



File No: 4.1.14

NOTICE OF ORDINARY MEETING OF COUNCIL

Dear Councillor,

The next Ordinary Meeting of the Northampton Shire Council will be held on Friday 18th November 2016 in the Council Chambers, Northampton commencing at 1.00pm.

The agenda for the above-mentioned meeting is enclosed.

Lunch will be served from 12.00pm.

**GRANT MIDDLETON
ACTING CHIEF EXECUTIVE OFFICER**

11th November 2016



~ Agenda ~

18th November 2016

NOTICE OF MEETING

Dear Elected Member

The next ordinary meeting of the Northampton Shire Council will be held on Friday 18th November 2016, at The Council Chambers, Northampton commencing at 1.00pm.

**GRANT MIDDLETON
ACTING CHIEF EXECUTIVE OFFICER**

11th November 2016

SHIRE OF NORTHAMPTON

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Signed _____

Date 11th November 2016

GRANT MIDDLETON
ACTING CHIEF EXECUTIVE OFFICER

AGENDA
ORDINARY MEETING OF COUNCIL
18th November 2016

1. OPENING

2. PRESENT

- 2.1 Leave of Absence
- 2.2 Apologies

3. QUESTION TIME

4. CONFIRMATION OF MINUTES

- 4.1 Ordinary Meeting of Council – 21st October 2016

5. RECEIVAL OF MINUTES -

6. REPORTS

- 6.1 Works
- 6.2 Health & Building
- 6.3 Town Planning
- 6.4 Finance
- 6.5 Administration & Corporate

7. COUNCILLORS & DELEGATES REPORTS

- 7.1 Presidents Report
- 7.2 Deputy Presidents Report
- 7.3 Councillors' Reports

8. INFORMATION BULLETIN

9. NEW ITEMS OF BUSINESS

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SHIRE OF NORTHAMPTON

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Northampton on 21 October 2016**

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SHIRE OF NORTHAMPTON

**Minutes of Ordinary Meeting of Council held at the Council Chambers Hampton Road,
Northampton on 21 October 2016**

10.1 OPENING

The President thanked all Councillors and staff members present for their attendance and declared the meeting open at 1.00pm.

10.2 PRESENT

Cr C Simkin	President	Northampton Ward
Cr M Scott	Deputy President	Kalbarri Ward
Cr S Stock-Standen		Northampton Ward
Cr T Carson		Northampton Ward
Cr R Suckling		Northampton Ward
Cr M Holt		Kalbarri Ward
Cr S Krakouer		Kalbarri Ward
Mr Grant Middleton	Acting Chief Executive Officer	
Mr Neil Broadhurst	Manager of Works	
Mr Glenn Bangay	Building Surveyor	
Mrs Deb Carson	Planning Officer	

10.2.1 LEAVE OF ABSENCE

Cr Pike

10.2.2 APOLOGIES

Cr Stanich

10.3 QUESTION TIME

Nil

10.4 CONFIRMATION OF MINUTES**10.4.1 CONFIRMATION OF MINUTES – ORDINARY COUNCIL MEETING 16
SEPTEMBER 2016**

Moved Cr SUCKLING, seconded Cr KRAKOUER

That the minutes of the Ordinary Meeting of Council held on the 16th September 2016 be confirmed as a true and correct record subject to the following amendment:

SHIRE OF NORTHAMPTON
**Minutes of Ordinary Meeting of Council held at the Council Chambers Hampton Road,
Northampton on 21 October 2016**

Minute 9.8.4 Clause 5.2, referred to in relation to the *Shire of Northampton Local Planning Policy – Extractive Industry* be changed to Clause 4.2.1 to correctly reflect the current Policy.

CARRIED 7/0

10.4.2 BUSINESS ARISING FROM MINUTES

Nil

10.5 RECEIVAL OF MINUTES

Nil

10.6 WORKS REPORT

10.6.1 INFORMATION ITEMS – MAINTENANCE/CONSTRUCTION WORKS PROGRAM (ITEM 6.1.1)

Noted

Neil Broadhurst departed the meeting at 1:26pm

10.7 HEALTH/BUILDING REPORT

10.7.1 BUILDING STATISTICS (ITEM 6.2.1)

Noted

10.7.2 AMENDED HEALTH ACT 1911 AND THE NEW PUBLIC HEALTH ACT (ITEM 6.2.2)

Moved Cr STOCK-STANDEN, seconded Cr SUCKLING

That the Principal Environmental Health Officer investigate the opportunity to form a regional group to support the implementation of the provisions of the *Public Health Act 2016* within this region.

CARRIED 7/0

SHIRE OF NORTHAMPTON
Minutes of Ordinary Meeting of Council held at the Council Chambers Hampton Road,
Northampton on 21 October 2016

10.7.3 BUSHFIRE ATTACK LEVELS LOT 5 SEAKIST RETREAT, KALBARRI (ITEM 6.2.3)

Moved Cr CARSON, seconded Cr SUCKLING

That Council supports the proponent's offer to slash the requested area as per Appendix A, with the clearing to be undertaken in consultation with the Kalbarri Volunteer Fire Brigade and other key stakeholders, and with future maintenance to be undertaken through the annual Council Works program.

CARRIED 7/0

10.8 TOWN PLANNING REPORT

10.8.1 SUMMARY OF PLANNING INFORMATION ITEMS (ITEM 6.3.1)

Noted

10.8.2 STEERING GROUP COMMITTEE – COUNCIL REPRESENTATIVES SOUGHT (ITEM 6.3.2)

Moved Cr KRAKOUER, seconded Cr SCOTT

That Council nominate Cr Stock Standen and Cr Craig Simkin (President) to represent Council on the *Coastal Management Strategy* Steering Committee.

CARRIED 7/0

10.9 FINANCE REPORT

10.9.1 ACCOUNTS FOR PAYMENT (ITEM 6.4.1)

Moved Cr CARSON, seconded Cr SUCKLING

That Municipal Fund Cheques 21023 to 21048 inclusive totalling \$165,186.37, Municipal EFT payments numbered EFT15527 to EFT15626 inclusive totalling \$670,814.38, Trust Fund Cheques 2164 to 2168, totalling \$10,670.00, Direct Debit payments numbered GJ0306 to GJ0314 inclusive totalling \$229,865.15 be passed for payment and the items therein be declared authorised expenditure.

CARRIED BY AN ABSOLUTE MAJORITY 7/0

SHIRE OF NORTHAMPTON

**Minutes of Ordinary Meeting of Council held at the Council Chambers Hampton Road,
Northampton on 21 October 2016**

10.9.2 MONTHLY FINANCIAL STATEMENTS SEPTEMBER 2016 (ITEM 6.4.2)

Moved Cr STOCK-STANDEN, seconded Cr KRAKOUER

That Council adopts the Monthly Financial Report for the period ending 30 September 2016.

CARRIED 7/0

10.10 ADMINISTRATION & CORPORATE REPORT

10.10.1 PROPOSED REGIONAL SUBSIDIARIES LEGISLATION (ITEM 6.5.1)

Moved Cr SCOTT, seconded Cr HOLT

1. That Council endorse the comments provided by the CEO and the submissions to the Department of Local Government & Communities on the *Consultation Paper – Proposal for Regional Subsidiaries*; and
2. Council authorise the Chief Executive Officer to comment further on the Consultation Paper for Regional Subsidiaries Legislation as he considers necessary and inform the Council of any significant deviation from those endorsed in item 1 of the recommendation.

CARRIED 7/0

**10.10.2 PROPOSED RAIL CROSSING SIGNAL POLE – MARY STREET RAILWAY
PRECINCT ENTRANCE, ROAD RESERVE (ITEM 6.5.2)**

Moved Cr STOCK-STANDEN, seconded Cr SUCKLING

That Council:

1. Approve the installation of a rail crossing pole within the road reserve at the entrance to the Mary Street Railway Precinct; and
2. Waive any fees associated with obtaining building approvals for the proposal.

CARRIED 7/0

SHIRE OF NORTHAMPTON
Minutes of Ordinary Meeting of Council held at the Council Chambers Hampton Road,
Northampton on 21 October 2016

10.10.3 SALE OF PORTION OF LOT 9001 GLASS STREET, HORROCKS (ITEM 6.5.3)

Moved Cr STOCK-STANDEN, seconded Cr KRAKOUER

That Council accepts the offer from P Lobato and R Offer for the purchase of approximately 97.43m² of Council Lot 9001 Glass Street, Horrocks subject to the provision of Section 3.58 of the Local Government Act 1995 and associated Regulations and that all subdivision costs are met by the applicant.

CARRIED 6/1

10.10.4 CHRISTMAS – NEW YEAR CLOSE DOWN PERIOD (ITEM 6.5.4)

Noted

10.10.5 UNBUDGETED EXPENDITURE REQUEST – NORTHAMPTON NEWS BUILDING (ITEM 6.5.5)

Moved Cr STOCK-STANDEN, seconded Cr SUCKLING

That Council list the installation of fans for consideration in the 2017/2018 Budget.

CARRIED 7/0

10.10.6 REVISED PROPOSAL TO HOLD TWO COMMUNITY CONCERTS IN NORTHAMPTON AND KALBARRI – RAY RYDER (ITEM 6.5.6)

Moved Cr SCOTT, seconded Cr STOCK-STANDEN

That Council:

1. Support the proposal for a concert to be held in Kalbarri on 17 March 2017, with Council to seek funding for \$1,000 (that will cover both accommodation and a contribution towards entertainment costs);
2. Provide a list of community group names to the band's Management; and
3. Assist with the provision of a venue.

CARRIED 7/0

SHIRE OF NORTHAMPTON

**Minutes of Ordinary Meeting of Council held at the Council Chambers Hampton Road,
Northampton on 21 October 2016**

ADJOURNMENT

Council adjourned at 2:57pm.

Meeting reconvened at 3:06pm with the following in attendance:

Cr Simkin, Cr Scott, Cr Stock-Standen, Cr Carson, Cr Suckling, Cr Holt, Cr Krakouer, Grant Middleton and Debbie Carson.

10.11 SHIRE PRESIDENT'S REPORT

Since the last Council meeting Cr Simkin reported on his attendance at the following:

5/10/2016	Lucky Bay Caretaker Interviews
18/10/2016	Meeting with Main Roads regarding Northampton Bypass
20/10/2016	Dinner meeting with MWDC at Lavender Farm

10.12 DEPUTY SHIRE PRESIDENT'S REPORT

Since the last Council meeting Cr Scott reported on his attendance at the following:

29 & 30/9/2016	Councillor Training in Geraldton
7/10/2016	Kalbarri Sport and Rec to finalise site for multi-sport courts
13 & 14/10/2016	Councillor Training in Geraldton

10.13 COUNCILLORS' REPORTS

10.13.1 CR HOLT

Since the last Council meeting Cr Holt reported on his attendance at:

18/10/2016	Kalbarri Development Association Meeting
21/10/2016	Western Power briefing

10.13.2 CR SUCKLING

Since the last Council meeting Cr Suckling reported on her attendance at:

29 & 30/9/2016	Councillor Training in Geraldton
13 & 14/10/2016	Councillor Training in Geraldton

10.13.3 CR KRAKOUER

Since the last Council meeting Cr Krakouer reported on his attendance at:

29 & 30/9/2016	Councillor Training in Geraldton
13 & 14/10/2016	Councillor Training in Geraldton
21/10/2016	Western Power briefing

SHIRE OF NORTHAMPTON
Minutes of Ordinary Meeting of Council held at the Council Chambers Hampton Road,
Northampton on 21 October 2016

10.14 INFORMATION BULLETIN

Noted

10.15 NEW ITEMS OF BUSINESS

Moved Cr SCOTT, seconded Cr KRAKOUER

That Council:

1. Request staff to prioritise sections of the Murchison River Foreshore for clean up, with consideration for the environmental assessment previously undertaken;
2. Seek assistance from MEEDAC to assist with these clean up works; and
3. Obtain relevant quotations for foreshore rehabilitation and landscaping projects for inclusion in the 2017/2018 Budget and/or to seek further grant funding.

CARRIED 7/0

10.16 NEXT MEETING OF COUNCIL

The next Ordinary Meeting of Council will be held on Friday the 18 November 2016 commencing at 1.00pm at the Council Chambers, Hampton Road, Northampton.

10.17 CLOSURE

There being no further business, the President thanked everyone for their attendance and declared the meeting closed at 4:01 pm.

WORKS & ENGINEERING REPORT CONTENTS

6.1.1	INFORMATION ITEMS MAINTENANCE /CONSTRUCTION WORKS PROGRAM	2
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6.1.1 INFORMATION ITEMS – MAINTENANCE/CONSTRUCTION WORKS PROGRAM

REPORTING OFFICER:	Neil Broadhurst - MWTS
DATE OF REPORT:	10th November 2016
APPENDICES:	1. Nil.

The following works, outside of the routine works, have been undertaken since the last report and are for Council information.

Specific Road Works

- Maintenance grading carried out on Sudlow, Harvey, Fourth, North, Rifle Range, Burges, Ogilvie South, Yambuna, Ajana East, Teakle, Isachar, Isseka East, Yerina Springs, Yallabartharra, Sandy Gully, Bowes River, Olivier and Swamps Roads.
- Gravel Patching/Sheeting/Verge works carried out on Rifle Range, Sudlow, Rob, Ogilvie School, and Ogilvie West Road.

Maintenance Items

- Northampton – Signs and associated infrastructure, various locations.
- Northampton - Verge works including tree pruning/drainage improvements.
- Northampton and Rural – Pothole works
- Northampton – Assistance to RSL – Spoil removal.
- Northampton – Oval Rehabilitation / Verti mow undertaken.
- Kalbarri – Town site pothole works.
- Kalbarri – Foreshore and general road/kerbside chemical spraying.
- Fire break inspections for all areas.

Other Items (Budget)

- Rural – Binu West Road – Construction works completed pending reseal.
- Northampton – Hampton Park – Stairs and paving to western entry commenced.
- Northampton – Pioneer Lodge bulk earthworks and associated works commenced.
- Northampton – Oval fence replacement, 180m south end.
- Kalbarri – Sporting Complex works commenced. Final design and court cross sections established. Commencement of bulk earthworks.
- Kalbarri – Gilgai tavern footpath and car park improvement works commenced.
- Kalbarri – Walker / Hackney Street verge works improvements commenced.
- Kalbarri – Floating Jetty abutments, ramp and pontoon section installed.
- Rural – Chilimony Road – Reconstruction vegetation and bulk earthworks commenced.

- Lucky Bay – Toilets/Dump Point/Caretaker accommodation unit/Caretaker office unit/Shed, associated plumbing and earthworks.
- Wannerenooka borefield works to replace the existing mineshaft water source.

Plant Items

- P273 - Kalbarri rubbish vehicle – Modifications completed and operating in field.
- Vandalism/Break in to plant at Ogilvie Gravel pit.
(P177 – Broken side window, theft of sundry tools. P136 – Broken side window and windscreen, theft of sundry tools.)
- P159 – Case Tractor – 2 x Rear turf tyres.
- P253 – Kalbarri mower – New complete deck and abrasion coating.

Staff/Personnel Items

- Up to 2 x Casual staff for Binu West Road and other works

OFFICER RECOMMENDATION – ITEM 6.1.1
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For Council information.

SHIRE OF NORTHAMPTON

WORKS CREW 12 MONTHLY PROGRAM AND PROGRESS REPORT (2016/2017)

(November 2016)

2016/2017 Budget Works	Status	Comments
<u>Regional Road Group Projects</u>		
Kalbarri Road Shoulder Reconditioning works 36 - 46 slk		Stage 2 of 4
Horrocks Road Shoulder Reconditioning works 9.4 - 13.4 slk		Stage 2 of 3
<u>Roads to Recovery</u>		
Binnu East Road Bitumen Reseal 18.4 to 22.4 slk	COMPLETE	
Chilimony Road Reconstruct 8.85 - 10.10 and 11.7 - 12.85 slk	Commenced	
Horrocks - Mitchell Street Add kerbing and Slurry/Asphalt seal		
Binnu East Road Bitumen Reseal 14.4 to 18.4 and 22.4 to 26.4 slk		
<u>Royalties for Regions Funding</u>		
Binnu West Road Construct and seal - Stage 2 of 2 (Total 9kms min)	COMPLETE	Complete total of 9 kms as part of funding commitment
White Cliffs Road Construct and seal - Stage 1 of 2 (Total 12kms)		
Cont.		

2016/2017 Budget Works	Status	Comments
<u>MUNICIPAL FUND CONSTRUCTION</u> (Carry over 2015/16)		
Harvey Road Pavement Repairs		
Northampton - West Street Upgrade stormwater at lowpoint		
Kalbarri - Sallys tree / VMR car park area Repair pavement and reseal		
Horrocks - Glance Street (HCC) Asphalt access road and car park area	COMPLETE	
<u>Kalbarri</u>		
Gilgai Tavern Car Park Install pedestrian refuge and asphalt seal carpark	Commenced	
Hackney Street Repave shop front area Walker/Hackney Street	Commenced	
Hackney Street Upgrade stormwater at lowpoint		
<u>Northampton</u>		
Kitson Court Reseal LIA access road		
West Street Reseal Stephen Street to Bateman Street		
<u>OTHER WORKS - SHIRE ASSISTED WORKS</u>		
Kalbarri - Sporting complex Tennis, Netball, Basketball Vegetation clearing, Bulk Earthworks, Car park etc	Commenced	
Northampton - Pioneer Lodge Accom extensions Vegetation clearing, Bulk Earthworks, Access Roads etc	Commenced	
Kalbarri - Floating Jetty - North Boat Ramp Install concrete abutments, assist with offloading and install	Commenced	
Cont.		

2016/2017 Budget Works	Status	Comments
<u>MUNICIPAL FOOTPATHS</u>		
Horrocks - Glance Street Dual Use Pathway around southern car park	COMPLETE	
Kalbarri - Grey Street Replace DUP plus improvements to front of Allen Centre		
Northampton - Stephen Street Replace DUP from NWCH to West Street		
<u>MUNICIPAL FOOTPATHS</u>		
Northampton oval Verti drain and verti mow works	COMPLETE	
Horrocks Jetty Maintenance works to pier supports		
<u>OTHER WORKS - Depots</u>		
Northampton - NWCH Yard Replace front fence and gates.		Works awarded
Kalbarri - Depot Yard Upgrade/Repair loading ramp and bulk storage area.		
Northampton - Wannerenooka Bore site New bore and associated infrastructure	Commenced	New bore drilled, Existing pipeline being acid flushed prior to commision of new pump etc
Northampton - Wannerenooka Storage Tanks New Tanks x 2 plus barrier fence replacement	Commenced	Site inspected and subject to Lead contamination review. Lead contamination cleanup to commnece Feb/March 2016
Northampton - Street Bins Replace/Additional steet bins		
Northampton - Event bins Additional bins for event requirements	COMPLETE	
Northampton - Office Install Rail to car park embankment	COMPLETE	
Cont.		

2016/2017 Budget Works	Status	Comments
<u>PLANT ITEMS - Major</u>		
Northampton - Prime Mover Purchase new - trade/sell P136 Mitsubishi Prime Mover	Advertised	To be presented to Council meeting December 2016
Northampton - 6 Wheel Truck Purchase New - trade/sell P177 6 Wheel Tip Truck	Advertised	To be presented to Council meeting December 2016
Northampton - Manager of Works Purchase new - trade/sell P223 Toyota Prado		Vehicle ordered August 30th, Delivery late November 2016
<u>PLANT ITEMS - Minor/Other/Sundry tools</u>		
Northampton - Fertiliser Spreader		
Northampton - Leading Hand Trip meter	COMPLETE	
Northampton - Depot pressure cleaner		
Northampton - Small Chainsaw	COMPLETE	
Northampton - Depot Air Grease Gun		
Northampton - Dia 400mm auger		
Northampton - Hitachi combo tool kit	COMPLETE	
Northampton - Gardeners - Whipper Snipper FS94	COMPLETE	
Northampton - Gardeners - Blower vacuum BR450	COMPLETE	
Northampton - Gardeners - Hedge Clippers HS82T	COMPLETE	
Kalbarri - Hitachi combo tool kit		
Kalbarri - Blower BG86C	COMPLETE	
Kalbarri - Large Chainsaw	COMPLETE	
Kalbarri - Reticulation remote phone applic		
Kalbarri - Drill Press		
Horrocks - Hitachi combo tool kit		
Two Way Radios - Uniden to suit x 4 (2 x Nton, 2 x Kalb)		
<u>OTHER WORKS - SPECIFIC / MAINTENANCE</u>		
Ogilvie East Road - Nolba to Balla Whellarra		
Balla Whellarra Road - 1.1km yellow sand		

HEALTH AND BUILDING REPORT CONTENTS

6.2.1	BUILDING STATISTICS FOR THE MONTH OF OCTOBER 2016	2
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6.2.1 INFORMATION ITEM: BUILDING STATISTICS

DATE OF REPORT:	11th November 2016
RESPONSIBLE OFFICER:	Glenn Bangay – Principal EHO/Building Surveyor

1. BUILDING STATISTICS

Attached for Councils' information are the Building Statistics for October 2016.

OFFICER RECOMMENDATION – ITEM 6.2.1

For Council information.

SHIRE OF NORTHAMPTON
HEALTH AND BUILDING REPORT – 18th November 2016

SHIRE OF NORTHAMPTON - BUILDING APPROVALS - OCTOBER 2016									
Approval Date	App. No.	Owner	Builder	Property Address	Type of Building	Materials	Area m2	Value	Fees
						1. Floor 2. Wall 3. Roof			1. App Fee 2. BCITF 3. BRB 4. Other
7/10/2016	1450	F Ralph C/- Post Office BINNU	Shoreline Outdoor World PO Box 3223 GERALDTON	141 (Lot 601) Hampton Road NORTHAMPTON	Shed	1. Concrete 2. C/Bond 3. C/Bond	90	\$28,597	1. 96.00 2. 0.00 3. 61.65 4. 0.00
7/10/2016	1461	G Hughes PO Box 129 KALBARRI	F Rystenberg PO Box 492 KALBARRI	10 (Lot 679) Gantheaume Cres KALBARRI	Patio	1. Pavers 2. n/a 3. C/Bond	36	\$9,800	1. 96.00 2. 0.00 3. 61.65 4. 0.00
7/10/2016	1460	Pioneer Lodge PO Box 389 NORTHAMPTON	PS Chester PO Box 65 GERALDTON	70 (Lot 7) Robinson Street NORTHAMPTON	Accom/Units	1. Concrete 2. Brick 3. C/Bond	760	\$1,291,110	1. 1162.00 2. 2582.22 3. 1768.82 4. 0.00
13/10/2016	1464	Fabre Pty Ltd 3 Sander Street TARCOOLA	GBSC PO Box 2074 GERALDTON	10 (Lot 473) Porter Street KALBARRI	Adds/Ablutions	1. Concrete 2. Brick 3. C/Bond	n/a	\$150,000	1. 480.00 2. 300.00 3. 205.50
18/10/2016	1466	G Patrick 58 Clement Drive KARRINYUP	M & D Hebiton 99 Anderson St WEBBERTON	Lot 289 Chilimony Road ALMA	Farm Shed	1. Concrete 2. Steel 3. Zinc	300	\$95,000	1. 180.50 2. 190.00 3. 130.15 4. 0.00
18/10/2016	1465	R Ford PMB 73 GERALDTON	WBS Group PO Box 910 NORTHAM	Lot 331 Ford Road BINNU		1. Concrete 2. Steel 3. Trimdeck	480	\$104,500	1. 334.40 2. 209.00 3. 143.17 4. 0.00
20/10/2016	1453	I & H Ralph PO Box 511 KALBARRI	Owner/Builder	6 (Lot 94) Mortimer Street KALBARRI	Front Fence	1. n/a 2. Brick 3. n/a	n/a	\$5,000	1. 96.00 2. 0.00 3. 61.65 4. 0.00

SHIRE OF NORTHAMPTON
HEALTH AND BUILDING REPORT – 18th November 2016

20/10/2016	1459	A Madigan PO Box 492 NORTHAMPTON	Aussie Sheds Group 279 Place Road GERALDTON	3 (Lot 529) Settlers Loop NORTHAMPTON	Shed	1. Concrete 2. C/Bond 3. C/Bond	28	\$11,300	1. 96.00 2. 0.00 3. 61.65 4. 0.00
20/10/2016	1467	K & D Brown PO Box 48 NORTHAMPTON	Super Struct PO Box 3493 GERALDTON	249 (Lot 426) Hampton Road NORTHAMPTON	Patio	1. Concrete 2. H/Plank 3. C/Bond	43	\$18,472	1. 96.00 2. 0.00 3. 61.65 4. 0.00
20/10/2016	1468	M Mahony PO Box 534 NORTHAMPTON	Owner/Builder	22 (Lot 8) Fourth Ave NORTHAMPTON	Shed	1. Concrete 2. C/Bond 3. C/Bond	28	\$10,000	1. 96.00 2. 0.00 3. 61.65 4. 0.00

TOWN PLANNING REPORT

ITEM 6.3.1	STATE ADMINISTRATIVE TRIBUNAL APPEAL	1
ITEM 6.3.2	PROPOSED SOLAR THERMAL POWER STATION, KALBARRI – LOT 10792 GEORGE GREY DRIVE, KALBARRI	15
ITEM 6.3.3	PROPOSED SIGN – LOT 151 (NO. 96) STEPHEN STREET, NORTHAMPTON	45
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ITEM 6.3.1 STATE ADMINISTRATIVE TRIBUNAL APPEAL

LOCATION:	Lots 29, 52, 7890 (No.199) Hatch Road, Bowes
APPLICANT:	Boral Resources
OWNER:	G & H Parker
FILE REFERENCE:	10.8.1.2 – 199 HAT/ A3913
DATE OF REPORT:	10 November 2016
REPORTING OFFICER:	Kathryn Jackson – Acting Principal Planner
RESPONSIBLE OFFICER:	Garry Keeffe – Chief Executive Officer
APPENDICES:	
1	Extract of Appeal Application
2	Notification of Directions Hearing
3	Outcome of Directions Hearing – Adjournment to Mediation

AUTHORITY / DISCRETION:

Quasi-Judicial when Council determines an application within a clearly defined statutory framework, abiding by the principles of natural justice, acting only with discretion afforded it under law, and giving full consideration to Council policies and strategies relevant to the matter at hand. These decisions are reviewable by the State Administrative Tribunal.

SUMMARY:

Council has been notified by the State Administrative Tribunal (SAT) that an appeal has been lodged which relates to a quarry that was proposed to be established upon Lots 29, 52, 7890 (No.199) Hatch Road, Bowes that was refused by Council at its 16 September 2016 meeting. This report provides Council with options for progressing this matter.

BACKGROUND:

On 28 October 2016 the Shire received formal notification that Boral Resources (being represented by TPG WA, a Perth based planning firm) had lodged an appeal with the State Administrative Tribunal (SAT) for the proposed Extractive Industry (granite hard rock quarry) to be established upon Lots 29, 52, 7890 (No.199) Hatch Road, Bowes. Please see **Appendix 1** for an extract of the Appeal Application.

This application was formally considered by Council at its 16 September 2016 meeting at which it was resolved to refuse the application subject to the following motion:

“That Council not adopt the officer recommendation, for the reason that the proposed standard operations of the hard rock quarry does not comply with Clause 4.2.1 of the Shire of Northampton Local Planning Policy – Extractive Industry, in that Council is not satisfied that the proposal guarantees the protection of water resources for the adjoining landowners who are reliant upon the groundwater resources in this area.

CARRIED 5/2”

Please note that the Clause number of this motion was amended during the confirmation of the September Council Minutes at the 21 October 2016 meeting from Clause 5.2 to reflect the correct Clause number of 4.2.1.

A Directions Hearing for the matter was held on Friday 4 November 2016 at 2:30pm. This hearing provided opportunity for the SAT Tribunal Member to commence deliberation of the matter by seeking initial feedback as to how the parties wished for the matter to be progressed. See **Appendix 2**.

Given the timing of the receipt of the appeal, Shire staff in liaison with TPG agreed that the matter could be adjourned to a mediation conference to be held Tuesday 22 November 2016 which would allow for Shire staff to present the matter formally to Council at its 18 November 2016 meeting. Please see **Appendix 3**.

The matter is now formally presented to Council in order to provide direction in relation to how the Council wishes to progress the matter through the SAT process.

For further information in relation to the Extractive Industry proposal please see Agenda Item 6.3.4 of the 16 September 2016 Council meeting.

COMMUNITY & GOVERNMENT CONSULTATION:

The application for the Extractive Industry was advertised for a period of 30 days from 10 May 2016 to 8 June 2016, in accordance with Clause 9.4 of the Local Planning Scheme No. 10 – Northampton.

There is no requirement for consultation as part of the Appeal process, however given the level of community interest in the matter Shire staff have sent a letter of notification in regards to the receipt of the SAT Appeal to all those who made a submission during the advertising period for the proposed Extractive Industry.

FINANCIAL & BUDGET IMPLICATIONS:

Conditional to the resolution of Council on this matter there are likely to be costs that are to be incurred in the Shire's involvement in the appeal process. These costs may include, but are not limited to, legal advice, legal representation and/or preparation of documentation, expert professional advice and or preparation of documentation such as town planning or hydrology, travel and accommodation to attend mediation hearing(s), Shire staff time and resources to coordinate and report on the matter and other such considerations.

Should Council consider that the engagement of suitable professionals be required further funds would need to be allocated to enable this action. General Ledger Account 4302– Legal Expenses has approximately \$4,000 unspent as of the end of October that potentially could be put towards this matter. However it should be noted that any further funds would be considered unbudgeted expenditure and would need to be reallocated from the budget by an absolute majority of Council.

STATUTORY IMPLICATIONS:

The State Administrative Tribunal Act 2004 provides the legislative controls in relation to the procedure and power of the Tribunal in determining Appeal applications.

STRATEGIC IMPLICATIONS:

Nil.

COMMENT

The SAT Appeal is now required to be formally considered by Council to determine how the matter is to be progressed. Options and matters to take into consideration include (but are not necessarily limited to):

Mediation

Mediation would be attended by representatives of both the Shire and Boral Resources. In the case of the Shire, this can be both officers and councillor(s). Mediation is without prejudice and confidential. The parties can be legally represented.

At present the only area of mediation is the issue of groundwater impacts per the Councils resolution of refusal. Council needs to consider that if Boral Resources can provide evidence that there are no water impacts, or can demonstrate that they can amend, manage or alter their proposal to ensure no water impacts would Council then be willing to reconsider their position on the application. There is opportunity for other concerns to be raised at mediation but these would need to be substantiated and have planning merit.

It is suggested that Shire staff with the assistance of experts, only as required,(i.e. lawyer, hydrologist, planning consultant) would be able to mediate the matter on behalf of Council. Depending on the negotiations with SAT and the number of staff/councillors representing on the matter it is estimated that an amount of \$10,000-15,000 would be required.

If it becomes apparent during mediation that a resolution cannot be reached, then the matter can still be referred to a hearing by the SAT member.

Hearing

Should Council consider that the matter cannot be mediated the matter can be requested to go to trial. At this stage it is considered that SAT would be reluctant to send this matter to a hearing without prior mediation. It is not considered that a hearing is within the Shire's interests at this stage, as the Shire's issues with the extractive industry are not yet well defined and it being unclear whether there is any expert evidence which the Shire could call at a hearing to support its concerns.

Should the matter be referred to a hearing it is suggested that the Council engage a lawyer to represent the Shire on this matter and also have provision for the engagement of planning and hydrology experts to bolster Council's position on the matter. As the officer's recommendation was for approval of the application it is not considered appropriate that the Shire Officer represent Council and it is further noted that this officer can also be called as a witness for Boral Resources to support their case as their professional opinion was to support the application. To cover the costs of a hearing it would be expected that a minimum of \$20,000-\$30,000 would be required to engage expert witnesses (potentially hydrology and town planning) for attendance at tribunal, the provision of professional documentation to bolster/prove up the Shires position, the Shire to be represented by a lawyer and other associated costs with staff time and administration of the matter.

In addition to the costs of defending Councils decision for refusal of the application it is noted for Councils further information that should SAT consider that the conduct of the Shire is somehow inadequate (list of factors taken into consideration), SAT can order the Shire to pay the costs that have been incurred by Boral in the Appeal process.

Section 31 Reconsideration

A Section 31 invitation can be made at any time by the Tribunal or can be requested by the local government. Section 31 invitations are routinely made following mediation, as new information is often provided by an applicant at mediation or a proposed development is modified, such that council may change its position if it is clearly established that the areas of concern can be appropriately removed or managed.

Should a Section 31 invitation be made by the Tribunal, Shire offices would return the matter to Council for reconsideration. At this juncture the Council is able to either: reaffirm its original motion of Council, amend its original motion and add additional reasons of refusal, make a brand new motion, or choose to approve the application subject to conditions.

CONCLUSION:

In deliberating how Council would like this matter to progress it is suggested that the following matters should be considered:

- If it is able to be demonstrated that water impacts are not applicable or that any potential impacts can either be removed or appropriate strategies put in place to manage impacts would Council reconsider the matter?
- Are there any other matters that the Council have concern with in relation to the proposal (would need to be substantiated and have planning merit)?
- What suitably qualified professionals would Council like to engage to assist with SAT proceedings?
- What financial sum would Council like to set aside for the undertaking of this matter? This is hard to give an accurate figure on as there are many unknowns, however if Council wants to pursue the matter an amount will be required in order to provide grounding for the refusal of the application.
- Would Council like to nominate any Councillor representatives to participate in the mediation proceedings?

VOTING REQUIREMENT:

In relation to any expenses incurred by this process that exceed the \$4,000 available in GL 4302 this would require an Absolute Majority as there are no finances set aside in the 2016/2017 budget for this purpose.

In relation to the decision by Council on the process of the Appeal this only requires a Simple Majority.

OFFICER RECOMMENDATION – ITEM 6.3.1

For Council consideration.

APPENDIX 1. EXTRACT OF APPEAL APPLICATION

State Administrative Tribunal

application

This is an application under the Planning and Development Act 2005, s 252(1): Review of a decision under a planning scheme.

An Act to provide for a system of land use planning and development in the State and for related purposes.

APPLICANT

What is your title?

What is your name?

What is your postal address?

Boral Resources (WA) ltd

PO Box 268 Belmont WA 6984

What are your day-time contact details?

Phone 9333 3624

Fax 9333 3402

Email jacob.dawkins@tpgwa.com.au

The Tribunal's practice is to send correspondence, via the email address provided.

If you do not wish to receive SAT correspondence via email please tick this box.

Identification of Aborigines and Torres Strait Islanders (Optional).

Do you identify as being of Aboriginal or Torres Strait Islander descent?

No

Do you have a lawyer or other representative?

If Yes, please complete the following:

What is their name?	TPG Town Planning, Urban Design and Heritage
What is their postal address?	PO Box 7375 Cloisters Square WA 6850
What are their day-time contact details?	
Phone	9289 8300
Fax	
Email	jacob.dawkins@tpgwa.com.au
The Tribunal's practice is to send correspondence, via the email address provided.	

Is there another applicant?

If Yes, please complete the following:

What is their title?	
What is their name?	
What is their postal address?	
What are their day-time contact details?	
Phone	
Fax	
Email	
The Tribunal's practice is to send correspondence, via the email address provided.	

Please attach details of any further additional applicants with your application.

RESPONDENT

What is their title?

What is their name?

Shire of Northampton

What is their postal address?

PO Box 61, Northampton WA 6535

What are their day-time contact details?

Phone 9934 1202

Fax

Email

The Tribunal's practice is to send correspondence, via the email address provided.

Do they have a lawyer or other representative?

No

If Yes, please complete the following:

What is their name?

What is their postal address?

What are their day-time contact details?

Phone

Fax

Email

The Tribunal's practice is to send correspondence, via the email address provided.

Is there another respondent?

No

If Yes, please complete the following:

What is their title?

What is their name?

What is their postal address?

What are their day-time contact details?

Phone

Fax

Email

The Tribunal's practice is to send correspondence, via the email address provided.

Please attach details of any further additional respondents with your application.

VARIATION OR REVOCATION OF A DETERMINATION

Who made the determination?

Shire of Northampton

On what date was it made?

16 September 2016

Please attach a copy of the determination.

ADDRESS OF LAND

What is the address of the land?

Lot 29, 52 and 7890 Hatch Road, Bowes

CLASS 2 INFORMATION

This section is to be completed for a Class 2 application.

What is the value of the development?

\$500,000

What is the proposed number of lots?

n/a

In class 2 applications the applicant may elect, if the other party agrees at the time of filing the application, to have the application determined by one Tribunal member.

Do you, with the agreement of the other party, elect that the application be determined by one member of the Tribunal?

Yes

DECISION SOUGHT

What decision do you want the SAT to make?

Approval of the proposed development

GROUNDS

On what grounds are you seeking review?

The amended minutes of the September Council Meeting contained within the October Council Meeting minutes have replaced the previously incorrect Clause 5.2 with Clause 4.2.1 of Local Planning Policy - Extractive Industry. This Clause does not specify water contamination as an environmental impact to be considered by the Council in determining an application. It is therefore believed the Council has inappropriately interpreted the Local Planning Policy in determining the application.

SUPPLEMENTARY INFORMATION

APPENDIX 2. NOTIFICATION OF DIRECTIONS HEARING



WESTERN AUSTRALIA



Matter No: DR 311 of 2016
Contact Officer: Lily
Your Ref:

Shire of Northampton
PO Box 61
NORTHAMPTON WA 6535

Dear Sir/Madam

NOTICE OF DIRECTIONS HEARING

**DR 311/2016: Boral Resources (WA) Ltd v Shire of Northampton
Planning and Development Act 2005 - Section 252(1)**

Address of the Land: Lot 29, 52 and 7890 (No. 199) Hatch Road, Bowes

This matter has been listed for directions as follows:

Place: Hearing Room 2.06 State Administrative Tribunal Building
Date: 4 November 2016
Time: 2:30PM

The Tribunal's first step is to hold a directions hearing, to establish how the matter will be dealt with by the Tribunal, whether it involves any particular questions of law, whether it is capable of resolution through mediation and how it will be listed for hearing.

If you require any of the following services or have questions relating to these services please contact the Tribunal on (08) 9219 3111 (local call cost on 1300 306 017):

- Teleconferencing (by arrangement)
- Video conferencing
- An interpreter
- Special accessibility requirements (eg: wheelchair access, hearing loop)

If you have any enquiries, please contact the Tribunal on (08) 9219 3111.

Yours sincerely



for EXECUTIVE OFFICER

24 October 2016

APPENDIX 3. OUTCOME OF DIRECTIONS HEARING – ADJOURNMENT TO MEDIATION



Jurisdiction:	<i>Planning and Development Act 2005</i>
Application:	Review of a decision under a local planning scheme or region planning scheme
Parties:	Boral Resources (WA) Ltd (Applicant) Shire of Northampton (Respondent)
Matter Number:	DR 311/2016
Application Lodged:	14 October 2016
Hearing Type:	Directions
Date of Decision:	4 November 2016
Decision of:	Senior Member Maurice Spillane
Outcome:	Adjourned to Mediation Conference

1. The matter is referred to mediation to commence at 10 am on 22 November 2016 for a duration of three hours at 565 Hay Street, Perth, Western Australia.



**ITEM 6.3.2 PROPOSED SOLAR THERMAL POWER STATION, KALBARRI – LOT 10792
GEORGE GREY DRIVE, KALBARRI**

LOCATION:	Lot 10792 George Grey Drive, Kalbarri
APPLICANT:	Whelans Town Planning
OWNER:	Allsage Pty Ltd
FILE REFERENCE:	10.6.1.3 (A4151/L10792GEO)
DATE OF REPORT:	10 November 2016
REPORTING OFFICER:	Kathryn Jackson – Acting Principal Planner
RESPONSIBLE OFFICER:	Garry Keeffe – Chief Executive Officer
APPENDICES:	
1.	Extract of Appendices 2-9 (all following appendices have been provided as separate attachments at the rear of the Town Planning report)
2.	Application Covering Letter
3.	Response to Shire request for additional information
4.	Solar Thermal Design Statement
5.	Development Plans
6.	Level 1 Flora, Vegetation and Fauna Survey
7.	Avian Impact Advice
8.	Bushfire Management Plan
9.	Visual Impact Assessment
10.	Received Submissions
11.	Schedule of Submissions

AUTHORITY / DISCRETION:

Quasi-Judicial when Council determines an application within a clearly defined statutory framework, abiding by the principles of natural justice, acting only with discretion afforded it under law, and giving full consideration to Council policies and strategies relevant to the matter at hand. These decisions are reviewable by the State Administrative Tribunal.

SUMMARY:

Council is in receipt of an application for the construction of a Solar Thermal Power Station upon Lot 10792 George Grey Drive, Kalbarri.

The subject land is zoned 'Rural' under Shire of Northampton Town Planning Scheme No. 9 – Kalbarri (the 'Scheme'). This report recommends conditional approval of the application for Stage 1 of the development only.

BACKGROUND:

Lot 10792 George Grey Drive, Kalbarri (the 'site') is a 1,007ha property that is located to the south of the Kalbarri townsite and to the east of Eco Flora and Capital Hill Residential Developments.

An Application for the construction of Stage 1 of the Solar Thermal Power Station (the 'Power Station') was received by the Shire on 2 May 2016 with advertising taking place from 17 May 2016 until 15 June 2016. Following the advertising period the applicant was sent a letter requesting the submission of additional information to assist in the assessment and determination of the application.

Between the 2-8 of November 2016 the applicant submitted additional information in response to those items raised. It is considered that there is now sufficient information to determine the application and that the remaining items could be required and submitted by the applicant as conditions of approval.

The Power Station is proposed to be constructed in two stages which would give a total development area of 26.45ha.

This application is for **Stage 1 only**.

The application for Stage 1 consists of the following infrastructure:

- 12 x Solastore Graphite Storage Towers;
- 1,296 x Heliostat mirrors;
- 24 x Radiators (cooling towers);
- 1 x water storage tank;
- 1 x diesel storage tank;
- 1 x transformer; &
- 28 x 20m outbuilding to contain 2 solar thermal generators, a black start generator and other plant and facilities.

It is understood that the applicant intends to form an agreement with Western Power for the generation of power back into the power grid. It is proposed that an above ground 33kV feeder would connect the Power Station to the existing 33kv western power line that runs through the property to the west of the proposed Power Station site.

A full copy of the received application has been provided as **Appendices 2-9** and provided separately to Councillors given the size of the documentation.

An extract of **Appendices 2-9** has been included as **Appendix 1** to this report to provide an overview of the application.

COMMUNITY & GOVERNMENT CONSULTATION:

Section 6.4.2 of the Scheme requires that where Council decides to give notice of an application it shall cause one of more of the following to be carried out:

- “(a) notice of the proposed development to be served on the owners and occupiers who are likely to be affected by the granting of Planning Consent stating that submissions may be made to Council by a specified date being not less than fourteen days of the service of such notice;*
- (b) notice of the proposed development to be published in a newspaper circulating in the Scheme Area stating that submissions may be made to Council by a specified date being not less than fourteen days from the publication thereof;*
- (c) sign or signs displaying notice of the proposed development to be erected in a conspicuous position on the land for the specified period from the date of publication of the notice referred to in subclause (b).*

In addition, the Shire’s ‘Consultation for Planning Proposals’ Local Planning Policy also requires that for applications that are discretionary after advertising, or may affect or impact surrounding properties, that the local government:

- “i. publish a notice of the development proposal in a newspaper circulating in the area;*
- ii. arrange for a sign or signs to be placed in a prominent position(s) on the site;*
- iii. consult the owners/occupiers of all land within a radius of 100m of the boundary of the application site for land within an urban area or within an existing settlement, or 500m radius for land within a rural area, except where it is determined by the local government that the proposal will not have any significant impact on certain portions of the area;*

- iv. *consult with the owners/occupiers of land beyond the foregoing areas where, in the opinion of the local government, there will be an impact along key transportation facilities, tourist routes or view-sheds; and/or*
- v. *consult as necessary with other affected government agencies or statutory authorities as the case requires, drawing attention to the form of the development proposal and inviting comment within a period not being less than 21 days or, where appropriate, such longer period as may be necessary to comply with relevant legislation."*

The advertising period for the application ran from 17 May 2016 until 15 June 2016.

