts to ensure customers obtain maximum benefits from our hired equipment.



Matthew Sims – National Sales Manager

Matthew provides customers with technical advice and trains new and existing customers on Jetmaster Road Maintenance Trucks and Stemming Trucks. He also assists with sales and service for new and existing customers.



Graeme Kaese – Production Manager

Graeme manages production, stock control and supervises our workshop staff. He works closely with consulting engineers overseeing and providing input into our research and development projects.



Shari Dunlop – Director / Marketing

As well as looking after the marketing and promotional aspects of the business, Shari fulfils a wide variety of administration tasks, including quotations and tender submissions.

Safety Features

The AUSROAD Jetmaster[®] unit is designed with the operator in mind at all times. We design equipment to be easy to load & unload from appropriate heights. All filling of the unit can be undertaken from ground level.

There are numerous safety features built into AUSROAD Jetmaster[®] machines;

1. The pneumatic venturi system has no moving parts and is very safe, there is nothing to get hands caught in.
2. Mark II Delivery System incorporating 'instant off' stone slide in the venturi distributor
3. The conveyor belt is very simple and well-guarded.
4. The hydraulic system is fitted with an emergency stop button
5. All valves are clearly labelled with large engraved labels to WorkCover Standards and to prevent removal by water blaster and cleaning etc.
6. All pressure vessels are fitted with PRV, dump valves and pressure gauges as standard. Emulsion tank is fitted with inspection hatches and dipstick. Fully compliant with Australian Standard AS 1210-1997 Class 2B Clause 3.26.1.
7. The *Jetmaster*[®] remote control boom is designed with a low profile in mind. When stowed for travel it presents no sharp edges or protrusions. It is fitted with a beacon and reflective marking strips for high visibility while operating. Boom movement is restricted to the right side of vehicle to avoid boom moving into path of traffic.
8. Increased front impact strength.
9. All AUSROAD Jetmaster[®] units are fitted with beacons as standard equipment and other various signs as required by Council.
10. Overall the AUSROAD Jetmaster[®] unit is very safe to operate, has been well designed and meets all Occupational Health and Safety guidelines. A full risk assessment will be supplied for unit offered at time of commissioning.
11. AUSROAD Jetmaster[®] hopper does not need to be elevated while spray sealing, edging and paving.
12. All operations are from the cab, no operator exposure to traffic.
13. AUSROAD Jetmaster[®] body will be compliant with AS 4024.1-2006 'Safety of Machinery'



After Sales Service & Spare Parts

Ausroad prides itself on promptly acting on any warranty claim. We understand the cost associated with downtime (as we run our own hire fleet of Jetmaster® units) and actively work to minimize this for our clients.

Ausroad has its offices and fully equipped workshop located in Brisbane. The Company employs qualified and experienced technicians and programs work well in advance to achieve scheduled delivery dates.

All parts for the AUSROAD Jetmaster® Unit commissioned are held in the AUSROAD™ Parts Store in Brisbane. A call to Owners will confirm the follow up and liaison of a small but responsible team that AUSROAD provide to clients as part of their continued and ongoing service. All Councils report AUSROAD provides an organised and friendly ongoing service to owners and Jetmaster® users. We are keen to maintain our record of exceptional service.

Ausroad is committed to providing highly efficient low maintenance road maintenance machines. Where possible we reduce the number of moving and wearing parts to accomplish this.

Ausroad hydraulics supplier 'Southcott Hydraulics Pty Ltd' has branches Australia wide.

We have a staff of 70 and often have staff interstate training operators, delivering hire units and demonstrating AUSROAD equipment.

The Jetmaster's efficiency is second to none, high production rates and less down time result in the highest efficiency in the industry. AUSROAD Jetmaster® Units have no moving parts within the delivery system resulting in low maintenance costs and less down time.

AUSROAD Jetmaster® parts are dispatched the same day orders are received.

Order must be received by 1.00pm when using Ausroad's various freight accounts alternatively parts can be freighted via Councils nominated freight carrier.

Warranty

The AUSROAD Jetmaster® unit is a premium product manufactured to the highest quality and backed by a 3 year warranty. Refer page 72 for details of warranty conditions.

Ausroad prides itself on promptly acting on any warranty claim. We understand the cost associated with downtime (as we run our own hire fleet of Jetmaster® units) and actively work to minimize this for our clients.

AUSROAD will complete warranty details of the whole unit and any specific warranty applying to any components. These will be supplied within the Maintenance Manual provided upon commissioning. AUSROAD will provide a regular service schedule and maintains stock of all parts in its Brisbane Store

Parts Warranty Covered under AUSROAD warranty refer page 72 for conditions.

Labour Warranty AUSROAD will if necessary engage local services to carry out warranty work. If specialized service is required AUSROAD staff will travel to Corrigin, WA to undertake repairs.

For repair work under warranty Ausroad will provide critical components on a 'loan' basis free of charge while Council parts are repaired if required, i.e. Jetmaster® IFM Ecomat components, blower. Ausroad runs a fleet of 6 AUSROAD Jetmaster® Road Maintenance Hire Units, in the event of extended downtime we would make a hire unit available.

Whole of Life Costs

Description	Parts	Labour	Sub Total	Interval	Yearly Cost	Total Cost over 6 year life	Total Cost over 8 year life
Aggregate hose replacement	\$1407.15	\$120.00	\$1527.15	1 yearly	\$1527.15	\$9 162.90	\$12 217.20
Air filters	\$139.00	\$12.00	\$151.00	1/2 yearly	\$302.00	\$1 812.00	\$2 416.00
Oil filters - Intank Pressure	\$92.00 x 2 \$244.80 x 2	\$30.00 \$30.00	\$214.00 \$519.60	1 yearly 1 yearly	\$214.00 \$519.60	\$1 284.00 \$3 117.60	\$1 712.00 \$4 156.80
Seals and O-rings	\$ NA						
Wear plates	\$ NA						
Broom replacement	\$669.50	\$60.00	\$729.50	1 yearly	\$729.50	\$4 377.00	\$5 836.00
Allowance for minor repairs and maintenance	\$200.00	\$300.00	\$500.00		\$500.00	\$3 000.00	\$4 000.00
Minor Service – Greasing Etc.	\$	\$120.00	\$	1 yearly	\$120.00	\$720.00	\$960.00
Conveyor belt	\$4 388.00	\$120.00	\$4 508.00	3 yearly	\$1 502.00	\$9 015.00	\$12 021.00
Conveyor belt complete bearings & rollers, drive nylon sprockets	\$1 687.00	\$120.00	\$1 807.00	3 yearly	\$602.35	\$3 614.00	\$4 818.80
Hydraulic oil	\$400.00	\$120.00	\$520.00	1 yearly	\$520.00	\$3 120.00	\$4 160.00
TOTAL FOR JETMASTER						\$39 222.50	\$52 296.66

**Assumptions: AUSROAD Jetmaster body
Labour @ \$60.00 per hour
Machine working 600 hours per year**

Notes

- **Neither replacement pads nor 'O'- Rings are required with the AUSROAD™ Venturi distributing system thus eliminating constant down time.**
- **The AUSROAD Venturi Distributor has no moving parts thus eliminating a lot of wearing and servicing costs. Refer to page 42 for further advantages of the Venturi System.**
- **Parts prices exclude GST and remain firm for 6 months.**

“Councils previous Jetpatching Unit being 11 years of age was also built by Ausroads and it served Council very well as maintenance cost were low while its productivity remained high. The new unit being far more advanced than its predecessor carries out the ever increasing activities required by councils to a high standard with ease and at a low cost.”

Robert Cosgrove, Manager of Works
Narrandera Shire Council

AUSROAD Training Program

Ausroad's Trainer will work alongside the requirements of Council and provide a guided program of theoretical and practical training based on the following schedule over 2 days, or until operators can operate unit safely and with confidence. Up to 6 staff members can be trained during this time. A 'Certificate of Competence' shall be provided for all staff that successfully completes the training course.

Follow up training can be arranged at any time in the future to train new operators at \$1500.00 (ex GST) per day plus expenses.

Day 1

Theory of operation of the unit. Technicians work through the full operating details of the Jetpatching system of patching using the Operators Manual to show and explain the procedures with Council Overseers and Operators. This includes safe practices, operational procedures, daily monitoring and service.

Topics Covered

Theory

- Principles of using and storing CRS Emulsions
- Technicians will examine emulsion storage and discuss current Council facilities.
- Aggregates and their use with the Jetpatching System
- Technician will explain size, types and mixtures for Jetpatching applications (including the use of sand)
- Safety features of the Jetmaster® Unit includes safe practices, operational procedures, daily monitoring and service.
- Loading and Patching
- Loading and operating unit safely.

Practical

- Loading materials safely.
- Beginning operations as time permits.

Day 2

Theory

Full explanation to be covered of all points as listed below to Councils Operators/Supervisors, including monitoring and fitting of wearing parts to the delivery system.

- Routine Maintenance
- Scheduled maintenance

Discussion with Overseer or suitable Council staff to be arranged for at completion of each days training.

Practical

Council operators operate Jetmaster® full patching operations under the supervision of AUSROAD™ Technician where required.

Further training for maintenance staff, including:

- Servicing Procedures
- Workshop Maintenance
- Monitoring Delivery System

AUSROAD Q & A

Why does AUSROAD use the venturi delivery system and not a rotary distribution system?

The Venturi delivery system that AUSROAD uses is the most efficient way to distribute aggregate into an air stream. Now powered by PTO it has no moving parts and requires no regular maintenance or additional power source.

The Venturi increases the air velocity by 60% after it leaves the blower making the venturi system the most productive available. By reducing the speed of the blower the operator has exact control over how much aggregate is delivered via the venturi and delivery hose.

Unlike a rotary distribution system it can handle a variety of aggregates from sand to 12mm, wet and dry. It is lighter, cheaper to maintain and more effective than any other system.

With no moving parts the venturi system is the safest and most efficient system available.

Why is the boom at bumper bar level with the hose stowed in under the cab?

It is easier to blow aggregate horizontally than to try and blow aggregate several meters up and over a truck cab. This is a waste of energy and likely to cause blockages and wear on the hose. We have a low straight delivery path with less cantilevered forces and wear on equipment. There is no greasing of parts required.

With the AUSROAD design there is no boom equipment hanging over the cab and down the side of the windshield when stowed. An over the cab set-up obstructs the driver's visibility and is more expensive. An over the cab design also interferes with cab tilting and is difficult to service.

The AUSROAD design provides extra crash protection for cab occupants. It is easy to access for maintenance and is clearly visible to the driver at all times.

The mounting of the unit to the chassis is as per truck manufacturers recommendations as approved by Hino and Isuzu Australia engineers.

With less moving parts the first AUSROAD delivery boom delivered in 2000 was still in operation with its original owner (Tweed Shire Council, NSW) after 9 years of service!

- Lower profile & cleaner design
- Straight delivery path, less wear
- Less moving parts
- No loss of ground clearance
- Better visibility & safety
- Strong construction with fibreglass filled epoxy bearings.

Why does AUSROAD use a large diameter delivery hose?

It's simple; with the patented Venturi system, AUSROAD™ units have the highest production rates of any remote-controlled unit presently available in Australia. Because of this we can use a larger diameter hose to deliver more material to the work site.

A larger diameter hose is less likely to block in any application. It also allows more material to be delivered to the patch area and a larger diameter hose makes it easier for the operator to achieve a flat finish. No speed bumps!

A wider hose means that less velocity is required to move aggregate along it. This means less loose aggregate left at the patch area whilst maintaining high production rates and compaction.

Why does AUSROAD use a belt and auger system in its spreader box?

A belt and auger system allows full use of the aggregate spreader without having to tip the hopper. All speeds are adjustable from the cab to allow the correct cover rates to be applied.

Unlike the competition the AUSROAD unit has an optimizing roller fitted to the spreader box, similar to other industrial spreaders. This allows for aggregate cover adjustment independent of ground speed. The operator can adjust spray and cover rates separately.

With the AUSROAD belt system the hopper does not need to be tipped. Tipping the hopper can result in stability issues and can cause safety issues in confined areas with overhead power lines and trees.

- More even aggregate distribution
- More control over aggregate distribution
- Adjustable to aggregate sizes
- No need to tip the hopper and safer
- More stability

For these reasons AUSROAD™ avoids having to tip the hopper.

Why does AUSROAD use the ECOMAT control system?

Our control system utilises robust IFM German engineered industrial quality components. It has LED's at every connection leading to simple fault finding and a 'Contactless' joystick. It utilises a flexible program giving the operator complete control over the system including job and material totals.

AUSROAD is the world leader in road maintenance systems. We have designed a safe and cost effective unit specifically for Australian conditions.

Units can be retro fitted with our latest technological developments.

Units are designed and built in Australia for Australian conditions; customers include;

- Australian Department of Defence
- Roads and Traffic Authority (NSW)
- RoadTek (Dept of Main Roads, QLD)
- Private Contractors
- Regional and City Councils

Why invest in Jetmaster® technology?

It's all about return on investment;

1. **The AUSROAD Jetmaster® unit is a high productivity unit that carries a productivity guarantee (refer page 73), is extremely well designed and has an impressive record in the market place.**

Operators of AUSROAD Jetmaster® remote control units are commonly laying 6 to 9m³ of aggregate per day, equivalent to 14 to 21 tonnes of hot-mix per day.

“Council uses the Jetmaster to carry out two (2) coat emulsion seals on our heavy patching and shoulder repair/widening programme. The savings in time and money are excellent as we are able to seal each patch as soon as it is ready instead of having to get a lot of patches ready to make it viable to get a sealing contractor in.”

David Coulton
Technical Officer Works
Gwydir Shire Council, Bingara NSW
(Excerpt from reference letter)

2. **It is Australia's largest selling blower type road maintenance machine and is backed a 3 year warranty, (refer pages 61 & 72).**
3. **The AUSROAD Jetmaster® unit is a premium quality road maintenance machine utilising low cost materials to produce high quality road repairs.**

“During August – September 1999, Cairns City Council dry hired a 4m³ capacity Jetpatcher Road Maintenance Unit. This initial hire was very successful in particular with relationship to productivity, permanence of repairs and operator acceptance.”

Peter Agar, Manager Maintenance & Construction
Cairns City Council, Cairns, QLD
(Excerpt from reference letter)

4. **Investing in an AUSROAD Jetmaster® unit means gaining the benefits of a premium quality road maintenance machine and professional backup and support services**

“The District Council of the Copper Coast South Australia would like to thank you for your excellent service and support by AUSROAD since the Council purchased the Jetpatcher® in March 2009”

Greg Munzer, Maintenance Supervisor
District Council of the Copper Coast, Kadina SA
(Excerpt from reference letter)

“The assistance and service Council has received from Jetpatcher Roadtech has been excellent and this is vitally important in these days of increasing costs and value for dollar is required.”

David Coulton
Technical Officer Works
Gwydir Shire Council, Bingara NSW
(Excerpt from reference letter)

“South Gippsland Shire Council would like to express our appreciation for the excellent service and support provided by Jetpatcher Roadtech.”

Noel Thornby
Operations Co-Ordinator
South Gippsland Shire Council, Leongatha, VIC
(Excerpt from reference letter)

“We have no hesitation in recommending to prospective purchasers this equipment and the technical back up service provided by Jetpatcher Australia Pty Ltd.

I am most willing to discuss any aspect regarding these road maintenance units.”

Bob Missingham, Manager Works
Tweed Shire Council, Murwillumbah, New South Wales
(Excerpt from reference letter)

Most recently commissioned AUSROAD units

Jetmaster® units in bold text (from September 2020)

Council / Company	Contact	Phone	Unit type
Kempsey Shire Council WEST KEMPSEY, NSW Direct Quote to Council	Garick Cahill Coordinator Maintenance Response	0427 490 803 02 6566 2751	6m AUSROAD Jetmaster Unit Unit No: 527 Commissioned May 2022
Wollondilly Shire Council PICTON NSW Via Tenderlink	Michael Lloyd Plant Superintendent	02 4677 9546	4m AUSROAD HD Series Unit Unit No: 519 Commissioned May 2022
Downer # 10 GILLMAN, Sa	Vincent Pearse SA Plant Manager	0459 821 040 08 8341 2549	7m AUSROAD Spray Seal Unit Unit No: 519 Delivered April 2022
Gympie Regional Council GYMPIE QLD (via NPN 1.15-2 VendorPanel)	Clint Wood Fleet Supervisor	07 5481 0905 0400 695 370	6m AUSROAD HD Series Unit Unit No: 520 Commissioned April 2022
Gympie Regional Council GYMPIE QLD (via NPN 1.15-2 VendorPanel)	Clint Wood Fleet Supervisor	07 5481 0905 0400 695 370	6m AUSROAD Jetmaster Unit Unit No: 516 Delivered March 2022
Towong Shire Council TALLANGATTA, VIC	Dolf Abbruzzese Manager Infrastructure Assessment	1300 365 222 0428 762 012	6m AUSROAD Jetmaster Unit Unit No: 517 Commissioned March 2022
Dubbo Regional Council DUBBO NSW (via NPN 1.15-2 VendorPanel)	Daniel Peterson Fleet Procurement Officer	02 6801 4942 0408 634 870	6m AUSROAD Jetmaster Unit Unit No: 512 Commissioned February 2022
Downer # 9 Gillman, SA	Vincent Pearse SA Plant Manager	08 8341 2549 0459 821 040	7.5m AUSROAD HD Series Units Unit No: 526 Commissioned: February 2022
Singleton Shire Council SINGLETON NSW (via NPN 1.15 VendorPanel)	Mark Burgess Team Leader	0438 284 833	6m AUSROAD Jetmaster Unit Unit No: 509 Commissioned: January 2022
Walgett Shire Council WALGETT NSW (via NPN 1.15 VendorPanel)	Greg Leersen Support Services Coordinator	02 6828 6145 0428 216 182	6m AUSROAD Jetmaster Unit Unit No: 504 Commissioned: January 2022 <i>Councils 3rd AUSROAD Unit</i>
Federation Council COWOWA NSW (via NPN 1.15 VendorPanel) <i>Councils 5th AUSROAD Unit</i>	Dean Skipper	0422 157 721	6m AUSROAD Jetmaster Unit Unit No: 511 Commissioned: January 2022
Leeton Shire Council LEETON NSW (via NPN 1.15 VendorPanel)	Mark Robinson Plant Superintendent	02 6953 0944 0419 290 238	6m AUSROAD Jetmaster Unit Unit No: 501 Commissioned: January 2022 <i>Councils 3rd AUSROAD Unit</i>

Uralla Shire Council URALLA NSW	Dean Weiley Co-Ordinator Fleet,Stores & Workshop	02 6778 6401 0447 082 087	6m AUSROAD HD Series Unit Unit No: 510 Commissioned: December 2021
Somerset Regional Council ESK QLD (via NPN 1.15 VendorPanel)	Peter Heath Workshop Supervisor	07 5424 4056 0409 632 805	4m AUSROAD HD Series Unit Unit No: 502 Commissioned: November 2021 Councils 4th AUSROAD Unit
Wagga Wagga City Council WAGGA WAGGA NSW (via Tender Link)	Graeme White Fleet Services Co-Ordinator	02 6971 4621 0438 236 162	4m AUSROAD HD Series Unit Unit No: 500 Commissioned: November 2021 Councils 6th AUSROAD Unit
Downer # 7 & 8 Gillman, SA	Vincent Pearse SA Plant Manager	08 8341 2549 0459 821 040	2 x 6m AUSROAD HD Series Units Unit No's: 505 & 506 Commissioned: November 2021
Bundaberg Regional Council #9 BUNDABERG QLD (via NPN 1.15 VendorPanel) Body prices only to Port City Auto	Craig Fredriksen Fleet Procurement Officer	07 4130 4641 0427 538 655	2 x 4.5m Ausroad HD Series Units Unit No: 507 & 508 Commissioned October 2021 Councils 10th & 11th AUSROAD Units
Moyne Shire Council PORT FAIRY VIC (via NPN 1.15 VendorPanel)	Crag Cole Manager, Construction & Maintenance	03 5558 7888 0439 336 211	6m AUSROAD Jetmaster Unit Unit No: 503 Commissioned Sept 2021 Councils 3rd AUSROAD Unit
Narrabri Shire Council NARRABRI NSW (via NPN 1.15 VendorPanel)	Michael Cain Road Services Manager	02 6799 6872 0427 101 707	6m AUSROAD Jetmaster Unit Unit No: 499 Commissioned August 2021 Councils 2nd AUSROAD Unit
Mackay Regional Council MACKAY QLD (via NPN 1.15 VendorPanel)	Graham Sutton Fleet Coordinator Procurement & Plant	07 4961 9830 0400 033 092	4m AUSROAD HD Series Unit Unit No: 495 Commissioned August 2021 Councils 6th AUSROAD Unit
Bundaberg Regional Council BUNDABERG QLD (via NPN 1.15 VendorPanel)	Craig Fredriksen Fleet Procurement Officer	07 4130 4641 0427 538 655	4.5m Ausroad HD Series Unit Unit No. 498 Commissioned July 2021 Councils 9th AUSROAD Unit
Goondiwindi Regional Council INGLEWOOD QLD	Steve Scott Plant Manager	07 4671 7480 0427 717 400	Three Way Tipping Truck Unit No 494 Commissioned June 2021 Councils 3rd AUSROAD Unit
Bundaberg Regional Council BUNDABERG QLD (via NPN 1.15 VendorPanel)	Craig Fredriksen Fleet Procurement Officer	07 4130 4641 0427 538 655	2 x 4.5m Ausroad HD Series Units Unit No's.496 & 497 Commissioned June 2021 Councils 7th & 8th AUSROAD Units
Warrumbungle Shire Council COONABARABRAN, NSW	Chris Staniforth Fleet Manager	0428 667 004	6m AUSROAD Jetmaster Unit Unit No: 493 Commissioned May 2021 Councils 2nd AUSROAD Unit

Bogan Shire Council NYNGAN, NSW Via VendorPanel 'Open Market Tenders'	Brendan McHattan Procurement Officer	02 6835 9060 0437 827 785	4m AUSROAD Jetmaster Unit Unit No: 492 Commissioned May 2021 <i>Councils 3rd AUSROAD Unit</i>
Bega Valley Shire Council BEGA, NSW (via NPN 1.15 VendorPanel)	Deon Constance Fleet Services Supervisor	02 6499 2422 0427 260 970	2.5m Ausroad HD Series Unit Unit No: 491 Commissioned April 2021 <i>Councils 5th AUSROAD Unit</i>
Southern Grampians SC Hamilton, VIC	Allan Wishart Fleet Manager	03 5573 0494 0458 004 704	4m AUSROAD Jetmaster Unit Unit No:489 Commissioned April 2021 <i>Councils 2nd AUSROAD Unit</i>
Boulia Shire Council Boulia, QLD	Joseph Kim Technical Officer	07 4746 3188	Emulsion Spray Trailer Commissioned March 2021 <i>Councils 2nd AUSROAD Unit</i>
Tweed Shire Council Murwillumbah, NSW Body price only to GC Isuzu but under NPN413	Justen Oliver Operations Coordinator Plant & Materials	02 6670 2705 0439 224 943	4.5m Ausroad HD Series Unit Unit No. 488 <i>Councils 8th AUSROAD Unit</i>
Lake Macquarie City Council Hunter Regional MC Body price only to Gilbert & Roach but under NPN413	Daniel Downie Plant & Fleet Officer	02 4921 0649 0417 659 365	4.5m Ausroad HD Series Unit Unit No. 487 Commissioned Feb 2021 <i>Councils 6th AUSROAD Unit</i>
Alexandrina Council Goolwa, SA (via NPN 1.15 VendorPanel)	Paul Minks Contracts Manager	08 8555 7000 0406 132 643	4.5m Ausroad HD Series Unit Unit No.478 Commissioned Feb 2021
Berrigan Shire Council Berrigan, NSW (Via LGP 419)	Dean Skipper Workshop Supervisor	0422 157 721	6m AUSROAD Jetmaster Unit Unit No. 482 Commissioned Jan 2021 <i>Councils 4th AUSROAD Unit</i>
Balonne Shire St George QLD (via NPN 1.15 VendorPanel)	Peter Gluzde Tech Officer	07 4620 8851 0409 846 281	Combined HD/JM Unit Unit No.475 Commissioned Nov 2020
Benalla Rural City Council Benalla VIC (via NPN 1.15 VendorPanel)	Robert Milton Manager Operations	0408 992 774	6m AUSROAD Jetmaster Unit Unit No.474 Commissioned Dec 2020
Mildura Rural City Council Mildura VIC	Patty Dowling Fleet Officer	03 5018 8439	3 x Ausroad HD Series Units 471, 472, 473 Delivered Oct 2020
Edward River Council Deniliquin NSW (via LGP 707-3)	Geoff Pitt Supervisor Fleet	03 5898 3000 0400 931 003	4m AUSROAD Jetmaster Unit Unit No.470 Delivered Sept 2020

Summary of Operating advantages of the AUSROAD Jetmaster® road maintenance unit

- (a) Very high production rates.
- (b) The Jetmaster® Unit has the ability to blow all water and debris out of the holes.
- (c) Jetmaster® has a proven system for applying sand to the road repair via the delivery hose which is all controlled by the operator.
- (d) The Jetmaster® Unit is the only blower type unit that has the ability to use variable speeds for emulsion and air, can use variable sizes of aggregate, and has the ability to apply sand.
- (e) No time is required in cleaning/maintenance of the Venturi distributor due to no moving or wearing parts.
- (f) AUSROAD Jetmaster® machines have pressurized kero tank cleaning of the nozzle. This is a unique feature.

A great team with impressive experience

AUSROAD technicians are available to assist Council at any time. Their expertise as designers and manufacturers ensures that their help and advice is gained from "long time experience" within the industry. Ausroad strives to provide prompt and efficient services. We believe in strong product and customer support and are keen to maintain our position as an expert in the field.

A recent list of AUSROAD unit owners is enclosed, refer pages 68 - 70. We suggest that some of those owners be contacted to discuss their experience with this type of equipment.

We recognise that our tender may not necessarily be the lowest submitted. However the increased capital investment in purchasing an AUSROAD Jetmaster® unit will very quickly be recovered with a much higher productivity unit that carries a longer guarantee, is extremely well designed and has an impressive record in the market place.

Management and Staff are dedicated to servicing the needs of Australian Councils and this has been confirmed by the repeat orders we have received. There will be questions to ask after considering our tender. We are here to assist you and welcome any queries you may have.

AUSROAD staff are available at all times to discuss issues with operation of Jetmaster® units.

Jetmaster® – the ultimate road repair system!



Limited 3 year Warranty

We Ausroad Manufacturing Pty Ltd warrant that all manufactured components are produced from the very best of material available and will repair and/or replace any defect in the AUSROAD Jetmaster[®] unit and installation services which become apparent within 36 months of the commissioned date.

Conditions of Warranty

- 1. Flexible hoses, batteries, conveyor belt, and the distributing system where fair wear and tear are normal are excluded.*
- 2. If the customer does not follow all maintenance recommendations as per the User Manual the warranty cannot apply.*
- 3. Correctly specified materials as recommended by the manufacturer must be used as a condition of the warranty. That is aggregate and emulsion, also sand if a sand bin is fitted.*
- 4. It is the responsibility of the customer to return to the factory of the manufacturer any defective component (or the complete AUSROAD Jetmaster[®] Unit) if there is any requirement to attend to under this warranty (approved by the Manufacturer).*
- 5. This warranty applies to the initial customer only and is revoked if the AUSROAD Jetmaster[®] unit is sold or otherwise disposed.*
- 6. In the case of components not manufactured by AUSROAD the purchaser has the benefit of the guarantees given to Ausroad Manufacturing Pty Ltd with a minimum of one year.*

Ausroad Manufacturing Pty Ltd

*Manufacturers & Distributors of;
AUSROAD Jetmaster Road Maintenance Units
AUSROAD HD Series Road Maintenance Units
Hiring of Road Maintenance Units
AUSROAD Emulsion Spray Units*

Jetmaster[®] - the ultimate road repair system



Productivity Guarantee

Ausroad Manufacturing Pty Ltd guarantee that the AUSROAD Jetmaster[®] machine purchased will consistently produce at the rate of 3.2 m³ per hour or better using patching function and 12m³ per hour using aggregate spreader and paving equipment (in the hands of an experienced operator).

If the Council (or Contractor) fail to consistently achieve this rate of production, then Ausroad Manufacturing will - at its cost - make whatever adjustments or modifications necessary to ensure the AUSROAD Jetmaster[®] machine attains this minimum level of production or better.

AUSROAD guarantees a production rate of 3.2m³ per hour using patching function and 12m³ per hour using aggregate spreader and paving equipment

(Please note that some Council's and Organisations are achieving 4m³ per hour)

Fast Parts Service and In-Stock Guarantee

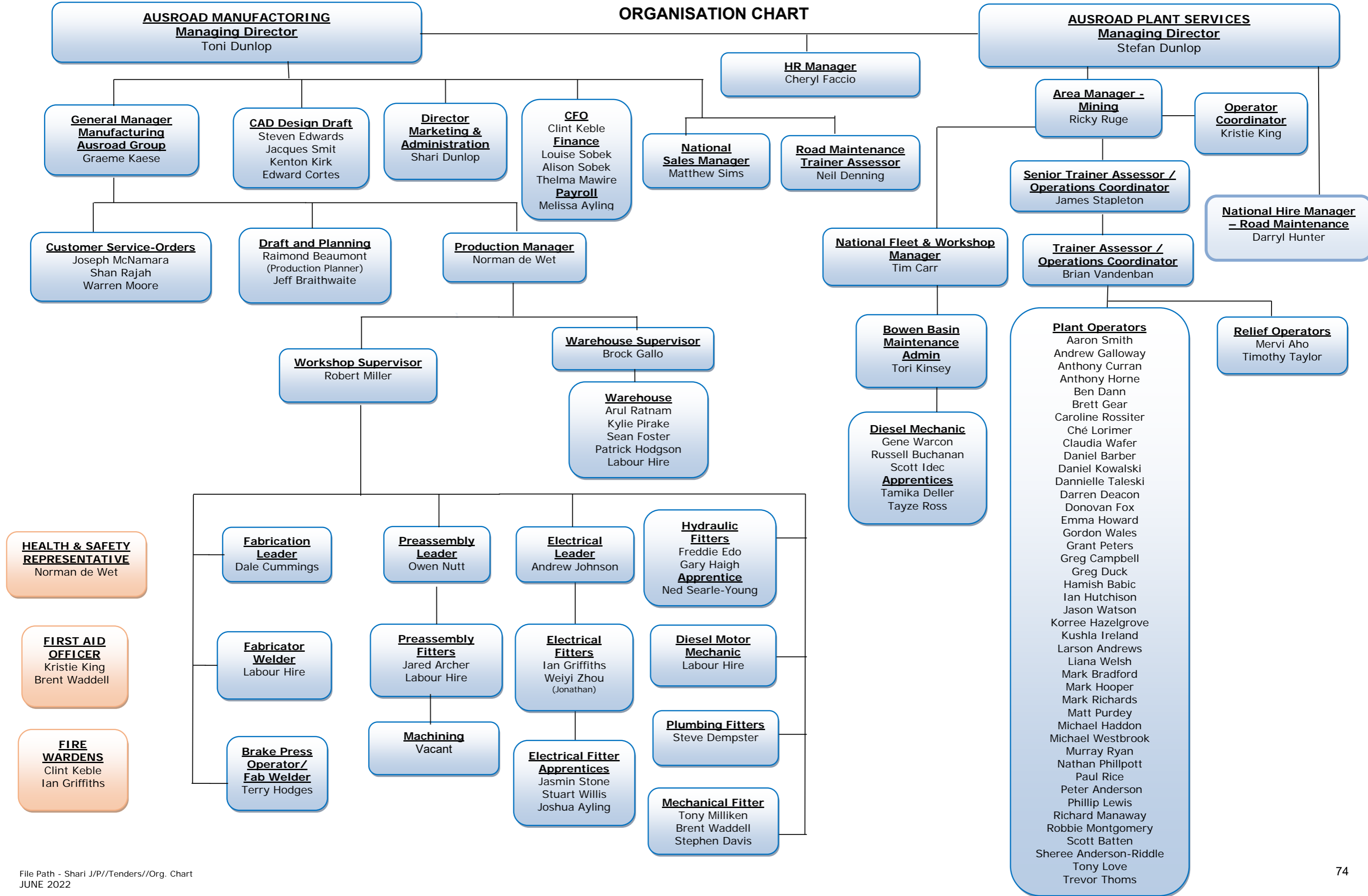
Ausroad Manufacturing guarantee to always have stocks of standard AUSROAD parts on hand. Further, Ausroad Manufacturing guarantee to ship your parts order on the day you order (order must be placed by 1.00pm).

Ausroad Manufacturing Pty Ltd

*Manufacturers & Distributors of;
AUSROAD Jetmaster Road Maintenance Units
AUSROAD HD Series Road Maintenance Units
Hiring of Road Maintenance Units
AUSROAD Emulsion Spray Units*

Jetmaster[®] - the ultimate road repair system

ORGANISATION CHART



Certificate of Currency

Employer's information

Employer name	Ausroad Systems Pty Ltd
ABN	61 097 151 445
ACN	97151445
Policy number	WAA010734263
Insurance type	Accident Insurance Policy

Statement of coverage

This certificate issued on **05 October 2021** is a Certificate of Currency, which provides cover under the *Workers' Compensation and Rehabilitation Act 2003* for:

- (a) the employer's legal liability for compensation; and
- (b) the employer's legal liability for damages.

The amount of insurance under the workers' compensation scheme is unlimited subject to the provisions of the *Workers' Compensation and Rehabilitation Act 2003* and the *Workers' Compensation and Rehabilitation Regulation 2014* and the employer's compliance with their requirements. In some instances, non-compliance can jeopardise an employer's insurance cover but will not prevent an injured worker from being compensated pursuant to the Act.

This Certificate of Currency is issued for the insurance period from **01 July 2021 to 30 June 2022**.

WorkCover industry classification

246216 - Mining & Construction Machinery Manufacturing

For more information, please contact us on 1300 362 128 or visit our website at worksafe.qld.gov.au.

Certificate of Insurance



Public and Products Liability Insurance

To whom it may concern, this certificate:

- is issued as a matter of information only and confers no rights upon the holder;
- does not amend coverage afforded by the policy/number listed;
- is a summary only of the cover provided. For full particulars, reference must be made to the current policy wording;
- is current at the date of issue.

Insurer: AAI Limited (ABN 48 005 297 807) trading as Vero Insurance

Policy wording: Vero Corporate Broadform Liability Insurance Policy - V1434 23/05/19 A

Policy number: LCL023024327

Named insured: AUSROAD SYSTEMS PTY LTD and AUSROAD PLANT SERVICES PTY LTD and Ausroad Manufacturing Pty Ltd.

Business: Manufacture, Fabrication & Repair of Road Maintenance Bodies, StemmingBodies, Watering Bodies, Loading Bodies, Dewatering Bodies, Shot Bodies &Wet and Dry Hire of Road Maintenance Trucks, Stemming Trucks, WateringTrucks, Loaders, Dewatering Trucks and Shot Trucks, Stemming ServicesContractor and all other activities incidental thereto

Period of insurance: From: 30/06/2021
To: 30/06/2022
4.00pm Local Standard Time

Limit of liability:

General/Public liability	\$ 20,000,000 any one Occurrence.
Products liability	\$ 20,000,000 in the aggregate during any one Period of insurance in respect of claims arising from Products.

Endorsement:
As Per Schedule



Signed for and on behalf of AAI Limited (ABN 48 005 297 807) trading as Vero Insurance

FX2 240-350 6X4

FX4 240-350 6X4



FX4 MODEL PICTURED

WEIGHT RATINGS*

GVM 24,000 kg
GCM 45,000 kg

ENGINE

POWER 257 kW @ 2,000 rpm
TORQUE 1,422 Nm @ 1,400 rpm

TRANSMISSION

9 speed manual transmission (MT)
6 speed automatic transmission (AT)

* Refer to back page for detailed weight rating information

ISUZU CARE	
WARRANTY	6 Year Standard Warranty
	600,000 km / 10,000 Engine Hours
ROADSIDE ASSIST	6 Year Roadside Support
	24/7 Unlimited km
HARSH APPLICATION WARRANTY (CONCRETE AGITATOR / GARBAGE COMPACTOR)	3 Year Standard Warranty
	300,000 km / no hours stipulation
	3 Year Roadside Support
	24/7 Unlimited km

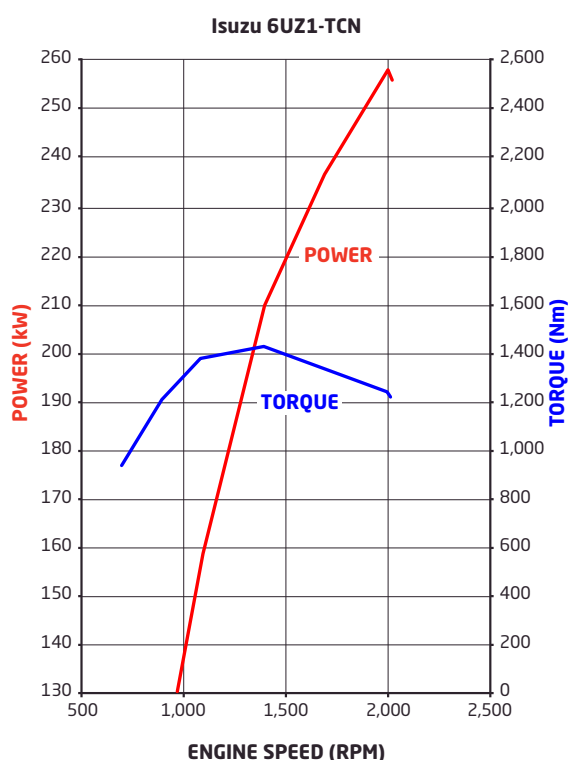


Subject to the conditions outlined in the IAL New Vehicle Warranty. For further information please visit isuzu.com.au or contact your local dealer.

INTELLIGENT SAFETY	
STANDARD FEATURES	Anti-Lock Braking System (ABS)
	Driver airbag
	Driver seatbelt pretensioner
	Low light capable reversing camera
	ECE-R29 compliant cab

SERVICE AGREEMENTS			
Optional Service Packages	ESSENTIALS	ESSENTIALS PLUS	TOTAL
SCHEDULED SERVICINGS	●	●	●
CONSUMABLES		●	●
ENGINE, TRANSMISSION & DRIVELINE			●
EXTRAS	After-hours Servicing, Glass, Fuel Card, Pickup - Dropoff		

ENGINE	
DESCRIPTION	Isuzu 6UZ1-TCN
TYPE	6 cylinder 24 valve SOHC
DISPLACEMENT	9,839 cc
COMPRESSION RATIO	17.5:1
BORE X STROKE	120 mm x 145 mm
POWER	257 kW (350PS) @ 2,000 rpm (DIN NET)
TORQUE	1,422 Nm @ 1,400 rpm (DIN NET)
INDUCTION	Electronically controlled variable nozzle turbocharger with air-to-air intercooler
FUEL INJECTION	Direct injection high pressure common rail
EMISSION CONTROL	Cooled EGR with exhaust Diesel Oxidation Catalyst (DOC). ADR 80/03 (Euro V) compliant.



TRANSMISSION																						
MT	CLUTCH	<p>Type: Single plate with air assisted hydraulic control</p> <p>Clutch plate diameter: 432 mm</p> <p>Clutch lining area: 1,923 cm²</p>																				
	GEARBOX	<p>Description: ZF 9S 1310 TO</p> <p>Type: 9 speed with synchromesh on gears 1-8</p> <p>Ratios:</p> <table border="1"> <tr> <th>Crawler</th> <th>1st</th> <th>2nd</th> <th>3rd</th> <th>4th</th> <th>5th</th> <th>6th</th> <th>7th</th> <th>8th</th> <th>Rev</th> </tr> <tr> <td>9.48</td> <td>6.58</td> <td>4.68</td> <td>3.48</td> <td>2.62</td> <td>1.89</td> <td>1.35</td> <td>1.00</td> <td>0.75</td> <td>8.97</td> </tr> </table> <p>Power Take Off facility: Provision at rear of transmission case</p> <p>Other features: Repeat 'H' shift pattern</p>	Crawler	1st	2nd	3rd	4th	5th	6th	7th	8th	Rev	9.48	6.58	4.68	3.48	2.62	1.89	1.35	1.00	0.75	8.97
		Crawler	1st	2nd	3rd	4th	5th	6th	7th	8th	Rev											
		9.48	6.58	4.68	3.48	2.62	1.89	1.35	1.00	0.75	8.97											
		AT	<p>Description: Allison 4430</p> <p>Type: 6 speed automatic</p> <p>Ratios:</p> <table border="1"> <tr> <th>1st</th> <th>2nd</th> <th>3rd</th> <th>4th</th> <th>5th</th> <th>6th</th> <th>Rev</th> </tr> <tr> <td>4.70</td> <td>2.21</td> <td>1.53</td> <td>1.00</td> <td>0.76</td> <td>0.67</td> <td>5.55</td> </tr> </table> <p>Power Take Off facility: LHS and top openings on transmission bellhousing. Engine driven PTO drive gear.</p> <p>Other features: 5th generation electronic controls with adaptive shift. Long life TranSynd synthetic fluid.</p>	1st	2nd	3rd	4th	5th	6th	Rev	4.70	2.21	1.53	1.00	0.76	0.67	5.55					
1st	2nd		3rd	4th	5th	6th	Rev															
4.70	2.21		1.53	1.00	0.76	0.67	5.55															

AXLES	
FRONT	Description: Meritor FG941
	Type: Reverse Elliot I-beam
	Capacity: 6,600 kg
REAR	Description: Meritor MT-14X
	Type: Tandem drive
	Other features: Inter-axle lock and cross locks fitted to both axles
	Capacity: 18,100 kg
Ratio: 4.875:1 (except FXZ/FXY AUTO MLWB models), 5.286:1 (FXZ/FXY AUTO MLWB models)	

SUSPENSION		
FRONT	Type: Single stage alloy steel taper-leaf springs	
	Other features: Double acting hydraulic shock absorbers. Stabiliser bar.	
REAR	FXZ	Type: Taper leaf spring with Isuzu 6 rod and trunnion location system
	FX4	Description: Hendrickson HAS461
		Type: Airbag
Capacity: 20,865 kg at ground		

BRAKES	
DESCRIPTION	Meritor 'Q-Plus'
TYPE	Full air 'S-Cam' front and rear drum brakes
DIAMETER X WIDTH FRONT	419 x 127 mm
DIAMETER X WIDTH REAR	419 x 178 mm
PARK BRAKE	Spring park brake acting on all rear wheels
AUXILIARY BRAKE	Air controlled exhaust brake

STEERING	
TYPE	Power assisted recirculating ball
GEAR RATIO	18.5:1
TURNS LOCK TO LOCK	3.7
WHEEL LOCK ANGLE	40° (inside wheel) / 32° (outside wheel)

WHEELS & TYRES		
FRONT	WHEELS	22.5 x 8.25 ten stud ISO standard steel wheels
	TYRES	295/80R22.5 152/148M Michelin X Multi Z 2 Tubeless
	STEER AXLE TYRE RATING	7,100 kg
REAR	WHEELS	22.5 x 8.25 ten stud ISO standard steel wheels
	TYRES	11R22.5 148/145L Michelin X Multi D Tubeless
	TANDEM AXLE TYRE RATING	23,200 kg
SPARE	Rim supplied. Winch type carrier (except FXZ MLWB).	

CHASSIS FRAME	
TYPE	Cold rivetted ladder frame.
MATERIAL	HT540A steel members
DIMENSIONS	Side rail (mm): 285 x 85 x 7.0 Rear frame width (mm): 850

FUEL TANK	
TYPE	Frame mounted aluminium fuel tank
CAPACITY	400 L
FUEL CAP	Lockable

ELECTRICAL SYSTEM	
TYPE	24 volt
ALTERNATOR	90 amp
STARTER MOTOR	5.0 kW
BATTERY	2 x 115E41L (651 CCA) batteries connected in series
CAN BUS PROVISION	Underdash CAN system access plug for connection to a Fleet Management System (FMS) (not supplied)

CABIN SPECIFICATIONS & APPOINTMENTS

CABIN GENERAL FEATURES	
ENGINE ACCESS	Electro-hydraulic cab tilt
CAB MOUNTING	Rear coil spring suspension with hydraulic shock absorbers
STEPS	Heavy duty anti-slip steps
DOORS	90° opening internally reinforced front doors
MIRRORS	Heated and powered exterior main mirrors with flat glass and additional independently adjustable convex "spot" mirrors
WIPERS	Two speed windscreen wipers with intermittent wipe mode
EXTERIOR LIGHTING	LED main beam and halogen high beam headlamps. Chrome surround.
	Roof mounted clearance lamps
	Front foglamps
AUDIBLE WARNING	Reverse alarm
GRILLE	Chrome
FRONT BUMPER	Body coloured air dam type
SECURITY	Central locking with remote keyless entry and immobiliser

CABIN INTERIOR	
SEATING	Isri 6860/875 NTS air suspension driver's seat
	Front passenger adjustable bucket seat and front centre seat with folding seat back
SEATBELTS	3-point lap sash seatbelts in all outboard seating positions. Driver seatbelt integrated with driver seat. Centre seat lap belts.
STEERING COLUMN	Tilt/telescopic adjustable
ENTRY ASSIST GRIPS	Door and roof pillar mounted
DOOR WINDOWS	Electric control
STORAGE	Overhead compartments
	Twin cup holders
	Centre console box and storage tray
	Passenger glovebox
	Door pockets
POWER OUTLET	24V cigarette lighter
	2.4A high current fast charge USB socket
AIRCONDITIONING	Auto control
INTERIOR LIGHTING	Fluorescent lamp
REAR COMPARTMENT	ADR 42 compliant sleeper with mattress

AUDIO VISUAL UNIT	
SCREEN TYPE	10.1" 1080p High Definition with capacitive touch
NAVIGATION	Truck tailored GPS based system + live feed traffic alerts and live feed route optimisation via smartphone link (live feed component is by subscription with first 3 years provided at no extra cost)
OPERATING SYSTEM	Android Automotive
RADIO	AM/FM/DAB+
INTERNAL STORAGE CAPACITY	32GB
	USB 3.0 socket
	Wi-Fi connectivity
SMARTPHONE INTEGRATION	Android Auto / Apple CarPlay compatible
	Phone storage pocket with wireless charging facility
OTHER CAPABILITY	Provision for external camera inputs, tyre pressure monitoring, low and high position reverse sensor inputs

DRIVER CONTROLS	
ENGINE	Idle speed control
	Cruise control
TRANSMISSION (AT ONLY)	Push button gear selection control
GENERAL CONTROLS	Headlamp on/off and levelling, windscreen wipers (2 speed and intermittent modes), washers, exhaust brake, turn signals
	Inter-axle lock and cross lock engage switches

INSTRUMENTATION	
MULTI INFORMATION DISPLAY	Vehicle systems status
	Low fuel level alert
	Fuel consumption information
	Service interval alerts
	Hourmeter
GENERAL INSTRUMENTATION	Adjustable vehicle speed warning
	Speedometer and tachometer
	Digital odometer with integrated dual tripmeters
	Transmission oil level, oil life, filter life, and condition monitor display (AT only)
	Engine coolant temperature, fuel level and air pressure gauges

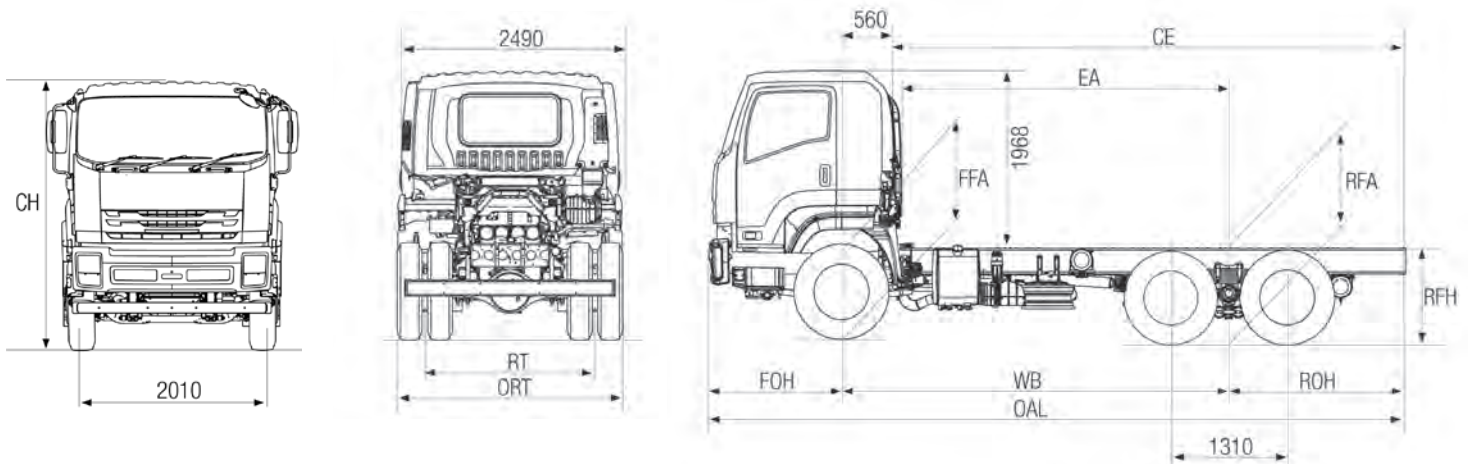


WEIGHTS (kg)							
MODELS	RATINGS*		LOADING LIMIT* (at ground)		CAB CHASSIS WEIGHT #		
	GVM	GCM	FRONT	REAR	FRONT	REAR	TOTAL
FXZ 240-350 AUTO MLWB	24,000	45,000	6,600	18,100	4,120	3,340	7,460
FXZ 240-350 LWB	24,000	45,000	6,600	18,100	3,945	3,540	7,485
FXZ 240-350 AUTO LWB	24,000	45,000	6,600	18,100	4,130	3,575	7,705
FXY 240-350 AUTO MLWB	24,000	45,000	6,600	18,100	4,075	3,130	7,205
FXY 240-350 LWB	24,000	45,000	6,600	18,100	3,925	3,320	7,245
FXY 240-350 AUTO LWB	24,000	45,000	6,600	18,100	4,105	3,350	7,455

* Vehicle ratings and front/rear weight limits are subject to government regulatory requirements and weight distribution analysis. Consult your Isuzu dealer to select the correct vehicle for your specific application.

Cab chassis only as supplied and including 10 litres of fuel.

DIMENSIONS (mm)													(m)
MODELS	WB	OAL	FOH	ROH	EA	CE	RT	ORT	CH	FFA (unladen)	RFA (unladen)	RFH (unladen)	TURNING CIRCLE kerb to kerb
FXZ 240-350 AUTO MLWB	4,540	8,000	1,480	1,980	3,860	5,939	1,840	2,450	2,990	920	1,095	1,140	17.1
FXZ 240-350 LWB / AUTO LWB	6,010	10,990	1,480	3,500	5,330	8,950	1,840	2,445	2,990	920	1,100	1,140	22.7
FXY 240-350 AUTO MLWB	4,540	8,000	1,480	1,980	3,860	5,939	1,840	2,450	2,990	920	1,050	1,070	17.1
FXY 240-350 LWB / AUTO LWB	6,010	10,990	1,480	3,500	5,330	8,950	1,840	2,445	2,990	920	1,040	1,065	22.7



PERFORMANCE (calculated - typical paved road)				
		GEARED SPEED [^] (top gear at peak power engine rpm)	LOW SPEED GRADEABILITY (lowest forward gear assuming no wheel slip)	ENGINE SPEED (top gear at 100 km/h)
FXZ/FXY 240-350 LWB	At 24,000 kg GVM	106 km/h @ 2,000 rpm	48%	1,890 rpm
FXZ/FXY 240-350 AUTO MLWB	At 24,000 kg GVM	109 km/h @ 2,000 rpm	60%	1,830 rpm
FXZ/FXY 240-350 AUTO LWB	At 24,000 kg GVM	119 km/h @ 2,000 rpm	55%	1,690 rpm

[^] Maximum speed achievable depends on vehicle frontal area as well as other factors. Consult your Isuzu dealer for more detailed information. Vehicle is speed limited to 100km/h.

ORDER CODES	
MODELS	CODES
FXZ 240-350 AUTO MLWB	FH-FXZJJ-L22
FXZ 240-350 LWB	FH-FXZJJ-D22
FXZ 240-350 AUTO LWB	FH-FXZJJ-N22
FXY 240-350 AUTO MLWB	FH-FXYJJ-L22
FXY 240-350 LWB	FH-FXYJJ-D22
FXY 240-350 AUTO LWB	FH-FXYJJ-N22

Subject to the conditions outlined in the IAL New Vehicle Warranty, Isuzu FX series models carry a standard factory warranty which covers the owner for the first 72 months or 600,000 kilometres or 10,000 Engine Hours (whichever comes first). All Isuzu warranties are subject to mandatory prescribed terms under Australian Consumer Law including consumer guarantees. Harsh Conditions variations to standard factory warranty may apply. For more details visit the Isuzu website at www.isuzu.com.au which explains Isuzu warranties in more detail, or alternatively contact your local Isuzu Truck dealer. All warranties commence from date of initial delivery.

ISUZU AUSTRALIA LIMITED ABN 97 006 962 572 ("IAL"). The information in this spec sheet was correct at time of printing, but all measurements, specifications and equipment are subject to change without notice. Some equipment may have been changed and/or is available at extra cost. IAL may make changes at any time without notice, in prices, colours, materials, equipment and models. IAL makes all reasonable attempts to ensure the availability of all vehicles and equipment. The information in this spec sheet is general in nature. Your Isuzu dealer can confirm all measurements, specifications and vehicle / equipment availability upon request. To the extent permitted by the law, IAL is not liable to any person as result of reliance on the content of this spec sheet.

Statement of Organisational Capacity and Experience

South West Isuzu and more importantly the Isuzu Truck Product has the support of eight (8) Isuzu Truck Franchised Dealers, including us, in Western Australia. From Port Hedland to Kalgoorlie to Bunbury to Albany and everywhere in between.

There are currently thousands of these models in Service in WA.

South West Isuzu Offer three (3) maintenance and service vehicles throughout WA and the Department of Parks and Wildlife have recently used this service in the 2015-2016 South Western bushfires where we as an organisation were involved in the maintenance and repair of Parks & Wildlife machines whilst retuning from front line duties at both the fire front and in our Service Workshop located in Bunbury WA.

With our organisation we have 15 staff member within our Fixed Operations dedicated to offering the best of aftersales care and support. South West Isuzu have been involved in various supply, install, maintenance and procurement of emergency parts in relation to trucks located all over WA.

RELEVANT EXPERIENCE

South West Isuzu has supplied vehicles similar to the one specified in the RFQ to a number of Local Shires and Councils including the City of Busselton.

We appreciate the work loads and usage of such vehicles and set high standards to our staff and subcontractors that the vehicle supplied will meet our high standards.

We are confident of delivering your new ISUZU truck on time and free of fault.

We have used local manufacturer Bengineering for your tray requirements.

Isuzu trucks of this model are covered by a full 3 year / 100000km bumper to bumper warranty with 24 hour roadside assistance. Options are available to upgrade the warranty to 5 years / 250000km for \$2450 including GST.

South West Isuzu have mobile breakdown service units for warranty problems etc. It is to be noted that all warranty is to be carried out at the selling dealer and we can arrange for the truck to be picked up and dropped off for warranty work required.

It is to be noted that Troy McAinch, our workshop Foreman/Supervisor lives in Busselton and has called into the City of Busselton on his way to and home from work to help with Isuzu truck issues.

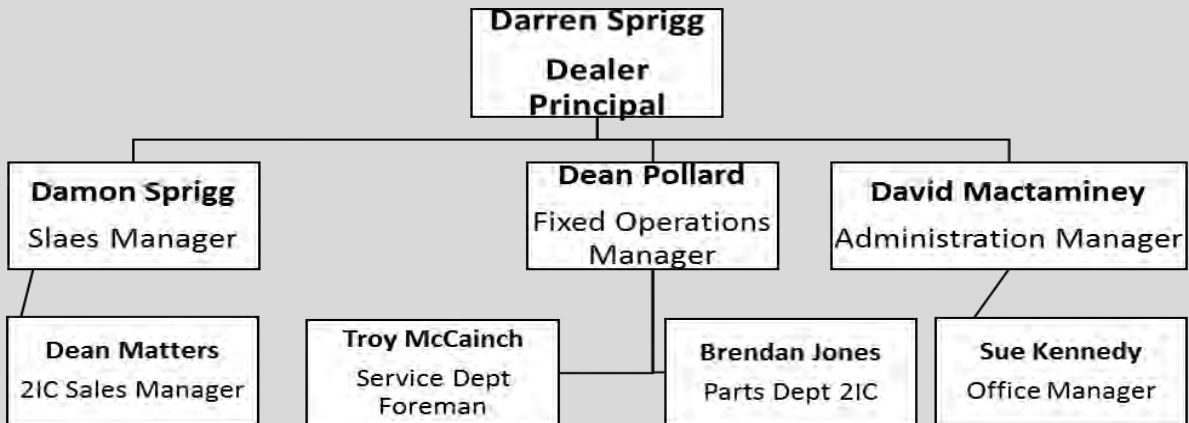
South West Isuzu have supplied trucks very similar in build to the following Local Government Councils. Shire of Wagin, City of Busselton, Shire of Capel, Shire of Donnybrook, Bridgetown/Greenbushes Shire, Shire of Harvey, Shire of Kulin, Kondinin Shire, Dumbleyung Shire, Shire of Lake Grace and the list could go on.