At the conclusion of the advertising period 8 submissions had been received in total in relation to the development. 7 of these submissions were received from government agencies offering comment upon the proposal and 1 submission was received from a private landowner raising concerns and questions in relation to the proposal.

Copies of the received submissions has been provided to Councillors as **Appendix10**.

A Schedule of Submissions has been prepared and provided to Councillors as **Appendix11**. The Schedule identifies the respondents, summarises the matters raised, provides individual comment upon the matters raised and a recommendation in regard to each.

The applicant was provided with a copy of the submissions received in order to have the opportunity to respond to the issues raised. The applicant did not choose to provide individual response to the received submissions.

FINANCIAL & BUDGET IMPLICATIONS:

Nil, however should Council refuse this application and the applicant proceed to exercise their right of appeal, costs are likely to be imposed on the Shire through its involvement in the appeal process.

As this is for Stage 1 only the planning application fee was also based on the suggested construction cost of this stage. On application for Stage 2 the applicant

will be required to pay a further planning application fee to Council for the determination of the application. Given the construction cost of Stage 1 it is also likely that the larger Stage 2 component would be required to be placed before the Midwest-Wheatbelt Joint Development Assessment Panel for determination.

STATUTORY IMPLICATIONS:

Shire of Northampton Local Planning Scheme No.9 - Kalbarri

The subject property is zoned 'Rural' under the Scheme. The development meets the required setbacks and site coverage of the Scheme.

Section 3.1.2.6 of the Scheme states the following purpose and intent for the 'Rural' zone:

- “(a) for land north of the Murchison River, to provide for retention and enhancement of the rural landscape in a manner consistent with sound land use management principles; and*
- (b) for land south of the Murchison River, to maintain the rural character and to prevent the use of the land for any use which may adversely affect potential future expansion of the urban area.”*

The application is considered to meet the purpose and intent of the zone as the location of the facility is approximately 1.6km from the western boundary of the property which is the closest that urban development could be developed at this point in time on adjoining land which is considered to be of sufficient distance to not be negatively impacted upon by the development.

Draft Local Planning Scheme No.11 – Kalbarri

Under the draft Local Planning Scheme No.11 this application would be considered under the land use of 'Renewable Energy Facility'. This is an 'A' land use under the Scheme meaning that the use is not permitted unless the local government exercises its discretion by granting development approval after giving special notice in accordance with clause 64 of the deemed provisions.

POLICY IMPLICATIONS:

State Planning Policy 3.7 'Planning in Bushfire Prone Areas'

As the property is located within a designated Bushfire Prone Area the applicant was required to prepare a Bushfire Management Plan that meets with the requirements of the Planning in Bushfire Prone Areas State Planning Policy.

A Bushfire Management Plan has been received and has been included as part of **Appendix 8** to this report (provided separately).

As the plans within this document do not reflect the updated site plan that has been received from the applicant it is suggested that as a condition of approval that a Bushfire Management Plan be required to be submitted and approved to the requirements of the Department of Fire & Emergency Services and to the approval of the local government.

STRATEGIC IMPLICATIONS:

Kalbarri Townsite Strategy

The Kalbarri Townsite Strategy states the following in relation to the subject lot:

"The eastern lot to be protected for long term residential requirements following substantial subdivision of Precinct SR1.

Subdivision and development to be subject to Use and Development provisions of BF1.

Protection and restoration of existing creek lines in Recreation and Conservation Reserves.

Minimum 10m vegetated buffer to be retained and planted where necessary in future subdivision to all surrounding major road boundaries including major internal distributor."

Given the size of the subject lot and the location of the Power Station at the south eastern corner it is considered that there is still adequate area available for residential expansion to be undertaken upon the lot before the proximity of the Power Station would prevent further development east upon the lot. With the rate of residential expansion and the generous setback between the proposal and existing residential lots it is not considered that this proposal detrimentally impacts upon future strategic planning of the lot or surrounding area.

COMMENT

It is considered that the main areas of consideration for the proposal are:

Visual Impact

The proposed location of the development upon the lot allows for generous setbacks to site boundaries with a minimum distance of 1.6km to the western boundary and 2.2km to the nearest dwelling. While it is noted that the scale and height of the storage towers will contrast with the surrounding low shrubland vegetation and rocky outcrops it is considered that the separation distances to surrounding land uses is a key mitigation measure to minimise visual prominence of the proposed facility.

As well as being partially buffered by generous setbacks the existing contours of the land will also ensure that the development is partly screened from some vantage points along George Grey Drive and the existing residential areas. The applicant has provided Visual Perspectives which have been included within **Appendix 9** to this report which demonstrates the potential view of the proposal from three different points in the landscape.

Please note that the visual assessment provided by the applicant is for *Stage 1 only*.

Although offering a contrast to the natural landscape that dominates the skyline it is suggested that the proposed facility may also offer a uniqueness in terms of local and regional landscape character and a point of interest for visitors to the region.

Given that renewable energy applications can be of considerable public interest and a tourist attraction it is recommended that interpretation signage for the proposed development also be conditioned as part of this development approval to be installed in a location to the approval of the local government.

Noise Impact

The extent of site works and the general construction activities may have the potential to generate levels of noise or vibration that could likely impact upon the amenity of the locality. However these impacts are able to be managed and

mitigated through the implementation of appropriate measures for the various phases of site and construction works.

The ongoing operational noise impacts associated with the facility are expected to be minimal. In support of the proposal the applicant has provided the following from AECOM:

“The primary noise source at the facility is expected to be the steam powered generator and associated plant room ventilation fans. The generator unit is proposed to be installed in an acoustically treated building in order to reduce noise emissions to the outside environment. It is generally anticipated that near field noise limits within operational areas of the power station will be less than 85 dBA, and that far field noise impacts at the facility boundary are expected to be minimal. The solar field external to the plant is expected to provide low noise emissions, with the primary noise sources being the feedwater pumps used to circulate water for the steam generating system and cooling fans associated with the condenser unit. It is expected the noise levels will be similar to those typical of light industrial applications.”

It is noted that the proponent must comply with the requirements of the Environmental Protection Act 1986 and the Environmental Protection (Noise) Regulations 1997 in regard to noise for both the construction and operational phases of the proposed facility.

It is deemed that impact to the local community will be negligible as both noise and visual impact are considered to be small. However, it is recommended that the requirement for a Noise Management plan be conditioned as part of the development approval.

Environmental Impact

The proponent provided a detailed environmental impact assessment in the form of a Level 1 Flora, Vegetation and Fauna Survey which has been provided as **Appendix 6**. The scope of work required that the flora and vegetation survey was undertaken in accordance with EPA Guidance Statement 51: Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (EPA 2004). The Level 1 fauna survey was undertaken in accordance with Guidance Statement 56: Terrestrial Fauna Surveys for Environmental Impact Assessment in

Western Australia (EPA 2004b). Targeted surveys were also undertaken in potential habitat for Declared Rare Flora, priority listed flora, Threatened Ecological Communities, Threatened Fauna and priority listed flora.

The environmental impact assessment has identified and addressed the environmental issues likely to be associated with the proposed development. Having regard to the information detailed within the assessment and the significant environmental advantages of the project, it is considered that the overall environmental impact will be acceptable. It will be a suggested condition of approval that the applicant adheres to an Environmental Impact Management Plan. The supplied Level 1 Survey is considered appropriate in this instance.

In relation to the clearing of the land for the Power Station it has been proposed that the entire 26.45ha development area be cleared as part of Stage 1. This is not supported by Shire staff as there is no guarantee of the development of Stage 2 nor that this would be developed in close succession to the initial stage of the Power Station. It is therefore recommended that as a condition of approval that the applicant be advised that the land is only permitted to be cleared for the area concerning Stage 1 of the development inclusive of an appropriate fire separation distance / firebreak. The land cleared during Stage 1 will also be required to be stabilised to the satisfaction of the local government.

CONCLUSION:

The proposed development is considered to be located in an area that although it can be seen from portions of the established residential areas and George Grey Drive that assessment of the proposal on its individual merits and supporting documentation should be considered by Council.

Through the imposition of appropriate planning conditions it is suggested that the site and land use can be achieved in a way that ensures that any potential impacts are managed and reduced with a good level of accountability on the proponent to implement the proposed use in accordance with the relevant legislation and management recommendations.

It is further considered that the application is a worthy environmental initiative and represents an important addition to the expanse of renewable energy facilities operating in the Mid-West region.

VOTING REQUIREMENT:

Absolute Majority Required: No

OFFICER RECOMMENDATION – ITEM 6.3.2

APPROVAL

That Council grant planning approval for Stage 1 only of the proposed Solar Thermal Power Station upon Lot 10792 George Grey Drive, Kalbarri subject to the following conditions:

- 1. Development shall be in accordance with the attached approved plan(s) dated (insert date) and subject to any modifications required as a consequence of any condition(s) of this approval. The endorsed plans shall not be modified or altered without the prior written approval of the local government.**
- 2. This approval is valid for a period of two (2) years from the date of approval and will be deemed to have lapsed if the development has not substantially commenced before the expiration of this period.**
- 3. Prior to commencement of any site works, the landowner/proponent shall lodge and secure the local government approval for a Construction Management Plan that sets out in detail the management commitments applicable to construction traffic management, signage, noise management, stormwater and dust management, construction operating hours and environmental management in relation to the approved development during the construction phase, with all costs met by the applicant. The proponent is responsible to ensure, that all installations, activities and processes are carried out at all times and in all respects in accordance with the approved Construction Management Plan.**
- 4. Prior to commencement of clearing works, the applicant is to prepare, submit and adhere to a Water and Soil Management Plan to the requirements of Department of Water and Department of Environment Regulation and the approval of the Local Government, with all costs met by the applicant.**

5. **The applicant is required to provide to the Local Government evidence of having obtained any relevant approvals/licences from the Department of Water in relation to water abstraction.**
6. **The applicant is to prepare, submit and adhere to an Environmental Management Plan to the requirements of the Department of Environment Regulation and the Department of Parks & Wildlife and the approval of the Local Government, with all costs met by the applicant.**
7. **The applicant is to prepare, submit and adhere to a Bushfire Management Plan to the requirements of the Department of Fire & Emergency Services and the approval of the Local Government, with all costs met by the applicant.**
8. **The applicant is to prepare, submit and adhere to a Noise Management Plan to the requirements of the Environmental Protection (Noise) Regulations 1997 to the approval of the Local Government, with all costs met by the applicant.**
9. **The applicant is to ensure a maximum speed limit of 20km/hour within the development to ensure dust suppression and minimise risk of collision with fauna.**
10. **Fuel storage shall be contained to the requirements of the Department of Water and Department of Fire and Emergency Services, and the approval of the Local Government, the fuel shall be for power generation of the development only and not for the general refuelling of vehicles.**
11. **Any lighting device is to be positioned and shielded as not to cause any direct, reflected or incidental light to encroach beyond the property boundaries or cause any glare nuisance to any nearby residents or passing motorists.**
12. **No signs or hoardings are to be erected on the lot without the prior written approval of the local government.**
13. **Clearing is only permitted to be undertaken for the portion of the development area that concerns Stage 1 facilities and infrastructure. Any soils disturbed or deposited on site shall be stabilised to the approval of the Local Government.**

14. **The removal/clearing of existing remnant vegetation on the property outside of the indicated development area is not permitted, except for the establishment of the internal access roads and implementation of Bushfire Management Plan recommendations, unless otherwise approved in writing by the local government.**
15. **The applicant is to provide interpretation signage for the proposed development to be installed in a location to the approval of the local government.**

Notes:

- a) **Where an approval has so lapsed, no development/land use shall be carried out without the further approval of the local government having first been sought and obtained.**
- b) **Any additions to or change of use of any part of the building or land (not the subject of this consent / approval) requires further application and planning approval for that use / addition. The applicant is reminded of the provisions of Regulation 17 of the Planning and Development (Development Assessment Panels) Regulations 2011.**
- c) **The applicant is advised that this planning approval does not negate the requirement for any additional approvals which may be required under separate legislation. It is the applicant's responsibility to obtain any additional approvals required before the development/use lawfully commences.**
- d) **The construction management plan shall provide a dilapidation survey prior to and at the completion of the development and provide management solutions for any damage caused to the road network by transport vehicles accessing the site.**
- e) **The Water and Soil Management plan is to address items including surface, ground, and storm water, drainage, water usage, groundwater drawdown impacts, waterways/foreshore reserve management and related management actions to these items and as otherwise directed by the Department of Water. The applicant is suggested to liaise with the Department of Water and Department of Environment Regulation to**

ensure the Management Plan meets their requirements prior to submission to the local government for approval.

- f) Should the applicant be aggrieved by the decision of the Council (in part or whole) a right of appeal exists to the State Administrative Tribunal within twenty eight (28) days from the date of the decision.**

APPENDIX 1. EXTRACT OF APPENDICES 2-9



Our Ref: 20582-01
22 April 2016

Shire of Northampton
PO Box 61
NORTHAMPTON WA 6535

Dear Sir/Madam,

APPLICATION FOR PLANNING APPROVAL – PROPOSED SOLAR THERMAL POWER STATION
LOT 10792 GEORGE GREY ROAD, KALBARRI

Whelans Town Planning act on behalf of Allsage Pty Ltd, the owner of the above mentioned property. Please find enclosed an application for approval for development of a proposed solar farm. Accordingly please find enclosed:

- A signed Application Form;
- A cheque for the application fee;
- Application Report;
- A Flora, Vegetation and Fauna Survey;
- A Bushfire Management Plan;
- 3 copies of the plans, and
- A copy of the Certificate of Title.

If you have any enquiries regarding this development application, please contact me on 6241 3305. We look forward to your favourable response.

Yours faithfully,



Melinda Marshall
Town Planner
Whelans Town Planning

HEAD OFFICE:
Suite 4, First Floor, 40 Hasler Road, Osborne Park WA 6017
PO Box 99, INCLINAT HAWTHORN WA 6015
T: 08 6241 3333 F: 08 6241 3300
E: whelans@whelans.com.au W: www.whelans.com.au
WHELANS AUSTRALIA PTY LTD ACN 674 363 741

SURVEYING AERIAL SURVEYING TOWN PLANNING



1.0 INTRODUCTION

This report and attached development plans have been prepared to seek planning approval for stage 1 of a solar thermal power station at Lot 10792 George Grey Road, Kalbarri. A completed Planning Application Form is located in Appendix 1.

This report discusses the site, its location particulars, the proposed development and town planning considerations.

2.0 SITE DESCRIPTION

The subject site is 1,007.3ha in area and is located within the locality of Kalbarri with frontage to George Grey Road. The land was used as a farm however is no longer used for this purpose and is currently vacant.

The site is bordered by rural zoned land to the north and south west, the Kalbarri National Park to the south and east, land reserved for water purposes to the north west and George Grey Road to the west. See Local Context Plan below.



Figure 1: Local Context Plan

3.0 LAND TENURE & OWNERSHIP

The land specific to this development application is owned by Allsage Pty Ltd. The land is legally described as follows:

Lot No.	Address	Plan no.	Certificate of Title No.
10792	No Street Address Information	DP210152	2223/449

Refer to Appendix 2 - Certificates of Title.



4.0 PROPOSED DEVELOPMENT

This proposal seeks planning approval for Stage 1 of a solar thermal power station (the Station). The Station will be located in the south east corner of Lot 10792 on a 26.45ha parcel of land, however Stage 1 will only require approximately 4ha of this area. The location was selected as it is remote from civilisation but in close proximity to the 33KV Geraldton to Kalbarri transmission line to which it will connect.

There is an identified need for an additional power source for Kalbarri. The town is currently subject to an unacceptable level of service with numerous outages and brown-outs when the line exceeds its maximum capacity and it is understood that Western Power can't currently justify the construction of a new power line to supply Kalbarri.

An application to connect to the South West Interconnected System (SWIS) has been submitted to Western Power who has advised that they expect to make an access offer in relation to the Connection Application in December 2016. See correspondence attached.

Stage 1 will be 1 Mega Watt (MW) in size, which will generate 15,000 kilowatt hours (kWh) per day. The power station will operate 24 hours a day, seven days a week however during off peak times at night can be throttled back to produce 200 kWh.

Stage 1 will consist of the following infrastructure:

- An array of 12 x Solastore Graphite Storage Towers;
- 1,296 heliostat mirrors;
- 22 x cooling towers
- 2 x water tanks;
- 1 x transformer, and;
- A 28m x 20m building that will contain 2 x solar thermal generators, a black start generator and other plant and facilities required for the operation of the station.

It is proposed to access the station via the existing crossover to George Grey Road and along existing tracks to minimise the amount of vegetation clearing required. Please refer to the attached development plans. There will be approximately 4 light vehicles that will access the station on a daily basis as part of normal operation. During the construction phase, which is estimated to be 3 months, the station site will be accessed on average by 1 heavy vehicle per day.

5.0 TOWN PLANNING FRAMEWORK

5.1 Shire of Northampton Community Strategic Plan

The proposed development is considered to be in accordance with the Shire of Northampton Community Strategic Plan as it fits in with the 'Environmental Responsibility' value and some of the strategies and actions of the 'Infrastructure' operational area such as:

- *Promotion of alternative renew-able energy sources*
- *Adequate power and renew-able energy in towns centres*
 - 3.4.1 *Advocate on behalf of the community with regard to power requirements*
 - 3.4.2 *Council to keep abreast of renewable energy technology and promote solar, wind and wave power wherever possible.*



5.2 Kalbarri Townsite Strategy 2011

The Kalbarri Townsite Strategy is the current land use strategy that guides the future development of the subject site and recommends that its use as 'long term residential'. Specifically it recommends the following:

- *The balance site area east of the Kalbarri Access Road in Port Kalbarri Structure Plan to be protected for long term residential requirements following substantial subdivision of Precinct SR1.*
- *Subdivision and development to be subject to Use and Development provisions of PK1.*
- *Protection and rehabilitation of existing creek lines in Recreation and Conservation Reserves.*
- *Minimum 10m vegetated buffer to be retained and planted where necessary in future subdivision to all surrounding major road boundaries including major internal distributor.*

5.3 Shire of Northampton Town Planning Scheme No.9

The subject site is zoned 'Rural' under the Shire of Northampton Town Planning Scheme No.9 (TPS9) and is also subject to Special Control Area 1 (SCA1), which requires development to be in accordance with an approved structure plan. The TPS9 provisions relating to SCA1 state that the development area is already addressed with the Development Strategy Plan for Port Kalbarri. The current development strategy guiding development of the land is the Kalbarri Townsite Strategy 2011, which recommends that the land be used for residential purposes in the long term. There is also a small portion in the north west corner of the site that is affected by a major road reservation that does not accord with a physical road.

A solar thermal power station is considered a 'use not listed' as it is not specifically mentioned in the Zoning Table and cannot reasonably be determined as falling within the type, class or genus of activity of any of the use categories. On this basis Council can grant approval for a 'use not listed' if the proposed use is consistent with the objectives and purpose of the particular zone. It is considered that a solar thermal power station is consistent with the objectives and purposes of the rural zone and is therefore capable of approval.

5.4 Environmental Protection Act 1986

As the clearing of native vegetation is required approval under the *Environmental Protection Act 1986* is required. An Application for a Clearing Permit has been submitted and is currently being considered by the Department of Environment Regulation who have advised that they consider a planning approval from the Shire of Northampton to a relevant matter to the application. See attached correspondence at Appendix 5. To support the Application a Flora and Fauna Study was undertaken of the station site. Please see attached as Appendix 6. The Study identified a small area of sandstone that should remain undisturbed and as a consequence the station site was relocated 50m to the west to avoid this area. Other measures that will be employed to minimise the impact on the flora and fauna of the site include fencing of the facility to exclude wildlife and the establishment of vegetation buffers to provide a visual separation.

Concerns have been raised by the Department of Parks and Wildlife with regards to the impact of the concentrated rays of sunlight produced by the station on birds. As outlined in the document located at Appendix 6 the Station is proposed to use a small multiple tower system that does not negatively impact on birds.



5.5 State Planning Policy 3.7: Planning in Bushfire Prone Areas

In accordance with State Planning Policy 3.7, as the proposed power station is located in an identified Bushfire Prone Area, a Bushfire Management Plan has been prepared. See attached as Appendix 7. This report provides details of the fire management strategies proposed to be implemented across the site to ensure adequate protection of life, property and biodiversity assets.

6.0 DEVELOPMENT STANDARDS

The development standards for the lot are governed by the TPS9, in particular Clauses 5.1. This clause sets out the site and development requirements for the 'Rural' zone. This proposal's compliance with the relevant standards of the Scheme is set out in the following table:

Standard	Required	Provided	Comment
Setbacks	20m from front boundary	3,750m	Complies
	20m from side boundary	200.5m	
	30m from rear boundary	304.8m	

7.0 CONCLUSION

The proposed use and development complies with the scheme requirements and will provide a benefit to the town of Kalbarri. On this basis we respectfully request Council grant approval for the development.

Whelans Town Planning



Our Ref: 20582-01
7 November 2016

Shire of Northampton
PO Box 61
NORTHAMPTON WA 6535

Dear Sir/Madam,

**APPLICATION FOR PLANNING APPROVAL – PROPOSED SOLAR THERMAL POWER STATION
LOT 10792 GEORGE GREY ROAD, KALBARRI – ADDITIONAL INFORMATION**

I refer to your email correspondence of 23 June 2016 requesting additional information in support of the application for planning approval for the abovementioned land. Accordingly, we supply the following information:

- **Amended site, layout plans and elevations that includes the requested additional information.**
Please note that there are no earthworks proposed and therefore the existing contours will not change.

- **A statement from AECOM that addresses the following questions:**
 - *What is a Solar Thermal Power Station? How does it work? What does it involve?*
 - *What resources are required (i.e. water, power, fuel)?*
 - *Project timeframes (what stages, what does each stage involve, likely timeframes) and lifespan?*
 - *Details around the connection back into the main power grid? How will it connect?*
 - *What infrastructure will this involve? Please also demonstrate on a plan this connection information*
 - *Clearing, drainage and erosion; will the entire development area be cleared, or just for stage 1? How will drainage and erosion be managed.*
 - *Decommissioning*
 - *Water Impact Assessment (i.e. quantity, water sources, licencing)*
 - *Noise Impact Assessment (i.e. Solar Thermal Power Station Generally, Generators)*
 - *Other Emissions: i.e. odours, gases*

- **A document that includes photos and diagrams that show visually what to expect for this type of development,**
- **Proposed subdivision of subject lot and how this impacts/relates to this proposal, and;**
- **The application needs to take into consideration not just existing built development, but also the potential built development that can be constructed upon surrounding land parcels, including any potential for future subdivision of the surrounding land or the subject lot.**

HEAD OFFICE:
Suite 4, First Floor, 40 Hasler Road, Osborne Park WA 6017
PO Box 99, MOUNT HAWTHORN WA 6915
T: 08 6241 3333 F: 08 6241 3300
E: whelans@whelans.com.au W: www.whelans.com.au
PERTH | KARRATHA | BROOME | KUNUNURRA | KALGOORLIE
WHELANS AUSTRALIA PTY LTD ACN 074 363 741

SURVEYING MAPPING TOWN PLANNING



Visual Impact Assessment of Solar Farm

This information takes into consideration the existing built development and the potential built development that can be constructed on surrounding land parcels, including any potential for future subdivision on the surrounding land or the subject lot. The purpose of the assessment is to consider whether these surrounding entities will be impacted by the operation of the Solar Farm.

This assessment being necessary as per the Shire's town planning scheme to ensure the proposal does not compromise the amenity, appearance or use of the surrounding land. This will promote proper and orderly development.

Please refer to the Visual Impact Assessment Plan and Visual Impact Perspectives.

Existing Built Development

The geophysical layout of Lot 10792 is demarcated in the middle by the Wittecarra Creek and its tributaries that flow intermittently from the national park on the east and southern boundaries toward the coast. The northern boundary of Lot 10792 is bordered by Crown land and the Tourist Precinct. The western boundary is adjacent the existing residential land. Please refer to the Plan.

The Wittecarra Creek environ, which is a large hollow occupies, approximately one third of the Lot 10792 land area. The sides of the creek area rise from 16m AHD to 68m AHD on the western edge to 50m AHD on the eastern edge. The balance of the lot, outside of the creek area was cleared of vegetation and used as part of the Browne Farm for cropping and grazing livestock up to the early 1990s. The proposed Solar Farm sits generally at 50m AHD in the very south east of the lot.

There is a Western Power overhead transmission power line that traverses through the site in a north-south direction at about the middle of the lot.

A Telecom communications tower is located at the very north-east corner of the lot, which used by the Water Corporation to control it's infrastructure.

On the western side of the original Browne Farm landholding is a residential estate. This estate borders George Grey Drive on the west. The estate contains residential lots and semi rural lots at the southern end. These landholdings are shown on the attached plan located between 2.2 kms and 3 kms from the location of the Solar Farm. The estates generally sit between elevations 50m AHD and 100m AHD. Some of these lots in the residential estate have the potential for glimpses of the Solar Farm but at considerable distance, as per the visual perspective images.

The land within the residential estates is partly occupied and sold but the general opinion is that there is a land supply of residential estate land in this location for the next 10 to 20 years.

The separation distances from the Solar Farm to potential sensitive land uses (the residential estate) are more than adequate, as per the Plan. In addition the Solar Farm site will not be sealed except for the area to contain the equipment. This together with the operation of the Solar Farm without noise, odour, and light spillage make the site ideal for this renewable power site to supply additional power into the Horizon Power grid.



Potential Built Development and Subdivision

Within the established residential estate lots ie Eco Flora, Capital Hill and semi-rural lots there remain approximately 10 to 20 years supply of these lots.

There is a new local structure plan for the area slightly west of approximately 240 residential and rural lots, or another 10 to 20 years of land supply. This is a total of approximately 20 to 40 years land supply based on current market conditions.

There is potential for more residential estate land as shown on the plans and as per the Kalbarri Townsite Strategy. However, this location is long-term and not foreseeable. The need for this residential estate land is unlikely in the next 30 to 40 years due to the already over-supply of residential estate lots.

Minor future subdivision may take place as per the proposal for the balance of Lot 10792 and the creation of the Wittecarra Creek Conservation Reserve but this will only be on case by case basis and unlikely to have any effect on the over-supply of residential estate lots.

Comment

The location of the Solar Farm is a good one, remote from the existing and proposed development and future subdivision. The visual impact is low, indeed, and sensitive land uses are well separated from the proposed Solar Farm.

The land supply already available in the residential estate to the west is estimated at approximately 20 to 40 years based on current and future demand estimates. On this basis the need to develop the unimproved residential estate land, shown on the Plan, is most likely only to happen beyond the life of the Solar Farm.

- *Construction and operation workforce*
The operation workforce will consist of 4 people. The construction workforce is unknown however is not likely to exceed half a dozen people.
- *Construction and operational traffic*
As stated in the Application Report there will be approximately 4 light vehicles that will access the station on a daily basis as part of normal operation. During the construction phase, which is estimated to be 3 months, the Station site will be accessed on average by 1 heavy vehicle per day.
- *Fuel storage*
It is proposed to have a 500L Diesel Fuel Tank onsite. This has been added to the layout plan.



- *Aboriginal Heritage*
A search of the Department of Aboriginal Affairs Aboriginal Heritage Inquiry System has revealed that there are no Registered Sites within Lot 10792.
- *Upgrade details for crossover from George Grey Drive*
It is not proposed to upgrade the crossover from George Grey Drive as it is currently meets the design requirements for the proposed type and volume of traffic.
- *General cost breakdown. is this for Stage 1 only? What is the cost of the development at full potential?*
The approximate cost indicated on the Application for Planning Approval is for Stage 1 only. The approximate cost for development of Stage 2 will be in the vicinity of \$7-8 million.
- Please amend the documentation as required to demonstrate an understanding of impacts and management of the property as a development with all stages completed. Plans are enclosed that indicate the layout of the facility if demand requires it to be expanded. As it is proposed for the whole site to be cleared as part of Stage 1 it is considered that expansion of the facility at a later date will not have any noticeable impact other than the appearance of additional towers, which due to their proximity to adjoining development, will be barely visible.

I trust the information provided meets the Shire's request. Please do not hesitate to contact me on 6241 3305 if there is any further information that is required.

Yours faithfully,



Melinda Marshall
Town Planner
Whelans Town Planning

Encl.

- Statement from Aecom
- Visual Impact Assessment Plans & Perspectives



AECOM Australia Pty Ltd +61 8 6208 0000 tel
3 Forrest Place +61 8 6208 0999 fax
Perth WA 6000 ABN 20 093 846 925
GPO Box B59
Perth WA 6849
Australia
www.aecom.com

31 October 2016

Commercial-in-Confidence

Brian Rourke
Managing Director
Tidal Energy Australia Pty Ltd
7 Bayview Vista
Ballajura WA 6066

Dear Brian,

Kalbarri Solar Thermal - Design Statement

AECOM provides this design statement in response to queries from the Shire of Northampton ('the Shire') in relation to the proposed Kalbarri solar thermal facility currently being developed by Allsage Pty Ltd. In providing this design statement, AECOM note that the advice is based upon the current status of design development and is provided based upon typical expectations associated with similar facilities of this nature and technology.

AECOM's comments on the Shire's queries are outlined as follows:

What is a solar thermal power station? How does it work? What does it involve?

A solar thermal power station is a facility which concentrates sunlight using mirrors in order to generate heat which is then used for the production of electricity. The proposed solar thermal facility at Kalbarri also proposes to use thermal storage in the form of graphite solar thermal receivers (STRs) in order to store heat, allowing electricity to be generated even in times when the sun is not shining, by using the heat stored in the graphite STRs. As basic overview of the process is described as follows:

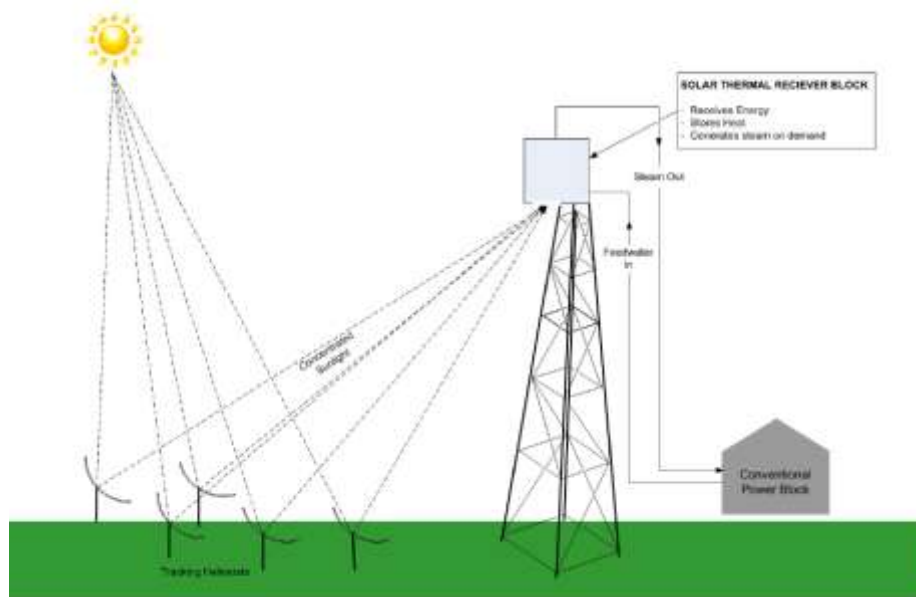
1. An array of mirrors (heliostats) installed at ground level reflect and focus sunlight onto a series of towers each supporting graphite blocks (solar thermal receivers) which collect the heat generated by the focused sunlight.
2. The heat from the concentrated sunlight is stored in the graphite blocks (solar thermal receivers).
3. Water is transferred within a closed piping system by pumping water through the graphite blocks in order to transfer heat from the blocks to the water to generate steam.
4. Steam is used in a steam powered generator in order to generate electricity. Steam exits the generator system as water to be used again as part of the steam/water cycle.

A high level overview of the proposed technology and photo of an existing similar installation in China as outlined in the below images as produced by the technology provider Solastor:



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Diagrammatic Solastor Solar Thermal System



What resources are required (ie. water, power, fuel)?

The operation of the proposed solar thermal facility requires limited resources for its continued operation, as sunlight forms the primary fuel source. An overview of the expected resources required for operation of the Kalbarri solar thermal facility is outlined as follows:

Water

Only limited amounts of water are expected to be consumed during normal operation of the facility. The water/steam cycle is based upon a closed cycle, with only minimal amounts of water required for make-up into the system in the event of minor water losses (such as leaks) or to make-up water blowdown from the system used to remove small amounts of water in order maintain water quality of the cycle. The plant will require an initial 'first fill' of water to fill the steam system, with change-out of the water expected to occur every few years. Minor amounts of potable water are expected to be required for general operational purposes such as site service water hose points and small amounts required throughout the year for solar mirror cleaning and general plant maintenance.

The current design allows for an air-cooled condenser design whereby the steam exiting the steam generator is cooled by air from a series of fans in order to condense the steam from gaseous steam back to liquid water for reuse. The use of an alternative water cooled condenser is currently be evaluated which would require a water source make-up as part of a small cooling tower system and cooling water circuit. The water cooled condenser system would be similar in technology application as cooling towers used for commercial building heating and ventilation systems. In the event that a water cooled condenser is used, the water consumed will be through evaporative losses to atmosphere in the cooling tower.

Power

The solar thermal facility will be a net exporter of electricity to the distribution electricity grid, providing electricity to the local distribution network. To achieve this, the plant will have an electrical connection to the distribution network. During normal operation, the facility will supply auxiliary equipment on site with electricity generated from the solar thermal generator. During plant start-up procedures it is expected that facility will draw a small

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amount of electricity from the grid (back feed) in order to power auxiliary equipment required to start the solar thermal generator equipment. This operation of back feeding of electricity from the grid would also be used during periods when the steam generator is not producing power and site auxiliary loads such as lighting are required for example during the night. Once the solar thermal facility is generating its own power this electricity supply will feed any required auxiliary equipment at the same time as exporting electricity to the grid.

Fuel

The primary fuel source for the solar thermal facility is sunlight. During rare unexpected 'black-start' occurrences, when electrical supply from the grid is not available due to a grid network outage, the facility will use a small diesel generating set in order to provide auxiliary loads with electricity during this period in order to allow the plant to black-start or maintain critical facility loads during grid outage. Diesel consumption associated with this practice is expected to be small, and this functionality is likely to enable the facility to supply power to the grid during these outages or to operate in 'island' mode.

Project timeframes (what stages, what does each stage involve, likely timeframes) and lifespan?

Upon discussions with our client the following rough timeframes are considered by Allsage Pty Ltd.

Stage 1: 12 Towers – 1 MW

- Design: August – November 2016
- Approval Shire: November 2016 anticipated
- Shire Building License: January 2016
- Approvals Western Power: December 2016
- Financial Close: June 2017
- Construction Start: March 2017
- Commissioning: October/November 2017
- Operation: November / December 2017

Stage 2: 48 Towers – 4 MW

- Western Power Tender: December 2016
- Design: November – February 2017
- Sire Construction Approval: June 2017
- Connection Approvals WP: June 2017
- Financial Close: September 2017
- Construction Start: September 2017
- Commissioning: July 2018
- Operation: August 2018

Details around the connection back into the main power grid? How will it connect? What infrastructure will this involve? Please also demonstrate on a plan this connection information.

A 33kV powerline will be erected between the site and the Tee-off point with the existing Western Power Line west of the site. The grid connection route is indicated on drawing. Western Power will be constructing the infrastructure up to the poles adjacent to the generation plant building. From the last pole the cables will go underground into the respective equipment (switchboard, transformer etc.). The likely distance between poles is also indicated on the following drawings:

- 60477754-01-CIV-0001-A

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- 60477754-01-CIV-0002-A
- 60477754-02-CIV-0002-A

The height and details of the poles are provided on the following drawings:

- 60477754-01-ELE-2001-A
- 60477754-02-ELE-2001-A
- 60477754-02-CIV-2003-A

Clearing, drainage and erosion; will the entire development area be cleared, or just for stage 1? How will drainage and erosion be managed?

Surface runoff from the pre-development site flows as 'sheet flow' (there are no existing drainage flow paths within the site due to the existing topography) in a westerly direction. The cleared post-development site is anticipated to have an increase surface runoff. This runoff will be collect along the downstream western and northern boundaries of the site within minor drains. The drains will convey the flow to a sedimentation basin which will prevent sediment discharge off the site, achieve water quality objectives and enable the post-development peak discharge from the site during extreme rainfall events to be comparable to the existing pre-development peak discharge. The temporary drainage structure proposed is shown on the following drawings:

- 60477754-02-CIV-2201-A
- 60477754-02-CIV-2202-A

The entire site will be cleared of vegetation during construction. The site is intended to allow for regrowth of grass intended to diminish the sediment transport risk. After the site vegetation (grass) has returned and been well established the temporary drainage as indicated on drawing 60477754-02-CIV-2202-A shall be removed.

The maintenance of vegetation (re-growth) will be undertaken to reduce fire risks as well as eliminating shading on the mirrors that start from ~0.5m above the ground in vertical position. The re-growth will be maintained with a grass cutting maintenance schedule across the site.

Decommissioning?

Allsage Pty Ltd and the equipment supplier (Solastor) have indicated that the plant is intended to be refurbished after 50 years of operation. De-commissioning strategies are being discussed with the equipment supplier currently.

Water Impact Assessment (ie quantity, water sources, licencing)

The site is located within the *Kalbarri/Eurardy* groundwater sub area. This aquifer currently has water available. An application will be made with the Department of Water to obtain a groundwater abstraction license for the site if required.

Further design efforts are being undertaken to consider the condenser cooling options in detailed design.

Noise Impact Assessment (ie. solar thermal power station generally, generators)

The primary noise source at the facility is expected to be the steam powered generator and associated plant room ventilation fans. The generator unit is proposed to be installed in an acoustically treated building in order to reduce noise emissions to the outside environment. It is generally anticipated that near field noise limits within operational areas of the power station will be less than 85 dBA, and that far field noise impacts at the facility boundary are expected to be minimal. The solar field external to the plant is expected to provide low noise emissions, with the primary noise sources being the feedwater pumps used to circulate water for the steam generating system and cooling fans associated with the condenser unit. It is expected the noise levels will be similar to those typical of light industrial applications.

Other emissions (ie. odours, gases)

The nature of a solar thermal plant means that sunlight is the predominant fuel source, with no combustion of fuels required, with the exception of small amounts of diesel in infrequently occurring black-start events where small levels of exhaust emissions will be produced as typical with black-start diesel generator units installed commonly in other grid outage applications (e.g. hospitals). There are no expected emissions of steam due to the

AECOM

closed nature of the steam cycle, except for during any emergency venting requirements in the unlikely event of system over-pressure when excess steam will be vented to atmosphere. Normal operation of the facility is not expected to produce any hazardous emissions or odours.

Yours faithfully

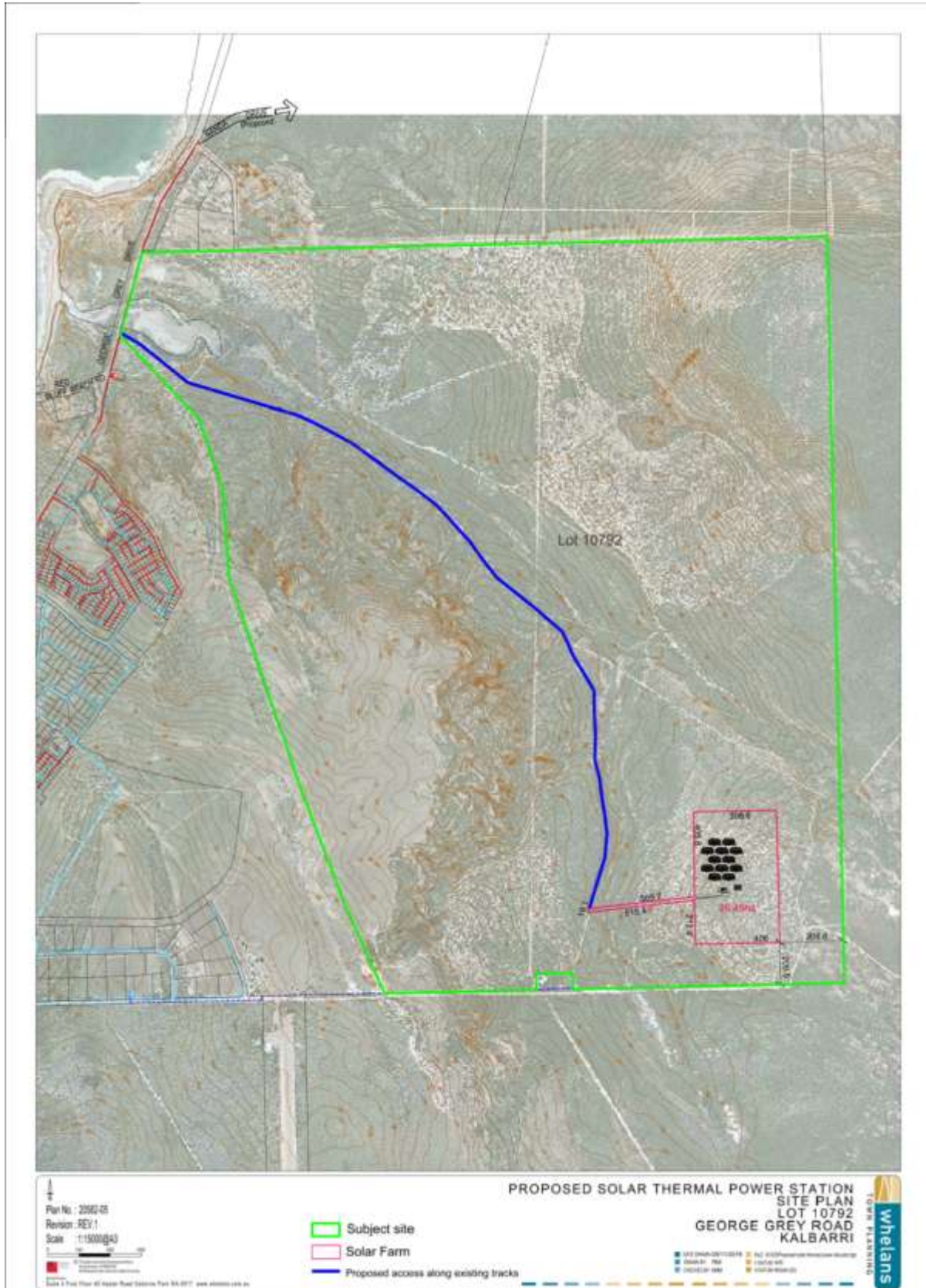
Joep Vaessen
Principal Engineer - Renewable Energy
D +61 8 6208 0457 M +61 400401362
Joep.Vaessen@aecom.com

Engineers involved in this statement:

Joep Vaessen
Principal Engineer – Renewable Energy

Wayne Goodwin
Renewable Project Lead

David Meyer
Senior Engineer – Drainage and Waterways





Plan No: 2092-9
 Revision: REV 0
 Scale: 1:20000(843)

- Subject site
- Solar Farm
- RL60m ● Levels
- Telecommunications Tower

**PROPOSED SOLAR THERMAL POWER STATION
 VISUAL IMPACT ASSESSMENTS PLAN**
 LOT 10792
 GEORGE GREY ROAD
 KALBARRI

DATE: 18/11/2016
 DRAWN: JAM
 CHECKED: JAM
 PROJECT: 2092-9





View 1 - George Grey Drive



View 2 - Beagle Road



View 3 - Darwinia Drive

Plan No : 2002-8
 Revision: REV 0
 Scale : NTS



PROPOSED SOLAR THERMAL POWER STATION
 VISUAL IMPACT PERSPECTIVES
 LOT 10792 GEORGE GREY ROAD
 KALBARRI

DATE ISSUED: 28/11/2016
 DRAWN BY: [Name]
 CHECKED BY: [Name]



ITEM 6.3.3 PROPOSED SIGN – LOT 151 (NO. 96) STEPHEN STREET, NORTHAMPTON

LOCATION:	Lot 151 (No. 96) Stephen Street, Northampton
FILE REFERENCE:	10.8.3 – A3425
APPLICANT:	Northampton Uniting Church
OWNER:	Northampton Uniting Church
DATE OF REPORT:	4 November 2016
RESPONSIBLE OFFICER:	Debbie Carson – Planning Officer
APPENDICES:	
1.	Applicant’s site plan
2.	Information provided by applicant
3.	Heritage Advisor’s Report
4.	Schedule of signs
5.	Letter from applicant

AUTHORITY / DISCRETION:

Quasi-Judicial *when Council determines an application within a clearly defined statutory framework, abiding by the principles of natural justice, acting only with discretion afforded it under law, and giving full consideration to Council policies and strategies relevant to the matter at hand. These decisions are reviewable by the State Administrative Tribunal.*

SUMMARY:

The Shire is in receipt of an application for a proposed sign upon Lot 151 (No. 96) Stephen Street, Northampton. The proposed development requires Council approval as it is a variation to the *Local Planning Scheme No. 10* and *Local Planning Policy – Signs* provisions with respect to the size and content of the sign. Due to the proposed sign being located adjacent to a building listed within the Shire’s Local Government (Heritage) Inventory, the proposal was referred to the Shire’s Heritage Advisor who has provided advice and comment. The report recommends conditional approval of the application for development approval.

BACKGROUND:

An application has been received for the installation of a sign upon Lot 151 (No. 96) Stephen Street, Northampton. Figure 1 provides a Location Plan and figure 2 provides a site plan for the property.

As part of the application to Council the applicant has provided:

- Completed Form of Application for Planning Approval;
- A Site plan detailing the location of the proposed sign;
- A drawing and description of the structure and content of the sign;
- Eighteen (18) sign designs proposed to be rotated for display. These were shortlisted from the original 51 designs to address heritage design standards; and
- A letter asking for Council to consider waiving planning as the applicant is a not-for-profit organisation.

Full copies of all information received in relation to this proposal can be provided to Councillors upon request.

Figure 1. Location Plan – Lot 151 (No. 96) Stephen Street, Northampton



Figure 2. Site plan - Lot 151 (No. 96) Stephen Street, Northampton



THE PROPOSAL:

The proposed sign comprises one 1750mm high structure with the sign board dimensions being 950mm by 1400mm and having a total sign surface area of 1.33m².

The proposed sign is to be located within the northern garden bed at the western end, and angled for view by vehicles and pedestrians travelling east along Stephen Street, with the following boundary setbacks:

Front (road facing N boundary) -	2m
Side (adjoining lot W) -	11m
Side (adjoining lot E) -	25m
Rear (adjoining Lot S) -	103m

A copy of the applicant's site plan has been included as **Appendix 1** to this report.

The applicant proposes to construct the sign with an aluminium and timber frame, Perspex cover and 75mm square steel posts. A copy of the applicant’s sign description and drawing has been included as **Appendix 2** to this report.

The applicant provided 51 different sign infill designs for consideration, and it is proposed that each sign infill will be rotated for display upon the sign throughout the year. This has been shortlisted to a possible 18 sign infills to meet heritage requirements.

In consideration of the application the following information is provided:

Lot Size	3,814m ²
Zoning	Special Use zone (SU8) - Church
Existing Development	Church and rear single dwelling
Access & Frontage	Stephen Street
Vegetation	Cleared - garden
Surrounding Land Uses	Residential, Public Purposes – Primary School (Day Care)

COMMUNITY & GOVERNMENT CONSULTATION:

The Shire of Northampton’s Heritage Advisor has been consulted as the lot is listed within the Local Government (Heritage) Inventory (Place Number 092), and has a Management Category of 2 – ‘Considerable Significance’ requiring that changes do not unduly impact on the heritage values of the place.

The Shire of Northampton’s Heritage Advisor’s provided an initial report (attached as **Appendix 3**) advised the following:

***“Proposed Location of New Sign:** The selected site is considered appropriate as it is both well removed from the heritage building and positioned within an existing garden bed which will help to lessen the overall impact of the structure on the aesthetic values of the stone church.*

***Proposed Proportions and Materials of the New Sign:** The scale and the construction materials of the new are considered acceptable, being a fairly standard combination for signage. It should be noted that the Perspex sheet will be expected to weather over time, especially given its largely north facing orientation.*

Content of Signage: *Given that the sign will be located in close context with the historic Uniting Church which has a high management category within the Northampton Municipal Inventory, it is important to carefully consider the content of the new sign in terms of its overall design inclusive of colour palette, font style and images. In this instance this is very difficult to assess as it is proposed to periodically change the content of the sign as per the list provided by the applicant. A review of this list reveals a wide and diverse selection of options with varied colour palettes, font styles and imagery. Generally it would be preferable for the sign to remain sympathetic with the heritage character of the church and its setting and, as such, an acceptable colour palette and font style should be agreed to. For example bright colours including flourescents, are not acceptable while modern font styles should generally be avoided. As such it is recommended that the applicant revisit the signage options listing and specify which versions would be used on the new sign.*

RECOMMENDATION: *Based on the above considerations the proposed new signage is supported subject to an agreed listing of signage options being submitted.”*

Based upon this recommendation, the list of signage options has been revised (refer to **Appendix 4**) and 18 designs were presented back to the Heritage Advisor for comment, who advised that the proposal:

“ appears to be in keeping with the general character of the heritage building in terms of colour palette and font style. In terms of heritage considerations I find the selected signs to be acceptable.”

FINANCIAL & BUDGET IMPLICATIONS:

Nil. However should Council refuse this application and the applicant proceed to exercise their right of appeal, costs are likely to be imposed on the Shire through its involvement in the appeal process.

STATUTORY IMPLICATIONS:

State: *Planning and Development Act 2005*

Local: *Shire of Northampton Local Planning Scheme No. 10 – Northampton*

Local Planning Scheme No. 10

The land is zoned “Special Use (SU8) – Church” under the *Local Planning Scheme No. 10 – Northampton*. The broad objective of “Special Use” zones under the Scheme is to:

“provide for specific uses, or combination of uses in circumstances where the uses have particular locational and development requirements, for which a generic zoning is unsuitable and to ensure compatibility with adjacent development”.

The specific conditions of the Special Use zone, as per Schedule 4 of Scheme No. 10, are “as determined by Local Government”.

The Scheme exempts advertisements for a “Place of Worship” as per the following provisions:

“one advertisement detailing in the function and/or the activities of the institution concerned” to a maximum area of 0.2m².

It is noted however, that the proposed sign falls outside of these exempt provisions and therefore 5.11.4 of the Scheme applies:

“All advertisements shall:

- (a) Be designed to be compatible with the proposed surroundings including buildings, landscaping and other advertisements; and*
- (b) Be erected or displayed in a position:*
 - so as to not obstruct the passage of or so as to create a hazard for vehicles or pedestrians;*
 - such that in the opinion of the local government, they would not adversely affect the amenity of the locality;*
 - so as to not significantly obstruct or impeded all or part of a view of a river, the sea or other place or feature which in the opinion of the local government is of significance to the district; and*
 - Where attached to a building, be incorporated into the architectural features of the building in placement, style, proportions, materials, colours and finish; and*

- (c) Only contain the following information:
- the name of the occupier;
 - the business carried on in the premises;
 - the occupier's telephone number;
 - a description of the goods sold or offered for sale in the premises to which the advertisement is affixed or to which it relates; and
 - any other matter specifically approved by the local government."

POLICY IMPLICATIONS:

Local: Shire of Northampton Local Planning Strategy– Signage

11.6 of the Shire of Northampton Local Planning Policy – Signage provides further guidance with regard to pylon signs:

"11.6.1 A pylon sign shall:

- (a) not have any part more than 6,000mm above the level of the ground immediately below it;
- (b) not exceed 4m² in area unless approved by the Shire;
- (c) be supported on one or more piers or columns of brick, stone, concrete, timber or steel of sufficient size and strength to support the sign under all conditions;
- (d) not be within 2,000mm of the side boundaries of the lot on which it is erected unless the lot on which the pylon sign is erected abuts an intersecting street or right-of-way, where the Shire may authorise the erection of the sign at a distance less than 2,000mm;
- (e) not have any part less than 6,000mm from any part of another sign erected on the same lot."

COMMENT:

It is considered that the proposal complies with the provisions of the *Local Planning Scheme No. 10* and *Local Planning Policy – Signage*. Whilst the content of the sign does not display the information that is typically required of a sign (eg name, phone, description of goods for sale), the applicant has proposed that the Church does not "sell" anything, rather they promote faith in various ways, and the sign therefore promotes the primary objectives of the Church. Further, the Special Use (Church) zoning allows Council the discretion to determine the suitability and compatibility of any development upon the site, and it is considered that the

promotion of faith messages is in keeping with the purposes and objectives of the Special Use site.

The site is included within the Shire’s Local Government (Heritage) Inventory as a Category 2, meaning that it is of ‘Considerable Significance’ and therefore any proposed change should not unduly impact on the heritage values of the place. It was therefore important that the Shire’s Heritage Advisor be consulted, and as a result of this consultation a number of signs were omitted from the final proposal. The final schedule of signs comprises 18 varying designs that are considered in keeping with the heritage building and site.

The proposal is unique to other sign proposal’s in that the content of the sign will change through the use of rotating sign infills, each displaying their own design, style and text. Each design therefore needs to be considered by Council and the entire schedule of signs (comprising 18 sign infill designs) approved for use. If Council approves the application for development approval, only those approved signs will be permitted to be displayed, and any variation to the approved schedule (i.e. new sign designs) will require further approval.

VOTING REQUIREMENT:

Absolute Majority Required: No

CONCLUSION:

Having taken into consideration the requirements of the Shire’s statutory and planning documents and the advice of the Shire’s Heritage Advisor, it is recommended that approval be issued to the applicant for the proposed sign and the 18 infill designs as per the Schedule of Signs. It is also requested that Council considers waiving fees associated with Shire approvals as the organisation is considered a not-for-profit association.

OFFICER RECOMMENDATION – ITEM 6.3.3	APPROVAL
That Council:	

1. Approves the Application for Development Approval subject to the following conditions:
 - a) Development shall be in accordance with the attached approved plan(s) dated 21 November, 2016 and subject to any modifications required as a consequence of any condition(s) of this approval. The endorsed plan(s) shall not be modified or altered without the prior written approval of the local government;
 - b) The approval is for one (1) sign, and eighteen (18) infill signs as per the attached approved Schedule of Signs dated 21 November 2016. The endorsed sign designs shall not be modified or altered without the prior written approval of the local government;
 - c) No further sign infill designs shall be displayed without the prior written approval of the local government;
 - d) The sign is to be maintained to the approval of the local government; and
 - e) The sign is to be securely fixed in position at all times.

Advice Notes:

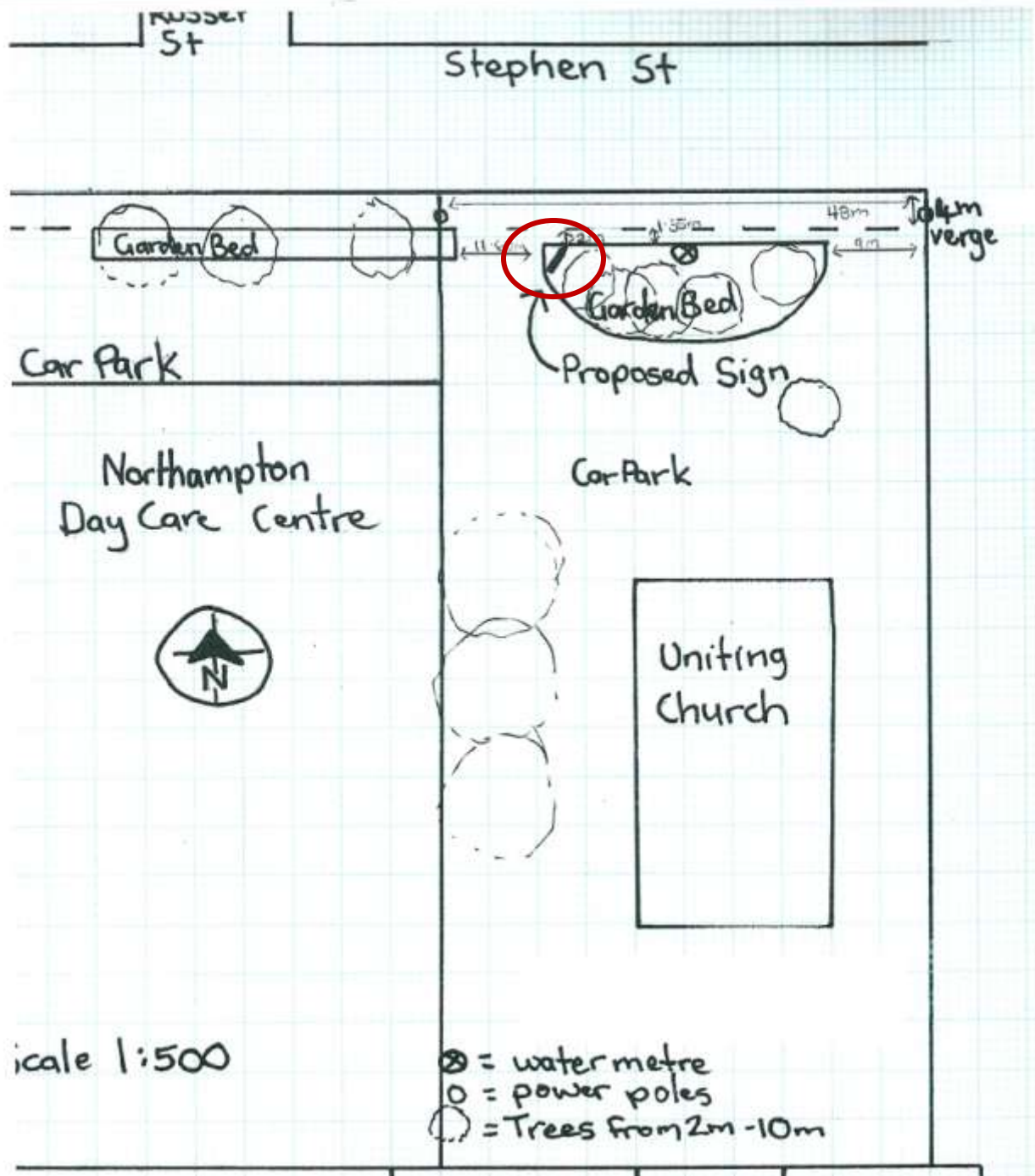
Note 1: If the development/use the subject of this approval is not substantially commenced within a period of two (2) years, or another period specified in the approval after the date of determination, the approval will lapse and be of no further effect.

Note 2: Where an approval has lapsed, no development/use shall be carried out without the further approval of the local government having first been sought and obtained.

Note 3: If an applicant is aggrieved by this determination there is a right (pursuant to the Planning and Development Act 2005) to have the decision reviewed by the State Administrative Tribunal. Such application must be made within 28 days from the date of this notice.

2. **Waives/does not waive** any fees associated with obtaining planning and building approvals for the proposed sign.

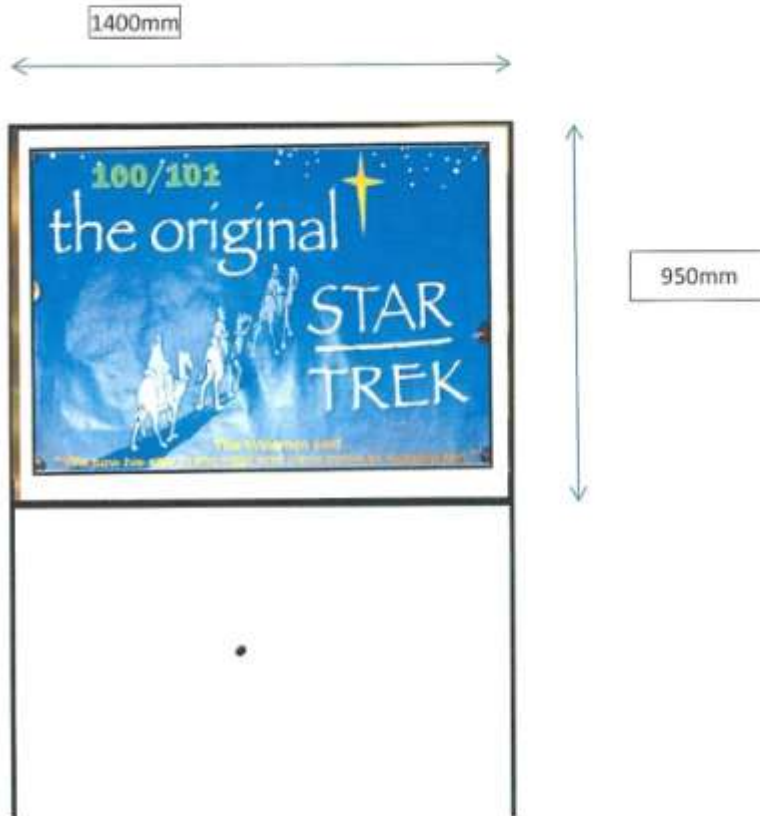
APPENDIX 1. APPLICANT'S SITE PLAN



APPENDIX 2. INFORMATION PROVIDED BY APPLICANT

14 October 2016

"The Northampton Uniting Church proposes to erect a public information sign board at the front of its Lot No 475 (St no 96) Stephen Street Northampton and seeks the Shire of Northampton's approval to do so.



An example of the proposed sign for the Northampton Uniting Church.

The location will be in the western end of the garden bed, 2m in from the 4m council verge facing northwest on premises 96 Stephen St Northampton.

The sign is to be constructed of aluminium and timber frame with Perspex cover. The overall size will be approx. 1750mm x 1400mm and only display on one side.. Footings: 300mm diameter, concrete 600mm deep. Posts: 75mm square steel hollow sections. The total cost of materials, construction and installation will be \$1800.

In reference to the Local Planning Scheme No.10 (at 5.11.4) (c) it says the sign shall contain a description of goods sold or offered for sale in the premises... As we don't "sell" anything, we do promote faith in God in various ways. The internal information on the sign board will change periodically and sometimes related to key periods such as Christmas and Easter. Examples of

information are provided with this application for the Shire of Northampton information. The samples provided will not be used if they are dated.

The Northampton Uniting Church sister church, the Lighthouse Church in Shenton Street Geraldton has displayed similar information for many years now without any known objections from the public."

There will be no change to the landscape that already exists. As the sign is more than 6m from the road the sign will not obstruct any view of oncoming traffic when exiting the drive way.

We would like the sign to be erected before Christmas 2016.



APPENDIX 3. HERITAGE ADVISOR'S REPORT

REPORT

TANYA HENKEL
HERITAGE ADVISORY
SERVICE

**To: Debbie Carson, Planning Officer,
Shire of Northampton**

From: Tanya Henkel

Date: 19 October 2016

**Subject: Proposed New Sign to front
of Uniting Church at Lot 475 (No. 96)
Stephen Street, Northampton**

HCWA Ref: 8970

In assessing the proposal for the erection of a sign to the front of the Uniting Church located at Lot 475, No. 96 Stephen Street, please be advised of the following:

- 1.0 **The Place:** Located on a sloping site on the southern side of Stephen Street, the church is set back from the street behind a gravel carpark. Built of local stone construction the church features a dominant bell-tower to the front (north) façade, while the side walls comprise four buttressed bays with gothic arched windows between. There is a weatherboard addition to the rear.
- 2.0 **Heritage Listings:**
 - 2.1 **Municipal Inventory:** The place is included in the Shire of Northampton Municipal Inventory of Heritage Places as Place No. 92 and has been afforded a management category of 2:
"Considerable Significance: Very important to the heritage of the locality.
Management Recommendation: Conservation of the place is highly recommended. Any proposed change to the place should not unduly impact on the heritage values of the place and should retain significant fabric wherever feasible."
- 4.0 **The Proposal:** It is proposed to erect a sign to the front of the Northampton Uniting Church. The new sign is to be located at the western end of an existing garden bed and approximately 2m from the street verge. Measuring 1.4m x 0.95m, the sign will be angled to address both the traffic travelling east along Stephen Street and entering the carpark of the church. To be constructed of aluminium on a timber frame with a Perspex cover and supported on steel posts, the content of the one-sided sign will change periodically as per the examples listed in the application information.
- 5.0 **Site Inspection:** Due to time constraints the Heritage Adviser has been unable to conduct a site visit prior to the preparation of this report. However please note that she is familiar with this property. If required she can visit the site during her next trip (2-4 November 2016).
- 6.0 **Issues:**
 - 6.1 **Proposed Location of New Sign:** The selected site is considered appropriate as it is both well removed from the heritage building and positioned within an existing garden bed which will help to lessen the overall impact of the structure on the aesthetic values of the stone church.

6.2 Proposed Proportions and Materials of the New Sign: The scale and the construction materials of the new are considered acceptable, being a fairly standard combination for signage. It should be noted that the Perspex sheet will be expected to weather over time, especially given its largely north facing orientation.

6.3 Content of Signage: Given that the sign will be located in close context with the historic Uniting Church which has a high management category within the Northampton Municipal Inventory, it is important to carefully consider the content of the new sign in terms of its overall design inclusive of colour palette, font style and images. In this instance this is very difficult to assess as it is proposed to periodically change the content of the sign as per the list provided by the applicant. A review of this list reveals a wide and diverse selection of options with varied colour palettes, font styles and imagery. Generally it would be preferable for the sign to remain sympathetic with the heritage character of the church and its setting and, as such, an acceptable colour palette and font style should be agreed to. For example bright colours including flourescents, are not acceptable while modern font styles should generally be avoided. As such it is recommended that the applicant revisit the signage options listing and specify which versions would be used on the new sign.

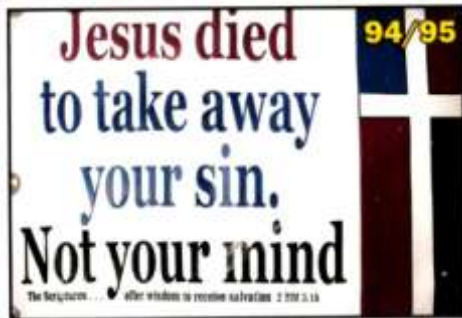
RECOMMENDATION:

Based on the above considerations the proposed new signage is supported subject to an agreed listing of signage options being submitted.

APPENDIX 4. SCHEDULE OF SIGNS



10.



11.



12.



13.



14.



15.



16.



17.



18.



APPENDIX 5. LETTER FROM APPLICANT REQUESTING CONSIDERATION FOR WAIVE OF FEES



Loving Jesus, Loving Community

Northampton Uniting Church
PO Box 550
NORTHAMPTON WA 6535
08 9934 2307
Email-dkharri@bigpond.com

Att: Deb Carson CDO/Planning Officer
Shire of Northampton
PO Box 61
NORTHAMPTON WA 6535

Dear Deb,

APPLICATION FOR PLANNING APPROVAL

The Uniting Church of Northampton would like to make a formal request to Council to waive the \$147 fee to erect an information sign out the front of the church. We are a non-profit organization that contributes to various community needs and does not seek financial gain from this proposed sign.

Thank you
Regards

A handwritten signature in black ink, appearing to read 'Kelly Harrington'.

Kelly Harrington
(Treasurer)

14 October 2016

ITEM 6.3.4 REQUEST TO MODIFY LOCATION OF BUILDING ENVELOPE – LOT 2 (NO. 7) RANCH COURT, KALBARRI

LOCATION:	Lot 2 (No. 7) Ranch Court, Kalbarri
FILE REFERENCE:	10.6.1.1
APPLICANT:	WA Country Builders
OWNER:	D & N Hayward
DATE OF REPORT:	7 November 2016
REPORTING OFFICER:	Debbie Carson – Planning Officer
APPENDICES:	
1.	Subdivision Guide Plan – Big River Ranch
2.	Schedule of Submissions
3.	Bushfire Attack Level Assessment Report

AUTHORITY / DISCRETION:

Quasi-Judicial *when Council determines an application within a clearly defined statutory framework, abiding by the principles of natural justice, acting only with discretion afforded it under law, and giving full consideration to Council policies and strategies relevant to the matter at hand. These decisions are reviewable by the State Administrative Tribunal.*

SUMMARY:

Correspondence has been received from abovementioned Applicant requesting Council consider modifying the location of the building envelope on Lot 2 (No. 7) Ranch Court, Kalbarri. The modification is requested in order to attain a Bushfire Attack Level (BAL) rating of 12.5 for the proposed dwelling upon the lot. The proposed modification is considered to comply with the *Town Planning Scheme No. 9*, Subdivision Guide Plan and the Special Rural zoning of the Big River Ranch with a minor variation to setbacks, such that the western setback would be reduced from the specified distance of 15 metres to 14 metres. This report recommends conditional approval of the modification.

LOCALITY PLANS:

Figure 1 – Location Plan, Lot 2 (No. 7) Ranch Court, Kalbarri



Figure 2 – Aerial Photograph, Lot 2 (No. 7) Ranch Court, Kalbarri



BACKGROUND:

Correspondence has been received from WA Country Builders requesting that Council consider the relocation of the building envelope on Lot 2 (No. 7) Ranch Court, Kalbarri.

Victoria Location 11493 Kalbarri-Ajana Road was subject of Scheme Amendment No. 37 to *Town Planning Scheme No. 4*. This Scheme Amendment rezoned the land from 'Special Site (Equestrian Centre/Resort) Zone' to 'Special Rural Zone' and 'Tourist Accommodation Zone'.

As part of the Scheme Amendment a Subdivision Guide Plan was included within the Scheme through the inclusion of Appendix No. 8. This contains various clauses relating to the subdivision and development of the land.

The Applicant requires the relocation of the building envelope to meet the requirements of the BAL (Bushfire Attack Level) Assessment Report and achieve a BAL 12.5 rating. The BAL Assessment requires that the house must be 41 metres from an adjacent plot of vegetation to the east to achieve this BAL rating.

The Applicant has therefore requested to modify the building envelope so that it has the following setbacks:

Front (N):	69m
Side (W):	14m
Side (E):	41m
Rear (S):	30m

A copy of the proposed site plan detailing the building envelope is included within **Appendix 1**.

The total area of the proposed building envelope will be reduced from approximately 2300m² to a proposed area of 1550m².

COMMUNITY/GOVERNMENT CONSULTATION:

The proposed building envelope relocation was advertised to adjoining landowners of Lot 2 (No. 7) Ranch Court, Kalbarri for a period of 14 days, with letters sent to these landowners. Letters were also sent to the Department of Parks and Wildlife and the Department of Water for their consideration. Consultation commenced on

17 October 2016 and concluded on 31 October 2016. During this time two (2) submissions were received, and are included in the Schedule of Submissions (**Appendix 2**). One submission provided no comment and one submission indicated support for the proposal. No objections were received during the advertising period.

FINANCIAL & BUDGET IMPLICATIONS:

Nil.

STATUTORY IMPLICATIONS:

State: Planning and Development Act 2005

Local: Shire of Northampton Town Planning Scheme No. 9 – Kalbarri Townsite

The land is zoned “Special Rural” under *Town Planning Scheme No. 9 – Kalbarri Townsite*, with Appendix 8 providing a number of specific clauses that relate to the subdivision and development of the land.

Appendix 8 – Special Rural Zone No. 2 includes the following subdivision and development control provisions:

“Subdivision

- (2) *Subdivision shall be generally in accordance with the Subdivision Guide Plan (Map 3) contained within the Amendment documents for Amendment No 37 to Town Planning Scheme No 4 upon gazettal of that Amendment. Variations to the Subdivision Guide Plan may only be made subject to endorsement by Council and the Commission, and in consultation with other relevant government agencies.*

- (3) *The minimum lot size shall be 1.0 hectare.*

Building

- (4) (a) *All building on a lot shall be erected within the building envelope defined on the Subdivision Guide Plan (Map 3) contained within the Amendment documents for Amendment No 37 to Town Planning Scheme No 4 upon gazettal of that Amendment.*

- (b) *No building envelope or effluent disposal system shall be located within the Landscape Protection Area defined on the Subdivision Guide Plan (Map 3) contained within the Amendment documents for Amendment No 37 to Town Planning Scheme No 4 upon gazettal of that Amendment.*
- (c) *Notwithstanding (4 a), Council may permit a variation to the location of a defined building envelope on a lot if it is shown to the satisfaction of Council that the proposed location of the building envelope will not be detrimental to the landscape or environment and satisfies the following minimum setbacks:*
- *Front Boundary 30 metres*
 - *Rear Boundary 15 metres*
 - *Side Boundaries 15 metres*
- (d) *Notwithstanding (4a), Council may permit the construction of stables (maximum area of 24m²) outside the defined building envelope on a lot if it is shown to the satisfaction of Council that there will be no detrimental impact on the amenity of the Zone or neighbouring properties.*
- (e) *No stable is permitted within the Landscape Protection Area defined on the Subdivision Guide Plan (Map 3) contained within the Amendment documents for Amendment No 37 to Town Planning Scheme No 4 upon gazettal of that Amendment or within 15 metres of a habitable building on a lot.*
- (f) *All buildings (including stables) shall be sympathetic to existing landscape elements, namely landform and vegetation, in terms of their design, building height, materials and cladding colours.*
- (g) *All buildings shall be constructed utilising roof and external wall materials comprising natural earth or green vegetation colours.*
- (h) *The use of zincalume, galvanised iron and other coloured (including white or off-white) roof and wall materials which, in the opinion of Council, prejudice the landscape amenity of the adjacent Kalbarri National Park and surrounding area, are not permitted.*
- (i) *All stormwater and runoff shall be disposed of within each lot and shall not be directed into the Landscape Protection Area.*
- (j) *No building shall exceed two (2) storeys in height."*

A copy of the Subdivision Guide Plan is included within **Appendix 1**.

POLICY IMPLICATIONS:

State: State Planning Policy 3.7 – Planning in Bushfire Prone Areas

SPP3.7 has the following Policy objectives:

- “5.1 Avoid any increase in the threat of bushfire to people, property and infrastructure. The preservation of life and the management of bushfire impact are paramount.*
- 5.2 Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process.*
- 5.3 Ensure that higher order strategic planning documents, strategic planning proposals, subdivision and development applications take into account bushfire protection requirements and include specified bushfire protection measures.*
- 5.4 Achieve an appropriate balance between bushfire risk management measures and, biodiversity conservation values, environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change.”*

A copy of the Bushfire Attack Level Assessment Report is included within **Appendix 3**.

COMMENT:

The proposed modifications to the location of the building envelope on Lot 2 (No. 7) Ranch Court, Kalbarri is considered to partially comply with the requirements set out in Appendix 8 of *Town Planning Scheme No. 9 – Kalbarri*.

The proposed building envelope does not impact on the Landscape Protection Area and is not considered to be detrimental to the landscape or environment. Neither the Department of Water nor the Department of Parks and Wildlife raised any concerns regarding the proposal, and the relocation of the building envelope has allowed the applicant to achieve a BAL 12.5 rating, under *State Planning Policy 3.7*

– *Planning in Bushfire Prone Areas.* The relocation and change to the building envelope also achieves compliance with the Subdivision Guide Plan in terms of the requirement for building envelopes to be a maximum total area of 2,000m² within the Special Rural Zone, with the existing enveloped being 2,300m² and the proposed envelope being reduced to 1,550m².

In contrast, the western side boundary does not comply with the setback of 15 metres as specified within the provisions of *the Town Planning Scheme No. 9 - Appendix 8*, with a slightly reduced setback of 14 metres. All other boundary setbacks meet the specified provisions.

it is therefore considered that the variation to the setback provisions as specified within Appendix 8, so that the applicant can achieve a lower BAL rating, is an acceptable variation. It is therefore recommended that Council grant approval to the proposed modification.

VOTING REQUIREMENT:

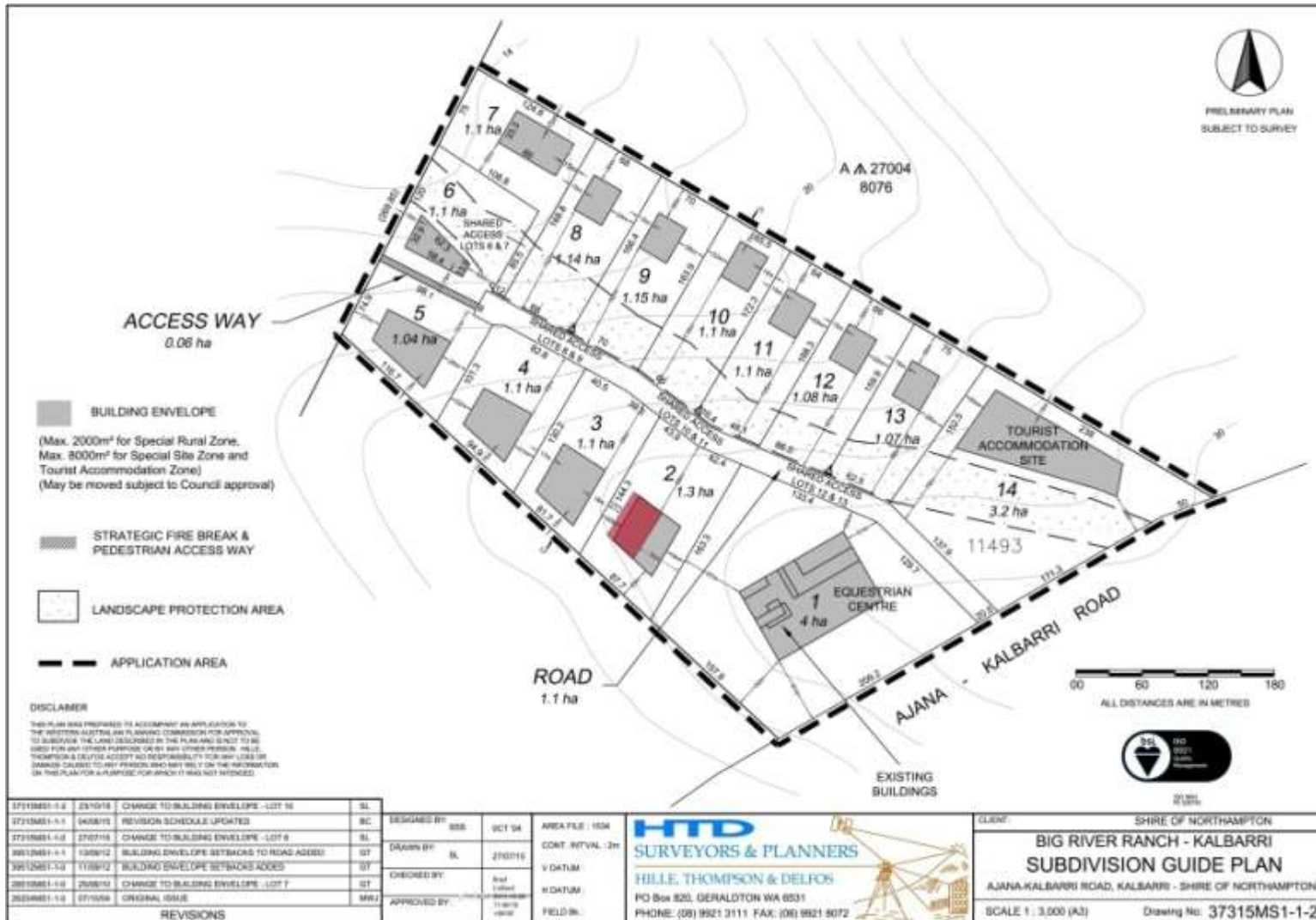
Absolute Majority Required: No.

CONCLUSION:

It is recommended that Council grant approval to the relocation of the building envelope on Lot 2 (No. 7) Ranch Court, Kalbarri in accordance with the attached plans (**Appendix 1**) detailing a rear setback of 30m, front setback of 69m, western side setback of 14m and eastern side setback of 41m.

OFFICER RECOMMENDATION – ITEM 6.3.4	APPROVAL
<p>That Council resolve to approve the relocation of the building envelope on Lot 2 (No. 7) Ranch Court, Kalbarri subject to:</p> <ol style="list-style-type: none"><li>1. The subdivision guide plan being amended at the cost of the Applicant/Landowner.	

APPENDIX 1 –SUBDIVISION GUIDE PLAN – BIG RIVER RANCH WITH MODIFICATIONS SHOWN IN RED



APPENDIX 2. SCHEDULE OF SUBMISSIONS

No	Submitter	Property Address	Submission Detail	Comment/Recommendation
1.	Department of Parks and Wildlife 201 Foreshore Drive, Geraldton WA 6530	No affected property address	- No comment.	- Noted.
4.	Kalbarri River Developments Pty Ltd	Lot 3 Ranch Court, Kalbarri	- Support.	- Noted.

APPENDIX 3. BUSHFIRE ATTACK LEVEL ASSESSMENT REPORT

Our Ref: 2016/RANC7
Your Ref: 31157
Enquiries: Kathryn Jackson



BUSHFIRE ATTACK LEVEL ASSESSMENT REPORT

This report has been prepared by an Accredited BPAD Practitioner using the Simplified Procedure (Method 1) as detailed in Section 2 of AS 3959 – 2009 (Incorporating Amendment Nos 1, 2 and 3).



DISCLAIMER & LIMITATION

This assessment has been carried out in accordance with AS3959.2009 for the purpose of calculating the potential Bushfire Attack Level (BAL).

A fire event is unpredictable and can be influenced by many factors such as, but not limited to, temperature, wind speed, wind direction, humidity, the slope of the land, vegetation fuel load, growth, planting or removal, level of implementation and maintenance of fire prevention measures and the construction of additional structures upon the property that are not included as part of this assessment. If you are concerned or notice that factors have changed a new Bushfire Attack Level should be undertaken.

As permitted by the law and to its greatest extent, WA Planning & Logistics Pty Ltd and its associated employees excludes all liability whatsoever for: Damage, loss, injury, death or claim to any property and/or person caused by a fire regardless of how that fire was caused and Errors and/or omissions in this report with the client expressly acknowledging that such exclusion of liability is reasonable in all circumstances.

This assessment is not a Bushfire Management Plan and does not in any way certify that the proposed structure has been built in accordance with the assessed BAL rating. In providing this report as part of a development application or building licence the client and landowner acknowledges that they understand, approve and will comply with all requirements to maintain the separation distances detailed in this report. Furthermore, the client/landowner acknowledges and accepts all responsibility in maintaining the required building protection zone defined in AS3959.2009.

This report is valid for 12 months only from the date of issue.

BUSHFIRE ATTACK LEVEL ASSESSMENT EXPLAINED

A Bushfire Attack Level (BAL) Assessment is a means of measuring the severity of a buildings potential exposure to ember attack, radiant heat and direct flame contact in a bushfire event, and thereby determining the construction measures required for the dwelling. The methodology used for the determination of the BAL rating, and the subsequent building construction standards, are directly referenced from Australian Standard AS 3959-2009 *Construction of buildings in bushfire prone areas*.

The BAL rating is determined through identification and assessment of the following parameters:

- Fire Danger Index (FDI) rating; assumed to be FDI-80 for WA;
- All classified vegetation *within 100m* of the subject building;
- Separation distance between the building and the classified vegetation source/s; and
- Slope of the land under the classified vegetation.

AS 3959-2009 has six (6) levels of BAL, based on the radiant heat flux exposure to the building, and also identifies the relevant sections for building construction, as detailed below:



Bushfire Attack Level (BAL)	Classified vegetation within 100m of the site and heat flux exposure thresholds	Description of predicted bushfire attack and levels of exposure	Construction Section (within AS3959)
BAL-LOW	See clause 2.2.3.2 of AS3959-2009	There is insufficient risk to warrant specific construction requirements	4
BAL-12.5	≤ 12.5kW/m ²	Ember attack	3&5
BAL-19	>12.5kW/m ² to ≤19kW/m ²	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux	3&6
BAL-29	>19kW/m ² to ≤29kW/m ²	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux	3&7
BAL-40	>29kW/m ² to ≤40kW/m ²	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux with the increased likelihood of exposure to flames	3&8
BAL-FZ	>40kW/m ²	Direct exposure to flames from fire front in addition to heat flux and ember attack	3&9

AS 3959-2009 BAL ASSESSMENT REPORT

This report has been prepared by an Accredited BPAD Practitioner using the Simplified Procedure (Method 1) as detailed in Section 2 of AS 3959 – 2009 (Incorporating Amendment Nos 1, 2 and 3).

Property Details and Description of Works				
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference
	-	7	2	Ranch Court
Local government area	Suburb		State	Postcode
	Kalbarri		WA	6536
Main BCA class of the building	1A	Use(s) of the building	Dwelling	
Description of the building or works	Single Residential Dwelling			

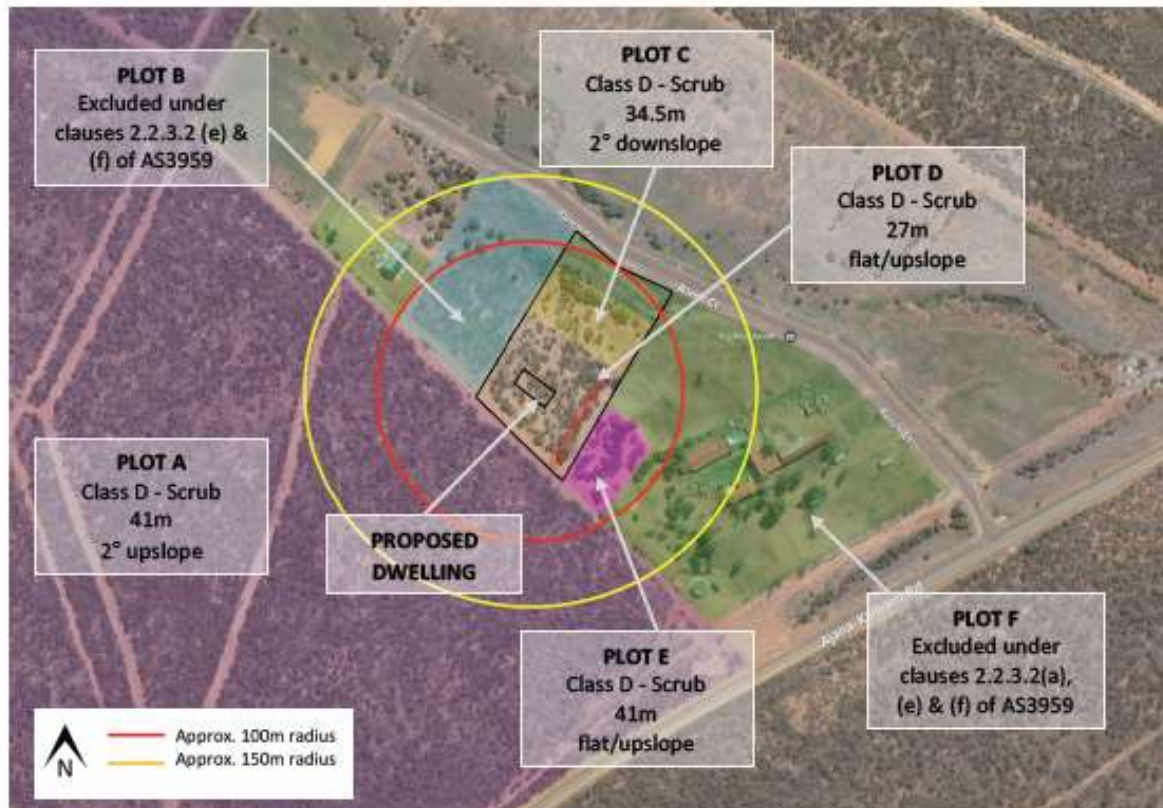
Report Details			
Report / Job Number RANC7	Report Version 1	Assessment Date 22 August 2016	Report Date 8 September 2016

BPAD Accredited Practitioner Details	
Name Kathryn Jackson Company Details WA Planning & Logistics Pty Ltd Town Planning Services & BAL Assessments PO Box 1570 GERALDTON WA 6531 Contact: 0459 186 171 Email: Kathryn@waplanning.com.au Signed: 	 <p>BPAD Bushfire Planning & Design Accredited Practitioner Level 1</p>
<small>Reliance on the assessment and determination of the Bushfire Attack Level contained in this report should not extend beyond a period of 12 months from the date of issue of the report. If this report was issued more than 12 months ago, it is recommended that the validity of the determination be confirmed with the Accredited Practitioner and where required an updated report issued.</small>	

SITE ASSESSMENT

The assessment of this site / development was undertaken on 22 August 2016 by a BPAD Accredited Practitioner for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 - 2009 Simplified Procedure (Method 1).