Shire of Dumbleyung
Calvin Shotter
Manager of Works
0427 634 012

Fulton Hogan / Mainroads
Adam Davies
Fleet Plant Coordinator
p: (08) 9781 0426 m: 0406 160 918
Adam.Davies@mainroads.wa.gov.au
Mainroads
Robinson Drive, Bunbury WA 6230
p: 08 9724 5703

Shire of Capel
Sue Burkett
Engineering & Operation Administrative Officer
SBurkett@capel.wa.gov.au
9727 0222

South West Isuzu Organisational Chart – Management



We will have three (3) layers of Management over this Contract, with responsibility changing as little as possible. This our Competitive Advantage.

Damon Sprigg will be the “Primary” within this whole three (3) month contract. He will liaise with Dean Pollard, Dean Matters to make sure we have the correct information regarding delivery time lines.

Troy McCainch himself will assume responsibility reporting direct to Dean Pollard for Aftercare Service, maintenance and repairs. Important to note we will have one (1) contact for this contract until the Date of delivery.

Darren Sprigg will oversee the entire Contract – pre contract to throughout the life of the truck. Ultimately Darren Sprigg is responsible.

Communication is Key:

We at south West Isuzu operate under one (1) pillar – that being “South West Isuzu”. We envisage that there be only one contact from the start to the end – with information disseminated from that “Primary Source” (in this case Damon Sprigg – pictured below) through to other layers right down to technicians and their daily expectations and responsibilities to get this contract completed correctly and on-time.

Contingencies include:

- Darren Sprigg & Dean Matters for Damon Sprigg (pictured below).



-
- Dean Pollard (above right) for Troy McAinch (above left)

Again “**Communication is Key**” and we invite Mr Allan Jones to Weekly Meetings to be held at convenient location (we would suggest Mr Allan Jones Office in Bunbury WA) to keep DBCA informed of where we at South West Isuzu are at in relation to this Contract. We are only five (5) minutes by vehicle from Mr Allan Jones office in Bunbury Western Australia. We are happy to meet at any prearranged convenient time both parties. We invite unconditionally Allan Jones to our Dealership at any time with an open door policy. Certainly we expect open, fair and concise communication.



Conveniently Located only five (5) minutes from Mr Allan Jones

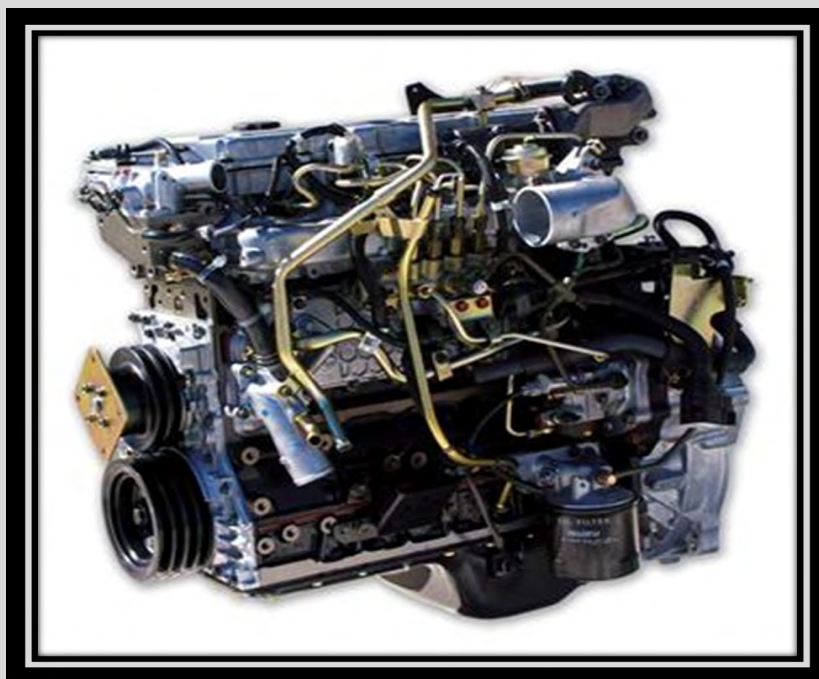
South West Isuzu Have supplied Department of Biodiversity, Conservation and Attractions these exact models and associated servicing on numerous previous occasions, on time and

on budget. We believe we have the track record with DBCA to fulfil this contract having recently (in the past 12-18 months) supplied numerous trucks of this type. We are geographically very close to communicate any problems, risks or threats should they occur.



Isuzu NPS 75-155 – Please see attached Isuzu Specification Sheet

We at our organisation understand the importance of great service and backup. If we cannot supply a part out of our \$400,000+ parts holdings we will supply off an engine or truck, that we will have complete in stock. The reliability of this Truck is unsurpassed but mechanical problems can and do happen. We are ready and willing to keep DBCA Trucks working. We will go the extra distance – we try harder.



Isuzu 4HK1 Engine – South West Isuzu Stock at least five (5) of these engines at any one time



Troy McAinch Driving at Midday in Feb 2016 on his way to a Fire Front in our Service Vehicle

The above photo is a clear and simple illustration of what the lengths that this organisation went to, to service and repair DBCA Isuzu Trucks during the summer of 2016 South West Bush Fires. While there; while waiting for Trucks to come back from the fighting front; Troy was involved with wetting down vehicles radiators with water hoses to clear them from ash, thus stopping them from overheating. We are willing to go that little bit further a bit more often.

Truck functionality is the most important factor in determining relevant investment. South West Isuzu stand by our very good reputation in providing the right product first time, the Isuzu NPS 4x4 is the only truck to purchase.

We provide Value for Money over and above the Quoted Pricing. Our Staff are a huge asset to ours and your organisation.



The Entire Team at South West Isuzu

Experience counts:

Damon Sprigg, Sales Manager – 25 years delivering Isuzu Trucks providing good value transport solutions to the Industry. Damon has a proven record supplying to DBCA.

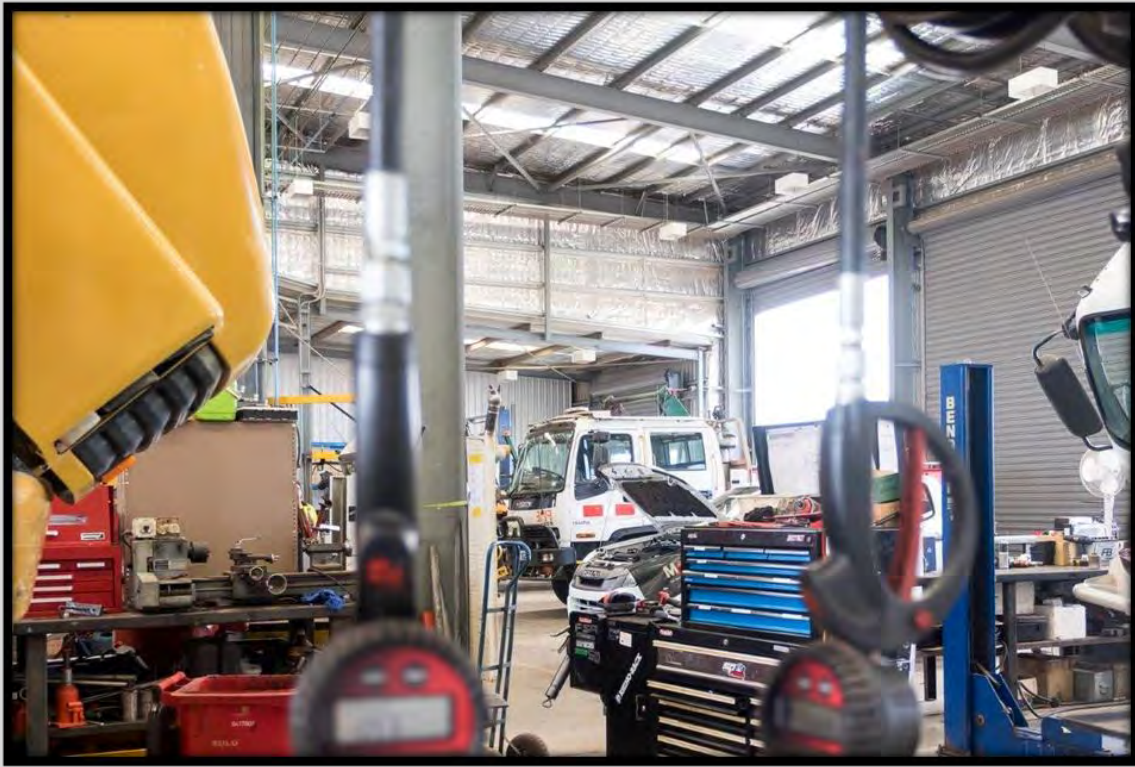
Darren Sprigg, Dealer Principal – 22 years in the Automotive Industry, with a Bachelor of Business – Major in Accounting.

Dean Pollard, Fixed Operations Manager – 30 years solving Service related problems providing cost effective solutions. We do not just guess and replace we fix at the source.

Troy McAinch, Service Foreman – 20 years Heavy Duty Diesel Technician, dedicated to our Fleet Clients. First Class, Cost effective, on the spot repairs and Maintenance.

Six other Staff with over 10 years' experience at South West Isuzu – Four (4) dedicated Mobile Field Service Units.





State of the Art Equipped Workshop.

Including: Computerised Brake Roller Tester.

Computerised Laser Wheel Alignment.

Suspension Stress Tester.

Full Length Service Pit.

Fully equipped with Isuzu Special Tools and Scan Laptops/Scan Tools.

All this located Regionally in the heart of the South West of Western Australia.





South West Isuzu Awarded Isuzu Dealer Excellence in 2017

Part of Achieving this prestigious award is the highest levels of Customer Satisfaction; South West Isuzu achieved this:

96% Approval for all customers combined including Sales, Service and Parts. South West Isuzu can deliver and this potential contract with DBCA will be no different.

Specified Personnel

Damon Sprigg

25 years' experience in selling, delivering, living, Isuzu Trucks.

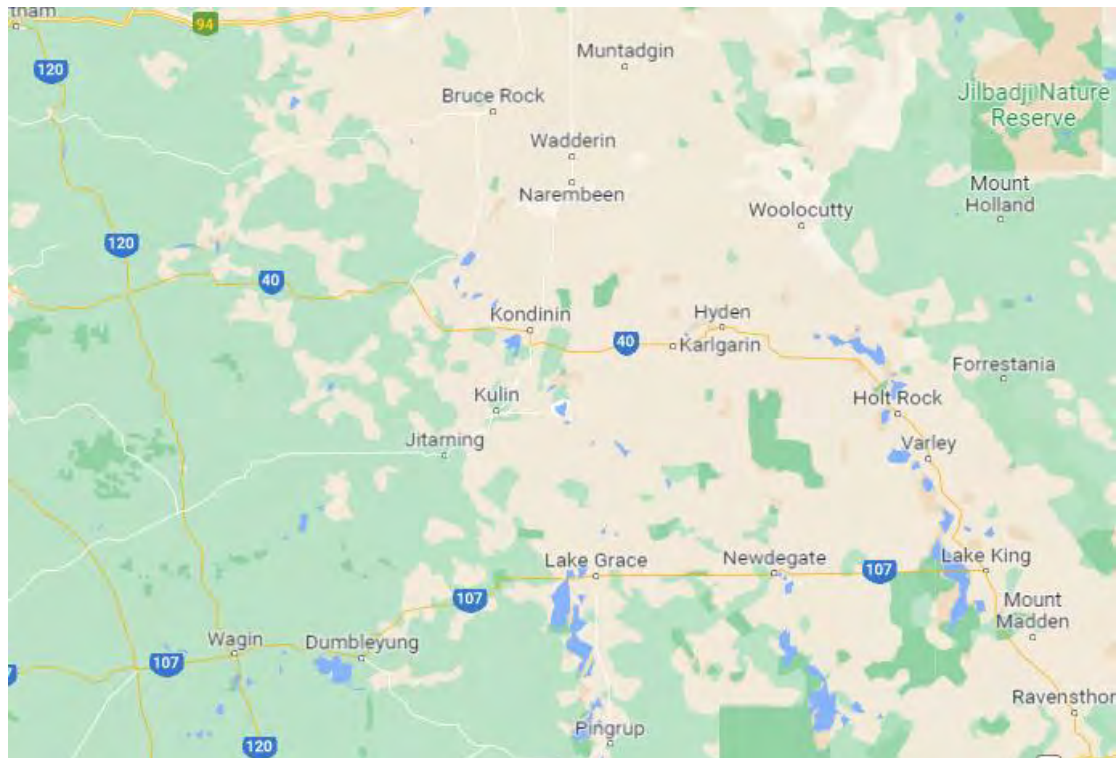


Damon Sprigg Team Elite Sales Manager 2017 – the only one in Western Australia.

“Local Benefit”

South West Isuzu look after a huge area which includes the Shire of Corrigin.

Our PMA covers down to Augusta in the South up to Northam just east of Perth and everywhere in between.



AUSROAD[®]
JETMASTER[®] TRUCKS

Quotation by:
Ausroad Manufacturing Pty Ltd
Acacia Ridge, QLD

to:
South West Isuzu
Picton, WA

RFT Title:
Supply & Delivery of Road Maintenance Unit

RFT Number: RFT 02-2022

for:
Shire of Corrigin
Corrigin, WA

Close date: 10 June 2022



TABLE OF CONTENTS

Letter of Introduction	Pages 1 - 2
Technical Summary	Page 3
<u>Section 1</u>	
Executive Summary	Page 4
AUSROAD Jetmaster advantages & benefits	Page 5
<u>Section 2</u>	
Council RFT Details <i>AUSROAD Response</i>	Pages 6 – 33
1. Conditions of Tendering	Pages 8 - 11
2. Specification	Pages 12 - 20
3. Tenderer's Offer	Pages 21 – 29
3.1 Form of Tender	Page 21
3.2 Selection Criteria	Pages 22 – 25
4. Project Reference Sheet	Page 26
5. Appendices	Pages 27 – 29
3.2.2 Qualitative Criteria <i>AUSROAD Response</i>	Pages 30 - 33
<u>Section 3</u>	
AUSROAD Jetmaster Specifications Overview	Page 34
Jetmaster Specifications	Pages 35 - 46
PTO, Compressor, Blower	Page 35
Hydraulic Equipment, Emulsion Systems	Pages 36 - 37
Pressurised Water Tank / Kero Tank	Page 37
Aggregate Hopper & Delivery System	Pages 37 - 38
Jetmaster Remote Control Delivery Boom	Pages 38 - 39
Jetmaster controls	Page 39
Cabin Control System	Page 40
ECOMAT Mobile Control System	Page 41
Paint & Venturi Distributor	Page 42
Aggregate Spreader	Pages 43 - 44
Spray Bar	Page 44
Multipurpose full width paving & edging attachment	Page 45
Road Broom	Page 46
AUSROAD Jetmaster unit, side & isometric views	Pages 47 - 50
AUSROAD Jetmaster unit, boom coverage diagram	Page 49
AUSROAD Jetmaster unit weight distribution diagram	Page 50
<u>Section 4</u>	
AUSROAD Jetmaster Standard Equipment	Page 51
AUSROAD Jetmaster Optional Equipment	Pages 52 - 56

Continued over...

Section 5

Additional Ausroad Information

Company Profile, Mission Statement, Quality Assurance	Pages 57 - 76
Meet some of our people	Page 57
Safety Features	Page 58
After Sales Service & Spare Parts	Page 59
Warranty	Page 60
Whole of Life Costs	Page 61
Training Program	Page 62
Ausroad Q & A	Page 63
Investing in Jetmaster technology	Pages 64 - 65
Recently commissioned AUSROAD Jetmaster Units	Pages 66 - 67
Summary of Operating Advantages	Pages 68 - 70
A great team with impressive experience	Page 71
Warranty & Guarantee	Page 71
Organisation Chart	Pages 72 - 73
Insurance Certificates of Currency	Page 74
	Pages 75 - 76

Section 6

Cab Chassis Manufacturer's Information

ISUZU FXZ 240-350 Auto Specifications	Pages 77 – 80
Organisational Capacity & Experience	Page 81
Relevant Experience	Pages 82 – 91
Local Benefit	Page 91



6m³ AUSROAD Jetmaster Road Maintenance Units
Muswellbrook Shire Council, Muswellbrook, NSW
RMS, Broken Hill, NSW



8th June 2022

Damon Sprigg
South West Isuzu
3 Giorgi Road
PICTON WA 6229



via email: disprigg@southwestisuzu.com.au

Dear Damon,

COMMERCIAL – IN - CONFIDENCE

RE: SHIRE OF CORRIGIN, CORRIGIN, WA
RFT Title: SUPPLY AND DELIVERY OF ROAD MAINTENANCE UNIT
RFT Number: RFT 02-2022

We have pleasure in offering South West Isuzu our quotation for the supply of:

One (1) only new **6m³ AUSROAD Jetmaster®** Road Maintenance Body complete with (but not limited to):

- PTO powered (Chelsea Hot-shift)
 - Jetmaster® fully hydraulic remote-control patching boom
 - 6m³ aggregate hopper capacity
 - 2000 litre emulsion tank
 - Aggregate Spreader / Spray Bar
 - Multipurpose full width paving & edging unit
 - Road Broom
 - Ecomat Control System.
- AUSROAD Standard & Optional Equipment as listed on pages 51 - 56.

Fitted to a new Isuzu FXZ 240-350 Cab Chassis with automatic transmission and wheel-base of approximately 4540mm* supplied by South West Isuzu. New cab chassis to be delivered to Ausroad Manufacturing in Acacia Ridge Brisbane, QLD. South West Isuzu to arrange transport back to their location.

Price is delivered to the Shire of Corrigin.

6m³ AUSROAD Jetmaster® body (PTO powered)	\$520,840.00**
Plus GST	\$52,424.00
Total (includes GST)	\$577,264.00

Price remains valid for 90 days.

Ausroad submission all as per:

- Council RFT Documents
Conditions of Tendering
Specification
Tenderer's Offer
Selection Criteria
Project Reference Sheet
Appendices
- AUSROAD Specifications
Additional Information

Delivery

Our current delivery time is 48 – 52 weeks subject to availability of the cab chassis and confirmation at time of ordering. These factors need to be taken into account regarding timing of order confirmation. Actual delivery date should be confirmed at time of ordering.

Registration

Registration costs **are not** included in quoted prices. These will be invoiced separately at cost to Council by Dealer.

Payment Terms

**Deposit of 30% of AUSROAD body price will be invoiced upon order and payable within 14 days to secure critical components at current pricing.

By placing your order, South West Isuzu accepts these payment terms, balance of payment due upon delivery. Ausroad will provide a tax invoice with EFT bank details for balance of payment at time of delivery.

Customer is responsible for the vehicle and its insurance once delivery has been made and possession of the unit taken (even if payment has not yet been made). Proof of insurance required prior to delivery.

Late Payment

Late payment will incur and additional 0.5% charge. A revised invoice will be issued if this occurs.

With regards



Matthew Sims
National Sales Manager
Ausroad Manufacturing Pty Ltd

 Local Government
PROCUREMENT
APPROVED CONTRACTOR



office ph: 07 3216 7058
e: matt@ausroad.com.au
m 0408 650 686

**Online training maybe required in place of on-site training due to travel restrictions. On-site training will be completed once travel restrictions are lifted.*

AUSROAD[®]

JETMASTER[®] TRUCKS

TECHNICAL SUMMARY

- High quality Australian built body
- 4mm high tensile steel plate hopper
- Self-tracking conveyor belt:
 - Joining link to enable easy installation.
 - Self-tracking eliminates the need for adjustment.
- Hot shift CHELSEA PTO
- ABAC B6000 Compressor, hydraulic driver (Parker Motor)
- EURUS MB 4509 Blower, variable speed hydraulic drive. 550-1000m³/hr
- Patented Venturi Distributor
 - Enables Jetmaster[®] to provide such high guaranteed production rates without excessive wear to the delivery system.
- Fully welded steel body construction
- Body will be:
 - Sand blasted to class 2.5
 - Under coated zinc etch primer
 - Top-coat 'white' two pack.
- Parker pumps
- GATES hydraulic hosing, minimum 3000 psi working pressure
- **Ecomat** control platform providing; job materials reports
machine fault diagnostics
flexible user interface



6m³ control remote AUSROAD Jetmaster[®] unit with aggregate spreader/spray bar, paving/edging attachment and road broom owned by Bega Valley Shire Council, NSW.

EXECUTIVE SUMMARY

6m³ AUSROAD Jetmaster® body

\$356,800.00

Plus Major Option (if selected per unit) pages 52 – 53.	Per Body (ex GST)
Water Spray bar mounted at front of truck (includes 240 litre capacity tank)	included
Road Broom	included
Aggregate Spreader / Spray Bar	included
Multipurpose full width paving & edging unit	included
Hydraulic Remote Outlet	\$4 465.00
Load Cells under hopper	\$8 630.00
Load Cells under emulsion tank	\$4 820.00
Automatic Greasing System	\$8 830.00
Heated spray tips on spray bar	included
Heated front nozzle emulsion ring	included
“Dragons Breath” LPG Burner mounted to front of boom	\$2 840.00

Plus Minor Options (if selected) pages 54 – 56.

Ausroad Benefits



- Fast service and backup support, refer page 60.
- Ausroad is an Australian owned and operated Company based in Brisbane, Queensland with extensive experience in Australian conditions.
- Versatile machine with ability to be customized to suit specific requirements of Council.
- Ausroad has 30 years of experience building road maintenance equipment.
- Proven Jetmaster process for handling emulsion and fluids to provide reliable unit with minimum downtime.

Quoted price includes;

- 2 days of Council Operators and Service Staff training by AUSROAD Trainer.
- AUSROAD Jetmaster® unit as per Council and AUSROAD specifications
- AUSROAD standard equipment as detailed on page 51.
- Workshop Maintenance Manual, Operators Manual, Spare Parts Manual (hard & electronic copies).
- 3 year product warranty & productivity guarantee, details pages 61, 72 – 73.
- AUSROAD staff are available at all times to discuss operational issues.



AUSROAD JETMASTER THE ULTIMATE ROAD REPAIR SYSTEM!

1. Easily remounted on future cab chassis

- PTO
- Wheelbase 4540mm ISUZU FXZ 240-350

*Wheelbase subject to final confirmation from Ausroad.

2. Remote boom - location / design

- Low straight delivery path – less wear on parts
- Less cantilevered forces on equipment
- Proven low maintenance design, no greasing of parts
- Compact smart design with very few moving parts.
- No interference with cab / tilt
- Proven durability
- Proven crash safety for head on impacts.

3. No tipping of hopper while spray sealing.

- Increased safety
- Increased visibility
- Lower centre of gravity at all times

4. Venturi (patented) delivery system

- No moving parts
- Very low maintenance
- Safe

5. Roller delivery from spreader box (optimiser)

- Simple accurate adjustment of spread rate
- Less wasted aggregate
- Spread rate will be calibrated on delivery with local materials

6. Control system (IFM)

- Proven robust IFM German control system
- Uses 'industrial quality' components
- Simplified fault finding (will self-diagnose faults)
- 'LEDS' at every connection
- 'Contactless' joystick, industrial design
- Flexible program giving operator material totals etc, for individual jobs.
- Download completed works information (optional)
 - time, date, materials used, area sealed
 - location
 - other fields available as required



Optional Load Cells under hopper and emulsion tank must be utilised to be able to have job data available



Request for Tender

Request for Tender:	Supply and Delivery of Road Maintenance Unit
Deadline:	Friday 10 June 2022 at 4.00pm
Address for Delivery:	tenders@corrigin.wa.gov.au
RFT Number:	RFT 02-2022

Table of Contents

1 Contents

1	Conditions of Tendering	3
1.1	Tender Documents.....	3
1.2	How to Prepare Your Tender.....	3
1.3	Contact Persons.....	3
1.4	Customs Duty.....	3
1.5	Lodgement of Tenders and Delivery Method	3
1.6	Rejection of Tenders	3
1.7	Late Tenders.....	4
1.8	Acceptance of Tenders	4
1.9	Disclosure of Contract Information.....	4
1.10	Tender Validity Period	4
1.11	Tenderers to Inform Themselves	4
1.12	Risk Assessment.....	4
1.13	Evaluation Process	5
1.14	Value Considerations.....	5
1.15	Regional Price Reference.....	6
1.16	Price Basis	6
1.17	Canvassing of Officials	6
2	Specification	7
2.1	Contract Requirements in Brief.....	7
2.2	Specifications	7
3	Tenderer's Offer	9
3.1	Form of Tender	9
3.2	Selection Criteria	10
3.2.1	Compliance Criteria.....	10
3.2.2	Qualitative Criteria.....	11
3.2.3	Price Information	12
3.2.4	Price Schedule	12
4	Project Reference Sheet	13
5	Appendices	14
5.1	Appendix 1 Regional Price Preference	14

1 Conditions of Tendering

1.1 Tender Documents

This Request for Tender is comprised of the following parts:

- Part 1 – Conditions of Tendering (*read and keep this part*).
- Part 2 – Specification (*read and keep this part*).
- Part 3 – Tenderer's Offer (*complete and return this part*).

1.2 How to Prepare Your Tender

Tenderers must:

- a) Carefully read all parts of this document.
- b) Ensure you understand the Requirements.
- c) Complete and return the Offer (Part 3) in all respects and include all attachments.
- d) Sign the Offer Form.
- e) Respond to all of the Selection Criteria.
- f) Lodge your Tender before the Deadline.

1.3 Contact Persons

Tenderers should not rely on any information provided by any person other than the person listed below:

Name:	Phil Burgess, Manager Works and Services
Telephone:	0429 632 203
Email:	works@corrigin.wa.gov.au
Name:	Terry Barron, Leading Hand – Roads and Civil
Telephone:	0447 137 749
Email:	roads@corrigin.wa.gov.au

1.4 Customs Duty

The Tenderer shall allow for any customs duty and primage applicable to all imported materials, plant and equipment required in connection with the works in its Tender.

1.5 Lodgement of Tenders and Delivery Method

The Tender must be lodged by **Friday 10 June 2022 at 4pm**.

The Tender is to be:

- a) emailed to tenders@corrigin.wa.gov.au

All pages must be numbered and the Tender must include supporting information such as brochures or pamphlets.

1.6 Rejection of Tenders

A Tender will be rejected without consideration of its merits in the event that:

- a) It is not submitted before the Deadline; or
- b) It is not submitted at the place specified in the Request; or
- c) It may be rejected if it fails to comply with any other requirements of the Request.

1.7 Late Tenders

Tenders received:

- a) After the Deadline; or
- b) In a place other than that stipulated in this Request

will not be accepted for evaluation.

1.8 Acceptance of Tenders

The Principal is not bound to accept the lowest Tender and may reject any or all Tenders submitted.

1.9 Disclosure of Contract Information

Documents and other information relevant to the contract may be disclosed when required by law under the *Freedom of Information Act 1992* or under a Court order.

All Tenderers will be given particulars of the successful Tenderer(s) or be advised that no Tender was accepted.

1.10 Tender Validity Period

All Tenders will remain valid and open for acceptance for a minimum period of ninety (90) days from the Deadline or forty-five (45) days from the Principal's resolution for determining the Tender, whichever is the later unless extended on mutual agreement between the Principal and the Tenderer in writing.

1.11 Tenderers to Inform Themselves

Tenderers will be deemed to have:

- a) examined the Request and any other information available in writing to Tenderers for the purpose of tendering;
- b) examined all further information relevant to the risks, contingencies, and other circumstances having an effect on their Tender which is obtainable by the making of reasonable enquires;
- c) satisfied themselves as to the correctness and sufficiency of their Tenders including tendered prices which will be deemed to cover the cost of complying with all the Conditions of Tendering and of all matters and things necessary for the due and proper performance and completion of the work described therein;
- d) acknowledged that the Principal may enter into negotiations with a chosen Tenderer and that negotiations are to be carried out in good faith; and
- e) satisfied themselves they have a full set of the Request documents and all relevant attachments.

1.12 Risk Assessment

The Principal may have access to and give consideration to:

- a) any risk assessment undertaken by any credit rating agency;
- b) any financial analytical assessment undertaken by any agency; and
- c) any information produced by the Bank, financial institution, or accountant of a Tenderer;

so as to assess that Tender and may consider such materials as tools in the Tender assessment process.

Tenderers may be required to undertake to provide to the Principal (or its nominated agent) upon request all such information as the Principal reasonably requires to satisfy itself that Tenderers are financially viable and have the financial capability to provide the Services for which they are submitting and to otherwise meet their obligations under any proposed Contract. The Principal reserves the right to engage (at its own cost) an independent financial assessor as a nominated agent to conduct financial assessments under conditions of strict confidentiality. For this assessment to be completed, a representative from the nominated agent may contact you concerning the financial information that you are required to provide.

The financial assessment is specifically for use by the Principal for the purpose of assessing Tenderers and will be treated as strictly confidential.

1.13 Evaluation Process

Tenders will be evaluated using information provided in your Tender.

The following evaluation methodology will be used in respect of this Request:

- a) Tenders are checked for completeness and compliance. Tenders that do not contain all information requested (eg completed Offer form and attachments) may be excluded from evaluation.
- b) Tenders are assessed against the Selection Criteria. Contract costs are evaluated, (eg tendered prices and other relevant whole of life costs are considered).
- c) The most suitable Tenderers may be short listed and may also be required to clarify their Tender, make a presentation, demonstrate the product/solution offered and/or open premises for inspection. Referees may also be contacted prior to the selection of the successful Tenderer.

A Contract may then be awarded to the Tenderer whose Tender is considered the most advantageous Tender to the Principal.

1.14 Value Considerations

Weighted Price Criteria

The Weighted Price method is used where price is considered to be crucial to the outcome of the contract. The price is then assessed with quality. Include any items that may affect any pricing outcomes (eg Regional Price Preference Policy).

Criteria	Weighting
Tendered Price	50%
Delivery Timeframe and Availability	10%
Operational Efficiency	15%
Breakdown and back up service	10%
Warranty Period	10%
Regional Price Preference	5%

1.15 Regional Price Reference

Tenderers for the contract may be afforded a preference in accordance with Regulation 24(A-G) of the *Local Government (Functions and General) Regulations 1996* and the Shire of Corrigin Regional Preference Policy adopted on 17 October 2017.

The Shire of Corrigin Regional Price Policy is attached in Appendix 1 and stipulates that a price preference will apply to suppliers who are based in, operate from or source goods or services from within the Shire Region in relation to all tenders invited by the Shire for the supply of goods, services and construction (building) services, unless the tender document specifically states prior to advertising of the tender that this policy does not apply.

The regional price preference enables tenders to be evaluated as if the proposed tender bid price were reduced in accordance with permitted price preferences as specified below in this policy. This policy will operate in conjunction with the purchasing considerations and procedures for tenders as outlined in the Shire's Purchasing Policy when evaluating and awarding tender contracts.

1.16 Price Basis

All prices for goods/services offered under this Request are to be fixed for the term of the Contract. Tendered prices **must include Goods and Services Tax (GST)**.

Unless otherwise indicated prices tendered must include delivery to Corrigin, Western Australia, unloading, packing, marking and all applicable levies, duties, taxes and charges. Any charge not stated in the Tender, as being additional will not be allowed as a charge for any transaction under any resultant Contract.

1.17 Canvassing of Officials

Canvassing of any of the Shire of Corrigin Officers or Councillors with a view to influencing the acceptance of any Tender may result in the Principal at its absolute discretion omitting the Tenderer from consideration..

2 Specification

2.1 Contract Requirements in Brief

The Shire of Corrigin seeks tenders for the supply of a new Road Maintenance Truck for efficient automated road maintenance including pot hole patching and edge repairs.

2.2 Specifications

Truck - Unit Isuzu or equivalent

1. Engine net power not less than 250Kw

Comply by Dealer.

2. Gross Combination Mass (GCM) not less than 45,000Kg

Comply by Dealer.

3. Auto Shift Transmission

Comply by Dealer.

4. Moulded Guards as part of body build

Comply by Ausroad.

5. Fully integrated air conditioning to cab

Comply by Dealer.

6. Air suspension seat with multiple adjustments.

Comply by Dealer.

7. Black Duck Canvas seat covers fitted.

Comply by Dealer.

8. *Shire of Corrigin* to be painted on both sides of the body (lettering at least 80mm)

Comply by Ausroad.

9. Radio/Bluetooth/Handsfree

Comply by Dealer.

10. UHF Radio (Latest GME) to be fitted to interior of cab with external antenna

Comply by Ausroad.

11. Tinted safety glass to be fitted to all cab glass panels to the maximum value allowed by WA regulations and Acts.

Comply by Dealer.

12. Power Windows

Comply by Dealer.

13. Heavy duty floor mats fitted

Comply by Dealer.

14. 2.5kg Fire extinguisher to be fitted inside cab

Comply by Dealer.

15. 9kg Fire extinguisher to be fitted outside of cab

Comply by Ausroad.

16. Powered and heated mirrors

Comply by Dealer.

17. Two (or a double) amber revolving beacon with guards for protection

Comply by Ausroad.

Four rotating flashing LED amber beacons (two front and two at rear) supplied as standard AUSROAD equipment. Additional LED strobe light on Jetmaster® boom.

18. Reversing camera / alarm system

Comply by Ausroad.

Rear-view camera and reverse alarm included.

19. Handrails to be fitted to the outside of the cab on the driver's and passenger side meeting SAE and ISO standards.

Comply by Dealer.

Standard ISUZU cab handrails included.

20. Tyres (full specification and options to be provided)

Comply by Dealer.

21. Spare rim and matching tyre with carrier to be supplied

Comply by Ausroad & Dealer.

22. Fitted quality mud flaps

Comply by Dealer.

23. Operator service, workshop and parts manuals to be supplied with the new unit

Comply by Dealer.

Maintenance Unit

1. Single joystick control (Interior, RH Side)

Comply by Ausroad.

2. Multi-function screen mounted to console.

Comply by Ausroad.

3. Pressurised water tank

Comply by Ausroad.

Aluminium water tank with a minimum capacity 240 litres and retractable hose reel for general cleaning and washing. Tap for hand washing.

4. Pressurised kerosene tank

Comply by Ausroad.

60 litre kerosene tank, plumbed into system for easy line flush.

5. Front boom not more than front bumper height.

Comply by Ausroad.

Remote control front delivery

The Jetmaster® aggregate delivery hose is mounted underneath the cab via the Jetmaster® fully hydraulic remote-control patching boom mounted at bumper bar height, in full clear vision of the operator.

Operation of the delivery boom is simple and placement of material is very accurate, so there is no need for a nozzle rotator / agitator. Heated front nozzle emulsion ring included.

Refer AUSROAD Jetmaster® specifications pages 38 – 39.

Patching boom is designed so that there is zero protrusion into oncoming traffic, refer diagram page 49 showing boom coverage.

Benefits of the Jetmaster® boom include:

1. **Less energy is required by taking aggregate in a more direct route under the cab.**
2. **Less wear on the aggregate delivery hose by taking the hose in a more direct route.**
3. **Clear visibility for the operator. No arm and delivery hose dangling down in front of wind screen.**
4. **Less moving parts giving more positive control of the boom by the operator.**
5. **Lower cab clearance enabling truck to pass under trees and other obstructions.**
6. **Mounting to chassis as per truck manufacturer's recommendations. (Approved by Isuzu and Hino Australia, Engineers)**
7. **The Jetmaster® boom has maintenance free bearings, slides on simple and effective UHMPE blocks and is built to withstand impacts. We have built over 300 of these assemblies over many years and have not had a single structural failure.**

8. ***The Jetmaster® remote control boom is designed with a low profile in mind. When stowed for travel it presents no sharp edges or protrusions. It is fitted with a beacon and reflective marking strips for high visibility while operating.***
9. ***Increased front impact strength.***

The remote control Jetmaster® boom:

- ***Strong construction with high quality fibreglass filled epoxy bearings.***
- ***Lower overall weight of boom allows greater payload.***
- ***No equipment suspended over cab.***
- ***No possibility of aggregate spraying over cab in event of hose failure.***
- ***More efficient material delivery path, less wear on hose.***



Jetmaster® boom fully retracted and stowed for safe travel between repair jobs.



Jetmaster® boom fully extended during repair job. Movement is restricted to the right for safety.

Refer also Q & A pages 64 – 65.

6. Heated emulsion tank not less 2000 litre

Comply by Ausroad.

Emulsion tank 2000 litre capacity and fully compliant with AS 1210. Usable approximately 1900 litres, stops emulsion getting into airlines. All pressure vessels are fitted with PRV, dump valves and pressure gauges as standard. Emulsion tank is fitted with inspection hatches and dipstick.

50mm female camlock fitted as standard or fitting to suit customer.

- ***240V overnight heating, included.***
- ***Equipment to enable filling emulsion tanks from 210 litre drums included.***

Optional

- ***Insulated tank cover, additional \$6 000.00 (ex GST), see page 55.***

7. Inline emulsion filter

Comply by Ausroad.

All Emulsion is filtered using an in-line emulsion filter.

8. Heated emulsion tank

Comply by Ausroad.

240V Overnight heating and Inline heat exchanger is supplied.

9. No less than 20m emulsion Hand Lance Kit (retractable)

Partial comply by Ausroad.

Self-retracting hose reel fitted with 10 metres of wire braided hose and a spray lance 2 metres long included.

10. Not less than 14mm stone flow

Comply by Ausroad.

Ausroad recommends using up to 10mm through the front nozzle and up to 14mm through the spreader box.

11. Aggregate spreader and spray bar

Comply by Ausroad.

Aggregate spreader

The aggregate spreader has 8 x 300mm wide gates for variable width spreading and is fully controlled from cab. Hydraulic side shift which allows the application of aggregate and emulsion outside the wheel track of the truck included.

The aggregate spreader / spray bar is controlled via the IFM Ecomat system, once the desired width and application (aggregate or emulsion or both) is selected then only one button is required to start and stop operation.

Whilst using the aggregate spreader the hopper does not have to be elevated, it remains fixed giving better vision, stability (important whilst sealing in hilly conditions, sharp corners and steeply cambered roads) and reduces the risk of hitting trees, signage etc particularly in 'built up' areas. Clearance is improved when sealing close to trees and buildings.

Refer AUSROAD Specifications pages 43 – 44.

Spray bar

2.4m wide. 8 nozzle spray bar allowed for. Nozzles are selected via ECOMAT system, spray rate application is automatic. Nozzles are controlled individually from the cab, these can be selected before or during application.

Height of spray bar is adjustable manually, not from cab. This height is set during commissioning and generally will not need to be adjusted.

Refer AUSROAD Specifications page 44.

12. Heated spray tips

Comply by Ausroad.

Heated spray tips on spray bar (heat nozzles to approximately 70C to remove blockages) included. Front nozzle includes hot water circulation system.

13. Heated front nozzle emulsion ring

Comply by Ausroad.

14. Multi-purpose full width paving and edging unit

Comply by Ausroad.

Multipurpose full width paving and edging unit

Multipurpose full width paving & edging unit included, refer pages 45 for full specifications.

Levelling board or 'screeder' is plastic, 2400 x 200 x 25mm

15. Auto broom

Comply by Ausroad.

Road broom

'Drum' type broom supplied, diameter 380mm, length 1000mm, mounted on left rear side of unit. Operation from cab, will sweep approximately 900mm wide from left side of unit.

Includes water dust suppression via water spray jets that operate automatically while sweeping. Refer AUSROAD Specifications page 46.

16. Auto pave

N/A

17. Full width water spray bar

Comply by Ausroad.

18. Heated hoses

Comply by Ausroad.

Heated hose on front nozzle.

19. No less than 1 hand washing water tank

Comply by Ausroad.

20. Spray suppression (Front and Rear)

Comply by Ausroad and Dealer.

21. Vacuum loading kit

Comply by Ausroad.

Equipment to enable filling emulsion tanks from 210 litre drums included. Drain plug on spray bar to allow collection of emulsion when cleaning.

22. Air blower

Comply by Dealer.

24. Front nozzle hotshot kit

Comply by Ausroad.

Heated front nozzle.

25. Sign patrol

Comply by Ausroad.

Cab roof mounted patrol sign 1200 x 600 double sided, heavy duty, electric raise and lower from cab. Rotating LED / amber beacon each side.

26. Sign storage rack

Comply by Ausroad.

Vertical sign rack designed for easy access and capable of holding road signs. Positioned between cab and emulsion tank, refer diagram pages 47 – 50.

27. Rear mounted camera

Comply by Ausroad.

BRIGADE' LCD Screen (heavy duty) and one camera (rear vision) fitted and supplied by AUSROAD, extra cameras available on request.

Delivery and Handover

Tender price is to include delivery to the Shire of Corrigin Depot, Walton Street, Corrigin, WA.

1. Onsite Handover

Included in AUSROAD Training.

2. Training on operation and servicing to be provided following delivery

AUSROAD Trainer will work alongside the requirements of Council and provide a guided program of theoretical and practical training over two days, or until operators can operate unit safely and with confidence. Refer page 63 for details of AUSROAD training program.

3. Full Road Maintenance Unit specifications

Refer AUSROAD:

- **Technical Summary page 3.**
- **Features & Benefits page 5.**
- **Specifications & Diagrams pages 34 – 50.**
- **Standard & Optional Equipment pages 51 – 56.**

Refer ISUZU:

- **Manufacturers Specifications pages 77 – 80.**

3 Tenderer's Offer

3.1 Form of Tender

The Chief Executive Officer
Shire of Corrigin
PO Box 221
CORRIGIN WA 6375

I/We (Registered Entity Name): South West Isuzu
(BLOCK LETTERS)
of 3 Giorgi Road, Picton WA 6229
(REGISTERED STREET ADDRESS)

ABN 65 730 475 316 ACN (if any) 008 996 174

Telephone No: (08)9724 8444

E-mail: disprigg@southwestisuzu.com.au

In response to Request for Tender RFT02/2022 Supply of New Road Maintenance Unit


I/We agree that I am/We are bound by and will comply with this Request and its associated schedules, attachments, all in accordance with the Conditions contained in this Request signed and completed.

The tendered price is valid up to ninety (90) calendar days from the date of the tender closing or forty-five (45) days from the Council's resolution for determining the Tender, whichever is the later unless extended on mutual agreement between the Principal and the Tenderer in writing.

I/We agree that there will be no cost payable by the Principal towards the preparation or submission of this Response irrespective of its outcome.

The consideration is as provided in the prices disclosed in the prescribed format and submitted with this Tender.

Dated this 10th day of June 2022

Signature of authorised signatory of Tenderer: 

Name of authorised signatory (BLOCK LETTERS): DAMON SPRIGG

Position: Sales Manager

3.2 Selection Criteria

3.2.1 Compliance Criteria

Please select with a Yes or No whether you have complied with the following compliance criteria:

Description of Compliance Criteria	
a) Tenderers are to provide acknowledgment that your organisation has submitted in accordance with the Conditions of Tender including completion of the Offer Form and provision of your pricing submitted in the format required by the Principal.	Yes / No
b) Compliance with the Specification contained in the Request.	Yes / No
c) Delivery date specified	Yes / No
<p>d) Risk Assessment Tenderers must address the following information in an attachment and label it Risk Assessment</p> <p>i) An outline of your organisational structure inclusive of any branches and number of personnel. Refer 'Organisation Chart' page 74.</p> <p>ii) Provide the organisation's directors/company owners and any other positions held with other organisations.</p> <p>iii) Provide a summary of the number of years your organisation has been in business. The Ausroad Group manufacturing arm has conducted business for some 30 years. Recently the group has undertaken a strategic re-structure to ensure it is best positioned to move forward as a business - which includes the continued high standard of service to its clients. This re-structure has not incorporated any changes to company operational personnel and or ultimate owners. Going forward, the manufacturing arm of the group will be operated by Ausroad Manufacturing Pty Ltd (ABN 90 602 766 530), Ausroad Systems Pty Ltd (ABN 61 097 151 445) will be transitioned out over a period of time.</p> <p>iv) Attach details of your referees. You should give examples of work provided for your referees where possible. Refer 'Recently Commissioned' pages 68 – 70.</p>	<p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p> <p>Yes / No</p>

Part 3 COMPLETE AND RETURN THIS PART

<p>v) Are you currently engaged in litigation as a result of which you may be liable for \$50,000 or more? If Yes please provide details.</p>	<p>Yes / No</p>
<p>vi) Are you presently able to pay all your debts in full as and when they fall due?</p>	<p>Yes / No</p>
<p>vii) Will any actual or potential conflict of interest in the performance of your obligations under the Contract exist if you are awarded the Contract? If Yes, please supply in an attachment details of any actual or potential conflict of interest and the way in which any conflict will be dealt with.</p>	<p>Yes / No</p>
<p>viii) Tenderers are to supply evidence of their insurance coverage including, insurer, expiry date, value and type of insurance. A copy of the Certificate of Currency is to be provided to the Principal within 30 days of acceptance.</p> <p>Refer attached 'Certificate of Currencies for Workcover & Public and Products Liability Insurance' pages 75 – 76.</p>	<p>Yes / No</p>

3.2.2 Qualitative Criteria

Before responding to the following qualitative criteria, Tenderers must note the following:

- a) All information relevant to your answers to each criterion are to be contained within your Tender;
- b) Tenderers are to assume that the Evaluation Panel has no previous knowledge of your organisation, its activities or experience;
- c) Tenderers are to provide full details for any claims, statements or examples used to address the qualitative criteria; and
- d) Tenderers are to address each issue outlined within a qualitative criterion.

<p>A. Tendered Price Tenderers must complete the Pricing Schedule at xx below.</p>	<p>Weighting 50%</p>	
<p>B. Delivery Timeframe and Availability Tenderers must address the following information in an attachment and label it Delivery Timeframe and Availability:</p>	<p>Weighting 10%</p>	
<p>Tenderer to demonstrate:</p> <ol style="list-style-type: none"> a) Availability and Delivery to Shire of Corrigin Depot will be within a timely manner. b) Timeline/Schedule of extras on the vehicle to be carried out e.g. tinting, fitting of accessories. 	<p>Delivery Timeframe and Availability</p>	<p>Tick if attached <input checked="" type="checkbox"/> Refer page 30.</p>
<p>C. Operational Efficiency Tenderers must address the following information in an attachment and label it Operational Efficiency:</p>	<p>Weighting 15%</p>	
<p>Tenderer to demonstrate the capability and efficiency of the machine.</p>	<p>Operational Efficiency</p>	<p>Tick if attached <input checked="" type="checkbox"/> Refer page 30.</p>
<p>D. Breakdown and Back Up Service Tenderers must address the following information in an attachment and label it Breakdown and Back Up Service:</p>	<p>Weighting 10%</p>	
<p>Tenderer to demonstrate:</p> <ol style="list-style-type: none"> a) Quality and standard of service b) Timeliness of service (productivity) c) Any other issues or matters which will maximise the benefit of the machine 	<p>Breakdown and Back Up Service</p>	<p>Tick if attached <input checked="" type="checkbox"/> Refer pages 31 – 32.</p>
<p>E. Warranty Period Tenderers must address the following information in an attachment and label it Warranty Period:</p>	<p>Weighting 10%</p>	
<p>Tenderer to demonstrate</p> <ol style="list-style-type: none"> a) Ability to provide excellent warranty and extended warranty b) Evidence of warranty coverage period, specifications and conditions 	<p>Warranty Period</p>	<p>Tick if attached <input checked="" type="checkbox"/> Refer page 33.</p>
<p>F. Regional Price Preference A price preference for businesses based in the Shire of Corrigin.</p>	<p>Weighting 5%</p>	

Part 3 COMPLETE AND RETURN THIS PART

a) Evidence of business based in region as per Regional Price Preference Policy.	Regional Organisation	Tick if attached <input checked="" type="checkbox"/> Refer page 33.
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3.2.3 Price Information

Tenderers must complete the following Price Schedule. Before completing the Price Schedule, Tenderers should ensure they have read this entire Request.

3.2.4 Price Schedule

Tenderers must complete the entire following price schedule.

Item	Cost (ex GST)	GST	Cost (inc GST)
Base Model 2022 Isuzu Truck	\$152,520.00	\$15,252.00	\$167,772.00
Extras as per specification	\$7,920.00	\$792.00	\$8,712.00
Registration and on road costs	\$600.00	\$0.00	\$600.00
Maintenance unit fitted as per specifications	\$356,800.00	\$35,680.00	\$392,480.00
Delivery to Shire of Corrigin	\$7,000.00	\$700.00	\$7,700.00
Total Cost to Supply and Deliver New Road Maintenance Unit as per specifications	\$524,840.00	\$52,424.00	\$577,264.00

4 Project Reference Sheet

Complete the following details and submit with your Tender labelled as **Project Reference Sheet**.

Customer	Date	Value (approx.)	Referees Name	Telephone Number
<i>Kempsey Shire Council</i>	<i>2021 – 2022</i>	<i>\$500+</i>	<i>Garick Cahill</i>	<i>0427 490 803</i>
<i>Gympie Regional Council</i>	<i>2021 – 2022</i>	<i>\$500+</i>	<i>Clint Wood</i>	<i>0400 695 370</i>
<i>Towong Shire Council</i>	<i>2021 – 2022</i>	<i>\$500+</i>	<i>Dolf Abbruzzese</i>	<i>0428 762 012</i>
<i>Dubbo Regional Council</i>	<i>2021 – 2022</i>	<i>\$500+</i>	<i>Daniel Peterson</i>	<i>0408 634 870</i>

5 Appendices

5.1 Appendix 1 Regional Price Preference

Policy Owner: Corporate and Community Services
Person Responsible: Deputy Chief Executive Officer, Manager Finance
Date of Approval: 21 June 2016
Amended: 17 October 2017

Objective: To stimulate economic activity and growth in the Shire by maximising the use of competitive local businesses in supplying goods, services and works purchased or contracted on behalf of the Shire of Corrigin (the 'Shire').

Legislative Requirements: This policy sets out the requirements that must be complied with by the Shire for the implementation and application of a regional price preference when purchasing goods and/or services through a tender process. The policy is compliant with the *Local Government (Functions and General) Regulations 1996*, as the relevant legislation.

Policy: A price preference will apply to suppliers who are based in, operate from or source goods or services from within the Shire Region in relation to all tenders invited by the Shire for the supply of goods, services and construction (building) services, unless the tender document specifically states prior to advertising of the tender that this policy does not apply.

The regional price preference enables tenders to be evaluated as if the proposed tender bid price were reduced in accordance with permitted price preferences as specified below in this policy. This policy will operate in conjunction with the purchasing considerations and procedures for tenders as outlined in the Shire's 'Purchasing Policy' when evaluating and awarding tender contracts.

Qualifying Criteria:

Regional Tenderer

A supplier of goods or services who submits a tender is regarded as being a regional tenderer if:

- a) that supplier has been operating a business continuously out of premises in the Region for at least six months before the time after which further tenders cannot be submitted. This is further defined as follows and the supplier will be required to meet all of these criteria:
 - i. the supplier to have a physical business premises (in the form of an office, depot, shop, outlet, headquarters or other premises where goods or services are being supplied from), located in the Region. This does not exclude suppliers whose registered business is located outside the Region but undertake the business from premises located in the Region;
 - ii. the physical location of the business premises in the Region has been operating on an ongoing basis for more than six months prior to the closing date for the tender;
 - iii. a business having permanent staff that are based at the business premises located in the Region;

iv. management or delivery of the majority of the tendered outcomes will be carried out from the business premises located in the Region; and
v. the business being registered or licensed in Western Australia; or

- b) some or all of the goods or services are to be supplied from regional sources. Goods and/or services that form a part of a tender submitted may be wholly supplied from regional sources; or partly supplied from regional sources, and partly supplied from non-regional sources. Only those goods or services identified in the tender as being from regional sources may be included in the discounted calculations that form a part of the assessments of a tender when the regional price preference policy is in operation.

In order for the policy to apply, the tenderer is required to provide to the Shire written evidence within the tender submission which demonstrates compliance with the above criteria. Tenderers who claim that they will use goods, materials or services supplied from regional sources in the delivery of the contract outcomes will be required, as part of the contract conditions, to demonstrate that they have actually used them.

Regional Price Preference Categories

The following levels of regional price preference will be applied (where relevant) to tenders received from a regional tenderer, as outlined above under this policy:

- ***Where the contract is for goods and services:*** Up to a 10% price preference (to a maximum price reduction of \$50,000 excluding GST) where goods and services are sourced from within the Shire Region.
- ***Where the contract is for construction (building) services:*** Up to a 5% price preference (up to a maximum price reduction of \$50,000 excluding GST) where construction (building) services are sourced from within the Shire Region.
- *Where the contract is for goods or services (including construction (building) services), if the Shire is seeking tenders for the provision of those goods or services for the first time, due to those goods or services having been, until then, undertaken by the Shire:*

Up to 5% price preference (up to a maximum price reduction of \$200,000 excluding GST) where goods or services (including construction (building) services) are sourced from within the Shire Region

Competitive Purchasing

Whilst price is a competitive consideration in the provision of goods and/or services via tender, it is only one aspect of the tender evaluation process. Value for money principles, as described within the Shire's 'Purchasing Policy', will be employed by assessing the price component in conjunction with the tender selection criteria and requirements in order to determine value for money. The tender offering the lowest price may not necessarily be successful.

Terminology

Construction (building) services: is defined as the construction of and improvement to buildings (including housing) on or over any area of land, lake, river or ocean and any services related to that activity in the Shire Region.

Goods: include tangible, quantifiable material requirements usually capable of being moved or transported that are purchased, rented, leased or hired by the Shire.

Region: for the purposes of this policy the Region is specified as the entire geographical area encompassed within the boundaries of the Shire of Corrigin.

Services: means any task, consultancy, work or advice to be performed or provided that is procured by the Shire. Included are services such as management consultancies, outsourcing, maintenance contract/agreement, cleaning, waste removal, equipment repairs, external auditors, utilities and services, public infrastructure construction and repair etc.

3.2.2. Qualitative Criteria

B. Delivery Timeframe and Availability

Tenderer to demonstrate:

- a) Availability and Delivery to Shire of Corrigin Depot will be within a timely manner.

Our current delivery time is 48 – 52 weeks subject to availability of the cab chassis and confirmation at time of ordering. These factors need to be taken into account regarding timing of order confirmation. Actual delivery date should be confirmed at time of ordering.

- b) Timeline/Schedule of extras on the vehicle to be carried out e.g. tinting, fitting of accessories.

Two days at South West Isuzu, Picton, WA.

C. Operational Efficiency

Tenderer to demonstrate the capability and efficiency of the machine.

The Jetpatching system works on the principle of moving aggregate with large volumes of low pressure air and moving emulsion with higher pressure air. When these two low cost materials are combined a strong flexible and durable repair is produced.

The Jetmaster's efficiency is second to none, high production rates and less down time result in the highest efficiency in the industry. AUSROAD Jetmaster® Units have no moving parts within the delivery system resulting in low maintenance costs and less down time.

AUSROAD Jetmaster® units are specifically designed for efficient road maintenance. The machine can accomplish a wide variety of tasks in minimum time. These include;

- ***potholes***
- ***edge breaks***
- ***road depressions***
- ***wheel path ruts***
- ***crocodile crack repairing***
- ***digouts***
- ***speed bumps***
- ***spoon drains***
- ***culverts***
- ***spray sealing is able to be carried out in one pass with the aggregate spreader / spray bar (included)***
- ***Multipurpose full width paving & edging unit (included)***
This system is very useful when repairing shoulders or depressions that are continuous in nature. Allows paving up to 2.4m wide.

AUSROAD Jetmaster® units can put through 12 cubic metres per day, equivalent to a 3km long, 500mm wide single coat strip seal, assuming no travel.

Operators of AUSROAD™ Jetmaster® remote control units are commonly laying 6 to 9m³ of aggregate per day, equivalent to 14 to 21 tonnes of hot mix per day.

D. Breakdown and Back-up Service

Tenderer to demonstrate:

- a) Quality and standard of service

Ausroad prides itself on a providing a superior quality well built road maintenance unit and first-rate support services.

AUSROAD manufactures the AUSROAD Jetmaster Road Maintenance machines in its Acacia Ridge, Brisbane workshop and offers:

- ***Full parts distribution service from Acacia Ridge, Brisbane.***
- ***Technical backup and support service (as Ausroad designs and builds all our own equipment we are well placed to provide in-depth technical advice).***
- ***A limited 3 year warranty***

The majority of AUSROAD'S customers are located Australia wide, we have almost 30 years' experience servicing and maintaining relationships with our valued customers.

Refer also South West Isuzu Corporate Information pages 81 – 92.

- b) Timeliness of service (productivity)

We understand the cost associated with downtime (as we run our own fleet of AUSROAD Jetmaster Road Maintenance Units) and actively work to minimise this for our clients. Normal hours of operation 7.00am to 4.30pm Monday to Thursday, 7.00am to 4.00pm Friday. Our skilled technicians are available at all times during business hours for advice. Manager is available via mobile phone outside of normal operating hours.