Figure 1 – Site Assessment




Please note: The above aerial imagery has been obtained from Bing 2016 DigitalGlobe on 24 August 2016. This image is used for mapping purposes only and that changes may have occurred since this image was taken. The BAL rating is determined on the physical assessment undertaken onsite in accordance with the requirements of AS3959-2009.

VEGETATION CLASSIFICATION


All vegetation within 100m of the site / proposed development was classified in accordance with Clause 2.2.3 of AS 3959-2009. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below.

Plot	Vegetation Classification or Exclusion Clause	Effective Slope	Separation (m)	BAL
A	Class D – Scrub	2° upslope	41m	BAL-12.5
Photographs				
				
Description / Justification for Classification				
<p>This plot commences 11m from the rear boundary on the other side of an 11m wide fire break / horse trail. The trees are under 3m which are spread out with low scrubs growing between with little to no grass understorey. There is some dry/dead material along the edge which appears to have been produced from clearing the break. 31m into the plot gave a 2 degree upslope. This plot will remain unmanaged. While there is a mixture of 2-4m high vegetation and lower shrubs, it is considered at its greatest potential this area should be considered as Scrub for the purposes of this assessment. This land is a Crown Reserve.</p>				

Plot	Vegetation Classification or Exclusion Clause	Effective Slope	Separation (m)	BAL
B	Excluded under clauses 2.2.3.2(e) & (f)	0°/flat	14m	BAL-LOW
Photographs				
				
Description / Justification for Classification				
<p>There is 14m between the proposed dwelling site and the boundary to the property to the north-west. Plot B has the occasional tree or bush however evidence onsite demonstrates that the area is regularly maintained through mowing with grass being maintained below 100mm at the time of the site visit. The site visit was also undertaken during winter/spring with ample rainfall and with the grass height still below 100mm it is considered reasonable to presume the lot is maintained regularly. As per the exclusion requirements of clause 2.2.3.2(f) it is considered that the lot is being managed in a minimal fuel condition and is not considered to significantly increase the severity of a bush fire attack. With the close proximity of the national park to the west, this is the high risk and vegetation plot that will produce air borne embers that will significantly increase the severity and spread of a bush fire in the area.</p>				

Plot	Vegetation Classification or Exclusion Clause	Effective Slope	Separation (m)	BAL
C	Class D – Scrub	2 ^o downslope	34.5m	BAL-12.5
Photographs				
				
Description / Justification for Classification				
<p>This vegetation plot is located between the proposed dwelling and Ranch Court and surrounds a small natural waterway that passes through the property. The area is 31m from the proposed dwelling site and consists of wattle trees between 5 -6m high with a light to medium understory.</p>				

Plot	Vegetation Classification or Exclusion Clause	Effective Slope	Separation (m)	BAL
D	Class D – Scrub	0 ^o / Flat	27m	BAL-12.5
Photographs				
				
Description / Justification for Classification				
<p>Plot D consists of a 9m wide vegetation strip that runs parallel to the southern boundary of the property. Between this vegetation and the property boundary is a firebreak approximately 5m wide. The vegetation consists of mostly wattle trees between 2-3m in height with a light understory. This area is 27m from the proposed dwelling on the same level. The area although less than 20m in width cannot be excluded under clause 2.2.3.2(d) as there is only 5m distance between this vegetation and Plot E.</p>				

Plot	Vegetation Classification or Exclusion Clause	Effective Slope	Separation (m)	BAL
E	Class D – Scrub	0 ^o / Flat	41m	BAL-12.5
Photographs				
				
Description / Justification for Classification				
<p>Plot E is the western portion of the property to the south of the subject lot. The area consists of wattle trees to 5m in height with little to no understory.</p>				

Plot	Vegetation Classification or Exclusion Clause	Effective Slope	Separation (m)	BAL
F	Excluded under clauses 2.2.3.2(a), (e) & (f)	-	-	BAL-LOW
Description / Justification for Classification				
Built development, managed landscaped areas, land managed in a low fuel condition and land that does not contain vegetation.				

BUSHFIRE PRONE AREA MAPPING

Below is an extract from the DFES mapping demonstrating that the subject property is located within a designated Bushfire Prone Area.

Figure 6 – Extract from the Map of Bush Fire Prone Areas 2016



RELEVANT FIRE DANGER INDEX

The fire danger index for this site has been determined in accordance with Table 2.1 of AS3959.2009 or otherwise determined in accordance with a jurisdictional variation applicable to the site.

FDI 40
Table 2.4.5

FDI 50
Table 2.4.4

FDI 80
Table 2.4.3

FDI 100
Table 2.4.2

POTENTIAL BUSHFIRE IMPACTS

The potential bushfire impact to the site / proposed development from each of the identified vegetation plots are identified below.

Table 1: BAL Analysis

Plot	Vegetation Classification	Effective Slope	Separation (m)	BAL
A	Class D – Scrub	2° upslope	41m	BAL-12.5
B	Excluded under clauses 2.2.3.2(f)	-	-	BAL-LOW
C	Class D – Scrub	2° downslope	34.5m	BAL-12.5
D	Class D – Scrub	0° / Flat	27m	BAL-12.5
E	Class D – Scrub	0° / Flat	41m	BAL-12.5
F	Excluded under clauses 2.2.3.2(a), (e) & (f)	-	-	BAL-LOW

APPLICATION OF SHIELDING PROVISIONS

Clause 3.5 of AS3959.2009 states that the next lower BAL can be applied to an elevation of a proposed building where the elevation is not exposed to the source of the bushfire attack. The shielded elevation is not permitted to be constructed below BAL-12.5, except where the exposed elevations have been determined as BAL-LOW.

An assessment of the proposed building has been undertaken. Shielding provisions are not applicable in this instance

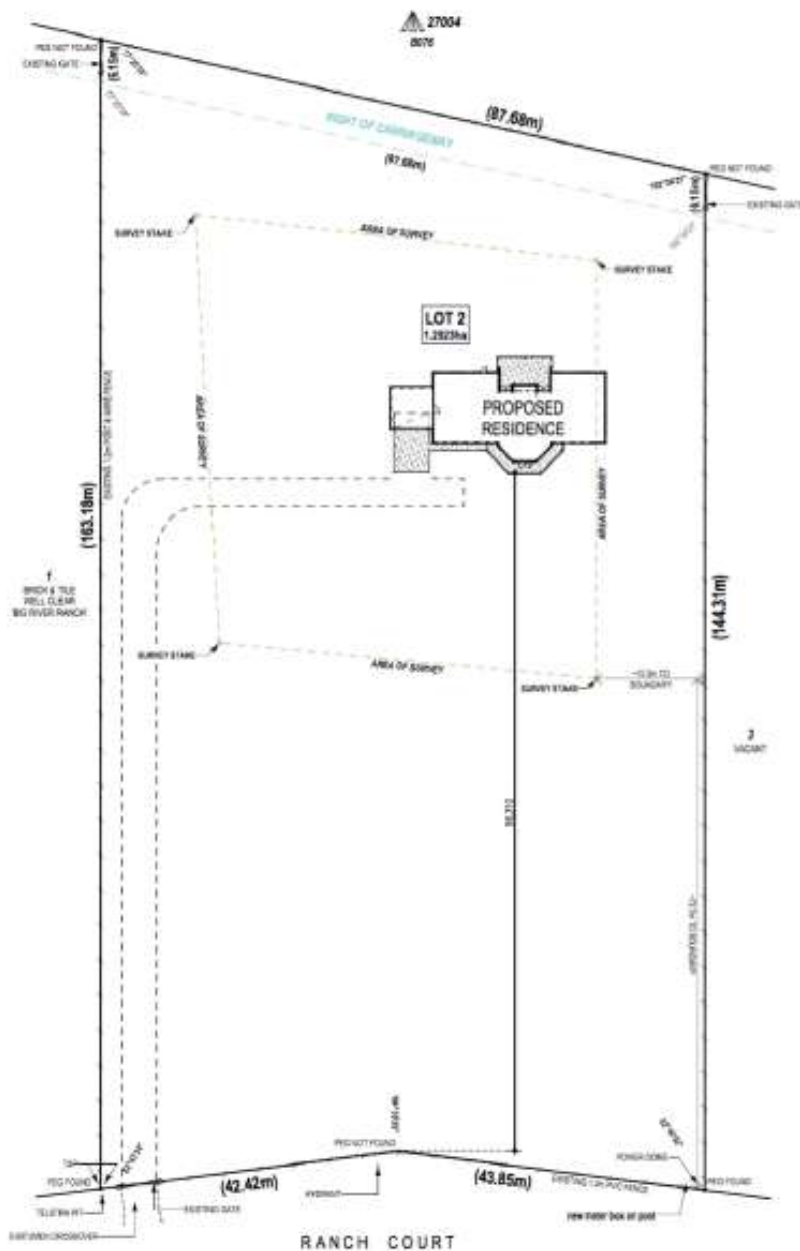
DETERMINED BUSHFIRE ATTACK LEVEL (BAL)

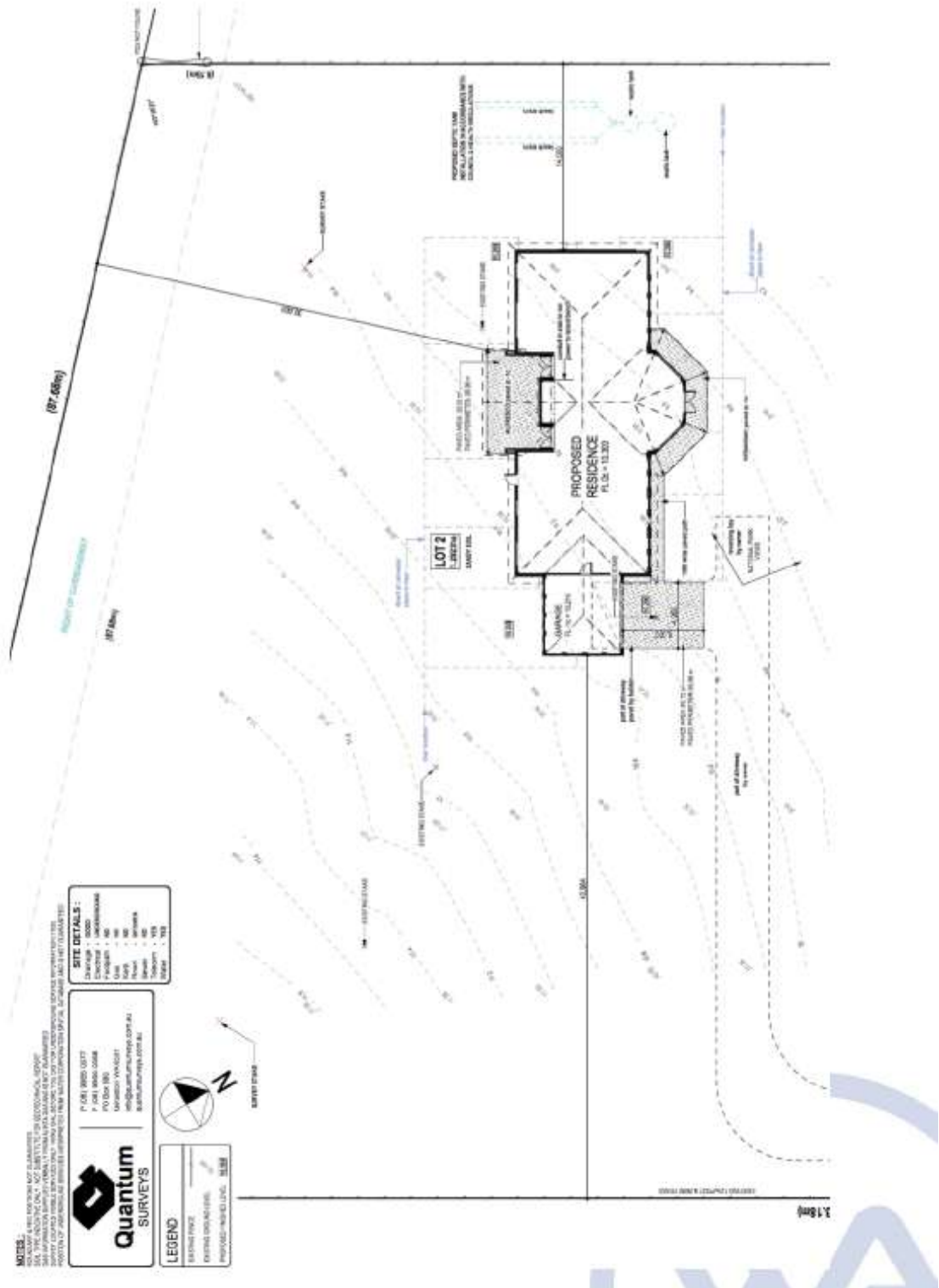
The Determined Bushfire Attack Level (highest BAL) for the site / proposed development has been determined in accordance with clause 2.2.6 of AS 3959-2009 using the above analysis.

Determined Bushfire Attack Level	BAL-12.5
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APPENDIX 1
[PLANS & DRAWINGS]

Plans and drawings relied on to determine the bushfire attack level:		
Drawing / Plan Description Site Plans		
Job Number 31157	Revision 5	Date of Revision 30/6/2016





APPENDIX 2
[PROPERTY PHOTOGRAPHS]

Property Photographs:

Property photographs demonstrating the context/view from each elevation of the proposed structure.

Figure 1 – View looking NORTH



Figure 2 – View looking SOUTH



Figure 3 – View looking EAST



Figure 4 – View looking WEST



ITEM 6.3.5 REQUEST TO ADD SECOND BUILDING ENVELOPE – LOT 6 (NO. 18) RANCH COURT, KALBARRI

LOCATION:	Lot 6 (No. 18) Ranch Court, Kalbarri
FILE REFERENCE:	10.6.1.1
APPLICANT:	A & L Sweetman
OWNER:	A & L Sweetman
DATE OF REPORT:	8 November 2016
REPORTING OFFICER:	Debbie Carson – Planning Officer
APPENDICES:	
1.	Letter from Applicant
2.	Subdivision Guide Plan – Big River Ranch
3.	Schedule of Submissions
4.	Conditions of Council for first building envelope relocation

AUTHORITY / DISCRETION:

Quasi-Judicial *when Council determines an application within a clearly defined statutory framework, abiding by the principles of natural justice, acting only with discretion afforded it under law, and giving full consideration to Council policies and strategies relevant to the matter at hand. These decisions are reviewable by the State Administrative Tribunal.*

SUMMARY:

Correspondence has been received from the abovementioned Applicant requesting Council consider allowing the addition of a second building envelope upon Lot 6 (No. 18) Ranch Court, Kalbarri. The second building envelope has been requested in order to allow both a shed and dwelling to be built upon the lot, without interfering with the Landscape Protection Area and water course that runs through the middle of the lot, and so as not to compromise or confine the functionality of the dwelling and lot. The proposed modification is considered to partially comply with the *Town Planning Scheme No. 9 Appendix 8*, with a variation to northern and eastern lot boundary setbacks requested, with the northern setback reducing from the specified distance of 15 metres to 5 metres and the eastern setback reducing from the specified distance of 30 metres to 20 metres. This report recommends conditional approval of the modification.

LOCALITY PLANS:

Figure 1 – Location Plan, Lot 6 (No. 18) Ranch Court, Kalbarri



Figure 2 – Aerial Photograph, Lot 6 (No. 18) Ranch Court, Kalbarri



BACKGROUND:

Correspondence has been received from the landowners of Lot 6 (No. 18) Ranch Court Kalbarri, requesting consideration for the addition of a second building envelope upon the lot (as attached at **Appendix 1**).

Victoria Location 11493 Kalbarri-Ajana Road was subject to Scheme Amendment No. 37 to *Town Planning Scheme No. 4*. This Scheme Amendment rezoned the land from 'Special Site (Equestrian Centre/Resort) Zone' to 'Special Rural Zone' and 'Tourist Accommodation Zone'.

As part of the Scheme Amendment, a Subdivision Guide Plan was included within the Scheme through the inclusion of Appendix No. 8. This contains various clauses relating to the subdivision and development of the land.

In 2015, the applicant requested that the building envelope location at that time be moved to avoid a new watercourse channel that had been identified, that was identified as being outside of the designated Landscape Protection Area. The former Landscape Protection Area covered the southern half of the block and the original building envelope was located on the north-eastern corner of the lot. An engineering consultant was engaged by the landowners to accurately determine the location of the water course channel that runs through the lot, and to ascertain the most appropriate location for the Landscape Protection Area and building envelope. As a result of this study, the location of the Landscape Protection Area was amended and the building envelope moved from the northern area to the southern portion of the lot, as it is on the current Subdivision Guide Plan.

The Applicant has now requested the addition of a second building envelope to allow the owner to build both a dwelling and outbuilding upon the lot without interfering with the Landscape Protection Area, and so as not to create a congestion of buildings upon the Special Rural lot.

The second building envelope is proposed to be located on the north-eastern corner of the lot, and having the following proposed setbacks:

Front (E):	20m
Side (N):	5m
Side (S):	79m
Rear (W):	67m

It is noted for Council information that the Applicant initially applied to have a setback from the northern boundary of 10 metres, however this has been amended to a proposed setback of 5 metres from the northern lot boundary in consideration of advice received from the Department of Water (see further).

A copy of the lot layout, detailing the proposed second building envelope in red, is included upon the existing Subdivision Guide Plan, at **Appendix 2**.

The total area of the two building envelopes combined will be approximately 1,455m², with the maximum allowable building envelope specified within the Scheme as being 2,000m².

COMMUNITY/GOVERNMENT CONSULTATION:

The proposed addition of a second building envelope was advertised to adjoining landowners of Lot 6 (No. 18) Ranch Court, Kalbarri for a period of 14 days, with letters sent to these landowners. Letters were also sent to the Department of Parks and Wildlife and the Department of Water for their consideration. Consultation commenced on 7 October 2016 and concluded on 21 October 2016.

During the advertising period five (5) submissions were received, and are included in the Schedule of Submissions (**Appendix 3**). No objections were received during the advertising period. One submission provided no comment and three submissions indicated support for the proposal. A submission from the Department of Water (DoW) indicated no objection, as long as the advice and recommendations provided are addressed, with the DoW supporting a further reduction of setbacks to ensure the second envelope remains outside of the Landscape Protection Area and watercourse path. In particular, the Department of Water provided the following comments:

“The Department of Water does not have any flood mapping or detailed topographical mapping for the general area. However, a portion of Lot 6 is expected to be affected by flooding as there is a main watercourse running through the middle of this property. In addition, there is a secondary channel located to the north of the main watercourse which, as mentioned in the Blacktop Consulting Engineers report, appears to be taking more flow over the last few years.

Due to a lack of flooding information, the proposed second building envelope on Lot 6 (coloured purple on attachment 2) should be located as far as

possible from the secondary channel (black dashed line on attachment 2) and built on fill to provide adequate flood protection. To allow this, the Department of Water encourages Council to permit reduced minimum setbacks from eastern or northern lot boundaries.

Please note that the Department of Water does not support the use of levees, as mentioned in the Blacktop Consulting Engineers report, as it promotes the myth of total flood protection and there would also be the need for ongoing levee maintenance. Levees can also exacerbate flooding problems downstream.

The other issues that may require attention are:

(1) the stability of the main watercourse and secondary channel due to the changing flow regime, and

(2) potential access across the watercourses.”

The Department of Water also provided comment on the conditions of the previous motion of approval by Council to relocate the original building envelope (Council’s motion is included at Appendix 4). One of the conditions included the requirement to undertake river channelling measures and excavation to train water through the lot and away from buildings. The DoW have advised that it does not support any modification to the water course through means of river channelling, channel excavation or clearing unless minimal impact can be adequately demonstrated by provision to DoW of survey information and engineered drawings. The DoW has also provided further advice on these conditions, and these have been noted, with the full item of correspondence from the Department of Water available to Council upon their request.

FINANCIAL & BUDGET IMPLICATIONS:

Nil.

STATUTORY IMPLICATIONS:

State: Planning and Development Act 2005

Local: Shire of Northampton Town Planning Scheme No. 9 – Kalbarri Townsite

The land is zoned “Special Rural” under *Town Planning Scheme No. 9 – Kalbarri Townsite* with Appendix 8 providing a number of specific clauses that relate to the subdivision and development of the land.

Appendix 8 – Special Rural Zone No. 2 includes the following subdivision and development control provisions:

“Subdivision

- (2) *Subdivision shall be generally in accordance with the Subdivision Guide Plan (Map 3) contained within the Amendment documents for Amendment No 37 to Town Planning Scheme No 4 upon gazettal of that Amendment. Variations to the Subdivision Guide Plan may only be made subject to endorsement by Council and the Commission, and in consultation with other relevant government agencies.*
- (3) *The minimum lot size shall be 1.0 hectare.*

Building

- (4) (a) *All building on a lot shall be erected within the building envelope defined on the Subdivision Guide Plan (Map 3) contained within the Amendment documents for Amendment No 37 to Town Planning Scheme No 4 upon gazettal of that Amendment.*
- (b) *No building envelope or effluent disposal system shall be located within the Landscape Protection Area defined on the Subdivision Guide Plan (Map 3) contained within the Amendment documents for Amendment No 37 to Town Planning Scheme No 4 upon gazettal of that Amendment.*
- (c) *Notwithstanding (4 a), Council may permit a variation to the location of a defined building envelope on a lot if it is shown to the satisfaction of Council that the proposed location of the building envelope will not be detrimental to the landscape or environment and satisfies the following minimum setbacks:*
- *Front Boundary 30 metres*
 - *Rear Boundary 15 metres*
 - *Side Boundaries 15 metres*
- (d) *Notwithstanding (4a), Council may permit the construction of stables (maximum area of 24m²) outside the defined building envelope on a lot if it is shown to the satisfaction of Council that there will be no detrimental impact on the amenity of the Zone or neighbouring properties.*

- (e) *No stable is permitted within the Landscape Protection Area defined on the Subdivision Guide Plan (Map 3) contained within the Amendment documents for Amendment No 37 to Town Planning Scheme No 4 upon gazettal of that Amendment or within 15 metres of a habitable building on a lot.*
- (f) *All buildings (including stables) shall be sympathetic to existing landscape elements, namely landform and vegetation, in terms of their design, building height, materials and cladding colours.*
- (g) *All buildings shall be constructed utilising roof and external wall materials comprising natural earth or green vegetation colours.*
- (h) *The use of zincalume, galvanised iron and other coloured (including white or off-white) roof and wall materials which, in the opinion of Council, prejudice the landscape amenity of the adjacent Kalbarri National Park and surrounding area, are not permitted.*
- (i) *All stormwater and runoff shall be disposed of within each lot and shall not be directed into the Landscape Protection Area.*
- (j) *No building shall exceed two (2) storeys in height."*

A copy of the Subdivision Guide Plan is included within **Appendix 2**.

POLICY IMPLICATIONS:

Nil.

COMMENT:

The proposed addition of a second building envelope upon Lot 6 (No. 18) Ranch Court is considered to partially comply with the requirements set out in Appendix 8 of *Town Planning Scheme No. 9 – Kalbarri*, with two reduced boundary setbacks being the reason that the proposal doesn't fully comply with the provisions of the Scheme.

The proposed second building envelope is not anticipated to impact on the Landscape Protection Area and is not considered to be detrimental to the

landscape or environment, and this is supported by the submissions received during the consultation process. Consideration should be given to the fact that a substantial protection area runs through the middle of the property (approximately 40% of the lot) which substantially limits the landowner's ability to utilise the land effectively. As per Appendix 8 of the *Town Planning Scheme No. 9*, no building envelope (or built form) shall occur within this Landscape Protection Area, and therefore the site is quite limiting in terms of building placement. To optimise the use of the remaining available land and avoid congestion of built form to one area of the 1.1ha lot, the owners propose to split the dwelling and outbuilding to opposite sides of the lot.

During the consultation process, the Department of Water and the Department of Parks and Wildlife were consulted to identify any issues that a second building envelope might pose to the natural environment of the lot and adjacent areas, and neither agency raised any objections to the proposal. The DoW have provided substantial advice in relation to the proposal, and their recommendations have been noted and addressed within the conditions of the proposed approval (N.B. A copy of the original conditions imposed upon the landowner for the original building envelope relocation, that are referred to within the Department of Water's correspondence, are attached as Appendix 4).

Three letters of support were also received from adjoining landowners with no objections to this consultation. All owners of lots within the Big River Ranch Special Rural area were advised of the proposal during the advertising period.

The addition of a second building envelope is considered to comply with the maximum total envelope footprint allowed.

The proposed eastern (front) and northern (side) boundary setbacks do not comply with the required 30m and 15m respectively, as specified within the provisions of *the Town Planning Scheme No. 9 - Appendix 8*, The proposed setbacks of 20 metres from the front boundary and 5 metres for the side boundary reduce the setback provisions by 10 metres on both lot boundaries. The western (rear) and southern (side) boundary setbacks both meet the specified provisions.

There are alternatives to allowing a second building envelope to be added to the lot. These include requiring the landowner to utilise the existing envelope, or allowing a larger existing building envelope on the southern portion of the lot, thus negating the need for a second envelope. In relation to these two other options, the first presents a problem in that the narrow nature of the existing envelope would

more likely require an outbuilding to be built forward of the dwelling and to the front of the lot, which does not comply with provision 4.2.5 of the Shire's *Local Planning Policy – Outbuildings*:

“4.2.5 Regardless of zoning, on lots of 4ha or less, an outbuilding and/or detached garage is to be located entirely behind any existing dwelling on the lot unless the outbuilding and/or detached garage is consistent in design and constructed in the same materials and colours as the dwelling.”

Under this alternative, the outbuilding would be located in a more visually prominent position within the Big River Ranch Subdivision area, at the end of the Ranch Court cul-de-sac. It is also more likely that the positioning of a dwelling towards the rear of the envelope would not be able to achieve an acceptably low BAL (Bushfire Attack Level) rating under the *State Planning Policy – Planning in Bushfire Areas* as it would be closer to bushfire prone vegetation, and therefore would present further problems for the landowner. The latter alternative (i.e. allowing a larger existing building envelope) would require reduced setbacks from lot boundaries that would not comply with the *Town Planning Scheme No. 9 Appendix 8* provisions, and therefore would present the same issues as the addition of a second building envelope, and as well create a congestion of buildings that the landowner is wishing to avoid.

Given that neither of the alternatives to the applicant's proposal presents a better option for the landowner in terms of functionality of the site, and given that there is a substantial area of land unable to accommodate built form within the Landscape Protection Area upon the lot, as well as the fact that the proposal has the support of landowners and the Department of Water, it is considered that the variation to the setback provisions (as specified within *Appendix 8*) is an acceptable variation to the *Scheme* provisions. It is therefore recommended that Council grant approval to the proposed additional building envelope.

VOTING REQUIREMENT:

Absolute Majority Required: No.

CONCLUSION:

It is recommended that Council grant approval to the addition of a second building envelope on Lot 6 (No. 18) Ranch Court, Kalbarri in accordance with the attached plans (**Appendix 2**) detailing a front setback of 20m, northern setback of 5m, southern side setback of 79m and western rear setback of 67m.

OFFICER RECOMMENDATION – ITEM 6.3.5	APPROVAL
<p>That Council resolve to approve the addition of a second building envelope on Lot 6 (No. 18) Ranch Court, Kalbarri subject to:</p>	
<p>1. The subdivision guide plan being amended at the cost of the Applicant/Landowner;</p>	
<p>2. The Development Application fee of \$147 being paid;</p>	
<p>3. The following past conditions of Council, endorsed on 19 June 2015, be rescinded to support the Department of Water’s recommendations, dated 31 October 2016 (as attached):</p>	
<p>(a) Excavate and train the central drainage channel by clearing some of the fringing shrubs and leaving space for future cleaning;</p>	
<p>(b) Replant widened vegetated buffer to the drainage line, with local species to a width of 20 metres either side of the drainage line. This would be encompassed within the landscape protection area shown on the subdivision guide plan;</p>	
<p>(c) Normal soil management practices will reduce potential loss of solid particles from the larger lots; and</p>	
<p>(d) There is little or no surface runoff from soils because of the porosity of the soils;</p>	
<p>4. The following past conditions of Council, endorsed on 19 June 2015, be retained and applied to both building envelopes upon Lot 6 (No. 18) Ranch Court, Kalbarri:</p>	
<p>(a) Locate dwellings off the alluvial flood plain as shown on the attached geotechnical plan;</p>	

- (b) Runoff from roads should be retained in detention basis designed for a 1:10 year storm event; and**
- (c) Stormwater from dwellings should be retained in rainwater tanks, soakwells or similar facilities.**

Advice Notes

- 1. Any proposed excavation within the Landscape Protection Area shall be submitted to the Department of Water prior to any works being undertaken, and any works approved shall be to the satisfaction and approval of the Department of Water.**
- 2. The Applicant is advised to familiarise themselves with the Department of Water's River Restoration Manual (Section 10 – Stream Stabilisation), their Operational Policy 4.3 – Identifying and Establishing Waterways Foreshore Areas, and their Water Quality Protection Note 6 – Vegetation Buffers to Sensitive Water Resources (2006).**
- 3. Any future on-ground works should be consistent with the Stormwater Management Manual for Western Australia (2004-2007), the relevant Department of Water guidance and Council development specifications.**

APPENDIX 1. LETTER FROM APPLICANT

Allan Sweetman
Lauren Sweetman
C/- PO Box 71
KALBARRI 6536

Dear Councillors

Re: Lot 6 Ranch Court, Kalbarri

Thank you for considering our request to divide the building envelope on Lot 6 Ranch Court at the October Council meeting.

We request Council take into account the factors influencing our request to split the current building envelope and build a shed on the opposite side of the block. These are:

- If the shed and house were to be built in the same envelope they would have to be placed very close together and will give a congested feel to the living area of our block.
- Our goal when buying a semi-rural block was to promote a rural style of living and be able to create space between our buildings, so as to not be too confined like a suburban block.
- The shed would be more aesthetically pleasing on the opposite side of the block as it would be tucked away out of public view. If it were to be placed in the current envelope it would be in prominent view for any traffic driving down Ranch Court.
- The shed will be strategically placed outside of both the Landscape Protection Area and the current watercourse which flows after a heavy rain.
- The shed will help screen the neighbouring foul yards from the future house site, helping to minimise noise from roosters etc.
- The site of the shed will still adhere to the shire guidelines – 10m and 20m's from prospective boundaries.

We have permission from the current neighbours to place the shed on the opposite side of the block.

We hope you will consider our proposal favourably and look forward to your reply.

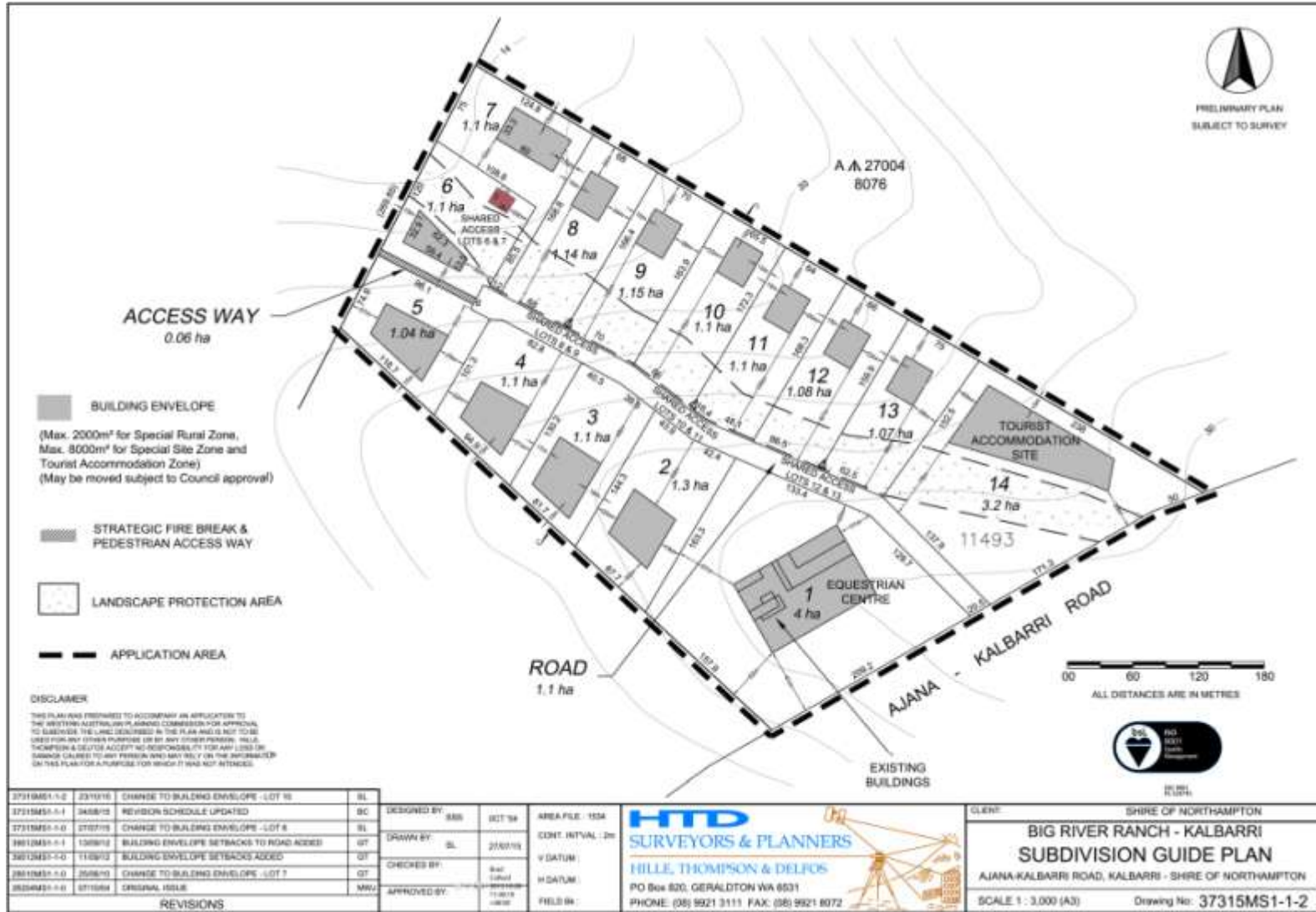
Yours sincerely

Allan Sweetman

Lauren Sweetman

4 October 2016

APPENDIX 2. SUBDIVISION GUIDE PLAN SHOWING PROPOSED SECOND BUILDING ENVELOPE IN RED



APPENDIX 3. SCHEDULE OF SUBMISSIONS

No	Submitter	Property Address	Submission Detail	Comment/Recommendation
1.	Rex Smith – Big River Ranch	Lot 1 Ranch Court, Kalbarri	- Support	- Noted.
2.	Kalbarri River Developments Pty Ltd	Lots 3,8,9,11,12,13 & 14 Ranch Court, Kalbarri	- Support	- Noted
3.	J & C Dawe	Lot 4 Ranch Court, Kalbarri	- Support	- Noted
4.	Department of Parks and Wildlife 201 Foreshore Drive, Geraldton WA 6530	No affected property address	- No comment	- Noted.
5.	Department of Water PO Box 73, Geraldton WA 6535	No affected property address	<p>The DoW provided several comments including:</p> <ol style="list-style-type: none"> 1. Due to a lack of flooding information held by the DoW, the proposed second building envelope on should be located as far as possible from the secondary channel and built on fill to provide adequate flood protection. To allow this, the DoW encourages Council to permit reduced minimum setbacks from eastern or northern lot boundaries. 2. The DoW does not support the use of levees as it promotes the myth of total flood protection and can also exacerbate flooding problems downstream. 3. Other issues that may require attention are: 	- Recommendations of DoW have been applied within the Conditions of the Recommendation.

			<p>(a) the stability of the main watercourse and secondary channel due to the changing flow regime, and</p> <p>(b) potential access across the watercourses.</p> <p>4. A number of comments and recommendations were given addressing past Council conditions imposed upon the original building envelope relocation (refer to Appendix 4) including:</p> <p>(a) Condition 1 -The DoW does not support the excavation or training of drainage channels and strongly recommends that a precautionary approach be taken to any further work on this watercourse, to avoid further erosion, sedimentation and other changes to the existing channel forms. The DoW provided information on Stormwater Management and River Restoration.</p> <p>(b) Condition 2 - revegation of Landscape Protection Area is not required. An increased density of planting to a density greater than adjacent land may increase the fire risk to landowners. If Council wishes to retain this condition, consider rewording to:</p> <ul style="list-style-type: none"> • “Vegetation buffers composition should comprise under-storey vegetation (grasses and sedges), over-storey (tall shrubs, trees) and carbon-rich litter matching the density and diversity of undisturbed local native vegetation.” <p>With an Advice Note stating that:</p>	
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			<ul style="list-style-type: none"> • “Any revegetation to be undertaken in accordance with DoW’s Operational Policy 4.3 Identifying and establishing waterways foreshore areas, and our Water quality protection note 6 - Vegetation buffers to sensitive water resources (2006). “ <p>(c) Condition 4 – condition would be better applied to development applications rather than building relocation approval, with recommended wording to be:</p> <p><i>“Stormwater management (upon Lot 6) shall be compliant with Council’s specifications, the relevant DoW guidance and the Stormwater Management Manual for Western Australia (2004-2007).”</i></p> <p>(d) Condition 6 – Condition should be removed on the basis that there is visual evidence of runoff and surface flow through the lot and there is always the risk of a large rainfall event whereby soil profiles become saturated</p>	
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**APPENDIX 4. CONDITIONS OF COUNCIL FOR FIRST BUILDING ENVELOPE RELOCATION
UPON LOT 6 (NO. 18) RANCH COURT, KALBARRI**

A report was placed before a meeting of Council held on 19 June 2015, at which it was resolved:

“Moved Cr SCOTT, seconded Cr GLIDDON

That Council support the request and refer the proposal to modify the landscape protection area and building envelope on Lot 6 (No. 18) Ranch Court to relevant Government agencies for their comment with the following conditions:

- *Excavate and train the central drainage channel by clearing some of the fringing shrubs and leaving space for future cleaning. (1)*
- *Replant widened vegetated buffer to the drainage line, with local species to a width of 20 metres either side of the drainage line. This would be encompassed within the landscape protection area shown on the subdivision guide plan. (2)*
- *Locate dwellings off the alluvial flood plain as shown on the attached geotechnical plan. (3)*
- *Normal soil management practices will reduce potential loss of solid particles from the larger lots. (4)*
- *Runoff from roads should be retained in detention basis designed for a 1:10 year storm event. (5)*
- *There is little or no surface runoff from soils because of the porosity of the soils. (6)*
- *Stormwater from dwellings should be retained in rainwater tanks, soakwells or similar facilities. (7)*

CARRIED 8/0”

ITEM 6.3.6 SHIRE OF NORTHAMPTON - LOCAL PLANNING SCHEME NO. 11 (KALBARRI TOWNSITE) – CONSIDERATION OF SUBMISSIONS AND PROPOSED MODIFICATIONS TO THE SCHEME

LOCATION:	KalbarriTownsite
FILE REFERENCE:	10.6.16
APPLICANT:	N/A
OWNER:	N/A
DATE OF REPORT:	10 November 2016
DISCLOSURE OF INTEREST:	Nil
RESPONSIBLE OFFICER:	Debbie Carson – Planning Officer
APPENDIX:	
1.	Schedule of Submissions

AUTHORITY / DISCRETION:

Legislative *when Council makes and reviews the legislation it requires performing its function as Local Government. For example, adopting local laws, town planning schemes & policies.*

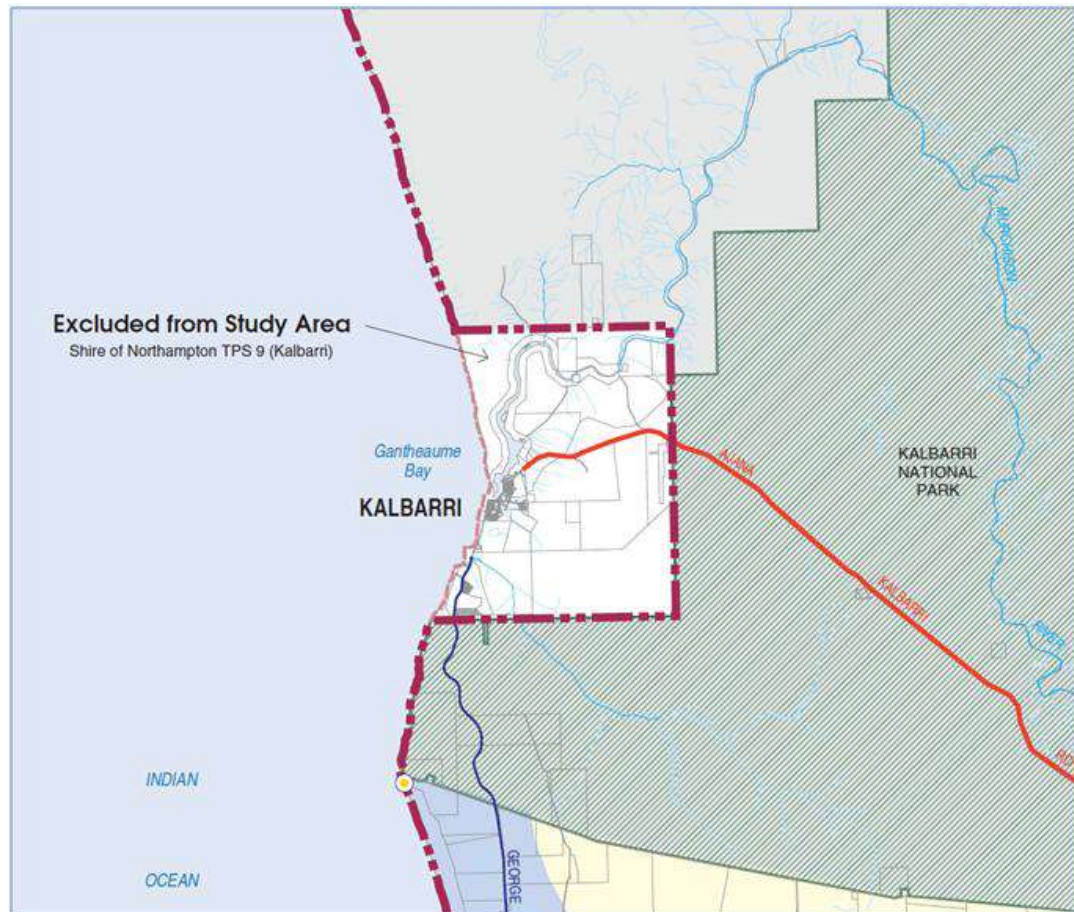
SUMMARY:

Local Planning Scheme No. 11 – Kalbarri was prepared to reflect the strategic proposals contained within the *Local Planning Strategy (LPS)* for the Kalbarri Townsite, which the WAPC subsequently endorsed in February 2012.