All parts for the AUSROAD Units are held in the AUSROAD Parts Store in Brisbane. A call to Owners will confirm the follow up and liaison of a small but responsible team that AUSROAD provides to clients as part of their continued and ongoing service. Ausroad provides an organised and friendly ongoing service. We are keen to maintain our record of exceptional service.

Servicing generally takes place at Customers location, if necessary AUSROAD will engage local services to carry out service and / or warranty work, if specialised service is required AUSROAD staff will travel to customer's location to undertake service and repair work.

KEY BENEFITS

- **Free After Sales Service**
Ausroad provides life-time technical support free of charge and maintain full parts inventory in Brisbane. (as Ausroad designs and builds all our own equipment we are well placed to provide in-depth technical advice).
- ***The majority of AUSROAD'S customers are located Australia wide, we have 30 years' experience servicing and maintaining relationships with our valued customers.***

- ***Our National Sales Manager travels interstate to new and existing customers on a regular basis.***
- ***AUSROAD units are designed to have minimum moving parts to reduce wear and possible breakdown.***
- ***Maintenance of the AUSROAD Jetmaster body is generally carried out by Council staff, maintenance training is included in AUSROAD'S 2 day induction training program at time of delivery.***
- ***Operators are required to complete AUSROAD training, which includes a short test covering operation, safety issues and material handling.***
- ***We take our responsibility as an equipment manufacturer seriously and work to provide a safe and efficient road maintenance machine.***

Refer also South West Isuzu Corporate Information pages 81 – 92.

- c) Any other issues or matters which will maximise the benefit of the machine

We develop and apply new technology right here in Australia to ensure we provide the world's safest and most efficient road maintenance machines. New and existing customers benefit from our dedicated and experienced team.

AUSROAD provides reliable, economical road maintenance equipment solutions by:

- ***Utilising the latest technology***
- ***Applying advanced engineering design and manufacture***
- ***Promoting innovative research and development***

With a commitment to excellent customer service, whilst increasing company growth, reputation and quality.

The Jetpatching system works on the principle of moving aggregate with large volumes of low pressure air and moving emulsion with higher pressure air. When these two low cost materials are combined a strong flexible and durable repair is produced.

Longer lasting and better looking repairs

Single layer compaction from jet air propelled material from the bottom up achieves much better void penetration and a higher density and compaction than rolled asphalt where compaction is carried out from the top down. This produces patches which not only look better but last longer than traditional patching methods.

No material wastage

No wastage with Jetmaster as just the right amount of material is prepared for the repair work. 'Plant Mix' materials used in traditional repair methods are often below standard when working away from base plant and wastage is a major problem with traditional methods.

E. Warranty Period

Tenderer to demonstrate

- a) Ability to provide excellent warranty and extended warranty

Warranty extension on Jetmaster body & Isuzu cab chassis not applicable.

- b) Evidence of warranty coverage period, specifications and conditions

AUSROAD:

Standard: 3 years, refer pages 61 & 72 for details & conditions.

AUSROAD will if necessary engage local services to carry out warranty work. If specialized service is required AUSROAD staff will travel to Corrigin, WA to undertake repairs.

ISUZU:

Standard: 6 years, 600 000km / 10000 hours

F. Regional Price Preference

- a) Evidence of business based in region as per Regional Price Preference Policy.

Ausroad Manufacturing sources cab chassis from Local Dealers, in this case Southwest Isuzu, Picton, WA. AUSROAD Jetmaster Road Maintenance body is assembled and built in AUSROAD's Brisbane (Acacia Ridge) workshop using Australian labour, all components are sourced within Australia.

AUSROAD Road Maintenance units are generally serviced by either Council or Local businesses within the area that they operate, AUSROAD staff will travel and stay at Customers location during commissioning of equipment.

ISUZU: refer 'Local Benefits' page 92.

AUSROAD[®]

JETMASTER[®] TRUCKS

AUSROAD SPECIFICATION OVERVIEW HIGH PERFORMANCE JETMASTER[®] ROAD MAINTENANCE MACHINE

The high-performance truck mounted AUSROAD Jetmaster[®] road maintenance machine is designed for street and road maintenance. The AUSROAD Jetmaster[®] Unit repairs broken edges and other sealed road surface damage and has an aggregate hopper capacity of 6m³.

The AUSROAD Jetmaster[®] road maintenance machine is capable of:

- (a) Cleaning the area to be sealed with **high volume air**
- (b) Supplying a tack coat of aggregate and emulsion to the area completely and evenly.
- (c) Compacting the applied aggregate into the depression with air velocity.
- (d) Applying a coat of clean aggregate to the finished surface.
- (e) **Remote control operation (INCLUDED)**
All of the above operations are capable of being performed by remote control from the cab by the truck driver with the delivery hose suspended out in front of the cab at in full vision of the operator/driver
- (f) **Spreader box / spray bar (INCLUDED)**
Applying up to 2400mm wide emulsion spray via a spray bar and up to 2400mm wide application of aggregate via a spreader box. Aggregate and emulsion are able to be applied both in one pass **or** in separate passes and are fully operated from the cab. The ability to change width of application from the cab whilst operating (8 x 300mm gates)
- (g) **Paving unit bar (INCLUDED)**
Apply varied widths of paving in a single pass up to 75mm in depth which is graded level with the existing road surface, via spreader box / spray bar and screeder. Rebuilding failed edges and pavement with continuously mixed aggregate and emulsion.
- (i) **Road broom (INCLUDED)**
Prepare road shoulders for repair or clearing traffic lanes of loose material. Drum style broom, in cab operation, able to sweep 1000mm wide, mounted on left rear of truck.



6m³ AUSROAD Jetmaster[®] road maintenance unit with Jetmaster[®] remote control boom, owned & operated by District Council of Copper Coast, SA.



SPECIFICATIONS DETAILS

AUSROAD JETMASTER® UNIT POWERED BY PTO VIA TRUCK ENGINE

- PTO CHELSEA
- Parker load sensing piston pumps

COMPRESSOR

ABAC B6000 Drive via hydraulic motor (Parker)

- A charge tank is fitted to ensure maintenance of pressure while spray sealing.

BLOWER

High volume low pressure EURUS MB 4509, 200- 480 CFM Blower;

- Running between 1800 and 2600 RPM delivering up to 480 C.F.M
- Fitted with air cleaner.
- Max 15 PSI.
- Hydraulic proportional drive (Parker)

Due to the unrestricted flow of air down the delivery hose, all the pressure generated by the blower is converted to kinetic energy, ie velocity of air. Unless there is a restriction, the resultant pressure will be close to zero, but the velocity and volume will be high.

The Venturi used by AUSROAD will draw in air equivalent to 60% of the blower capacity while "hole clearing".

The AUSROAD Jetmaster® blower is rated at 400 cfm at the revs used during clearing. With the additional venturi air, the total flow is 660 cfm or 18 cubic metres per minute. The resultant airflow at the nozzle is 50 metres per second.

During patching the stone dropping into the venturi reduces the amount of air drawn into the venturi, and therefore reduces the velocity at the nozzle by about 50% to 25 m /sec. This is important as a velocity significantly above this will cause the new patch to be "blown away" during patching.

HYDRAULIC EQUIPMENT

Hydraulic Pump

- Parker VP1 x 2 Load Sensor Piston Pump

Hydraulic tank

- Capacity: 200 litres with integral filters with Hydraulic Driven system.

Hydraulic Filters

- Pressure Line Filter – HYDAC 0030-D-010
- Return Line Filter – OMTF 200-10

Hydraulic Motors

- Parker

The AUSROAD Jetmaster® hydraulic system is powered via two variable displacement piston pumps, PTO driven via the Alison gearbox.

Hydraulic manifold and valves are supplied by Southcott Hydraulics, branches Australia wide.

Hydraulic Oil Cooler

- Temperature controlled Hydac Cooler
- High volume
- Fan forced cooling

EMULSION SYSTEMS

Pressurized emulsion tanks. Volume capacity nominal 2000 litres

- Vessels are built to AS 1210 1997 standards.
- Fitted with doubling pads and are stress relieved to Class 2B requirements for transportable vehicles.
- All pressurized emulsion tanks have independent safety relief valves and pressure gauges. This is separate from the regulator and gauge that is used to set pressure.
- Working pressure is 40psi with safety set at 80psi.
- All pressure tanks have non-return valves to eliminate backflow.

Emulsion Filling

- Filling the emulsion tank is quick and efficient via **female 2"** camlock.
- All operations from ground level.
- Self-contained equipment to allow filling from 210 litre drums included.

Heating of emulsion

Inline Heating (from emulsion tank to nozzle)

- Emulsion is heated via inline stainless-steel heat exchanger utilizing hot water from the truck heater system.

Overnight heating (within emulsion tank)

- 240V overnight heating included, includes IP65 control panel with ON / OFF switch, 3 pin plug socket (male) and earth leakage circuit breaker.
- **OPTIONAL** insulated tank cover, refer page 55, (additional \$6 000.00 ex GST).

Details of cleaning emulsion tank and distributing system.

- The emulsion tank has dump valves for cleaning out old emulsion/kerosene. Tanks are cleaned using kerosene, pressurizing tanks and blowing through emulsion line to nozzle.
- The AUSROAD Jetmaster machine is designed to allow cleaning and / or preheating of emulsion lines with pressurized kerosene, water and / or air via control manifold at any time. Cleaning of venturi distributor and delivery hose is fast and easy with the unit's own water.

PRESSURIZED WATER TANK / KERO TANK

Kero tank

- capacity 60 litres.
- working pressure of 40 PSI

Aluminium water tank with a minimum capacity 240 litres

- Built to AS 1210 standards as required.
- Working pressure 40 PSI incorporating safety valves.
- A retractable water hose reel is included with each machine. This enables the operators to quickly clean the truck and delivery system at the end of the day.
- A tap is included for hand washing.

AGGREGATE HOPPER AND DELIVERY SYSTEM

From the hopper the aggregate is carried by:

- Self-tracking conveyor belt feeding to polyurethane long-life belt.
- Fully pneumatic Jet-distributor (venturi principle) feeding to,
- 88mm ID specially made rubber lined flexible delivery hose,
- to nozzle

(a) Aggregate hopper - 4mm steel

- RHS welded to the top of the hopper to withstand knocks to hopper from loaders.
- Hopper size / aggregate capacity as quoted with self-tracking conveyor belt - adjustable at both ends.
- Hopper V shaped fitted with load carriers, designed to minimize weight on conveyor belt.

(b) Self tracking aggregate conveyor belt

- The self-tracking conveyor belt eliminates the need for adjustment.
- Operates in conjunction with self-tracking nylon sprockets.
- Instant stop for the conveyor at distributor feed in the unlikely event of an emergency.
- The belt has a joining link to enable easy installation.

(c) Jet-distributor (patented venturi principle)

- Uses specific lengths and diameters and utilises variable engine and conveyor speed to deliver the required amount of aggregate volume for the particular repair.
- It has no moving parts and only one adjustment that is pre-set before delivery.
- The venturi is made from tool steel and has a grill to prevent large rocks or debris causing blockage.

(d) Hose type and diameter

- Aggregate hose 88mm I.D specially manufactured flexible natural rubber.
- Oil petrol and emulsion resistant.
- These hoses are hand made specifically for AUSROAD Jetmaster® Units.

(e) Nozzle details including spray system.

- Emulsion is delivered via 'hydraulic line' to spray nozzle
- Emulsion is injected into spray ring which atomizes emulsion and coats aggregate as it passed through nozzle.
- Control is fully remote via on/off button integrated into joystick control in cab
- The nozzle assembly has four components.
- Heated front nozzle emulsion ring.

PATCHING BOOM

- The remotely controlled *Jetmaster* delivery boom is mounted at "bumper bar" height giving a considerable saving in energy (by eliminating the need to carry the aggregate and emulsion over the truck cab). Overall weight is reduced resulting in greater payload.
- The AUSROAD Jetmaster® unit with the remote control *Jetmaster* boom is the only unit available that incorporates an 'under the cab' delivery system, this eliminates the suspended over the cab boom design. Overall results are;
- Lower profile
- Cleaner design
- Straighter delivery path
- Improved efficiency
- Safer driving when not patching
- Eliminates the possibility of damaging equipment on overhanging object, ie trees, high signage etc.



Patching Boom fully retracted for travel.



Example of Patching Boom position during operation.

The boom has three components.

1. A three quarter width arm
 2. A full width arm
 3. Plus an extension to the full width arm giving an overall working radius of approx 4 metres.
See diagram page 49 of boom coverage.
- All of the booms movements are powered and controlled by hydraulics including the raising and lowering.
 - The controls are located in the cab to the right of the driver/operator on operator's armrest giving him full control of the arm via a joystick. Operation of the delivery boom is simple and placement of material is very accurate



Movements of the boom

The telescopic boom can be angled **"up and down"** plus moved from **"side to side"** as well as **"in and out"**.

The nozzle can be **"angled to left or right"** to blow across ground.



Controls



Joystick located in the cab to the right of the driver/operator giving operator full control of the arm via integrated switches. Arm rests on an ergonomically designed arm rest.

AUSROAD Jetmaster® joystick control, arm rests on an ergonomically designed arm rest.

Cabin Control System

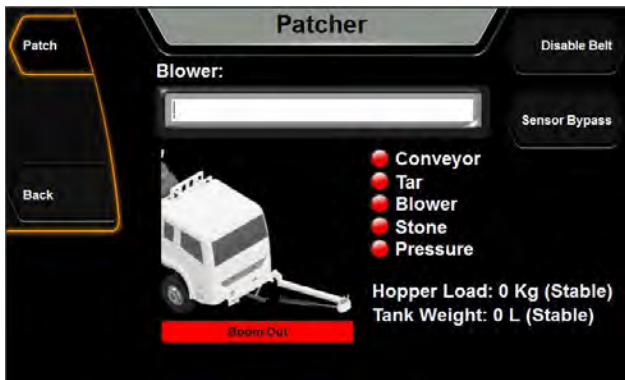


Our **Ecomat** control system has been developed in conjunction with Whitelaw and IFM. The major advantage from the operator’s point of view is at the interface in the cab.

The operator has a ‘multi-function’ screen mounted on a console to the left of the driver’s position. This screen will enable operation of all machine functions as well as adjustment of proportional hydraulics and fault reporting. Please see below for examples of screens.

The **Ecomat** system has been developed for ‘mobile’ applications (including the mining industry) and is extremely robust and reliable.

Jetmaster® IFM Screen Examples

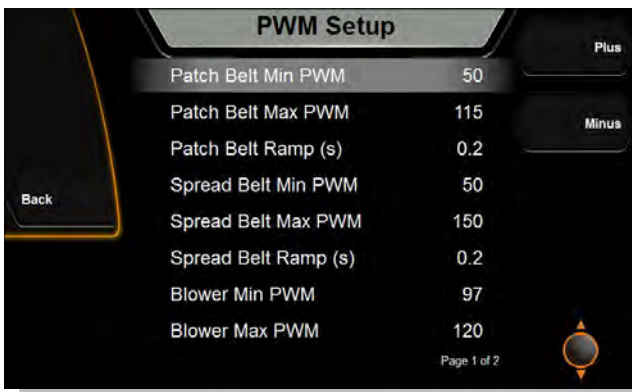
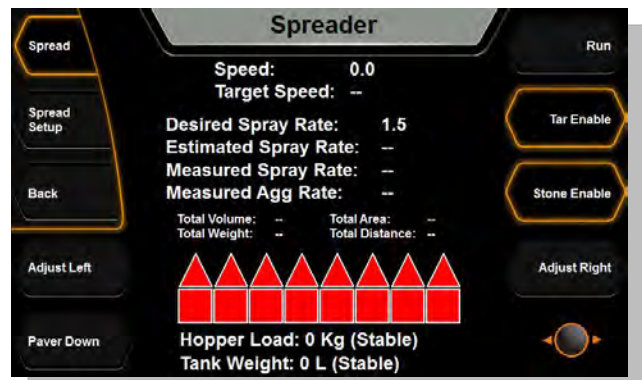


Patching screen

- Used while Jetpatching.
- Operation of beacons and work sign also on this screen.

Spray seal / paving screen

- Shows spray jets and gates selected
- Position of paver
- Allows width of seal / pave selection
- Gives spray rate information
- Will warn driver (visually & audible) if spray rate is outside of programmed rate
- Able to give operator report of aggregate spread rate (kgm²)



Setup Screen

- Allows adjustment of conveyor speeds
- Allows adjustment of aggregate spread rate
- Selection of nozzle size and aggregate size.



Ausroad® Road Maintenance Unit Control System

Ausroad Systems Pty Ltd now install the IFM produced **Ecomat Mobile Control System** equipment in all new Jetmaster® Road Maintenance units. **Ecomat** equipment is specifically designed for mobile applications with attention given to:

- » Extreme operating temperatures
- » Mechanical stress i.e. impact and shock
- » Exposure to environment i.e. dirt, water, humidity
- » Voltage fluctuations found in mobile applications
- » Shielding against radiated interference from existing electrical systems

In short this equipment is designed for, and used in mobile equipment with a huge variety of applications and flexibility. **Ecomat** enables control, management and integration of all functions of the unit.

- » Hydraulic, pneumatic and electrical operating systems i.e. valves, solenoids etc.
- » Daily works orders i.e. download works orders, collect information as job completed, upload completed works information to database i.e. "reflect" or similar
- » Report faults with hydraulic, electrical, pneumatic systems and provide information on where the fault is located on the unit
- » Provide warnings to operator if operation of unit is not within set parameters
- » Log machine operating hours and indicate when service is required



Ausroad Systems Pty Ltd // Manufacturers & Distributors //

Ausroad® Road Maintenance Units // Ausroad® HD Series Road Maintenance Units // Emulsion Spray Units // Hiring of Road Maintenance Units // Ausroad Stemming Trucks™ // Ausroad Water Trucks

PO Box 1200 Archerfield BC QLD 4108 // 3A/147 Boniface St, Archerfield QLD 4108

t: + 61 7 3216 7058 // f: + 61 7 3216 7076 // e: info@ausroad.com.au // w: www.ausroad.com.au // ABN: 33 165 889 636

PAINT

Standard ARTIC white or colour as required by Council.

Body will be:

- Sand blasted to class 2.5
- Under coated zinc etch primer
- Top coat 'white' two pack.

UNIT IS COMPLETE WITH ITEMS AS LISTED UNDER 'STANDARD EQUIPMENT' PAGE 51.

AUSROAD WILL CUSTOMIZE MACHINE TO SUIT INDIVIDUAL REQUIREMENTS

To enable the introduction of improvements from time to time, Ausroad reserves the right to make changes to the design and specification without notice.

VENTURI DISTRIBUTOR

The venturi distributor used by AUSROAD eliminates the costly time and maintenance required by the superseded rotor distributing system first developed by AUSROAD™

The Jetmaster is the only road repair machine using this venturi principle which incorporates the 'instant off' stone slide in the venturi. This alleviates the past problem of varying amounts of aggregate being delivered after the aggregate switch is shut off.

It was trialed and tested over two years before becoming commercially available. AUSROAD are confident it is the most maintenance free system available worldwide.

Advantages of the Pneumatic Jet-distributor (venturi type)

1. The venturi is made up of three pieces with the critical barrel made of tool steel and hardened to Rockwell C.62. **It has no moving parts**, i.e. does not require the changing, fitting and adjusting wear pads.
2. Saves the ongoing cost of 'O' rings and wear pads, the subsequent labor involved and lost production.
3. Will handle any material that flows (including sand) up to 12mm
4. Saves cleaning down time - able to be cleaned via onboard pressurized water system.
5. Does not require dismantling or oiling at the end of the day.
6. **AUSROAD guarantees a production rate of 3.2m³ per hour using patching function and 12m³ per hour using aggregate spreader and paving equipment**

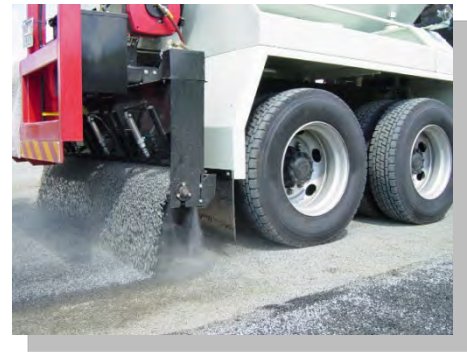
Operators of AUSROAD Jetmaster® remote control units are commonly laying 6 to 9m³ of aggregate per day, equivalent hot mix per day.

Jetmaster® - the ultimate road repair system

The AUSROAD Jetmaster® Aggregate Spreader (included)

The full width aggregate spreader is located immediately behind the rear truck wheels and at a constant height from the road, this means that it is always in position for immediate use.

AUSROAD Jetmaster® units are fitted with a 400mm wide conveyor belt. The hydraulic motor powering the belt also has the ability to travel faster or slower depending on requirements. The speed of the belt is then set for either the normal "Jetpatching" operation or at the faster speed required to feed the full width aggregate spreader.



Whilst using the aggregate spreader the **hopper does not have to be elevated**, it remains fixed giving better vision, stability (important whilst sealing in hilly conditions, sharp corners and steeply cambered roads) and reduces the risk of hitting trees, signage etc particularly in 'built up' areas. Clearance is improved when sealing close to trees and buildings.

The AUSROAD Jetmaster® aggregate spreader features a split auger (or 2 augers) each driven independently by separate hydraulic motors which ensures a constant even feed of aggregate when the box is offset from the truck or operating on cambered road. Augers and conveyor belt have independent "Auto Stop" systems to control aggregate flow.

The AUSROAD Jetmaster® aggregate spreader has **8 x 300mm wide gates** for variable width spreading fully controlled from cab. Plus the option of a hydraulic side shift which allows the application of aggregate and emulsion outside the wheel track of the truck. Width can be preset before starting run and / or changed "on the run". Spread rate is preset within **Ecomat** system and easily adjustable from cab.



Spray sealing in progress



Completed Jetmaster® spray sealing



Before shoulder sealing



After shoulder sealing

Drivers cab spreader box control

This system is controlled via the IFM **Ecomat** system so once the desired width and application (aggregate or emulsion or both) is selected then only one button is required to start and stop operation.

Rate of aggregate application is controlled by the optimizer

The patented "aggregate optimizer" gives more accurate control and a more even spread of aggregate. The aggregate is 'rolled' off the optimizer, the speed of the optimizer dictates the rate of application. This allows independent control of aggregate and emulsion spray rates and gives accurate adjustment of aggregate application rates.



Aggregate Spreader on AUSROAD™ Jetmaster® unit using one of the eight, 300mm wide gates to spray seal roadside edge break in Mildura, Victoria.

Spray Bar (included)

The spray rate (L/m²) is controlled by the nozzle size and truck speed. The **Ecomat** control system allows the operator to select the required spray rate. The system will provide accurate feed back to the operator to ensure correct spray rate.

An advantage of the 'Aggregate Optimizer' is that the aggregate rate can be varied independently of truck speed. This allows any combination of spray rate and aggregate application.

The spray bar is operated via air operated valves activated by the **Ecomat** system.

The emulsion is stored in the certified pressure vessel where it is held under pressure at 40 P.S.I. The emulsion is then directed under pressure via the emulsion hose to either the AUSROAD Jetmaster® spray nozzle or the spray bar by the appropriate valves. Nozzle heating for quick clearance of blockages

Emulsion Spraying Bar (High Flow Spray Bar)

- Standard 8 nozzle 2400 wide
- Adjustable in 300mm increments
- In cab controls of all functions

The emulsion spray system will be fitted with a high-pressure air purge, water and kerosene flush facility to adequately clean all lines and nozzles. The spray bar can be fitted on its own, or with the aggregate spreader.

Wash down system

As described above all of the emulsion lines can be purged via high pressure (110 psi) air, water or kerosene. The AUSROAD Jetmaster® has its own 240 litre water tank and retractable hose reel for general cleaning and washing.

Multipurpose full width paving & edging attachment (included)

The AUSROAD screeder can be fitted with the aggregate spreader, the aggregate is dispensed from the spreader box in the normal way but at a higher rate, then mixed with emulsion as it drops onto the road.

The AUSROAD screeder then distributes the mix to the defective area. A 5mm to 7mm aggregate that contains fines (i.e. dirty) will form a mix similar to hot asphalt, yet with the ease and safety of applying cold compounds. Because you only mix the material required for each job, there is no waste and minimal clean up.



Side Shift



Side Shift

The screeder automatically levels itself with existing road surface and forms the new material into a smooth paved surface. This system is very useful when repairing shoulders or depressions that are continuous in nature. Allows paving up to 2.4m wide.



Before wheel rutting repairs



After wheel rutting repairs

Road broom (included)



The road broom is used for preparing road shoulders for repair or clearing traffic lanes of loose material. It is a 'drum' type broom, diameter 380mm, length 1000mm, mounted on left rear side of unit. Operation from cab, will sweep approximately 900mm wide from left side of unit.

Includes water dust suppression via water spray jets that operate automatically while sweeping.

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UNLESS STATED OTHERWISE UNTOLERANCED DIMENSIONS TO BE WITHIN THE LIMITS SHOWN					
NOMINAL SIZE	UP TO 50	ABOVE 50 UP TO 150	ABOVE 150 UP TO 300	ABOVE 300 UP TO 1000	ABOVE 1000
MACHINING	± 0.1	± 0.2	± 0.3	± 0.5	± 1.0
FABRICATION	± 0.5	± 0.5	± 0.5	± 1.0	± 2.0
ASSEMBLIES	± 0.5	± 0.5	± 0.5	± 1.0	± 3.0

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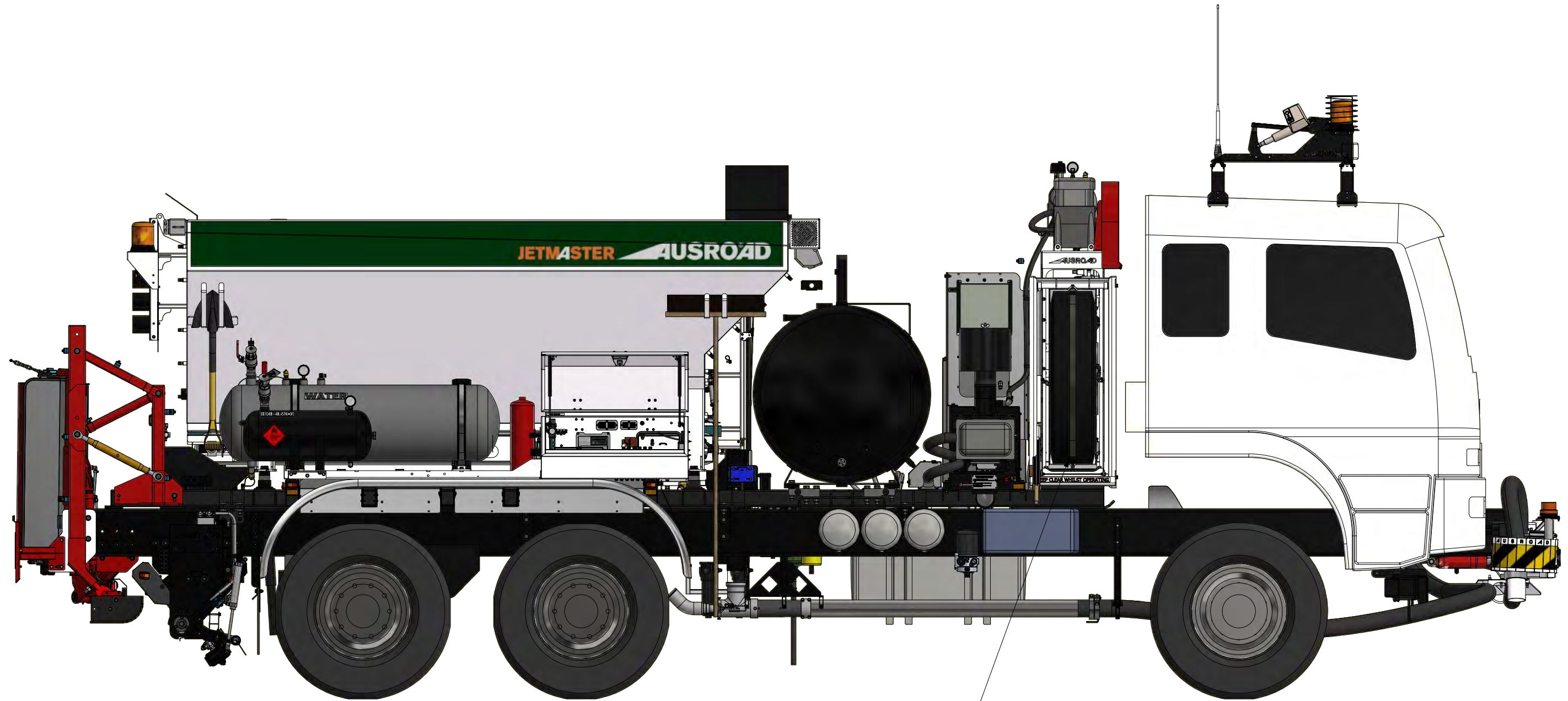
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OPTIONAL TOOLBOX IN LIEU OF SPARE WHEEL CARRIER

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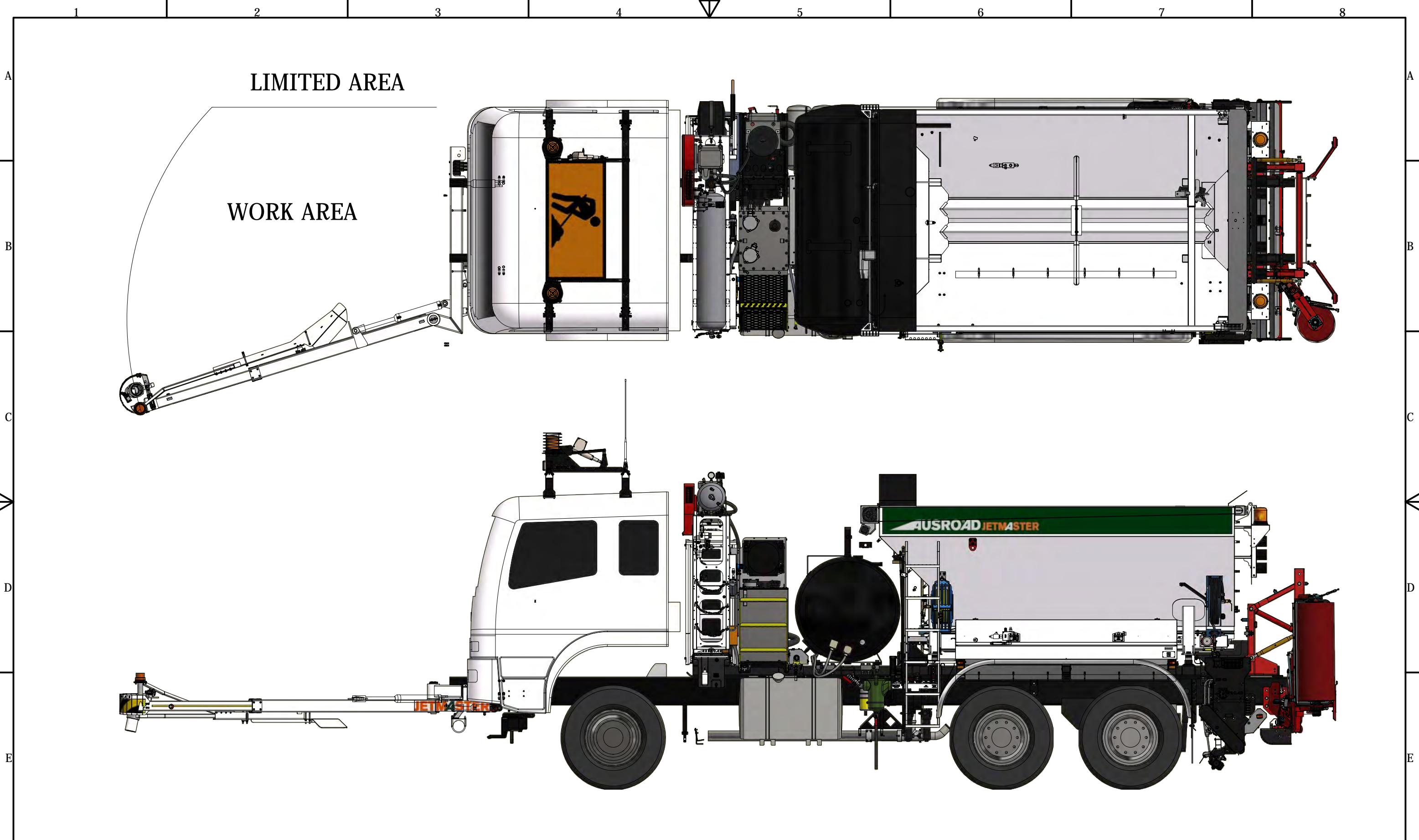
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FABRICATION	± 0.5	± 0.5	± 0.5	± 1.0	± 2.0
ASSEMBLIES	± 0.5	± 0.5	± 0.5	± 1.0	± 3.0

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	UNLADEN	LADEN
HINO	5055 KG	6000 KG
ISUZU	4920 KG	5900 KG

	UNLADEN	LADEN
HINO	6090 KG	16000 KG
ISUZU	6600 KG	16500 KG

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STANDARD EQUIPMENT

General

- 6m³ hopper capacity
- Remotely controlled Jetmaster delivery boom mounted at "bumper bar" height
- Mark II Delivery System incorporating 'instant off' stone slide in the venturi distributor
- 2000 litre emulsion tank with 240V overnight heating
- 240 litre water tank (aluminium)
- Heat exchanger – for emulsion
- Kero flush, water flush, air purge of emulsion lines
- Spare spray ring (hardened) x 1
- Water hose & retractable reel
- Water tap for hand washing
- Ladder
- 60 litre kero tank
- Hydraulic line for all emulsion lines
- Remote control joystick complete with integrated switches
- Proportional control hydraulic system.
- Retractable Load Cover (heavy duty mesh)

Storage

- Sign storage rack
- Lockable tool box
- Shovel racks
- Spare wheel storage

Safety Equipment

- Revolving LED amber beacons (cages included, no cage on strobe on boom)
(2 front and 2 rear, 1 x LED strobe on end of remote boom)
- LED Tail lights
- All body mounted lights LED
- All legal signage
- 9 kg Fire Extinguisher (external)

Also included:

- Ecomat control platform
- Hand-held spray lance & emulsion reel
- UHF radio GME
- Patrol sign, double sided
- Reversing camera
- Reversing alarm
- 'Shire of Corrigin' sign on both sides of body
- Equipment to enable filling emulsion tank from 210 litre drums
- 2.4m front water spray bar
- Aggregate spreader / spray bar (heated nozzles)
- Road Broom
- Multipurpose full width paving & edging unit
- Shovel chute
- Heated front nozzle emulsion ring

AUSROAD[®]

JETMASTER[®] TRUCKS

OPTIONAL EQUIPMENT

Major Options

Prices per unit

1. Water Spray Bar

2.4m wide water spray bar mounted at front of truck, includes 240 litre capacity tank *included*

2. Road Broom – includes water dust suppression with water jets *included*

The Ausroad road broom is used for preparing road shoulders for repair or clearing traffic lanes of loose material. It is a 'drum' type broom supplied by Bonne Engineering, diameter 380mm, length 1000mm, mounted on left rear side of unit.



Road broom folded back for travel



Road broom in operation

3. Aggregate Spreader / Spray Bar *included*

The aggregate spreader enables emulsion spraying and aggregate sealing to be completed in one pass. The full width aggregate spreader is located immediately behind the rear truck wheels and at a constant height from the road, this means that it is always in position for immediate use. Full width aggregate spreader operational from cab



Spray sealing in progress



Completed spray sealing

The spray bar allows variable width emulsion spraying and is fully operational from the cab. It is generally fitted with the aggregate spreader.

Spray Bar fully operational from cab with 2400 wide 300mm divisions, air, water, kero flush.

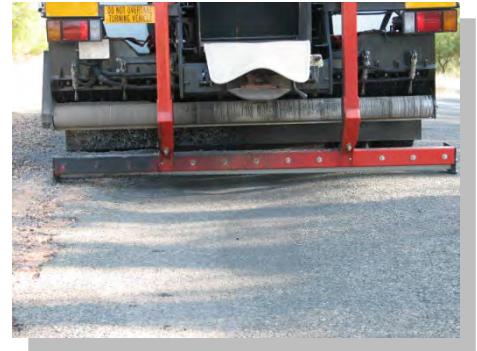
4. Multipurpose full width paving & edging unit

The Ausroad screeder can be fitted with the aggregate spreader, the aggregate is dispensed from the spreader box in the normal way but at a higher rate, then mixed with emulsion as it drops onto the road.

The screeder then distributes the mix to the defective area. A 5mm to 7mm aggregate that contains fines (i.e. dirty) will form a mix similar to hot asphalt, yet with the ease and safety of applying cold compounds. Because you only mix the material required for each job, there is no waste and minimal clean up.

The screeder automatically levels itself with existing road service and forms the new material into a smooth paved surface. This system is very useful when repairing shoulders or depressions that are continuous in nature. Allows paving up to 2.4m wide.

included



Before wheel rutting repairs



After wheel rutting repairs

5. Hydraulic Remote Outlet

With twin retractable hose reel and quick release coupling available flow up to 105 L/min **\$4 465.00**

6. Load Cells under hopper.

These have an accuracy of within 1-2% and will have read out in cab. **\$8 630.00**

7. Load Cells under emulsion tank.

These have an accuracy of within 1-2% and will have read out in cab **\$4 820.00**

To get accurate usage, load cells should be installed under the emulsion tank **and** hopper.

8. Automatic Greasing System

For all truck and body grease points (except drive shaft) **\$8 830.00**

9. Heated spray tips on spray bar

(Heat nozzles to approximately 70°C to remove blockages) **included**

10. Heated front nozzle emulsion ring

included

11. "Dragon's Breath" LPG Burner mounted to front of boom

\$2 840.00

Safety Equipment

1. Rear Mounted Camera

included

'BRIGADE' LCD Screen (heavy duty)
Extra cameras available on request

2. Traffic Director Arrow Board (rise & fall from cab)

1200 x 600 single sided panel to Australian standards
Arrow LH
Arrow RH
Double arrow
Caution Mode - Manual rise and fall

Arrow board can be mounted on cab or flush mounted on rear of hopper as shown in photo.

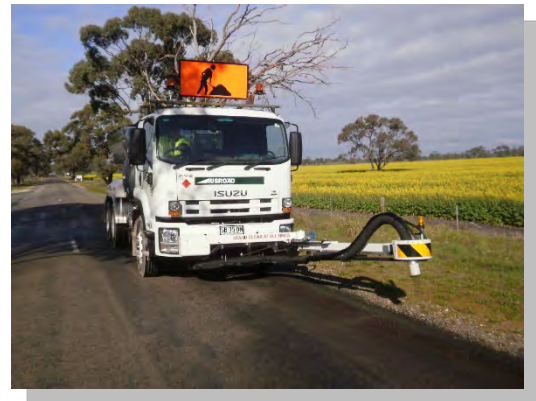
Flush mounted **\$3 960.00**
Cab mounted **\$4 925.00**



3. Patrol Sign

included

Cab roof mounted patrol sign 1200 x 600 double sided, heavy duty, electric raise and lower from cab. Rotating amber beacon each side.



4. VMS Board

\$12 800.00

Cab mounted Colour VMS Board. Single sided.



Miscellaneous

Emulsion application options

1. Hand Held Spray Lance & Emulsion Reel (10m steel 'Steel Craft' reel) ***included***

Emulsion - Filters, strainers

2. Filter pot for bulk emulsion tanks **\$1 600.00**
 (not installed on truck, to be installed on Council bulk emulsion tank)
3. Emulsion - filling of Pressure Vessels ***included***
 Equipment to enable filling emulsion tank from 210 litre drums

Emulsion Heating

4. Emulsion Heating – Provision for intank heating (dry pipe through tank)

Intank Emulsion Heating (overnight) **\$2 890.00**
 240 volt heating element 2.2kw for overnight heating. This includes IP65 control panel with ON / OFF switch, 3 pin plug socket (male) and earth leakage circuit breaker.



5. Insulated tank cover **\$6 000.00**
6. Locker Linings **\$2 030.00**
 Locker linings provide an extremely hard-wearing impact resistant surface, protecting tools and lockers from damage. Linings are sprayed polyurethane supplied by 'Rhino Linings' Choice of colours available.
7. Retractable Load Cover ***Included***
 PVC 'Ripstop' material instead of heavy duty mesh **plus \$325.00**
 Hard (aluminium) hydraulic lift over cover, with warning system when open **plus \$2 365.00**

Generally a load cover is not required to keep aggregate dry. Ausroad recommends slightly damp aggregate for optimal results. Rain or excess water will be vaporized in the delivery system and can be seen at the nozzle as a fine mist. This allows road repairs to continue in wet weather.

Load covers are supplied to meet RTA (Australia) requirements to cover load.

8. Option for GPS / Material Log System

Captured Data: GPS Location
 Pothole jobs
 Edge maintenance jobs
 Reseal jobs
 Stone usage
 Emulsion usage
 Square Meterage
 Distance Covered

Downloaded captured information onto USB as an EXCEL.CSV file: **\$3 000.00**

To utilise this option the AUSROAD Jetmaster Road Maintenance Truck must have load cells on the hopper and the emulsion tank.

All Optional Equipment prices exclude GST

AUSROAD ADDITIONAL INFORMATION

Company Profile

Ausroad manufactures, distributes and hires road maintenance equipment to the Australian & Indonesian market. The Company is firmly established in the field of providing economical road maintenance solutions to Local Government, Contractors and Private Companies who maintain sealed roads.

The expertise of the organization is well established, Ausroad has been successfully supplying the Australian market since 1990.

New technology is being developed and incorporated constantly to give the most efficient and most advanced road maintenance machines worldwide.

AUSROAD Jetmaster® Road Maintenance units provide faster, longer lasting repairs to Pot Holes, Road Depressions, Edge Breaks, Wheel Path Rutting, Crack Sealing, Digouts, Speed Bumps, Drainage Bumps, and Scabbing.

Ausroad manufactures:

- AUSROAD Jetmaster® Road Maintenance Units (both remote control front delivery and rear delivery models)
Sizes: 4m³ to 6m³ hopper capacities
- AUSROAD HD (Horizontal Discharge) Series Road Maintenance Units
Sizes 2.5m³ to 6m³ hopper capacities
- AUSROAD Emulsion Spray Units (skid or trailer mounted)
200 to 2000 litre emulsion tank capacities
- Ausroad also hires AUSROAD Road Maintenance Units
- AUSROAD Stemming Trucks™

Mission Statement

Ausroad will provide reliable, economical road maintenance equipment solutions by:

- Utilising the latest technology
- Applying advanced engineering design and manufacture
- Promoting innovative research and development

With a commitment to excellent customer service, whilst increasing company growth, reputation and quality

Quality Assurance

AUSROAD takes pride in its quality control to ensure the highest standard at all times and maintains its own self assessed Quality Assurance System based on ISO AS/NZS 9002.

AUSROAD Jetmaster® body will be compliant with AS 4024.1-2006 'Safety of Machinery'.

Meet some of our people



Toni Dunlop – Managing Director

As well as being responsible for the overall running of AUSROAD, Toni takes care of our business development. He takes a very hands-on approach when it comes to customer service and particularly enjoys helping clients by sharing his technical knowledge.



Stefan Dunlop – Hiring Manager

Stefan oversees the smooth running of all hire contracts to ensure customers obtain maximum benefits from our hired equipment.



Matthew Sims – National Sales Manager

Matthew provides customers with technical advice and trains new and existing customers on Jetmaster Road Maintenance Trucks and Stemming Trucks. He also assists with sales and service for new and existing customers.



Graeme Kaese – Production Manager

Graeme manages production, stock control and supervises our workshop staff. He works closely with consulting engineers overseeing and providing input into our research and development projects.



Shari Dunlop – Director / Marketing

As well as looking after the marketing and promotional aspects of the business, Shari fulfils a wide variety of administration tasks, including quotations and tender submissions.

Safety Features

The AUSROAD Jetmaster[®] unit is designed with the operator in mind at all times. We design equipment to be easy to load & unload from appropriate heights. All filling of the unit can be undertaken from ground level.

There are numerous safety features built into AUSROAD Jetmaster[®] machines;

1. The pneumatic venturi system has no moving parts and is very safe, there is nothing to get hands caught in.
2. Mark II Delivery System incorporating 'instant off' stone slide in the venturi distributor
3. The conveyor belt is very simple and well-guarded.
4. The hydraulic system is fitted with an emergency stop button
5. All valves are clearly labelled with large engraved labels to WorkCover Standards and to prevent removal by water blaster and cleaning etc.
6. All pressure vessels are fitted with PRV, dump valves and pressure gauges as standard. Emulsion tank is fitted with inspection hatches and dipstick. Fully compliant with Australian Standard AS 1210-1997 Class 2B Clause 3.26.1.
7. The *Jetmaster*[®] remote control boom is designed with a low profile in mind. When stowed for travel it presents no sharp edges or protrusions. It is fitted with a beacon and reflective marking strips for high visibility while operating. Boom movement is restricted to the right side of vehicle to avoid boom moving into path of traffic.
8. Increased front impact strength.
9. All AUSROAD Jetmaster[®] units are fitted with beacons as standard equipment and other various signs as required by Council.
10. Overall the AUSROAD Jetmaster[®] unit is very safe to operate, has been well designed and meets all Occupational Health and Safety guidelines. A full risk assessment will be supplied for unit offered at time of commissioning.
11. AUSROAD Jetmaster[®] hopper does not need to be elevated while spray sealing, edging and paving.
12. All operations are from the cab, no operator exposure to traffic.
13. AUSROAD Jetmaster[®] body will be compliant with AS 4024.1-2006 'Safety of Machinery'



After Sales Service & Spare Parts

Ausroad prides itself on promptly acting on any warranty claim. We understand the cost associated with downtime (as we run our own hire fleet of Jetmaster® units) and actively work to minimize this for our clients.

Ausroad has its offices and fully equipped workshop located in Brisbane. The Company employs qualified and experienced technicians and programs work well in advance to achieve scheduled delivery dates.

All parts for the AUSROAD Jetmaster® Unit commissioned are held in the AUSROAD™ Parts Store in Brisbane. A call to Owners will confirm the follow up and liaison of a small but responsible team that AUSROAD provide to clients as part of their continued and ongoing service. All Councils report AUSROAD provides an organised and friendly ongoing service to owners and Jetmaster® users. We are keen to maintain our record of exceptional service.

Ausroad is committed to providing highly efficient low maintenance road maintenance machines. Where possible we reduce the number of moving and wearing parts to accomplish this.

Ausroad hydraulics supplier 'Southcott Hydraulics Pty Ltd' has branches Australia wide.

We have a staff of 70 and often have staff interstate training operators, delivering hire units and demonstrating AUSROAD equipment.

The Jetmaster's efficiency is second to none, high production rates and less down time result in the highest efficiency in the industry. AUSROAD Jetmaster® Units have no moving parts within the delivery system resulting in low maintenance costs and less down time.

AUSROAD Jetmaster® parts are dispatched the same day orders are received.

Order must be received by 1.00pm when using Ausroad's various freight accounts alternatively parts can be freighted via Councils nominated freight carrier.

Warranty

The AUSROAD Jetmaster® unit is a premium product manufactured to the highest quality and backed by a 3 year warranty. Refer page 72 for details of warranty conditions.

Ausroad prides itself on promptly acting on any warranty claim. We understand the cost associated with downtime (as we run our own hire fleet of Jetmaster® units) and actively work to minimize this for our clients.

AUSROAD will complete warranty details of the whole unit and any specific warranty applying to any components. These will be supplied within the Maintenance Manual provided upon commissioning. AUSROAD will provide a regular service schedule and maintains stock of all parts in its Brisbane Store

Parts Warranty Covered under AUSROAD warranty refer page 72 for conditions.

Labour Warranty AUSROAD will if necessary engage local services to carry out warranty work. If specialized service is required AUSROAD staff will travel to Corrigin, WA to undertake repairs.

For repair work under warranty Ausroad will provide critical components on a 'loan' basis free of charge while Council parts are repaired if required, i.e. Jetmaster® IFM Ecomat components, blower. Ausroad runs a fleet of 6 AUSROAD Jetmaster® Road Maintenance Hire Units, in the event of extended downtime we would make a hire unit available.

Whole of Life Costs

Description	Parts	Labour	Sub Total	Interval	Yearly Cost	Total Cost over 6 year life	Total Cost over 8 year life
Aggregate hose replacement	\$1407.15	\$120.00	\$1527.15	1 yearly	\$1527.15	\$9 162.90	\$12 217.20
Air filters	\$139.00	\$12.00	\$151.00	1/2 yearly	\$302.00	\$1 812.00	\$2 416.00
Oil filters - Intank Pressure	\$92.00 x 2 \$244.80 x 2	\$30.00 \$30.00	\$214.00 \$519.60	1 yearly 1 yearly	\$214.00 \$519.60	\$1 284.00 \$3 117.60	\$1 712.00 \$4 156.80
Seals and O-rings	\$ NA						
Wear plates	\$ NA						
Broom replacement	\$669.50	\$60.00	\$729.50	1 yearly	\$729.50	\$4 377.00	\$5 836.00
Allowance for minor repairs and maintenance	\$200.00	\$300.00	\$500.00		\$500.00	\$3 000.00	\$4 000.00
Minor Service – Greasing Etc.	\$	\$120.00	\$	1 yearly	\$120.00	\$720.00	\$960.00
Conveyor belt	\$4 388.00	\$120.00	\$4 508.00	3 yearly	\$1 502.00	\$9 015.00	\$12 021.00
Conveyor belt complete bearings & rollers, drive nylon sprockets	\$1 687.00	\$120.00	\$1 807.00	3 yearly	\$602.35	\$3 614.00	\$4 818.80
Hydraulic oil	\$400.00	\$120.00	\$520.00	1 yearly	\$520.00	\$3 120.00	\$4 160.00
TOTAL FOR JETMASTER						\$39 222.50	\$52 296.66

Assumptions: AUSROAD Jetmaster body
Labour @ \$60.00 per hour
Machine working 600 hours per year

Notes

- **Neither replacement pads nor 'O'- Rings are required with the AUSROAD™ Venturi distributing system thus eliminating constant down time.**
- **The AUSROAD Venturi Distributor has no moving parts thus eliminating a lot of wearing and servicing costs. Refer to page 42 for further advantages of the Venturi System.**
- **Parts prices exclude GST and remain firm for 6 months.**

“Councils previous Jetpatching Unit being 11 years of age was also built by Ausroads and it served Council very well as maintenance cost were low while its productivity remained high. The new unit being far more advanced than its predecessor carries out the ever increasing activities required by councils to a high standard with ease and at a low cost.”

Robert Cosgrove, Manager of Works
 Narrandera Shire Council

AUSROAD Training Program

Ausroad's Trainer will work alongside the requirements of Council and provide a guided program of theoretical and practical training based on the following schedule over 2 days, or until operators can operate unit safely and with confidence. Up to 6 staff members can be trained during this time. A 'Certificate of Competence' shall be provided for all staff that successfully completes the training course.

Follow up training can be arranged at any time in the future to train new operators at \$1500.00 (ex GST) per day plus expenses.

Day 1

Theory of operation of the unit. Technicians work through the full operating details of the Jetpatching system of patching using the Operators Manual to show and explain the procedures with Council Overseers and Operators. This includes safe practices, operational procedures, daily monitoring and service.

Topics Covered

Theory

- Principles of using and storing CRS Emulsions
- Technicians will examine emulsion storage and discuss current Council facilities.
- Aggregates and their use with the Jetpatching System
- Technician will explain size, types and mixtures for Jetpatching applications (including the use of sand)
- Safety features of the Jetmaster® Unit includes safe practices, operational procedures, daily monitoring and service.
- Loading and Patching
- Loading and operating unit safely.

Practical

- Loading materials safely.
- Beginning operations as time permits.

Day 2

Theory

Full explanation to be covered of all points as listed below to Councils Operators/Supervisors, including monitoring and fitting of wearing parts to the delivery system.

- Routine Maintenance
- Scheduled maintenance

Discussion with Overseer or suitable Council staff to be arranged for at completion of each days training.

Practical

Council operators operate Jetmaster® full patching operations under the supervision of AUSROAD™ Technician where required.

Further training for maintenance staff, including:

- Servicing Procedures
- Workshop Maintenance
- Monitoring Delivery System

AUSROAD Q & A

Why does AUSROAD use the venturi delivery system and not a rotary distribution system?

The Venturi delivery system that AUSROAD uses is the most efficient way to distribute aggregate into an air stream. Now powered by PTO it has no moving parts and requires no regular maintenance or additional power source.

The Venturi increases the air velocity by 60% after it leaves the blower making the venturi system the most productive available. By reducing the speed of the blower the operator has exact control over how much aggregate is delivered via the venturi and delivery hose.

Unlike a rotary distribution system it can handle a variety of aggregates from sand to 12mm, wet and dry. It is lighter, cheaper to maintain and more effective than any other system.

With no moving parts the venturi system is the safest and most efficient system available.

Why is the boom at bumper bar level with the hose stowed in under the cab?

It is easier to blow aggregate horizontally than to try and blow aggregate several meters up and over a truck cab. This is a waste of energy and likely to cause blockages and wear on the hose. We have a low straight delivery path with less cantilevered forces and wear on equipment. There is no greasing of parts required.

With the AUSROAD design there is no boom equipment hanging over the cab and down the side of the windshield when stowed. An over the cab set-up obstructs the driver's visibility and is more expensive. An over the cab design also interferes with cab tilting and is difficult to service.

The AUSROAD design provides extra crash protection for cab occupants. It is easy to access for maintenance and is clearly visible to the driver at all times.

The mounting of the unit to the chassis is as per truck manufacturers recommendations as approved by Hino and Isuzu Australia engineers.

With less moving parts the first AUSROAD delivery boom delivered in 2000 was still in operation with its original owner (Tweed Shire Council, NSW) after 9 years of service!

- Lower profile & cleaner design
- Straight delivery path, less wear
- Less moving parts
- No loss of ground clearance
- Better visibility & safety
- Strong construction with fibreglass filled epoxy bearings.

Why does AUSROAD use a large diameter delivery hose?

It's simple; with the patented Venturi system, AUSROAD™ units have the highest production rates of any remote-controlled unit presently available in Australia. Because of this we can use a larger diameter hose to deliver more material to the work site.

A larger diameter hose is less likely to block in any application. It also allows more material to be delivered to the patch area and a larger diameter hose makes it easier for the operator to achieve a flat finish. No speed bumps!

A wider hose means that less velocity is required to move aggregate along it. This means less loose aggregate left at the patch area whilst maintaining high production rates and compaction.

Why does AUSROAD use a belt and auger system in its spreader box?

A belt and auger system allows full use of the aggregate spreader without having to tip the hopper. All speeds are adjustable from the cab to allow the correct cover rates to be applied.

Unlike the competition the AUSROAD unit has an optimizing roller fitted to the spreader box, similar to other industrial spreaders. This allows for aggregate cover adjustment independent of ground speed. The operator can adjust spray and cover rates separately.

With the AUSROAD belt system the hopper does not need to be tipped. Tipping the hopper can result in stability issues and can cause safety issues in confined areas with overhead power lines and trees.

- More even aggregate distribution
- More control over aggregate distribution
- Adjustable to aggregate sizes
- No need to tip the hopper and safer
- More stability

For these reasons AUSROAD™ avoids having to tip the hopper.

Why does AUSROAD use the ECOMAT control system?

Our control system utilises robust IFM German engineered industrial quality components. It has LED's at every connection leading to simple fault finding and a 'Contactless' joystick. It utilises a flexible program giving the operator complete control over the system including job and material totals.

AUSROAD is the world leader in road maintenance systems. We have designed a safe and cost effective unit specifically for Australian conditions.

Units can be retro fitted with our latest technological developments.

Units are designed and built in Australia for Australian conditions; customers include;

- Australian Department of Defence
- Roads and Traffic Authority (NSW)
- RoadTek (Dept of Main Roads, QLD)
- Private Contractors
- Regional and City Councils

Why invest in Jetmaster® technology?

It's all about return on investment;

1. **The AUSROAD Jetmaster® unit is a high productivity unit that carries a productivity guarantee (refer page 73), is extremely well designed and has an impressive record in the market place.**

Operators of AUSROAD Jetmaster® remote control units are commonly laying 6 to 9m³ of aggregate per day, equivalent to 14 to 21 tonnes of hot-mix per day.

“Council uses the Jetmaster to carry out two (2) coat emulsion seals on our heavy patching and shoulder repair/widening programme. The savings in time and money are excellent as we are able to seal each patch as soon as it is ready instead of having to get a lot of patches ready to make it viable to get a sealing contractor in.”

David Coulton
Technical Officer Works
Gwydir Shire Council, Bingara NSW
(Excerpt from reference letter)

2. **It is Australia's largest selling blower type road maintenance machine and is backed a 3 year warranty, (refer pages 61 & 72).**
3. **The AUSROAD Jetmaster® unit is a premium quality road maintenance machine utilising low cost materials to produce high quality road repairs.**

“During August – September 1999, Cairns City Council dry hired a 4m³ capacity Jetpatcher Road Maintenance Unit. This initial hire was very successful in particular with relationship to productivity, permanence of repairs and operator acceptance.”

Peter Agar, Manager Maintenance & Construction
Cairns City Council, Cairns, QLD
(Excerpt from reference letter)

4. **Investing in an AUSROAD Jetmaster® unit means gaining the benefits of a premium quality road maintenance machine and professional backup and support services**

“The District Council of the Copper Coast South Australia would like to thank you for your excellent service and support by AUSROAD since the Council purchased the Jetpatcher® in March 2009”

Greg Munzer, Maintenance Supervisor
District Council of the Copper Coast, Kadina SA
(Excerpt from reference letter)

“The assistance and service Council has received from Jetpatcher Roadtech has been excellent and this is vitally important in these days of increasing costs and value for dollar is required.”

David Coulton
Technical Officer Works
Gwydir Shire Council, Bingara NSW
(Excerpt from reference letter)

“South Gippsland Shire Council would like to express our appreciation for the excellent service and support provided by Jetpatcher Roadtech.”

Noel Thornby
Operations Co-Ordinator
South Gippsland Shire Council, Leongatha, VIC
(Excerpt from reference letter)

“We have no hesitation in recommending to prospective purchasers this equipment and the technical back up service provided by Jetpatcher Australia Pty Ltd.

I am most willing to discuss any aspect regarding these road maintenance units.”

Bob Missingham, Manager Works
Tweed Shire Council, Murwillumbah, New South Wales
(Excerpt from reference letter)

Most recently commissioned AUSROAD units

Jetmaster® units in bold text (from September 2020)

Council / Company	Contact	Phone	Unit type
Kempsey Shire Council WEST KEMPSEY, NSW Direct Quote to Council	Garick Cahill Coordinator Maintenance Response	0427 490 803 02 6566 2751	6m AUSROAD Jetmaster Unit Unit No: 527 Commissioned May 2022
Wollondilly Shire Council PICTON NSW Via Tenderlink	Michael Lloyd Plant Superintendent	02 4677 9546	4m AUSROAD HD Series Unit Unit No: 519 Commissioned May 2022
Downer # 10 GILLMAN, Sa	Vincent Pearse SA Plant Manager	0459 821 040 08 8341 2549	7m AUSROAD Spray Seal Unit Unit No: 519 Delivered April 2022
Gympie Regional Council GYMPIE QLD (via NPN 1.15-2 VendorPanel)	Clint Wood Fleet Supervisor	07 5481 0905 0400 695 370	6m AUSROAD HD Series Unit Unit No: 520 Commissioned April 2022
Gympie Regional Council GYMPIE QLD (via NPN 1.15-2 VendorPanel)	Clint Wood Fleet Supervisor	07 5481 0905 0400 695 370	6m AUSROAD Jetmaster Unit Unit No: 516 Delivered March 2022
Towong Shire Council TALLANGATTA, VIC	Dolf Abbruzzese Manager Infrastructure Assessment	1300 365 222 0428 762 012	6m AUSROAD Jetmaster Unit Unit No: 517 Commissioned March 2022
Dubbo Regional Council DUBBO NSW (via NPN 1.15-2 VendorPanel)	Daniel Peterson Fleet Procurement Officer	02 6801 4942 0408 634 870	6m AUSROAD Jetmaster Unit Unit No: 512 Commissioned February 2022
Downer # 9 Gillman, SA	Vincent Pearse SA Plant Manager	08 8341 2549 0459 821 040	7.5m AUSROAD HD Series Units Unit No: 526 Commissioned: February 2022
Singleton Shire Council SINGLETON NSW (via NPN 1.15 VendorPanel)	Mark Burgess Team Leader	0438 284 833	6m AUSROAD Jetmaster Unit Unit No: 509 Commissioned: January 2022
Walgett Shire Council WALGETT NSW (via NPN 1.15 VendorPanel)	Greg Leersen Support Services Coordinator	02 6828 6145 0428 216 182	6m AUSROAD Jetmaster Unit Unit No: 504 Commissioned: January 2022 <i>Councils 3rd AUSROAD Unit</i>
Federation Council COWOWA NSW (via NPN 1.15 VendorPanel) <i>Councils 5th AUSROAD Unit</i>	Dean Skipper	0422 157 721	6m AUSROAD Jetmaster Unit Unit No: 511 Commissioned: January 2022
Leeton Shire Council LEETON NSW (via NPN 1.15 VendorPanel)	Mark Robinson Plant Superintendent	02 6953 0944 0419 290 238	6m AUSROAD Jetmaster Unit Unit No: 501 Commissioned: January 2022 <i>Councils 3rd AUSROAD Unit</i>

Uralla Shire Council URALLA NSW	Dean Weiley Co-Ordinator Fleet,Stores & Workshop	02 6778 6401 0447 082 087	6m AUSROAD HD Series Unit Unit No: 510 Commissioned: December 2021
Somerset Regional Council ESK QLD (via NPN 1.15 VendorPanel)	Peter Heath Workshop Supervisor	07 5424 4056 0409 632 805	4m AUSROAD HD Series Unit Unit No: 502 Commissioned: November 2021 Councils 4th AUSROAD Unit
Wagga Wagga City Council WAGGA WAGGA NSW (via Tender Link)	Graeme White Fleet Services Co-Ordinator	02 6971 4621 0438 236 162	4m AUSROAD HD Series Unit Unit No: 500 Commissioned: November 2021 Councils 6th AUSROAD Unit
Downer # 7 & 8 Gillman, SA	Vincent Pearse SA Plant Manager	08 8341 2549 0459 821 040	2 x 6m AUSROAD HD Series Units Unit No's: 505 & 506 Commissioned: November 2021
Bundaberg Regional Council #9 BUNDABERG QLD (via NPN 1.15 VendorPanel) Body prices only to Port City Auto	Craig Fredriksen Fleet Procurement Officer	07 4130 4641 0427 538 655	2 x 4.5m Ausroad HD Series Units Unit No: 507 & 508 Commissioned October 2021 Councils 10th & 11th AUSROAD Units
Moyne Shire Council PORT FAIRY VIC (via NPN 1.15 VendorPanel)	Crag Cole Manager, Construction & Maintenance	03 5558 7888 0439 336 211	6m AUSROAD Jetmaster Unit Unit No: 503 Commissioned Sept 2021 Councils 3rd AUSROAD Unit
Narrabri Shire Council NARRABRI NSW (via NPN 1.15 VendorPanel)	Michael Cain Road Services Manager	02 6799 6872 0427 101 707	6m AUSROAD Jetmaster Unit Unit No: 499 Commissioned August 2021 Councils 2nd AUSROAD Unit
Mackay Regional Council MACKAY QLD (via NPN 1.15 VendorPanel)	Graham Sutton Fleet Coordinator Procurement & Plant	07 4961 9830 0400 033 092	4m AUSROAD HD Series Unit Unit No: 495 Commissioned August 2021 Councils 6th AUSROAD Unit
Bundaberg Regional Council BUNDABERG QLD (via NPN 1.15 VendorPanel)	Craig Fredriksen Fleet Procurement Officer	07 4130 4641 0427 538 655	4.5m Ausroad HD Series Unit Unit No. 498 Commissioned July 2021 Councils 9th AUSROAD Unit
Goondiwindi Regional Council INGLEWOOD QLD	Steve Scott Plant Manager	07 4671 7480 0427 717 400	Three Way Tipping Truck Unit No 494 Commissioned June 2021 Councils 3rd AUSROAD Unit
Bundaberg Regional Council BUNDABERG QLD (via NPN 1.15 VendorPanel)	Craig Fredriksen Fleet Procurement Officer	07 4130 4641 0427 538 655	2 x 4.5m Ausroad HD Series Units Unit No's.496 & 497 Commissioned June 2021 Councils 7th & 8th AUSROAD Units
Warrumbungle Shire Council COONABARABRAN, NSW	Chris Staniforth Fleet Manager	0428 667 004	6m AUSROAD Jetmaster Unit Unit No: 493 Commissioned May 2021 Councils 2nd AUSROAD Unit

Bogan Shire Council NYNGAN, NSW Via VendorPanel 'Open Market Tenders'	Brendan McHattan Procurement Officer	02 6835 9060 0437 827 785	4m AUSROAD Jetmaster Unit Unit No: 492 Commissioned May 2021 <i>Councils 3rd AUSROAD Unit</i>
Bega Valley Shire Council BEGA, NSW (via NPN 1.15 VendorPanel)	Deon Constance Fleet Services Supervisor	02 6499 2422 0427 260 970	2.5m Ausroad HD Series Unit Unit No: 491 Commissioned April 2021 <i>Councils 5th AUSROAD Unit</i>
Southern Grampians SC Hamilton, VIC	Allan Wishart Fleet Manager	03 5573 0494 0458 004 704	4m AUSROAD Jetmaster Unit Unit No:489 Commissioned April 2021 <i>Councils 2nd AUSROAD Unit</i>
Boulia Shire Council Boulia, QLD	Joseph Kim Technical Officer	07 4746 3188	Emulsion Spray Trailer Commissioned March 2021 <i>Councils 2nd AUSROAD Unit</i>
Tweed Shire Council Murwillumbah, NSW Body price only to GC Isuzu but under NPN413	Justen Oliver Operations Coordinator Plant & Materials	02 6670 2705 0439 224 943	4.5m Ausroad HD Series Unit Unit No. 488 <i>Councils 8th AUSROAD Unit</i>
Lake Macquarie City Council Hunter Regional MC Body price only to Gilbert & Roach but under NPN413	Daniel Downie Plant & Fleet Officer	02 4921 0649 0417 659 365	4.5m Ausroad HD Series Unit Unit No. 487 Commissioned Feb 2021 <i>Councils 6th AUSROAD Unit</i>
Alexandrina Council Goolwa, SA (via NPN 1.15 VendorPanel)	Paul Minks Contracts Manager	08 8555 7000 0406 132 643	4.5m Ausroad HD Series Unit Unit No.478 Commissioned Feb 2021
Berrigan Shire Council Berrigan, NSW (Via LGP 419)	Dean Skipper Workshop Supervisor	0422 157 721	6m AUSROAD Jetmaster Unit Unit No. 482 Commissioned Jan 2021 <i>Councils 4th AUSROAD Unit</i>
Balonne Shire St George QLD (via NPN 1.15 VendorPanel)	Peter Gluzde Tech Officer	07 4620 8851 0409 846 281	Combined HD/JM Unit Unit No.475 Commissioned Nov 2020
Benalla Rural City Council Benalla VIC (via NPN 1.15 VendorPanel)	Robert Milton Manager Operations	0408 992 774	6m AUSROAD Jetmaster Unit Unit No.474 Commissioned Dec 2020
Mildura Rural City Council Mildura VIC	Patty Dowling Fleet Officer	03 5018 8439	3 x Ausroad HD Series Units 471, 472, 473 Delivered Oct 2020
Edward River Council Deniliquin NSW (via LGP 707-3)	Geoff Pitt Supervisor Fleet	03 5898 3000 0400 931 003	4m AUSROAD Jetmaster Unit Unit No.470 Delivered Sept 2020

Summary of Operating advantages of the AUSROAD Jetmaster® road maintenance unit

- (a) Very high production rates.
- (b) The Jetmaster® Unit has the ability to blow all water and debris out of the holes.
- (c) Jetmaster® has a proven system for applying sand to the road repair via the delivery hose which is all controlled by the operator.
- (d) The Jetmaster® Unit is the only blower type unit that has the ability to use variable speeds for emulsion and air, can use variable sizes of aggregate, and has the ability to apply sand.
- (e) No time is required in cleaning/maintenance of the Venturi distributor due to no moving or wearing parts.
- (f) AUSROAD Jetmaster® machines have pressurized kero tank cleaning of the nozzle. This is a unique feature.

A great team with impressive experience

AUSROAD technicians are available to assist Council at any time. Their expertise as designers and manufacturers ensures that their help and advice is gained from "long time experience" within the industry. Ausroad strives to provide prompt and efficient services. We believe in strong product and customer support and are keen to maintain our position as an expert in the field.

A recent list of AUSROAD unit owners is enclosed, refer pages 68 - 70. We suggest that some of those owners be contacted to discuss their experience with this type of equipment.

We recognise that our tender may not necessarily be the lowest submitted. However the increased capital investment in purchasing an AUSROAD Jetmaster® unit will very quickly be recovered with a much higher productivity unit that carries a longer guarantee, is extremely well designed and has an impressive record in the market place.

Management and Staff are dedicated to servicing the needs of Australian Councils and this has been confirmed by the repeat orders we have received. There will be questions to ask after considering our tender. We are here to assist you and welcome any queries you may have.

AUSROAD staff are available at all times to discuss issues with operation of Jetmaster® units.

Jetmaster® – the ultimate road repair system!



Limited 3 year Warranty

We Ausroad Manufacturing Pty Ltd warrant that all manufactured components are produced from the very best of material available and will repair and/or replace any defect in the AUSROAD Jetmaster[®] unit and installation services which become apparent within 36 months of the commissioned date.

Conditions of Warranty

- 1. Flexible hoses, batteries, conveyor belt, and the distributing system where fair wear and tear are normal are excluded.*
- 2. If the customer does not follow all maintenance recommendations as per the User Manual the warranty cannot apply.*
- 3. Correctly specified materials as recommended by the manufacturer must be used as a condition of the warranty. That is aggregate and emulsion, also sand if a sand bin is fitted.*
- 4. It is the responsibility of the customer to return to the factory of the manufacturer any defective component (or the complete AUSROAD Jetmaster[®] Unit) if there is any requirement to attend to under this warranty (approved by the Manufacturer).*
- 5. This warranty applies to the initial customer only and is revoked if the AUSROAD Jetmaster[®] unit is sold or otherwise disposed.*
- 6. In the case of components not manufactured by AUSROAD the purchaser has the benefit of the guarantees given to Ausroad Manufacturing Pty Ltd with a minimum of one year.*

Ausroad Manufacturing Pty Ltd

*Manufacturers & Distributors of;
AUSROAD Jetmaster Road Maintenance Units
AUSROAD HD Series Road Maintenance Units
Hiring of Road Maintenance Units
AUSROAD Emulsion Spray Units*

Jetmaster[®] - the ultimate road repair system



Productivity Guarantee

Ausroad Manufacturing Pty Ltd guarantee that the AUSROAD Jetmaster[®] machine purchased will consistently produce at the rate of 3.2 m³ per hour or better using patching function and 12m³ per hour using aggregate spreader and paving equipment (in the hands of an experienced operator).

If the Council (or Contractor) fail to consistently achieve this rate of production, then Ausroad Manufacturing will - at its cost - make whatever adjustments or modifications necessary to ensure the AUSROAD Jetmaster[®] machine attains this minimum level of production or better.

AUSROAD guarantees a production rate of 3.2m³ per hour using patching function and 12m³ per hour using aggregate spreader and paving equipment

(Please note that some Council's and Organisations are achieving 4m³ per hour)

Fast Parts Service and In-Stock Guarantee

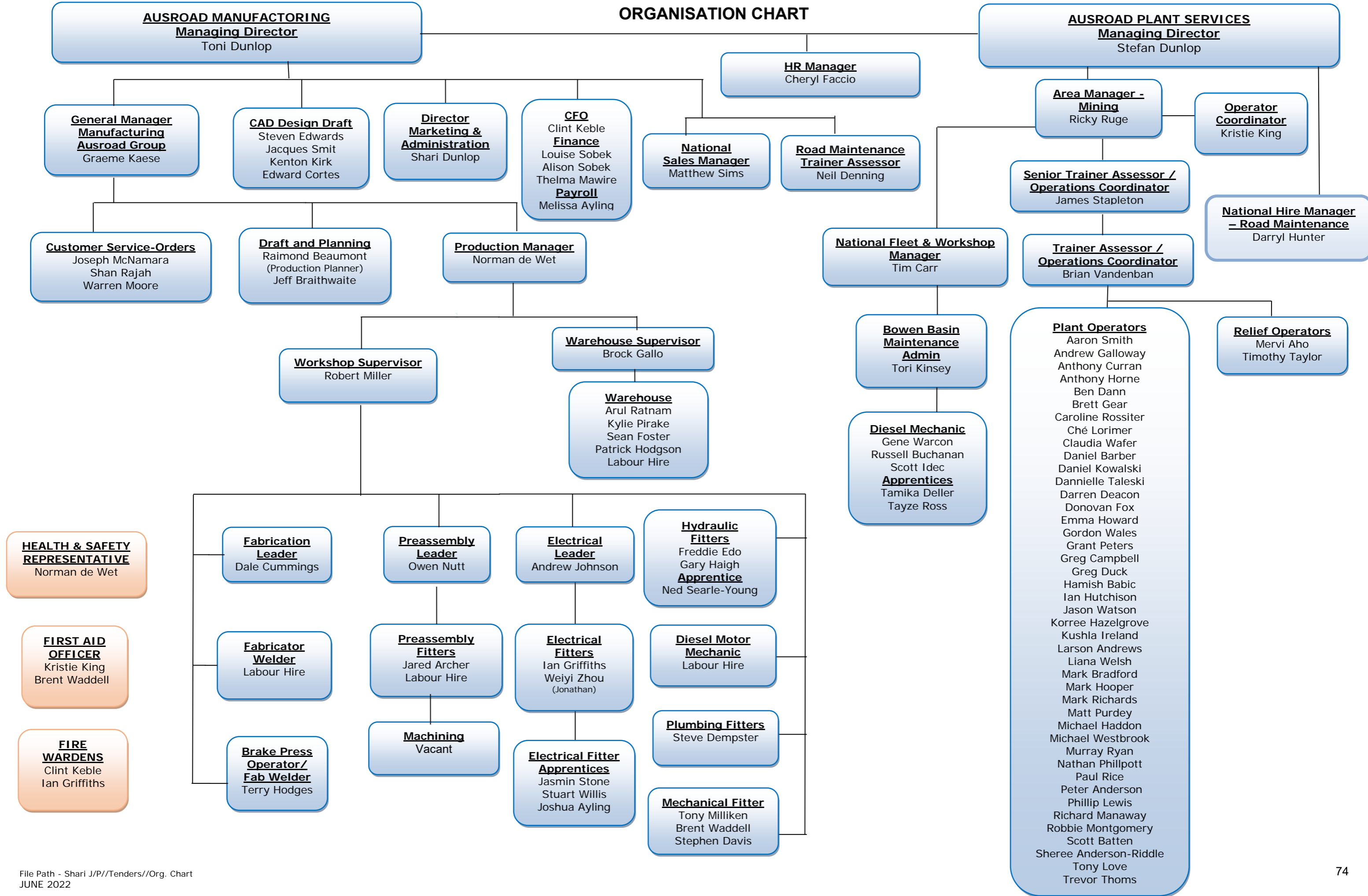
Ausroad Manufacturing guarantee to always have stocks of standard AUSROAD parts on hand. Further, Ausroad Manufacturing guarantee to ship your parts order on the day you order (order must be placed by 1.00pm).

Ausroad Manufacturing Pty Ltd

*Manufacturers & Distributors of;
AUSROAD Jetmaster Road Maintenance Units
AUSROAD HD Series Road Maintenance Units
Hiring of Road Maintenance Units
AUSROAD Emulsion Spray Units*

Jetmaster[®] - the ultimate road repair system

ORGANISATION CHART



Certificate of Currency

Employer's information

Employer name	Ausroad Systems Pty Ltd
ABN	61 097 151 445
ACN	97151445
Policy number	WAA010734263
Insurance type	Accident Insurance Policy

Statement of coverage

This certificate issued on **05 October 2021** is a Certificate of Currency, which provides cover under the *Workers' Compensation and Rehabilitation Act 2003* for:

- (a) the employer's legal liability for compensation; and
- (b) the employer's legal liability for damages.

The amount of insurance under the workers' compensation scheme is unlimited subject to the provisions of the *Workers' Compensation and Rehabilitation Act 2003* and the *Workers' Compensation and Rehabilitation Regulation 2014* and the employer's compliance with their requirements. In some instances, non-compliance can jeopardise an employer's insurance cover but will not prevent an injured worker from being compensated pursuant to the Act.

This Certificate of Currency is issued for the insurance period from **01 July 2021 to 30 June 2022**.

WorkCover industry classification

246216 - Mining & Construction Machinery Manufacturing

For more information, please contact us on 1300 362 128 or visit our website at worksafe.qld.gov.au.

Certificate of Insurance



Public and Products Liability Insurance

To whom it may concern, this certificate:

- is issued as a matter of information only and confers no rights upon the holder;
- does not amend coverage afforded by the policy/number listed;
- is a summary only of the cover provided. For full particulars, reference must be made to the current policy wording;
- is current at the date of issue.

Insurer: AAI Limited (ABN 48 005 297 807) trading as Vero Insurance

Policy wording: Vero Corporate Broadform Liability Insurance Policy - V1434 23/05/19 A

Policy number: LCL023024327

Named insured: AUSROAD SYSTEMS PTY LTD and AUSROAD PLANT SERVICES PTY LTD and Ausroad Manufacturing Pty Ltd.

Business: Manufacture, Fabrication & Repair of Road Maintenance Bodies, StemmingBodies, Watering Bodies, Loading Bodies, Dewatering Bodies, Shot Bodies &Wet and Dry Hire of Road Maintenance Trucks, Stemming Trucks, WateringTrucks, Loaders, Dewatering Trucks and Shot Trucks, Stemming ServicesContractor and all other activities incidental thereto

Period of insurance: From: 30/06/2021
To: 30/06/2022
4.00pm Local Standard Time

Limit of liability:

General/Public liability	\$ 20,000,000 any one Occurrence.
Products liability	\$ 20,000,000 in the aggregate during any one Period of insurance in respect of claims arising from Products.

Endorsement:
As Per Schedule



Signed for and on behalf of AAI Limited (ABN 48 005 297 807) trading as Vero Insurance

FX2 240-350 6X4

FX4 240-350 6X4



FX4 MODEL PICTURED

WEIGHT RATINGS*

GVM 24,000 kg
GCM 45,000 kg

ENGINE

POWER 257 kW @ 2,000 rpm
TORQUE 1,422 Nm @ 1,400 rpm

TRANSMISSION

9 speed manual transmission (MT)
6 speed automatic transmission (AT)

* Refer to back page for detailed weight rating information

ISUZU CARE	
WARRANTY	6 Year Standard Warranty
	600,000 km / 10,000 Engine Hours
ROADSIDE ASSIST	6 Year Roadside Support
	24/7 Unlimited km
HARSH APPLICATION WARRANTY (CONCRETE AGITATOR / GARBAGE COMPACTOR)	3 Year Standard Warranty
	300,000 km / no hours stipulation
	3 Year Roadside Support
	24/7 Unlimited km

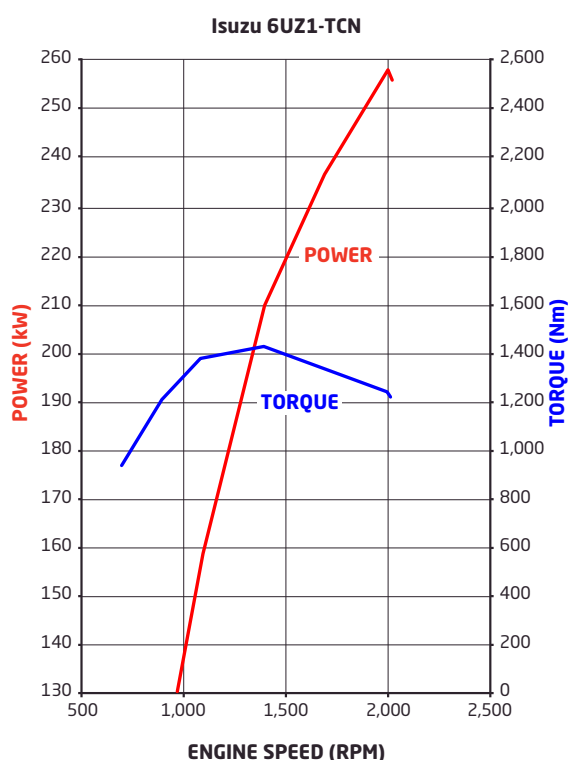


Subject to the conditions outlined in the IAL New Vehicle Warranty. For further information please visit isuzu.com.au or contact your local dealer.

INTELLIGENT SAFETY	
STANDARD FEATURES	Anti-Lock Braking System (ABS)
	Driver airbag
	Driver seatbelt pretensioner
	Low light capable reversing camera
	ECE-R29 compliant cab

SERVICE AGREEMENTS			
Optional Service Packages	ESSENTIALS	ESSENTIALS PLUS	TOTAL
SCHEDULED SERVICINGS	●	●	●
CONSUMABLES		●	●
ENGINE, TRANSMISSION & DRIVELINE			●
EXTRAS	After-hours Servicing, Glass, Fuel Card, Pickup - Dropoff		

ENGINE	
DESCRIPTION	Isuzu 6UZ1-TCN
TYPE	6 cylinder 24 valve SOHC
DISPLACEMENT	9,839 cc
COMPRESSION RATIO	17.5:1
BORE X STROKE	120 mm x 145 mm
POWER	257 kW (350PS) @ 2,000 rpm (DIN NET)
TORQUE	1,422 Nm @ 1,400 rpm (DIN NET)
INDUCTION	Electronically controlled variable nozzle turbocharger with air-to-air intercooler
FUEL INJECTION	Direct injection high pressure common rail
EMISSION CONTROL	Cooled EGR with exhaust Diesel Oxidation Catalyst (DOC). ADR 80/03 (Euro V) compliant.



TRANSMISSION																						
MT	CLUTCH	<p>Type: Single plate with air assisted hydraulic control</p> <p>Clutch plate diameter: 432 mm</p> <p>Clutch lining area: 1,923 cm²</p>																				
	GEARBOX	<p>Description: ZF 9S 1310 TO</p> <p>Type: 9 speed with synchromesh on gears 1-8</p> <p>Ratios:</p> <table border="1"> <tr> <th>Crawler</th> <th>1st</th> <th>2nd</th> <th>3rd</th> <th>4th</th> <th>5th</th> <th>6th</th> <th>7th</th> <th>8th</th> <th>Rev</th> </tr> <tr> <td>9.48</td> <td>6.58</td> <td>4.68</td> <td>3.48</td> <td>2.62</td> <td>1.89</td> <td>1.35</td> <td>1.00</td> <td>0.75</td> <td>8.97</td> </tr> </table> <p>Power Take Off facility: Provision at rear of transmission case</p> <p>Other features: Repeat 'H' shift pattern</p>	Crawler	1st	2nd	3rd	4th	5th	6th	7th	8th	Rev	9.48	6.58	4.68	3.48	2.62	1.89	1.35	1.00	0.75	8.97
		Crawler	1st	2nd	3rd	4th	5th	6th	7th	8th	Rev											
		9.48	6.58	4.68	3.48	2.62	1.89	1.35	1.00	0.75	8.97											
		AT	<p>Description: Allison 4430</p> <p>Type: 6 speed automatic</p> <p>Ratios:</p> <table border="1"> <tr> <th>1st</th> <th>2nd</th> <th>3rd</th> <th>4th</th> <th>5th</th> <th>6th</th> <th>Rev</th> </tr> <tr> <td>4.70</td> <td>2.21</td> <td>1.53</td> <td>1.00</td> <td>0.76</td> <td>0.67</td> <td>5.55</td> </tr> </table> <p>Power Take Off facility: LHS and top openings on transmission bellhousing. Engine driven PTO drive gear.</p> <p>Other features: 5th generation electronic controls with adaptive shift. Long life TranSynd synthetic fluid.</p>	1st	2nd	3rd	4th	5th	6th	Rev	4.70	2.21	1.53	1.00	0.76	0.67	5.55					
1st	2nd		3rd	4th	5th	6th	Rev															
4.70	2.21		1.53	1.00	0.76	0.67	5.55															

AXLES	
FRONT	Description: Meritor FG941
	Type: Reverse Elliot I-beam
	Capacity: 6,600 kg
REAR	Description: Meritor MT-14X
	Type: Tandem drive
	Other features: Inter-axle lock and cross locks fitted to both axles
	Capacity: 18,100 kg
Ratio: 4.875:1 (except FXZ/FXY AUTO MLWB models), 5.286:1 (FXZ/FXY AUTO MLWB models)	

SUSPENSION		
FRONT	Type: Single stage alloy steel taper-leaf springs	
	Other features: Double acting hydraulic shock absorbers. Stabiliser bar.	
REAR	FXZ	Type: Taper leaf spring with Isuzu 6 rod and trunnion location system
	FXY	Description: Hendrickson HAS461
		Type: Airbag
Capacity: 20,865 kg at ground		

BRAKES	
DESCRIPTION	Meritor 'Q-Plus'
TYPE	Full air 'S-Cam' front and rear drum brakes
DIAMETER X WIDTH FRONT	419 x 127 mm
DIAMETER X WIDTH REAR	419 x 178 mm
PARK BRAKE	Spring park brake acting on all rear wheels
AUXILIARY BRAKE	Air controlled exhaust brake

STEERING	
TYPE	Power assisted recirculating ball
GEAR RATIO	18.5:1
TURNS LOCK TO LOCK	3.7
WHEEL LOCK ANGLE	40° (inside wheel) / 32° (outside wheel)

WHEELS & TYRES		
FRONT	WHEELS	22.5 x 8.25 ten stud ISO standard steel wheels
	TYRES	295/80R22.5 152/148M Michelin X Multi Z 2 Tubeless
	STEER AXLE TYRE RATING	7,100 kg
REAR	WHEELS	22.5 x 8.25 ten stud ISO standard steel wheels
	TYRES	11R22.5 148/145L Michelin X Multi D Tubeless
	TANDEM AXLE TYRE RATING	23,200 kg
SPARE	Rim supplied. Winch type carrier (except FXZ MLWB).	

CHASSIS FRAME	
TYPE	Cold rivetted ladder frame.
MATERIAL	HT540A steel members
DIMENSIONS	Side rail (mm): 285 x 85 x 7.0 Rear frame width (mm): 850

FUEL TANK	
TYPE	Frame mounted aluminium fuel tank
CAPACITY	400 L
FUEL CAP	Lockable

ELECTRICAL SYSTEM	
TYPE	24 volt
ALTERNATOR	90 amp
STARTER MOTOR	5.0 kW
BATTERY	2 x 115E41L (651 CCA) batteries connected in series
CAN BUS PROVISION	Underdash CAN system access plug for connection to a Fleet Management System (FMS) (not supplied)

CABIN SPECIFICATIONS & APPOINTMENTS

CABIN GENERAL FEATURES	
ENGINE ACCESS	Electro-hydraulic cab tilt
CAB MOUNTING	Rear coil spring suspension with hydraulic shock absorbers
STEPS	Heavy duty anti-slip steps
DOORS	90° opening internally reinforced front doors
MIRRORS	Heated and powered exterior main mirrors with flat glass and additional independently adjustable convex "spot" mirrors
WIPERS	Two speed windscreen wipers with intermittent wipe mode
EXTERIOR LIGHTING	LED main beam and halogen high beam headlamps. Chrome surround.
	Roof mounted clearance lamps
	Front foglamps
AUDIBLE WARNING	Reverse alarm
GRILLE	Chrome
FRONT BUMPER	Body coloured air dam type
SECURITY	Central locking with remote keyless entry and immobiliser

CABIN INTERIOR	
SEATING	Isri 6860/875 NTS air suspension driver's seat
	Front passenger adjustable bucket seat and front centre seat with folding seat back
SEATBELTS	3-point lap sash seatbelts in all outboard seating positions. Driver seatbelt integrated with driver seat. Centre seat lap belts.
STEERING COLUMN	Tilt/telescopic adjustable
ENTRY ASSIST GRIPS	Door and roof pillar mounted
DOOR WINDOWS	Electric control
STORAGE	Overhead compartments
	Twin cup holders
	Centre console box and storage tray
	Passenger glovebox
	Door pockets
POWER OUTLET	24V cigarette lighter
	2.4A high current fast charge USB socket
AIRCONDITIONING	Auto control
INTERIOR LIGHTING	Fluorescent lamp
REAR COMPARTMENT	ADR 42 compliant sleeper with mattress

AUDIO VISUAL UNIT	
SCREEN TYPE	10.1" 1080p High Definition with capacitive touch
NAVIGATION	Truck tailored GPS based system + live feed traffic alerts and live feed route optimisation via smartphone link (live feed component is by subscription with first 3 years provided at no extra cost)
OPERATING SYSTEM	Android Automotive
RADIO	AM/FM/DAB+
INTERNAL STORAGE CAPACITY	32GB
	USB 3.0 socket
	Wi-Fi connectivity
SMARTPHONE INTEGRATION	Android Auto / Apple CarPlay compatible
	Phone storage pocket with wireless charging facility
OTHER CAPABILITY	Provision for external camera inputs, tyre pressure monitoring, low and high position reverse sensor inputs

DRIVER CONTROLS	
ENGINE	Idle speed control
	Cruise control
TRANSMISSION (AT ONLY)	Push button gear selection control
GENERAL CONTROLS	Headlamp on/off and levelling, windscreen wipers (2 speed and intermittent modes), washers, exhaust brake, turn signals
	Inter-axle lock and cross lock engage switches

INSTRUMENTATION	
MULTI INFORMATION DISPLAY	Vehicle systems status
	Low fuel level alert
	Fuel consumption information
	Service interval alerts
	Hourmeter
GENERAL INSTRUMENTATION	Adjustable vehicle speed warning
	Speedometer and tachometer
	Digital odometer with integrated dual tripmeters
	Transmission oil level, oil life, filter life, and condition monitor display (AT only)
	Engine coolant temperature, fuel level and air pressure gauges

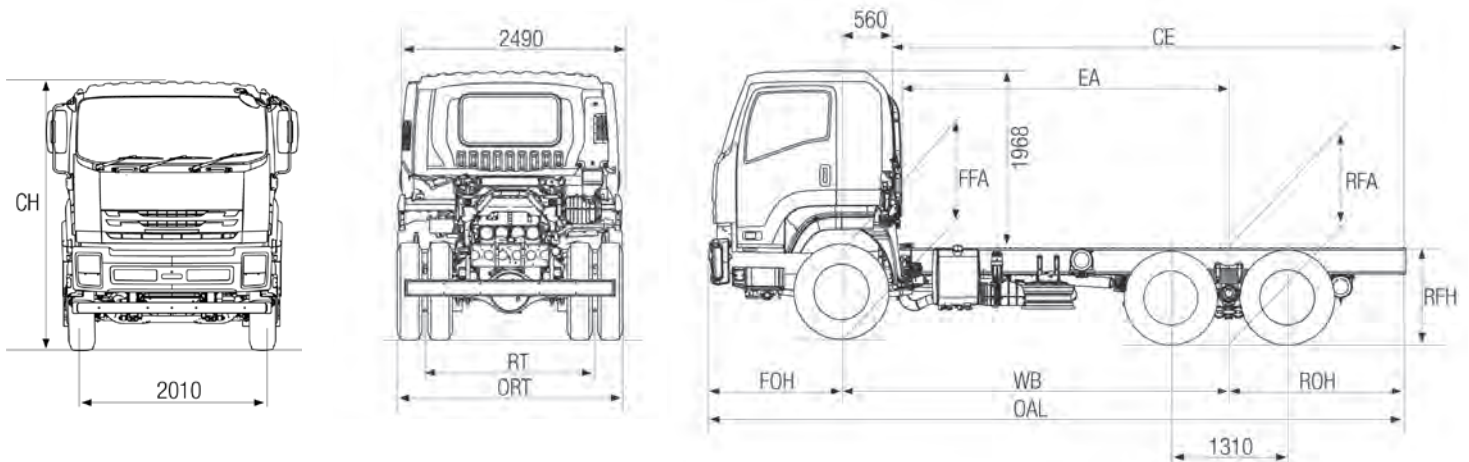


WEIGHTS (kg)							
MODELS	RATINGS*		LOADING LIMIT* (at ground)		CAB CHASSIS WEIGHT #		
	GVM	GCM	FRONT	REAR	FRONT	REAR	TOTAL
FXZ 240-350 AUTO MLWB	24,000	45,000	6,600	18,100	4,120	3,340	7,460
FXZ 240-350 LWB	24,000	45,000	6,600	18,100	3,945	3,540	7,485
FXZ 240-350 AUTO LWB	24,000	45,000	6,600	18,100	4,130	3,575	7,705
FXY 240-350 AUTO MLWB	24,000	45,000	6,600	18,100	4,075	3,130	7,205
FXY 240-350 LWB	24,000	45,000	6,600	18,100	3,925	3,320	7,245
FXY 240-350 AUTO LWB	24,000	45,000	6,600	18,100	4,105	3,350	7,455

* Vehicle ratings and front/rear weight limits are subject to government regulatory requirements and weight distribution analysis. Consult your Isuzu dealer to select the correct vehicle for your specific application.

Cab chassis only as supplied and including 10 litres of fuel.

DIMENSIONS (mm)													(m)
MODELS	WB	OAL	FOH	ROH	EA	CE	RT	ORT	CH	FFA (unladen)	RFA (unladen)	RFH (unladen)	TURNING CIRCLE kerb to kerb
FXZ 240-350 AUTO MLWB	4,540	8,000	1,480	1,980	3,860	5,939	1,840	2,450	2,990	920	1,095	1,140	17.1
FXZ 240-350 LWB / AUTO LWB	6,010	10,990	1,480	3,500	5,330	8,950	1,840	2,445	2,990	920	1,100	1,140	22.7
FXY 240-350 AUTO MLWB	4,540	8,000	1,480	1,980	3,860	5,939	1,840	2,450	2,990	920	1,050	1,070	17.1
FXY 240-350 LWB / AUTO LWB	6,010	10,990	1,480	3,500	5,330	8,950	1,840	2,445	2,990	920	1,040	1,065	22.7



PERFORMANCE (calculated - typical paved road)				
		GEARED SPEED [^] (top gear at peak power engine rpm)	LOW SPEED GRADEABILITY (lowest forward gear assuming no wheel slip)	ENGINE SPEED (top gear at 100 km/h)
FXZ/FXY 240-350 LWB	At 24,000 kg GVM	106 km/h @ 2,000 rpm	48%	1,890 rpm
FXZ/FXY 240-350 AUTO MLWB	At 24,000 kg GVM	109 km/h @ 2,000 rpm	60%	1,830 rpm
FXZ/FXY 240-350 AUTO LWB	At 24,000 kg GVM	119 km/h @ 2,000 rpm	55%	1,690 rpm

[^] Maximum speed achievable depends on vehicle frontal area as well as other factors. Consult your Isuzu dealer for more detailed information. Vehicle is speed limited to 100km/h.

ORDER CODES	
MODELS	CODES
FXZ 240-350 AUTO MLWB	FH-FXZJJ-L22
FXZ 240-350 LWB	FH-FXZJJ-D22
FXZ 240-350 AUTO LWB	FH-FXZJJ-N22
FXY 240-350 AUTO MLWB	FH-FXYJJ-L22
FXY 240-350 LWB	FH-FXYJJ-D22
FXY 240-350 AUTO LWB	FH-FXYJJ-N22

Subject to the conditions outlined in the IAL New Vehicle Warranty, Isuzu FX series models carry a standard factory warranty which covers the owner for the first 72 months or 600,000 kilometres or 10,000 Engine Hours (whichever comes first). All Isuzu warranties are subject to mandatory prescribed terms under Australian Consumer Law including consumer guarantees. Harsh Conditions variations to standard factory warranty may apply. For more details visit the Isuzu website at www.isuzu.com.au which explains Isuzu warranties in more detail, or alternatively contact your local Isuzu Truck dealer. All warranties commence from date of initial delivery.

ISUZU AUSTRALIA LIMITED ABN 97 006 962 572 ("IAL"). The information in this spec sheet was correct at time of printing, but all measurements, specifications and equipment are subject to change without notice. Some equipment may have been changed and/or is available at extra cost. IAL may make changes at any time without notice, in prices, colours, materials, equipment and models. IAL makes all reasonable attempts to ensure the availability of all vehicles and equipment. The information in this spec sheet is general in nature. Your Isuzu dealer can confirm all measurements, specifications and vehicle / equipment availability upon request. To the extent permitted by the law, IAL is not liable to any person as result of reliance on the content of this spec sheet.

Statement of Organisational Capacity and Experience

South West Isuzu and more importantly the Isuzu Truck Product has the support of eight (8) Isuzu Truck Franchised Dealers, including us, in Western Australia. From Port Hedland to Kalgoorlie to Bunbury to Albany and everywhere in between.

There are currently thousands of these models in Service in WA.

South West Isuzu Offer three (3) maintenance and service vehicles throughout WA and the Department of Parks and Wildlife have recently used this service in the 2015-2016 South Western bushfires where we as an organisation were involved in the maintenance and repair of Parks & Wildlife machines whilst retuning from front line duties at both the fire front and in our Service Workshop located in Bunbury WA.

With our organisation we have 15 staff member within our Fixed Operations dedicated to offering the best of aftersales care and support. South West Isuzu have been involved in various supply, install, maintenance and procurement of emergency parts in relation to trucks located all over WA.

RELEVANT EXPERIENCE

South West Isuzu has supplied vehicles similar to the one specified in the RFQ to a number of Local Shires and Councils including the City of Busselton.

We appreciate the work loads and usage of such vehicles and set high standards to our staff and sub-contractors that the vehicle supplied will meet our high standards.

We are confident of delivering your new ISUZU truck on time and free of fault.

We have used local manufacturer Bengineering for your tray requirements.

Isuzu trucks of this model are covered by a full 3 year / 100000km bumper to bumper warranty with 24 hour roadside assistance. Options are available to upgrade the warranty to 5 years / 250000km for \$2450 including GST.

South West Isuzu have mobile breakdown service units for warranty problems etc. It is to be noted that all warranty is to be carried out at the selling dealer and we can arrange for the truck to be picked up and dropped off for warranty work required.

It is to be noted that Troy McAinch, our workshop Foreman/Supervisor lives in Busselton and has called into the City of Busselton on his way to and home from work to help with Isuzu truck issues.

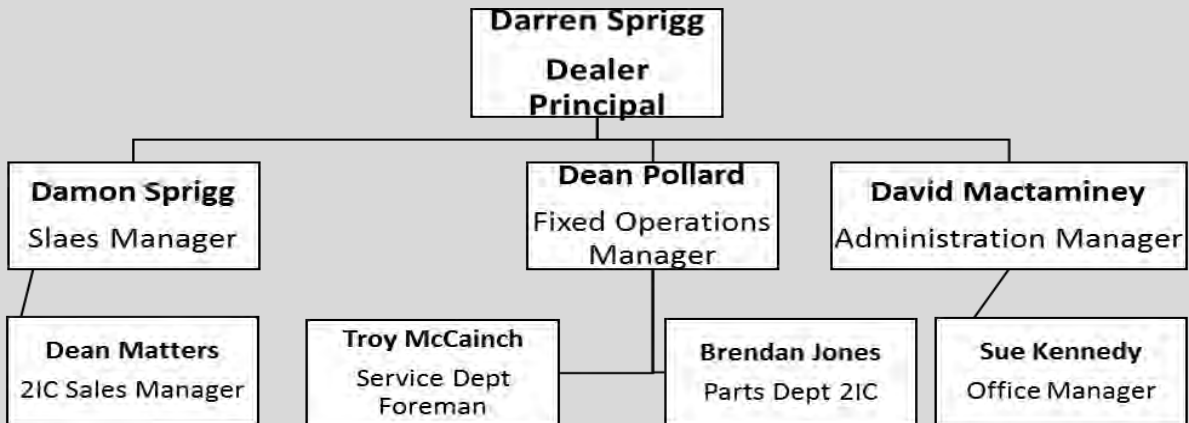
South West Isuzu have supplied trucks very similar in build to the following Local Government Councils. Shire of Wagin, City of Busselton, Shire of Capel, Shire of Donnybrook, Bridgetown/Greenbushes Shire, Shire of Harvey, Shire of Kulin, Kondinin Shire, Dumbleyung Shire, Shire of Lake Grace and the list could go on.

Shire of Dumbleyung
Calvin Shotter
Manager of Works
0427 634 012

Fulton Hogan / Mainroads
Adam Davies
Fleet Plant Coordinator
p: (08) 9781 0426 m: 0406 160 918
Adam.Davies@mainroads.wa.gov.au
Mainroads
Robinson Drive, Bunbury WA 6230
p: 08 9724 5703

Shire of Capel
Sue Burkett
Engineering & Operation Administrative Officer
SBurkett@capel.wa.gov.au
9727 0222

South West Isuzu Organisational Chart – Management



We will have three (3) layers of Management over this Contract, with responsibility changing as little as possible. This our Competitive Advantage.

Damon Sprigg will be the “Primary” within this whole three (3) month contract. He will liaise with Dean Pollard, Dean Matters to make sure we have the correct information regarding delivery time lines.

Troy McCainch himself will assume responsibility reporting direct to Dean Pollard for Aftercare Service, maintenance and repairs. Important to note we will have one (1) contact for this contract until the Date of delivery.

Darren Sprigg will oversee the entire Contract – pre contract to throughout the life of the truck. Ultimately Darren Sprigg is responsible.

Communication is Key:

We at south West Isuzu operate under one (1) pillar – that being “South West Isuzu”. We envisage that there be only one contact from the start to the end – with information disseminated from that “Primary Source” (in this case Damon Sprigg – pictured below) through to other layers right down to technicians and their daily expectations and responsibilities to get this contract completed correctly and on-time.

Contingencies include:

- Darren Sprigg & Dean Matters for Damon Sprigg (pictured below).



-
- Dean Pollard (above right) for Troy McAinch (above left)

Again “**Communication is Key**” and we invite Mr Allan Jones to Weekly Meetings to be held at convenient location (we would suggest Mr Allan Jones Office in Bunbury WA) to keep DBCA informed of where we at South West Isuzu are at in relation to this Contract. We are only five (5) minutes by vehicle from Mr Allan Jones office in Bunbury Western Australia. We are happy to meet at any prearranged convenient time both parties. We invite unconditionally Allan Jones to our Dealership at any time with an open door policy. Certainly we expect open, fair and concise communication.



Conveniently Located only five (5) minutes from Mr Allan Jones

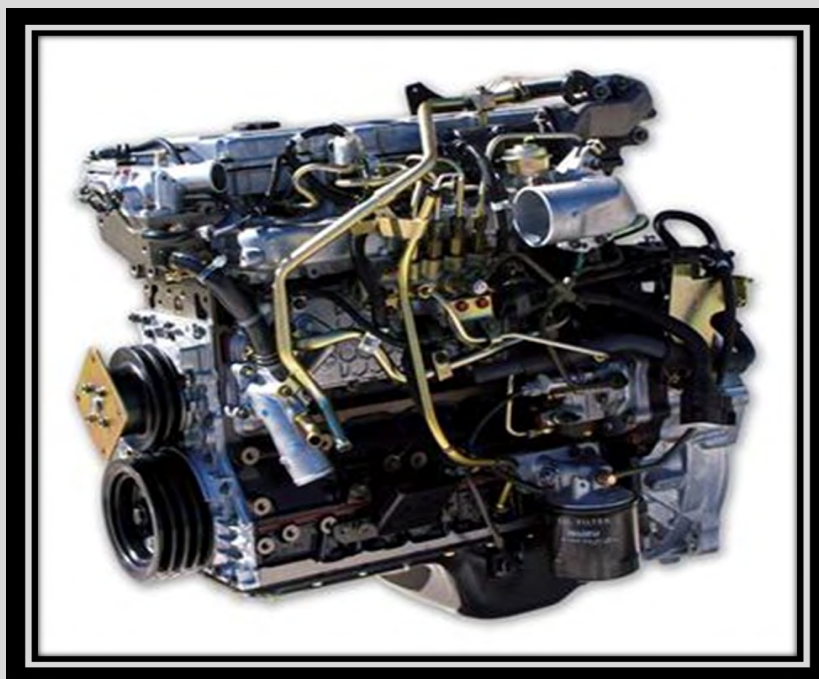
South West Isuzu Have supplied Department of Biodiversity, Conservation and Attractions these exact models and associated servicing on numerous previous occasions, on time and

on budget. We believe we have the track record with DBCA to fulfil this contract having recently (in the past 12-18 months) supplied numerous trucks of this type. We are geographically very close to communicate any problems, risks or threats should they occur.



Isuzu NPS 75-155 – Please see attached Isuzu Specification Sheet

We at our organisation understand the importance of great service and backup. If we cannot supply a part out of our \$400,000+ parts holdings we will supply off an engine or truck, that we will have complete in stock. The reliability of this Truck is unsurpassed but mechanical problems can and do happen. We are ready and willing to keep DBCA Trucks working. We will go the extra distance – we try harder.



Isuzu 4HK1 Engine – South West Isuzu Stock at least five (5) of these engines at any one time



Troy McAinch Driving at Midday in Feb 2016 on his way to a Fire Front in our Service Vehicle

The above photo is a clear and simple illustration of what the lengths that this organisation went to, to service and repair DBCA Isuzu Trucks during the summer of 2016 South West Bush Fires. While there; while waiting for Trucks to come back from the fighting front; Troy was involved with wetting down vehicles radiators with water hoses to clear them from ash, thus stopping them from overheating. We are willing to go that little bit further a bit more often.

Truck functionality is the most important factor in determining relevant investment. South West Isuzu stand by our very good reputation in providing the right product first time, the Isuzu NPS 4x4 is the only truck to purchase.

We provide Value for Money over and above the Quoted Pricing. Our Staff are a huge asset to ours and your organisation.



The Entire Team at South West Isuzu

Experience counts:

Damon Sprigg, Sales Manager – 25 years delivering Isuzu Trucks providing good value transport solutions to the Industry. Damon has a proven record supplying to DBCA.

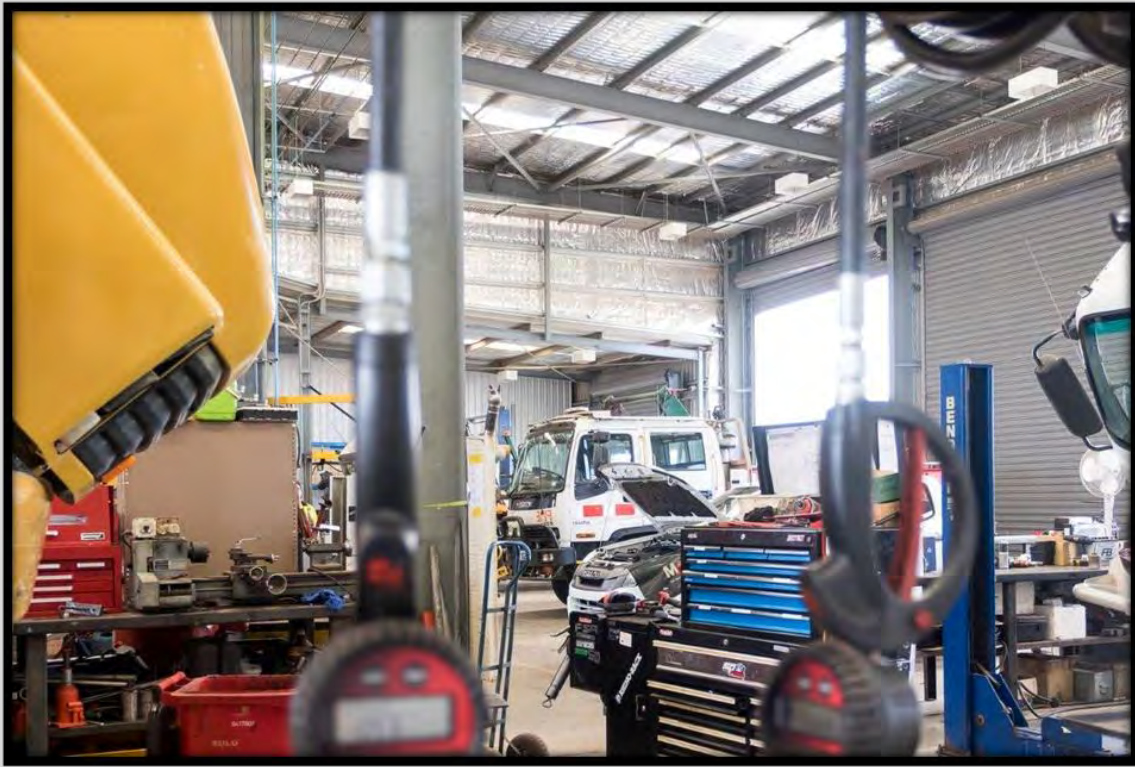
Darren Sprigg, Dealer Principal – 22 years in the Automotive Industry, with a Bachelor of Business – Major in Accounting.

Dean Pollard, Fixed Operations Manager – 30 years solving Service related problems providing cost effective solutions. We do not just guess and replace we fix at the source.

Troy McAinch, Service Foreman – 20 years Heavy Duty Diesel Technician, dedicated to our Fleet Clients. First Class, Cost effective, on the spot repairs and Maintenance.

Six other Staff with over 10 years' experience at South West Isuzu – Four (4) dedicated Mobile Field Service Units.





State of the Art Equipped Workshop.

Including: Computerised Brake Roller Tester.

Computerised Laser Wheel Alignment.

Suspension Stress Tester.

Full Length Service Pit.

Fully equipped with Isuzu Special Tools and Scan Laptops/Scan Tools.

All this located Regionally in the heart of the South West of Western Australia.





South West Isuzu Awarded Isuzu Dealer Excellence in 2017

Part of Achieving this prestigious award is the highest levels of Customer Satisfaction; South West Isuzu achieved this:

96% Approval for all customers combined including Sales, Service and Parts. South West Isuzu can deliver and this potential contract with DBCA will be no different.

Specified Personnel

Damon Sprigg

25 years' experience in selling, delivering, living, Isuzu Trucks.

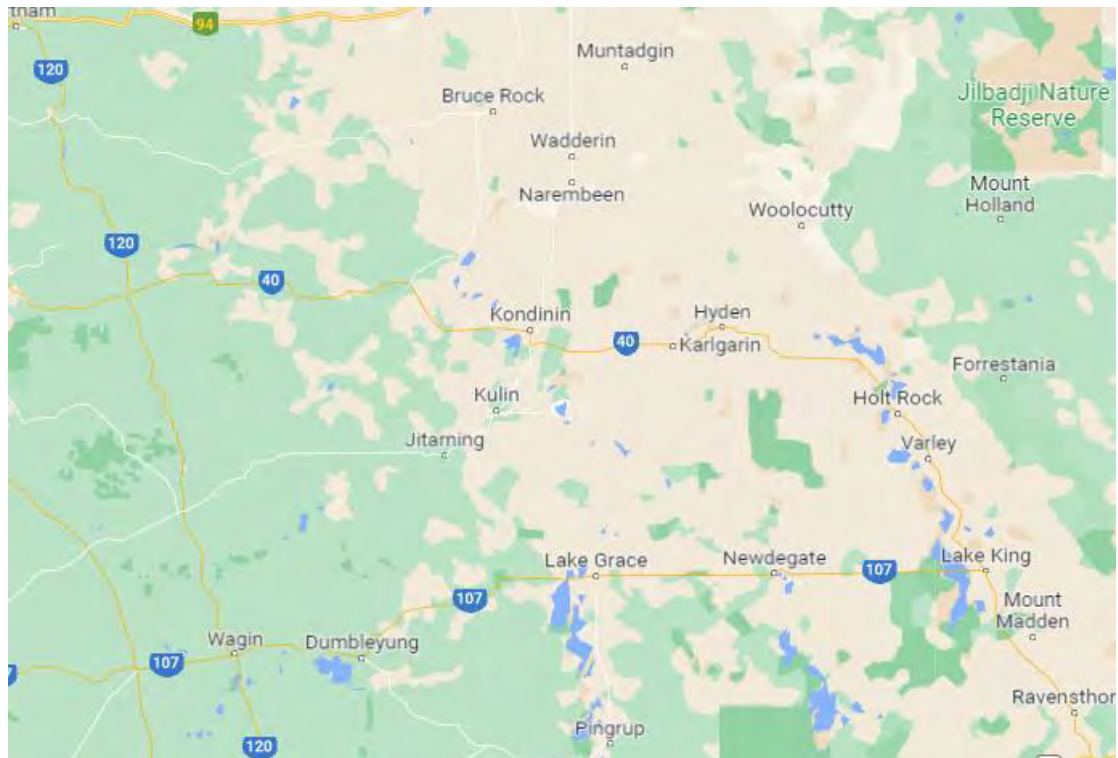


Damon Sprigg Team Elite Sales Manager 2017 – the only one in Western Australia.

“Local Benefit”

South West Isuzu look after a huge area which includes the Shire of Corrigin.

Our PMA covers down to Augusta in the South up to Northam just east of Perth and everywhere in between.





Request for Quote 01-2022

Supervision of DRFAWA Fire and Flood
Recovery and Reinstatement Works for the
Shire of Corrigin

Contents

1	Background	3
1.1	Initial Assessment to Determine Order of Magnitude	3
1.2	Time Limit for Claims	3
2	Evaluation Criteria	4
3	Specification	4
3.1	Contract Requirements in Brief	4
3.2	Scope of Work	5
3.3	Specific Requirements of the Contract	5
3.3.1	Photographs	6
3.3.2	Compliance with Legislation and Policies.....	6
3.4	Implementation Timetable	6
3.4.1	Indicative Timeline	7
4	General Conditions of Contract	7
4.1	Insurances	7
5	Special Conditions of Contract	8
5.1	Administrative Requirements	8
5.2	Dress Code.....	8
5.3	Plant, Vehicles and Equipment	8
5.4	Quality Control	9
5.5	Environmental Protection	9
5.5.1	Site Control.....	9
5.6	Materials and Work	9
5.6.1	Regulations.....	9
5.6.2	Safety Management Plan.....	9
5.6.3	Induction Training	9
5.6.4	Pre-Job Planning	10
6	Schedule of Rates	10

1 Background

The Shire of Corrigin sustained widespread damage to various roads following heavy rainfall throughout the Shire during July 2021. The damage included road and shoulder scours, damaged and blocked floodways and culverts, destruction or dislocation of culvert headwalls and silting of table and cut-off drains.