The Scheme was considered by Council on 22 August 2014 when it adopted *Local Planning Scheme No. 11* for consent to advertise. The Minister for Planning subsequently granted consent for the Scheme to be advertised and this was outlined in a letter from the WAPC dated 25 May 2016. Advertising was undertaken from 28 June 2016 to 26 September 2016.

This report recommends Council determine the submissions on *Local Planning Scheme No. 11*, propose modifications to the Scheme documents, and refer the documentation to the Western Australian Planning Commission for the Minister to consider final approval to the Scheme with the proposed modifications.

LOCALITY PLAN:



BACKGROUND:

The WAPC endorsed the *Local Planning Strategy (LPS)* for the Kalbarri Townsite, which then resulted in a review of the *Local Planning Scheme* for Kalbarri.

The following actions were taken during the preparation of the Draft Scheme Text:

- The *Local Planning Strategy* for the Kalbarri townsite was reviewed to ensure that the *Local Planning Scheme No. 11* reflects the strategic intent of the strategy and reflects any specific matters identified.
- *Local Planning Policies* were reviewed to determine whether the content of the policies should be incorporated into the scheme provisions or more appropriately retained as local planning policies.

- A list of issues that required consideration were identified by the Council planning staff.
- Relevant government agencies were consulted in relation to specific issues.

A full copy of the *Draft Local Planning Scheme No. 11* for the Kalbarri Townsite is available for inspection at the Shire Office upon Councillor's request.

COMMUNITY CONSULTATION:

Council sought consent to advertise the Scheme at its meeting held on 22 August 2014, and consent was subsequently granted by the Minister for Planning, outlined in a letter from the WAPC dated 25 May 2016.

Advertising was undertaken in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015* and the Shire's *Local Planning Policy – Consultation for Planning Proposals*.

The following advertising measures were taken:

- The *Draft LPS 11* was advertised for public comment for three months commencing the 28th June, 2016 and closing on the 26th September, 2016.
- An advertisement was placed in the Geraldton Guardian on 28 June 2016;
- Notifications were placed in local community newspapers, including the Northampton News and Kalbarri Town Talk during July 2016;
- Letters were sent to a list of individuals and groups who had previously registered their interest in being notified of the advertising period;
- Notices were displayed at both the Northampton and Kalbarri Offices of the Northampton Council;
- The Draft Scheme was placed on the Shire of Northampton's website during the advertising period; and
- An information brochure was sent in the form of a letterdrop, explaining the Local Planning Scheme review, to all Kalbarri residents.

GOVERNMENT CONSULTATION:

The Draft Scheme was referred to the following relevant government departments and stakeholders for their comments:

- *Telstra;*
- *Department of Planning and Infrastructure;*
- *Water Corporation;*
- *Western Power;*
- *Fire and Emergency Services Authority of WA;*
- *Department for Regional Development and Lands;*
- *Department of Indigenous Affairs;*
- *Yamatji Marlpa Aboriginal Corporation;*
- *Department of Water;*
- *Department of Parks and Wildlife;*
- *Department of Education;*
- *Department of Training and Workforce Development;*
- *Department of Health;*
- *State Heritage Office;*
- *Department of Mines and Petroleum;*
- *Mainroads WA;*
- *Department of Transport; and*
- *Tourism WA Planning Department.*

FINANCIAL & BUDGET IMPLICATIONS:

In the 2016/17 budget, an allocation of \$29,000.00 was approved to facilitate advertising and review of the Draft Text and Maps.

STATUTORY IMPLICATIONS:

State: Planning and Development Act 2005 & the Planning and Development (Local Planning Schemes) Regulations 2015

Local: Shire of Northampton Town Planning Scheme No. 9 – Kalbarri Townsite

Under regulations 25(1), (2) & (3) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, the Council must consider all submissions received on the Scheme and for each submission consider whether the Scheme should be modified or whether that submission should be rejected. Council must then resolve that the Scheme be adopted with or without modifications or whether it does not wish to proceed with the Scheme.

Under regulation 28(1) the local government must within 28 days of passing a resolution under regulation 25(3) forward the following documents to the Western Australian Planning Commission for a decision on final approval:

- (a) *a schedule of submissions made on the draft Scheme;*
- (b) *the response of the local government to each submission;*
- (c) *particulars of each modification to the draft scheme proposed by the local government in response to the submissions;*
- (d) *if any proposed modification to the scheme was advertised —*
 - (i) *an explanation of the reasons for advertising the modification; and*
 - (ii) *particulars of how the modification was advertised; and*
 - (iii) *a schedule of submissions made on the proposed modifications; and*
 - (iv) *the recommendation of the local government in accordance with regulation 26(7)(c) in respect of each submission;*
- (e) *a copy of the resolution passed under regulation 25(3);*
- (f) *if that resolution was a resolution under regulation 25(3)(c) — a summary of the reasons why the local government does not support the draft scheme;*
- (g) *details of any provision in the draft scheme that varies or excludes a provision set out in Schedule 1;*
- (h) *details of any provision in the draft scheme that supplements a provision set out in Schedule 2;*
- (i) *any relevant maps, plans, specifications and particulars required by the Commission.*

The schedule of submissions must include —

- (a) *the name and address of the person making the submission;*
- (b) *where it is relevant, a description of the property that is the subject of the submission; and*
- (c) *the submission or a summary of the submission.*

The Western Australian Planning Commission will consider the Scheme and any submissions received and make a recommendation to the Minister for Planning concerning determination. Upon receipt of the Western Australian Planning Commission's recommendation, the Hon Minister will consider the matter then make a determination on the outcome of the Scheme, which may include finalisation of the Scheme, or modifications to the Scheme that may or may not require readvertising, or refusal to finalise the Scheme.

POLICY IMPLICATIONS:

Local: Shire of Northampton Local Planning Strategy – Kalbarri Townsite (2012)

The aims of the Scheme are summarised in the strategic proposals in the Local Planning Strategy:

- *To enhance Kalbarri’s position as a premier family holiday destination within Western Australia while recognising the continuing value and importance of non-family Intrastate, Interstate and International visitors*
- *To broaden Kalbarri’s economic and employment base by furthering Kalbarri’s position as a desirable alternative residential and employment location within the Mid-West.*
- *To protect and enhance Kalbarri’s unique urban values and particularly its connectivity to the surrounding natural environment together with its compactness and high level of walkability.*

COMMENT:

A total of 15 submissions were received during the public consultation period as follows:

Source	Number of Submissions
Government Departments	11
Individual	4

The attached Schedule of Submissions (at **Appendix 1**) addresses the submissions in the context of issues raised by the Respondents, the Officer and Consultant’s comments on the issues that have been raised, and what action (in respect of the Draft Scheme, if any) is recommended to Council.

The submissions as a whole can be regarded as relatively minor, of a “tidying up” / clarifying nature for the most part and reflect positively on the extent of community

consultation undertaken in developing the *Local Planning Strategy – Kalbarri Townsite* and the degree of community acceptance and ownership achieved.

VOTING REQUIREMENT:

Absolute Majority Required: No

CONCLUSION:

It is recommended that Council determine the submissions on the Draft *Local Planning Scheme No. 11*, propose modifications to the Scheme documents and refer the documentation to the Western Australian Planning Commission for the Minister to consider final approval to the Scheme with the proposed modifications.

OFFICER RECOMMENDATION – ITEM 6.3.6	ADOPTION
That Council:	
<p>1. Pursuant to regulation 25(2) of the <i>Planning and Development (Local Planning Schemes) Regulations 2015</i>, determine the submissions in accordance with the Schedule of Submissions listed below; and</p>	
<p>2. Pursuant to regulation 25(3) of the <i>Planning and Development (Local Planning Schemes) Regulations 2015</i>, resolve that the Scheme be adopted with the modifications detailed in the Schedule of Submissions listed below; and</p>	
<p>3. Pursuant to regulation 28(1) of the <i>Planning and Development (Local Planning Schemes) Regulations 2015</i>, forward the necessary documents to the Western Australian Planning Commission for a decision on final approval by the Minister for Planning.</p>	

APPENDIX 1. SCHEDULE OF SUBMISSIONS

OFFICER RECOMMENDATION – ITEM 6.3.6 continued				ADOPTION
Shire of Northampton Draft Local Planning Scheme No 11 Kalbarri Townsite				
No	Submitter	Property Address	Submission Detail	Comment/Recommendation
1.	Dept of Education	Govt	No comment or objection.	Recommendation :That the submission be noted.
2.	Telstra	Govt	No comment or objection	Recommendation :That the submission be noted.
3.	Main Roads WA	Govt	Proposed Scheme would have limited detrimental impact on the level of service, amenity and safety of users on Main Roads network. No objection.	Recommendation :That the submission be noted.
4.	Dept of Aboriginal Affairs	Govt	Scheme Area covers a significant number and variety of Aboriginal heritage places known to DAA. As a consequence of large area and number of sites, DAA is unable to provide comment on specific instances. Notes obligations of landowners and developers in respect of places of	As noted by the DAA, issues of Aboriginal heritage and the presence or otherwise of sites of Aboriginal significance are required to be addressed in the preparation of a Structure Plan for the subdivision and development of land or where land is proposed to be developed and not the subject of previous investigations. Accordingly, no further action is required under the Scheme. Recommendation :That the submission be noted.

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			Aboriginal heritage.	
5.	State Heritage Office	Govt	<p>Supports preparation of the Scheme consistent with the deemed provisions of the Regulations which include Heritage provisions.</p> <p>Queries whether there is a need to continue reference to the Shire's Municipal Inventory as the "heritage list" for the purposes of the deemed provisions.</p> <p>Recommends that Council review its Municipal Inventory consistent with the requirements of the deemed provisions of the Local Planning Scheme Regulations.</p>	<p>The Shire's current municipal inventory is titled "Local Government Inventory" and therefore inconsistent with the wording of the Heritage provisions of the deemed provisions of the Local Planning Scheme Regulations. There is a need to ensure that the cross-reference continues and it is proposed that a new Term – Heritage List – be inserted in Part 6: Division 1 – General Definitions.</p> <p>The Shire has reviewed its former Municipal Inventory consistent with the deemed provisions of the Local Planning Scheme Regulations.</p> <p>Recommendation : That Part 6: Division 1 – General Definitions used in Scheme be amended by the insertion of the following :</p> <p>"heritage list means the Shire of Northampton Local Government Inventory 2015"</p>
6.	Water Corp	Govt	<p>Development areas indicated in the proposed LPS are catered for in the ultimate planning of the Kalbarri Water Supply Scheme and long term conceptual planning..</p> <p>Recommends a Special Control Area be established encompassing the buffer to the Kalbarri Wastewater Treatment Plant as it is essential infrastructure integral to infill development and urban expansion within Kalbarri, provides irrigation water to the golf course and</p>	<p>The inclusion of the Kalbarri Wastewater Treatment Plant buffer – either as a buffer notation on the Scheme Maps or as a Special Control Area is supported in principle.</p> <p>However, it is noted that the Draft Scheme maps submitted to the Department of Planning did originally propose that the Scheme Maps should show the WWTP buffer. The Department did not carry this forward onto the advertised Scheme Maps.</p> <p>Notwithstanding, it is considered worthwhile raising the issue again with DoP.</p> <p>Recommendation : That Council seek the advice of the Department of Planning in respect of inclusion of the Kalbarri WWTP buffer in a</p>

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			potentially other land uses and a potential location for other compatible and beneficial land uses.	Special Control Area.
7.	Dept of Water	Govt	<p>Kalbarri Water Reserve:</p> <p>Recommends that the Kalbarri Water Reserve be included within a Special Control Area consistent with SPP 2.7 Public Drinking Water Areas to protect the entire public drinking water source area and regardless of the underlying zoning. Portion of Lot 11204 [the large lot south of Nanda Drive] incurs into the Water Reserve. Rural uses need to be managed carefully and DoW will not support land use intensification over this area.</p> <p>The Industrial area is located in Priority 3 area of the Water Reserve. Future expansion will require connection to sewer and management of stormwater away from the production bores.</p> <p>Setback from Watercourses:</p> <p>The DoW does not generally support application of fixed seatbacks [Clause 4.8.13] from watercourses but recognises fixed setbacks are a pragmatic planning approach. The DoW's preferred approach is that</p>	<p>Kalbarri Water Reserve:</p> <p>The vast majority of the Kalbarri Water Reserve is located within the Kalbarri National Park and reserved accordingly. The scope for land uses potentially detrimental to the water supply to establish over that portion of the Reserve is therefore very limited.</p> <p>The only portion of the KWR that is not within the National Park is the south-western edge south of the current Nanda Drive and immediately adjoining the National Park. The Draft Scheme submitted to the Dept of Planning proposed that this area be included within a Special Control Area for the purposes of Groundwater Protection. The Dept required that the SCA be removed from the Draft Scheme Text and Maps.</p> <p>Notwithstanding, it is considered worthwhile raising the issue again with DoP.</p> <p>Setback from Watercourses:</p> <p>Clause 4.8.13 was carried over from TPS 9 and states "4.8.13 <i>Setbacks from Watercourses</i></p> <p>Within the Scheme Area, Council shall not permit the erection of any building or effluent disposal system on any land within 50 metres of the nearest definable bank of any watercourse with permanent water, or within 40 metres of the nearest definable bank of any seasonally flowing watercourse or within 75 metres of the nearest</p>

		<p>foreshore reserves be determined by on-ground site assessment, as recommended in DoW Operational Policy 4.3 Identifying and establishing waterways foreshore areas.</p> <p>The DoW also notes that the setbacks proposed at Clause 4.8.13 are considered inadequate for effluent disposal systems noting that a minimum 100m setback is recommended for effluent disposal systems.</p>	<p>definable bank of a river or estuary unless specific approval to vary this requirement is granted by Council.”</p> <p>The current foreshore reservations shown on the Scheme Maps for the Murchison River have been in place for a very long time and to seek to alter (increase) those at this time will present serious implications for Council including risks of claims for compensation from adjacent landowners. The Murchison has been the subject of considerable flood investigations and mapping which will guide future subdivision adjacent to the River and Wittecarra Creek is addressed during the structure planning process.</p> <p>It is noted that the DoP has reviewed the Text and accepted Clause 4.8.13 as presently proposed, and further Council is not in the position nor has the resources to determine a foreshore reserve for the Murchison River or Wittecarra Creek in the manner prescribed by DoW Policy 4.3.</p> <p>Development in the vicinity of the Murchison River and Wittecarra and Gabba Gabba Creeks will be required to connect to sewer overcoming the bulk of concerns in respect of distances to on-site effluent disposal systems. The only issue that may still arise is in the case of a rural residence in the vicinity of a creek or wetland. In this respect it is appropriate to modify Clause 4.8.13 to conform with the 100m setback to effluent disposal systems.</p> <p>Recommendation :</p> <ol style="list-style-type: none"> 1. That Council seek the advice of the Department of Planning in
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				<p>respect of inclusion of the Kalbarri Water Reserve in a Special Control Area.</p> <p>2. That Clause 4.8.13 be modified as follows to require a minimum 100m setback to on-site effluent disposal systems (modification in italics):</p> <p>“4.8.13 Setbacks from Watercourses</p> <p>Within the Scheme Area, Council shall not permit:</p> <p>a) <i>the erection of any building on any land within 50 metres of the nearest definable bank of any watercourse with permanent water, or within 40 metres of the nearest definable bank of any seasonally flowing watercourse or within 75 metres of the nearest definable bank of a river or estuary unless specific approval to vary this requirement is granted by Council; and</i></p> <p>b) <i>the installation of an effluent disposal system on any land within 100 metres of the nearest definable bank of any watercourse or wetland.</i></p>
8.	Dept of Parks & Wildlife	Govt	<p>Supports EPA recommendation for flora and vegetation studies as part of structure planning process.</p> <p>Notes presence of Rare Flora in Lot 9505 and recommends DRF survey prior to rezoning to urban.</p> <p>Notes presence of Important Wetland in Lot 11204 and recommends buffers and survey of wetland prior to rezoning to urban.</p>	<p>Environmental surveys will be required of both Lots 9505 and 11204 as part of the structure planning and subdivision process.</p> <p>Recommendation :That the submission be noted.</p>

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9.	Dept of Mines & Petroleum	Govt	<p>Raises significant concern that LPS 11 does not give due regard to strategic directions for exploration and resources development as outlined in SPP 2.5 – Rural Planning Policy and will increase “red tape” and act as disincentive for exploration and mining within the Shire.</p> <p>Specifically, the Dept objects to Mining Operations & Industry – Extractive being an “X” (not permitted) use in the Rural Zone. For example, the Dept suggests that sand extraction may be desirable prior to development.</p>	<p>Three areas within the LPS Scheme Area are proposed as Rural Zone and specifically:</p> <ul style="list-style-type: none"> • South of the current Nanda Drive which is proposed for future urban development; • The eastern portion of Browne’s Farm which is proposed for future urban; and • The northernmost portion of the Scheme Area north of the Murchison River. <p>As a general principle, mining / extraction of basic raw materials would not be desirable within future urban areas within the main Kalbarri Townsite but could be acceptable in the northern most areas.</p> <p>Additionally, some basic raw materials extraction may be acceptable in future urban areas consistent with an overall structure plan.</p> <p>Recommendation :That Table 1 – Zoning Table be amended to indicate Mining Operations & Industry – Extractive as “A” uses within the Rural Zone.</p>
10.	Western Power	Govt	Acknowledgement of receipt of LPS 11 but no further comment received.	<p>Recommendation :That the submission be noted.</p>
11.	Dept of Health	Govt	<p>Notes that LPS 11 should require that development be required to connect to scheme water and reticulated sewer and where no scheme water a sufficient potable supply should be required.</p> <p>Draws attention to various DoH documents applying to structure planning and subdivision design.</p>	<p>LPS 11 requires connection to scheme water and sewer and where no scheme water is available, an adequate potable supply to Council’s satisfaction.</p> <p>Recommendation :That the submission be noted.</p>

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12.	E. Trotti	Lot 831 Bridgeman Rd, Kalbarri	<p>The submission relates to Special Use Zone 9 and Clause 5.1.6 - Jakes Point Mixed Tourism Precinct (SCA 3).</p> <p>The landowner is proposing to seek Council approval to develop Lot 831 Bridgeman Road, Kalbarri to provide a mini putt-putt, kiosk/shop (small retail) and caretaker's dwelling. Due to the modest scale of the development, it is proposed that the development can be accommodated without a requirement for reticulated sewerage. It is requested that consideration for low scale tourist developments be further considered with regard to 5.1.6 (cvii) of the Draft Local Planning Scheme No. 11, which currently suggests that all development (regardless of size and scale) within SCA3 shall require scheme water and reticulated sewerage.</p> <p>The cost of extending services to the area could not be justified in the context of the proposal.</p>	<p>Special Control Area SCA 3 seeks to facilitate the co-ordinated redevelopment of the precinct for Mixed Use Tourism purposes to provide for the broad accommodation and recreational needs of visitors and the recreational needs of residents. The SCA requires that:</p> <p>“the cost of providing reticulated sewer and water supply to the lots within the precinct shall be borne by the owners and the costs shared pro-rata between the owners based on the area of each lot.”</p> <p>The nature of development ultimately envisaged under SCA3 is intensive and notwithstanding costs, cannot reasonably occur or be sustainable without the extension of scheme water and reticulated sewer.</p> <p>Notwithstanding, low key developments may be able to be accommodated with on-site water catchment and effluent disposal in the interim subject to Shire and Dept of Health approvals and connection to reticulated services when available.</p> <p>Recommendation : That Special Use Zone 9 and Clause 5.1.6(vii) be modified as follows (modification in italics):</p> <p><i>(vii) Except as otherwise approved by the local government and Department of Health in the case of low key tourist developments, all development shall be connected to reticulated sewer and water supply. The cost of providing reticulated sewer and water supply to the lots within the precinct shall be borne by the owners and the costs shared pro-rata between the owners based on the area of each lot.</i></p>
13	M & W Payne	Lot 582 Red Bluff Rd,	<p>The submission relates to Special Use Zone 9 and Clause 5.1.6 - Jakes Point Mixed Tourism Precinct (SCA 3).</p>	<p>(a) Agreed. The Special Use Zone and SCA 3 in effect seek to create a local tourist precinct and it is conceivable that there may be need for one or more Caretakers' Dwellings.</p> <p>(b) Clause 5.1.6c(v) cites as an objective to facilitate shared vehicular</p>

		Kalbarri	<p>The submission:</p> <p>(a) Requests, consistent with the Zoning Table provisions relating to the Tourist Zone, that the use of Caretakers Dwelling be a permitted use in SUZ 9;</p> <p>(b) Seeks clarification of Clause 5.1.6(v) that the 6m road reserve required along the western boundaries of Lot 582 and 830 is located within George Grey Drive;</p> <p>(c) Supports maintenance of a minimum 10m vegetated buffer along George Grey Drive and suggests inclusion of a 10m buffer along the Drive as a scheme aspiration and further that vegetation within the buffer may only be removed for safety reasons; and</p> <p>(d) Proposes that cost sharing arrangements between owners for the extension of scheme water and reticulated sewer be addressed as part of a future Development Contributions Plan under the Regulations as the type and intensity of development – and hence service requirements – may vary between lots.</p>	<p>and pedestrian access between sites and requires a minimum 6 metre wide public road along the western boundaries of lots 582 and 830 George Grey Drive. The intent of the Clause is clearly that the access be within the lots. Clarification is therefore desirable that the road lies within the lots. Further, the purpose of the road is as a shared public vehicular access way and may be directly abutted by parking.</p> <p>(c) Noted. The Scheme seeks where possible to require and maintain a vegetated buffer along George Grey Drive. Management of the vegetation would be under Council's control and it is not desirable to limit its removal only on safety grounds as other valid reasons may arise requiring the removal of vegetation.</p> <p>(d) Agreed. It is possible that the nature and intensity of development may vary between lots such that the demand for services may vary significantly between lots. It would be unreasonable for other owners to be responsible for servicing costs not directly related to their development.</p> <p>Recommendation: That Special Use Zone 9 and Clause 5.1.6 be modified as follows:</p> <ol style="list-style-type: none"> 1. To include Caretakers Dwelling in Column 3 – Special Use of SU 9 in Schedule 3: Special Use zones; 2. Clause 5.1.6c(v) be modified to read (modification in italics): The local government shall require a minimum 6 metre wide <i>public vehicular access</i> along the western boundaries of <i>and within</i> lots 582 and 830 George Grey Drive. 3. Clause 5.1.6c(vii) be modified to read (modification in italics): The cost of providing reticulated sewer and water supply to the lots within the precinct shall be borne by the owners <i>in accordance with a Development Contributions Plan</i>.
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14.	E Haskell	15 Smith St, Kalbarri	<p>Opposes the three storey building height on the western portion of Additional Use Zone A2 being the IGA store on the corner of Grey Street and Auger Street as it would be detrimental to the ambience and amenity of the Old Kalbarri.</p>	<p>Additional Use Zone A2 encourages the re-development of the lot to provide for a Convenience Store in addition to short term tourist accommodation consistent with adjacent lots. Retention of the convenience store is considered important to the overall amenity and walkability of the Old Kalbarri Residential Precinct.</p> <p>To assist with the retention of the Convenience Store function in the re-development of the site, the Scheme allows for a 3 storey portion over 50% of the western half of the property. As the property falls from east to west by some 2m+ the overall effect of a three storey over portion on the Grey Street frontage will be similar to two storeys on Smith Street. Limiting three storeys to 50% of the frontage will help to minimise the visual impact when viewed from Smith Street.</p> <p>Recommendation : That the submission be dismissed.</p>
15.	Allsage Pty Ltd / Whelans Town Planning	Lot 10792 George Grey Road, Kalbarri	<p>Seeks modification of the zoning of Lot 10792 from Rural to Rural Smallholdings to facilitate the subdivision of the land into a small number of mostly large lots. Most of the lots are to be sold to facilitate the construction of a Solar Power Station on one of the lots.</p> <p>The submission also proposes that portion of Wittecarra Creek be reserved as Environmental Conservation Reserve. It is proposed that the land continue in private ownership under the Scheme for subsequent management by Government and potentially acquisition.</p>	<p>LPS 11 proposes that Lot 10792 be zoned Rural consistent with the Kalbarri Townsite Local Planning Strategy which identifies the area as Long Term Residential. The Strategy has a clear preference for short to medium term residential to occur principally adjacent to the main Townsite to strengthen and capitalise on the Townsite's economic, social and cultural infrastructure.</p> <p>The proposition of considering limited, large lot rural subdivision over the land has some merit in that it could provide for the management of the land while remaining available for longer term residential subdivision. Such subdivision should be subject to there being a specified small number of lots, conservation controls over vegetated areas and animal management guidelines over cleared areas.</p> <p>The Kalbarri Townsite Local Planning Strategy does not recognise this type of use of the landholding at present and Council and the WAPC</p>

SHIRE OF NORTHAMPTON
TOWN PLANNING REPORT – 18 NOVEMBER 2016

		<p>The area proposed to be reserved is believed to be endorsed by the Dept of Parks and Wildlife.</p> <p>The submission suggests that proposed zoning to Rural Smallholdings is not inconsistent with the Kalbarri Local Planning Strategy which identifies the land as Long Term Residential as the large lots would have the ability to be subdivided for residential purposes at a later date.</p> <p>The submission also notes that the proposed subdivision will facilitate the provision of a Solar Farm reducing Kalbarri's reliance on non-renewable energy as well as presumably improve energy reliability within the Townsite.</p>	<p>would need more detailed planning justification and proposals in order to consider an amendment to the Local Planning Strategy to include "interim" provisions if considered warranted.</p> <p>Separate consideration is also required of the Solar Farm, particularly in respect of visual amenity impacts on the main Townsite area.</p> <p>There is also a need for a more in depth assessment of the Wittecarra Creek reservation and the longer term ownership and management of the reserve.</p> <p>It is considered that the proposals are significant and beyond the scope of the submission period on LPS 11. In the absence of any support from the Strategy they could also conceivably be considered a major modification potentially delaying the Scheme Gazettal process.</p> <p>The proposals should be dealt with as a Scheme Amendment following Gazettal of LPS 11.</p> <p>Recommendation : That the submission be dismissed but the owner be invited to submit a detailed proposal for consideration as an Amendment to LPS11 following Gazettal.</p>
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ITEM 6.3.7 SUMMARY OF PLANNING INFORMATION ITEMS

DATE OF REPORT: 7 November 2016
RESPONSIBLE OFFICER: Debbie Carson–Planning Officer

COMMENT:

The following informs Council of the various planning items (including delegated approvals) that have been dealt with since last reported to Council. Further information regarding any of the items can be obtained from the Planning Officer.

REF	APPLICANT	LOCATION	PROPOSED DEVELOPMENT / USE	DATE
057	I & H Ralph	LOT 94 (NO. 6) MORTIMER STREET, KALBARRI	PROPOSED FRONT BOUNDARY FENCE	18 October 2016
058	David Pratt	LOT 2 (NO. 45) GANTHEAUME CRESCENT, KALBARRI	PROPOSED SINGLE DWELLING – R-CODE VARIATIONS	20 October 2016

OFFICER RECOMMENDATION – ITEM 6.3.7

For Council Information

Our Ref: 20582-01
22 April 2016

Shire of Northampton
PO Box 61
NORTHAMPTON WA 6535

Dear Sir/Madam,

**APPLICATION FOR PLANNING APPROVAL – PROPOSED SOLAR THERMAL POWER STATION
LOT 10792 GEORGE GREY ROAD, KALBARRI**

Whelans Town Planning act on behalf of Allsage Pty Ltd, the owner of the above mentioned property. Please find enclosed an application for approval for development of a proposed solar farm. Accordingly please find enclosed:

- A signed Application Form;
- A cheque for the application fee;
- Application Report;
- A Flora, Vegetation and Fauna Survey;
- A Bushfire Management Plan;
- 3 copies of the plans, and
- A copy of the Certificate of Title.

If you have any enquiries regarding this development application, please contact me on 6241 3305. We look forward to your favourable response.

Yours faithfully,



Melinda Marshall
Town Planner
Whelans Town Planning

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Figures

1. Local Context Plan

Appendices

1. Planning Application Form
2. Certificate of Title
3. Western Power Correspondence
4. Development Plans
5. Department of Environment Regulation Correspondence
6. Flora and Fauna Study
7. Avian Impact Issues Advice
8. Bushfire Management Plan

1.0 INTRODUCTION

This report and attached development plans have been prepared to seek planning approval for stage 1 of a solar thermal power station at Lot 10792 George Grey Road, Kalbarri. A completed Planning Application Form is located in Appendix 1.

This report discusses the site, its location particulars, the proposed development and town planning considerations.

2.0 SITE DESCRIPTION

The subject site is 1,007.3ha in area and is located within the locality of Kalbarri with frontage to George Grey Road. The land was used as a farm however is no longer used for this purpose and is currently vacant.

The site is bordered by rural zoned land to the north and south west, the Kalbarri National Park to the south and east, land reserved for water purposes to the north west and George Grey Road to the west. See Local Context Plan below.



Figure 1: Local Context Plan

3.0 LAND TENURE & OWNERSHIP

The land specific to this development application is owned by Allsage Pty Ltd. The land is legally described as follows:

Lot No.	Address	Plan no.	Certificate of Title No.
10792	No Street Address Information	DP210152	2223/449

Refer to Appendix 2 - Certificates of Title.

4.0 PROPOSED DEVELOPMENT

This proposal seeks planning approval for Stage 1 of a solar thermal power station (the Station). The Station will be located in the south east corner of Lot 10792 on a 26.45ha parcel of land, however Stage 1 will only require approximately 4ha of this area. The location was selected as it is remote from civilisation but in close proximity to the 33KV Geraldton to Kalbarri transmission line to which it will connect.

There is an identified need for an additional power source for Kalbarri. The town is currently subject to an unacceptable level of service with numerous outages and brown-outs when the line exceeds its maximum capacity and it is understood that Western Power can't currently justify the construction of a new power line to supply Kalbarri.

An application to connect to the South West Interconnected System (SWIS) has been submitted to Western Power who has advised that they expect to make an access offer in relation to the Connection Application in December 2016. See correspondence attached.

Stage 1 will be 1 Mega Watt (MW) in size, which will generate 15,000 kilowatt hours (kWh) per day. The power station will operate 24 hours a day, seven days a week however during off peak times at night can be throttled back to produce 200 kWh.

Stage 1 will consist of the following infrastructure:

- An array of 12 x Solastore Graphite Storage Towers;
- 1,296 heliostat mirrors;
- 22 x cooling towers
- 2 x water tanks;
- 1 x transformer, and;
- A 28m x 20m building that will contain 2 x solar thermal generators, a black start generator and other plant and facilities required for the operation of the station.

It is proposed to access the station via the existing crossover to George Grey Road and along existing tracks to minimise the amount of vegetation clearing required. Please refer to the attached development plans. There will be approximately 4 light vehicles that will access the station on a daily basis as part of normal operation. During the construction phase, which is estimated to be 3 months, the station site will be accessed on average by 1 heavy vehicle per day.

5.0 TOWN PLANNING FRAMEWORK

5.1 Shire of Northampton Community Strategic Plan

The proposed development is considered to be in accordance with the Shire of Northampton Community Strategic Plan as it fits in with the 'Environmental Responsibility' value and some of the strategies and actions of the 'Infrastructure' operational area such as:

- *Promotion of alternative renew-able energy sources*
- *Adequate power and renew-able energy in towns centres*
 - 3.4.1 *Advocate on behalf of the community with regard to power requirements*
 - 3.4.2 *Council to keep abreast of renewable energy technology and promote solar, wind and wave power wherever possible.*

5.2 Kalbarri Townsite Strategy 2011

The Kalbarri Townsite Strategy is the current land use strategy that guides the future development of the subject site and recommends that its use as 'long term residential'. Specifically it recommends the following:

- *The balance site area east of the Kalbarri Access Road in Port Kalbarri Structure Plan to be protected for long term residential requirements following substantial subdivision of Precinct SR1.*
- *Subdivision and development to be subject to Use and Development provisions of PK1.*
- *Protection and rehabilitation of existing creek lines in Recreation and Conservation Reserves.*
- *Minimum 10m vegetated buffer to be retained and planted where necessary in future subdivision to all surrounding major road boundaries including major internal distributor.*

5.3 Shire of Northampton Town Planning Scheme No.9

The subject site is zoned 'Rural' under the Shire of Northampton Town Planning Scheme No.9 (TPS9) and is also subject to Special Control Area 1 (SCA1), which requires development to be in accordance with an approved structure plan. The TPS9 provisions relating to SCA1 state that the development area is already addressed with the Development Strategy Plan for Port Kalbarri. The current development strategy guiding development of the land is the Kalbarri Townsite Strategy 2011, which recommends that the land be used for residential purposes in the long term. There is also a small portion in the north west corner of the site that is affected by a major road reservation that does not accord with a physical road.

A solar thermal power station is considered a 'use not listed' as it is not specifically mentioned in the Zoning Table and cannot reasonably be determined as falling within the type, class or genus of activity of any of the use categories. On this basis Council can grant approval for a 'use not listed' if the proposed use is consistent with the objectives and purpose of the particular zone. It is considered that a solar thermal power station is consistent with the objectives and purposes of the rural zone and is therefore capable of approval.

5.4 Environmental Protection Act 1986

As the clearing of native vegetation is required approval under the *Environmental Protection Act 1986* is required. An Application for a Clearing Permit has been submitted and is currently being considered by the Department of Environment Regulation who have advised that they consider a planning approval from the Shire of Northampton to a relevant matter to the application. See attached correspondence at Appendix 5. To support the Application a Flora and Fauna Study was undertaken of the station site. Please see attached as Appendix 6. The Study identified a small area of sandstone that should remain undisturbed and as a consequence the station site was relocated 50m to the west to avoid this area. Other measures that will be employed to minimise the impact on the flora and fauna of the site include fencing of the facility to exclude wildlife and the establishment of vegetation buffers to provide a visual separation.

Concerns have been raised by the Department of Parks and Wildlife with regards to the impact of the concentrated rays of sunlight produced by the station on birds. As outlined in the document located at Appendix 6 the Station is proposed to use a small multiple tower system that does not negatively impact on birds.

5.5 State Planning Policy 3.7: Planning in Bushfire Prone Areas

In accordance with State Planning Policy 3.7, as the proposed power station is located in an identified Bushfire Prone Area, a Bushfire Management Plan has been prepared. See attached as Appendix 7. This report provides details of the fire management strategies proposed to be implemented across the site to ensure adequate protection of life, property and biodiversity assets.

6.0 DEVELOPMENT STANDARDS

The development standards for the lot are governed by the TPS9, in particular Clauses 5.1. This clause sets out the site and development requirements for the 'Rural' zone. This proposal's compliance with the relevant standards of the Scheme is set out in the following table:

Standard	Required	Provided	Comment
Setbacks	20m from front boundary	3,750m	Complies
	20m from side boundary	200.5m	
	30m from rear boundary	304.8m	

7.0 CONCLUSION

The proposed use and development complies with the scheme requirements and will provide a benefit to the town of Kalbarri. On this basis we respectfully request Council grant approval for the development.

Whelans Town Planning

Appendix 1
Application for Approval to Undertake Development



APPLICATION FOR DEVELOPMENT APPROVAL

(PLEASE USE BLOCK LETTERS & COMPLETE ALL SHADED SECTIONS)

OWNER DETAILS:

Name(s): Allsage Pty Ltd

ABN (if applicable): 78 739 820 069

Postal Address: 7 Bayview Vista, Ballajura Postcode: 6066

Phone: 9249 2990 Email: bprouke@bigpond.com

Contact Person for correspondence: Brian Rourke

Signature: [Signature] Date: 11/4/2016

Signature: _____ Date: _____

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 person referred to in the Planning and Development (Local Planning Scheme) Regulations 2015 Schedule 2 clause 62(2).

APPLICANT DETAILS: (if different from owner)

Name: Whelans Town Planning

Postal Address: PO Box 99, Mount Hawthorn Postcode: 6915

Phone: 6241 3305 Email: melinda.marshall@whelans.com.au

Contact Person for correspondence: Melinda Marshall

I agree that 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 NO

Signature: [Signature] Date: 11/4/2016

NOTE: All correspondence will be sent to the Applicant unless otherwise advised.

Continued over...

PROPERTY DETAILS:

Lot/Location No: Lot 10792 House/Street No: _____
Street Name: No Street Address Information Locality/Suburb: Kalbarri
Diagram/Plan No: DP210152 Volume No: 2223 Folio No: 449
Nearest street intersection: _____

PROPOSED DEVELOPMENT:

Nature of development: Works
Use
Works and Use

Is an exemption from development claimed for part of the development?

Yes No

If yes, is the exemption for:

Works Use

Description of proposed works and/or land use: Solar Thermal Power Station

Description of exemption claimed (if relevant): _____

Nature of any existing buildings and/or land use: Vacant

Approximate cost of proposed development: \$7 million

Estimated Time of Completion: _____

REQUIRED INFORMATION & FEES:

Please refer over for the information required to be submitted with this application and the schedule of fees. This application will not be processed without all required information including payment of the appropriate fee.

OFFICE USE ONLY:

Date Received: _____ Accepting Officer's Initials: _____

Required Fee: \$ _____ Date Paid: _____

Receipt No.: _____

WESTERN



AUSTRALIA

REGISTER NUMBER 10792/DP210152	
DUPLICATE EDITION 2	DATE DUPLICATE ISSUED 6/7/2012

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

VOLUME
2223

FOLIO
449

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.

REGISTRAR OF TITLES



LAND DESCRIPTION:

LOT 10792 ON DEPOSITED PLAN 210152

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

ALLSAGE PTY LTD OF 7 BAYVIEW VISTA, BALLAJURA

(T L946005) REGISTERED 25 MAY 2012

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

1. H167091 EASEMENT TO WATER CORPORATION. SEE SKETCH ON VOL. 2199 FOL. 697.
REGISTERED 14.7.1999.

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: 2199-697 (10792/DP210152).
PREVIOUS TITLE: 2199-697.
PROPERTY STREET ADDRESS: NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AREA: SHIRE OF NORTHAMPTON.

Our ref: DM# 13575227
Contact: Chris McCoppin – (08) 9326 4603

16 February 2016

STRICTLY COMMERCIAL-IN-CONFIDENCE

Mr Brian Rourke
Lower Ord Pty Ltd
7 Bayview Vista
Ballajura WA 6066

Dear Brian,

**SF200586 – Kalbarri Solar Thermal
Initial Response to your Connection Application**

(1) Status of your Connection Application

Western Power confirms receipt of your completed updated Connection Application to connect 0.95MW Solar Thermal generator to Western Power's network at Victoria Loc 10792 George Grey Drive by December 2016.

Please note the following details:

Project Title	Kalbarri Solar Thermal
Application Reference Number	SF200586
Priority Date	30/4/2012

(2) Preliminary Assessment

Western Power has previously completed a Preliminary Assessment in respect of your Connection Application, in accordance with clause 19.3 of the Applications and Queuing Policy.

(3) Estimated timing of your access offer

Based on the information currently available Western Power expects to make an access offer in relation to your Connection Application December 2016.

Please note that while all care has been taken in preparing this information, Western Power is not liable for any error or omission.

(4) Your Connection Application is non-competing

Western Power advises you that this Connection Application has been assessed as not competing with other applications for the same network capacity.

(5) Next steps

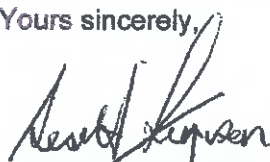
Enclosed with this letter is a Processing Proposal to progress your Connection Application.

Once Western Power has received your signed acceptance of the Individual Processing Contract and payment of attached invoice we will commence work on progressing your Connection Application.

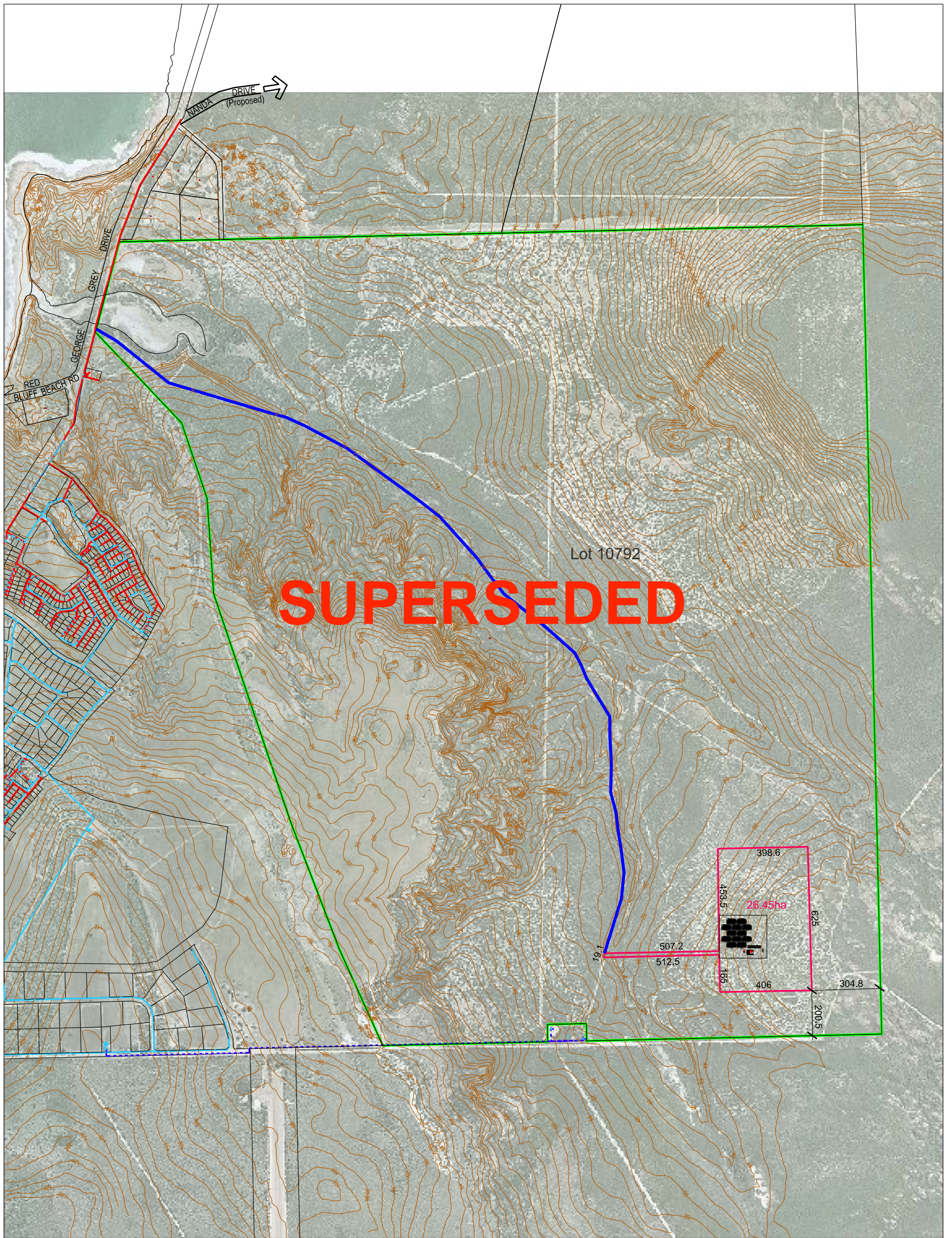
(6) Further information

Should you wish to discuss your application, or have any other queries in respect of the information contained in this letter, please do not hesitate to contact your Access Consultant, Chris McCoppin on +61 (8) 9326 4603 and/or at Chris.McCoppin@WesternPower.com.au.