In February 2022 the shire also sustained significant damage to roads and public assets from a large bush fire.

The Shire of Corrigin has submitted two applications for funding under the Disaster Recovery Funding Arrangements WA associated with a flood event, AGRN978 in July 2021 and a bushfire event, AGRN1010 in February 2022.

The Shire of Corrigin intends to engage contractors to complete the reinstatement works as internal resources are fully committed to maintenance and capital works programs. Some work was carried out initially by the Shire of Corrigin and contractors as opening-up works immediately after the event.

A consultant is required to manage the repairs and reinstate essential public assets to pre-disaster condition.

1.1 Initial Assessment to Determine Order of Magnitude

After the flood and fire events, the Principal engaged Greenfield Technical to undertake an assessment of the damage to provide an initial cost estimate relevant to the nature and extent of the damage to Shire roads and public assets.

The flood damage assessment report and cost estimate was submitted to Department of Fire and Emergency Services (DFES) in August 2021 with supporting documentation. The indicative estimate for AGRN978 is approximately \$1.4million.

A damage assessment report and cost estimate for AGRN1010 was submitted to DFES in May 2022 for damage to essential public assets as a result of the bush fire. The indicative cost estimate for AGRN1010 is \$3million.

1.2 Time Limit for Claims

The allowable time limit for eligible on-ground activities related to Essential Public Asset Restoration Works for both ARGN 978 (flood) and ARGN 1010 (fire) expires on 30 June 2024.

2 Evaluation Criteria

Interested consultants should provide a proposal to complete the above scope of work on a schedule of rates basis. The proposal should address the following elements:

- Company name, address, contact details and ABN.
- Company profile.
- Insurance details.
- Relevant previous company experience.
- Nominated staff including qualifications and experience
- Capacity to carry out the works with the consultant's current commitments.
- Proposed Methodology.
- Schedule of rates including any disbursement costs.

The responses will be evaluated using the following criteria:

Criteria	Weighting
Price	50%
Relevant Company and Consultant Skills and Experience	20%
Company Resources and Availability	15%
Methodology and Approach	10%
Regional Price Preference	5%

3 Specification

3.1 Contract Requirements in Brief

The Shire is seeking to appoint a suitably qualified and resourced company to provide project management, administration and onsite technical assurance and inspection services to deliver the works required for the two events.

The successful consultant will be required to develop technical specifications and engage contractors to complete the restoration work efficiently and with limited disruption to normal shire operations. Liaison with the Manager Works and Services, landowners, contractors and DFES will be required to ensure the project is completed within the required timeframe.

The Shire may request some additional betterment works at their discretion and at the shire's own cost which the successful company may be requested to manage.

3.2 Scope of Work

The Consultant will be required to provide supervision of on-ground activities related to recovery and restoration of essential public assets including the following:

- Project administration and management to ensure efficient and effective use of resources.
- Provide experienced and qualified onsite supervisor for the duration of the project to manage all associated activities including procurement, inductions and construction works.
- Development of technical specifications for restoration works.
- Procurement and engagement of contractors to carry out on ground works in consultation with the Principal and in compliance with legislation and shire procurement policies.
- Supervision and direction of contractors undertaking the works.
- Sourcing materials such as gravel supplies, culverts, pipes, bitumen, etc in consultation with the Principal and in compliance with legislation and shire procurement policies.
- Liaison with landowners and road users.
- Collection and reconciliation of daily work dockets to support invoicing raised by the contractor to enable payments to be made by the shire and claims to be lodged with DFES for reimbursement.
- Preparation of DRFAWA claims ready for submission to DFES by Shire of Corrigin.
- Preparation of quarterly estimates to meet DFES requirements.
- Monthly management reports to be submitted to Manager of Works and Services summarising work completed, project outcomes, progress of claims and remaining restoration works.
- Provide monthly comparison report of actual expenditure to estimated costs and ensure all financial expenditure reporting is thorough, accurate and detailed in accordance the Australian Accounting Standards and the Local Government Financial Regulations.
- Provide final report and supporting documentation to a standard acceptable to the Shire of Corrigin and DFES.
- Update RAMM database to include restoration works at completion of project.

3.3 Specific Requirements of the Contract

The successful company will need to provide their own vehicle and accommodation and have staff that can provide the necessary project management, project administration, engineering and technical services and job planning/scope advice to the appointed contractors.

3.3.1 Photographs

Photographs of the completed works will be required to comply with the DRFAWA guidelines and should contain the following:

- Road name
- Road number
- Latitude / Longitude
- SLK
- Date / time

The imagery must be taken in a forward direction along each road and be of suitable resolution.

The data must be made available to the Shire in electronic format.

The Shire will provide the consultant access to the Shire's RAMM database to assist in preparing the claim as well as provide evidence of the Shire of Corrigin road network in its pre-disaster condition.

3.3.2 Compliance with Legislation and Policies

The consultant shall ensure that all activities comply with the following standards, procedures and regulations:

- *Local Government Act 1995.*
- *Local Government (Functions and General) Regulations 1996.*
- *Local Government (Financial Management Regulations) 1996.*
- *Work Health and Safety Act 2020.*
- Australian Accounting Standards
- DRFAWA funding requirements.
- Main Roads Western Australia design requirements (as relevant).
- Shire of Corrigin policies and procedures

3.4 Implementation Timetable

On ground works are expected to commence as soon as possible from 1 July 2022 and are to be completed by December 2023 with specific timing to be arranged in consultation with the Manager of Works and Services.

3.4.1 Indicative Timeline

The following table provides an indicative project timeline subject to discussion and amendment.

	Milestone	Timeline
1	Advertising Request for Quote	Wednesday 25 May 2022
2	Closure of Quote	Friday 10 June 2022 at 4pm
3	Evaluate Responses	Tuesday 14 June 2022
4	Finalise Contract and Appoint Consultant	Friday 17 June 2022
5	Confirm Scope and Technical details	Friday 1 July 2022
6	Source materials and contractors	Friday 29 July 2022
7	Commence on ground works	Monday 29 August 2022
8	Complete on ground works	December 2023

4 General Conditions of Contract

The general conditions of contract is based on the AS 4122 – 2010 General Conditions of Contract for Consultants

4.1 Insurances

The Consultant will require the following insurance:

Public Liability—\$20,000,000 in one occurrence and \$20,000,000 aggregate to protect against claims arising from personal injury or property damage caused by the actions and operations of the insured.

Workers' Compensation or Personal Accident Insurance Cover— All employees in Australia must be insured by their employer for Workers' Compensation. Or in the case of a sole business owner or operator then Personal Accident Insurance Cover is required. The company or person appointed will be required to have the appropriate insurance in effect.

Vehicle Insurance – cover for the value of plant and equipment.

5 Special Conditions of Contract

5.1 Administrative Requirements

The Consultant is required to provide the following during the course of their contractual obligations:

Activity	Frequency
Any variations to the contract or additional works to be undertaken	Prior to commencement
Observations of dangerous circumstances that require attention to obviate potential public harm or public liability	Immediately
Accidents or related claims of a public liability nature	Immediately
Damage to property or persons as a result of the performance or non-performance of the contract service requirements	Immediately
All instances of misbehaviour or illegal activity that contravenes Commonwealth, State or Local laws or that impedes the performance of the contract service or that may result in damage to any Council or community property or misconduct towards the public	Immediately as incident occurs

5.2 Dress Code

All Consultants and Contractors are to wear appropriate clothing, footwear and any safety equipment as required by the nature of the services provided.

All Consultants and Contractors as well as their employees are to wear high visibility upper garments at all times while working outside or near plant and vehicles within road reserves.

All appropriate clothing and equipment is to be provided by the contractor.

5.3 Plant, Vehicles and Equipment

The Consultant is to provide, operate and maintain the plant, vehicles and equipment necessary for the proper performance of the required services.

All plant, vehicles and equipment used in the Contract services shall be maintained in good working order and clean condition to the satisfaction of the Principal.

The Consultant shall ensure that all Contractor and Sub contractors vehicles and plant operated whilst undertaking this contract are maintained in roadworthy condition and carry the required licensing and registration as required under the Road Traffic Act at all times.

5.4 Quality Control

The Principal shall conduct regular inspections to audit works carried out. The Consultant shall be responsible for ensuring that:

- activities scheduled in the program conform to the specification,
- adequate resources are allocated to enable delivery of specified outcomes, and
- work is carried out with the specified time constraints.

5.5 Environmental Protection

5.5.1 Site Control

The Consultant shall ensure that all Contractors or Sub Contractors:

- a) Comply with the regulations and restrictions imposed by the Superintendent relating to the storage of equipment, the routing of traffic, the interruption of existing services and facilities and any other regulations in force on the Site;
- b) Comply with all statutes, regulations and bylaws relating to the protection of the environment including, but not limited to, the *Environmental Protection Act 1986*; *Wildlife Conservation Act 1950*; *Conservation and Land Management Act 1984*; *Soil and Land Conservation Act 1945*; *Environment Protection and Biodiversity Act 1999 (Cth)* and associated regulations.
- c) Obtain written approval from the Superintendent for the formation of any temporary roads, the erection of temporary structures or any Site clearing not specifically documented; and
- d) Store flammable or explosive products in accordance with the relevant statutes and to the approval of the Superintendent.

5.6 Materials and Work

5.6.1 Regulations

The Consultant and any Contractors shall comply with the *Work Health and Safety Act 2020* and associated regulation.

The Contractor shall be solely responsible for ensuring that wherever practicable, its employees and those of the sub-contractors and employees of separate contractors, the Principal, Superintendents, and visitors to the Site, are not exposed to hazards.

5.6.2 Safety Management Plan

The Consultant shall ensure that Contractors implement and maintain a Safety Management Plan and supply it to the Superintendent prior to the commencement of the Works.

The Consultant shall ensure that if Contractor does not have a Safety Management Plan then they will be required to comply with the Shire of Corrigin Safety Management Plan.

5.6.3 Induction Training

Employees of the Consultant, Contractors and/or Subcontractors and Employees of Contractors shall not commence work on the site until they have been inducted.

Upon commencement of work on the site, the Consultant and any Contractors shall further induct each employee with regard to all significant hazards associated with their particular

activity and area of employment on the Site and where relevant shall include the use of powered plant, tools and equipment.

5.6.4 Pre-Job Planning

The Consultant is to liaise with the Principal's representative to:

- Confirm the details of the project.
- Discuss the work schedule and DRFAWA funding requirements.
- Discuss any safety precautions.

Where legislation or codes of practice identify particularly hazardous activities including but not limited to working at heights the Contractor shall supply to the Manager of Works and Services with a Safe Work Procedure prior to the commencing such activity or type of work on the Site.

6 Schedule of Rates

Please complete the following table of general schedule of rates.

General Schedule of Rates	Hourly Rate Exc GST	GST	Total Hourly Rate Inc GST
Director/Partner			
Project Manager			
Project Supervisor			
Administration support			
<i>Consultants are to list any other items that may be chargeable over and above the fees listed in the schedule above including disbursements, consumables, travel etc. Any items not listed here will be ineligible for payment.</i>			
Disbursements	Rate Exc GST	GST	Rate Inc GST
<i>Example Travel</i>			
<i>Example Accommodation at cost</i>			
<i>Example Consumables at cost</i>			

Note:

Respondents may add to these Pricing Schedules as required.
 Disbursement may be provided as a fee or on a cost plus basis.
 Where fees are offered they are to be GST Inclusive
 Travel restricted to South West Land Division



Corrigin DRFAWA Project Management and Supervision

VP308235 - GHD Proposal

Shire of Corrigin

10 June 2022

→ The Power of Commitment

Project name		Corrigin DRFAWA Project Management and Supervision				
Document title		Corrigin DRFAWA Project Management and Supervision VP308235 - GHD Proposal				
Project number		12585408				
File name		"\\projectsportal.ghd.com@SSL\DavWWWRoot\sites\pp18_06\corriginrdfawaprojec\OppDocs\12585408-PRO_Corrigin DRFAWA Project Management and Supervision Proposal.docx"				
Revision	Author	Reviewer		Approved for issue		
		Name	Signature	Name	Signature	Date
0	Salman Agherdien	Antoinette Krause	<i>AKrause</i>	Antoinette Krause	<i>AKrause</i>	10.06.2022

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Executive summary

The purpose of this project is to provide project management, contract administration, site inspections and onsite supervision for the Shire of Corrigin to aid restoration works following flood damage sustained in 2021 and fire damage in 2022.

Value for Money

GHD is well placed to provide a quality, value for money service to the Shire for the following key reasons:

- Recent relevant experience: GHD have recently completed or are currently working on a number of DRFAWA/WANDRRA projects. This relevant experience can be applied specifically to this project to enable us to deliver a successful project for the Shire. Our recent experience means that GHD can provide the Shire with a value for money service that meets the project requirements.
- Capability: Supported by a large network of offices throughout Australia, GHD's WA Regions team is able to draw on expertise from a wide range of technical specialists and resources across the business. This enables us to meet a broad range of technical requirements.
- Location: Our office located in Bunbury will enable our engineers to mobilise to the site on short notice if required. This will shorten response times and reduce disbursement costs. Engineers based in the Geraldton and Perth office are also able to mobilise to site, as required.

Opportunity - Local commitment and knowledge

GHD have an extensive regional presence around Western Australia. We are committed to providing comprehensive engineering services to the local communities we operate in. We strive to develop long lasting relationships and work collaboratively to shape the communities we live in. We understand the local and regional requirements and therefore are able to provide the appropriate services.

Opportunity – Quality and safety

GHD is committed to the highest standards of health, safety, and environmental practices. GHD has embedded HSE into every aspect of our operations, and protecting the safety of our people, our clients and the communities and environments in which we operate. We are guided by our workplace health, safety, quality and environmental management systems, which are certified by Lloyds Register Quality Assurance to the relevant international standards (ISO and OHSAS).

Opportunity – Experienced team and project appreciation

GHD is well placed to provide the required consultancy services. Having completed a number of successful disaster damage assessment and recovery projects in the Midwest, Wheatbelt and Pilbara, we are familiar with the DRFAWA funding process. The selected team has extensive experience in project management, contract administration, technical specifications and construction supervision.

GHD's proposed team, including our nominated subcontractor, is familiar with the Shire of Corrigin. The nominated subcontractor has experienced staff residing in close vicinity to the Shire.

Contents

1. Company Details, Consultant Skills and Experience	1
1.1 Relevant Project Experience	2
1.2 Local Government References	2
2. Company Resources and Availability	3
3. Methodology and Approach	5
4. GHD's Offer	7
4.1 Hourly rates	7
4.2 Terms and Conditions	7
4.3 Insurances	7

Table index

Table 1	Company details	1
Table 2	Relevant Experience (GHD)	2
Table 3	Scope of Work and relevant experience	5
Table 4	Schedule of Rates	7
Table 5	Insurances	8

Appendices

Appendix A	Key Personnel CVs (GHD)
Appendix B	Onsite Supervisors CVs (Pro Earth Civil)

1. Company Details, Consultant Skills and Experience

Table 1 Company details

Item	Details
Company name	GHD Pty Ltd
Address	Level 1, 209 Foreshore Drive, Geraldton, WA 6530
ABN	39 0084 883 73
Contact details	Antoinette Krause – Manager Mid West Region Antoinette.krause@ghd.com 0434508403 08 9920 9403

GHD recognises and understands the world is constantly changing. We are committed to solving the world's biggest challenges in the areas of water, energy and urbanisation.

We are a global professional services company that leads through engineering, construction and architectural expertise. Our forward-looking, innovative approaches connect and sustain communities around the world. Delivering extraordinary social and economic outcomes, we are focused on building lasting relationships with our partners and clients.

Established in 1928, we remain wholly owned by our people. We are 10,000+ diverse and skilled individuals connected by over 200 offices, across five continents – Asia, Australia, Europe, North and South America, and the Pacific region.

Find out more about us at ghd.com

90+ years in operation
135+ countries served
200+ offices worldwide
2.2^B AUD revenue 2021
5 global markets
10^K people
50+ service lines

↳ Providing engineering, environmental, advisory, architecture, digital and construction services

1.1 Relevant Project Experience

Table 2 Relevant Experience (GHD)

Item No.	Project Title	GHD Scope of Work/Team involvement
1	Shire of Dowerin \$5 million (estimate) DRFWA (AGRN903)	Revised cost estimates, procurement, project management and reporting, contract administration and site inspections, site supervision, funding recoup claims.
2	Shire of Mingenew \$3 million (estimate) DRFAWA (AGRN965) Severe Tropical Cyclone Seroja	Damage assessment and cost estimate submission to DRFAWA. Procurement of a contractor and site supervisor. Construction phase has recently commenced. Project management, contract administration, site inspections, site supervision and funding recoup is currently being undertaken.
3	Shire of Exmouth \$2.5 million (estimate) DRFAWA (AGRN971)	Damage assessment and cost estimate submission to DRFAWA. Procurement phase to commence shortly.
4	Shire of Murchison Initial assessment DRFAWA	GHD was engaged to undertake an initial assessment after flood damage occurred to establish if the value of the works would trigger a flood event to be declared.
5	Shire of Carnamah \$10.6 million WANDRRA (AGRN743)	Flood damage assessment, cost estimates, procurement, project management and reporting, contract admin and site inspections, funding claims.
6	Shire of Dowerin \$881K WANDRRA (AGRN743)	Revised cost estimates, procurement, project management and reporting, contract administration, site inspections, and funding recoup claims.

1.2 Local Government References

GHD has a proven track record of providing quality project management services (DRFAWA/WANDRRA) to Local Governments in Western Australia. Please feel free to contact our references with regards to current and completed flood damage restoration projects.

Mr. Aaron Wooldridge Corporate & Community Services Manager Shire of Dowerin (08) 9631 1202	Mr. Jeremy Clapham Finance Manager Shire of Mingenew (08) 9928 1128
---------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------

2. Company Resources and Availability

GHD has permanent regional offices based in Geraldton, Karratha, Bunbury, and Albany. Our regional offices are supported by various experienced teams in Perth. This is a key differentiator when compared to smaller firms.

GHD's recent experience with DRFAWA (previously WANDRRA) projects has positioned us well for providing Project Management Services for the reinstatement of essential public assets and infrastructure following declaration of a natural disaster:

- GHD has a solid understanding of the processes involved from damage assessment, cost estimation, technical specifications, tender management, contract administration, site supervision, reporting and funding recoup.
- GHD has been working closely with DFES and Main Roads on a number of disaster recovery projects and appreciates the level of effort and attention to detail required in managing DRFAWA projects.

In addition to the above DRFAWA experience, GHD has undertaken multiple municipal projects that demonstrate our capability and extensive experience in successfully delivering projects in all regions across WA.

GHD proposes the following core team (Geraldton office):

Antoinette Krause

Antoinette has 16 years' experience in all stages of design, procurement and contract administration. She is a Chartered Professional Engineer (BEng Civil, B(Hons) Environmental) and certified Project Management Professional (PMP).

Antoinette has been managing flood restoration projects for a number of years and has an appreciation for the level of detail and accuracy required in fulfilling the DRFAWA/DFES requirements. All projects listed in Table 2 were managed by Antoinette.

Salman Agherdien

As a graduate civil/structural engineer at GHD, Salman has gained experience in project management, contract administration, client liaison and structural inspections. Being situated in a regional office has given Salman the opportunity to partake in a broad range of projects which include road construction, bridge inspections, steel and concrete assessment and environmental works. Salman has undertaken flood restoration works for the Shire of Mingenew, Shire of Exmouth and Shire of Dowerin.

On-Site Supervisor

GHD intends to subcontract the role to Pro Earth Civil who has extensive experience in DRFAWA projects. Refer to Appendix B for Pro Earth Civil's supervisor CV's.

The following team will provide support where required (Bunbury office).

Cheslyn Lotteriet

Cheslyn has 12 years' experience in the preparation of design/drafting documentation of civil infrastructure and multidisciplinary engineering projects across Western Australia, with excellent skills in compliance with Main Roads Western Australia drafting/drawing standards, lead drafting coordination, quality assurance, 2D road and pavement marking design documentation. His expertise has been applied to high profile roads and highways projects and urban/land development projects within Australia.

George Kezich

George is an engineer with over 7 years of experience, based at GHD's Bunbury office. He has a Bachelor of Engineering (Civil) degree from UWA. His experience includes planning; concept and detailed design; cost and quantity estimation; asset management; contracts and tendering; and project management. The infrastructure projects he has worked on include roads, traffic facilities, pavements, ports, stormwater drainage, waterways, integrated water management, and structural condition assessment.

Nicholas Bonin

Nicholas is a graduate who has used his fundamental skills in Project Management – Asset Delivery. He is experienced in forming business case documents and technical writing, interpreting engineering design report documents, construction costs and variation orders, ensuring contractor compliance with OHS, project risk assessments, construction supervision.

Resources

Vehicles: GHD staff travel with rental vehicles that are equipped with appropriate safety equipment for regional terrain. GHD has built strong relationships with rental vehicle providers to ensure procurement is cost effective and prompt. Pro Earth Civil staff have the required 4WD vehicles and all insurances are in place.

Communications: All staff are equipped with mobile phones, satellite phones (in locations where required) and Garmin location trackers that may be required for safe working and effective communication in regional and remote locations.

Software for damage assessments: GHD has developed a tool to assist in flood damage pick-ups, standardising and streamlining the data collection and processing. Further information available on request.

3. Methodology and Approach

As outlined in the RFT document, the Shire of Corrigin seeks to engage a suitably qualified, experienced and resourced to undertake project management, contract administration, site inspection and onsite supervision. GHD believes it will be able to assist the Shire in the reconstruction of essential public assets following these natural disasters. GHD confirms its capabilities to provide the following scope of works:

Table 3 Scope of Work and relevant experience

Item	Description	Included in Scope of Works	Relevant Experience
	<u>APPROVALS STAGE</u>		
1	Undertake assessment of damage sustained due to the natural disaster event, in collaboration with the Shire and DFES	No - already completed	GHD has undertaken a number of flood damage assessments in regional locations. Refer to the projects listed in Table 2. GHD has also developed software for use on tablets to assist with damage pick up and data processing. We also make use of the MRWA SLK meter to accurately records location of damage.
2	Provide a cost estimate for the repair works, in accordance with DRFA WA guidelines	No - already completed	GHD has undertaken a number of flood damage assessments and the associated cost estimates. Refer to the projects listed in Table 2.
3	Approvals by the Commonwealth – through DFES	DFES	GHD regularly liaises with the DFES and MRWA teams to ensure compliance with the DRFAWA requirements and processes. We are well versed with the requirements as demonstrated by a number of successfully completed projects.
	<u>PROCUREMENT STAGE</u>		
4	Prepare tender documents and a technical specification for engagement of a contractor.	Yes	Refer to Table 2 for recently completed DRFAWA and WANDRRA projects. In addition to flood damage projects, GHD regularly work for Local and State government agencies, managing procurement on behalf of our clients.
5	Facilitate the tender process.	Yes	The nominated staff recently managed procurement for clients such as the Shire of Mingenew, CSIRO, Department of Finance and the Shire of Dowerin.
6	Assess and evaluate tenders received and recommend suitable tenderers to the Shire for appointment. Council briefing (if required).	Yes	
7	Coordination of Contract Document signing Letters of advice to unsuccessful tenderers	Yes	
	<u>CONSTRUCTION STAGE</u>		
8	Contract administration and project management Review of contractor’s safety documentation	Yes	The nominated staff have extensive experience in managing flood damage contracts, but also other Local and State Government contracts with a variety of Contract Conditions.

Item	Description	Included in Scope of Works	Relevant Experience
	<p>Progress Claims and Payment Certificates</p> <p>Technical queries and support</p> <p>Progress/site meetings</p> <p>Budget tracking and advance quarterly estimates</p> <p>Project updates and progress reporting</p> <p>Presentation to Council if required</p>		<p>The nominated staff are regionally based and therefore well versed in the management of regional and remote construction project. Being based in regional towns around WA, GHD understands the needs of regional Shires and therefore can provide tailored services.</p> <p>The proximity of GHD's Bunbury and Perth offices offers the advantage that staff can mobilise to site on short notice if required.</p>
9	<p>Site supervision</p> <p>On site coordination of resources</p> <p>Develop a works programme (in consultation with the contractor and Shire Works Manager) including identification of any borrow pit areas and water sources and any other required materials</p> <p>Liaison with land owners and general public where required</p> <p>Timesheets, daily site reports, photo records</p> <p>Inspection of the works to ensure compliance with the technical specifications, DFES and MRWA requirements.</p> <p>Provision of own transport, accommodation and telecoms.</p>	Yes (subcontractor)	<p>GHD intends to subcontract Pro Earth Civil who has extensive on-site supervision experience on DRFAWA projects.</p> <p>Pro Earth Civil is based in Perth and is familiar with the conditions and constraints of the Pilbara, Mid West and Wheatbelt regions. Being based in Perth and having staff residing in close proximity to the Shire of Corrigin, allows for mobilisation to site to be undertaken on short notice, reducing overall travel costs.</p>
10	<p>Acquittal of funding on behalf of the Shire. Preparation of claims to DFES requirements.</p>	Yes	<p>Both GHD and Pro Earth Civil has extensive experience in preparing claims in accordance with the DRFAWA requirements.</p> <p>Two members of the DFES team recently commented on GHD's professional approach to the DRFAWA process and on the quality of our submissions.</p> <p>GHD has successfully supported the Shires listed in Table 2 with funding recoup claims.</p>

4. GHD's Offer

4.1 Hourly rates

The table below provides GHD's hourly rates (in line with WALGA Panel rates). It is proposed that the project is undertaken on an hourly rates basis.

Table 4 Schedule of Rates

	Roles	Unit	Rate ex GST
Project Management and Contract Administration (GHD)	Core team: Senior Civil Engineer/Project Director	Hour	\$216.00
	Core team: Graduate Engineer	Hour	\$119.00
	Civil Designer	Hour	\$166.00
	Civil Engineer/Project Manager	Hour	\$162.00
	Accommodation and meals	Day	\$280.00
	Vehicle costs	Kilometre	\$0.78
	Flights	Item	Cost +10%
	Any other project disbursements - if required	Item	Cost +10%
On Site Supervision (subcontract or to GHD)	On-site supervisor	Hour	\$117.60
	Administrative staff (if required)	Hour	\$47.25
	Vehicle costs	Kilometre	\$1.33
	Accommodation and meals (Shire of Corrigin based)	Day	\$198.90

4.2 Terms and Conditions

GHD proposes that the engagement be in accordance with the General Conditions of Contract for Engagement of Consultants **AS4122-2010** with a limit of liability and Professional Indemnity insurance appropriately determined and agreed for the project.

Should the Shire of Corrigin require alternative Terms and Conditions, such as the WALGA Panel Agreement, these can be reviewed and agreed prior to engagement.

COVID-19

In regard to the ongoing COVID-19 coronavirus pandemic, GHD would like to stress that the health and safety of our people, and the clients and communities we work with, remains our number one priority and that we are taking all prudent measures to prevent the spread of COVID-19 in the community. With this in mind, GHD notes that as the COVID-19 situation develops, it is possible that there may be disruption caused to GHD's business operations that adversely affects our ability to perform the proposed services in an efficient and timely manner. We trust that you will understand that it is not reasonably possible for us to foresee the timing and quantum of any such potential disruption and its associated costs. It follows that this is not something which we can reasonably include for within our offer. As such, we regret that our offer is subject to reasonable adjustment in terms of both time and cost to reflect the occurrence of any disruption to the performance of the services as outlined above. Please do not hesitate to contact the undersigned for further information.

4.3 Insurances

Certificates of currency can be provided on request.

Alternative values can be agreed on based on project requirements.

Table 5 *Insurances*

Insurance	Limit of Indemnity (AUD)	Insurer	Policy Period	
			From	To
Public and Products Liability	\$20,000, 000	HDI Global SE Australia	31 May 2022	31 May 2023
WA Workers Compensation Insurance	\$200mil	Allianz Australia Insurance Limited	30 Jun 2021	30 Jun 2022
Professional Indemnity	\$5,000, 000	Certain Underwriters at Lloyd's of London	1 Dec 2021	1 Dec 2022

Appendix A

Key Personnel CVs (GHD)



Antoinette Krause

B Eng Civil, B(Hons) Environmental
Project Manager/Senior Civil Engineer



Location

Geraldton, Western Australia

Experience

16 years

Accreditations

- Certified Project Management Professional (PMP)
- Chartered Professional Engineer of Australia (CPEng),

Key technical skills

- Project Management
- Client drivers and communication
- Leadership and Mentoring
- Integrated Environmental Management
- Legal Risk Management and Contracts
- Negotiations with land owners and land acquisition
- Road Access Management
- Occupational Health and Safety

Relevant experience summary

As the GHD Geraldton office manager Antoinette is committed to see successful project delivery for our clients with lasting community benefit in the Mid West Region. Antoinette has over 16 years' experience in a wide range of projects including design, contract management and project management. Antoinette's experience in a regional office has offered her exposure to a broad range of engineering and environmental projects and as such she has developed good skills in the coordination and integration of various disciplines contributing to successful project delivery.

Project experience – Construction Projects

Main Roads Western Australia (MRWA)

Project Manager | Mid-West Branch - secondment |

Antoinette recently completed a secondment with MRWA where she was responsible for project management and contract administration on two projects.

The projects involved pavement rehabilitation, sealing and replacement of drainage infrastructure.

This opportunity provided Antoinette with a clear understanding of the processes within MRWA as well as use of the MRWA Technical Specifications and standard drawings.

DRFAWA Flood damage repairs (AGRN903)

Project Engineer/Superintendent | Shire of Dowerin | Western Australia |

Revising and updating the flood damage cost estimate under the DRFAWA funding arrangement. Antoinette's role includes managing the tender process, contract administration and frequent liaison with the Shire and DFES. The project is nearing completion and tracking on budget and within the required timeframe. Funding recoup is also progressing well.

DRFAWA Flood damage repairs (AGRN971)

Project Engineer/Superintendent | Shire of Exmouth | Western Australia |

Antoinette's role includes damage assessment and cost estimate preparation, liaison with DFES, MRWA and the Shire.

The project is about to commence procurement phase

DRFAWA Flood damage repairs (AGRN965)

**Project Engineer/Superintendent |
Shire of Mingenew | Western Australia |**

Antoinette's role includes damage assessment and cost estimate preparation, managing the tender process, contract award and frequent liaison with the Shire, MRWA and DFES. The project is about to progress to construction.

WANDRRA Flood damage repairs (AGRN743)

**Project Engineer/Superintendent |
Shire of Carnamah | Western Australia |**

Undertaking flood damage assessment and preparing cost estimates under the WANDRRA funding arrangement. Antoinette's role includes flood damage assessment, managing the tender process, contract administration and frequent liaison with the Shire and MRWA. The project was successfully completed under budget and with great commitment and teamwork from all parties.

WANDRRA Flood damage repairs (AGRN743)

**Project Manager/Superintendent |
Shire of Mingenew | Western Australia |**

Undertaking flood damage assessment and preparing cost estimates under the WANDRRA funding arrangement. Antoinette's role includes flood damage assessment, managing the tender process, contract administration and frequent liaison with the Shire and MRWA. The project is running on a tight time schedule and budget.

WANDRRA Flood damage repairs (AGRN743)

**Project Manager/Superintendent |
Shire of Perenjori | Western Australia |**

Undertaking project management and contract administration for the reinstatement of flood damaged roads and drainage infrastructure under the WANDRRA funding arrangement. Antoinette also provided technical input and assistance to the site supervisor where required.

WANDRRA Flood damage repairs (AGRN743)

**Project Manager/Superintendent |
Shire of Dowerin | Western Australia |**

Undertaking project management and contract administration for the reinstatement of flood damaged roads and drainage infrastructure under the WANDRRA funding arrangement. Antoinette also provided technical input and assistance to the site supervisor where required.

Murchison Radio Observatory Access Road Maintenance

**Project Manager and Superintendent |
CSIRO | Murchison, Western Australia |**

GHD has been appointed as the Project Manager and Superintendent for the five yearly maintenance program of the 9km access road to the MRO site. Antoinette is the key client contact and responsible for overall project delivery. Antoinette is responsible for the design development phase, the procurement phase and acting as Superintendent's Representative during construction.

Booldardy Pipeline

**Project Manager and Superintendent |
CSIRO | Murchison, Western Australia |**

The project entails the provision of water supply infrastructure at Booldardy Station. GHD has been appointed as the Project Manager and Superintendent. Antoinette is the key client contact and responsible for overall project delivery. Antoinette is responsible for the design development phase, the procurement phase and will act as Superintendent during construction.

Borefield Collector Main

**Superintendent's Site Representative |
Department of Finance | Carnarvon, Western Australia |**

Site representative for the construction of a DN900 water pipeline through a flood protection levee. The 24km borefield collector main project forms part of the Gascoyne Food Bowl Initiative.

Fire ring main and hydrant replacement project at Greenough Regional Prison

**Superintendent's Representative |
Department of Finance | Geraldton, Western Australia |**

GHD was engaged for design of the new fire ring main and hydrant replacement as well as for the Superintendent's Representative (SR) role.

Antoinette acted as SR and also managed the procurement process in accordance with the Department's requirements. The project has been successfully delivered and is currently in Defects Liability Phase.



Salman Agherdien BENG HONS (CIVIL)

Graduate Civil/Structural Engineer



Qualifications/Accreditations

- BEng Hons (Civil), 2021

Relevant experience summary

As a graduate civil/structural engineer at GHD, Salman has gained experience in project management, contract administration, client liaison and structural inspections. Being situated in a regional office has given Salman the opportunity to partake in a broad range of projects which include road construction, bridge inspections, steel and concrete assessment and environmental works.

Project Experience – Road Construction Works

Mingenew Flood Works

Graduate Engineer |

Shire of Mingenev | Mingenev WA, Australia |

Following flood damage, the road infrastructure across the shire required reconstruction and repair. GHD was engaged to provide project management, contract administration and supervision services.

Salman processed DFES recoup claims and undertook budget tracking and control.

Dowerin Flood Works

Graduate Engineer |

Shire of Dowerin | Geraldton WA, Australia |

Following flood damage, the road infrastructure across the shire required reconstruction and repair. GHD was engaged to provide project management, contract administration and supervision services.

Salman processed DFES funding recoup claims and undertook budget tracking and control.

Mingenew Mullewa Road RRSP

Graduate Engineer |

Shire of Mingenev | Mingenev WA, Australia |

As part of the Regional Road Safety Program, the Mingenev Mullewa Road required shoulder reconstruction and sealing to improve road safety. GHD was engaged to provide consultancy services/superintendent works. The shire later engaged GHD to undertake line marking and guide post design.

Salman undertook site inspections, client liaison, project management and contract administration tasks.

Project Experience – Inspection Works

Geraldton Pool Inspections

Graduate engineer |

City of Greater Geraldton | Geraldton WA, Australia |

GHD was engaged to provide technical advice throughout the Geraldton pool refurbishment.

Salman assisted with steel inspections of reinforced concrete pool structures.

Geraldton Level 1 Bridge Inspections

Graduate Engineer |

City of Greater Geraldton | Geraldton WA, Australia |

GHD was engaged by the City of Greater Geraldton to undertake level 1 bridge inspections.

Salman assisted with bridge inspections and prepared assessment reports outlining the condition of the bridge and the maintenance required.

Project Experience – Environmental Works

Yogi Magnetite Project

Graduate Engineer |

FI Joint Venture Pty. Ltd. | Yalgoo WA, Australia |

GHD was engaged to provide water monitoring and environmental services.

Salman assisted with water sampling and data compilation.

Career History

17 January	GHD, Graduate Civil/Structural Engineer
2022 - present	

Appendix B

Onsite Supervisors CVs (Pro Earth Civil)



CORPORATE PROFILE



Civil Earthworks & Construction Consultants

History

Pro Earth Civil (PEC) was established in 2002 whilst Midwest based, in the glorious town of Dongara.

Pro Earth Civil commenced as a Site Management, Supervision and Plant Hire business. With further development and gains in experience, since this period, in July 2012 PEC expanded our capabilities to Project Management/Supervision and Civil Construction Consultancy.

The main drivers behind Pro Earth Civil are its exceptional record of adherence to safety standards and a proven ability to meet the needs of the State's mining and road construction sector.

Pro Earth Civil and our director Wayne Thomson have extensive practical experience with mining, civil, and road construction activities at multiple locations throughout Western Australia.

Pro Earth Civil is committed to its values of: integrity; employer of choice; health and safety; environment; customer; excellence; profitability; and accountability.

Our Mission

PEC strives to maintain its leading position by meeting the continually changing requirements within our ever-evolving industry. We pride ourselves on providing a quality service that meets our clients' expectations, budget and requirements.



PEC as Your Partner

As a consultancy business PEC is available to provide services to our clients on an ad-hoc, short or long terms basis dependent on their requirements. Our services add value through all phases of projects from the tender through to project close-out. Our client can be assured PEC will deliver services with the utmost level of professionalism and integrity, which is the foundation of the success we have achieved since our inception.

PEC will contribute to your business and projects through areas of expertise that include:

1. Safety focus and programs
2. Complete understanding of the scope and milestones
3. Bid and/or quotation management
4. Project management
5. On site superintendence
6. Compilation of Claims, submissions
7. Construction Supervision
8. Contractor management



PEC principal tasks and services have included:

- DRFAWA Pickup, Estimation Submissions
- DRFAWA Emergency, Immediate & Reinstatement Works
- WANDRRA Flood remediation works
- WANDRRA Flood Damage Pick ups
- WALGA Works
- Bulk earthworks:
- Airstrip Construction
- Mine site rehabilitation works
- Detailed earthworks:
- Road construction and maintenance
- Detailed earthworks for civil construction
- Tailings dams
- Survey
- Compaction testing
- Rail Construction and maintenance
- Subdivisions
- Draining and culvert construction
- Retaining wall and fencing



PEC Clients

PEC with our director have provided services to a diverse range of customers, including but not limited to:

Shire of Mingenew

Town of Port Hedland

Compass Group

Shire of Dowerin

GHD Pty Ltd

City of Greater Geraldton

Shire of Wyndham East Kimberley

Shire of Carnamah

Shire of Sandstone

Shire of Cue

Fulton Hogan-Southern Networks (MRWA)

DM Roads-Goldfields (MRWA)

Newmont Boddington Gold Pty Ltd

BHP Billiton Worsley Alumina Pty Ltd

Aurizon Rail Network

Riverhill Contracting Pty Ltd

BHP Iron Ore

Pinjarra Race Club Inc.

Leighton's

Alcoa - Pinjarra

Rio Tinto

NRW Holdings

Ertech Pty Ltd

Murray Shire

Main Roads WA

Roadline Civil & Mining

Water Corporation

Crescent Gold

Southern Gateway Alliance

Golden Grove Operations

RAWWA

Orixon Pty Ltd



Profile on Wayne Thomson

In 1991, after several years within his Mechanical Trade in different locations around WA, Wayne joined his family's established earthworks and cartage business based in Coolup, WA. During Wayne's period within this business he provided services to a varying client base throughout the Murray Shire and beyond. The client base range from domestic, agricultural and civil earthworks and cartage.

In 1994, Wayne began employment with a commercial electrical company, Interlec Pty Ltd, as a machine operator and site leading hand. Interlec Pty Ltd, in this period were contracted to CBH to upgrade its power supplies underground. This project saw Wayne working expansively throughout rural WA.

On the completion of the CBH contract, mid 1995 Wayne began employment as a sub-contractor to NRW Pty Ltd as an operator of varying heavy machinery and shift supervisor/leading hand. With NRW Pty Ltd Wayne developed his knowledge and experience being promoted to a Supervisor and in 1997 Wayne and his family relocated at the company request to Dongara to commence and manage projects within the Midwest region, including projects for Iluka and Golden Grove as the Mid-West Area Manager (Mining and Civil Earthmoving Operations), this continued for 8 years, Wayne's roles had now developed to:

- Business Development
- Project Tendering
- Project Management
- Client Liaison
- Employee Management, Assessment, Development
- Promotional Portfolio's and representation

In 2002, Pro Earth Civil (PEC) and Wayne continued contracts with NRW Pty Ltd under this new business, at this time mostly throughout the Nor West of WA. In 2005, PEC was offered a contract to relocate to Karratha as the Nor West Area Manager, however due to family education obligations PEC and Wayne relocate to Perth and commenced with Ertech Pty Ltd as a Project Superintendent for varying contracts throughout the state.

In Early 2007, Wayne joined Roadline Contracting Pty Ltd in an Operations Manager role to build and develop a new Civil Construction Company. Wayne's capacity was utilised in every aspect of the company from HR to the implementation of QA qualifications. The bulk of the works awarded during this time involved remote area operations and some exploration works in remote Northern Goldfields supervising & managing subcontractor teams, then in January 2010 Wayne was offered State Operations Manager role for BEM Pty Ltd based in Mandurah.

From this time to June 2012 contracting to BEM Pty Ltd saw Wayne delivering multiple projects throughout WA and the Northern Territory. In June 2012 Wayne commenced diversifying into the Civil Earthworks and Construction Consultants. Wayne remained with BEM Pty Ltd until completing final contracts in July 2013

As a civil consultancy business, PEC offer over 25 years industry experience in Civil Construction & supervision throughout WA. PEC have worked extensively in the resources, transport and public infrastructure sectors. Wayne and PEC can bring this knowledge and experience to your business and provide depth and proven cost effective results.

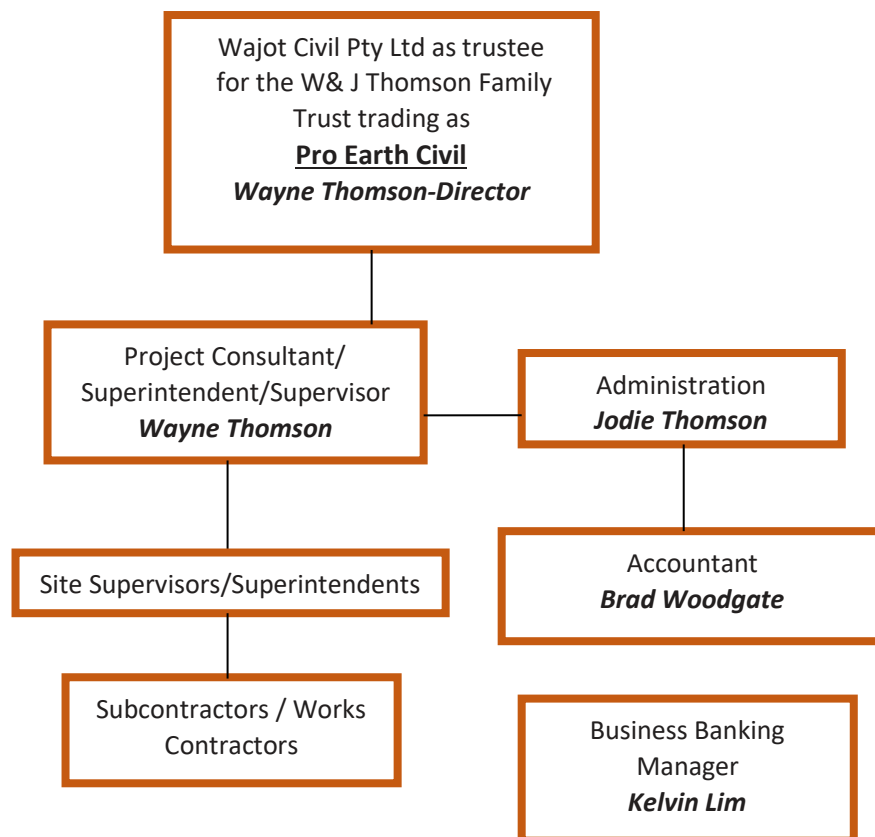
Contract Philosophy and Methodology

PEC's guiding principles under which it executes all contracts/projects are contained in our Integrated Management System, Code of Ethics, and Quality Policy Manual that our safety, culture, health and environmental systems.

We are committed to:

- client satisfaction;
- proficient management to ensure our business processes are documented and implemented in a safe, planned and efficient manner;
- creating a no-injuries environment, a healthy workplace, and a harmonious community in which we work;
- continual improvement and innovation in everything we do;
- complying with the law and contractual requirements;
- minimising waste and emissions and preventing all avoidable pollution and damage to the environment.

Organisation Chart



CURRICULUM VITAE

WAYNE THOMSON

Director

Supervisor, Site Superintendant & Project Management

Email: proearthcivil@bigpond.com

Mobile: 0457 818 511

Professional Development, Training & Information Technology

Local Government Safety Induction

Reference: 264489

WA Construction White Card

Card No. 957453

Cert III Civil Construction

Rii30815

Frontline Management Course

Mine Employees Health Surveillance Card

Issued by Department of Minerals and Energy

Marcsta Induction

Issued by Mining and Resource Contractors Safety Training Association

CCI Certificate

Negotiating Enterprise Agreements

BHP Supervisors Train Group Controllers Course

BHP Billiton – Port Hedland

Course in Occupational Safety and Health for Supervisors

Industrial Foundation for Accident Prevention, Leeming WA

Certificate IV in Assessment and Workplace Training

Interactive Training Network, Geraldton WA.

Four Wheel Drive Safety Course

Issued by Drive Safe Australia

Certificate of Trade Studies in Automotive Mechanical

Issued by Education Department of Western Australia, Bunbury Technical College

Microsoft Office Suite – Advanced on Word, Excel, Outlook & Publisher

Qualifications, National Tickets and Licenses

Western Australian License Class HC-X, R

Skid Steer	Excavator
Dump Truck	Grader
Loader	Roller
Dozer	Compactor
Water Cart	Integrated Tool Carrier
Back Hoe	

AT A GLANCE...

During my working career I have held a variety of positions within a diverse range of service-orientated environments, namely: -

- Director – Pro Earth Civil - Statewide & Northern Territory
- Operations Manager/Works Superintendent- Statewide
- Area Supervisor – Midwest based in Dongara / Project Manager - Statewide
- Supervisor Earthworks Projects – Statewide
- Plant Operator
- Leading Hand \ Operator
- Plant Operator \ Truck Driver
- Automotive Service Manager
- Automotive Service Adviser
- Automotive Technician

I am experienced with advanced communication and negotiation skills, coupled with a genuine and natural empathy for people, allows me to liaise across the board – at shop floor and management level – with people from all cultural and social backgrounds to establish and maintain excellent customer and employee relations.

I am a highly effective employee within team structured environments and have always enjoyed mutually respectful relations with Cliental, Management, fellow colleagues alike. Versatility, resourcefulness and professional commitment to any undertaking allows me to adapt to different environments and effective new tasks.

I pride myself on being reliable and efficient and have a commitment to maintain a high standard of quality in my work.

EMPLOYMENT HISTORY

Duration: 2012 – Current

Employer: Self employed – **Pro Earth Civil**

Position: **Director**

Duties Civil Earthworks Consulting, Sub Contractor Supervision, Construction Management.

Projects **Town of Port Hedland**- Project Manage Blackspot Project Forrest Circle & Cottier Drive
Town of Port Hedland -Capital Works Programs 2021-2022
GHD Pty Ltd – Shire of Dowerin AGRN 903 – Supervisor (Relief)
Town of Port Hedland - Contract Project Manager– DRFA WA AGRN 951
Town of Port Hedland - Contract Project Manager – Project Manager RRG Programs & Capital Spending 2020-2021
Town of Port Hedland - Contract Project Manager– DRFA WA AGRN 899
Town of Port Hedland - Contract Project Manager – Project Manager RRG Programs & Capital Spending 2019-2020
Town of Port Hedland - Contract Consultant/Supervisor– DRFA WA AGRN 850
Town of Port Hedland - Contract Consultant/Supervisor– WALGA (Capital) Works
Town of Port Hedland - Flood Damage Project Manager/Supervisor WANDRRA AGRN 743
Shire of Mingenew – Site Supervisor / Contract Consultant WANDRRA AGRN 743
City of Greater Geraldton – Flood Damage Supervisor WANDRRA. 2017-2018
Shire of Wyndham East Kimberley - Flood Damage Supervisor WANDRRA.
City of Greater Geraldton – WALGA (Capital) Works.
City of Greater Geraldton – Flood Damage Pickup
City of Greater Geraldton – Flood Damage Supervisor WANDRRA. 2016-2017
City of Greater Geraldton – Supervisor to Construction of the Mullewa Waste Transfer Station.
McMahon Australia – Carpark access construction
Waroona Self Storage – Road Access, Carpark Construction and Warehouse Pad Construction & drainage
Riverhill Contracting Pty Ltd – Project operations consultant Northern Territory Government, remote road resheeting program
Alcoa Australia – Pinjarra , Road realignment Supervision
Shire of Murray, Road reconstruction and realignment, PM.
Department Housing – Slashing/firebreaks, Laverton, Leonora, Wiluna Crescent Gold
Laverton East haul road feasibility, D&C Crescent Gold
Laverton East haul road construction and Supervision
D & H Contracting – Operations & Tender Consultant
Aurizon - Rail hardstand construction Supervisor/Consultant Leonora RAWWA - Course upgrades, drainage and carpark construction.
Pinjarra Park Race Course – Project Supervisor/Manager for various bitumen, asphalt and concrete projects.
Pinjarra Park Race Course – Supply and install 8 person elevator.
Pinjarra Park Race Course – Upgrade all race course drainage.
Orixon Pty Ltd – retaining wall and earthworks construction, Supervision Various private carparks and house/shed pads, operating and Supervising Various borrow pit operations and rehabilitation.

Duration: February 2010 – March 2013

Employer: BEM Contract Management Company (Formally Boddington Earthmoving)

Position: State Operations Manager (Mandurah Based)

Duties: Secure work with key clients. Delivery of multiple Projects throughout Western Australia & the Northern Territory from \$5 to \$50 million in value.

Key Duties

- Business Development
- Project Supervision
- Manage and Monitor all Business Units
- Management of Projects
- Subcontractor Supervision
- On Site Project Technical Support
- Estimating

Projects Newmont Boddington Gold Mine RDA construction, maintenance and Haul road construction
Gindalbie Karara Project, access road seal feasibility study.
OIEP Leighton's Ord Irrigation project, road construction & gravel pit works John Holland
Kununurra detailed earthworks, bitumen and concrete works Rio Tinto Argyle Diamond Mine
Road Construction, flood damage repair MRWA shoulder repair and various seal reinstatement projects
MRWA Gravel pit operations
BHP Worsley Bauxite bulk earthworks/road construction
Laing O'Rourke Marradong road construction & Solomon floodway works Aurizon Rail, freight terminal hardstand construction in the Goldfields area Water Corporation various bulk earthworks and dam construction
Various detailed earthworks and asphalt projects

Duration: February 2007 – February 2010

Employer: Roadline Contracting Pty Ltd

Position: Operations Manager (Perth Based)

Duties: Build and introduce a new earthmoving company from the ground up.

Key Duties

- Management of projects
- Business Development
- All estimating
- Implement all QA requirements
- Plant Management
- HR Management
- On Site Project Supervision

Projects Rio Tinto West Angeles air strip construction & bitumen seal, road upgrades, various asphalt supply and lay works.
Rio Tinto Parker Point Sea Wall construction
Southern Gateway Alliance - Perth to Bunbury Road Civil construction & plant hire
Water Corporation Wellington Dam road realignment/drill & blast Yalgoo Shire, maintenance grading.

Department Treasure and Finance, Northampton Remediation works Various Subdivision works

Duration: July 2005 – February 2007

Employer: Ertech Pty Ltd

Position: Senior Supervisor – Statewide

Duties: Supervisor, Mining and Earthmoving Operations

Other key duties included: -

- Supervision of bulk earthworks and roadwork's projects
- Inspections & Pricing of Company Tenders
- Client Liaison
- Employee Management (Training, Appraisals)
- Relief Project Management
- Fleet Management

Projects BHP Rail & road duplication between Port Headland & Newman BHP
Ravensthorpe Nickel mine site construction
Alcoa Pinjarra Mine Site upgrade
BHP Worsley bulk earthworks & dam construction
Barrick Gold - Golden Grove bulk earthworks & airstrip upgrade
Chevron Barrow Island works
Quarry crushing and screening
Sub Division road works and drainage

Duration: August 1996 – June 2005

Employer: NRW Pty Ltd - Dongara Based

Position: Area Manager - Midwest / Project Supervisor – State-wide

Duties: Midwest Area Manager, Mining and Earthmoving

Operations Other key duties included: -

- Management & Supervision of Mining Operations
- Management & Supervision of road construction projects
- Sub contractor Management & Supervision
- Relief plant operating – grader, loader, truck etc
- Weekly Progress and Production Meetings of all Contracts
- Occupational Health and Safety Management
- Inspections & Pricing of Company Tenders
- Employee Management (Interviews, Training, Appraisals)
- Development of business plans, fiscal budgets, production analysis, income and expenditure analysis and monthly reports.
- Assessment of employee's workplace competencies.
- Preparation and processing of Employee Shift Rosters, Payroll, Workers Compensation and Leave Rosters.
- Co-ordination and Management of Environmental Rehabilitation in conjunction with CALM at Westlime
- Co-ordination and Management of Corrosion Control at Westlime

Projects Civil Supervisor at BHP Rail siding Earthworks Construction Stage A, B&C Irwin Shire Dongara, various road and town works
Western Mining Air strip re-construction Mount Keith Westlime (WA) Limited, Dongara Sand Mining
Origin Energy Dongara – Beharra Springs exploration grid lines Darlot Gold Mine TSF 2 Construction
Newmont – Golden Grove TSF 1 raise walls (3 years) Newmont – Bronzewing TSF 1 Lift
BHP – Yandi, Train Load out Tunnel reconstruction BHP Ore Body 25 – Newman, Access road construction Leonora Sons of Gwalia TSF 2 Lift
Lionore Nickel Project – Emily Anne, TSF construction Magnetic Minerals Exploration Project – Dongara
Insitu Construction & Maintenance – Dongara Seawall construction Boral Energy – Dongara road maintenance

Duration: 1993 - 1996

Self-Employed: T & J Contract Repairs

Position: Owner Operator

Duties: Plant Operator – Loaders, Graders, Excavators – Statewide Heavy Duty Plant Servicing
Automotive repairs Bobcat services

Other key duties included: -

- Plant Operations of Dump Trucks, Front End Loaders, Bulldozers, Crushers and Screening Plants
- Maintenance and Repairs of all above Equipment

Projects NRW Pty Ltd -Thomsons Lake
Readymix Quarries WA Limestone
DE Maddison Haulage

Duration: 1991 - 1993

Employer: Interlec Electrical Perth

Position: Leading Hand, Plant Operator

Duties: Workshop Co-ordinator, Leading Hand – remote locations Other key duties included: -

- Organisation Personnel off Site Accommodation
- Project Planning
- Management of Company Fleet
- Onsite Leading Hand
- Client Liaison
- Machine Operator

Projects CBH road and pad earthworks
Western Mining – Leinster, Power Station construction

Referees:

Town of Port Hedland

Rob O'Driscoll

Manager of Projects & Infrastructure

13 McGregor St, Port Hedland WA 6721

Mobile: 0420 739 590

Email: rodricoll@porthedland.wa.gov.au

A K Evans Earthmoving

Michael Still

General Manager

2 Trig Street, Port Hedland WA 6721

Mobile: 0484 333 055

Email: michael@akevans.com.au

CIRRICULUM VITAE

Colin (Stormy) Jones

Indigenous Representative

Mobile: 0400 817 102

Email: colin@proearthcivil.com

SUPERVISOR

CONTINUOUS IMPROVEMENT: More than 25 years experience in civil project delivery, meeting company and client best practice standards, conforming to safe work methodologies.

RESOURCE MANAGEMENT: Coordination of labour, plant and material procurement, liaising and negotiation across clientele and subcontractors, including strong control preparation of material/water sourcing, manpower and production forecasting.

OHS FOCUSED LEADERSHIP: Complete commitment to Occupational Health & Safety and Zero Harm policies and procedures, building ownership and responsibility across work crews, whilst working under pressure and meeting/exceeding contractual time and budgetary constraints.

Education & Expertise

All plant competencies achieved under current RII Training Package

Plan and Prepare for Equipment Operation

Operate Light Vehicle

Conduct Hydraulic Excavator Operations

Operate and Maintain 4WD Vehicle- **NRW Holdings Pty Ltd**

Supervisors Ticket - **BHP Billiton**

Mine Employees Health Surveillance Card

Construction Induction White Card

First Aid, CPR & Basic Emergency Life Support

Basic Worksite Traffic Management Traffic Controller

Collect specimens for drugs of abuse testing

Professional History

SITE SUPERVISOR

Pro Earth Civil | GHD Pty Ltd

April 2022-current

Shire of Mingenew – AGRN 965

SITE SUPERVISOR

- Supervising Civil Contractor Works Crew of average 10-18 operators
- Ongoing plant resource identification and planning in consultation with Shire Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with rate payers, landowners for accessing resources such as gravel and water
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Superintendent / Supervisor
- Liaise with Shire Representatives, Rate Payers & other Representatives

SITE SUPERVISOR

Pro Earth Civil | GHD Pty Ltd

Nov 2021-April 2022

Shire of Dowerin – AGRN 903 (\$2.881 Million)

SITE SUPERVISOR

- Supervising Civil Contractor Works Crew of average 10-18 operators
- Ongoing plant resource identification and planning in consultation with Shire Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with rate payers, landowners for accessing resources such as gravel and water
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Superintendent / Supervisor
- Liaise with Shire Representatives, Rate Payers & other Representatives.