Yours sincerely,

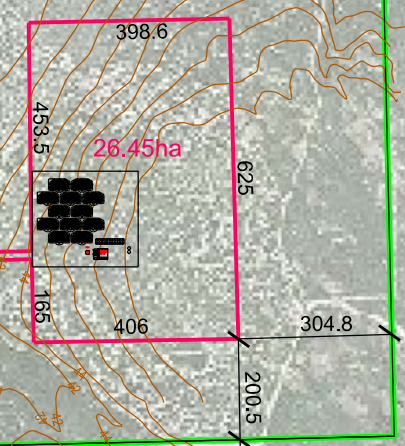


**SCOTT FERGUSON
ACCESS SOLUTIONS AND LINE RELOCATIONS MANAGER
CUSTOMER SERVICE
WESTERN POWER**



SUPERSEDED

Lot 10792



Plan No. : 20582-01
 Revision : REV.0
 Scale : 1:15000@A3
 0 150 300 450
 © This plan must not be reproduced without the permission of WHELANS. All dimensions and areas are subject to survey.
 Member Practice
 Suite 4 First Floor 40 Hasler Road Osborne Park WA 6017 www.whelans.com.au

- Subject site
- Solar Farm
- Proposed access along existing tracks

PROPOSED SOLAR THERMAL POWER STATION
 STAGE 1
 LOT 10792
 GEORGE GREY ROAD
 KALBARRI

DATE DRAWN: 13/4/2016
 DRAWN BY: RM
 CHECKED BY: MM
 FILE: 1604138base pt 10792 Plan 2 *.dgn
 V DATUM: AHD
 H DATUM: MGA94 (50)





PROJECT
**KALBARRI SOLAR
 THERMAL GENERATOR
 PLANT**
 1MW - STAGE 1

CLIENT
**LOWER ORD PTY
 LTD**

CONSULTANT
 AECOM Australia Pty Ltd
 A.B.N 20 093 846 925
 www.aecom.com

SAFETY IN DESIGN INFORMATION
 ARE THERE ANY ADDITIONAL HAZARDS / RISKS
 NOT NORMALLY ASSOCIATED WITH THE TYPES
 OF WORK DETAILED ON THIS DRAWING?
 NO
 YES - REFER TO THE FOLLOWING:

REGISTRATION

PRELIMINARY

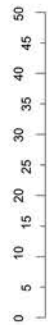
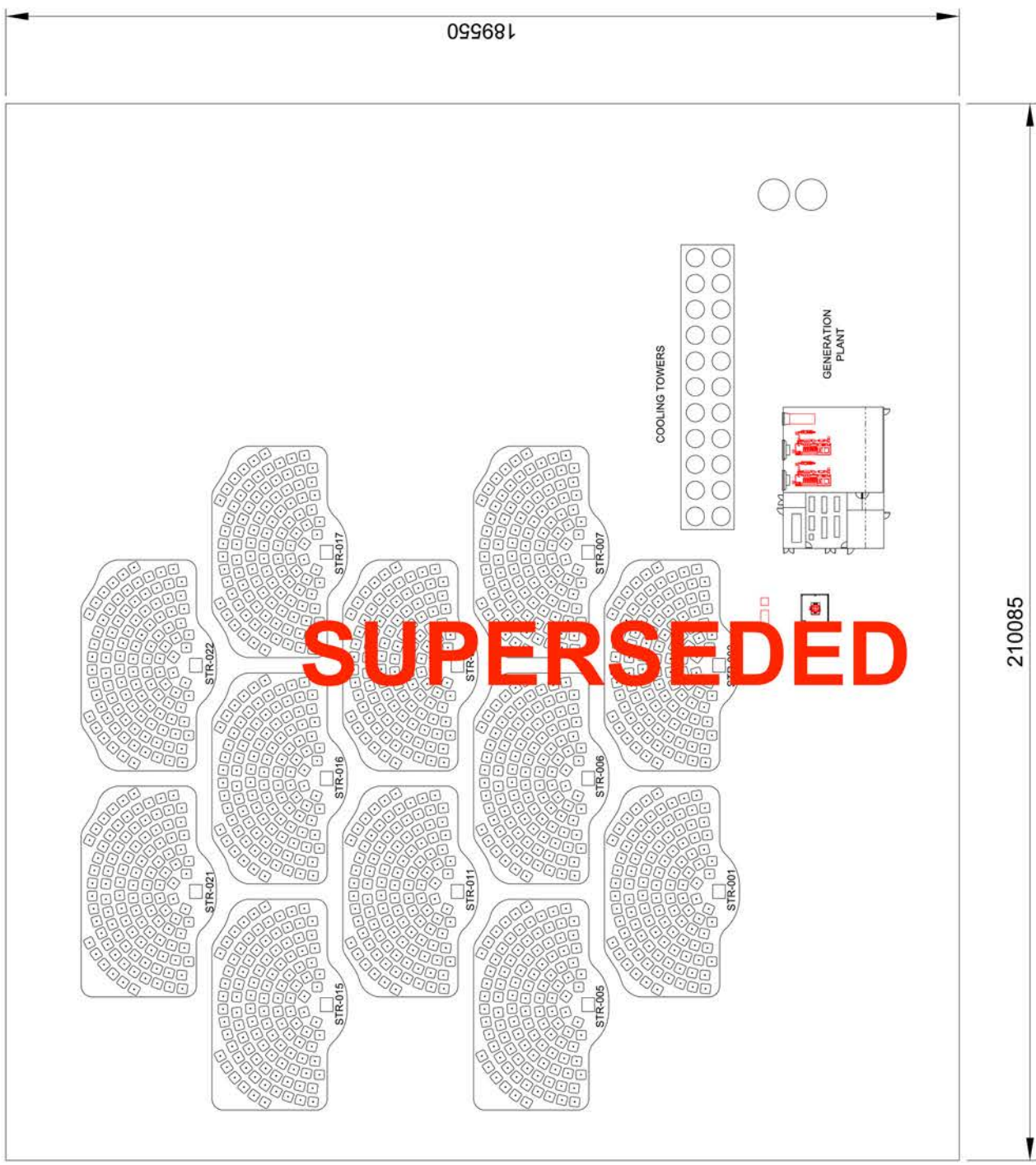
PROJECT MANAGEMENT INITIALS

AMH	PS	LN
DESIGNER	CHECKED	APPROVED

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	31-3-16	ISSUED FOR CLIENT APPROVAL
A	14-3-16	ISSUED FOR CLIENT REVIEW

PROJECT NUMBER
 60446727
 SHEET TITLE
 SITE LAYOUT
 PLAN VIEW
 SHEET NUMBER
 60446727-EL-05002-01



PLAN VIEW





AECOM
 PROJECT
**KALBARRI SOLAR
 THERMAL GENERATOR
 PLANT - 1MW
 STAGE 1**

CLIENT
**LOWER ORD PTY
 LTD**

CONSULTANT
 AECOM Australia Pty Ltd
 A.B.N 20 093 846 925
 www.aecom.com

SAFETY IN DESIGN INFORMATION
 ARE THERE ANY ADDITIONAL HAZARDS / RISKS
 NOT NORMALLY ASSOCIATED WITH THE TYPES
 OF WORK DETAILED ON THIS DRAWING?
 NO
 YES - REFER TO THE FOLLOWING:

REGISTRATION
PRELIMINARY

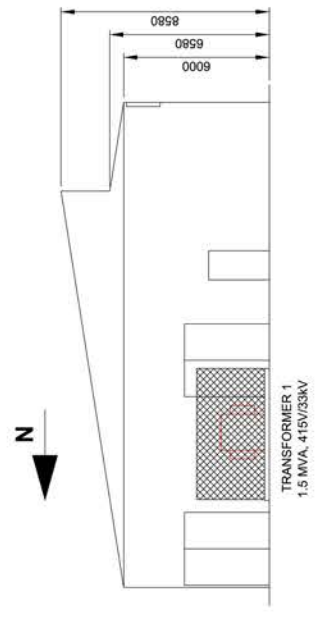
PROJECT MANAGEMENT INITIALS

AMH	PS	LN
DESIGNER	CHECKED	APPROVED

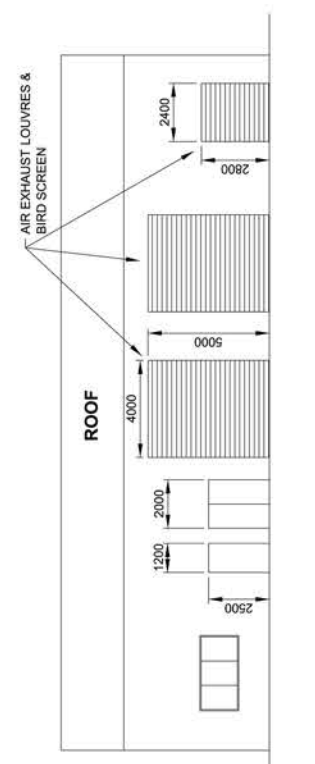
ISSUE/REVISION	IR	DATE	DESCRIPTION
A	31-3-16		ISSUED FOR CLIENT APPROVAL

PROJECT NUMBER
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 SHEET TITLE
 ELECTRICAL SERVICES
 GENERAL ARRANGEMENT
 SHEET NUMBER
 60446727-EL-05002-01

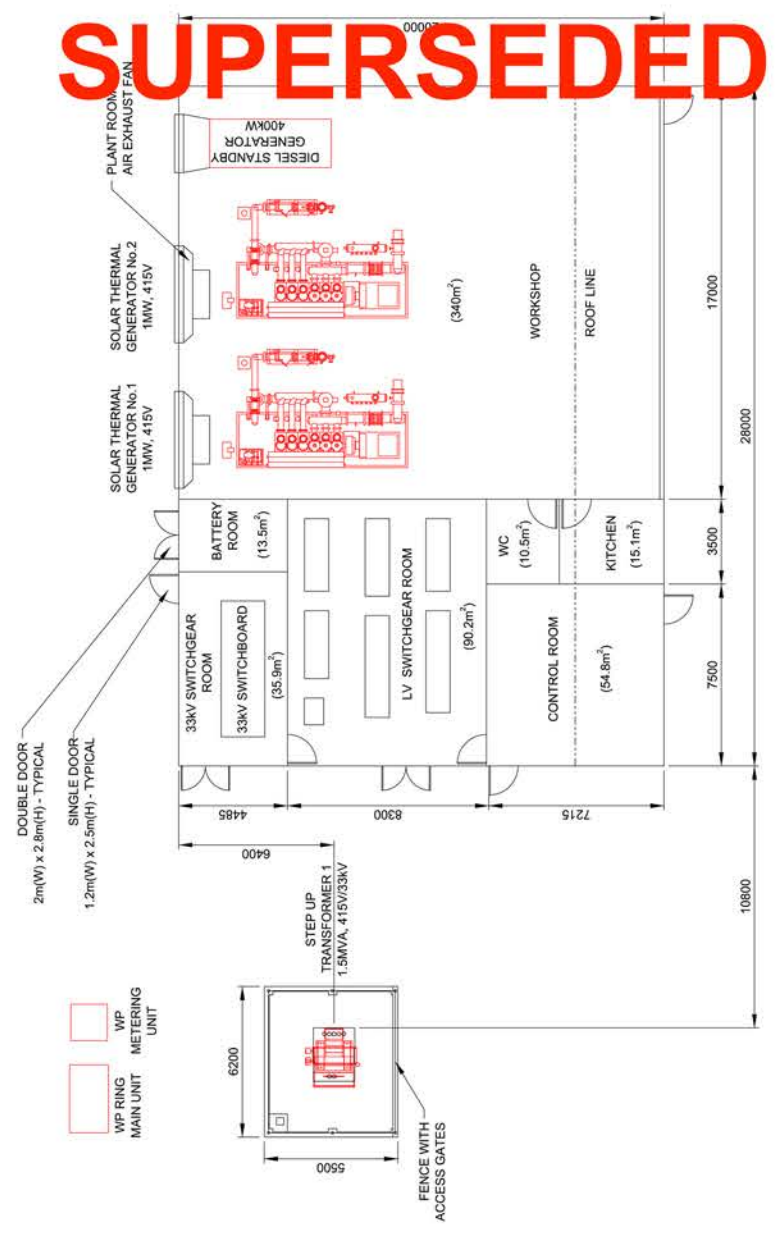
This drawing is confidential and shall only be used for the purpose of this project. The signing of this block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2000.



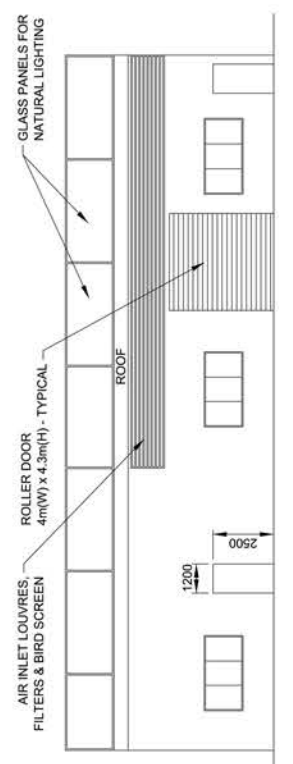
LEFT VIEW



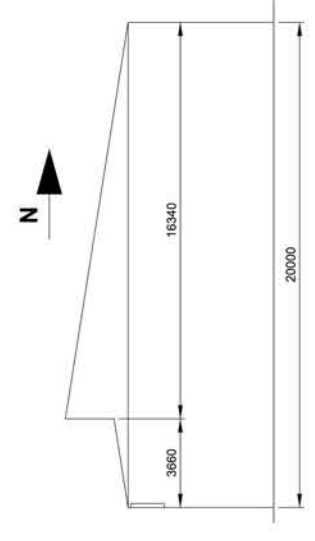
BACK VIEW



PLAN VIEW



FRONT VIEW



RIGHT VIEW



Government of Western Australia
Department of Environment Regulation

Your ref
Our ref: CPS 6797/1
Enquiries: Ray Carvalho
Phone: 9333 7498
Email: nvp@der.wa.gov.au

Mrs Kathryn Kinnear
Director/Environmental Consultant
Bio Diverse Solutions
55 Peppermint Drive
ALBANY WA 6330

Dear Mrs Kinnear

APPLICATION TO CLEAR NATIVE VEGETATION UNDER THE ENVIRONMENTAL PROTECTION ACT 1986

I refer to Allsage Pty Ltd's application to clear 26 hectares of native vegetation within Lot 10792 on Deposited Plan 210152, Kalbarri, for the purpose of constructing a solar farm (reference CPS 6797/1).

A preliminary assessment of the native vegetation under application has been conducted, taking into account information you have provided and information the Department of Environment Regulation (DER) has obtained through consultation. In considering your application, I must have regard to the clearing principles contained in Schedule 5 of the *Environmental Protection Act 1986* (EP Act) and also any planning instrument or other relevant matter.

The clearing principles consider environmental impacts on biodiversity values, water quality and land degradation. Clearing that has a significant impact on the environment, is generally not supported. Native Vegetation Fact Sheet 1 "Native vegetation clearing legislation in Western Australia", attached, outlines the intent of the clearing legislation in more detail.

I advise that a portion of the vegetation under application is growing in association with a major non perennial watercourse known as Wittecarra Gully and the proposed clearing has the potential to impact on the natural flow of this watercourse, lead to water erosion and increase sedimentation downstream, particularly after heavy rainfall. To date, no information has been provided indicating the proposed use of culverts or otherwise to minimise impacts to this watercourse.

I invite you to provide additional advice addressing the abovementioned issue, including information on how you intend to avoid or minimise the identified impacts. Where avoidance of impacts is not possible, please provide advice on how you intend to mitigate these impacts.

In addition, I understand that Planning Approval from the Shire of Northampton has not yet been obtained. I consider this approval to be a relevant matter.

I would appreciate your advice within 30 days from the date of this letter, including information pertaining to Allsage Pty Ltd's progress towards obtaining Planning Approval. Your comments are important and will be considered before a decision is made. Should you not provide any additional advice, I will proceed with a decision based on the information that I have to date.

The Atrium, 168 St Georges Terrace, Perth WA 8000
Phone: (08) 9333 7469
Postal address: Locked Bag 33, Cloisters Square, Perth WA 6850
www.der.wa.gov.au

If you have any queries regarding this application, please contact Clearing Regulation Officer Mr Ray Carvalho on 9333 7498.

Yours sincerely



James Widenbar
A/SENIOR MANAGER
CLEARING REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

15 February 2016

Attached: CPS 6797/1 Preliminary Assessment Report
Native Vegetation Fact Sheet 1

31 October 2016

Commercial-in-Confidence

Brian Rourke
Managing Director
Tidal Energy Australia Pty Ltd
7 Bayview Vista
Ballajura WA 6066

Dear Brian,

Kalbarri Solar Thermal - Design Statement

AECOM provides this design statement in response to queries from the Shire of Northampton ('the Shire') in relation to the proposed Kalbarri solar thermal facility currently being developed by Allsage Pty Ltd. In providing this design statement, AECOM note that the advice is based upon the current status of design development and is provided based upon typical expectations associated with similar facilities of this nature and technology.

AECOM's comments on the Shire's queries are outlined as follows:

What is a solar thermal power station? How does it work? What does it involve?

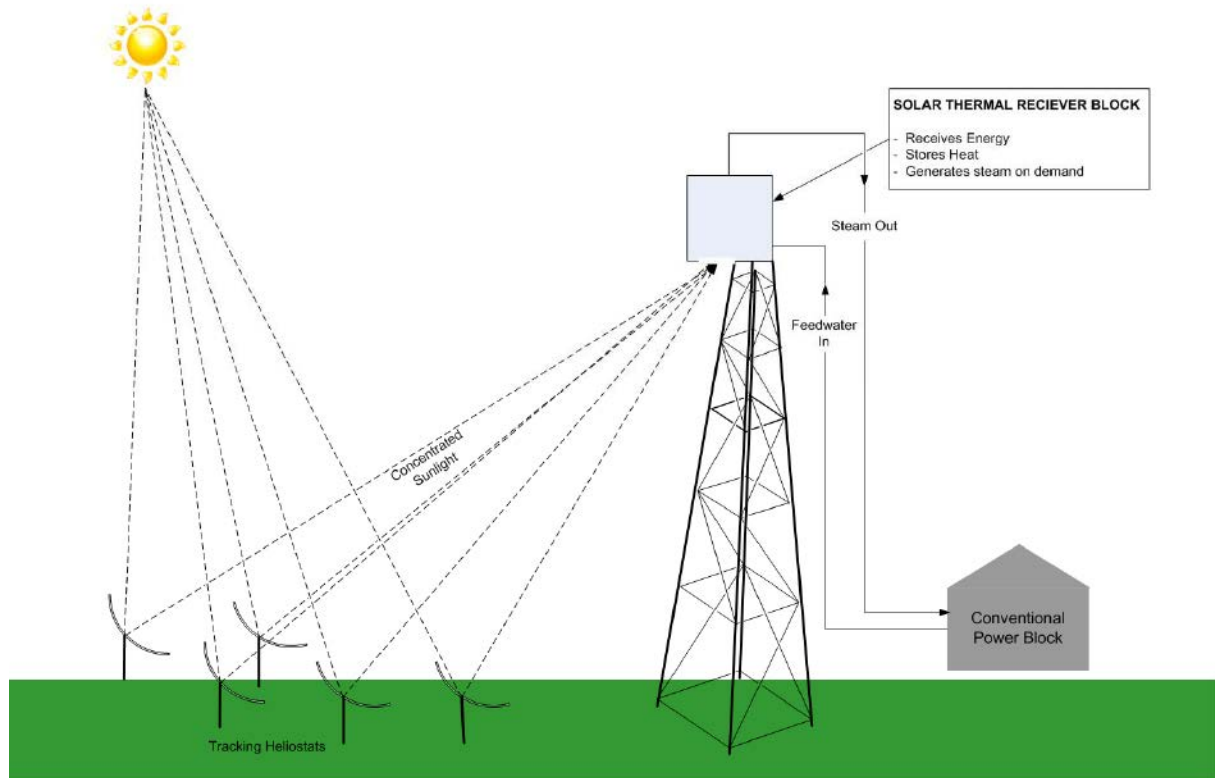
A solar thermal power station is a facility which concentrates sunlight using mirrors in order to generate heat which is then used for the production of electricity. The proposed solar thermal facility at Kalbarri also proposes to use thermal storage in the form of graphite solar thermal receivers (STRs) in order to store heat, allowing electricity to be generated even in times when the sun is not shining, by using the heat stored in the graphite STRs. As basic overview of the process is described as follows:

1. An array of mirrors (heliostats) installed at ground level reflect and focus sunlight onto a series of towers each supporting graphite blocks (solar thermal receivers) which collect the heat generated by the focused sunlight.
2. The heat from the concentrated sunlight is stored in the graphite blocks (solar thermal receivers).
3. Water is transferred within a closed piping system by pumping water through the graphite blocks in order to transfer heat from the blocks to the water to generate steam.
4. Steam is used in a steam powered generator in order to generate electricity. Steam exits the generator system as water to be used again as part of the steam/water cycle.

A high level overview of the proposed technology and photo of an existing similar installation in China as outlined in the below images as produced by the technology provider Solastor:



Diagrammatic Solastor Solar Thermal System



What resources are required (ie. water, power, fuel)?

The operation of the proposed solar thermal facility requires limited resources for its continued operation, as sunlight forms the primary fuel source. An overview of the expected resources required for operation of the Kalbarri solar thermal facility is outlined as follows:

Water

Only limited amounts of water are expected to be consumed during normal operation of the facility. The water/steam cycle is based upon a closed cycle, with only minimal amounts of water required for make-up into the system in the event of minor water losses (such as leaks) or to make-up water blowdown from the system used to remove small amounts of water in order maintain water quality of the cycle. The plant will require an initial 'first fill' of water to fill the steam system, with change-out of the water expected to occur every few years. Minor amounts of potable water are expected to be required for general operational purposes such as site service water hose points and small amounts required throughout the year for solar mirror cleaning and general plant maintenance.

The current design allows for an air-cooled condenser design whereby the steam exiting the steam generator is cooled by air from a series of fans in order to condense the steam from gaseous steam back to liquid water for reuse. The use of an alternative water cooled condenser is currently be evaluated which would require a water source make-up as part of a small cooling tower system and cooling water circuit. The water cooled condenser system would be similar in technology application as cooling towers used for commercial building heating and ventilation systems. In the event that a water cooled condenser is used, the water consumed will be through evaporative losses to atmosphere in the cooling tower.

Power

The solar thermal facility will be a net exporter of electricity to the distribution electricity grid, providing electricity to the local distribution network. To achieve this, the plant will have an electrical connection to the distribution network.. During normal operation, the facility will supply auxiliary equipment on site with electricity generated from the solar thermal generator. During plant start-up procedures it is expected that facility will draw a small

amount of electricity from the grid (back feed) in order to power auxiliary equipment required to start the solar thermal generator equipment. This operation of back feeding of electricity from the grid would also be used during periods when the steam generator is not producing power and site auxiliary loads such as lighting are required for example during the night. Once the solar thermal facility is generating its own power this electricity supply will feed any required auxiliary equipment at the same time as exporting electricity to the grid.

Fuel

The primary fuel source for the solar thermal facility is sunlight. During rare unexpected 'black-start' occurrences, when electrical supply from the grid is not available due to a grid network outage, the facility will use a small diesel generating set in order to provide auxiliary loads with electricity during this period in order to allow the plant to black-start or maintain critical facility loads during grid outage. Diesel consumption associated with this practice is expected to be small, and this functionality is likely to enable the facility to supply power to the grid during these outages or to operate in 'island' mode.

Project timeframes (what stages, what does each stage involve, likely timeframes) and lifespan?

Upon discussions with our client the following rough timeframes are considered by Allsage Pty Ltd.

Stage 1: 12 Towers – 1 MW

- Design: August – November 2016
- Approval Shire November 2016 anticipated
- Shire Building License January 2016
- Approvals Western Power: December 2016
- Financial Close: June 2017
- Construction Start: March 2017
- Commissioning: October/November 2017
- Operation: November / December 2017

Stage 2: 48 Towers – 4 MW

- Western Power Tender December 2016
- Design: November – February 2017
- Sire Construction Approval June 2017
- Connection Approvals WP June 2017
- Financial Close: September 2017
- Construction Start: September 2017
- Commissioning: July 2018
- Operation: August 2018

Details around the connection back into the main power grid? How will it connect? What infrastructure will this involve? Please also demonstrate on a plan this connection information.

A 33kV powerline will be erected between the site and the Tee-off point with the existing Western Power Line west of the site. The grid connection route is indicated on drawing. Western Power will be constructing the infrastructure up to the poles adjacent to the generation plant building. From the last pole the cables will go underground into the respective equipment (switchboard, transformer etc.). The likely distance between poles is also indicated on the following drawings:

- 60477754-01-CIV-0001-A

- 60477754-01-CIV-0002-A
- 60477754-02-CIV-0002-A

The height and details of the poles are provided on the following drawings:

- 60477754-01-ELE-2001-A
- 60477754-02-ELE-2001-A
- 60477754-02-CIV-2003-A

Clearing, drainage and erosion; will the entire development area be cleared, or just for stage 1? How will drainage and erosion be managed?

Surface runoff from the pre-development site flows as 'sheet flow' (there are no existing drainage flow paths within the site due to the existing topography) in a westerly direction. The cleared post-development site is anticipated to have an increase surface runoff. This runoff will be collect along the downstream western and northern boundaries of the site within minor drains. The drains will convey the flow to a sedimentation basin which will prevent sediment discharge off the site, achieve water quality objectives and enable the post-development peak discharge from the site during extreme rainfall events to be comparable to the existing pre-development peak discharge. The temporary drainage structure proposed is shown on the following drawings:

- 60477754-02-CIV-2201-A
- 60477754-02-CIV-2202-A

The entire site will be cleared of vegetation during construction. The site is intended to allow for regrowth of grass intended to diminish the sediment transport risk. After the site vegetation (grass) has returned and been well established the temporary drainage as indicated on drawing 60477754-02-CIV-2202-A shall be removed.

The maintenance of vegetation (re-growth) will be undertaken to reduce fire risks as well as eliminating shading on the mirrors that start from ~0.5m above the ground in vertical position. The re-growth will be maintained with a grass cutting maintenance schedule across the site.

Decommissioning?

Allsage Pty Ltd and the equipment supplier (Solastor) have indicated that the plant is intended to be refurbished after 50 years of operation. De-commissioning strategies are being discussed with the equipment supplier currently.

Water Impact Assessment (ie quantity, water sources, licencing)

The site is located within the *Kalbarri/Eurardy* groundwater sub area. This aquifer currently has water available. An application will be made with the Department of Water to obtain a groundwater abstraction license for the site if required.

Further design efforts are being undertaken to consider the condenser cooling options in detailed design.

Noise Impact Assessment (ie. solar thermal power station generally, generators)

The primary noise source at the facility is expected to be the steam powered generator and associated plant room ventilation fans. The generator unit is proposed to be installed in an acoustically treated building in order to reduce noise emissions to the outside environment. It is generally anticipated that near field noise limits within operational areas of the power station will be less than 85 dBA, and that far field noise impacts at the facility boundary are expected to be minimal. The solar field external to the plant is expected to provide low noise emissions, with the primary noise sources being the feedwater pumps used to circulate water for the steam generating system and cooling fans associated with the condenser unit. It is expected the noise levels will be similar to those typical of light industrial applications.

Other emissions (ie. odours, gases)

The nature of a solar thermal plant means that sunlight is the predominant fuel source, with no combustion of fuels required, with the exception of small amounts of diesel in infrequently occurring black-start events where small levels of exhaust emissions will be produced as typical with black-start diesel generator units installed commonly in other grid outage applications (e.g. hospitals). There are no expected emissions of steam due to the

closed nature of the steam cycle, except for during any emergency venting requirements in the unlikely event of system over-pressure when excess steam will be vented to atmosphere. Normal operation of the facility is not expected to produce any hazardous emissions or odours.

Yours faithfully

Joep Vaessen

Principal Engineer - Renewable Energy

D +61 8 6208 0457 M +61 400401362

Joep.Vaessen@aecom.com

Engineers involved in this statement:

Joep Vaessen

Principal Engineer – Renewable Energy

Wayne Goodwin

Renewable Project Lead

David Meyer

Senior Engineer – Drainage and Waterways

Our Ref: 20582-01
7 November 2016

Shire of Northampton
PO Box 61
NORTHAMPTON WA 6535

Dear Sir/Madam,

**APPLICATION FOR PLANNING APPROVAL – PROPOSED SOLAR THERMAL POWER STATION
LOT 10792 GEORGE GREY ROAD, KALBARRI – ADDITIONAL INFORMATION**

I refer to your email correspondence of 23 June 2016 requesting additional information in support of the application for planning approval for the abovementioned land. Accordingly, we supply the following information:

- **Amended site, layout plans and elevations that includes the requested additional information.**
Please note that there are no earthworks proposed and therefore the existing contours will not change.

- **A statement from AECOM that addresses the following questions:**
 - *What is a Solar Thermal Power Station? How does it work? What does it involve?*
 - *What resources are required (i.e. water, power, fuel)?*
 - *Project timeframes (what stages, what does each stage involve, likely timeframes) and lifespan?*
 - *Details around the connection back into the main power grid? How will it connect?*
 - *What infrastructure will this involve? Please also demonstrate on a plan this connection information*
 - *Clearing, drainage and erosion; will the entire development area be cleared, or just for stage 1? How will drainage and erosion be managed.*
 - *Decommissioning*
 - *Water Impact Assessment (i.e. quantity, water sources, licencing)*
 - *Noise Impact Assessment (i.e. Solar Thermal Power Station Generally, Generators)*
 - *Other Emissions: i.e. odours, gases*

- **A document that includes photos and diagrams that show visually what to expect for this type of development,**
- **Proposed subdivision of subject lot and how this impacts/relates to this proposal, and;**
- **The application needs to take into consideration not just existing built development, but also the potential built development that can be constructed upon surrounding land parcels, including any potential for future subdivision of the surrounding land or the subject lot.**

HEAD OFFICE:
Suite 4, First Floor, 40 Hasler Road, Osborne Park WA 6017
PO Box 99, MOUNT HAWTHORN WA 6915
T: 08 6241 3333 F: 08 6241 3300
E: whelans@whelans.com.au W: www.whelans.com.au

PERTH | KARRATHA | BROOME | KUNUNURRA | KALGOORLIE

WHELANS AUSTRALIA PTY LTD ACN 074 363 741

Visual Impact Assessment of Solar Farm

This information takes into consideration the existing built development and the potential built development that can be constructed on surrounding land parcels, including any potential for future subdivision on the surrounding land or the subject lot. The purpose of the assessment is to consider whether these surrounding entities will be impacted by the operation of the Solar Farm.

This assessment being necessary as per the Shire's town planning scheme to ensure the proposal does not compromise the amenity, appearance or use of the surrounding land. This will promote proper and orderly development.

Please refer to the Visual Impact Assessment Plan and Visual Impact Perspectives.

Existing Built Development

The geophysical layout of Lot 10792 is demarcated in the middle by the Wittecarra Creek and its tributaries that flow intermittently from the national park on the east and southern boundaries toward the coast. The northern boundary of Lot 10792 is bordered by Crown land and the Tourist Precinct. The western boundary is adjacent the existing residential land. Please refer to the Plan.

The Wittecarra Creek environ, which is a large hollow occupies, approximately one third of the Lot 10792 land area. The sides of the creek area rise from 16m AHD to 68m AHD on the western edge to 50m AHD on the eastern edge. The balance of the lot, outside of the creek area was cleared of vegetation and used as part of the Browne Farm for cropping and grazing livestock up to the early 1990s. The proposed Solar Farm sits generally at 50m AHD in the very south east of the lot.

There is a Western Power overhead transmission power line that traverses through the site in a north-south direction at about the middle of the lot.

A Telecom communications tower is located at the very north-east corner of the lot, which used by the Water Corporation to control it's infrastructure.

On the western side of the original Browne Farm landholding is a residential estate. This estate borders George Grey Drive on the west. The estate contains residential lots and semi rural lots at the southern end. These landholdings are shown on the attached plan located between 2.2 kms and 3 kms from the location of the Solar Farm. The estates generally sit between elevations 50m AHD and 100m AHD. Some of these lots in the residential estate have the potential for glimpses of the Solar Farm but at considerable distance, as per the visual perspective images.

The land within the residential estates is partly occupied and sold but the general opinion is that there is a land supply of residential estate land in this location for the next 10 to 20 years.

The separation distances from the Solar Farm to potential sensitive land uses (the residential estate) are more than adequate, as per the Plan. In addition the Solar Farm site will not be sealed except for the area to contain the equipment. This together with the operation of the Solar Farm without noise, odour, and light spillage make the site ideal for this renewable power site to supply additional power into the Horizon Power grid.

Potential Built Development and Subdivision

Within the established residential estate lots ie Eco Flora, Capital Hill and semi-rural lots there remain approximately 10 to 20 years supply of these lots.

There is a new local structure plan for the area slightly west of approximately 240 residential and rural lots, or another 10 to 20 years of land supply. This is a total of approximately 20 to 40 years land supply based on current market conditions.

There is potential for more residential estate land as shown on the plans and as per the Kalbarri Townsite Strategy. However, this location is long-term and not foreseeable. The need for this residential estate land is unlikely in the next 30 to 40 years due to the already over-supply of residential estate lots.

Minor future subdivision may take place as per the proposal for the balance of Lot 10792 and the creation of the Wittecarra Creek Conservation Reserve but this will only be on case by case basis and unlikely to have any effect on the over-supply of residential estate lots.

Comment

The location of the Solar Farm is a good one, remote from the existing and proposed development and future subdivision. The visual impact is low, indeed, and sensitive land uses are well separated from the proposed Solar Farm.

The land supply already available in the residential estate to the west is estimated at approximately 20 to 40 years based on current and future demand estimates. On this basis the need to develop the unimproved residential estate land, shown on the Plan, is most likely only to happen beyond the life of the Solar Farm.

- ***Construction and operation workforce***

The operation workforce will consist of 4 people. The construction workforce is unknown however is not likely to exceed half a dozen people.

- ***Construction and operational traffic***

As stated in the Application Report there will be approximately 4 light vehicles that will access the station on a daily basis as part of normal operation. During the construction phase, which is estimated to be 3 months, the Station site will be accessed on average by 1 heavy vehicle per day.

- ***Fuel storage***

It is proposed to have a 500L Diesel Fuel Tank onsite. This has been added to the layout plan.

- **Aboriginal Heritage**
A search of the Department of Aboriginal Affairs Aboriginal Heritage Inquiry System has revealed that there are no Registered Sites within Lot 10792.
- **Upgrade details for crossover from George Grey Drive**
It is not proposed to upgrade the crossover from George Grey Drive as it is currently meets the design requirements for the proposed type and volume of traffic.
- **General cost breakdown. is this for Stage 1 only? What is the cost of the development at full potential?**
The approximate cost indicated on the Application for Planning Approval is for Stage 1 only. The approximate cost for development of Stage 2 will be in the vicinity of \$7-8 million.
- **Please amend the documentation as required to demonstrate an understanding of impacts and management of the property as a development with all stages completed.**
Plans are enclosed that indicate the layout of the facility if demand requires it to be expanded. As it is proposed for the whole site to be cleared as part of Stage 1 it is considered that expansion of the facility at a later date will not have any noticeable impact other than the appearance of additional towers, which due to their proximity to adjoining development, will be barely visible.

I trust the information provided meets the Shire's request. Please do not hesitate to contact me on 6241 3305 if there is any further information that is required.

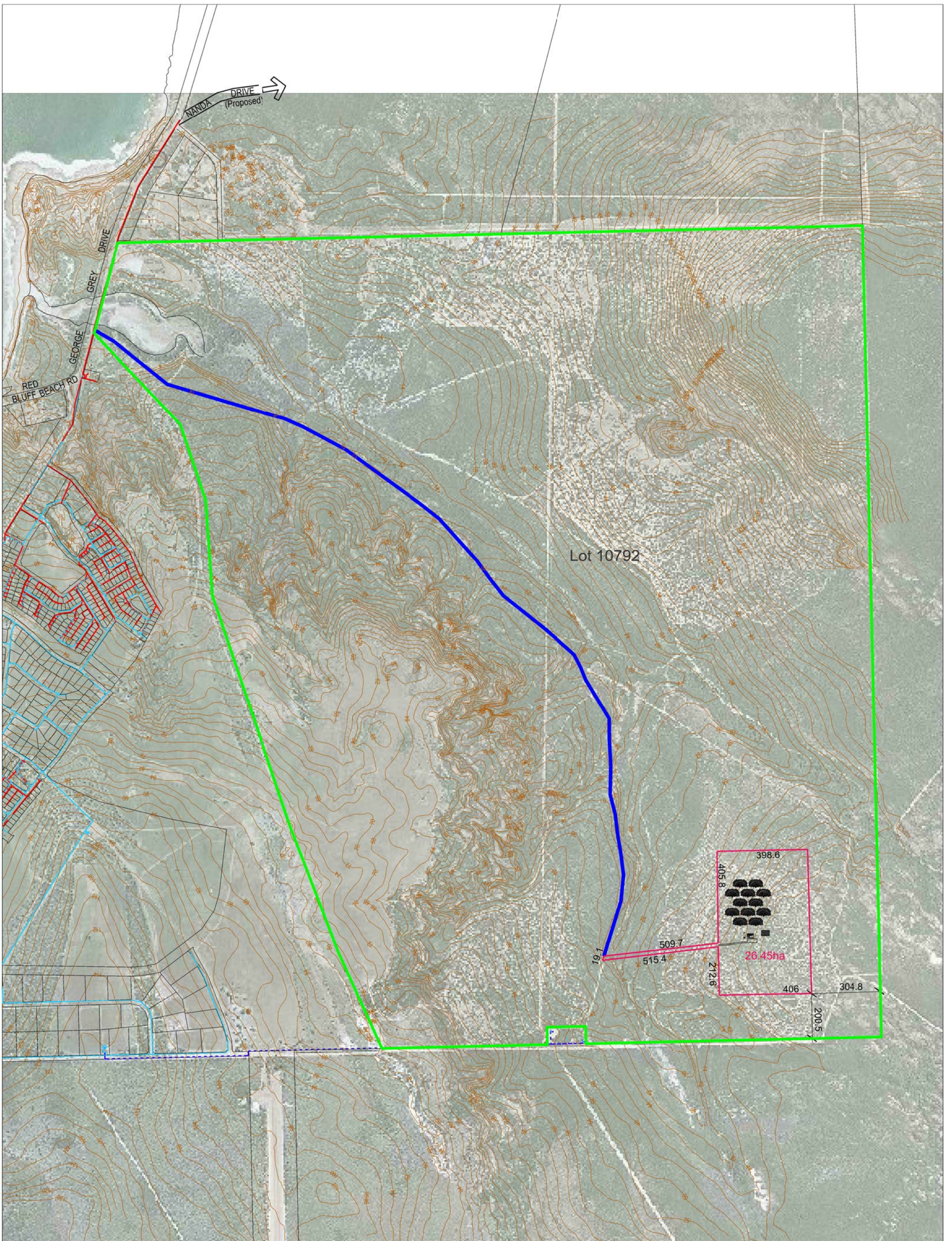
Yours faithfully,



Melinda Marshall
Town Planner
Whelans Town Planning

Encl.

- Statement from Aecom
- Visual Impact Assessment Plans & Perspectives



Plan No. : 20582-05
 Revision : REV.1

Scale : 1:15000@A3



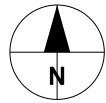
© This plan must not be reproduced without the permission of WHELANS. All dimensions and areas are subject to survey.

Member Practice Suite 4 First Floor 40 Hasler Road Osborne Park WA 6017 www.whelans.com.au

- Subject site
- Solar Farm
- Proposed access along existing tracks

PROPOSED SOLAR THERMAL POWER STATION
 SITE PLAN
 LOT 10792
 GEORGE GREY ROAD
 KALBARRI

DATE DRAWN: 08/11/2016 FILE: 161025Proposed solar thermal power site plan.dgn
 DRAWN BY: RM V DATUM: AHD
 CHECKED BY: MM H DATUM: MGA84 (50)



PROJECT

KALBARRI SOLAR THERMAL GENERATOR PLANT 4MW - STAGE 2 48 TOWERS

CLIENT

LOWER ORD PTY LTD

CONSULTANT

AECOM Australia Pty Ltd
A.B.N 20 093 846 925
www.aecom.com

SAFETY IN DESIGN INFORMATION

ARE THERE ANY ADDITIONAL HAZARDS / RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING?

- NO
- YES - REFER TO THE FOLLOWING:

NOTES:

ARE THERE ANY ADDITIONAL

-
-

REGISTRATION

PRELIMINARY

NOT FOR CONSTRUCTION

PROJECT MANAGEMENT INITIALS

PS	DM	JV
DESIGNER	CHECKED	APPROVED

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	01-11-16	FOR SUBMISSION
A	27.10.16	ISSUED FOR INFORMATION

PROJECT NUMBER

60477754

SHEET TITLE

STAGE 2 - 48 TOWERS
DRAINAGE LAYOUT
PLAN VIEW

SHEET NUMBER

60477754-02-CIV-2202

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001:2000.

Drain Dimensions
300mm depth, 1000mm base width, 1:3 (H:W)

Sedimentation Basin
500mm depth, 1000mm base width, 1:3 (H:W), 20m Length.

Temporary Drainage

A perimeter drain along the downstream boundary of the site will capture runoff from the site and direct the water to a sedimentation basin.

The basin is a deeper than the connecting drains to promote settlement of material. Excess water will discharge via a rock weir back into the existing environment.

The proposed development will require some vegetation clearing during construction. It is anticipated that vegetation will re-grow in the future.

There will be no modification of the existing site topography for the majority of the site. With regrowth of the vegetation and maintenance of existing topography, it is not anticipated that the longer term surface runoff from the post-development site will be different from the pre-development. Therefore, no post-development drainage mitigation infrastructure (i.e. detention basin) is required.

The development will however require temporary drainage infrastructure during construction and for a period after construction to manage potential sediment transportation. Once the site vegetation has returned and the sediment transport risk has diminished, the temporary drainage should be removed

Drain Dimensions
300mm depth, 1000mm base width, 1:3 (H:W)

Drain Dimensions
300mm depth, 1000mm base width, 1:3 (H:W)

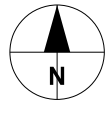
Sedimentation Basin
500mm depth, 1000mm base width, 1:3 (H:W), 10m Length.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

LEGEND

Drainage Infrastructure

- Drain
- Sedimentation Basin
- Weir
- Site Boundary
- Catchments
- Topography (1m Contours)



PROJECT
KALBARRI SOLAR THERMAL GENERATOR PLANT 4MW - STAGE 2 48 TOWERS
CLIENT
LOWER ORD PTY LTD

CONSULTANT
 AECOM Australia Pty Ltd
 A.B.N 20 093 846 925
 www.aecom.com

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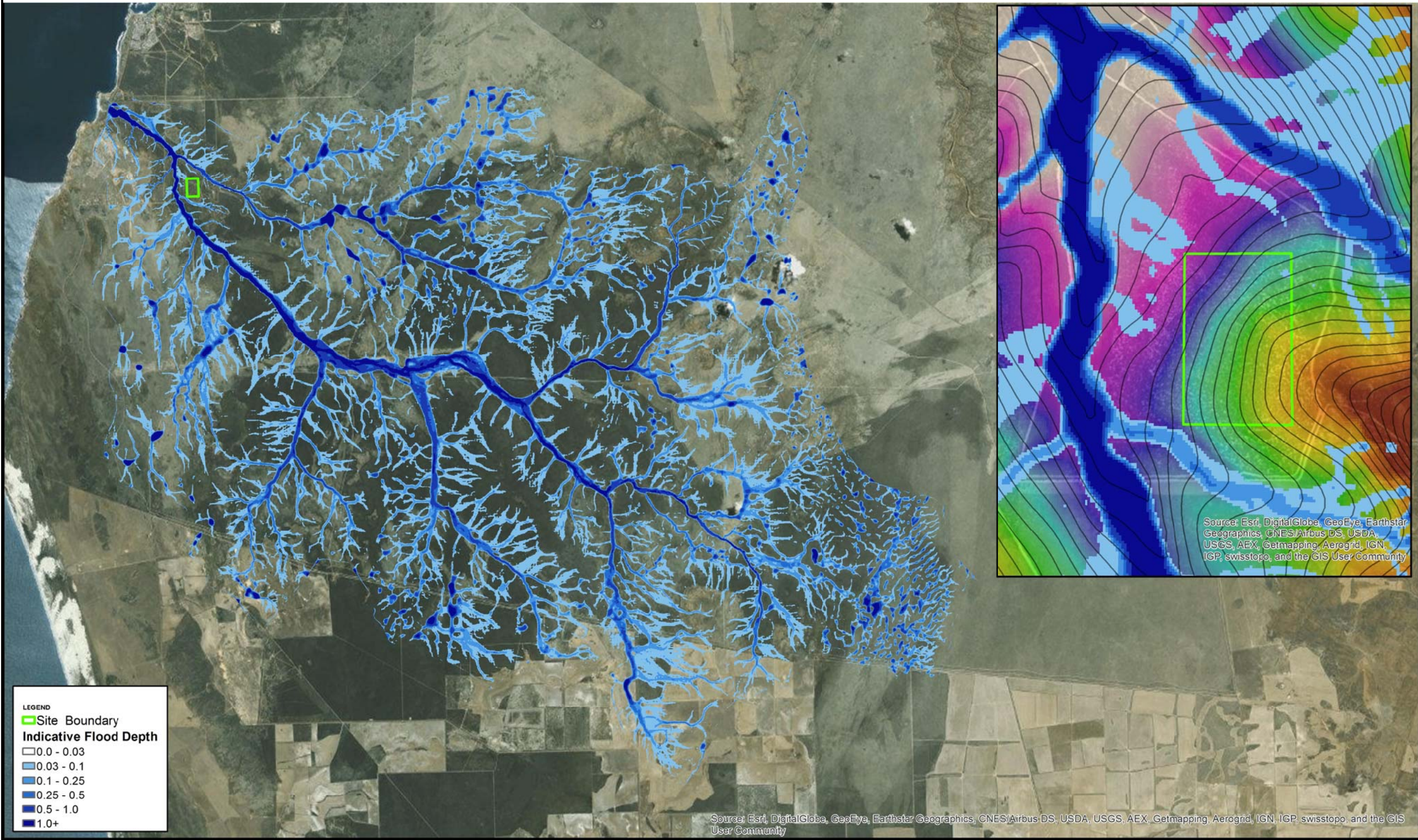
PROJECT MANAGEMENT INITIALS

PS	DM	JV
DESIGNER	CHECKED	APPROVED

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	01-11-16	FOR SUBMISSION
A	27-10-16	ISSUED FOR INFORMATION

PROJECT NUMBER
 60477754
SHEET TITLE
 STAGE 2 - 48 TOWERS FLOOD PLAIN INUNDATION PLAN VIEW
SHEET NUMBER
 60477754-02-CIV-2201



LEGEND

Site Boundary

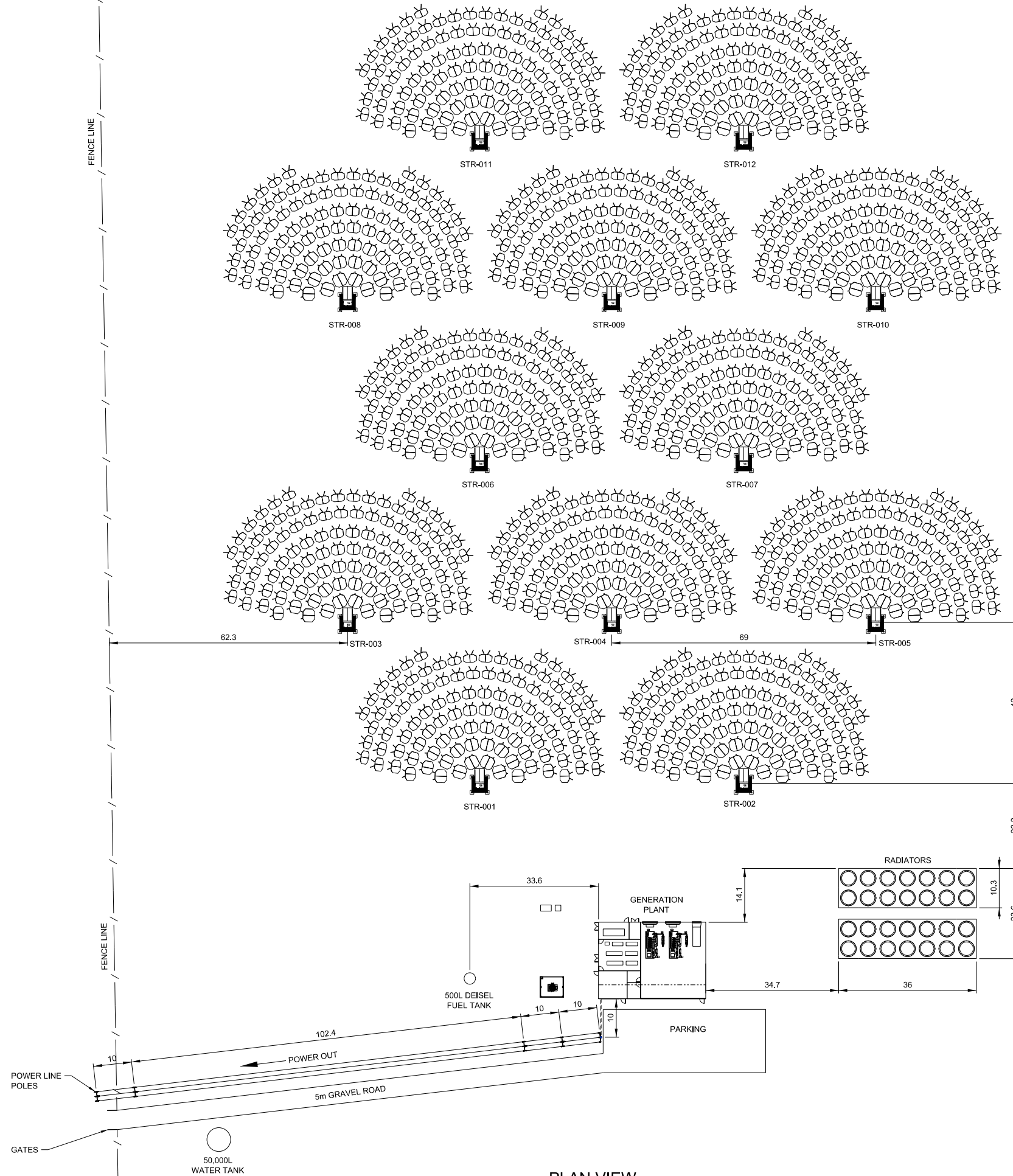
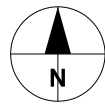
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- 0.1 - 0.25
- 0.25 - 0.5
- 0.5 - 1.0
- 1.0+

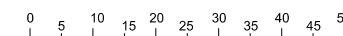
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ISO A1 594mm x 841mm
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 \$Filename_NES



PLAN VIEW



PROJECT

KALBARRI SOLAR
 THERMAL
 GENERATOR PLANT
 1MW - STAGE 1
 12 TOWERS

CLIENT

LOWER ORD PTY
 LTD

CONSULTANT

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PROJECT MANAGEMENT INITIALS

PS	PV	LN
DESIGNER	CHECKED	APPROVED

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	01-11-16	FOR SUBMISSION
A	28-10-16	ISSUED FOR CLIENT REVIEW
1/R		

PROJECT NUMBER

60477754

SHEET TITLE

SITE LAYOUT
 PLAN VIEW

SHEET NUMBER

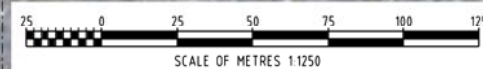
60477754-01-CIV-0003

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ISO A1 594mm x 841mm
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NOTES:
 1. POSITION OF SOLAR TOWERS AND RADIATOR FANS ARE SUBJECT TO DETAIL DESIGN



PROJECT
 KALBARRI SOLAR THERMAL GENERATOR PLANT 1MW - STAGE 1 12 TOWERS
CLIENT
 LOWER ORD PTY LTD

CONSULTANT
 AECOM Australia Pty Ltd
 A.B.N 20 093 846 925
 www.aecom.com

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PROJECT MANAGEMENT INITIALS

PS	BR	JV
DESIGNER	CHECKED	APPROVED

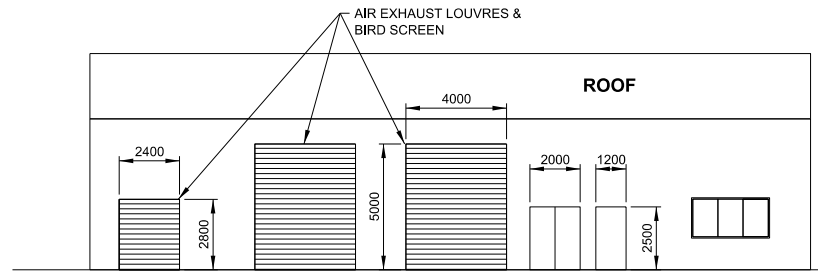
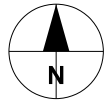
ISSUE/REVISION

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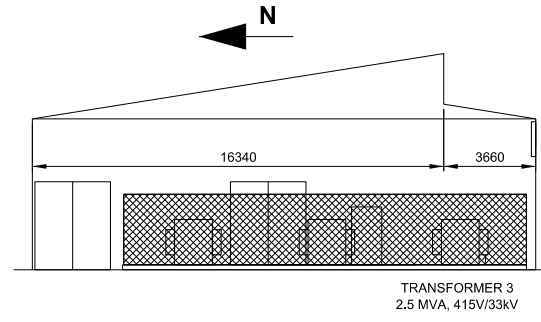
PROJECT NUMBER
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SHEET TITLE
 STAGE 1 - 12 TOWERS SITE LAYOUT PLAN VIEW
SHEET NUMBER
 60477754-01-CIV-0002

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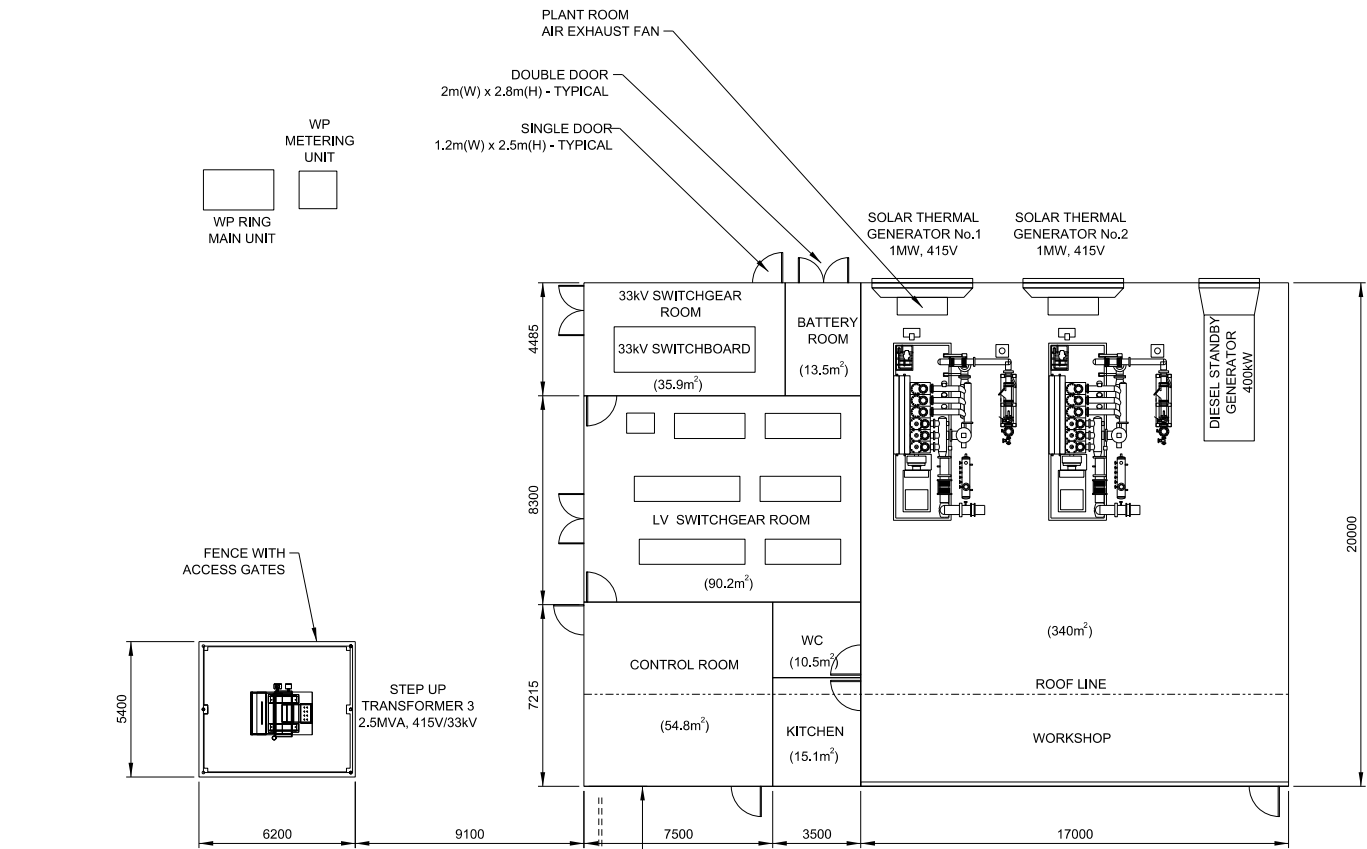
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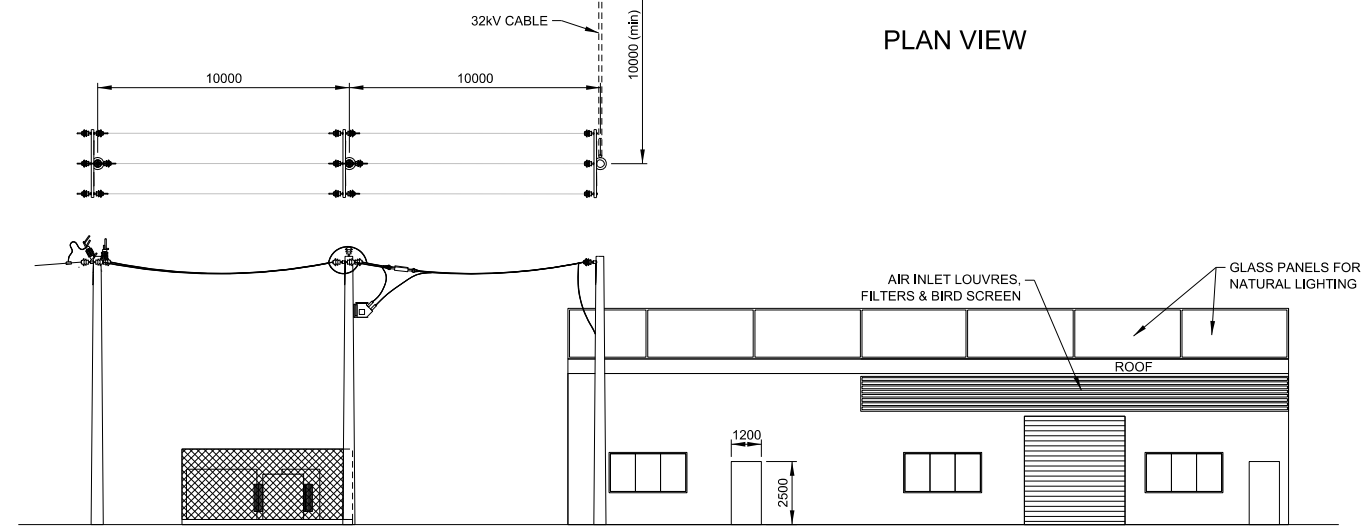
BACK VIEW



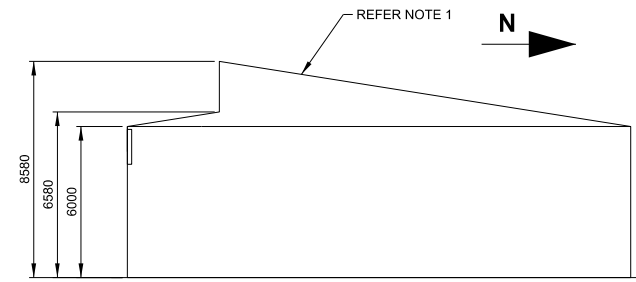
LEFT VIEW



PLAN VIEW



FRONT VIEW



RIGHT VIEW

- NOTE:**
1. OUTBUILDINGS WILL BE CONSTRUCTED OF COLORBOND SURFMIST
 2. ROOF WILL BE CONSTRUCTED OF COLORBOND SHALE GREY



PROJECT
KALBARRI SOLAR THERMAL GENERATOR PLANT - 1MW STAGE 1

CLIENT
LOWER ORD PTY LTD

CONSULTANT
 AECOM Australia Pty Ltd
 A.B.N 20 093 846 925
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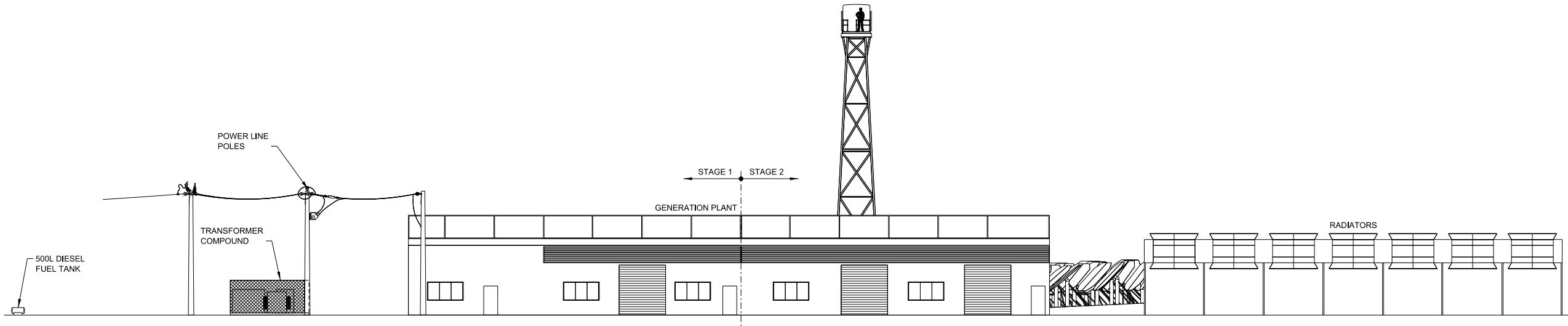
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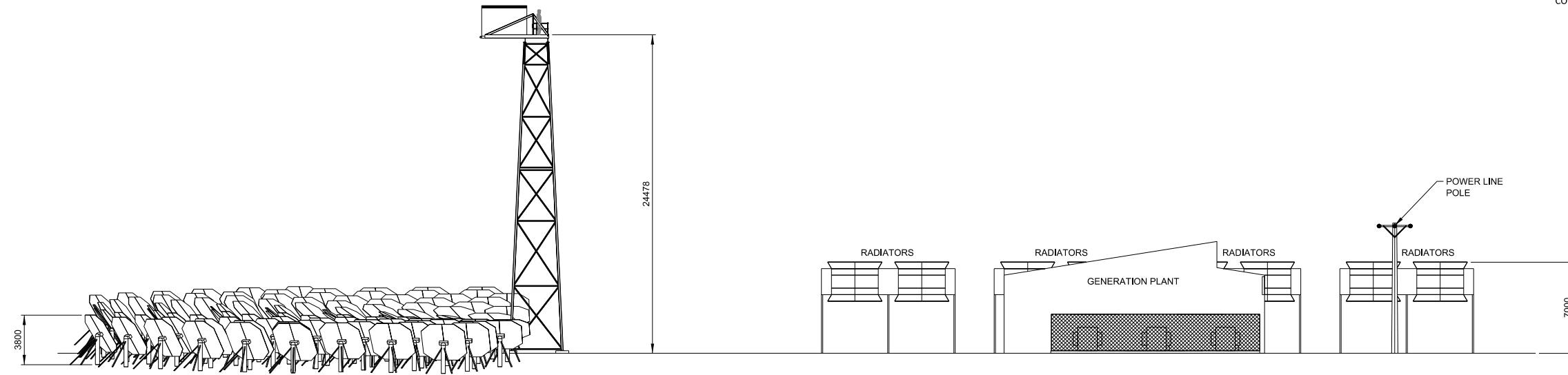
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FRONT VIEW - LOOKING NORTH



LEFT VIEW - LOOKING EAST

NOTE:

1. OUTBUILDINGS WILL BE CONSTRUCTED OF COLORBOND SURFMIST
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PROJECT

KALBARRI SOLAR THERMAL GENERATOR PLANT - 4MW STAGE 1 & 2

CLIENT

LOWER ORD PTY LTD

CONSULTANT

AECOM Australia Pty Ltd
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ELECTRICAL SERVICES
SITE GENERAL ARRANGEMENT
ELEVATIONS

SHEET NUMBER

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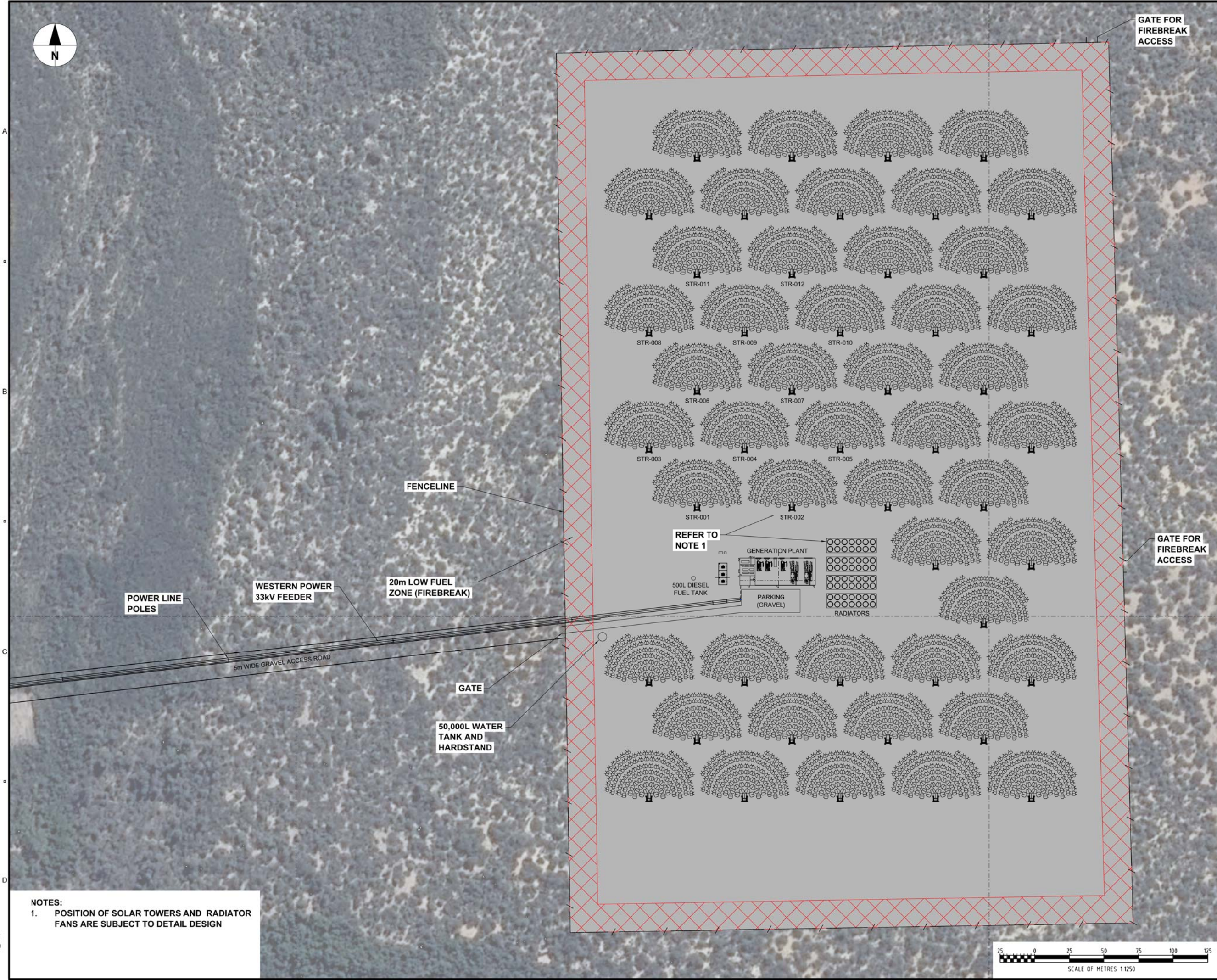
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NOTES:
 1. POSITION OF SOLAR TOWERS AND RADIATOR FANS ARE SUBJECT TO DETAIL DESIGN

GATE FOR FIREBREAK ACCESS

GATE FOR FIREBREAK ACCESS

POWER LINE POLES

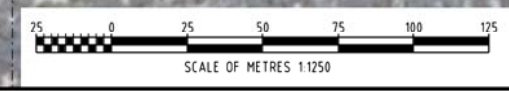
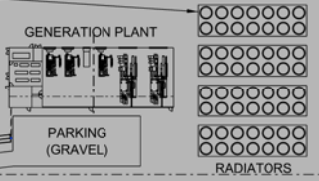
WESTERN POWER 33KV FEEDER

20m LOW FUEL ZONE (FIREBREAK)

GATE

50,000L WATER TANK AND HARDSTAND

REFER TO NOTE 1



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 STAGE 2 - 48 TOWERS
 SITE LAYOUT
 PLAN VIEW
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 4MW - STAGE 2
 48 TOWERS

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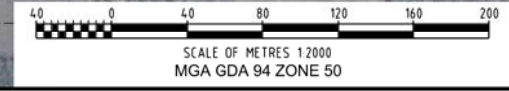
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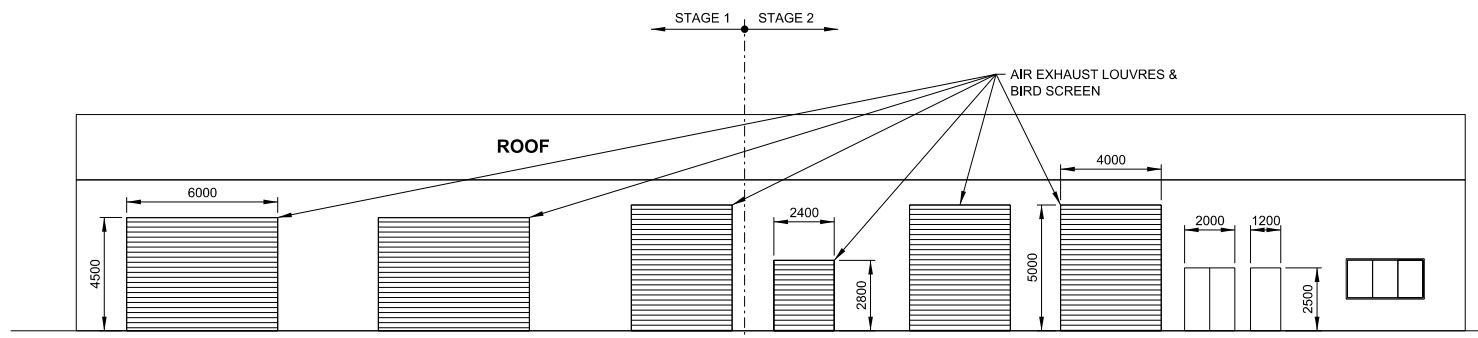
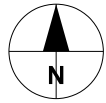
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 STAGE 2 - 48 TOWERS
 SITE LAYOUT
 PLAN VIEW

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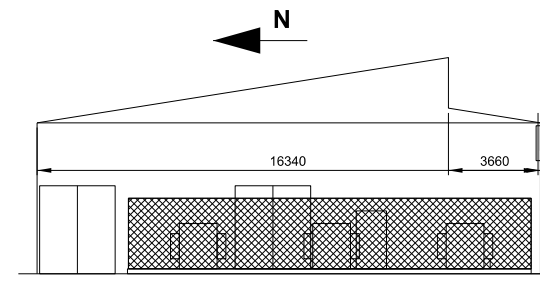
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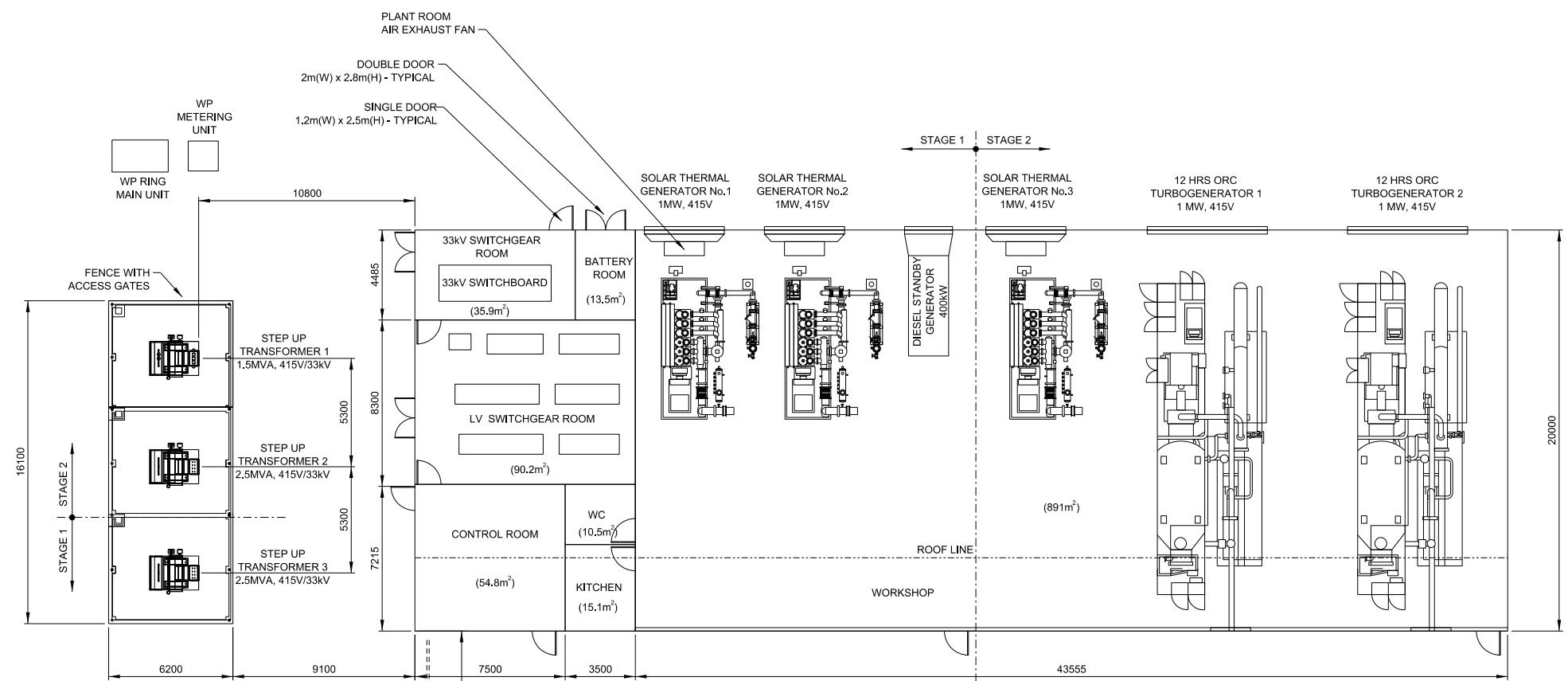


BACK VIEW



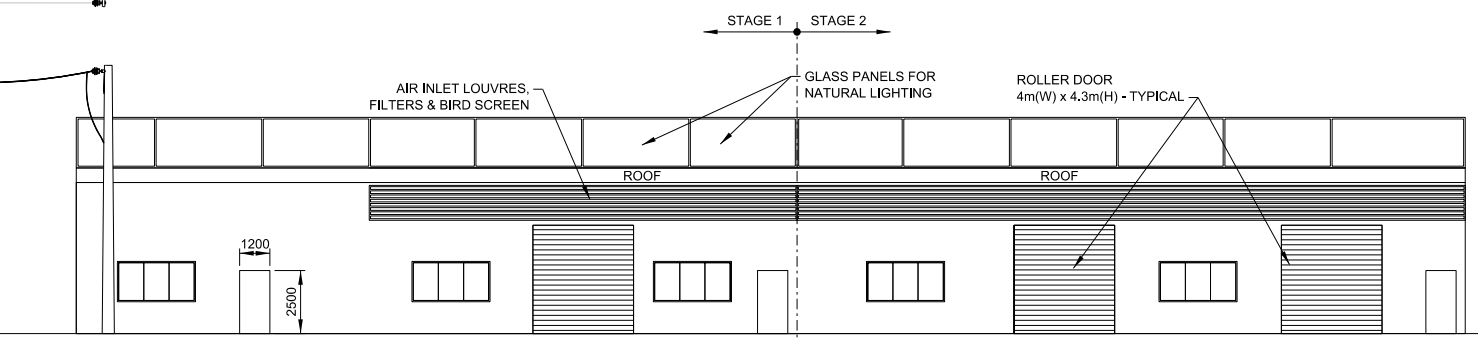
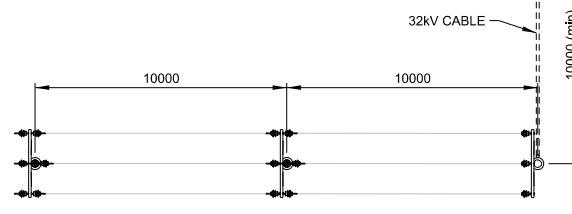
TRANSFORMER 1 1.5 MVA, 415V/33kV
 TRANSFORMER 2 2.5 MVA, 415V/33kV
 TRANSFORMER 3 2.5 MVA, 415V/33kV

LEFT VIEW

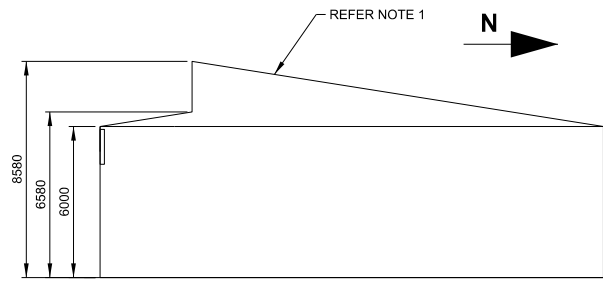


PLAN VIEW

- NOTE:**
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FRONT VIEW



RIGHT VIEW



PROJECT
 KALBARRI SOLAR
 THERMAL GENERATOR
 PLANT - 4MW
 STAGE 2

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**Lot 10792 George Grey Rd, Kalbarri.
Solar Farm and Wittecarra Creek Conservation Reserve
LEVEL 1 FLORA, VEGETATION AND FAUNA
SURVEY**



Kathryn Kinnear

Bio Diverse Solutions

12/11/2015





Contact details

Bio Diverse Solutions
55 Peppermint Drive
Albany WA 6330
08 9841 3936/ 0447555516
www.biodiversesolutions.com.au
ABN 48 138 824 272

REVISION RECORD

Revision	Summary	Revised By	Date
DRAFT ID 2/10/2015	DRAFT INTERNAL QA REVIEW	K.BAIN & K.KINNEAR	2/10/2015
DRAFT ID 2/10/2015	DRAFT RELEASED TO CLIENT	V.BUTTERLY & B.ROURKE	2/10/2015
DRAFT ID 21/10/2015	REFERRED TO DPAW & DOW FOR COMMENT	N.DETCHON & M.CANNY	21/10/2015
FINAL ID 12/11/2015	UPDATED FROM DPAW COMMENTS	K.BAIN & K. KINNEAR	12/11/2015

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1 INTRODUCTION

1.1 Site location

The survey area is located approximately 3.5 km south south west of Kalbarri and is a small portion of Lot 10792 George-Grey Drive, Kalbarri. This survey and report relate to a proposed 25 ha solar farm in the south east corner of the block and the 30.86 ha proposed Wittecarra Creek Conservation Reserve in the north west corner (Figure 1), which has been proposed to comply with provisions of the Shire of Northampton, Kalbarri Town Strategy (Shire of Northampton 2011).

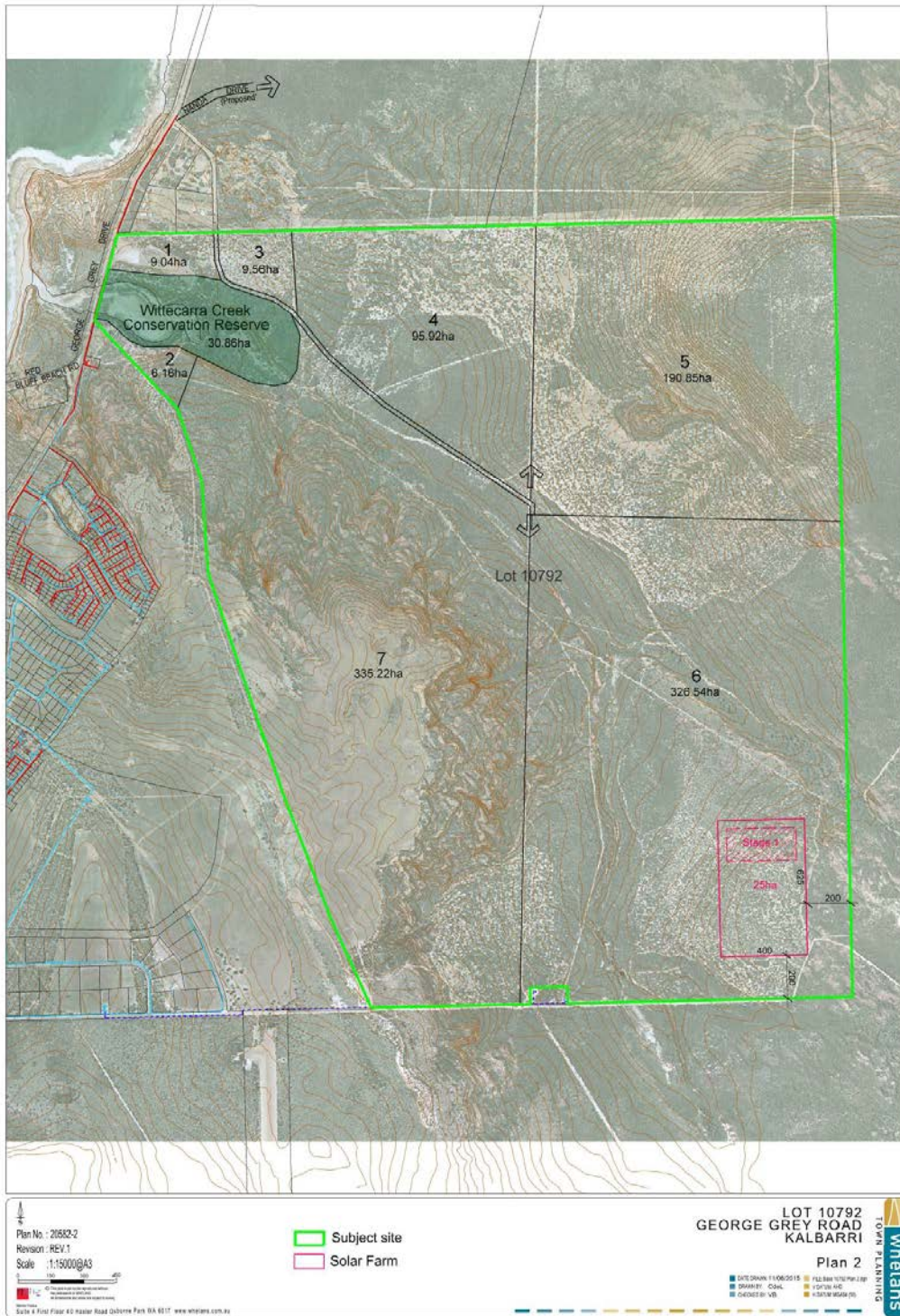


Figure 1: Location of Survey Area. Map Produced by Whelans Town Planning 11 June 2015.

To the south and east of the survey area is the Kalbarri National Park. To the west is public open space associated with the subdivision of Lot 9505. To the north is private land that has been earmarked for tourist attractions, conservation and groundwater protection (Shire of Northampton 2011).

1.2 Scope of work

Bio Diverse Solutions was commissioned by Allsage Pty Ltd (Brian Rourke), the owner of Lot 10792 to conduct a flora, vegetation and fauna assessment of a proposed solar farm in the SE corner of the property and a proposed conservation reserve around the mouth of the Wittecarra Creek, in the NW corner of the property. The proposed Wittecarra Creek Conservation Reserve boundary was considered indicative, with final boundaries to be determined from site investigations and environmental and landscape assessments (Shire of Northampton 2011). A proposed road alignment to allow access to the solar farm from the west, partially using an existing road, was also assessed during this survey.

A level 1 flora and vegetation survey was undertaken in accordance with EPA Guidance Statement 51: *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (EPA 2004). The Level 1 fauna survey was undertaken in accordance with Guidance Statement 56: *Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia* (EPA 2004b). Targeted surveys were also undertaken in potential habitat for Declared Rare Flora, priority listed flora, Threatened Ecological Communities, Threatened Fauna and priority listed flora. See section 2.1 and 3.1 for full desktop analysis and field survey methods.

1.3 Regional Context

The survey area lies within the Geraldton Sandplains Interim Biogeographic Regional Area (IBRA) bioregion and the Geraldton Hills sub region. The bioregion is characterised by extensive proteaceous heaths rich in endemic species occurring on undulating, lateritic sandplains (Desmond and Chant 2001). The Geraldton Hills subregion incorporates the southern end of Carnarvon Basin and northern end of the Perth Basin, with exposed areas of siltstone and sandstones, mostly overlain by sandplains, alluvial plains, and coastal limestones. Vegetation consists of heaths with emergent Banksia and Actinostrobus, York Gum woodlands on alluvial plains, proteaceous heath and *Acacia* scrubs on limestones and low closed forest of *Acacia* *rostellifera* on alluvial plains (Desmond and Chant 2001). The main land uses in the surrounding areas include residential development, dry land agriculture, grazing of native pastures, conservation lands, and other Crown lands.

1.4 Geology, geomorphology and soils

The survey area is located within the Kalbarri Sandplain Zone in the Canarvon Province, which is characterised by moderately dissected sandplain on deeply weathered mantle and colluvium over Cretaceous (and some Silurian) sedimentary rocks of the Carnarvon Basin (Tille 2006). The sandplains are predominantly flat to gently undulating, though sandplains with linear (and occasionally reticulate) dunes and broad depressions also occur. The floors of these depressions may be broad sandy swales, clayey interdunal plains, saline flats, or limestone plains. Alluvial plains are found on old river deltas and range from nearly flat, saline plains to plains with numerous low sandy banks and rises. Soils are dominated by pale deep sands, yellow deep sands, red deep sands and sandy duplexes, some pale shallow sands and bare rock (Tille 2006).