**Pro Earth Civil | Downer – DM Roads Goldfields
(MRWA – Rural Network Contract 91/17)**

23 Nov 2020 – Nov 2021

- Edge Break Repairs (Leonora to Balidonia)
- Shoulder reconditioning & Seal Leonora Laverton Road SLK 0.40-10.68
- Shoulder Reconditioning Great Eastern Hwy SLK 554-569
- Shoulder Reconditioning & Seal Great Eastern Hwy SLK 382.76-432.11

- Supervising Civil Contractor Works Crew of average 10-18 operators
- Ongoing plant resource identification and planning in consultation with DM Roads & MRWA Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with landowners for accessing resources such as gravel and water
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Project Managers and MRWA Inspectors
- Liaise with all Representatives & other Representatives in relation to project

SITE SUPERVISOR

Pro Earth Civil | Town of Port Hedland

10 Feb 2020- Oct 2020

**DRFA WA – AGRN 899 Emergency, Immediate and Reinstatement Yandeyarra Road (Remote),
Pippingarra Road Reinstatement (\$2.3 Million)**

- Supervising Civil Contractor Works Crew of average 10-18 operators
- Ongoing plant resource identification and planning in consultation with Shire Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with rate payers, landowners for accessing resources such as gravel and water
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Superintendent / Supervisor
- Liaise with Shire Representatives, Rate Payers & other Representatives.

DRFA WA – AGRN 850 Roads – Emergency, Immediate & Reinstatement Works (\$4.2M)

28 Mar 2019 – 10 Feb 2020

- Supervising Civil Contractor Works Crew of average 10-18 operators
- Ongoing plant resource identification and planning in consultation with Shire Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with rate payers, landowners for accessing resources such as gravel and water
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Superintendent / Supervisor
- Liaise with Shire Representatives, Rate Payers & other Representatives.

Capital Works –

Feb 2018 – Oct 2020

- **Baler Primary School Carpark Upgrade & Landscaping (\$500,000)(current to estimated 25/10/2020)**
- **Administration Office & Depot Upgrade- Stage 1**
- **Pre Cyclone Green Waste Program**
- **Kerb Renewal Program**
- **Asphalt Renewal Program**
- **Tinder Street Parking Upgrade**
- **Regional Road Grant – Yandeyarra Road – Floodway Construction Concrete 2018-19 (\$350,000)**
- **Regional Road Grant – Yandeyarra Road – Floodway Improvements 2019-20 (\$250,000)**
- **Regional Road Grant – Yandeyarra Road – Floodway Improvements 2020-21 (\$450,000)**
- **Regional Road Grant – Pippingarra Road – Floodway Construction Concrete 2019-20 (\$180,000)**
- **Blackspot Projects 3 x Intersections, (\$1.1 Million)**
- **North Circular Roundabout Upgrade,**
- **Unsealed Road Resheeting Program 2018-19**
- **Unsealed Road Resheeting Program 2019-20**
- **JD Hardie Expansion,**
- **Port Hedland International Airport – Asbestos Removal & Remediation**
- **Road Renewal Program & Formation Improvement Yandeyarra Road 2019-20 (\$250,000)**
- Supervising Civil Contractor Works Crew of average 10-18 operators
- Ongoing plant resource identification and planning in consultation with Shire Representative
- Consultation with varied works contractors
- Inspection of Town Asset Register, report and documentation of faults
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with rate payers, landowners for accessing resources such as gravel and water

- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Superintendent / Supervisor
- Liaise with Shire Representatives, Rate Payers & other Representatives

WANDRRA Flood Damage Reinstatement Works

WANDRRA Flood Damage AGRN 743 Roads:

- Supervising Civil Contractor Works Crew of average 10-18 operators
- Ongoing plant resource identification and planning in consultation with Shire Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with rate payers, landowners for accessing resources such as gravel and water
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Superintendent / Supervisor
- Liaise with Shire Representatives, Rate Payers & other Representatives.

SUPERVISOR

March 2017-Dec 2017

De Grey Civil for NRW Holdings Pty Ltd

Rio Tinto Yandicoogina Pocket Billiards South Project

- Supervise crew of 30 plant operators and labourers
- Install culverts and concrete headwalls
- Drainage, stream training, rock protection
- Liaise with client to amend timetable to suit availability of culvert sites

SUPERVISOR

Aug 2017 – Mar 2017

De Grey Civil for NRW Holdings Pty Ltd

Rio Tinto Yandicoogina Oxbow Project

- Supervise crew of 30 plant operators and labourers
- Install culverts and concrete headwalls
- Drainage, stream training, rock protection
- Successful completion of culvert installation and won contract for next project on the basis of this work

PLANT OPERATOR
SSP Diverse Pty Ltd
Perth Metro

Jan 2016 – Mar 2017

- Operate Cat 336, Volvo EC460 Excavators
- Operate Komatsu WA320PZ, WA380, Volvo L120E IT Loaders
- Labouring
- Adhere to all workplace HSE

Civil Supervisor
Rusca Brothers
Ichthys LNG Project

Sep 2015 – Dec 2015

Supervisor Detailed and Bulk Earthworks
NRW Holdings Pty Ltd
Roy Hill Mine and Rail

Sep 2013 - Sep 2015

- Bulk earthworks nightshift supervisor for up to 30 crew including workshop
- Build rail formation cut to fill load and haul

Supervisor Detailed Earthworks
DTMT
Rio Tinto Cape Lambert

Mar 2013 – Sep 2013

- Detail concrete works supervisor for up to 60 personnel
- Acting senior supervisor
- Concrete works for car dumper, conveyor formation, reclaimer and stacker

Supervisor Detailed Earthworks and Drainage
NRW Holdings Pty Ltd
FMG Thomas Yard Project

Feb 2006 – Mar 2013

Project Duration Nov 2012 – Mar 2013

- Detail excavation and drainage supervisor
- Building pad and associated works for automated ore car repair workshop

Supervisor Detailed Earthworks and Drainage

NRW Holdings Pty Ltd

FMG Anderson Point Port- Expansion

Project Duration Nov 2010 – Nov 2012

- Detailed excavation and concrete works supervisor
- Construction of and associated works for ore train car dumper and conveyor formation

Supervisor Earthworks Culvert Installation and Drainage

NRW Holdings Pty Ltd

FMG Christmas Creek Mine Construction

Project Duration Jan 2010 – Nov 2010

Supervisor Earthworks Drainage

NRW Holdings Pty Ltd

BHP Billiton Rapid Growth Project 5 Rail Line

Project Duration Jan 2009 – Jan 2010

Supervisor Culvert Installation and Drainage

NRW Holdings Pty Ltd

Rio Tinto Brockman 4

Project Duration Jan 2007 – Jan 2009

Supervisor Drainage

NRW Holdings Pty Ltd

Rio Tinto Yandicoogina Mine

Project Duration Feb 2006 – Jan 2007

Supervisor / Plant Operator Civil Works

2004 – Feb 2006

Koppens Development

Metro and Regional Subdivisions Cairns QLD

- Supervisor works, operate excavator, loader, backhoe, bobcat, lay sewer mains, water mains, stormwater lines

Plant Operator Civil Works

1989 – 2004

AR@MA Ballem Drainage

Metro and Regional Subdivisions

Various civil construction roles including plant operation and civil foreman for new subdivisions in WA and QLD

1980 – 1989

References

Rob O'Driscoll

Project Manager

Town of Port Hedland

rodriscoll@porthedland.wa.gov.au

0448 174 151

Antoinette Krause

Manager-Mid west Region (Senior Civil Engineer)

GHD Pty Ltd

Antoinette.Krause@ghd.com

0434 508 403

CIRRICULUM VITAE

Levi Flight

Mobile: 0481 999 469
Email: levi@proearthcivil.com
SUPERVISOR

CAREER OBJECTIVES

- Positive and friendly attitude, excellent interpersonal skills and a team player
- Always professional and motivated
- Strong administrative capabilities
- Excellent communication and teamwork skills

I am an experienced Plant Operator with a history of working in the Civil Engineering industry Skilled in Earthworks, Engineering, Construction, Dump Truck, and General Operations. Responsibilities included coordination and supervision of equipment and operators, development of daily work plans, site safety inspections, and monitoring of equipment operators. Responsible for daily task and safety planning meetings to review safe and efficient equipment operation, Hazard review in response to site regulations and procedures, hazard recognition, and compliance to company safety policies.

I possess excellent planning skills, coupled with an ability to develop and implement initiatives, have enabled me to establish productive and proactive relationships in a work environment. I have been responsible for managing personnel and equipment, oversight of earthworks activities, all record keeping, and acting as a client liaison.

PROJECT EXPERIENCE

Town of Port Hedland – AGRN 951 EPAR Reinstatement Pippingarra Road

Town of Port Hedland – AGRN 899 EPAR Reinstatement South Hedland Drains & Culverts

Town of Port Hedland – AGRN 899 EPAR Reinstatement Wallwork Road

Town of Port Hedland- Capital Works Projects 2021/22

Dargues Gold Mill Refurbishment Project (Braidwood NSW – Diversified Minerals)

Gibb River Road – sealing / head wall extension (Main Roads WA)

Civil sub-divisions all across Perth

North Link Tonkin Highway Extension

Margaret River Bypass (Main Roads WA)

DEMONSTRATED SKILLS

- Excellent understanding of mining and earthworks,
 - Demonstrated commitment to safe operations at all times,
 - Resourceful, productive and willing to learn,
 - Production orientated,
 - Excellent communication skills (written and oral),
 - Excellent computer literacy skills e.g. Word, Excel, PowerPoint and Outlook,
 - Always comply with mining standards, regulatory standards, company policies and procedures, and
 - Good problem-solving skills.
-

EDUCATION - Mazenod College, Graduated Year 12

EMPLOYMENT PROFILE

PRO EARTH CIVIL

March 2021 – April 2022

Town of Port Hedland

DRFA WA – AGRN 951 – EPAR Reinstatement Works

Site Supervisor

Pippingarra Road (Currently underway)

- Supervising Civil Contractor Works Crew of average 8-12 operators
- Ongoing plant resource identification and planning in consultation with Shire Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with rate payers, landowners for accessing resources such as gravel and water
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Superintendent / Supervisor
- Liaise with Shire Representatives, Rate Payers & other Representatives.

Town of Port Hedland

DRFA WA – AGRN 899 – EPAR Reinstatement Works

Site Supervisor

Wallwork Road & Bridge, South Hedland Stormwater Drainage and Culvert Reinstatement

- Supervising Civil Contractor Works Crew of average 10-18 operators
- Ongoing plant resource identification and planning in consultation with Shire Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with rate payers, landowners for accessing resources such as gravel and water
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Superintendent / Supervisor
- Liaise with Shire Representatives, Rate Payers & other Representatives.

Capital Works –

Site Supervisor

- Unsealed Road Program 2021/22 Pippingarra Road (current)
- Landfill Car Prk & Office Building Civil's (current)
- Sutherland Street Shared Path (Beachside)
- Sutherland Street/Spoilbank Rock Protection & Spillway Upgrade
- Nth Circular Rd/Cottier Drive Culvert Rock Protection
- Hardscaping Town of Port Hedland Depot Stages 1,2 & 3
- Unsealed Road Program 2021/22 Yandeyarra Road
- Hamilton/Schillaman Maintenance Program
- Blackspot Project- Forrest Circle & Cottier Drive Intersection
- Wilson Street Shared Path – Services Location
- Supervising Civil Contractor Works Crew of average 8-15 operators
- Ongoing plant resource identification and planning in consultation with Town Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Superintendent / Supervisor

- Liaise with Town Representatives, Rate Payers & other Representatives.

Fulton Hogan

(MRWA – Southern Network Contract 2020-23 Greater Southern-Albany)

(MRWA-Southern Network Contract 2020-23 South West-Bunbury)

Site Supervisor

- Ravensthorpe South Coastal Highway H8 SLK 328-339.5
- South Coastal Highway M074
- Boddington M003
- Collie Williams Road M066
- Stewart Road Nannup M080

Responsibilities:

- Supervising Civil Contractor Works Crew of average 10-25 operators
- Ongoing plant resource identification and planning in consultation with DM Roads & MRWA Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with landowners for accessing resources such as gravel and water
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports
- Ongoing regular consultation with the Project Managers and MRWA Inspectors
- Liaise with all Representatives & other Representatives in relation to project

Pro Earth Civil | Downer – DM Roads

(MRWA – Rural Network Contract 91/17)

- Shoulder Reconditioning Great Eastern Hwy SLK 454-487
- Supervising Civil Contractor Works Crew of average 10-18 operators
- Ongoing plant resource identification and planning in consultation with DM Roads & MRWA Representative
- Facilitated toolbox and pre-starts meetings
- Ongoing inspection and assessment of works in progress with respect to the specifications, including directing rework and/or changes to work methods as required and/or instructed
- Instruct Operators /Contractor in relation to construction methods
- Liaising, sourcing with landowners for accessing resources such as gravel and water
- Identification, planning and set out of work sections ahead of the works crew
- Ongoing auditing of works, completion of daily works summary reports

- Ongoing regular consultation with the Project Managers and MRWA Inspectors
- Liaise with all Representatives & other Representatives in relation to project

SLE

November 2020 – January 2021

Supervisor / Operator (Contract) Masonic aged care facility earthworks circa \$3M

Responsibilities:

- Supervising medium to large subdivision projects in the metropolitan area

Adaman Gold - Kirkalocka

July 2019 – November 2020

Supervisor / Operator (Contract)

Responsibilities:

- Lead supervisor for all ROM operations
- Compliance to all safety requirements

Jagcor – Dargues Gold

February 2019 – July 2019

Operator (Contract)

Responsibilities:

- Operating machinery to client standards
- Interpreting and delivering on detailed plans
- Consistently meeting production targets whilst maintaining a high level of safety
- Demonstrated an ongoing commitment to OH&S – attended all toolbox meetings and completed work with no accidents or injury
- Compliance to all safety requirements

All West Plant Hire

August 2018 – February 2019

Operator

Responsibilities:

- Operating machinery to a business standard
- Conducting pre-start meetings
- Ensure appropriate resources are allocated and managed to meet the needs of the client
- Interpreting and delivering on detailed plans
- Extensive experience in final trimming and excavating to grade
- Operating various excavators from 3 tonnes to 45 tonnes

Road Line Civil

April 2018 – August 2018

Supervisor (Contract)

Responsibilities:

- Supervising day to day activities of road civil construction
- Coordination and supervision of equipment and operators
- Development of daily work plans
- Site safety inspections
- Hazard review in response to site regulations and procedures

Georgiou Group

January 2017 – March 2018

Supervisor – Elizabeth Quay \$150M and Scarborough Redevelopment \$20M

Responsibilities:

- Supervising stormwater / sewer installations
- Conducting penetration tests and recording of data
- Supervising road contraction including sub-grade and sub-base material, including installation of storm water lids and gully's ready for sealing with asphalt
- Liaising with site engineering department
- Daily pre-starts and inspections for new machinery
- Monitoring of performance KPI's and time management

TECHNICAL EXPERTISE / SPECIALIST COURSES

National Police Clearance
Alcolizer-HH3 Alcohol Tester Certified
Certificate I Construction
Excavator VoC (RIIMP0301C)
Rio Tinto inductions / rail access permits/ lock holder

MR Drivers Licence
Work Safe WA – White Card
Wheel Loader VoC (RIIMP0304B)
Skid Steer Loader VoC (RIIMP0332A)
Water Corporation Induction

EQUIPMENT KNOWLEDGE & EXPERTISE

CAT 777 Watercart
CAT 12M & 14M Grader
CAT Excavator 14-50t
CAT 950, 966 Loaders

PC3000 Excavator CAT/Komatsu
CAT 950, 966, 980 & 993 Loaders
CAT D6, D10 & D11 Dozers

REFEREES

Project Manager

Project Manager

Jamie Richardson
Fulton Hogan (Southern Region)
0400 883 960

Rob O'Driscoll
Town of Port Hedland
0409 278 895



ghd.com

→ **The Power of Commitment**

PROPOSAL FOR SHIRE OF CORRIGIN

DRFAWA PROJECT SUPERVISION FIRE AND FLOOD DAMAGE

VP308235

8 June 2022

GERALDTON

8/81 Forrest Street, PO Box 2840, Geraldton, WA 6531
P 08 9921 5547

PERTH

8/339 Cambridge Street, Wembley, WA 6014
P 08 9921 5547

CONTENTS

COMPANY DETAILS 4

INSURANCE DETAILS 5

PREVIOUS DRFAWA EXPERIENCE 6

 REFEREES..... 13

NOMINATED RESOURCES 16

CAPACITY TO CARRY OUT THE WORKS 18

 GENERAL..... 18

 REGIONAL AND REMOTE AREA CAPABILITIES 18

 REGIONAL WA EXPERIENCE 19

PROPOSED APPROACH & METHODOLOGY 20

 AGRN978 / 1010 SUGGESTED PROJECT METHODOLOGY 21

ESTIMATED PROJECT COST & FEE PROPOSAL..... 23

8 June 2022

GTSPROP-00299

SHIRE OF CORRIGIN
9 LYNCH ST
CORRIGIN WA 6375

ATTN: NATALIE MANTON AND PHIL BURGESS

RE: DRFAWA PROJECT SUPERVISION FIRE AND FLOOD DAMAGE

Dear Natalie & Phil

Thank you for the opportunity to provide a proposal to provide project management, administrative and engineering support to the Shire of Corrigin's AGRN978 (flood damage) and AGRN1010 (fire damage) related works.

As you may be aware, Greenfield has been managing DRFAWA works across regional WA for more than 10 years. Recently we have also been working closely with the Shire of Corrigin to assess the damage from the recent flood and fire events as well as other miscellaneous road upgrade works.

Through our recent involvement in the Shire, Greenfield has gained valuable experience regarding the local area and built strong relationships with the key stakeholders throughout the area as well as with the Shire and its employees. Our staff have a comprehensive knowledge of the DRFAWA process and has completed more than 40 DRFAWA projects with a combined total of more than \$150M in regional and rural WA local governments. We consistently receive feedback from our clients about the high level of professionalism and quality of the projects we deliver.

For this proposal, Greenfield has nominated a team of highly experienced resources including project management resources, site inspection and assurance resources and project administration resources. We also have the necessary tools and processes in place to ensure the works are delivered within budget and following the DRFAWA requirements.

I trust this proposal demonstrates our capabilities to provide these services to the Shire. Please contact me if you require any further information. We look forward to working with you to complete the contract works.

Kind regards



Joshua Kirk

Principal



COMPANY DETAILS

Company Name	Greenfield Technical Services
Address	Unit 8, 81 Forrest Street Geraldton WA 6530
Contact Person	Joshua Kirk, Principal 0498 999 484 Josh.kirk@greenfieldtech.com.au
ABN	55 178 347 044



INSURANCE DETAILS

Type	Insurer	Policy Number	Value
Professional Indemnity	Arch	P0005387PI2021AU5	\$10M / \$30M
Public and Products Liability	Berkley	GL20201102-17510406	\$20M / \$20M
Works Compensation	CGU	O/17-2378	\$50M

Certificates of currency are available via the WALGA eQuotes Vendor Panel or can be supplied on request via email.

PREVIOUS DRFAWA EXPERIENCE

Greenfield has played a key role in the assessment, management and delivery of more than \$150M worth of works under the Disaster Recovery Funding Arrangement – Western Australia (DRFAWA) program for Shires across the Mid-West, Gascoyne, Goldfields, Pilbara, Kimberley and the Interior over the past 10 years. Our in-house resources have extensive knowledge of the DRFAWA process maximising the value of the works to the Client.

Greenfield has also been working closely with DFES to optimise the new DRFAWA requirements assisting to improve the quality and relevance of the information required for flood damage claims and has been recognised by DFES as being a leader in WA for DRFAWA works.

Clients that we have provided flood damage project management, site inspection/quality assurance and project and financial administration include:

- City of Greater Geraldton
- Shire of Ashburton
- Shire of Corrigin
- Shire of Cue
- Shire of Derby West Kimberley
- Shire of Dowerin
- Shire of Halls Creek
- Shire of Irwin
- Shire of Jerramungup
- Shire of Laverton
- Shire of Meekatharra
- Shire of Morawa
- Shire of Mount Magnet
- Shire of Mt Marshall
- Shire of Murchison
- Shire of Narrogin
- Shire of Sandstone
- Shire of Perenjori
- Shire of Upper Gascoyne
- Shire of West Arthur
- Shire of Wiluna
- Town of Port Hedland

Some of the more recent key DRFAWA projects that we have been involved with are summarised below.

Shire of Ashburton – Emergency Road Flood Damage Inspection Consultancy Services (2022 – ongoing)

The Shire of Ashburton has engaged Greenfield to provide emergency road flood damage inspection consultancy services on an ad-hoc basis. The scope of the works requires that Greenfield be available to assess any road flood damage that occurs in the Shire immediately following the event once the roads are safe to travel on. Greenfield's role includes collecting visual evidence of the damage, preparing cost estimates for the damage under the DRFAWA program and supporting the Shire during any emergency works completed as part of the road "opening up" works.

In recent years, Greenfield has performed these services for the Shire on an ad-hoc basis. However, as a testament to Greenfield's experience in these works, the Shire wished to secure Greenfield's services on a

dedicated basis so that following an event, we could be called upon on short notice to provide the required technical and engineering support services.

Shire of Corrigin – DRFAWA AGRN978 ~\$1.2M (2021)

Greenfield was engaged by the Shire of Corrigin to complete the damage assessment and inspection of the road network following the flooding event and significant rain during winter 2021. At short notice, Greenfield re-prioritised other works to ensure we could attend the Shire and provide assistance promptly. The damage inspection was completed promptly and efficiently using automated camera technology that significantly improves the accuracy and thoroughness of the inspection. Greenfield also continues to support the Shire in processing the documentation for the emergency works completed by the Shire for this event. Greenfield submitted the EPAR cost estimate to DFES on behalf of the Shire which comprised damage to sealed and unsealed roads, roadside drains and culverts.

At the same time as doing this damage inspection, the Shire chose to leverage synergies with Greenfield being in the area to collect pre-disaster visual condition evidence of the condition of its entire road network. This has been extremely valuable to the Shire as it has supported the submission of a subsequent claim under AGRN1010 for fire damage to various roads within the Shire's network.

Shire of Corrigin – DRFAWA AGRN978 ~\$1.2M (2021)

Greenfield was engaged by the Shire of Corrigin to complete the damage assessment and inspection of specific parts of the road network following the fire event and significant rain during summer 2022. Similarly to AGRN978, due to the urgency of the situation and at short notice, Greenfield re-prioritised other works to ensure we could attend the Shire and provide assistance promptly.

The damage inspection was completed promptly and efficiently again using automated camera technology and the pre-disaster evidence that was collected in July 2021 was critical in demonstrating the extent of the damage to DFES. Greenfield completed and submitted the EPAR cost estimate on behalf of the Shire that incorporated damage to unsealed roads, sealed roads, signage, guideposts and bridge guard rails.

Shire of Upper Gascoyne – Emergency Road Flood Damage Inspection Consultancy Services (2020 – ongoing)

The Shire of Upper Gascoyne engaged Greenfield to provide emergency road flood damage inspection consultancy services on an ad-hoc basis. The scope of the works requires that Greenfield be available to assess any road flood damage that occurs in the Shire immediately following the event once the roads are safe to travel on. Greenfield's role includes collecting visual evidence of the damage, preparing cost estimates for the damage under the DRFAWA program and supporting the Shire during any emergency works completed as part of the road "opening up" works.

Greenfield has successfully provided these services for the past 18 months which has ensured that the Shire has immediate access to qualified and experienced road flood damage inspectors to collect all the evidence needed to submit DRFAWA claims. The result of this is that this specific local government has a comprehensive suite of visual evidence of their road network which improves the quality of the DRFAWA cost estimate and submission and minimises the time taken by DFES to review and approve the claim.

Shire of Upper Gascoyne – DRFAWA AGRN951 ~\$12M (2021 – 2022)

The Shire of Upper Gascoyne engaged Greenfield to provide project management, financial administration and site inspection services in relation to the AGRN951 event. Our scope of work is currently ongoing and comprised the damage assessment and cost estimate preparation, management of the tender process to engage two plant hire contractors, ongoing project management and oversight of the works, the provision of two full-time site inspectors and the ongoing financial administration.

This project is being completed in parallel with several other DRFAWA projects for this Client so the administration and project management is challenging and needs particular care and attention.

One work package is well advanced and the other work package is scheduled to commence in July 2022. All works completed in the first work package have been to a high standard and Greenfield continues to deliver professional and efficient project management and engineering consultancy services to this Client. Greenfield has been working closely with DFES on this project as it is the first time the Shire has experienced the new process for verification of the tendered rates. Greenfield has been recognised consistently by the Shire and the Council for the high quality of services and project management provided.

Shire of Upper Gascoyne – DRFAWA AGRN908 ~\$24M (2020 – 2022)

The Shire of Upper Gascoyne engaged Greenfield to provide project management, financial administration and site supervision services in relation to the AGRN908 event. Our scope of work is currently ongoing and comprised the damage assessment and cost estimate preparation, management of the tender process to engage two plant hire contractors, ongoing project management and oversight of the works, the provision of two full-time site inspectors and the ongoing financial administration.

This project was particularly complex as it involved a combination of three discrete AGRN events rolled into one larger event. Greenfield was required to identify and separate the costs and demonstrate to DFES the business case for combining the events in terms of realising synergies and efficiencies.

One work package is complete and the other is well advanced and to date, all works have been completed to a high standard and quality. Greenfield is working closely with DFES to ensure that the claims for reimbursement are in accordance with the DRFAWA requirements and facilitate timely reimbursement to the Shire.

Shire of Upper Gascoyne – DRFAWA AGRN863 ~\$10M (2019 – 2020)

The Shire of Upper Gascoyne engaged Greenfield to provide project management, financial administration and site supervision services in relation to the AGRN863 event. Our scope of work was completed in early 2021 and comprised the damage assessment and cost estimate preparation, management of the tender process to engage two plant hire contractors, ongoing project management and oversight of the works, and the provision of two full-time site inspectors and the ongoing financial administration.

The works were completed slightly below budget and within the estimated original project schedule with the Shire being reimbursed in full for the cost of the works.

Shire of Upper Gascoyne – DRFAWA AGRN821 ~\$3.6M (2019 – 2020)

The Shire of Upper Gascoyne engaged Greenfield to provide project management, financial administration and site supervision services in relation to the DRFAWA AGRN821 event. Our scope of work has been completed and comprised the damage assessment and cost estimate preparation, management of the tender process to engage a plant hire contractor, ongoing project management and oversight of the works, full-time site inspection and financial administration.

We have worked closely with DFES on this project as the DRFAWA funding arrangements are transitioned from MRWA to DFES to ensure we have a thorough understanding of the new processes for the project administration.

Shire of Upper Gascoyne – AGRN781 ~\$18.5M (2018 - 2019)

The Shire of Upper Gascoyne engaged Greenfield to provide end-to-end services in relation to the AGRN781 event. The scope of our work comprised completing a damage assessment of the Shire's road network, preparing a DRFAWA cost estimate, submitting the estimate to MRWA including all photographic evidence and liaison with MRWA during the funding approval period. Similar to other projects, the cost estimate and damage schedule was accepted and approved by MRWA in a short time frame.

Greenfield then developed the tender documentation necessary to engage two plant hire contractors to complete the damage reinstatement works. For this project, Greenfield also provided three full-time onsite Site Inspectors to provide surveillance and technical assurance of the three Plant Hire Contractors. Greenfield also provided complete project management services including work programming, quality assurance and inspections and regularly attended the Shire Council meetings to provide progress updates on the works.

As part of this project, Greenfield also managed the construction of >20 water bores across the Shire which were funded from the flood damage funding. Greenfield led the preparation of the business case and presented this to MRWA demonstrating the cost-effectiveness of drilling bores rather than carting water long distances.

As with other flood damage projects, Greenfield also managed the financial administration and recoup process in a professional, cost-efficient manner which is producing positive benefits for the Shire and Contractors.

Shire of Upper Gascoyne – AGRN743 ~\$10.7M (2017 - 2018)

The Shire of Upper Gascoyne engaged Greenfield to provide project management, supervision and financial administration services in relation to the AGRN743 event. The scope of work comprised completing a damage assessment of the Shire's road network, preparing a DRFAWA cost estimate, submitting the estimate to MRWA including all photographic evidence and liaison with MRWA during the funding approval period.

Greenfield then developed the tender documentation necessary to engage two plant hire contractors to complete the damage reinstatement works. For this project, Greenfield provided two full-time onsite Site Inspectors to provide surveillance and technical assurance of the two Works Contractors. Greenfield also provided complete project management services including work programming, quality assurance and inspections and regularly attended the Shire Council meetings to provide progress updates on the works.

Similarly to the AGRN781 project for this Shire, Greenfield also managed the construction of >15 water bores across the Shire which were funded from the flood damage funding. Greenfield led the preparation of the business case and presented this to MRWA demonstrating the cost-effectiveness of drilling bores rather than carting water long distances.

As with other flood damage projects, Greenfield successfully managed the financial administration and recoup process with a 100% success rate in terms of recovering all money expended from the flood damage program.

Shire of Murchison – AGRN863 / AGRN899 ~\$11.5M (2020 - 2021)

The Shire of Murchison engaged Greenfield to provide project management, inspection and financial administration services in relation to the AGRN863 / AGRN899 events. The Shire combined the two flood damage reinstatement scopes to be managed as one event and Greenfield's scope of work comprised completing two separate damage assessments of the Shire's road network, preparing two separate DRFAWA cost estimates, submitting the estimates to DFES including all photographic evidence and liaison with MRWA / DFES during the funding approval period. Similar to other projects, the cost estimates and damage schedule was accepted and approved by DFES and MRWA.

Greenfield then developed the tender documentation necessary to engage two plant hire contractors to complete the damage reinstatement works. For this project, Greenfield provided two full-time onsite Site Inspectors to provide surveillance and day-to-day technical assurance of the two Plant Hire Contractors. Greenfield also provided complete project management services including work programming, quality assurance and inspections. Greenfield also coordinated all Aboriginal Heritage inspections to ensure that the Shire complied with their regulatory obligations.

As with other flood damage projects, Greenfield successfully managed the financial administration and recoup process in a cost-efficient manner and all funds spent by the Shire were successfully claimed from the flood damage program.

Shire of Murchison – AGRN781 ~\$14.8M (2018 - 2019)

The Shire of Murchison engaged Greenfield to provide project management, inspection and financial administration services in relation to the AGRN781 event. The scope of our work comprised completing a damage assessment of the Shire's road network, preparing a DRFAWA cost estimate, submitting the estimate to MRWA including all photographic evidence and liaison with MRWA during the funding approval period. Similar to other projects, the cost estimate and damage schedule was accepted and approved by MRWA in a short time frame.

Greenfield then developed the tender documentation necessary to engage three plant hire contractors to complete the damage reinstatement works. For this project, Greenfield provided three full-time onsite Site Inspectors to provide surveillance and day-to-day technical assurance of the three Plant Hire Contractors. Greenfield also provided complete project management services including work programming, quality assurance and inspections. Greenfield also coordinated all Aboriginal Heritage inspections to ensure that the Shire complied with their regulatory obligations.

As with other flood damage projects, Greenfield successfully managed the financial administration and recoup process in a cost-efficient manner and all funds spent by the Shire were successfully claimed from the flood damage program.

Shire of Murchison – AGRN743 ~\$6.4M (2017 - 2018)

The Shire of Murchison engaged Greenfield to manage the full extent of the Shire's flood damage works. This included an initial flood damage inspection and preparation of the cost estimate, preparation of the tender for contract supervisors and plant hire contractors and then the project management and financial administration of the works over approx. 8 months.

The works were completed in two work packages of approximately equal value. Greenfield added value to the project due to our strong local knowledge and efficient management of the works. All claims for reimbursement were approved and the Shire received the funds back promptly. The Shire recognised Greenfield for its professionalism and expertise in managing large flood damage projects.

Shire of Cue – AGRN863 ~\$5M (2019 – 2021)

The Shire of Cue engaged Greenfield to manage all works associated with AGRN863. This included completing a damage assessment, preparing the DRFAWA Cost Estimate, and preparing tenders for engaging a plant hire contractor and contract supervisor. The damage assessment was completed safely and efficiently whilst the cost estimate was approved by DFES with minimal queries.

Greenfield then prepared the technical specifications for the reinstatement works comprising the reconstruction of unsealed roads, floodways, culverts, signage and stock grids. The specifications were aligned with MRWA and AustRoads guidelines for unsealed road assets. Due to the size of the claim, Greenfield worked closely with the Shire to split the works into three work packages which were completed sequentially. Greenfield developed work schedules that were used to drive progress with the plant hire contractors.

All works were completed according to the project schedule and within the original budget. Greenfield, the Works Contractors and Works Supervisors were recognised by the Shire for the high quality of works completed and the professionalism of the services provided.

Shire of Cue – AGRN661 ~\$11M (2015 – 2017)

The Shire of Cue engaged Greenfield to manage all works associated with DRFAWA AGRN661. This included completing a damage assessment, preparing the DRFAWA Cost Estimate, and preparing tenders for engaging plant hire contractors and contract supervisors. The damage assessment was completed safely and efficiently whilst the cost estimate was approved by MRWA without query.

Greenfield then prepared the technical specifications for the reinstatement works comprising the reconstruction of unsealed roads, floodways, culverts, signage and stock grids. The specifications were aligned with MRWA and AustRoads guidelines for unsealed road assets. Due to the size of the claim, Greenfield worked closely with the Shire to split the works into three work packages which were completed sequentially. Greenfield developed work schedules that were used to drive progress with the plant hire contractors.

All works were completed according to the project schedule and within the original budget. Greenfield, the Works Contractors and Works Supervisors were recognised by the Shire for the high quality of works completed and the professionalism of the services provided.

Shire of Halls Creek – AGRN899 ~\$6M (2019 – 2022)

Greenfield was engaged by the Shire of Halls Creek to complete the damage assessment, cost estimate preparation and provide project management and site inspection services to deliver the Shire's AGRN899 works. This involved extensive liaison and negotiation with DFES and Main Roads WA to obtain approval for the claim and following a 12-month process, Greenfield was instrumental in demonstrating the extent and severity of the damage to DFES to allow the claim to be approved. The works are nearing completion and all works will be completed to a high standard, in accordance with the approved budget and within the allowable schedule.

Shire of Halls Creek – AGRN743 ~\$4.7M (2017 – 2018)

Greenfield was engaged by the Shire of Halls Creek to complete the damage assessment, cost estimate preparation and provide project management and project administration services to deliver the Shire's AGRN743 works.

For this project, the process was still administered by Main Roads WA, and Greenfield led the damage assessment process in collaboration with MRWA inspectors. Following a 3 month review and approval process in which Greenfield provided extensive support to the Shire in responding to MRWA queries, the cost estimate was approved. Greenfield then managed the road construction contractor and the Shire's inspector to complete the works in accordance with the approved schedule. All costs incurred on this job were reimbursed to the Shire in full which was testament and evidence of Greenfield's capabilities and expertise with these works.

Shire of Ashburton - AGRN743 ~\$10.9M (2017 – 2018)

Greenfield was engaged by the Shire of Ashburton in March 2017 to complete a Flood Damage Assessment and prepare a Cost Estimate for damage incurred as a result of AGRN743. Greenfield's Flood Damage Inspector completed the physical inspection in conjunction with a representative from the Shire over approximately 22 days. A claim of approximately \$10.9M was prepared and was approved by MRWA with minimal queries.

The Shire then engaged Greenfield again to fulfil the role of Contract Superintendent for the duration of the damage reinstatement works. Greenfield also supplied two full-time Flood Damage Supervisors to manage the plant hire contractors in completing the flood damage reinstatement works. Greenfield has completed this project successfully and professionally and the quality of the work has been commended by the Shire.

Shire of Wiluna – AGRN888 ~\$26M (2019 – 2022)

Greenfield was appointed by the Shire of Wiluna to complete the damage assessment for AGRN888 in early 2019. The extent of this event was extreme and it took several weeks to complete the damage assessment due to the extensive damage to the road network. Greenfield then prepared the cost estimate and damage schedule and worked with MRWA and DFES to obtain approval.

Following approval of the cost estimate, Greenfield was responsible to develop the tender documentation to engage road construction contractors to complete the works. Greenfield placed the tender advertisement and also evaluated the tender responses in accordance with the Shire's RFT criteria. We then supported the Shire in the award of the contract.

The Shire then ran an RFT process to engage an experienced, professional and competent consultant to manage the works. Greenfield was awarded this package of works and we have been providing project management, site inspection and project administration services to this work for the past 8 months. The works are due to be completed in late 2022 and the quality of the services provided by Greenfield to date has been recognised by the Shire as being of an excellent standard.

Shire of Wiluna – AGRN743 ~\$10.9M (2017 – 2018)

Greenfield was appointed by the Shire of Wiluna to complete the damage assessment for AGRN743 in October 2017. Using two Flood Damage Inspectors, Greenfield travelled the length of the Shire's road networks documenting all damage incurred over approximately 25 days. Greenfield then prepared the Cost Estimate and associated photographic documentation. To illustrate the magnitude of the damage incurred, the defect listing contained more than 900 items.

Greenfield was then invited to present the cost estimate to the Shire Council for approval. Following this, the estimate was submitted to MRWA and was approved without query within seven days of the submission. This illustrates the high quality of Greenfield's flood damage assessment process.

REFEREES

Greenfield invites the Shire of Corrigin to contact our referees to verify our experience and capabilities to complete the DRFAWA works.

Referee #1

Phil Burgess – Works Manager.

Shire of Corrigin

Email: works@corrigin.wa.gov.au. Phone: 08 9063 2079

Numerous projects for the Shire of Halls Creek in his previous role as Director Infrastructure Assets:

- 2021/22 Rabbit Proof Fence Rd / Bullaring Gorge Rock Rd intersection upgrade design (Shire of Corrigin)
- 2020/21 Sealed Road Reconstruction Works throughout Halls Creek townsite comprising project management services and site inspection services.
- Flood Damage 2019 (AGRN899) Damage assessment, cost estimate, Procurement Management, Project Management, Project Administration and onsite technical assurance.
- Flood Damage 2017 (AGRN743) (1 work package) Damage Assessment, Cost Estimate, Procurement Management, Project Management and Project Administration.
- Road Works Program 2019 Project Management and Site Inspection
- Road Works Program 2018 Project Management and Site Inspection
- Road Works Program 2017 Project Management
- Road Works Program 2016 Project Management
- Road Works Program 2015 Project Management
- Flood Damage 2015 (AGRN606) Damage Assessment, Cost Estimate, Contract Superintendent, Project Management, Financial Management

Referee #2

John McCleary – Chief Executive Officer

Shire of Upper Gascoyne

Email: ceo@uppergascoyne.wa.gov.au. Phone: 08 9943 0988

Projects:

- Carnarvon Mullewa Rd Upgrade Design 2022: design of approx. 12km of road upgrade from an unsealed to a sealed standard.
- Dalgety Downs Landor Rd Upgrade to Sealed Road 2020/21 project management and site inspection.
- Gascoyne Junction Tourist Park 2020/21 sealed pavement reconstruction project management and site inspection.
- 2020/21 Spray Sealing works – technical specifications, procurement documentation and site inspection and assurance work.
- Flood Damage 2020 (AGRN908) (2 work packages) Damage Assessment, Cost Estimate Preparation, Procurement Management, Project Management, Project Administration and onsite technical assurance.
- Flood Damage 2019 (AGRN863) (2 work packages) Damage Assessment, Cost Estimate Preparation, Procurement Management, Project Management, Project Administration and onsite technical assurance.

- Flood Damage 2018 (AGRN821) (1 work package) Damage Assessment, Cost Estimate, Procurement Management, Project Management, Project Administration and onsite technical assurance.
- Flood Damage 2018 (AGRN781) (3 work packages) Damage Assessment, Cost Estimate, Procurement Management, Project Management, Project Administration and onsite technical assurance.
- Flood Damage 2017 (AGRN743) (2 work packages) Damage Assessment, Cost Estimate, Procurement Management, Project Management, Project Administration and onsite technical assurance.

Referee #3

William Herold – Works Manager

Shire of Murchison

Email: works@murchison.wa.gov.au. Phone: 08 9963 7999

Projects:

- Carnarvon Mullewa Rd Upgrade Design 2021/22: upgrade of approx. 8km from an unsealed to a sealed standard
- Bilung Creek Crossing 2020/21 engineering design, technical specifications and procurement management.
- 2020/21 and 2021/22 spray sealing program technical specifications and procurement management.
- Flood Damage 2021 (AGRN951) (2 work packages) Damage Assessment and Cost Estimate Preparation, Procurement Management, Project Management, Project Administration and onsite technical assurance.
- Flood Damage 2020 (AGRN899) (2 work packages) Damage Assessment, Cost Estimate Preparation, Procurement Management, Project Management, Project Administration and onsite technical assurance.
- Flood Damage 2019 (AGRN863) (2 work packages) Damage Assessment, Cost Estimate Preparation, Procurement Management, Project Management, Project Administration and onsite technical assurance.
- Flood Damage 2018 (AGRN781) (3 work packages) Damage Assessment, Cost Estimate, Procurement Management, Project Management, Project Administration and onsite technical assurance.
- Flood Damage 2017 (AGRN743) (2 work packages) Damage Assessment, Cost Estimate, Procurement Management, Project Management, Project Administration and onsite technical assurance.

Referee #4

Wayne Neate – Director of Technical and Development Services

Shire of Derby West Kimberley

Email: emtds@sdk.wa.gov.au. Phone: 08 9191 0999

Projects:

- Flood Damage 2022 (AGRN1015) Damage Assessment and Cost Estimate Preparation, Procurement Management, Project Management, Project Administration and onsite technical assurance.
- Flood Damage 2021 (AGRN951) (2 work packages) Damage Assessment, Cost Estimate Preparation, Procurement Management, Project Management, Project Administration and onsite technical assurance.

- Flood Damage 2020 (AGRN907) (3 work packages) Damage Assessment, Cost Estimate Preparation, Procurement Management, Project Management, Project Administration and onsite technical assurance.
- Flood Damage 2019 (AGRN793) (2 work packages) Procurement Management, Project Management, Project Administration and onsite technical assurance.
- 2019/20 Knowsley St East Reconstruction: Project management and onsite technical assurance
- 2020/21 Road Asset Valuation: RAMM database updates, preparation of valuation data for Shire

NOMINATED RESOURCES

Greenfield's nominated resources for this project are detailed below.

Joshua Kirk – Principal Civil Engineer is a Chartered Civil Engineer (CPEng) and holds tertiary qualifications in Civil Engineering, Commerce and Business Administration with more than 12 years of experience in project management, engineering design and construction management. Joshua is a skilled project manager with a strong record of achievement in delivering successful outcomes and value-adding across a wide variety of complex, multidisciplinary industrial and infrastructure projects. Joshua brings to Greenfield advanced project management and facilitation skills and a high level of business acumen. Through his experience in working with some of the largest resources and engineering companies, Joshua has developed extensive experience in all aspects of project delivery from business cases and concepts through to detailed engineering design, procurement, fabrication, construction, commissioning, start-up and handover to the client.

For this Project, Joshua will fulfil the role of Principal's Representative. In this capacity, he will be the primary point of contact for all aspects of the Project including liaison with DFES and MRWA, the Shire, the community and the Contractors, reviewing the Contractor's claims, managing the project's schedule and budget and providing direction to the Contractor at a contract level.

Joshua has extensive experience in this role having completed the same role for numerous local governments across WA for the past 6 years.

Joshua D'Cruze – Project Manager is one of Greenfield's experienced project engineers with more than 12 years of experience in road and civil infrastructure delivery. Joshua has excellent communication skills and is skilled in working with a wide range of personnel to achieve common objectives. Most recently, Joshua has been managing significant road repair works for numerous regional local governments across Western Australia as well as providing technical assessments and advice for other regional clients for unsealed and sealed pavement and surfacing jobs. As a result of Josh's recent work, he has excellent knowledge and understanding of regional areas and is well-suited to provide a significant contribution to the Shire as part of the delivery of this scope of work.

In his role as Project Manager, he will support Joshua Kirk as the Principal's Representative and specifically coordinate site inspections, assurance verification works and other required project documentation.

Sarah Ferguson – Project Administrator is another experienced Project Administrator who has excellent attention to detail and consistently delivers high-quality results for the projects she supports. Sarah understands the need for timely and accurate information and has also gained excellent experience working with a wide range of construction contractors and personnel. This experience allows her to handle the demands of complex construction jobs and she works well under pressure. Sarah has already been working with the Shire of Corrigin to manage the documentation from the emergency works the Shire completed for AGRN978 and AGRN1010.

Site Inspectors

Greenfield is nominating three Site Inspectors for our proposal. Depending on the timing of the works, one of these resources will be allocated to the works.

Bill Okely– Site Inspector is an experienced civil construction supervisor who has strong experience in managing remote road construction works throughout regional and remote areas of Western Australia. For the past several years, Jonathan has been managing various road upgrade, repair and flood damage reinstatement works in remote areas in the Mid-West and Gascoyne regions and as a result of this experience has an excellent understanding of the documentation required, nature of the works and the process for ensuring works are completed following DRFAWA requirements.



Jonathan Petrie – Site Inspector is an experienced civil construction supervisor who has strong experience in managing remote road construction works throughout regional and remote areas of Western Australia. For the past several years, Jonathan has been managing various road upgrade, repair and flood damage reinstatement works in remote areas in the Mid-West and Gascoyne regions and as a result of this experience has an excellent understanding of the documentation required, nature of the works and the process for ensuring works are completed under DRFAWA requirements.

Tony White – Site Inspector is another of Greenfield’s nominated site inspectors. Tony is an experienced civil construction inspector and supervisor who has strong experience in managing rural road construction works throughout the Mid-West, Gascoyne, Pilbara and Kimberley. Starting as a machinery operator has provided Tony with excellent experience in road construction techniques. He has extended these skills further over time and has now made the transition into civil and road construction supervision and inspection. Over the past three years, Tony has been working in various locations across regional WA inspecting and supervising unsealed and sealed road construction works. Tony has an excellent knowledge of the Shire of Corrigin having performed the flood damage and fire damage site inspection and damage assessment work in 2021 and 2022.

In the unlikely event that any of the above resources are unavailable, Greenfield will work with the Shire to determine a suitable replacement from Greenfield’s existing resources.

Details resumes can be provided on request.

CAPACITY TO CARRY OUT THE WORKS

GENERAL

Greenfield confirms that we have adequate resources to carry out the Shire's works to the highest standard. Our team is constantly working on progressing and managing DRFAWA works for a wide range of clients and therefore we are practised and experienced at delivering the necessary tasks and activities required for these works. As a result of this experience, we are acutely aware of the nature of the work and the time required to manage the complex and onerous DRFAWA requirements.

In recognition of the importance of these works to Greenfield, Joshua Kirk, Greenfield's Principal will take personal responsibility for the overall management and coordination of the project. This will include attending Shire meetings (where invited) to present to the Shire the progress of works.

Assuming that the works commence in 2nd / 3rd Qtr 2022, all of our nominated resources are available to meet this proposed project schedule. Based on the cost estimates submitted to DFES, we estimate there is approx. 6 months of physical works required to complete the flood and fire damage reinstatement works plus time prior and post to plan and coordinate the works and then close out the documentation with DFES.

REGIONAL AND REMOTE AREA CAPABILITIES

Unlikely some of our competitors, Greenfield has extensive and recent experience providing project management, site inspection and road flood damage assessment services in regional and remote areas of Western Australia. Greenfield has made significant investments in ensuring our Inspectors have the necessary equipment to complete the work tasks in a safe, productive and efficient manner.

To this end, our Inspectors are equipped with:

- Robust 4WD vehicle including:
 - Mine fleet specification compliant,
 - Spare parts,
 - Dual spare wheels and tyres,
 - Long-range fuel tanks
 - UHF radios
 - In-vehicle satellite phone
 - Vehicle satellite tracking, journey management and emergency duress / lone worker system.
 - Road video and photographic capture equipment
- Fully self-sufficient mobile camp set-up (where the job requires) including:
 - Computer, printing and scanning office facilities
 - Satellite internet equipment (based at the mobile camp) including landline phone system
 - Mobile power supply including fuel
 - Potable water supply and storage
 - Wastewater processing and collection equipment
- Diesel fuel storage at the mobile camp sufficient for the full work swing. This eliminates the need for the Inspector to have to travel back and forth during the working swing to refuel their vehicle which can damage roads and result in additional cost for additional travel
- Site surveying and measurement equipment

The above equipment will be employed on an as-needed basis to suit the local conditions and environment. Additionally, Greenfield has the internal capability to transport any additional urgent materials to the Site Supervisors as required via light aircraft minimising cost and downtime.



REGIONAL WA EXPERIENCE

Being based in regional Western Australia (Geraldton) and working predominately in regional and remote Western Australia, Greenfield is well suited to provide cost-effective and timely support to the Shire's flood and fire damage works. We understand the regional environment and the challenges and opportunities of doing work in these areas. Additionally, our proposed team has good knowledge of the area and the local people via our recent involvement with some of the Shire's road upgrade and damage assessment works.

PROPOSED APPROACH & METHODOLOGY

Greenfield's proposed scope of work comprises the following tasks/activities/processes.

- Project management of the construction works including:
 - Liaison, technical assurance and oversight of the Shire's plant hire contractors and specifically:
 - Developing a high-level sequence for the works taking into account any priorities from the Shire as to the order that works are completed and adjusting the program to suit environmental conditions as necessary.
 - Selection and use of natural construction materials.
 - Liaison with local stakeholders to obtain approval to access natural materials (gravels/water).
 - Monitoring and assurance of the quality plant hire contractor's works against the project specifications.
 - Monitoring progress against the project budget and making adjustments with the plant hire contractor as necessary to ensure the works are completed within budget.
 - Monitoring the plant hire contractor's productivity, efficiency and hours worked to ensure the Shire is receiving value-for-money during the works.
 - Verification that the works are being completed as per the approved damage schedule and in accordance with the DRFAWA requirements.
 - Completing site technical audits to verify works against the defect schedule.
 - Completing handover inspections to verify the completion of every defect in accordance with the defect schedule.
 - Monitoring the condition of roads used by the plant hire contractors to ensure they are maintained in the same condition at the end of the works as they were at the start of the works.
 - Forward planning of works to ensure that the risk of delays to the contractor's work program is minimised.
 - Progress reporting to the Shire and Council including attending monthly council meetings to report on the works (if required).
 - Technical and ad-hoc support to the Shire/works program as necessary to ensure the works are completed successfully.
- Financial and project administration of the project including:
 - Review, assurance and approval of the plant hire contractor's daily dockets to verify that the correct hours are claimed.
 - Collation of all evidence required documenting the works including timesheets, daily resource record sheets, site quality audit documentation and completion photos.
 - Preparation of requests for invoice to the plant hire contractor based on the hours worked and review and assurance of the subsequent invoices before sending to the Shire for payment.
 - Preparation of claims for reimbursement for funds spent by the Shire to complete the works via the DRFAWA program.
 - Preparation of all ad-hoc documentation required by DFES in support of the works.

AGRN978 / 1010 SUGGESTED PROJECT METHODOLOGY

Based on approx. \$1.2M (AGRN978) and \$2.7M (AGRN1010) worth of work, Greenfield has assumed that the works will be completed by one main contractor utilising a specialist subcontractor for the bitumen spray sealing works.

Assuming the Shire's AGRN978 and AGRN1010 cost estimates are fully approx by DFES by July 2022, Greenfield would propose the following key dates for the works:

- Jul / Sep 2022: Develop RFT documentation and technical specifications, conduct the tender process and Shire Council to engage the preferred plant hire contractor
- Sep / Oct 2022: Finalise DRFAWA Cost Estimates with Tendered Rates from the successful plant hire contractor (including subcontractor costs for bitumen spray sealing works)
- Oct / Nov 2022: Commence reinstatement works
- May / Jun 2023: Complete all AGRN978 and AGRN1010 reinstatement works

A summary of the proposed roles and responsibilities of each party to the project is provided below.

Principal: Shire of Corrigin

The role of the Principal is to engage the Principal's Representative (Greenfield Technical Services), Site Inspector (Greenfield personnel) and the plant hire contractor to work together to complete the contract works. The Principal is responsible for paying the contractors after which a DRFAWA Claim can be submitted to recover the costs incurred.

Works Manager: Shire of Corrigin

The Shire's Works Manager provides local knowledge and technical assistance as required to the Principal's Representative and Site Inspector. However, they are not generally involved with the day-to-day management of the reinstatement works.

Principal's Representative: Greenfield Technical Services.

The role of the Principal's Representative is to complete the proposed scope of work summarised within this proposal. The Principal's Representative reports directly to the Principal (Shire of Corrigin). Greenfield has extensive experience in fulfilling the obligations of this role.

Site Inspector: Greenfield Technical Services.

The Site Inspector is a full-time field-based position that reports directly to the Principal's Representative. Their primary role is to provide assurance that the plant hire contractor is completing all works following the approved reinstatement defect schedule, that all works are meeting or exceeding the technical road repair specifications, and that all construction records including daily resource record sheets and contractor hours are accurate and that the contractor is engaging its plant/resources efficiently to complete the works within the estimated cost.

Additionally, the Site Inspector is essential in documenting and verifying the progress of works and collecting and managing all site documentation required to satisfy the detailed evidence and records process under the DRFAWA program. This position is critical in ensuring the smooth execution and completion of DRFAWA reinstatement works. Greenfield has supplied suitable persons for this role in many instances across regional WA which can be verified by our referees and the details we provided of similar experience.

Plant Hire Contractor

The plant hire contractor enters a contract with the Shire of Corrigin to complete the scope of works as defined in the Shire's approved cost estimate and defect schedule following the technical specifications provided in the tender document. For this scope, given that the AGRN1010 works involve a significant

quantity of bitumen sealing works, the plant hire contractor will also be required to engage a spray sealing contractor to complete the sealing works. The RFT documentation that Greenfield develops will include provisions for this spray sealing work.

The plant hire contractor determines which items of plant/equipment are required to complete the works and agrees the proposed repair methodology with the Site Inspector before commencing the works.

The plant hire contractor is responsible for all tasks/activities undertaken by their workforce and is also responsible for managing all aspects of the work site in accordance with all regulatory requirements (including all occupational health and safety requirements). As the work site will be managed and controlled by the plant hire contractor, the plant hire contractor is responsible for managing all aspects of the work site in accordance with all regulatory requirements (including all occupational health and safety requirements). This includes ensuring the plant hire contractor has the necessary OHS documentation for the works and that all personnel on site are complying with these OHS requirements. It also includes managing entry/exit from each work site, ensuring that all personnel on the contractor's work site are appropriately trained, qualified, and equipped for the works. It also includes monitoring the environmental, occupational health and safety performance of the worksite including making any necessary adjustments/improvements as required. Greenfield is not responsible for assuring, managing or verifying any of the plant hire contractor's OHS requirements.

ESTIMATED PROJECT COST & FEE PROPOSAL

Greenfield's fee proposal is a Schedule of Rates based on supplying Project Management, Site Inspection and Project Administration services.

PROJECT TEAM – SCHEDULE OF RATES		
Resource		Rate (ex-GST)
Principal's Representative - Joshua Kirk	\$/hr	\$178.50
Project Manager – Joshua D'Cruze	\$/hr	\$170.00
Project Administrator – Sarah Ferguson	\$/hr	\$66.50
Site Inspector (working)	\$/hr	\$130.00
Site Inspector (standby)	\$/hr	\$96.00
Travel	\$/km	\$1.50
Meals & Accommodation Allowance (Site Inspector) per working or standby day	\$/day	\$200.00
Any other costs (e.g. accommodation, meals) for Principal's Representative and Project Manager	Item	Cost + 12%

Notes:

1. A standby rate of \$96/hr is applicable for the Site Inspector during wet weather and other similar events where the Inspector is on-site or supposed to be on site but is unable to be due to external factors.
 - a. Standby is limited to a maximum of 8 hours per day.
 - b. Where an Inspector is on standby and is on-site, the daily accommodation & meals rate will also apply.
2. If the Shire can provide accommodation at no cost, Greenfield can reduce the meals/accommodation allowance from \$200 per day to \$70 per day (ex-GST) to cover a meals allowance only for the Site Inspector.

For the Shire’s procurement purpose and to allow a comparison between submissions from consultants, Greenfield has provided an ESTIMATE of the possible quantities that may be required for the different resources for this project below. Please note this is an estimate only and is provided in good faith and should not be used solely to differentiate between submissions when the Shire is considering who to award this contract to.

The total cost of Greenfield is highly dependent on the length of time that the plant hire contractor takes to complete the works. If other consultants assume a different project duration, then their costs will be significantly different to Greenfield’s estimated costs.

All actual costs will be based on the actual quantities required to complete the works. DFES will reimburse the Shire for actual costs and not estimated costs.

PROJECT TEAM – SCHEDULE OF RATES & ESTIMATED TOTAL COST				
Resource		Rate (ex-GST)	Est. Qty	Est. Total (ex-GST)
Principal’s Representative - Joshua Kirk	\$/hr	\$178.50	280	\$49,980
Project Manager – Joshua D’Cruze	\$/hr	\$170.00	420	\$71,400
Project Administrator – Sarah Ferguson	\$/hr	\$66.50	560	\$37,240
Site Inspector (working)	\$/hr	\$130.00	1386	\$159,390
Site Inspector (standby)	\$/hr	\$96.00	-	-
Travel	\$/km	\$1.50	23,100	\$34,650
Meals & Accommodation Allowance (Site Inspector) per working or standby day	\$/day	\$200.00	126	\$25,200
Any other costs (e.g. accommodation, meals) for Principal’s Representative and Project Manager	Item	Cost + 12%	As required	As required
Estimated Total (ex-GST)			\$377,860	

Notes:

1. For procurement and transparency purposes, Greenfield has provided an estimate of the quantities required to complete the works. The following assumptions have been made:
 - a. Works will take approx. 6 months to complete using one work crew provided by the Plant Hire Contractor.

- b. The Site Inspector will work an average of 11 hours per day for a 3 week on, 1 week off working swing. 6 work swings in total will be required.
 - c. Site Inspectors will average a total of 150km travel per day. This is an estimate only and not a minimum requirement. Only kilometres required to complete the works will be travelled.
 - d. The Project Manager will make one trip per month to the Shire of Corrigin (6 trips in total) for technical assurance and progress inspections.
2. Please note, that the quantities provided are an estimate only; actual charges will be based on actual quantities required to complete the works and not estimated quantities. This is appropriate given the duration of the work is highly variable and related to the contractor's work program.
3. All costs associated with the DRFAWA works, except for the Shire's initial contribution, are reimbursable providing the works are completed under the DRFAWA requirements.
4. For comparison purposes, in Greenfield's experience managing similar DRFAWA events, project management/site inspection costs are typically 10 – 12% of the total claim value. The rates given below extrapolated over the estimated project duration of 6 months represent approx. 10% of the Shire's flood and fire damage claim.
5. Time/kilometres to/from the Corrigin work sites will be based from the Site Inspector's home location.



Fee proposal for DRFAWA Project Supervision Fire and Flood Damage

VP308235



Prepared for Shire of Corrigin

9 June 2022

Project Number: TCP22067

Version	Description	Date	Author	Reviewer	Approver
1.0	First Approved Release	09/06/2022	MH	PG	PG
Approval for Release					
Name	Position	File Reference			
Paul Gauci	Senior Civil Engineer	TCP22067_Corrigin DRFAWA Fee Proposal_1.0			
Signature					
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Natalie Manton

Chief Executive Officer

Shire of Corrigin
9 Lynch Street
6375, Western Australia
Australia

Dear Natalie Manton,

Fee Proposal for the provision of DRFAWA Project Supervision Fire and Flood Damage services

Thank you for offering Talis Consultants Pty Ltd (Talis) the opportunity to provide this Fee Proposal for DRFAWA Project Supervision Fire and Flood Damage services

Talis is an industry leader in supporting local governments through the processes of DRFAWA, and is currently working with multiple shires such as the Shire of Wyndham East Kimberley, the Shire of Northam and the Shire of Plantagenet on these types of projects. Talis was also a leader in the former arrangement of WANDRRA, undertaking project management and supervision services for many local governments across the State. We look forward to the opportunity of working with the Shire on this DRFAWA project.

At Talis, we distinguish ourselves from the competition by:

- Relevant recent experience undertaking DRFAWA projects;
- Multi-disciplinary, mid-size consultancy which has the resources to readily take-on a project of this size and nature;
- Customer service and excellence; and
- Access to industry leading hardware and software, including our digital video capture system.

Thank you for considering Talis' Fee Proposal and I look forward to discussing this project in further detail with you. Please feel free to contact me directly if you have any queries on Talis' fee proposal.

Best Regards,



Mikel Haramboure

Team Lead -Project Management Engineering

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Table of Contents

1	Scope of Works	5
2	About Talis	6
3	Relevant Experience	7
3.1	Talis and DRFAWA.....	7
3.2	Methodology.....	13
3.2.1	Project Initiation.....	13
3.2.2	Internal Project Management.....	13
3.3	Damage Inspection and Data Collection.....	13
3.4	Essential Public Asset Reconstruction (EPAR) Cost Estimate.....	13
3.5	Contractor Procurement.....	14
3.6	Construction Supervision and Contract Administration	14
3.6.1	Contractor Pre-Start Meetings.....	14
3.6.2	DRFAWA Requirements	14
3.6.3	Remote Communications and Information Management System	15
3.6.4	Cost Reimbursement.....	15
3.6.5	Superintendent and Site Supervisors’ Roles and Methodologies.....	16
3.6.6	Maintaining Works Records	17
3.6.7	Project Control and Programming	17
3.6.8	Sourcing of Pavement Materials & Water (with required NVP)	18
3.6.9	Quality Control	18
3.6.10	Approval of Contractor's Progress Claims.....	18
3.6.11	Monthly progress and budget reporting.....	18
3.6.12	Project Close Audit and Report.....	18
4	Key Personnel Skills and Experience	19
4.1	Project Team Members.....	19
4.2	Off-Site Personnel	21
4.3	On-Site Personnel	23
4.4	Administration support.....	27
4.5	Contingency Measures.....	28

5	Past Company Performance	30
5.1	Referees	30
6	Resources.....	33
6.1	Plant, Equipment and Materials	33
6.2	Resources Schedule	33
7	Fee & Charges	34
7.1	Schedule of rates.....	34
7.2	Assumptions.....	34

Appendices

Appendix A: CV's

Appendix B: Organisational Structure

1 Scope of Works

The Shire is seeking to appoint a suitably qualified and resourced company to provide project management, administration and onsite technical assurance and inspection services for the restoration of roads and associated road infrastructure in the Shire of Corrigin following flood damage in 2021 and fire damage in 2022.

The successful consultant will be required to develop technical specifications and engage contractors to complete the restoration work efficiently and with limited disruption to normal shire operations. Liaison with the Manager Works and Services, landowners, contractors and DFES will be required to ensure the project is completed within the required timeframe.

The successful company will need to be based in Corrigin to oversee on ground works

The Shire of Corrigin (Shire, Principal) seeks to engage a suitable qualified, experienced and resources Company, for Emergency Flood Damage Inspection Consultancy Services. The Company will be required to work with the Shire, landowners, the appointed Contractor/s and the Department of Fire & Emergency Services (DFES) throughout the life of these events including any additional work that the Shire may include as a consequence.

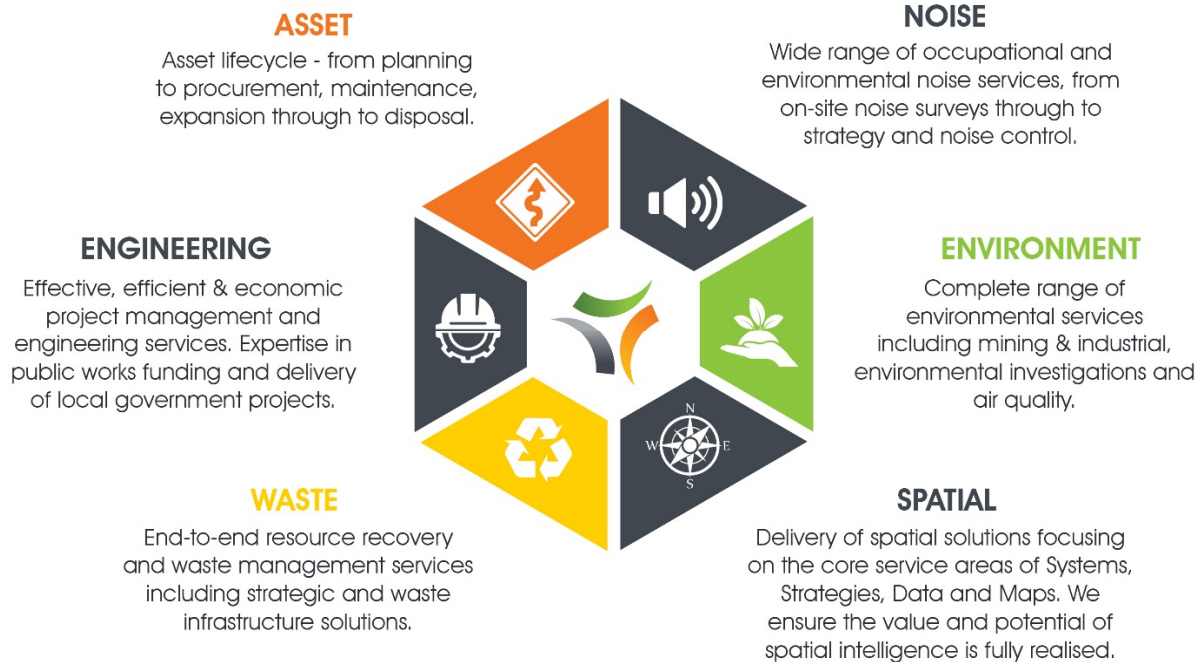
Talis will undertake the following scope of works, in order to meet the Shire's requirements:

- To work with the Shire, landowners, the appointed Contractor/s and the Department of Fire & Emergency Services throughout the life of these events including any additional works that the Shire may include as a consequence;
- Inspect, collect, assess and process flood damage records and data for emergency responses and claims in accordance with the DFES guidelines and the Shire requirements.
- Onsite engineering supervision to ensure compliance with Main Roads WA and DFES requirements and produce evidence to support reimbursement claims to DFES;
- Administrative support in the lodging of reimbursement claims to DFES;
- Provide own vehicle and accommodation and have staff that can provide the necessary technical, occupation safety and health, and job planning/scope advice to the appointed Contractors; and
- To complete a comparison of actual costs as to budget as well as the provision of advance quarterly estimates to meet the requirement stipulated by DFES.

2 About Talis

Talis is a specialised consultancy providing bespoke solutions in Asset, Engineering, Environment, Noise, Spatial, and Waste Management. Our multidisciplinary team has extensive experience and works with public and private sector clients across Australia, to provide efficient, effective, and economic solutions that benefit all stakeholders of a project. Since its Establishment in 2012, the company has grown exponentially and currently has more than 100 employees and the organisational structure can be found in Appendix B.

Talis consultancy services can be listed under six distinct categories:



We are committed to delivering fit-for-purpose solutions to our clients, by working alongside them to understand their needs and business objectives and develop innovative solutions and strategies that benefit all stakeholders and add value to the project lifecycle. We services clients across a range of sectors both locally in Western Australia as well as interstate. Our commitment to our clients is guided by our core values of passion, integrity, quality, teamwork, client focus and employee focus and is demonstrated through our track record of projects delivered successfully across multiple sectors.

WHAT SETS US APART FROM THE REST?



3 Relevant Experience

3.1 Talis and DRFAWA

Talis has been a part of Western Australian Local Government Association (WALGA) preferred suppliers' panel since its inception in 2012 and is on the panel for Natural Disaster Engineering including DRFA-WA. This category specifically provides for the assessment and subsequent Project Management of recovery and reinstatement of essential assets and infrastructure following the declaration of a natural disaster. This includes but is not limited to:

- The administration and supervision of asset assessment;
- Formulation of procurement documents and technical specifications;
- Documenting grant funding applications and acquittals; and
- Ongoing management and supervision of resultant DRFA-WA repair and reinstatement works projects, including control of DRFA-WA grants.

Talis is recognised as the leading asset management consultancy for local governments in Western Australia. Our team is familiar with the applicable standards, procedures and regulations that must be adhered to when managing any resultant DRFA-WA projects, including:

- Local Government ACT 1995.
- Local Government (Functions and General) Regulations 1996.
- Local Government (Financial Regulations) 1996.
- Australian Accounting Standards as described by the Australian Accounting Standards Board.
- Disaster Relief Funding Arrangements requirements.
- The Principal's policies and procedures where it affects these activities including but not limited to:
 - Disability Access and Inclusion Plan 2018-2022
 - FIN12 Purchasing Policy
 - FIN04 Regional Price Preference Policy
 - EMP52 Employee Code of Conduct
 - EMP25 Fitness for Work

Most Talis team members have worked for local governments, either as employees or consultants. Our extensive experience in undertaking project management and civil engineering works for local governments stretches back more than 40 years.

We are therefore very familiar with local government processes, including governance, procurement and design standard requirements. We understand the workings of local governments and of the requirements to successfully complete projects either for local governments or projects that require both local and state government approvals.

Talis' experience and capabilities include:

- In-field survey and assessment of critical infrastructure following a disaster event to identify and quantify required remediation works;
- Preparation of status reports, remediation strategies and cost estimates, including reports for Council;
- Tender process management;
- Consultation with external and internal stakeholders;
- Preparation of designs, if required;
- Formulation of procurement documents and technical specification; and
- Ongoing project management, elaboration of schedule of works, contract administration and construction supervision and quality assurance.

Talis has provided a range of WANDRRA/ DRFAWA -related services to the Shire of Broome, the Shire of Murchison, the Shire of Lake Grace, the Shire of Meekatharra, the Shire of Northam, the Shire of Wyndham East Kimberley and the Shire of Wiluna. Professional services delivered include flood damage inspection and evaluation, remedial works supervision, site superintendence and claim submission.

We have a demonstrated understanding of regional local government throughout the Wheatbelt. Talis has worked with several local governments throughout this region on various infrastructure upgrade and maintenance projects.

Talis has developed an excellent working relationship with the Department of Fire and Emergency Services (DFES) during its involvement on these projects.

Refer to Table 3-1 for details of Talis experience relevant to DRFW-WA.



Table 3-1: Details of Talis Experience Relevant to DRWA-WA

Project	Asset Inspection & Damage assessment	Design	Funding Approvals	Preparation & Evaluation of Tenders	Programme of Works	Inspection of Works	Assist Contractors on any issues arising	Prepare & Submit regular Expenditure Reports	Contract Administration	Report back to Client on Programming & Standard of Work	Acquittal of Funding
Shire of Plantagenet AGRN973	✓		✓		✓						
Shire of Northam AGRN962	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shire of Wyndham East Kimberley DRFAWA AGRN951 Project Management and Site Supervision for Emergency Works	✓		✓		✓						
Shire of Wyndham East Kimberley DRFAWA AGRN907 Project Management and Site Supervision for EPAR Works	✓		✓	✓	✓	✓	✓		✓	✓	✓
Shire of Lake Grace WANDRRA AGRN743 project management services			✓	✓	✓	✓	✓	✓	✓	✓	✓
Shire of Upper Gascoyne Project Management services		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shire of Ashburton Project Management services			✓		✓	✓	✓	✓	✓	✓	✓
AGRN780, Shire of Broome WANDRRA Project Management and site supervision	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AGRN781, Shire of Broome WANDRRA Project Management and site supervision	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AGRN787 Shire of Broome WANDRRA Project Management and site supervision	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AGRN793 Shire of Broome WANDRRA Project Management and site supervision	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shire of Upper Gascoyne Ulluarra Road damage inspection and cost assessment	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Shire of Upper Gascoyne Ulluarra Road upgrade evaluation & CFRF funding application	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Shire of Murchison WANDRRA AGRN781 Supervision works					✓	✓	✓	✓	✓	✓	
Shire of Murchison Roadworks evaluation and repair works Superintendence	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

PROJECT: WANDRRA Broome

CLIENT: Shire of Broome

The Shire of Broome sustained damage to essential public assets as a result of high winds and flooding associated with Tropical Cyclone's Hilda and Joyce, along with the Tropical Low over a two-month period from December 2017 to January 2018. Talis was engaged by the Shire of Broome for full scope project management, superintendent and surveillance services for flood remediation works. The scope of involvement included:

1. Order of Magnitude assessment of damage
2. Preparation of a detailed cost estimate
3. Contractor procurement
4. Site surveillance
5. WANDRRA contract administration

PROJECT: DRFAWA Northam (current)

CLIENT: Shire of Northam

Talis provided assistance to Shire of Northam to manage the recovery process to reinstate essential public road infrastructure damaged in Storm Event 2-4 March 2021. Talis undertook preparation and implementation of the works detailed below:

1. Undertake asset pick up of damage and document including pictures. SLK location and extent of damage, in accordance with DRFAWA requirements
2. Identify detailed scope under approved disaster relief claim once declared.
3. Formulate documents and technical specification for the scope identified.
4. Oversee the preparation of tender documents and liaise with the Shire's Procurement Team to ensure compliance with the Local Government Act 1995 and associated Local Government purchasing policy
5. Review submissions and manage tender award.
6. Provide qualified project managers and fulltime works engineer/supervisor for the duration of the project. Supervise construction works and manage all associated activities.
7. Ensure all financial expenditure reporting is thorough, accurate and detailed in accordance the Australian Accounting Standard and the Local Government Financial Regulation.
8. Contract administration and supervision for the contracted project and preparing detail scope, specification and tender documents for upcoming project. (Project supervision and claims administration will be the integral part of both projects).
9. Closeout the project and report to standards acceptable to Local Government, Main Roads and the Department of Premier and Cabinet

PROJECT: WANDRRA Lake Grace

CLIENT: Shire of Lake Grace

The Shire of Lake Grace engaged Talis to supply site supervision services to oversee the activities of roadworks contractors undertaking road flood damage repairs on various roads within the Shire of Lake Grace following floodings in January and February 2017.

Talis provided two site supervisors to manage four distinct parcels of works covering a large area of the Shire Road network.

Talis' scope of involvement included:

1. Providing site supervision services in relation to storm damage related reinstatement works
2. Setting out and inspecting the works, to ensure that they are carried out in accordance with drawings and specifications
3. Assist the contractor with any arising issues
4. Provide a line of communication between Contractor and Superintendent

PROJECT: DRFAWA SWEK (current)

CLIENT: Shire of Wyndham East Kimberley

Following the ex-tropical cyclone Esther and associated flooding (28 February – 3 March 2020) Shire of Wyndham East Kimberley appointed Talis as the Shire's Representative to progress compilation of damage, develop documentation and supervise on ground works. Talis managed the execution of the repair works by providing the below services to complete the repair works:

1. Undertaking a verification survey of on ground damage subject to a verified event.
2. Documenting the damage via photographic evidence.
3. Recording SLK numbers and the extent of damage at each location.
4. Building a scope of Works based on a schedule or rates to the satisfaction of DFES and the Shire
5. Development of a proposed project schedule
6. Development of overarching documentation required to go to the marketplace for tender or quotations
7. Provision of all Project Management services for the delivery of the services agreement and management of the Construction Works associated with the declared events.
8. Provision of EPAR Works Cost Summary claims for DFES for the reimbursement of the roadwork expenses to the Shire.

Further to the above event, a second flood event occurred in 2021 which resulted in more damage to the Shire's Road network. Talis undertook/is undertaking the same services as above for the new event. This Project is current.

PROJECT: DRFAWA Plantagenet (current)

CLIENT: Shire of Plantagenet

Talis is aiding the Shire of Plantagenet in the management of Disaster Recovery following declared AGRN 973 Storms and Associated Flooding across the Southern Coastal District (20-21 June 2021) Storm Talis undertook preparation and implementation of the works detailed below:

1. Prepare Emergency Works claim submission.
2. Undertake asset pick up of damage and produce report including pictures. SLK location and extent of damage, in accordance with DRFAWA requirements
3. Identify detailed scope under approved disaster relief claim once declared.
4. Formulate documents and technical specification for the scope identified.
5. Prepare Essential Public Asset Reconstruction cost estimate.

Talis is currently completing the following tasks as part of the scope of services:

6. Oversee the preparation of tender documents and liaise with the Shire's Procurement Team to ensure compliance with the Local Government Act 1995 and associated Local Government purchasing policy
7. Review submissions and manage tender award.
8. Provide qualified project managers and fulltime works engineer/supervisor for the duration of the project. Supervise construction works and manage all associated activities.
9. Ensure all financial expenditure reporting is thorough, accurate and detailed in accordance the Australian Accounting Standard and the Local Government Financial Regulation.
10. Contract administration and supervision for the contracted project and preparing detail scope, specification and tender documents for upcoming project. (Project supervision and claims administration will be the integral part of both projects).
11. Closeout the project and report to standards acceptable to Local Government, Main Roads and the Department of Premier and Cabinet

3.2 Methodology

Over the years, Talis has developed a methodology which has proven to deliver results to the client's and DFES' satisfaction.

3.2.1 Project Initiation

Upon award, Talis conducts a Project Initiation Meeting with the Shire. The Project Initiation Meeting provides the opportunity for Talis to confirm the proposed project scope, methodology and key risks. It also gives an opportunity to meet the teams involved in the project.

Talis proposes that the Project Initiation Meeting be held either via Zoom/ Teleconference or in person, at the discretion of the Shire. After the initial meeting, the following internal plans are developed:

- Quality Plan;
- Risk Management Plan;
- Draft Construction Plan;
- Project administration and documentation plan to meet DRFAWA and MRWA requirements

3.2.2 Internal Project Management

Following the Project Initiation Meeting, the Talis Project Team holds an internal meeting to develop a Project Management Plan which will be used to guide the delivery of the project within the required timetable adopted by the Shire. The Project Management Plan will address:

- Project Tasks;
- Project Programme;
- Project Resources;
- Risk Analysis; and
- Project Communication Plan.

Talis utilises its Quality Management System (QMS) to govern the delivery of projects. It provides a structure which promotes efficient and cost-effective operations, resulting in a high quality of work produced. Our QMS system is ISO 9001:2015 QUALITY MANAGEMENT SYSTEMS accredited.

3.3 Damage Inspection and Data Collection

The Shire of Corrigin has already completed the damage inspection and data collection and this service is not required.

3.4 Essential Public Asset Reconstruction (EPAR) Cost Estimate

The Shire of Corrigin has already submitted an EPAR Cost Estimate to DFES and this service is not required.

3.5 Contractor Procurement

Talis prepares a tender package for a restoration works contract in accordance with Shire Policies, and DRFAWA requirements. The restoration works tender package is developed based on the proposed damage assessment and cost estimate for storm, associated flooding event and bushfires.

Talis then undertakes a review of the received tenders and provide a recommendation to the Shire on a suitable remediation contractor. Talis prepares a Tender Evaluation Report for the Shire records. If required, Talis can attend and participate in a Council meeting to outline the findings of the tender process.

Talis ensures that the procurement process is undertaken in accordance with the Local Government Regulations, as well as any internal procurement policies to the Shire.

3.6 Construction Supervision and Contract Administration

Throughout the duration of restoration works, Talis provides suitably qualified and experienced staff to undertake the following:

- Site inspection of construction contractor crews undertaking restoration works on pavement and drainage items;
- Dedicated Project Manager and Administration staff to report and liaise with the Shire, DFES to ensure all respective requirements are achieved;
- Contract Administration including progress claims and payment certificates, technical queries, progress/site meetings, site inspections, budget tracking and project update reports;
- Ensure that restoration works are undertaken in accordance with QA; and
- Handover documentation requirements.

3.6.1 Contractor Pre-Start Meetings

Talis conducts pre-start meetings with the contractor at the time of commencement of each contract works package. The meeting addresses the following items:

- Project Team introductions.
- Reporting & Communication requirements and processes.
- Financial / Contractual obligations and reporting timelines.
- Scope review.
- Programme/timeframe for delivery.
- General business.

3.6.2 DRFAWA Requirements

Talis ensures that the works are completed to current engineering standards in line with the scope of works as approved by DFES.

Talis prepares the Shire's reimbursement Claims and submit to DFES for approval and payment.

Talis finalises and handover all project documentation to substantiate the completed work, comparing post disaster photos with completed reinstatement photos.

3.6.3 Remote Communications and Information Management System

Talis understands the communication issues which can arise during remote projects and has a tried and tested method for remote communications. Our field personnel use a combination of mobile networks and satellite to synchronise data to the cloud-based storage system to allow safe and secure access for project stakeholders as soon as it is required. Where a mobile phone network is not available, failover to satellite is automatic.

Talis uses Microsoft OneDrive cloud file storage service to ensure all data collected in the field can be made available to stakeholders.

Field laptops will run the OneDrive client software which uses the differential algorithm used by the Microsoft OneDrive Windows client. This software compares file name, size, modification date and data characteristics to determine if any changes have been made to any files or folders

All data generated in the field is synchronised back to the Talis server at the earliest opportunity for inclusion in nightly backups.

3.6.4 Cost Reimbursement

Talis processes the Shire’s reimbursement claims in line with the DRFAWA Guidelines. The completed claim forms and all supporting information will be submitted to DFES for approval and reimbursement on a monthly basis.

The process of information capture and management and cost reimbursement is summarised in Table 3-2 **Error! Reference source not found.:**

Table 3-2: Cost Reimbursement

Site Supervisor	Daily Site Diary	Daily
	Works Audit / Inspection Reports	Daily
	Contractors Daily Site Records	Daily
	Completion Pictures	Daily
	Upload to Cloud	Daily
Project Engineer / Admin	Save in Information in Reimbursement Folder	Daily
Project Manager	Programme Update	Weekly
	Cash-flow Update	Weekly
Project Manager	Monthly Progress Report	Monthly
	Contractors Progress Claims (Including supporting documentation)	Fortnightly
	Certification of above	Fortnightly
	Reimbursement Claim Documentation	Monthly
	Receive Remittance Advice	Monthly
	Submit claim to DFES	Monthly
DFES	Claim Approval	We work with DFES to minimise the time for approval.

	Payment to Shire	We work with DFES to minimise the time for payment.
--	------------------	-----------------------------------------------------

3.6.5 Superintendent and Site Supervisors' Roles and Methodologies

Talis has undertaken the role of Superintendent, Superintendent's Representative and Site Supervisor/Works Inspector on numerous local government projects, including DRFAWA and WANDRRA projects. These include projects for the Shires of Wyndham East Kimberley, Broome, Lake Grace and Ashburton.

During the course of these projects, Talis site supervisors have formulated an effective working relationship with the Shire Representative teams and project Superintendent and have been to the fore in developing good working relationships with all project stakeholders, including landowners, the general public, contractors and the principal.

Opportunities for efficiencies in scheduling of works, sourcing of suitable materials for essential repair works, water sources, traffic management and co-ordination of separate DRFAWA and scheduled maintenance works are some areas where the site supervisors have actively and positively contributed to enhance delivery of the project on behalf of the Principal. This high level of service has been due to the level of experience and professionalism of the supervisors provided by Talis and project superintendence provided which has developed into a coherent and efficient site supervision and contract management team.

The general duties of the Site Supervisors will include:

- Carry out pre-start on motor vehicle.
- Drive through work area inspecting site for any sign of overnight vandalism or damage with a high emphasis on public safety.
- Check all road signs are in place.
- Meet with contractor's supervisor to discuss the daily work schedule.
- Document all topics discussed.
- Issue written 'site instructions' to the contractor with clear direction on:
 - Areas of concern that need improving or remedied;
 - What machinery is suitable to be used once inspected;
 - What machinery need to be stood down; and
 - What additional machinery needs to be brought on site and what machinery can be removed from site.
- Document any contractor staffing issues.
- Photograph and record the different stages of road repairs before, during and after work is completed in accordance with DRFAWA requirements.
- Undertake routine inspection of the mixing of road base to water ratio for compaction purposes and document for quality control.
- Peg out work areas for the next day (ideally 3-4 days ahead).
- Check to see if contractors are complying with their traffic management plans.
- Video record the different methods of road repairs e.g., mixing of road base material, cement stabilising etc.
- Daily download and log all projects photographs, documents and detail, upload to the cloud-based server.

- Review and sign off on contractor's docket daily.
- Inspect the work site at the end of each day and check that all safety measures are in place and the general public and road users are protected.
- Send through documentation to Talis office.

The general duties of the Superintendent and contract administrative support team will include:

- Administer the Construction contract.
- Provide job planning and scope advice to the Contractors
- Prepare monthly budgets for expenditure and monitor the project expenditure against the budgets.
- Prepare and submit regular financial reports to the Shire.
- Review for approval contractor documentation as required.
- Address and resolve contract issues.
- Assess for approval all progress claims.
- Assess and review for approval all requests for variations and extensions of time from the contractors.
- Prepare regular reports to the Shire on each of the contracts, including reports requested by the Project Control Group.
- Attend and present reports to the Monthly meetings of the Shire's Council.

3.6.6 Maintaining Works Records

A key to any successful DRFA- WA project is recording the works on site. DFES compares photographs taken of the affected roads from before and after the remediation work has taken place, and confirms that each element is eligible for reimbursement to the Shire. Talis staff has the capacity and is very familiar with procedures to collect, record, prepare and maintain works records including daily contractor works progress, plant utilisation, photographic evidence, and measurement of completed works.

Talis staff prepares cost reimbursement claims progressively as the works are completed, to ensure that claims are made as soon as possible.

3.6.7 Project Control and Programming

Talis has experience in documenting and scheduling works and works processes. This includes preparing Gantt Charts (Programmes) using Microsoft Project, assessing contractors work programmes and documenting progress. We also convert the contractors Programmes into Microsoft Project (MSP) format to allow progress to be monitored and reported weekly to the Shire. Delays are identified and mitigation plans requested from the Contractor to return the project to the correct timeline. Projected revenue and cash flows for the program and actual progress of the works are also generated from MSP and are maintained on a weekly basis. The monthly program and cash flow status is incorporated into the monthly reports presented to Council and includes a three month revenue forecast.

3.6.8 Sourcing of Pavement Materials & Water (with required NVP)

The Department of Environment Regulation (DER) is responsible for administering native vegetation clearing provisions. Talis has considerable experience of the native vegetation clearing permit process (NVP) and associated legislation in Western Australia (WA). These include the clearing provisions under the Environmental Protection Act 1986 (EP Act), Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Regulations), as well as the Commonwealth of Australia's Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Talis reviews all available material sources and identifies all NVP requirements to the Shire as soon as possible following award. As far as possible, Talis endeavours to mitigate this requirement. Using local knowledge, Talis undertakes site inspections and confirm availability of suitable pavement materials in consultation with local Landowners, the Shire and DFES. Talis then provides the contractors with a list of locations the material can be collected from, along with local suitable water source locations for the supply of construction water.

3.6.9 Quality Control

Talis monitors the quality of the construction and restoration works to ensure that they meet requirements and current engineering standards. Talis' Site Supervisors are positioned in the Shire during all of the construction repair and restoration works and ensure the finished works are completed to the relevant standards and specifications. Talis' Superintendent and relevant technical staff attend site inspections periodically throughout the contract as needed.

3.6.10 Approval of Contractor's Progress Claims

As the Contract Superintendent for the works, Talis reviews and approves the monthly progress claims from Contractors. Talis also provides the contractors with the correct invoice substantiation template as agreed with DFES. Talis verifies the quantity and quality of the work prior to approving each progress claim.

3.6.11 Monthly progress and budget reporting

Talis confirms the budget with the contractor and provide monthly status reports to the Shire. The reporting outlines the works that have been completed and makes comparison to the original anticipated schedule. Any deviation from the schedule is evaluated and quantified as appropriate. Progress reporting also includes reconciliation of costs to claims and overall project expenditure against budget tracking. This information is used to provide advance quarterly estimates to meet the requirements of DFES.

Talis' Superintendent attends and facilitates progress updates at the Shire's Council Meetings as required.

3.6.12 Project Close Audit and Report

Following completion of restoration activities, a close out audit is undertaken, along with final compilation and review of comprehensive documentation and evidence to ensure that Shire and DRFAWA requirements are met.

4 Key Personnel Skills and Experience

Talis will provide a dedicated project team to ensure a broad range of knowledge, a balanced skillset and dynamic leadership are always on hand.

We have proposed an integrated, balanced team with a blend of skills and experience, and associated cost rates. This will enable us to have the appropriate team member undertake each task to ensure the Shire gets the best value for money outcome. Other Talis Consultants personnel will be made available as required depending on the specificities of each project and corresponding expertise needed.

4.1 Project Team Members

Mikel Haramboure is Talis' Project Management Team Lead and is responsible for all our DRFAWA projects. In addition, his experience of the Wheatbelt through managerial roles such as a Manager Infrastructure and Emergency Services for the Shire of Brookton and Executive Manager Operations and Assets in Gingin makes him our most suitable project manager for this project. On this project Mikel will coordinate the Talis team, provide strategic project guidance to both Talis and the Shire's team throughout the project and will perform the role of Superintendent for the damage repair works contracts.

John King is a Director of Talis and has extensive experience in DRFAWA projects. John is available to provide advice and support the project team as required.

This Fee Proposal has included allowance in the budget estimate for ongoing office support for:

- Tendering process;
- Technical engineering advice to assist in ensuring the most cost-effective remedial works are undertaken;
- Site works supervision;
- Project management support to assist with claim submissions, cost-estimates, tender processes and all parts of the contract management of the works.

The Disaster Recovery Management team shown in **Figure 4-1** will coordinate all project activities associated with this project to deliver works in a safely manner, on time and within budget.



TALIS CONSULTANTS – ENGINEERING SECTION STRUCTURE




Figure 4-1: Engineering Section Organogram

4.2 Off-Site Personnel

A brief overview of experience of the primary contract administration team resources available to the project is provided below. Roles and positions for each individual may vary over the duration of the contract as they gain experience. Detailed CVs are provided in Appendix A.

John King - Director	
	<p>John is a Director of Talis and a Principal Civil Engineer in the Engineering Team. As a Fellow Chartered member of Engineers Australia, John is recognised internationally as having a wide range of expertise and a variety of experience accumulated from over 40 years of industry involvement in both the public and private sectors.</p> <p>John has a strong understanding of local and State government procedures including governance, funding approvals, tender procurement policies, design standards, construction methodologies and reporting requirements. This has been continuously developed through 15 years career experience as a senior local government engineer, working for such local governments as the Shire of Wyndham - East Kimberley and the Cities of Wanneroo, Perth and Stirling.</p>
<p><u>Qualifications and affiliations</u></p> <ul style="list-style-type: none"> Bachelor of Engineering (UWA) Graduate Diploma in Business Municipal Engineering Certificate Fellow of the Institution of Engineers of Australia Fellow of the Institute of Public Works Engineering Australia 	<p><u>Professional expertise</u></p> <ul style="list-style-type: none"> Contract Superintendence Local Government and State Government procedures Roads and Civil Infrastructure

Ken Wilyman – Engineering Section Leader	
	<p>Ken has proven experience in managing teams to deliver industry leading performance and success. His open and communicative leadership creates teams that work collaboratively with government agencies, designers, contractors and vendors to deliver projects which achieve outstanding stretch targets. Ken has extensive experience in challenging accepted practice to achieve innovative project solutions. He is a problem solver with a strong focus on project delivery to ensure project objectives are safely achieved.</p> <p>Ken has extensive experience with a diverse range of infrastructure projects. His experience includes whole of infrastructure life from early feasibility studies, obtaining approvals, stakeholder consultation, design, construction, contract administration through to ongoing operations and maintenance.</p>
<p><u>Qualifications and affiliations</u></p> <ul style="list-style-type: none"> • BSc Hons (Civil) University of Leeds • Chartered Professional Engineer • Registered Engineer – National Engineering Register (NER) • Member of the Institution of Engineers Australia 	<p><u>Professional expertise</u></p> <ul style="list-style-type: none"> • Management of multidisciplinary projects • Contract management • Roads and Civil infrastructure • Client representation, authority liaison and stakeholder consultation • Feasibility studies • Environmental impact assessments

Mikel Haramboure – Team Lead- Project Management Engineering – Senior Engineer	
	<p>Mikel is an outcome focused professional acknowledged by peers for strengths in communication, strong organisational skills, problem solving and analytical thinking. His 18 years of experience as an engineer in the private and public sectors include 8 years in the Local Government of Western Australia in the Metropolitan Area and in the Wheatbelt region. He has developed an extensive knowledge of Local Government legislation, policies and procedures through leadership, managerial and executive roles.</p>
<p><u>Qualifications and affiliations</u></p> <ul style="list-style-type: none"> • Master’s degree in Engineering 	<p><u>Professional expertise</u></p> <ul style="list-style-type: none"> • Disaster Recovery (DRFAWA) • Capital Works Program management • Tendering process • Black Spot Program funding submission • Road Project Grants (RRG and MRRG) • Construction superintendence • Project Management

Andres Palencia – Graduate Engineer



Andres is a civil engineer with substantial experience of civil and construction projects, including civil design, construction materials quality assurance and on-site supervision roles, working both locally and abroad. Andres contributes to the design and project management teams in the delivery of public infrastructure projects.

Andres has experience undertaking damage assessment, cost estimate, data collection and site supervision for DRFAWA projects.

Qualifications and affiliations

- Bachelor of Civil Engineering
- Diploma of Civil & Structural Engineering (WA)
- Advanced Diploma of Civil & Structural Engineering (WA)
- Member of the Institution of Engineers Australia (MIEAust)

Professional expertise

- Disaster Recovery (DRFAWA)
- Construction quality assurance support and supervision
- Construction materials quality control
- Civil design
- AutoCAD, Civil 3D, Revit
- Project planning and scheduling
- Road asset inspection
- Cost estimation

4.3 On-Site Personnel

Simon Kelly and Tim Bailey are the main Works Supervisors for Talis.

Both supervisors have significant relevant experience of road infrastructure works supervision. They have demonstrated experience of working independently when required and at remote project locations throughout Western Australia.

They possess strong leadership & people management skills. They have high level knowledge and experience of road reconstruction after disaster events including sourcing of gravel and construction water sources for road reinstatement works. They have strong health & safety management skills and excellent communication and contractor management experience.

They possess proven track records of project supervision of earthmoving and road construction works including extensive experience working in the capacity of site Superintendent Representative roles, project management, operations management, supervision and remote contract works including WANDRRA/ DRFAWA. They offer high levels of experience and knowledge of civil and roadworks plant operational efficiency and maintenance requirements.

Both proposed supervisors have proven ability in the provision of superintendence services that meet all quality, cost, and schedule requirements for DRFAWA roadworks supervision projects that will bring added value and effective time and cost savings to the damage repair works phase of the project.

The Works Supervisors have senior first aid certificates and appropriate training for working remotely. They will be equipped with a first aid kit and supplies including satellite phone for responding to emergency situations. Talis' site supervisors will be inducted under the company remote works plan and safe work procedures. Adherence to these procedures by the nominated supervisors will be implemented to ensure that fatigue, journey management, emergency response and public safety are all appropriately managed for the duration of the works.

Talis' engineering team management based at Leederville in Perth will be in daily communication with the nominated supervisors directly throughout the project.

CVs for the personnel listed above are provided in Appendix A.

Depending on the scope of works, Talis would have the capacity to deploy additional Works Supervisors.

Timothy Bailey – Site Inspector



Timothy is a skilled and experienced construction supervisor and construction site manager with a consistent 13-year work history. Broad skill base in construction, road works, bridge works, drilling and blasting, construction, and human resource management.

Timothy worked as a Supervisor and Project manager on road construction, repairs and Civil Construction in WA, NSW and Indonesia. His experience includes new road construction to State National Standards, repairs under the WANDRRA and DRFAWA Scheme after storm event(s) and construction of access under difficult geotechnical conditions. Timothy has excellent safety awareness and a good understanding of Occupational Health & Safety policies and risk analysis procedures. He has a demonstrated experience in working in remote sites and multicultural environments.

Tim resides in the Kimberley and is very familiar with local engineering conditions which exist within that Region. He has worked on multiple projects across the Kimberley Region, including DRFAWA projects for the rehabilitation of unsealed roads.

Qualifications and affiliations

- Certificate IV in Project Management -Northern TAFE
- White Card
- 4WD Course
- MC Driver’s License
- DFES Volunteer Fire Fighting and Rescue
- Various earthmoving machinery competency

Professional expertise

- Road, drainage and civil works supervision
- Occupational Health and Safety
- Australian Standards
- Main Roads and Austroads specifications
- Crew management
- Traffic Management
- Planning and reporting
- Remote worksites
- Community relations

Simon Kelly – Site Inspector



Simon possesses strong leadership skills, extensive project management experience together with good occupational health and safety management skills. He has excellent time management/scheduling skills and has worked extensively in remote areas.

Some of Simon’s key projects includes Site Supervisor/Assessor – remote roads; Project Manager – Waterloo Nickel Project; Construction Supervisor – New Holland Underground Operations


Qualifications and affiliations

- Cert 3 Civil Construction
- Licences – HR Truck, Bobcat, Excavator, Loader, Forklift

Professional expertise

- Road, drainage and civil works supervision
- Occupational Health and Safety
- Austroads specifications
- Crew management
- Traffic Management
- Planning and reporting
- Remote worksites


4.4 Administration support


Wendy Sherwood – Senior Project Administrator – Administration Support	
	<p>Talis Project Administration team develop and implement appropriate systems and compliant processes to ensure that projects are administered efficiently. The project administration team responsibilities include end to end project administration, month end billing and reporting, control activities, Project/Contract administration including document management and related reporting and administrative support when required including arranging travel.</p> <p>Wendy has been with Talis for 5 years and brings a wealth of senior experience from a background in financial services, marketing, and accounts. Wendy has a B.Com and has over 20 years’ experience .</p>
<p><u>Qualifications and affiliations</u></p> <ul style="list-style-type: none"> B.Com 	<p><u>Professional expertise</u></p> <ul style="list-style-type: none"> Bookkeeping Budgeting Financial reporting

Emyrose Roberts – Junior Project Administrator – Administration Support	
	<p>Talis Project Administration team develop and implement appropriate systems and compliant processes to ensure that projects are administered efficiently. The project administration team responsibilities include end to end project administration, month end billing and reporting, control activities, Project/Contract administration including document management and related reporting and administrative support when required including arranging travel.</p> <p>Emyrose joined Talis a year ago and supports Wendy with junior experience in construction projects, accounts and logistics.</p> <p>Emyrose has a B. Com and over 7 years’ experience.</p>
<p><u>Qualifications and affiliations</u></p> <ul style="list-style-type: none"> B.Com 	<p><u>Professional expertise</u></p> <ul style="list-style-type: none"> Logistical support Financial reporting

4.5 Contingency Measures

Talis is a multi-disciplinary consultancy which employs over 100 staff. If required on this project, we can readily allocate additional staff to ensure that all time constraints are met. Profiles for three of our relevant backup staff members are provided below. Organogram of our organisation is provided in Appendix C demonstrating the broad range of skills available within Talis if needed.

Mona Arabshahi – Engineer	
	<p>Mona is a graduate Civil Engineer with experience across various civil engineering projects including slope stability, pavement investigation and design and cost estimate. Over the last year, Mona has transitioned to do more project management works including project programming, tender documentation, claim review as well as liaison with the clients and contractors.</p> <p>Mona is experienced in DRFAWA projects from the damage pick-up stage all through to provision of the cost estimate, review of the contractor’s interim claims and provide reimbursement claim documentation for DFES.</p>
<p><u>Qualifications and affiliations</u></p> <ul style="list-style-type: none"> • PhD – Construction management • Master’s degree Geotechnical Engineering • Bachelor’s Degree Civil Engineering • Leadership and Communication • Project Management • Member of the Institution of Engineers Australia (MIEAust) 	<p><u>Professional expertise</u></p> <ul style="list-style-type: none"> • MS Project (Planning and scheduling) • Disaster Recovery (DRFAWA) • Geotechnical analyses and design • Reinforced earth structures, soil nailing and anchorage design • Rocscience • Pavement Investigation • Cost Estimation

Oguz Tekatli – Graduate Engineer	
	<p>Oguz is a graduate Civil Engineer with two years’ experience on a range of civil engineering and construction projects, including Main Roads projects in Western Australia.</p> <p>He is self-motivated to complete tasks on time and willing to improve himself as a civil engineer. He assists with variation assessment, cost estimates, tender preparation and contributes to design developments as per specification, MRWA & Australian Standards.</p>
<p><u>Qualifications and affiliations</u></p> <ul style="list-style-type: none"> Bachelor of Civil Engineering BIM Certificate Primavera Certificate Member of the Institution of Engineers Australia (MIEAust) 	<p><u>Professional expertise</u></p> <ul style="list-style-type: none"> Site Engineering Project Engineering Black Spot Program Road Project Grants (RRG and MRRG) Tender preparation and evaluation Design, documentation and procurement Contract administration

Chris Wood – Engineer / Superintendent / Contract Administrator	
	<p>Chris is a Professional Civil Engineer who has specific experience in the Implementation and Management of roads and civil infrastructure projects within Australia. He has an extensive MRWA & project delivery background along with excellent communication and project coordination skills.</p>
<p><u>Qualifications and affiliations</u></p> <ul style="list-style-type: none"> Bachelor of Engineering (Civil) 	<p><u>Professional expertise</u></p> <ul style="list-style-type: none"> Project management of major road infrastructure. Project supervision of construction works including road infrastructure. Communication, project coordination and stakeholder engagement. Preparation of contract documentation

5 Past Company Performance

5.1 Referees

Talis has a large record of successfully delivered project and the Referees listed below could attest.

Table 5-1: Project Management, Contract Administration and Construction Supervision Project References

Project Description	Services Provided	Contract Value	Contract Date	Client Details (name of business, name of client and phone number)
DRFAWA AGRN 962 Shire of Plantagenet	Emergency works claims, damage assessment, EPAR cost estimate.	\$3.0M	2021-ongoing	<u>David Lynch</u> Executive Manager Works and Services Shire of Plantagenet mws@sop.wa.gov.au PH. (08) 9892 1139
DRFAWA AGRN907 and AGRN951 Shire of Wyndham East Kimberley	Damage assessment and cost estimation, development of technical specification and tender documentation. Project management and Superintendent services for repair works for Flood Damage to North Kimberley Road System DRFAWA AGRN907	\$4.2M	2020-Ongoing	<u>Paul Webb</u> Manager Assets and Engineering Shire of Wyndham East Kimberley Ph (08) 9168 4100

Project Description	Services Provided	Contract Value	Contract Date	Client Details (name of business, name of client and phone number)
WANDRRA AGRN793 Shire of Broome Road	Project Management and Superintendent services for Infrastructure flood damage repair works WANDRRA AGRN793	\$4M	(2018 - 2019)	<u>Sam Mastrolembo</u> Chief Executive Officer Shire of Broome Ph. (08) 9191 3456
Gascoyne Junction Bridges	Project Management and Superintendent services for the construction of two bridges (420m & 72m) and a causeway across the Gascoyne River.	\$11M	(2015 - 2016)	<u>John McCleary</u> Chief Executive Officer Shire of Upper Gascoyne Ph. (08) 9943 0988
Ulluwarra Road Upgrade Projects	Project Management services including-secure HVSPF funding, Geometric and Pavement Design, Stakeholder and Budget Management, Contractor Procurement and Management, Supervision and Construction Contract Administration.	\$10.0M	2018-2020	<u>John McCleary</u> Chief Executive Officer Shire of Upper Gascoyne Ph. (08) 9943 0988
Town of Port Hedland Infrastructure Services	Feasibility, Concept and Detailed Design, Program and Risk management, Contract Procurement, Contract Administration and	Various up to \$25m	2019-2021	<u>Vivian Hendricks</u> Procurement Manager Town of Port Hedland Ph (08) 9158 9307

Project Description	Services Provided	Contract Value	Contract Date	Client Details (name of business, name of client and phone number)
	Construction Supervision.			
MRWA project management services	Infrastructure design and construction project management services- Various projects -Perth metropolitan and Regional WA	Various up to \$100m	2019-ongoing	<u>Mark Russell</u> Mainroads WA Mark.russell@mainroads.wa.gov.au 0417979482

6 Resources

6.1 Plant, Equipment and Materials

Talis' nominated site supervisors will be provided with a 4WD vehicle, safety and communication equipment, self-contained off-road caravan (if needed) and project administration equipment necessary to fulfil the role.

Talis has ample experience in working in remote or regional locations and is intimately familiar with the requirements of projects in the Wheatbelt. Our on-site personnel are fully equipped so that they can carry out their duties in a safe and productive manner.

Our systems are setup from previous projects, which allows for automatic backup of all on-site records. These records are automatically stored on Talis' server as soon as the supervisors have internet coverage. More information on Talis' setup is provided in the methodology in Section 4.2.

6.2 Resources Schedule

Talis is allocating sufficient resources to this project to ensure that it can be delivered within the allocated timeframes. The personnel are available to work for the Shire of Corrigin on short notice. An outline of the resources to be used on this project is provided below.

Table 6-1: Resources Schedule

Resource Category	Resources
Plant, Machinery & Hardware	<ul style="list-style-type: none"> • 4WD Vehicle • Caravan (if required) • Satellite Phone • Mobile Phone • Laptops • Printers
Material	<ul style="list-style-type: none"> • Nil
Labour	<ul style="list-style-type: none"> • Site Supervisor • Project Manager • Project Administrator • Engineering Support

7 Fee & Charges

7.1 Schedule of rates

Talis will undertake the scope of work, as detailed in this Fee Proposal, on a schedule of rates based on the WALGA rates.

Project and Tendering process will be managed by our Project Manager and Senior Engineer. Technical work will be completed by the Graduate Engineer with the support of our Project Administrators. Engineers will bring their expertise and assist when required.

Table 7-1: Schedule of Rates

Item No.	Role Description	Rate (ex GST)	Rate (inc. GST)
Personnel			
1	Director	\$225.00	\$247.50
2	Senior Engineer/Team Lead/Project Manager	\$180.00	\$198.00
3	Engineer	\$162.00	\$178.20
4	Graduate Engineer	\$112.50	\$123.75
5	Works Supervisor	\$110.00	\$121.00
6	Project Administrator	\$81.00	\$89.10
Disbursements			
7	Talis vehicle for site supervision (per month)	\$4500.00	\$4950.00
8	Meals (per day)	\$90.00	\$99.00
9	All other recoverable costs	NA	Cost +3%

7.2 Assumptions

This Fee Proposal is based on the following assumptions:

- Item 7 excludes fuel costs.
- Recoverable costs include but are not limited to:
 1. vehicle hire (if a Talis vehicle is not available);
 2. mobilisation and demobilisation to site;
 3. accommodation;

4. caravan hire;
 5. fuel;
 6. Satellite communication
- Items 1 to 6 and item 9 are our current WALGA Preferred supplier rates and the Shire of Corrigin accepts to update the Schedule of Rates should our WALGA Preferred supplier rates vary during the period of this contract in line with our agreement with WALGA as part of our Preferred Supplier Panel Contract terms.

Appendix A: CV's

John King

Director



John has in excess of 45 years professional experience as a Civil Engineer including 15 years in local government and 30 years in the consulting industry. John's areas of expertise include Roads & Civil Infrastructure, Solid Waste Management, Asset Management, and Traffic & Transportation. John is widely regarded as having extensive knowledge of the workings of local governments and of the requirements to successfully complete local government projects. He has gained considerable experience and knowledge on procurement processes for public works projects.

John has been a Director of Talis Consultants since its inception in June 2012. He has also been a Project Manager/Director on a broad range of public works projects across Western Australia.



John.King@talisconsultants.com.au



+61 (0) 419 923 128 / 1300 251 070

QUALIFICATIONS AND AFFILIATIONS

Bachelor of Engineering (UWA)
Graduate Diploma in Business
Municipal Engineering Certificate
Fellow of the Institution of Engineers of Australia
Fellow of the Institute of Public Works
Engineering Australia

PROFESSIONAL EXPERTISE

- Solid Waste Management
- Asset Management
- Roads & Civil Infrastructure and Traffic & Transportation.
- Local government asset systems management

KEY PROJECT EXPERIENCE

- Project management for establishment of Resource Recovery Facilities for Eastern Metropolitan Regional Council and for the Rivers Regional Council in Perth Western Australia (both projects are current).
- Evaluation of the impacts on the Shire of Broome of accepting responsibility for the delivery of Municipal Services to remote Aboriginal communities within the Shire
- Alignment studies, topographical and heritage survey and design of a road between Punmu and Parrngur through the Karlamilyi National Park
- Development options for a Regional Waste Management Plan for the Mindarie Region
- Master Plan for the Tamala Park Waste Management Facility
- Comprehensive Waste Education Strategy for the Eastern Metropolitan Regional Council
- Comprehensive Waste Education Strategy for the Mindarie Regional Council

WORK EXPERIENCE

Company: Talis Consultants

Position: Director

Jun 2012 - Present

Undertaking solid waste management and civil engineering projects for a range of predominantly local government clients. Chairman of the Resource and Energy Recovery Working Group of the Waste Management Association, Australia (WA Branch). Project managing a number of roads related projects in urban and remote parts of Western Australia

Company: John King Consultants

Position: Senior Consultant

Aug 2009 Jun 2012

Undertaking local government civil engineering and solid waste management projects for a range of clients including as a Project Director. Predominantly worked on local government related waste managements, asset management and road projects.

Company: Cardno WA

Position: Solid Waste Discipline Leader | Senior Principal

Aug 2008 – Aug 2009

Responsible for managing major waste management projects and for developing the solid waste management discipline within Cardno. Also worked on general civil engineering projects involving remote road and urban land development projects.

Company: Cardno BSD (subsequently Cardno WA)

Position: Division Manager

Jan 2004 – Jul 2008

In October 2004 BSD Consultants merged with Cardno Limited. In John's role as Division Manager he was responsible for the overall management of Cardno BSD, a division of the Cardno Group and reported initially to the Managing Director and then to the Regional General Manager NT and WA. Provided leadership to the solid waste team in Cardno as Discipline Leader and Project Director for the major projects undertaken. This included an integrated land use and transport study for Geraldton and detailed design road projects for Main Roads WA and local governments.

Company: BSD Consultants Pty Ltd

Position: Managing Director

Jan 1999 – Jan 2004

Responsible for management of the company and various projects in the fields of Solid Waste Management, Asset Management and Provision of Infrastructure.

Project Management

- Project management for establishment of a Resource Recovery Facility for Easter Metropolitan Regional Council (Perth)
- Project management of the introduction of a Resource Recovery Facility in the Mindarie Regional Council
- JV Board member of Western Infrastructure, a joint venture between BSD, SMEC and BG&E, which provided consulting services to Main Roads WA for 5 years.

Solid Waste Management

- Development options for a Regional Waste Management Plan for the Mindarie Region

WORK EXPERIENCE

- Tamala Park Master Plan
- Comprehensive Waste Education Strategy for the Eastern Metropolitan Regional Council
- Comprehensive Waste Education Strategy for the Mindarie Regional Council
- Site Assessment for Secondary Waste Treatment Plant for the Mindarie Regional Council
- Update to Kyoto Targets and Energy Balance for the Eastern Metropolitan Regional Council
- Waste Management Strategies for the Cities of Joondalup and Wanneroo
- Waste Collection Tenders for Town of Cambridge
- Regional Waste Collection Services, Shire of Plantagenet, Geraldton – Greenough Waste Stream Audit
- Tamala Park Intermediate Capping, Mindarie Regional Council

Traffic Management

- Distribution management plans for Perth City section of the South West Metropolitan Railway for Perth Urban Rail Development
- Construction management plan for freeway section of South West Metropolitan Railway for Perth Urban Rail Development

Asset Management

- Strategic Asset Management Plans for the City of Wanneroo and Town of Cambridge

Road Planning

- Geraldton Primary North-South Road Alignment Selection Study, Ministry for Planning
- Geraldton Regional Centre Strategy Plan, Department for Planning and Infrastructure

Environmental

- Environmental approvals for the construction of Harbour Walls North Harbour, Jervois Bay, Landcorp
- Works approvals for Stage 2 landfill, Tamala Park, Mindarie Regional Council
- Central Coast Regional Pollution Study for the Central Coast Planning coordinating Committee
- Bush Management Plan, Tamala Park, Mindarie Regional Council

Company: BSD Consultants Pty Ltd

Position: Director Engineering Services

Jan 1994 – Jan 1999

- Responsible for the company's civil and structural engineering services. In particular, land development and infrastructure projects that include waste management, highways and roads, stormwater drainage, streetscape improvements and asset management.
- Waste Management
- Two studies for the Cities of Perth and Wanneroo 'Accounting for Excavation Costs and Lease Fee for Tamala Park' and 'A Review of the Principles of Operating the Mindarie Regional Council'.
- Project Leader for the 'Future Directions and strategies in the Area of Waste Management' for the Eastern Metropolitan Regional Council. Design of the Red Hill Waste Transfer Facility
- Viability of the Brookway Transfer Station, Western Metropolitan Regional Council

WORK EXPERIENCE

- Waste Management Strategies, Eastern Metropolitan Regional Council
- City of Wanneroo Recycling Strategy
- Implication of ANZEC and Kyoto targets on Eastern Metropolitan Regional Council
- Feasibility of Hazelmere Waste Management Facility, Eastern Metropolitan Regional Council
- Asset Management
- Conducting a number of asset management seminars of the Institute of Municipal Engineering (Australia)
- Management of the ROMAN Road Management System training and support contract
- Conducting asset management audits for numerous local governments, implementing asset management strategies for local governments.
- Road Projects
- Orrong Road dual carriageway design for the City of Canning
- Brand Highway realignment design for Main Roads Western Australia
- Dalwallinu Heavy Vehicle Bypass, investigation and design for the Shire of Dalwallinu
- St George's Terrace redevelopment, design and documentation for the City of Perth
- Albany-Lake Grace road realignments, design for Main Roads Western Australia
- Albany Highway townscape improvements, planning, design, documentation and contract administration for the Town of Victoria Park
- Mount Keith-Wiluna Road Alignment Study, Main Roads, Western Australia
- Ngaanyatjarra Road Study, Shire of Ngaanyatjaraku
- Outback Highway Feasibility Study, Shire of Ngaanyatjarraku
- Road Prioritisation Project, Main Roads Western Australia
- Other
- City of Gosnells Drainage Investigation
- East Wanneroo Structure plan for the City of Wanneroo
- Great Northern Highway Alignment Study for Main Roads Western Australia
- Fatal Accident Investigation Byford, for Main Roads Western Australia
- Design of Jundee Airfield, Great Central Mines
- Mount Newman on Site Traffic Management Strategy for BHP
- Review of Local Governments, Department of Local Government

PRIOR WORK EXPERIENCE

Jan 1987 – Jan 1994

Organisation: City of Perth
Position: Deputy City Engineer

Jan 1983 – Jan 1987

Organisation: City of Wanneroo
Position: Executive Engineer | Deputy City Engineer

Jan 1980 – Jan 1983

Organisation: Shire of Wyndham
Position: Shire Engineer

Jan 1979 – Jan 1980

Organisation: City of Stirling
Position: Design Engineer

Aug 1977 – Dec 1978

Organisation – Freeman Fox, London
Position: Assistant Engineer

Jan 1974 – March 1977

Organisation – Department of Housing and Works, Darwin
Positions: Design Engineers, Construction Engineer, Senior Design Engineer.



Ken has proven experience in managing teams to deliver industry leading performance and success. His open and communicative leadership creates teams that work collaboratively with government agencies, designers, contractors and vendors to deliver projects which achieve outstanding stretch targets. Ken has extensive experience in challenging accepted practice to achieve innovative project solutions. He is a problem solver with a strong focus on project delivery to ensure project objectives are safely achieved.

Ken has extensive experience with a diverse range of infrastructure projects. His experience includes whole of infrastructure life from early feasibility studies, obtaining approvals, stakeholder consultation, design, construction, contract administration through to ongoing operations, maintenance and facility closure and rehabilitation.



Ken.wilyman@talisconsultants.com.au



+61 (0) 409 193 865 / 1300 251 070

QUALIFICATIONS AND AFFILIATIONS

BSc Hons (Civil) University of Leeds

Chartered Professional Engineer

Registered Engineer - National Engineering Register (NER)

Member of the Institution of Engineers Australia

PROFESSIONAL EXPERTISE

- Management of complex multidisciplinary projects.
- Contract management.
- Roads and Civil infrastructure.
- Client representation, authority liaison and stakeholder consultation.
- Study Management including feasibility studies.
- Environmental impact assessments.
- Obtaining approvals.
- Port facilities.
- Industrial facilities.
- Operational management and operational readiness.
- Innovation and problem solving.
- Leadership and communication.

KEY PROJECT EXPERIENCE

- Project Manager for new berth facility AP5, Port Hedland. Works included dredging, sediment management, wharf structure and conveyors. Responsibilities included all facets of the project from concept to commissioning and operational handover.
- Project Manager for Eliwana Process and Non-Process infrastructure from concept to final investment decision and project execution. Scope included process plant, overland conveyors, outload facilities and miscellaneous infrastructure.
- Sydney Manufacturing and Distribution facility, Erskine Park, Western Sydney. Works included planning, costing and design for the bulk earthworks, roads, drainage, water re-use and building works.
- Project Delivery Manager for the T155 Port Hedland Port Expansion Project. Scope included wharfs, inload and outload circuits, train unloaders, bulk earthworks and associated infrastructure.
- Rehabilitation of Kemira Colliery, Wollongong, NSW to Department of Primary Industries requirements.
- Risk assessments and transport safety audits for traffic control, pedestrian and train interaction including costing alternate options for BlueScope Steel.
- Traffic and stormwater assessments and design and documentation of roads, drainage, car parks for various facilities, NSW for BHP Billiton.
- Design and contract management of emplacement works, including landform, drainage and water management at South Bulli for Allied Bellambi Collieries Pty Ltd.

WORK EXPERIENCE

Company: Talis Consultants

Position: Engineering Section Leader

Jul 2021 - Present

Ken recently joined Talis and leads the Engineering team.

Company: Salt Lake Potash

Position: Study and Approvals Manager

2018 - 2021

Potash is a new and developing industry in WA, with many significant challenges as new regulatory and engineering solutions are required. For the Lake Way project, the project included brine abstraction, evaporation ponds, processing facilities, services infrastructure and haulage. Activities included concept design and key stakeholder engagement, including government agencies. Responsibilities included preparing feasibility and background studies, project approvals, including DMIRS and EPA approvals and stakeholder and native title negotiations. In 2020, the Association of Mining and Exploration Companies (AMEC) awarded SO4 the Community Engagement award.

Company: Fortescue

Position: Project Director | Study Manager

2010 - 2018

Study and Project Manager: Eliwana Process and Non-Process Infrastructure (project value \$AU600m)

Responsibilities included building and leading the project team to develop the infrastructure from concept through final investment decision and into project execution. The scope included approvals, geotechnical investigations, bulk earthworks, crushers, screening, a 3km overland conveyor, stockyard with a combined stacker reclaimer and train load out bin and associated infrastructure including roads, power and water. The solution incorporated the operational knowledge of Fortescue with existing proven technology.

Study Manager: Feasibility Study North Star Stage 2 (project value \$AU250m)

This study included the option development and preliminary CAPEX and OPEX estimates for the infrastructure required for the Port export facility. The scope included concentrate overflow infrastructure, dewatering process facility, bulk earthworks, enclosed stockyard shed with reclaimer and outload circuit to the export wharf. Various options were investigated with order of magnitude cost estimates developed.

Project Director: AP5 Project (Project Value AU\$250m)

This project included the construction of a new berth facility alongside an existing facility in a brownfield environment. The works included dredging, wharf structure and associated infrastructure including conveyors and transfer stations. Responsibilities included building and leading the team from concept design to completion including safety, environmental compliance, risk assessment, engineering, construction, offshore fabrication (China), contractor management, commissioning, operational readiness and stakeholder engagement including Pilbara Port Authority approvals. The project was delivered in 15 months with a one week ramp up to full production.

Project Delivery Manager: T155 Port Hedland Port Expansion Project (Project Value AU\$2.2 billion)

This project included dredging, settlement pond construction, bulk earthworks, two new berth facilities, two new inload and outload circuits, including ship loaders, reclaimers, stackers, and train unloaders, surge bin, bulk earthworks, and the associated infrastructure. Responsibilities included management of the Owners Team, the EPCM (Worley Parsons) and being part of Fortescue's on-site Port Operations Senior Management Team. Responsibilities included all facets of the project from concept design to completion including safety, environmental compliance, stakeholder engagement, engineering, dredging, bulk earthworks for stockpile areas, construction, contract management, commissioning and operational readiness and Government

WORK EXPERIENCE

Authority approvals and liaison. The project works were delivered safely on time and below budget during the height of the mining boom when resource projects often had significant budget and schedule overruns.

Company: Georgiou Mining Services

Position: Project Development Manager

2008 - 2009

Project development manager responsible for tendering and design for infrastructure projects in WA. The projects included bulk earthworks, tailings dams, rail works, stockpile construction, haul and access roads, tunnels and bridges. Clients included Rio Tinto, BHPB, Alcoa, Cliffs Natural Resources, QR National and Indigenous groups.

Company: Cardno WA

Position: WA Manager – Civil Infrastructure

2007 - 2008

Responsible for management and performance of the Business Unit. Responsibilities included client relationships, seeking approvals, stakeholder and government agency consultation, project budgets and planning, design, quality, documentation and construction for civil infrastructure works and land development. Clients included private urban land developers, local government, Water Corporation and LandCorp.

Company: Cardno Forbes Rigby

Position: Director

1986 - 2007

Director of a successful multi-disciplinary consultancy Forbes Rigby which merged with Cardno in 2006. Responsibilities included all facets of business development and management. Some key projects carried out included:

Rehabilitation of Kemira Colliery, Wollongong, NSW to Department of Primary Industries requirements. This project included flora, fauna and heritage studies, community and agency consultation, flood modelling, engineering design, documentation and contract administration of slope stability works and creek realignment. The works achieved lease relinquishment for BHP Billiton.

BHP Billiton Illawarra Coal: Stage 3 Emplacement West Cliff Colliery, NSW. This work involved the design and construction for a new emplacement (approximate volume 30 million m³). The works included approvals and studies including archaeological, flora and fauna, traffic, flood modelling, water quality, community, agency and client representation.

Risk assessments and transport safety audit for traffic control, pedestrian and train interaction and developing and costing alternate transport options for BlueScope Steel.

Stormwater and drainage assessment and car park, roads and traffic design and documentation of Dendrobium Pit Top Mine, Mount Kembla for BHP Billiton Illawarra Coal.

Design and documentation for a 55m high structural steel-clad Pulverised Coal Injection plant at the Port Kembla works, for a European consortium WKS Pty Ltd.

Design and documentation of the interchange ramps and bridge design review for the Yallah Interchange on the Princess Highway near Wollongong to the newly created Hayward's Bay Estate for the Winton Group.

67 ML stormwater detention basin for Wollongong City Council. The works included 6m high concrete retaining walls forming 'star' weir structure, precast hollow core bridge, gabion retaining walls and wetlands works.

WORK EXPERIENCE

Sydney Manufacturing and Distribution facility Erskine Park, Western Sydney for BlueScope Steel. This work involved the planning, costing and design and documentation for the bulk earthworks, road, drainage, water re-use, parking and building works.

South Bulli Mine for Allied Bellambi Collieries. Design of civil works for the emplacement for the final landforms and preparation of a Masterplan for redevelopment costings.

Design, documentation and construction supervision of truck weighbridges and platforms and access roads at Appin Colliery, Cordeaux Colliery and Tower Colliery for BHP.

Project overview and development of the Management Plan of the emplacement operations, including installation of the main trunk drainage line, soil and water management control and site operations for the emplacement area at South Bulli Mine for Shell Australia Ltd

Miscellaneous works including concept design of a new barge wharf and a new 35m span precast concrete bridge over an existing rail line, documentation for gate houses, water treatment ponds, design review of existing berth and berthing ramps, restoration of the Military Museum for Port Kembla Port Corporation.

400Kw Wave Energy power generation facility at Port Kembla, NSW for Wave Power Projects Ltd. A prototype reinforced concrete and steel structure founded on the seabed to gather wave energy for usable power. The project was designed, documented and tendered.

Design and documentation of 3 steel arched pedestrian bridges within the Wollongong area as part of a flood mitigation works program for Wollongong City Council.

Design and documentation of 1200 mm diameter Hel Cor culvert replacement and repair and associated pit and foundation details, Mt Ousley Freeway, for the Roads and Traffic Authority.

Remediation works to Wollongong Harbour Breakwater Lighthouse for DLWC

Design, documentation and supervision of the reinforced concrete and structural steel structure for stage three of the Technology Centre for the University of Wollongong.

Design and documentation of steel framed and clad building to house the new No. 6 Metallic Coating Line at Westernport, Victoria for BHP Sheet and Coil.

PRIOR WORK EXPERIENCE

1985 - 1986

Company: John Taylor and Sons, Consulting Engineers, London
Position: Graduate Design Engineer

1983 - 1984

Company: University of NSW, Civil Engineering Dept
Position: Professional Officer

Mikel Haramboure

Civil Engineer | Team Lead – Project Management Engineering



Mikel is an outcome focused professional, acknowledged by peers for strengths in communication, problem solving and innovation.

As an engineer with 18 years of experience, Mikel has led projects in construction, maintenance and asset management. His experience includes:

- Local Government and private sector;
- Procurement processes;
- Civil engineering and land development; and
- Delivery of projects valued between \$100,000 and \$5 million.



Mikel.haramboure@taliconsultants.com.au



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QUALIFICATIONS AND AFFILIATIONS

Master's Degree in Engineering

PROFESSIONAL EXPERTISE

- Project and Program Management
- Disaster Recovery Engineering (DRFA-WA)
- Local Government Infrastructure
- Emergency Management
- Civil Construction and Maintenance
- Engineering Asset Life-Cycle Management
- Contract Administration
- Work Health and Safety

KEY PROJECT EXPERIENCE

- DRFAWA (Shire of Wyndham-East Kimberley, Shire of Northam and Shire of Plantagenet)
- Manager of Capital Works and Maintenance Program for the Shire of Gingin.
- Emergency Situation (floods) Management for the Shire of Gingin including Traffic Management and remedial works.
- Implementation of Regional Road Safety Program funded project for the Shire of Gingin.
- Manager of Capital Works and Maintenance Program for the Shire of Brookton.
- State Road Funds to Local Government Agreement program funding submissions and claims for the Shire of Brookton.
- Natural Disaster (bushfire) Relief and Recovery management for the Shire of Brookton.
- Development of 5 years Bridge Routine and Preventive Maintenance Plan for the Shire of Brookton as per Main Roads Western Australia Programs framework.
- Elaboration of Asset Management Policy, Strategy and Plan for the Shire of Brookton.
- Design and construction management of Leerdeville Village Square for the City of Vincent.
- Footpath Construction and Maintenance Program review and delivery for the City of Belmont.
- Asset Management Register management for the City of Belmont.

WORK EXPERIENCE

Company: Talis Consultants

Position: Team Lead - Civil Engineering Infrastructure Project Management

Dec 2021 - Present

Responsibilities

- Provide support to the Civil Section Leader in development of project management capabilities including Disaster Recovery Funding Arrangement (DRFA-WA), Black Spot Program and MRRG/RRG funding.
- Contribute to secure project management business opportunities in both the Public and Private sectors.
- Provide project management leadership for scope management, design, documentation, tendering, contract administration, financial management, project scheduling and risk management, construction supervision and quality assurance of civil engineering infrastructure projects.
- Co-ordination and management of contractors for remote civil infrastructure projects.
- Application of advanced engineering techniques, procedures and standards including developing and implementing systems and procedures, appropriate for the contract administration of construction works.
- Ensuring all project work complies with statutory and regulatory requirements.
- Ensuring compliance with legal obligations, including contractual and those relating to OH&S, and employment of staff.
- Contract superintendence roles on behalf of the principal for construction works.

Company: Shire of Gingin

Position: Executive Manager Operations and Assets

June 2021 – Nov 2021

Responsibilities

- Assist the Chief Executive Officer with the strategic development and management of the Construction, General Maintenance and Assets services including the interface between administration and elected members, the community and other stakeholders;
- Provide leadership, oversight and outcome management for the Division's activities which includes:
 1. Road Maintenance & Construction;
 2. Footpath and Drainage Programs including design and construction;
 3. Asset Management Planning;
 4. Plant and Equipment;
 5. Purchase, maintenance and renewal;
 6. Building Maintenance;
 7. Assets Projects; and
 8. Depot Operations.
- Oversee the development and implementation of policies and strategies in relation to Construction, General Maintenance and Assets;
- Road asset funding application
- Reports and provide advice to the Chief Executive Officer and Council on matters that are the responsibility of this position;
- Oversee the effective planning, management and services delivery of Capital Works program;

WORK EXPERIENCE

- Ensure the highest standards in human resources and financial management are practiced within the Construction division and contribute to the promotion of a safe working environment;
- Ensure the OSH Policy is endorsed and implemented;
- Allocate resources to achieve the OHS Policy objectives;
- Monitor OSH Performance;
- Actively promote safety and lead by example.

Achievements

- Identified major flaws in Safety procedures and initiated improvement
- Implemented organisational change recommended by external auditor
- Developed and reviewed engineering specifications
- Produced tenders for Capital Works Program
- Mentored Project Officer in PMBOK processes and safely delivered projects on time and budget.

Company: Shire of Brookton

Position: Manager Infrastructure and Emergency

May 2020 – June 2021

Responsibilities

- Provide guidance to Council and staff on infrastructure matters and emergency preparedness
- Ensure the effective delivery of services relating to infrastructure planning, engineering design and traffic
- Oversee the implementation and review the Shire's Asset Management Program
- Develop and maintain capital works plans (minimum 5 years) for all infrastructure assets and Shire owned buildings
- Plan and in conjunction with relevant key stakeholders manage the use, development, maintenance, renewal and upgrade of Council's infrastructure assets
- Coordinate the Shire's Emergency Management functions in line with legislative requirements and community needs.

Achievements

- Progressed key aspects of the Asset Management Policy and Strategy of the Shire
- Identified opportunities and successfully obtained new sources of external funding for road construction
- Represented the Shire in community consultation public meetings.

WORK EXPERIENCE

Company: Goodline, Eliwana

Position: Project Engineer (FIFO) - Contract

March 2020 – May 2020

Responsibilities

- Provide support to the Construction Supervisors
- Oversee procurement and allocation of resources
- Manage and liaise with sub-contractors and suppliers
- Oversee planning, programming and completion schedules
- Cost management and reporting
- Produce progress reports for the Construction Managers
- Financial management of projects

Achievements

- Strategic input to supervisor meetings.

Company: City of Vincent

Position: Coordinator of Engineering Design

2018 - 2020

Responsibilities

- Leading operational planning to deliver on strategic plans
- Oversee the Engineering Design unit including the team of 5 staff
- Coordinate the preparation of design concepts and estimating on new projects
- Prepare detailed design and estimates for the City's annual capital works program
- Coordinate the regular inspection of civil assets through formal condition assessments
- Assist with implementing the GPS data collection system for entry into the GIS
- Coordinate the development of civil asset management plans and programs for inclusion in the Strategic Asset Management Plan (SAMP) and Long Term Financial Plan (LTFP)
- Contribute to asset valuations, periodic financial reporting, identification of long term renewal and maintenance financial needs, and preparation of asset depreciation reports
- Implement traffic and parking strategies, and coordinate annual traffic data collection
- Supervise the preparation of funding submissions for the Metropolitan Regional Road Program, Roads to Recovery, Black Spot, Bus Shelters and Cycling Infrastructure grants
- Coordinate quotations, tenders, specifications and plans for procurement and contracts
- Co-supervise the light vehicle fleet, including maintenance, repairs and replacement
- Prepare reports and Council submissions on civil design and asset management matters
- Manage enquiries from residents, public, user groups and services providers.

WORK EXPERIENCE

Achievements

- Acting Manager for leave coverage
- Member of the Australasian Management Challenge 2019 City of Vincent team
- Member of the Urban Mobility Advisory Group
- Project Manager of major projects, including the implementation of a large 40km/h speed zone trial, road upgrades and bicycle network upgrades.

Company: City of Belmont
Position: Design Surveyor

2013 - 2018

Responsibilities

- Coordinate the implementation of the City's annual path programme
- Conduct a biennial path fault and condition survey of the City's entire path network
- Prepare and undertake surveys of roads, drainage, footpaths and parklands using robotic total station and GPS
- Maintain the integrity of the Survey Control network and maintenance of the GIS dataset
- Contribute to planning and implementing the annual footpath program and budgets
- Provide specialist technical advice, guidance and support for the section and community
- Inspect path construction, check bill of quantities and organise payments to contractors.

Achievements

- Delivered safely, in time and on budget \$800,000 per annum footpath program
- Delivered in time the engineering survey program
- Progressed improvements to the asset data collection system
- Improved estimation techniques and created new budgeting and forecasting system
- Tender board member
- Technical Services OSH representative.

PRIOR WORK EXPERIENCE

2013 - 2013

Company: Le Bihan et Associés, France
Position: Bridge Construction Monitoring Manager - Contract

2013 - 2013

Company: GHD, Perth
Position: Engineering Surveyor - Contract

2012 - 2012

Company: Michel Group Services, Gold Coast
Position: Engineering Supervisor - Contract

2008 - 2012

Company: GeoExpert, Nuku Hiva, French Polynesia
Position: Company Director and Licensed Surveyor

WORK EXPERIENCE

2007 – 2008

Company: Bernard Travauz Polynésie, Tahiti
Position: Company Director and Licensed Surveyor

2007

Company: Geo Topo, Moorea, French Polynesia
Position: Licensed Surveyor – Self Employed

2006 – 2007

Company: CTF, Republic of Vanuatu
Position: Consulting Surveyor

2004 - 2006

Company: Topopacifique, Tahiti
Position: Survey Project Manager

Andres Palencia

Civil Engineer



Highly organized and responsible Civil engineer, with an advanced diploma in Civil and Structural Engineering. Specialising in project management and civil design using engineering software such as AutoCAD, Civil3D and Revit.

Integral professional with a broad knowledge of engineering design, construction materials and project management, capability to face problems and provide solutions in a timely manner.

Andres is technically minded with effective skills such as teamwork, able to work under pressure and unsupervised, with excellent abilities to communicate at all levels.

Key Skills: Time management. high attention to detail. multitasking.



Andres.palencia@talisconsultants.com.au



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QUALIFICATIONS AND AFFILIATIONS

Bachelor of Civil Engineering

Diploma of Civil & Structural Engineering (WA)

Advanced Diploma of Civil & Structural Engineering (WA)

Member of the Institution of Engineers Australia (MIEAust)

PROFESSIONAL EXPERTISE

- Construction quality assurance support and supervision
- Construction materials quality control
- Civil design
- Good understanding and management of AutoCAD, Civil 3D, Revit
- Project program, planning and development
- Data collection and analysis
- Cost estimation

KEY PROJECT EXPERIENCE

- Shire of Plantagenet DRFAWA, Inspection, damage assessment and preparation of road repairs plan.
- Shire of Wyndham – East Kimberley DRFAWA, Site supervision and project management of road repairation works.
- SOILCO, Road/Pavement design Wogamia Road NSW.
- Shire of Wyndham – East Kimberley WA, stormwater design.
- Shoalhaven City council NSW, Footpath design lake Tabourie.
- Shire of Chittering WA, Detailed design for Teatree Road and Cockatoo Drive
- Shire of Northam WA, Waste Transfer station engineering design.
- Shoalhaven City Council NSW, Currarong Road widening.

WORK EXPERIENCE

Company: Talis Consultants

Position: Civil Engineer

Jan 2021 - Present

Engineer responsible for providing professional civil engineering design, project management and documentation services to deliver infrastructure projects across the public and private sectors, by applying engineering principles and technics to each allocated project.

During this time, I have participated in a range of road construction related projects/activities such as:

- Shire of Wyndham – East Kimberley DRFAWA, Site supervision and project management of road reparation works.
- Shire of Plantagenet DRFAWA, Undertaken the inspection, damage assessment and preparation of road repairs plan.

Key Responsibilities:

- Liaison with local government and client's representative to deliver projects as per specification.
- Planning and supervision of road damage repair works.
- Delivering project design and modelling for civil, environmental, and waste projects.
- Managing concept design and detailed design processes for infrastructure projects and prepare design plans and drawings (2D and 3D) for civil construction works.
- Preparing quantities, calculations and cost estimates and correspondence associated with civil works.
- Planning, designing, and undertaking improvements works as required.

Company: Talis Consultants

Position: Civil Designer

Oct 2020 – Dec 2020

Responsible for providing technical drafting support across a range of different infrastructure projects.

Key Responsibilities

- Deliver conceptual and detailed design drawings.
- Preparation of drawings to meet client specifications.
- Application of relevant standards, specifications and company procedures to conduct work.
- Undertake additional tasks as requested.

Company: CEMEX (Colombia)

Position: Operations Coordinator

May 2014 – May 2017

Engineer responsible for supervising and coordinating the activities of varied personnel involved in the daily operations of the concrete ready-mix plants located in different construction projects across the country. Additionally, an engineer in charge of the design, technical support, and quality control of concrete mixtures.

Key Responsibilities

- Designed and administered improvement projects required by direct customers.
- Provided customer support in resolving quality concerns and problems with the Concrete.

WORK EXPERIENCE

- Controlled the consumption of raw materials in the preparation of pre-mixed concrete following established quality standards.
- Coordinated HSEQ requirements in accordance with company policies and procedures.
- Studied and analysed areas of opportunity in productive processes to contribute to cost profitability.
- Ensured quality assurance was maintained, tracked subcontractors and materials, submitted permit applications and approvals.
- Planned and managed monthly and annual maintenance costs.
- Administered and controlled annual investments acquired through CAPEX.
- Managed systems that reduced productive times while ensuring product quality.
- Administered area's information systems, including monthly KPI.
- Managed, Supervised and developed equipment in charge.

Company: Siemens Colombia

Position: Civil Engineer Apprentice

Oct 2013 – Apr 2014

Apprentice responsible for assisting civil cost engineers in project estimate costs based on budgets, for several key government projects involving electrical generation, transmission and distribution systems.

Key Responsibilities:

- Maintained engineering drawings and organized project documentation.
- Assisted project teams to develop concept drawings.
- Handled cost-of-materials estimations.
- Reported and tracked documentation.
- On site project visits.

Company: AIESEC Colombia

Position: International Volunteer

Mar 2011 – Mar 2013

The World's Largest Non-governmental organisation run by students focused on impacting positively society through developing leadership by motivating leaders. Member of an International Educational Project whose main purpose was to teach Spanish to Brazilian children, with different socio-economic issues, in 5 different public schools in Vitoria, Brazil.

Key Responsibilities:

- Proposed ways to teach children Spanish.
- Carried out activities in Public Schools and collected donations to help parents with transport, food and accommodation costs.
- Prepared cultural exchanges or "Global Village" between children and trainees.
- Motivated children to participate in an international exchange.



Timothy is a skilled and experienced construction supervisor and construction site manager with a consistent 19-year work history in the construction and maintenance industry. Broad skill base in construction, road works, bridge works, drilling and blasting, construction, and human resource management.

Timothy worked as a Supervisor and Project manager on road construction, repairs and Civil Construction in WA, NSW and Indonesia. His experience includes new road construction to State National Standards, repairs under the WANDRRA and DRFAWA Scheme after storm event(s) and construction of access under difficult geotechnical conditions. Timothy has excellent safety awareness and a good understanding of Occupational Health & Safety policies and risk analysis procedures. He has a demonstrated experience in working in remote sites and multicultural environments.



Tim.Bailey@talisconsultants.com.au



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QUALIFICATIONS AND AFFILIATIONS

- Certificate IV in Project Management - Northern TAFE
- White Card
- 4WD Course
- MC Driver's License
- DFES Volunteer Fire Fighting and Rescue
- Various earthmoving machinery competency

PROFESSIONAL EXPERTISE

- Road, drainage and civil works supervision
- Occupational Health and Safety
- Australian Standards
- Main Roads and Austroads specifications
- Crew management
- Traffic Management
- Planning and reporting
- Remote worksites
- Community relations

KEY PROJECT EXPERIENCE

- Supervision of 90km sealed road construction on Cape Leveque Road (Dampier Peninsula)
- Supervision of damage repairs of unsealed roads in Kimberley region as part of Disaster Recovery Funding Agreement (\$2M project per year)
- Works supervision of road resheeting for the Shire of Wyndham-East Kimberley
- International Civil Construction In Southeast Asia
- Supervisor Drill and Blast for Consolidated Rock Services P/L Karratha, Brandrill P/L and Belmadar P/L Jindabvne Dam.

WORK EXPERIENCE

Company: Talis Consultants

Position: Construction Supervisor

March 2021 – Current

- Supervise contractor for road repair works as part of Disaster Recovery Funding Agreement WA
- Supervise day to day works of personnel and equipment
- Short to medium term Planning of works
- Quality control and progress monitoring
- Reporting to project manager
- Safety compliance
- Selecting Burrow Pits and Water Sources
- Community Relations

Company: Shire of Wyndham East Kimberley

Position: Works Supervisor

June 2020 – November 2020

- Supervise 30 Kilometres of Road Resheeting
- Managing Day to Day works of personal and equipment
- Short to medium term Planning of works
- Selecting of Equipment for task in hand
- Making sure works were completed to required standards and time lines

Company: MACCA Civil MRWA Kimberley project contract

Position: Superintendent Representative

August 2018 – September 2019

- Supervise 90 Kilometres of Road Construction
- Managing Day to Day works of personal and equipment
- Short to medium term Planning of works
- Selecting of Equipment for task in hand
- Making sure works were completed to required standards and time lines

Company: Palmer Earthmoving Australia

Position: Project Manager

August 2016 – March 2017

- Overseeing up to 30 staff members on various civil works projects with total value of \$5.8 Milion
- Tendering, evaluating designs, developing scope of work and preparing budgets
- Training, mentoring, and performance management of staff
- Overseeing OHS on site (overseeing toolboxes, pre-starts)
- Ensuring that staff and contractors comply with all OHS procedures
- Liaising with clients both private and government requirements for the project
- Advising, evaluating and selecting sub-contractors
- Ensuring subcontractors were servicing their scope of work and meeting high standards of workmanship
- Educating the workforce for new work procedures and ensuring the procedures were followed

WORK EXPERIENCE

Company: Numans Group

Position: Civil Superintendent

July 2013 – November 2013

- Overseeing up to 12 staff members on a \$1 million project
- Evaluating designs, developing scope of work and preparing budgets
- Training, mentoring, and performance management of staff
- Looking after all OHS on site (overseeing toolboxes, pre-starts)
- Ensuring that staff and contractors comply with all OHS procedures
- Advising, evaluating and selecting contractors
- Ensuring contractors were servicing their scope of work and meeting high standards of workmanship

Company: Citic Pacific

Position: Project Manager

April 2012 – October 2012

- Overseeing up to 12 staff members on a \$3.5m project
- Evaluating designs, developing scope of work and preparing budgets
- Training, mentoring, and performance management of staff
- Looking after all OHS on site (overseeing toolboxes, pre-starts)
- Ensuring that staff and contractors comply with all OHS procedures
- Liaising with Hygiene department heads and directors with all aspects of decontamination of personnel and their requirements for the project
- Advising, evaluating and selecting contractors
- Ensuring contractors were servicing their scope of work and meeting high standards of workmanship
- Educating the workforce for new work procedures for decontamination and ensuring the procedures were followed

Company: Citic Pacific

Position: Acting Drill and Blast Superintendent

December 2011 – April 2012

- Monitoring daily performance of drill and blast crews (80 staff members) and equipment (\$6m+ per month)
- Attending morning pre-starts and providing OHS advice
- Supervising building of new drill bit sharpening shed
- Weekly and monthly planning of drill and blast activity
- Overseeing and signing off technical designs of drill and blast
- Ensuring drill mark out was correct and advising on any issues with mark up
- Accident and incident investigation and reporting
- Regular inspections of secure site installations and ensuring compliance with all Acts
- Making sure contractor was meeting KPI's and liaising with them for weekly and monthly explosive use
- Liaising with workshop and contractors for maintenance of MMU, loaders, vehicles and drills
- Interviewing, selecting and performance managing staff, rostering and drafting travel requests for staff under my control
- Cyclone leader for drill and blast
- Site management representative for after-hours camp issues or emergencies

- Overseeing marine blasting
- Making sure training met requirements and was kept up to date
- Managing contractor crushing for steaming and making sure they kept to schedule
- Conducting return to work presentation for crew members

PRIOR WORK EXPERIENCE

Feb2011 – Sep 2011	Company: G Resources Indonesia Position: Construction Superintendent
Oct 2010 – Nov 2010	Company: Bechtel Hay Point Position: Marine Drill and Blast Consultant
Jun 2009- - Aug 2010	Company: Northrock Position: Superintendent Construction Blasting
Jun 2009 – Aug 2009	Company: Civmec Position: Construction Site Manager

curriculum vitae

Simon Kelly

Supervisor



Key Details

Years' Experience:
20 years

Profession:
Supervisor

Qualifications:
Carpenter & Joiner
Cert 3 Civil Construction
Plant Operations

Licences
HR Truck
Bobcat
Excavator
Loader
Forklift

Summary

- Strong leadership skills
- Excellent people skills
- Extensive Project Management experience
- Good occupational Health & Safety Management skills
- Excellent time management/scheduling skills
- Good written and oral communication skills
- Able to work independently or part of a team
- Honest, reliable & punctual
- Self-motivated worker
- Good computer skills
- Dedicated work ethic
- Good analytical skills
- Eagerness to learn
- Confident with contract design and specification requirements
- Non Smoker

Significant Projects

Jun 2018 – Feb 2019
 Sep 2007 – Oct 2008
 Jul 2005 – Sep 2006
 Jan 2004 – Jul 2005

Site Supervisor/Assessor – Remote Roads
 Project Manager - Windimurra Vanadium Project
 Project Manager - Waterloo Nickel Project
 Construction Supervisor - New Holland Underground Operation

Relevant Experience

June 2018 - Feb 2019

Road Construction Back-up Site Supervisor and Assessor; Remote Roads

Laverton WANDRRA Flood Damage Project

- Participated as part of the Remote Roads Team in the inspection of the work being carried out by the Civil Contractor on the White Cliffs Road Reinstatement Project for the Laverton Shire

Shire of Menzies WANDRRA Flood Damage Project

- Set out the specified sections of roads that are to be repaired under WANDRRA funding
- Highlighted the different design requirements for each section of the Project
- Identified type, quantity and location of resources available to be used for the purpose of road construction
- Identified the most cost effective way to utilise machinery to undertake work required
- Liaised with Shire Representatives, Station Owners, General Public and Mine Managers
- Inspected areas that have been identified as of Aboriginal Heritage significance
- Carried out audit of work that has been completed

Shire of Murchison, Beringarra Cue Road Project

- Appraisal of work to be carried out for Tender Purposes
- Inspected suitable location for sourcing resources such as gravel, calcrete and water that meet the criteria for road construction purposes
- Identified laydown areas for the stockpiling of existing sealed pavement material
- Investigated potential problem areas of project such as location of drains, flood ways, haul distances from pits, location and distances between turkey nests and bores, location for camps, internet signals etc.
- Inspected areas that have been identified as of Aboriginal Heritage significance
- Inspected previous work that had been undertaken for durability and noted examples of material suitable for upcoming projects
- Inspected work being undertaken on the same road but in adjoining shire illustrating floodway designs and bitumen patch work

Shire of Upper Gascoyne Feasibility Study

- Undertaken the inspection of Flood ways & road surfaces located throughout the Upper Gascoyne Region of WA
- Photographing and documenting of each floodway and adjoining roadways
- Compiling a detailed report on each of the Points of Interests for evaluation by the principals representative

Shire of Upper Gascoyne – Damage Report

- Undertake the inspection of a number of roads located throughout the Upper Gascoyne Region of WA to compile a report to enable repair work to be carried out on damaged access roads vital to the location around Gascoyne Junction.

Sept. 2017 – Dec. 2017

Operator (sub contract) – Fortnum Gold Mine, Meekatharra, WA

Duties & Responsibilities

- Carry out earthworks for the construction of veranda pads, utility ramps, tank pads, carparks and bunding used with the expansion of existing Accommodation Village
- Back fill site service trenching and carry out general site clean up
- Landscape area with new soil and drainage material
- Rebuilt roadway intersections on main intersecting corridor
- Constructed earthwork bunding to close off unused roads
- Rebuilt side wall of sewerage pond and constructed septic tank bases using rock and metal dust
- All work constructed to design specification and with optimum compaction and moisture content

Nov. 2014 – Sept. 2017

Branch Manager, M & B Sales, Geraldton WA

Duties & Responsibilities

- Manage the daily running of the branch
- Liaise with Head Office and other M&B branches
- Quoting and tendering of materials for various projects
- Liaise with builders, tradesmen, suppliers and local customers
- Maintain the daily delivery of customer's orders out of the branch
- Maintain procurement of materials
- Supervise and manage staff members
- Manage quality control measures from within the business
- Liaise and supervision of transport contractors
- Prepare and manage stock levels and budgets
- Introduce and maintain new products and ideas into the branch
- Develop relationships with new customers
- Remedy any warranty issues that may arise
- Represent the company at business related events

Aug. 2008 – Oct. 2014

Managing Director, Midwest Transportables | Midwest Steel Framing, Geraldton WA

Duties & Responsibilities

- Design and manufacture transportable buildings
- Quoting and tendering for projects
- Liaise with engineers, draftsmen and local council
- Liaise with clients on a daily basis
- Design, engineering and detailing of steel wall frames and roof trusses
- Daily operation and maintenance of steel roll forming machine
- Assembly of steel wall frames and roof trusses
- Loading and delivery of orders
- Procurement of materials
- Conduct daily safety meetings and identify risks
- Developing strategies to manage safety issues
- Delivery and installation of transportable buildings on site
- Manufacture and supply of 'Kit Form' housing
- Oversee the construction of 'Flat Pack' Housing

- Manage all warranty and maintenance issues
- Capture and implement changes with Regulations and Building Codes

Sep 2007 – Oct 2008

Project Manager, Simtrac Pty Ltd, Windimurra Vanadium Mine, Mt Magnet WA

Contract- Installation of new Kitchen and Dining Room Facilities
 Installation of 350 Person Accommodation Village and Site Offices
 Installation of additional 100 Room Staff Quarters

Site Maintenance

Duties & Responsibilities

- Daily management of a team of 30 staff plus contractors
- Liaise with site managers, mine site personnel and contractors
- Undertake earthworks using bobcats, loaders, excavators and tip trucks
- Oversee the installation of all plumbing, electrical and communication services.
- Oversee the installation of all transportable buildings, sheds & patios
- Oversee the installation of concrete veranda's, paths and ramps
- Carry out the daily maintenance of mine site infrastructure
- Plan and supervise the onsite alterations and additions of existing buildings as required
- Oversee the installation of fire system for the accommodation village
- Oversee the installation of RO water treatment system
- Oversee the installation of communication system
- Manage the construction team with a strong focus on OH&S and quality management
- Submit site documents and carrying out work as per the mine sites Safety Policies and Procedures
- Attending and contributing to site safety meetings
- Capturing and processing all contract variations daily
- Completing project within a specified timeframe and within budget

Jul 2005 – Sep 2006

Project Manager, LionOre Australia, Waterloo Nickel Operation, Leinster WA

Duties & Responsibilities

- Undertake preliminary work required to obtain the necessary permits an
- Source road base material, backfill sand and a steady water supply required for the commencement of construction
- Manager project time lines, schedules and budgets
- Oversee the relocation of transportable offices and associated infrastructure from other mine sites
- Supervise the daily operation of machinery needed for carrying out required earthworks
- Oversee the install. of all plumbing, electrical & communication services
- Oversee the install. of transportable buildings, sheds & verandas
- Design and manage the construction and installation of new Underground Change rooms
- Oversee all civil works in preparation for the pouring of concrete verandas, footpaths, pads, footings and workshop aprons
- Manage the installation of new workshops, aprons, jacking pads and oil separation unit
- Undertake renovations to existing mine site offices

- Manage the design and installation of fire system for mine site office complex
- Installation of communication system – including concrete foundations for a 50m communications tower
- Design and oversee the construction of new turkey nest including the liner, pipes, pumps and fencing
- Manage the installation of overhead Power Lines to supply electricity for underground mining operations
- Supervision of between 5 - 20 staff and contractors with a strong focus on OH&S and quality management
- Design and manage the installation of new pump system for the site water supply
- Oversee the installation of new sewerage treatment plant
- Submitting documents and carrying out work as per the mine sites Safety Policies and Procedures
- Attending and contributing to site management and safety meetings
- Capture daily all 'Variations to Contract' and process them accordingly

Jan 2004 – Jul 2005

Construction Supervisor, Simtrac Pty Ltd, Lawlers Gold Mine, Agnew WA
Project: - New Holland Underground Operation, Accommodation Village Extension

Duties & Responsibilities

- Carry out daily maintenance of mine site infrastructure
- Renovate and refurbish second hand office units, cribsrooms, first aid room and administration buildings
- Relocation of accommodation units, offices and associated infrastructure from other mine sites.
- Oversee the design and installation of fire system for accommodation village
- Design and installation of surface sprinkler system for underground mining operation
- Installation of new RO water treatment system for mine site
- Carry out alterations to underground workshop, car wash bay and oil separation area
- Supervision of construction team with a strong focus on OH&S and quality management
- Oversee the construction of new turkey nest including the liner, pipework, pumps and fencing
- Design and manage the construction and installation of new underground change rooms
- Oversee the installation of new independent fire ring main for office complex
- Construct gravel roads, carparks and necessary bunding
- Design and setting up of underground water pumping station
- Installation of roadside signage and delineators
- Construction of new verandas and breezeways
- Installation of new stores building and warehouse for underground mining operation
- Manage the installation of new bulk fuel storage tanks and required fencing

Mona Arabshahi

Civil Engineer



Mona is a Civil Engineer with various experience across civil engineering and project management. Project programming, tender documentation, contract admin, claim review and approval, liaison with the clients and contractors, traffic impact assessment, road and pavement design are a few outlines of Mona's expertise.

Experienced in both academia and the construction industry, Mona is versatile in pursuing various methodologies for addressing industry needs.



Mona.arabshahi@taliconsultants.com.au



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QUALIFICATIONS AND AFFILIATIONS

PhD – Construction management – Curtin University

Master's degree Geotechnical Engineering – University of Tehran, Iran

Bachelor's Degree Civil Engineering – KNT University of Technology, Tehran, Iran

Leadership and Communication – E-Grad School Australia

Project Management – E-Grad School Australia

PROFESSIONAL EXPERTISE

- MS Project
- Sidra Intersection
- Geotechnical analyses and design: Slope stability, retaining walls, shallow foundations, piles, tunnel design and support, etc.
- Reinforced earth structures, soil nailing and anchorage design and construction techniques
- Plaxis (2D,3D)
- Rocscience (Slide, Phase2, Swedge, Unwedge, Rocplane, Dips)
- Geo-slope (Geo studio: Slope, Seep, Sigma)
- Finite Elements Modelling (ANSYS)
- Pavement Investigation
- Cost Estimation

KEY PROJECT EXPERIENCE

- DRFAWA project management including damage pick-up, cost estimate, contract admin and provision of reimbursement claim documentation.
- Repair of Road and Associated Drainage Flood Damage tender document preparation, Shire of Wyndham East Kimberley, WA
- MRRG Pavement Investigation, City of Armadale, WA
- FWD data analysis by EfromD3 back calculation programme for pavement layers' moduli for various projects
- PAPL T2 Forecourt Pavement Remediation, Project Management, document control, subconsultant liaison and coordination, Perth Airport, WA
- Balcatta PPR Brief, Cost estimate of the Community Recycling Centre, Balcatta, WA
- Traffic Impact Assessment: Burswood Redevelopment Project, Kargotich Road Design Shire of Serpentine Jarrahdale
- Tender documentation.

WORK EXPERIENCE

Company: Talis Consultants

Position: Civil Engineer

Apr 2022 - Present

Project Management and Contract Admin

- Disaster Recovery Funding Arrangement (DRFA) Shire of Wyndham East Kimberley

Traffic Impact Assessment

- Burswood Redevelopment Project
- Kargotich Road Design, Shire of Serpentine Jarrahdale

Company: Talis Consultants

Position: Graduate Civil Engineer

Jan 2021 – Apr 2022

Tender Documentation

- Assisting with the provision of technical specification and general conditions of contract

Pavement Inspection and Investigation

- Armadale 5 years MRRG

FWD data analysis

- Armadale 5 years MRRG
- Cockburn MRRG

Cost Estimate

- Balcatta Community Recycling Centre

Client Liaison and Project admin

- Terminal 2 Forecourt Remediation Project, Perth Airport

Project Admin, Contract Admin, Progress Claim Review and Approval

- Disaster Recovery Funding Arrangement (DRFA) Shire of Wyndham East Kimberley

Damage Pick Up

- Disaster Recovery Funding Arrangement (DRFA) Shire of Wyndham East Kimberley

Company: Sustainability Waste Alliance

Position: Research Intern

Sep 2020 – Nov 2020

Recycle First Plan for Bunbury Outer Ring Road (BORR)

- Undertaking an environmental scan and mapping of recycled materials to BORR opportunities.
- Developing an industry toolkit to support supply chain integrity of construction and demolition waste collection.
- Generating a report on the “Recycled Firs Plan” for BORR as part of a team.

WORK EXPERIENCE

Company: Curtin University
Position: Sessional Academic

2017 - 2020

- Department of Construction Management
- School of Design and the Built Environment
- Tutoring:
 - Plant and equipment
 - Construction Project
 - Structures

Company: O'Bryan Peter & Associates
Position: Geotechnical Engineer (casual employment)

2014 - 2016

- Geotechnical Engineer
 - Slope stability modelling, analyses, and design in open pit mining
 - Underground mining data analyses

Company: Tamavan Consulting Engineers
Position: Geotechnical Engineer and Modeller

2010 - 2013

Responsible for Geotechnical analyses, modelling and designing (Slope stability, tunnel modelling, tunnel supports, soil nailing and anchorage, groundwater and seepage analyses, etc.)

- Analyses and design of slope stability problems in open pit mining
- Tunnel modelling and design of supports: bolts, nailing, shotcrete, etc.

PRIOR WORK EXPERIENCE

2008 - 2010

Company: Khakemosallah (reinforced earth)
Position: Geotechnical Engineer and Supervisor



Oguz is a Civil Engineering member of the Institute of Engineers Australia. Oguz has three years' experience on a range of civil engineering and construction projects, including mining and Main Roads projects in Western Australia.

He is self-motivated to complete tasks on time and willing to improve himself as a civil engineer. He assists with variation assessment, cost estimates, tender preparation, traffic impact assessments and contributes to drainage and pavement design as per specification, MRWA & Australian Standards.

QUALIFICATIONS AND AFFILIATIONS

Bachelor of Civil Engineering
Member of the Institution of Engineers Australia (MIEAust)
BIM (Building Information Modelling) Certificate
Primavera 6 Certificate
White Card

PROFESSIONAL EXPERTISE

- Site engineering
- Project engineering
- Tender preparation and evaluation
- Design, documentation and procurement
- Contract administration

KEY PROJECT EXPERIENCE

- Copley Sulfide Expansion Project
- Kemerton Lithium Plant, Wood/Albemarle, WA
- Tonkin Gap, Main Roads, WA
- Cranford Avenue Principal Shared Path, WA
- Stock Road Extension Bullsbrook, City of Swan
- Kargotich Road, Shire of Serpentine Jarrahdale
- Busselton Margaret River Airport Carpark, City of Busselton
- City of Perth MRRG
- City of Nedlands MRRG
- City of Albany Median Design
- Warmun Bridge Remedial Works, Department of Communities

WORK EXPERIENCE

Company: Talis Consultants

Position: Civil Engineer

October 2021 – Present

Oguz involves various civil design and project management works as a civil engineer.

Main Duties:

- Variation Assessments
- Tender Preparation
- Drainage design
- Pavement Design
- Traffic Impact Statement Preparation
- In-situ soil testing, sampling and reporting
- Cost estimates
- MRRG Submission preparation

Company: ACS – Tonkin Gap Deflection Walls and Cranford PSP Underpass

Position: Civil Project Engineer

August 2020 – September 2021

Oguz worked closely with the site team and provided technical support as a civil project engineer.

Main Duties:

- Prepare and follow up all technical queries (TQ's)
- Identify contract variations and draft correspondences
- Prepare as-built sketches by using AutoCAD and Revit
- Prepare concrete repair methodology, construction methodologies.
- Quality inspections and management of all quality documentation
- 4 weeks look ahead schedule update
- Schedule plant and equipment, ie Cranes and concrete pumps, scaffolding.
- Liaise with formwork designer regarding temporary design for the underpass, capping beam, and any other retaining walls.
- Procurement of all construction materials and keeps records of all material on site.
- Reinforcement schedule approvals
- Attend project-specific meetings with clients and other relevant stakeholders.
- Engage subcontractors to complete specific tasks such as lifting and concrete cutting.

Company: Wood – Kemerton Lithium Project

Position: Project Engineer

June 2019 – July 2020

Main Duties:

- Review, create and follow up all technical queries (TQ's) and request for information (RFI's) on a major LS Contract
- Review, analyze and draft responses to correspondence received under the Contract
- Assist with monthly progress reporting, progress claims & variation assessments
- Review contractor' schedules and provide feedback to the planning team.
- Prepare clash detection reports by using Navisworks.
- Provide construction estimates, bill of quantities, and cost of materials.
- Prepare and reviews the scope of works for civil structures.
- Assist with technical advice regarding the civil design and contributes to the design development as per project specification, Australian Standards.

Company: Alacer Gold Mining – Copley Sulfide Expansion Project

Position: Junior Civil Project Engineer

December 2017 – January 2019

Main duties:

- Supervision of local civil subcontractor's concrete works, site grading, and underground piping
- Report daily progress and future activities to the construction manager
- Attend daily work assessment review meetings with the subcontractors as a company representative
- Approve daily subcontractors' man-hours

PRIOR WORK EXPERIENCE

July 2014 – August 2014

Company: TAV Construction – Dubai Damac Towers
Position: Undergraduate Engineer

Chris Wood

Works Manager



Chris is a Professional Civil Engineer who has specific experience in the Implementation and Management of roads and civil infrastructure projects within Australia. He has an extensive MRWA & project delivery background along with excellent communication and project coordination skills.

QUALIFICATIONS AND AFFILIATIONS

Bachelor of Engineering (Civil)

PROFESSIONAL EXPERTISE

Project management of major road infrastructure.

Project supervision of construction works including road infrastructure.

Communication, project coordination and stakeholder engagement.

Preparation of contract documentation

KEY PROJECT EXPERIENCE

- Cooktown Waterfront Activity Precinct, Cook Shire, QLD
- Marradong Mine Development, Bechtel Australasia Pty Ltd, WA
- Road Construction Program (Goldfields – Esperance Region), MRWA, WA
- Great Eastern Highway - Baandee Lakes Section, MRWA, WA
- Mt. Magnet to Leinster Project, MRWA, WA
- Term Maintenance Projects, MRWA, WA
- Busselton Highway Duplication Project, MRWA, WA
- Brookton Highway Project, MRWA, WA
- Narrogin Division Project, MRWA, WA
- Great Eastern Highway Road Train Assembly Area, MRWA, WA
- Brockman 4 Phase 2 (\$580M), Western Turner Syncline (\$980M) and Yandi Sustaining Project (\$1.7B), Calibre Projects, WA
- Marradong Mine Development (\$450M), Bechtel Australasia, WA
- Brockman 4 Iron Ore Mining Development, Calibre Projects, WA

WORK EXPERIENCE

Company: Talis Consultants
Position: Project Manager

Aug 2021 - Present

Newly appointed role.

Company: C J Wood Civil Design & Construction Pty Ltd
Position: Director | Senior Project Manager

June 2020 – Aug 2021

Senior Project Manager responsible for the preparation of tender documents for Project Management Services for Building and Land Development within the Shire of Ashburton and Expression of Interest for Detailed Engineering Road Design Services for the City of Joondalup within the City of Perth. The preparation of Project Management Services for Roadworks for City of South Perth and for the Panel Consultancy for the provision of Civil Engineering Services for the City of Port Hedland.

Company: Talis Consultants
Position: Senior Project Manager

Oct 2019 – May 2020

Seconded to Main Roads Western Australia as a Senior Project Manager responsible for the Project Management of development works for the \$505M Tonkin Highway Extension Project from Thomas Road to South Western Highway. The scope of the work included 15km of Dual Carriageway Highway with 5 interchanges and a Freight Rail Realignment around the Town of Mundijong. The work included the management of internal MRWA and PTA resources and engagement and management of external Consultants and Contractors.

Seconded to the Shire of Ashburton as Project Manager Class IV Waste Facility, Onslow WA and because of approvals disruption was responsible for the project/ contract management of Unsealed Rural Roads Contract RFT 21.19 which included 14 kms of Reformation works and two 20km sections of gravel overlay on unsealed rural roads within the Shire of Ashburton.

Company: Dept of Transport Main Roads, Qld
Position: Project Manager

Feb 2018 – May 2019

Project Manager for the Department of Transport Main Roads, Cairns and responsible for the Project Management of \$67M High Risk Roads Safety Program along Captain Cook Highway in Cairns. The work includes the management of internal TMR and external consulting and contracting resources. The implementation of the High Risk Roads Strategy for the Captain Cook Highway from Cairns to Port Douglas and managing budget cost and time for the project.

Company: Cook Shire, Cooktown, Qld
Position: Project Manager

Oct 2016 – Feb 2018

Responsible for the project management of design and day to day construction of the multidiscipline Cooktown Waterfront Activity Precinct. The works include seawall remediation, concrete pavement works, building works, earthworks, roadworks, sewerage and water, electrical, telecommunication/instrument and mechanical service installation and landscaping. The overall control of budget, cost and time for the project.

WORK EXPERIENCE

Company: C J Wood Civil Design and Construction Pty Ltd

Position: Director | Principal Civil Engineer

Sep 2013 – Oct 2016

Responsible for the project management and detail design and construction supervision for the extension of the existing water supply pipeline to service a new subdivision in Northam.

Assisting with the development of documentation for the refurbishment or replacement of the Kent Street Weir. Providing consulting advice to the Department of Water in the development of this project

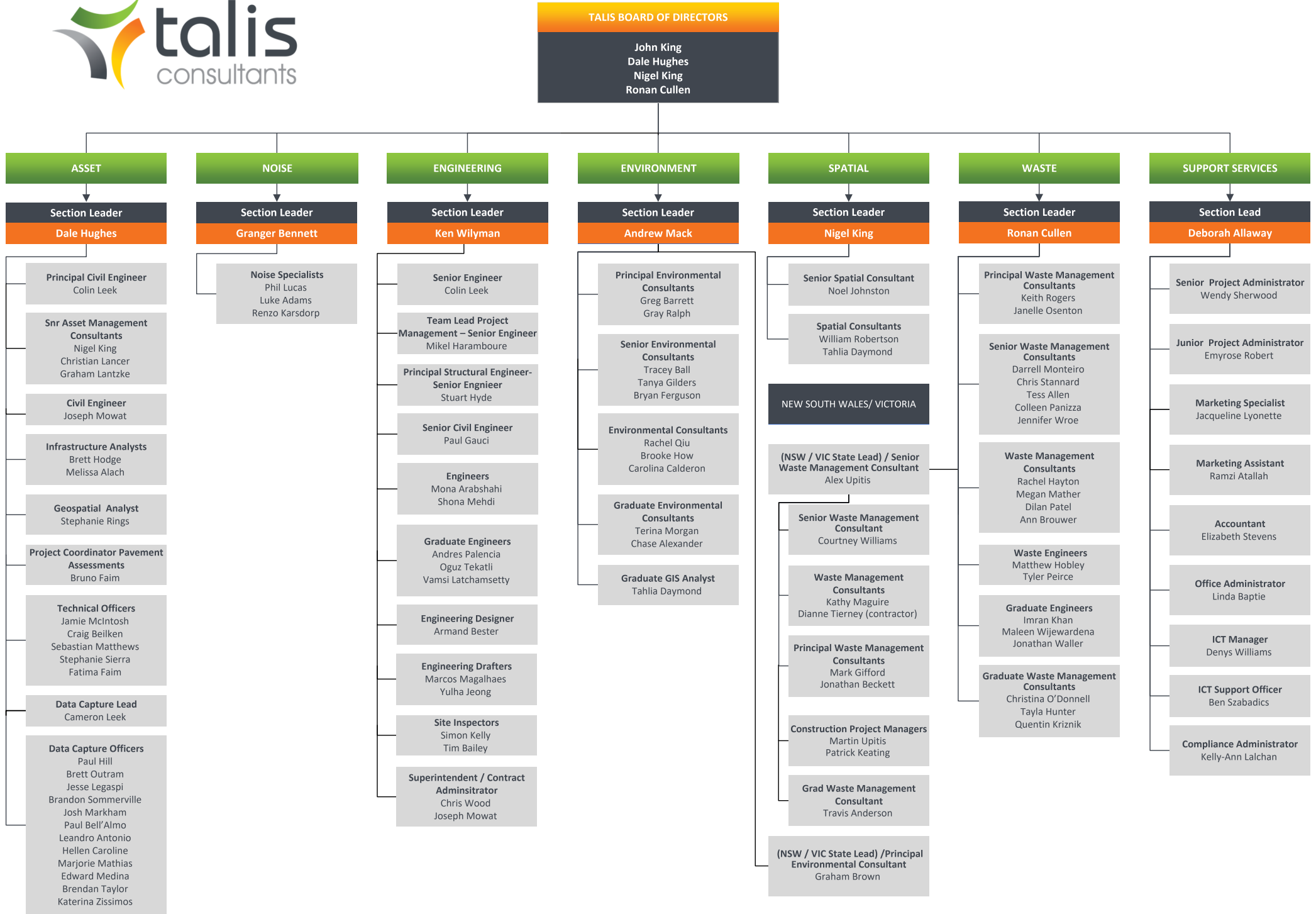
Responsible for the design of earthworks, roadworks and drainage for the Wellington Street Medical Centre for the Shire of Northam.

PRIOR WORK EXPERIENCE

2013 – Aug 2013	Company: Calibre Projects Position: Lead Civil Earthworks Engineer
2009 - 2012	Company: Calibre Projects Position: Principal Civil Earthworks Engineer Lead Civil Earthworks Engineer
2008 - 2010	Company: Bechtel Australasia Pty Ltd Position: Deputy Project Manager Lead CSA Civil Engineer
2007 - 2008	Company: Calibre Projects Position: Lead Civil Earthworks Engineer

Appendix B: Organisational Structure

TALIS CONSULTANTS – ORGANISATIONAL STRUCTURE





Assets | Engineering | Environment | Noise | Spatial | Waste

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