2 VEGETATION AND FLORA

2.1 Survey methods

Desktop inventory of potential threatened flora species likely to occur within 5km of the survey area was undertaken using the following databases:

- Formal search of DPaW Threatened and Priority Flora database (Appendix A);
- Nature Map Database Search (combined data from DPaW, WA Museum and WA Herbarium) (DPaW 2015 Appendix B);
- Protected matters search tool (DoE 2015, Appendix C); and
- WA Herbarium records accessed through Flora Base (Western Australian Herbarium, DPaW)

The list compiled from this data is based on observations from a broader area than the survey area and is likely to include species that would not occur in the actual survey area due to a lack of suitable habitat. The data also includes very old records and in some cases the species in question may have become locally or regionally extinct.

The conservation significance of flora species has been assessed using data from the following sources:

- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Administered by the Australian Government Department of the Environment (DoE);
- Wildlife Conservation Act 1950 (WC Act). Administered by the Western Australian Department of Parks and Wildlife (DPaW);
- DPaW Priority Flora list. A non-legislative list maintained by DPaW for management purposes.

Karlene Bain, a botanist from Bio Diverse Solutions undertook a level 1 flora and vegetation survey on 16 and 17 September 2015. The survey area was traversed on foot. The flora was systematically recorded and collections of plant specimens were made where further identification was required. For species that were not flowering and where foliage or nuts/ fruit couldn't be used for identification, potential habitat was used as an indication of the likelihood of species occurrence.

The plant communities occurring within the survey area were mapped and described in detail using opportunistic mapping and collections as well as 12 quadrats (10m x 10m) in the solar farm area and 17 quadrats in the proposed Wittecarra Creek Conservation Reserve. Quadrats were positioned in a manner that was representative of the different vegetation units onsite and their varying condition.

2.2 Flora survey outcomes

A search of the DPaW Threatened Flora Database (DEFL), the WA Herbarium database (WAHerb), the Declared Rare and Priority Flora Species List (TFPL), Naturemap and the Protected Matters Search Tool identified 112 species of declared rare and priority listed flora within a 5km radius of the site, including 10 DRF and 102 priority listed species (Table 1). Of these species, 38 were considered unlikely to occur within the survey area as a result of unsuitable habitat. Suitable habitat was present onsite for the remaining 74 species, but despite targeted searches only one species was found during field surveys, *Chamelaucium marchantii* (P3).

During the field survey 88 species, consisting of 29 families and 66 genera were found. The most common families were Myrtaceae, Fabaceae, Poaceae and Asteraceae. This list includes 75 native species (Table 2 and 3) and seven introduced species (Table 5).

Table 1: Potential Threatened Flora Species Occurring Within 5 km of Lot 10792 George-Grey Rd, Kalbarri. Generated from Nature Map (DPaW 2015), Protected Matters Search Tool (DOE 2015) and the DPaW Threatened and Priority Flora database with a post hoc assessment of suitability of habitat and flowering

Species	Status (WA)	Potentially Suitable Habitat	Within Flowering Period
<i>Acacia gelasina</i>	P2	Y	Y
<i>Acacia leptospermoides</i> subsp. <i>obovata</i>	P2	Y	Y
<i>Acacia plautella</i>	P3	Y	Y
<i>Acacia stereophylla</i> var. <i>cylindrata</i>	P2	Y	Y
<i>Acanthocarpus parviflorus</i>	P3	Y	N
<i>Angianthus microcephalus</i> Small-headed Angianthus	P2	Y	Y
<i>Anthocercis intricata</i>	P3	Y	Y
<i>Anthotroche myoporoides</i>	P3	Y	Y
<i>Arnocrinum drummondii</i>	P3	Y	Y
<i>Astroloma inopinatum</i>	P1	N	N
<i>Baeckea subcuneata</i>	P2	Y	Y
<i>Beyeria cinerea</i> subsp. <i>cinerea</i>	P3	Y	N
<i>Beyeria gardneri</i>	P3	Y	Y
<i>Beyeria lepidopetala</i> Short-petalled Beyeria	DRF	Y	Y
<i>Bossiaea calcicola</i>	P3	N	Y
<i>Bossiaea inundata</i>	P2	Y	Y
<i>Caladenia barbarella</i>	EN	N	Y
<i>Caladenia bryceana</i> subsp. <i>cracens</i>	EN	N	Y
<i>Caladenia hoffmanii</i>	EN	Y	Y
<i>Caladenia wanosa</i> Kalbarri Spider Orchid	EN	Y	Y
<i>Calectasia browneana</i>	P2	N	Y
<i>Calothamnus cupularis</i>	P2	Y	N
<i>Calytrix formosa</i>	P3	Y	Y
<i>Calytrix harvestiana</i>	P2	Y	Y
<i>Calytrix paucicostata</i>	P2	Y	Y
<i>Calytrix pimeleoides</i>	P3	Y	Y
<i>Calytrix purpurea</i>	P2	Y	Y
<i>Carpobrotus</i> sp. <i>Thevenard Island</i> (M. White 050)	P3	N	Y
<i>Centrolepis cephaloformis</i> subsp. <i>murrayi</i>	P3	Y	Y
<i>Chamelaucium marchantii</i>	P3	Y	Y
<i>Chthonocephalus tomentellus</i>	P2	N	Y
<i>Cryptandra glabriflora</i>	P2	Y	N
<i>Dampiera</i> sp. <i>Jurien</i> (G. Lullfitz s.n. 10/7/1986)	P2	N	N
<i>Desmocladius bififormis</i>	P3	Y	Y
<i>Diuris recurva</i>	P4	N	N
<i>Drakaea concolor</i>	EN	Y	Y
<i>Enekbatus cristatus</i>	P2	Y	Y
<i>Eremophila microtheca</i>	P4	N	Y
<i>Eremophila occidentis</i>	P2	N	Y
<i>Eucalyptus arachnaea</i> subsp. <i>arrecta</i>	P3	Y	N
<i>Eucalyptus beardiana</i>	EN	Y	Y
<i>Frankenia confusa</i>	P4	N	Y
<i>Geleznovia</i> sp. <i>Red Bluff</i> (A. Crawford ADC 597) PN	P2	Y	Y
<i>Grevillea costata</i>	P3	N	Y

Table 1 continued

Species	Status (WA)	Potentially Suitable Habitat	Within Flowering Period
<i>Grevillea leuoclada</i>	P3	N	Y
<i>Grevillea rogersoniana</i>	P3	N	Y
<i>Grevillea stenomera</i> Lace Net Grevillea	P2	Y	Y
<i>Guichenotia impudica</i>	P3	N	Y
<i>Harperia ferruginipes</i>	P1	N	N
<i>Hemiandra</i> sp. Kalbarri (D. Bellairs P1505)	P2	Y	Y
<i>Hibbertia spicata</i> subsp. <i>leptotheca</i>	P3	N	Y
<i>Hypocalymma angustifolium</i> subsp. <i>Hutt River</i> (S. Patrick P298P2)	VU	Y	Y
<i>Jacksonia velutina</i>	P4	Y	Y
<i>Lasiopetalum oldfieldii</i> subsp. <i>oldfieldii</i>	P3	Y	Y
<i>Lasiopetalum oppositifolium</i>	P3	N	Y
<i>Lechenaultia chlorantha</i>	EN	Y	Y
<i>Lechenaultia chlorantha</i> Kalbarri Leschenaultia	EN	Y	Y
<i>Lepidobolus densus</i>	P3	N	N
<i>Lepidosperma rupestre</i> Kalbarri Lepidosperma	P4	N	N
<i>Macarthuria intricata</i>	P3	N	Y
<i>Malleostemon</i> sp. <i>Hardabutt Rapids</i> (D. Bellairs P165P4A)	P1	N	N
<i>Malleostemon</i> sp. Kalbarri (L.A. Craven 708P3)	P2	Y	N
<i>Malleostemon</i> sp. <i>Moonyoonooka</i> (R.J. Cranfield P29P47)	P2	N	Y
<i>Malleostemon</i> sp. <i>Yerina</i> (S.J. Patrick 2728)	P1	N	N
<i>Melaleuca boeophylla</i>	P2	Y	N
<i>Melaleuca oldfieldii</i>	P2	N	N
<i>Microcorys tenuifolia</i>	P3	N	N
<i>Micromyrtus collina</i>	P1	Y	N
<i>Millotia jacksonii</i>	P2	Y	Y
<i>Mirbelia corallina</i>	P3	Y	Y
<i>Murchisonia fragrans</i>	P2	Y	Y
<i>Paracaleana alcockii</i>	P2	Y	Y
<i>Persoonia brachystylis</i> Short-styled Persoonia	P2	Y	N
<i>Philothea kalbarriensis</i>	P2	Y	Y
<i>Physopsis chrysophylla</i>	P3	Y	Y
<i>Pileanthus aurantiacus</i>	P1	Y	N
<i>Pileanthus bellus</i>	P3	Y	N
<i>Pityrodia viscida</i>	P4	N	Y
<i>Platysace</i> sp. Kalbarri (D. & B. Bellairs 1383)	P2	Y	N
<i>Scaevola kallophylla</i>	P4	N	Y
<i>Scaevola oldfieldii</i>	P3	Y	Y
<i>Scaevola</i> sp. <i>Golden hairs</i> (D. & B. Bellairs 1450 A)	P1	Y	N
<i>Schoenus</i> sp. Kalbarri (K.R. Newbey 9P35P2)	P2	Y	Y
<i>Scholtzia</i> sp. <i>Ajana</i> (T.A. Halliday P1P37)	P3	Y	Y
<i>Scholtzia</i> sp. <i>Eradu</i> (R.D. Royce 8016)	P2	Y	N
<i>Scholtzia</i> sp. <i>Eurardy</i> (J.S. Beard 6886)	P2	N	N
<i>Scholtzia</i> sp. <i>Folly Hill</i> (M.E. Trudgen P1P2097)	P2	Y	Y
<i>Scholtzia</i> sp. Kalbarri	P2	N	Y

Table 1 Continued

Species	Status (WA)	Potentially Suitable Habitat	Within Flowering Period
<i>Scholtzia</i> sp. Ross Graham Lookout (S. Maley 6)	P2	Y	Y
<i>Scholtzia</i> sp. Z-Bend (Bellairs-Kalflora 9P1P2a)	P2	Y	N
<i>Stachystemon nematophorus</i>	P4	Y	Y
<i>Stenanthemum divaricatum</i>	P3	Y	Y
<i>Thryptomene calcicola</i>	P2	Y	N
<i>Thryptomene johnsonii</i>	P2	Y	Y
<i>Thryptomene</i> sp. Eagle Gorge (A.G. Gunness 2360)	P2	N	N
<i>Thryptomene</i> sp. Wandana (M.E. Trudgen MET P2P20P16)	P3	Y	Y
<i>Thryptomene stenophylla</i>	P2	Y	N
<i>Thryptomene striata</i>	P2	Y	Y
<i>Thysanotus</i> sp. Kalbarri (D. & B. Bellairs 1523 A)	P2	Y	Y
<i>Triodia bromoides</i>	P4	N	Y
<i>Triodia dielsii</i>	P3	N	Y
<i>Verticordia capillaris</i>	P4	Y	Y
<i>Verticordia cooloomia</i>	P3	Y	Y
<i>Verticordia dasystylis</i> subsp. kalbarriensis	P2	N	N
<i>Verticordia densiflora</i> var. roseostella	P3	N	Y
<i>Verticordia dichroma</i> var. dichroma	P3	Y	Y
<i>Verticordia dichroma</i> var. syntoma	P3	Y	N
<i>Verticordia galeata</i>	P2	N	Y
<i>Verticordia polytricha</i> N.Cauliflower	P4	Y	Y
<i>Verticordia x eurardyensis</i>	P1	Y	N
<i>Wurmbea murchisoniana</i>	P4	N	Y

A full listing of conservation codes are provided in Appendix G.

Table 2: Native Flora Species Recorded from the Solar Farm Survey Area on Lot 10792

Family	Species	Common Name
Araliaceae	<i>Trachymene ornata</i>	Spongefruit
Asparagaceae	<i>Thysanotus manglesianus</i>	Fringed Lily
Asteraceae	<i>Calocephalus francisii</i>	Fine-leaf Beauty-heads
Asteraceae	<i>Gnephosis tenuissima</i>	
Asteraceae	<i>Helipterum craspedioides</i>	Yellow Billy Buttons
Asteraceae	<i>Lawrencella rosea</i>	
Asteraceae	<i>Olearia axillaris</i>	Coastal Daisybush
Asteraceae	<i>Podotheca gnaphliodes</i>	Golden Long-heads
Asteraceae	<i>Pogonolepis stricta</i>	
Casuarinaceae	<i>Allocasuarina campestris</i>	
Cupressaceae	<i>Callitris arenaria</i>	Sandplain Cypress
Ericaceae	<i>Leucopogon cordifolius</i>	Heart-leaf Beard heath
Ericaceae	<i>Astroloma glaucescens</i>	
Fabaceae	<i>Acacia oldfieldii</i>	
Fabaceae	<i>Acacia scirpifolia</i>	
Fabaceae	<i>Jacksonia cupulifera</i>	
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Fabaceae	<i>Leptosema aphyllum</i>	
Goonediaceae	<i>Goodenia berardiana</i>	
Haloragaceae	<i>Glischrocaryon aureum</i>	Common Pop Flower
Lamiaceae	<i>Lachnostachys eriobotrya</i>	Lambswool
Myrtaceae	<i>Baeckea robusta</i>	
Myrtaceae	<i>Calothamnus quadrifidus ssp homalophyllus</i>	Murchison Claw Flower
Myrtaceae	<i>Calytrix brevifolia</i>	
Myrtaceae	<i>Melaleuca megacephala</i>	
Myrtaceae	<i>Scholtzia sp. Red Bluff</i>	
Myrtaceae	<i>Thryptomene denticulata</i>	
Poaceae	<i>Austrostipa nitida</i>	
Polygalaceae	<i>Comesperma scoparium</i>	Broom Milkwort
Polygonaceae	<i>Muehlenbeckia adpressa</i>	Climbing Lignum
Portulacaceae	<i>Calandrinia ployandra</i>	Parakeelya
Proteaceae	<i>Banksia prionotes</i>	Acorn Banksia
Proteaceae	<i>Conospermum stoechadis</i>	Common Smokebush
Proteaceae	<i>Grevillea leucoptervis</i>	White Plume Grevillea
Proteaceae	<i>Grevillea pinaster</i>	
Proteaceae	<i>Hakea orthorrhyncha</i>	Bird Beak Hakea
Restionaceae	<i>Desmocladus asper</i>	
Solanaceae	<i>Solanum lasiophyllum</i>	Flannel Bush
Stylidiaceae	<i>Stylidium sp. Kalbarri</i>	

* refers to species that are alien to Western Australia.

Table 3: Native Flora Species Recorded from the Proposed Conservation Reserve on Lot 10792

Family	Species	Common Name
Aizoaceae	<i>Gunniopsis septifraga</i>	
Aizoaceae	<i>Mesembryanthemum crystallinum*</i>	Ice plant
Amaranthaceae	<i>Ptilotus polystachyus</i>	Prince of Wales Feather
Araliaceae	<i>Trachymene ornata</i>	
Asparagaceae	<i>Acanthocarpus sp. Ajana</i>	
Asparagaceae	<i>Thysanotus manglesianus</i>	Fringed Lily
Asteraceae	<i>Arctotheca calendula*</i>	Cape Weed
Asteraceae	<i>Calocephalus francisii</i>	Fine-leaf Beauty-heads
Asteraceae	<i>Sonchos oleraceus*</i>	Common Sow Thistle
Casuarinaceae	<i>Casuarina obesa</i>	Swamp Sheoak
Chenopodiaceae	<i>Atriplex amnicola</i>	Swamp Salt Bush
Chenopodiaceae	<i>Chenopodium album*</i>	Fat Hen
Chenopodiaceae	<i>Enchylaena tomentosa</i>	Barrier Saltbush
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Chenopodiaceae	<i>Rhagodia preissii subsp. obovata</i>	
Chenopodiaceae	<i>Tetrcornia halocnemoides</i>	Red Samphire
Chenopodiaceae	<i>Tetrcornia indica ssp. bidens</i>	Green Samphire
Crassulaceae	<i>Crassula colorata</i>	
Dilleniaceae	<i>Hibbertia spicata</i>	
Fabaceae	<i>Acacia rostellifera</i>	Summer-scented Wattle
Fabaceae	<i>Acacia scirpifolia</i>	
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Fabaceae	<i>Melilotus indicus*</i>	
Goodeniaceae	<i>Dampiera spicigera</i>	Spiked Dampiera
Haemodoraceae	<i>Conostylis robusta</i>	
Haemodoraceae	<i>Conostylis stylioides</i>	
Lauraceae	<i>Cassytha aurea var. aurea</i>	
Loranthaceae	<i>Amyema linophylla subsp. linophylla</i>	
Malvaceae	<i>Commersonia densiflora</i>	
Malvaceae	<i>Lasiopetalum sp.</i>	
Myrtaceae	<i>Baeckea pentagonantha</i>	
Myrtaceae	<i>Calothamnus sanguineus</i>	Silky-leaved Blood flower
Myrtaceae	<i>Chamelaucium marchantii (P3)</i>	
Myrtaceae	<i>Eucalyptus camaldulensis subsp. obtusa</i>	Blunt-budded River Red Gum
Myrtaceae	<i>Melaleuca megacephala</i>	
Myrtaceae	<i>Melaleuca raphiophylla</i>	Swamp Paperbark
Poaceae	<i>Austrostipa macalpinei</i>	
Poaceae	<i>Austrostipa nitida</i>	
Poaceae	<i>Ehrharta longiflora*</i>	
Poaceae	<i>Eriachne aristidea</i>	
Poaceae	<i>Hordeum hystrix*</i>	Barley Grass

Table 3 Continued

Family	Species	Common Name
Poaceae	<i>Parapholis incurva</i>	Coast Barb Grass
Poaceae	<i>Rostraria cristata</i>	
Polygalaceae	<i>Comesperma scoparium</i>	Broom Milkwort
Polygonaceae	<i>Muehlenbeckia adpressa</i>	
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya
Proteaceae	<i>Banksia menziesii</i>	Firewood Banksia
Proteaceae	<i>Banksia prionotes</i>	Acorn Banksia
Solanaceae	<i>Anthocercis ilicifolia subsp. caldariola</i>	

* refers to species that are alien to Western Australia.

2.3 Vegetation Units

Vegetation units were mapped in the field using a GPS and as 12 quadrats (10m x 10m) in the solar farm area and 17 quadrats in the proposed conservation reserve (see Appendix D for a map and full list of species associated with each plot). Eight main vegetation units were identified within the survey area (Figure 2, 3 and Table 4).

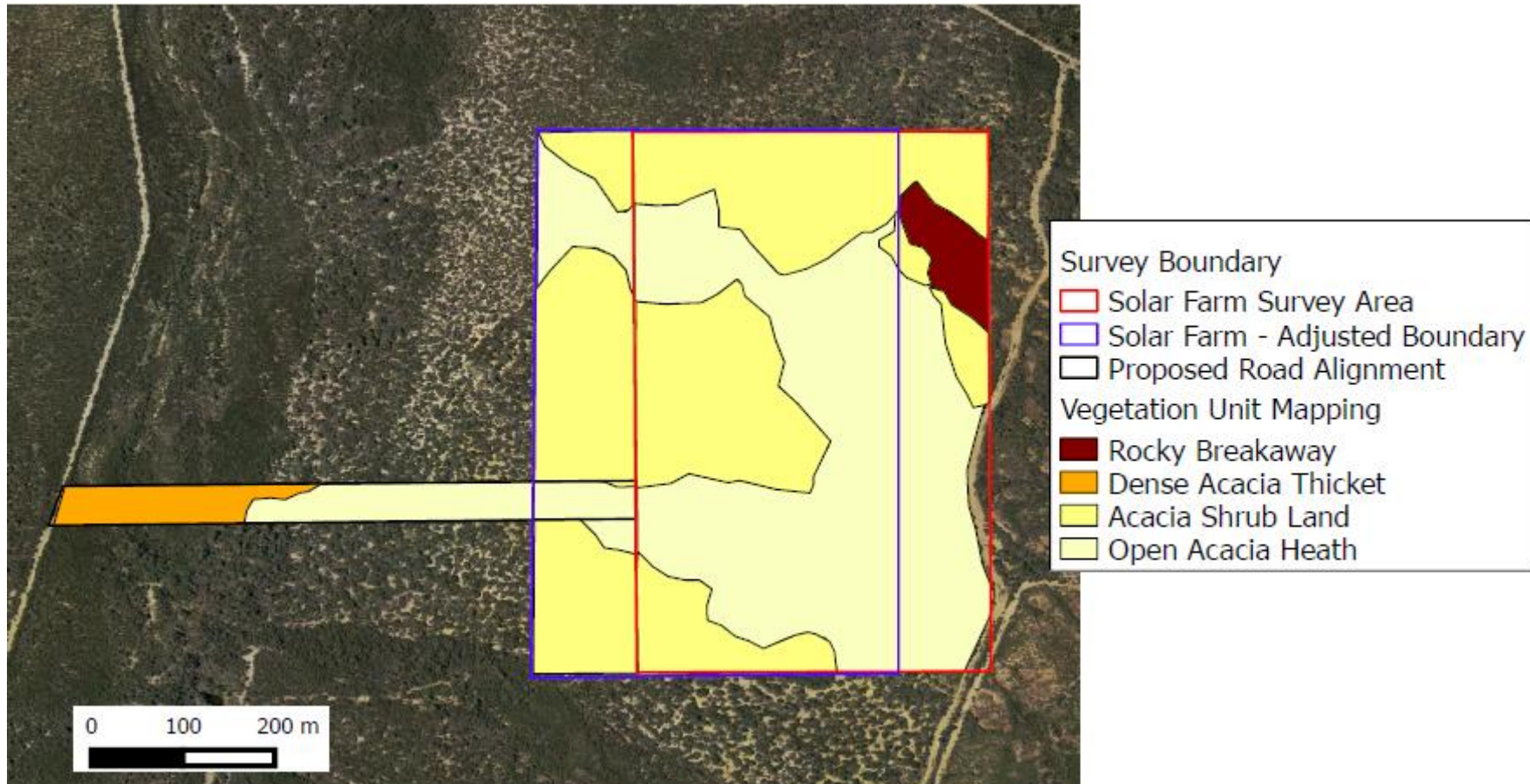


Figure 2: Vegetation Units Mapped Within the Solar Farm and Proposed Road Alignment Survey Areas on Lot 10792 George Grey Rd, Kalbarri.

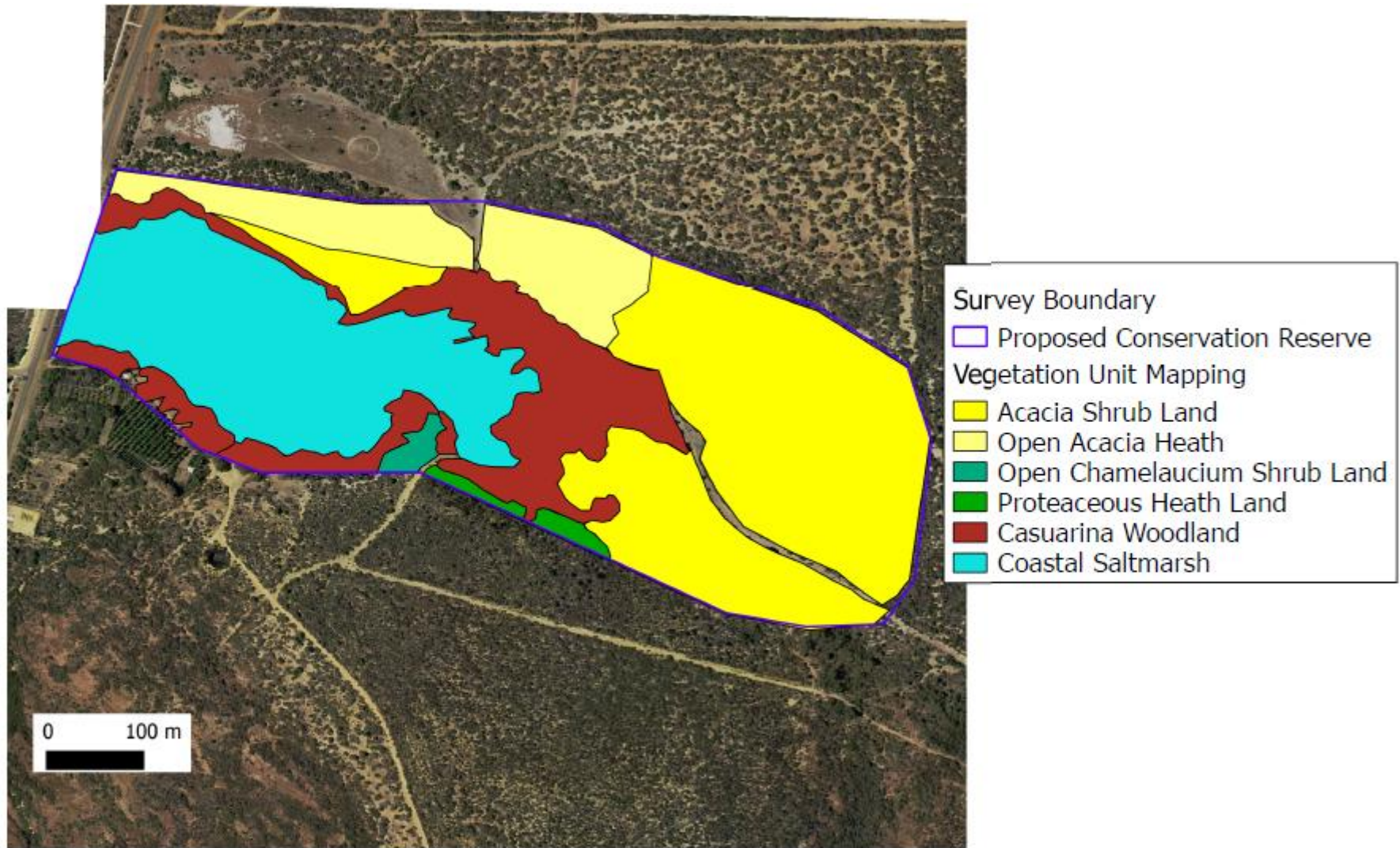


Figure 3: Vegetation Units Mapped Within the Proposed Wittecarra Creek Conservation Reserve on Lot 10792 George Grey Rd, Kalbarri.

Table 4: Description Of Vegetation Units Mapped Within the Solar Farm Area, Proposed Conservation Reserve and Proposed Road Alignment on Lot 10792 George Grey Rd Kalbarri.


Vegetation Unit Description	Image
<p>Tall <i>Acacia</i> shrub land on deep yellow sand. 50-90% cover; 3-7 m high. Overstorey of <i>Acacia oldfieldii</i> or <i>Acacia scirpifolia</i>, <i>Labichea lanceolata</i>, <i>Jacksonia cupulifera</i>, <i>Allocasuarina campestris</i>, <i>Callitris arenaria</i>, <i>Grevillea leucopteris</i> and <i>Banksia prionotes</i> (occasional); understorey of <i>Baeckea robusta</i>, <i>Melaleuca megacephala</i>, <i>Solanum lasiophyllum</i>, <i>Lachnostachys eriobotrya</i> and <i>Scholtzia sp. Red Bluff</i>; and a sparse ground cover of <i>Calandrinia polyandra</i>, <i>Trachymene ornata</i>, <i>Podotheca gnaphliodes</i>, <i>Arctotheca calendula*</i>, <i>Goodenia berardiana</i>, <i>Ehrharta longifolia*</i>, <i>Austrostipa nitida</i> and <i>Schenkia australis</i>. In the proposed conservation reserve, this vegetation unit also included <i>Acacia rostellifera</i>, <i>Anthocercis ilicifolia subsp. caldariola</i>, <i>Atriplex amnicola</i>, <i>Rhagodia latifolia subsp latifolia</i>, <i>Acacia rostellifera</i>, <i>Austrostipa macalpinei</i> and <i>Eriachne aristada</i>.</p>	
<p>Dense <i>Acacia</i> Thicket 5-8 m tall. Dense thickets of <i>Acacia scirpifolia</i>, <i>Melaleuca megacephala</i>, <i>Labichea lanceolata</i>, <i>Grevillea leucopteris</i> and <i>Jacksonia cupulifera</i>. Understorey of <i>Gompholobium tomentosum</i>, <i>Patersonia occidentalis var. latifolia</i> (occasional), <i>Stylidium sp. Kalbarri</i>, <i>Calandrinia ployandra</i> and <i>Comesperma scoparium</i>.</p>	
<p>Sparse <i>Calothamnus</i> over red sandstone breakaways. 0.8-2m high; Overstorey of <i>Calothamnus quadrifidus ssp homalophyllus</i>, <i>Hakea orthorrhyncha</i>, <i>Scholtzia sp. Red Bluff</i>, <i>Jacksonia cupulifera</i> and <i>Grevillea pinaster</i>; Understorey of <i>Thysanotus manglesianus</i>; ground cover of <i>Calandrinia polyandra</i>, <i>Calocephalus francisii</i>, <i>Podotheca gnaphlioides</i>, <i>Calocephalus francisii</i>, <i>Gnephosis tenuissima</i>, <i>Helipterum craspedioides</i> and <i>Pogonolepis stricta</i></p>	
<p>Low, open <i>Acacia</i> heath land 0.8-3 m high over deep yellow sand. Overstorey dominated by <i>Acacia oldfieldii</i>, <i>Acacia scirpifolia</i>, <i>Labichea lanceolata</i>, <i>Olearia axillaris</i>, <i>Calothamnus quadrifidus ssp homalophyllus</i>, <i>Melaleuca megacephala</i>, <i>Allocasuarina campestris</i>, <i>Calytrix brevifolia</i>, <i>Grevillea leucopteris</i> and <i>Callitris arenaria</i> (occasional); understorey dominated by <i>Thysanotus manglesianus</i>, <i>Leptosema aphyllum</i>, <i>Comesperma scoparium</i>, <i>Solanum lasiophyllum</i>, <i>Glyschrocaryon aureum</i>, <i>Thryptomene denticulata</i> (occasional) and <i>Astroloma glaucescens</i> (occasional); and sparse ground cover of <i>Trachymene ornata</i>, <i>Podotheca gnaphliodes</i>, <i>Gnephosis tenuissima</i>, <i>Muehlenbeckia adpressa</i>, <i>Arctotheca calendula*</i>, <i>Stylidium sp. Kalbarri</i>, <i>Calandrinia polyandra</i> and <i>Desmocladus asper</i>.</p>	

Table 4 continued

Vegetation Unit Description	Image
<p>Open Chamelaucium shrub land. Overstorey of <i>Chamelaucium marchantii</i> (P3), <i>Calothamnus sanguineus</i>, <i>Melaleuca megacephala</i> <i>Acacia rostelifera</i>, <i>Acacia scirpifolia</i>, <i>Banksia menziesii</i> and <i>Anthocercis ilicifolia</i> subsp. <i>caldariola</i>; understorey of <i>Ptilotus polystachyus</i>, <i>Rhagodia latifolia</i> subsp. <i>latifolia</i>, <i>Hibbertia spicata</i>, <i>Dampiera spicigera</i> and <i>Austrostipa macalpinei</i>; ground cover of <i>Calocephalus francisii</i> and <i>Calandrinia polyandra</i>.</p>	
<p>Proteaceous heath on deep yellow sand. Overstorey dominated by <i>Banksia menziesii</i>, <i>Banksia prionotes</i>, <i>Anthocercis ilicifolia</i> subsp. <i>caldariola</i>, <i>Acacia rostelifera</i>, <i>Acacia scirpifolia</i>, <i>Labichea lanceolata</i>, <i>Calothamnus sanguineus</i> and <i>Melaleuca megacephala</i>. Understorey dominated by <i>Ptilotus polystachyus</i>, <i>Dampiera spicigera</i>, <i>Conostylis robusta</i>, <i>Conostylis stylidioides</i>, <i>Commersonia densiflora</i>, <i>Cassytha aurea</i> var. <i>aurea</i>, <i>Lasiopetalum</i> sp., <i>Austrostipa macalpinei</i>, <i>Austrostipa nitida</i>, <i>Eriachne aristata</i> and <i>Comesperma scoparium</i>; ground cover dominated by <i>Trachymene ornata</i>, <i>Calocephalus francisii</i> and <i>Calandrinia polyandra</i>.</p>	
<p>Tall <i>Casuarina</i> woodland over brown loamy sand. Overstorey dominated by <i>Casuarina obesa</i> and <i>Eucalyptus camaldulensis</i> subsp. <i>obtusa</i>; with some <i>Amyema linophylla</i> subsp. <i>linophylla</i> on the <i>Casuarina</i>. No understorey within the undisturbed true woodland areas; a weedy understorey adjacent to the farm area on the southern boundary of the proposed reserve. On the fringes of the woodland, a sparse understorey of <i>Atriplex amnicola</i>, <i>Rhagodia latifolia</i> subsp. <i>latifolia</i>, <i>Cassytha aurea</i> var. <i>aurea</i>, <i>Tetricornia indica</i> ssp. <i>bidens</i> and <i>Enchylaena tomentosa</i></p>	
<p><i>Coastal Saltmarsh</i>. Complete absence of overstorey or understorey. Vegetation interspersed with unvegetated patches and salt pans. Ground cover dominated by succulent species: <i>Tetricornia indica</i> ssp. <i>bidens</i> and <i>Tetricornia halocnemoides</i>. Other species present include: <i>Gunniopsis septifraga</i>, <i>Mesembryanthemum crystallinum</i>*, <i>Arctotheca calendula</i>*, <i>Crassula colorata</i>, <i>Hordeum hystrix</i>*, <i>Parapholis incurva</i>, <i>Rostraria cristata</i> and <i>Enchylaena tomentosa</i> (occasional)</p>	

2.4 Vegetation Condition

The vegetation condition for the survey area has been surveyed using the Keighery condition rating scale (Keighery 1994, Appendix E). Vegetation in both the proposed solar farm and road alignment survey areas was in “Excellent condition” throughout, with a weed index of between 0 and 5% across these areas (not mapped as deemed “Excellent condition” throughout survey area).

Within the proposed Wittecarra Creek conservation reserve, disturbance to the vegetation was more evident as a result of significant 4WD and motorcycle access to the area, particularly around the wetland area where multiple tracks had been established. It was unclear why visitation to this area is so high, but the outcome has been the physical disturbance of vegetation proximate to these tracks and the lake, dumping of rubbish within these areas and weed invasion from the tracks and from a mango farm south of the lake. Areas of proteaceous heath, *Chamelaucium* heath and *Acacia* shrub land located away from the core wetland area are in excellent-pristine condition (Figure 4).

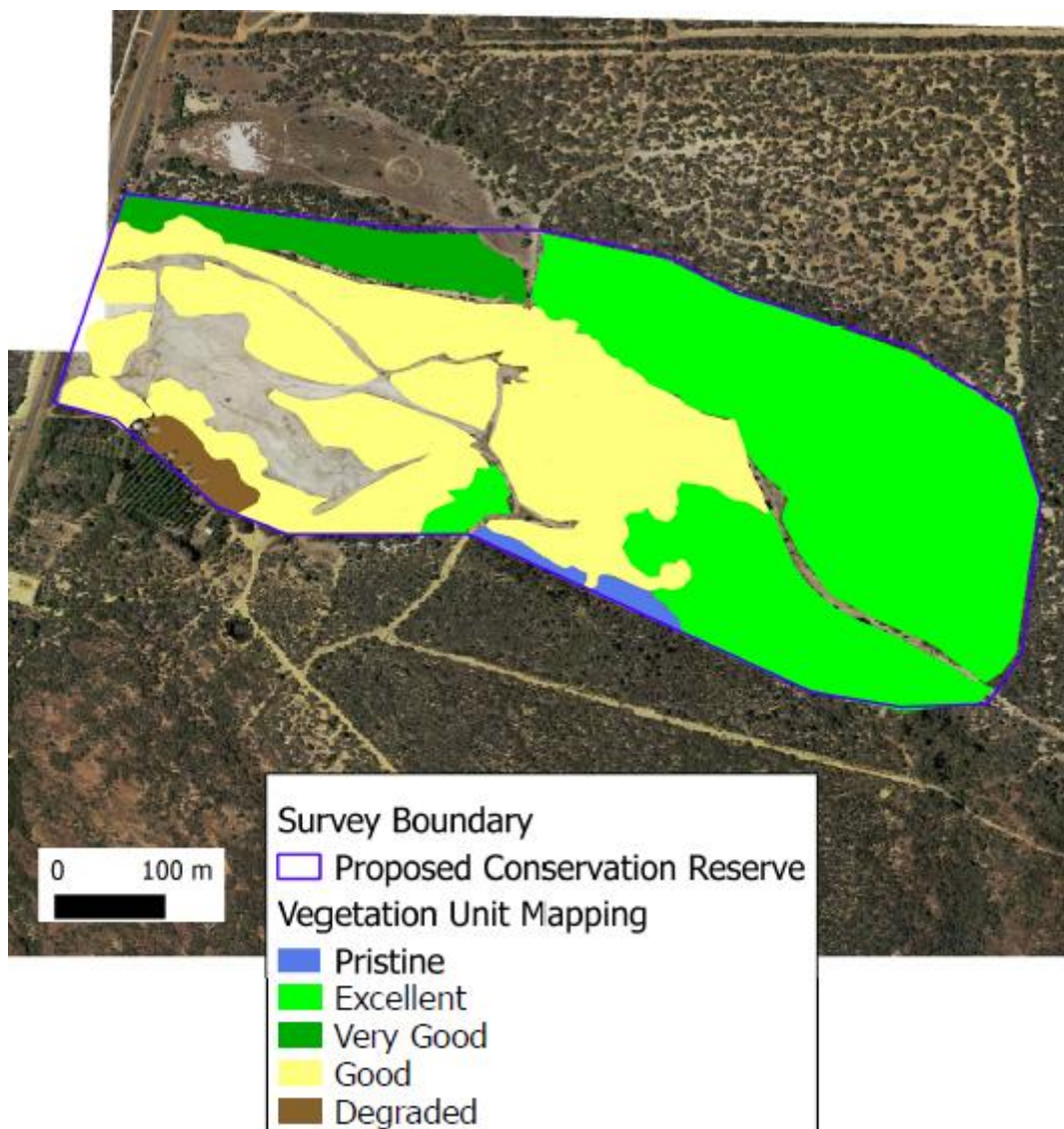


Figure 4: Vegetation Condition Mapped Within the Proposed Wittecarra Creek Conservation Reserve in Lot 10792 George Grey Rd, Kalbarri.

2.5 Weeds and disturbance

Of the 88 taxa recorded within the survey area, seven (8 %) were introduced species (Table 5).

Table 5: Weed species recorded from within the two survey areas on Lot 10792

Family	Species	Common Name	BAM Rating	EWS Rating
Aizoaceae	<i>Mesembryanthemum crystallinum</i>	Ice plant	None	Mod
Asteraceae	<i>Arctotheca calendula</i>	Cape Weed	None	Mod
Asteraceae	<i>Sonchus oleraceus</i>	Common Sow Thistle	None	None
Chenopodiaceae	<i>Chenopodium album</i>	Fat Hen	None	Low
Fabaceae	<i>Melilotus indicus</i>		None	TBA
Poaceae	<i>Ehrharta longiflora</i>		None	Mod
Poaceae	<i>Hordeum hystrix</i>	Barley Grass	None	None

The most extensively weed invaded areas were associated with the 4WD access to areas fringing the Witteccarra Creek wetland, and garden escapes from a small farm on the southern edge of the wetland. In these areas, weed cover contributed between 10-80% of the understorey and reduced condition of the vegetation. In the remaining areas (>90% of the survey area), the weed index was very low, with < 10% cover.

Of the weeds recorded, none are declared agricultural weeds under the *Biosecurity and Agriculture Management Act 2007* and none are considered a high priority for control and/or research as identified in the Environmental Weeds Strategy for Western Australia (CALM 1999). The strategy classifies weeds according to their relative level of threat to conservation (high medium or low) and this rating is based their relative level of invasiveness, distribution and environmental impacts (Appendix F).

Other disturbances in the reserve included 4WD access through and around the wetland, rubbish dumping and minor firewood cutting within the *Casuarina* woodland.

3 FAUNA

3.1 Survey methods

Desktop inventory of potential threatened fauna species likely to occur within 10 km of the survey area was undertaken using the following databases:

- DPaW's Nature Map Database Search (combined data from DPaW, Western Australian Museum and Birds Australia) (DPaW 2015, Appendix B); and
- Protected matters search tool (DoE 2015, Appendix C).

The list compiled from this data is based on observations from a broader area than the survey area and is likely to include species that are vagrants or would not occur in the actual survey area due to a lack of suitable habitat or poor ecological connectivity. The databases also often included very old records and in some cases the species in question may have become locally or regionally extinct.

The conservation significance of fauna species has been assessed using data from the following sources:

- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Administered by the Australian Government Department of the Environment (DoE);
- Wildlife Conservation Act 1950 (WC Act). Administered by the Western Australian Department of Parks and Wildlife (DPaW);
- Red List produced by the Species Survival Commission (SSC) of the World Conservation Union (also known as the IUCN Red List - the acronym derived from its former name of the International Union for Conservation of Nature and Natural Resources). The Red List has no legislative power in Australia but is used as a framework for State and Commonwealth categories and criteria; and
- DPaW Priority Fauna list. A non-legislative list maintained by DPaW for management purposes.

The EPBC Act also requires the compilation of a list of migratory species that are recognised under international treaties including the:

- Japan Australia Migratory Bird Agreement 1981 (JAMBA). Species listed under JAMBA are also protected under Schedule 3 of the WC Act;
- China Australia Migratory Bird Agreement 1998 (CAMBA);
- Republic of Korea-Australia Migratory Bird Agreement 2007 (ROKAMBA); and
- Bonn Convention 1979 (The Convention on the Conservation of Migratory Species of Wild Animals).

All migratory bird species listed in the annexes to these bilateral agreements are protected in Australia as matters of national environmental significance under the *EPBC Act*.

The conservation status of all vertebrate fauna species listed as occurring or possibly occurring in the vicinity of the Project area has been assessed using the most recent lists published in accordance with the above-mentioned instruments and is indicated as such in the fauna listings of this report. Full definitions of conservation codes are provided in Appendix G.

A number of other species not listed in official lists can also be considered of local or regional conservation significance. These include species that have a restricted range, those that occur in breeding colonies and those at the limit of their range.

It can be difficult to identify what may be significant invertebrate species in Western Australia (e.g. Short Range Endemics - SREs) as there is a lack of knowledge on invertebrates, there is currently no general standard for invertebrate survey work and there is a shortage of invertebrate taxonomic expertise (Harvey 2002). For this survey, the assessment for conservation significant invertebrates has been limited to those listed by the DPaW and *EPBC Act* database searches (which rely on distribution records and known habitat preferences).

Field survey work was carried out by an experienced zoologist Karlene Bain (Bio Diverse Solutions) on the 16 and 17 September 2015. Vegetation units observed during the site survey were used to define broad fauna habitat types across the site (See section 2.3, Figure 2, 3 and Table 4). The main aim of the habitat assessment was to determine the likelihood of threatened species utilising the area and the significance of the habitat to them.

Opportunistic observations of fauna species were made during survey of 29 vegetation quadrats across the survey areas (12 in the proposed solar farm area and 17 in the proposed Wittecarra Creek Conservation Reserve). In addition, microhabitats such as logs, rocks, leaf litter and standing water were searched throughout the site, frogs were identified from their calls or through direct observation and bird species were identified from their calls or from visual identification through binoculars.

Targeted assessment was carried out for threatened species, migratory species that are recognised under international treaties, short range endemics and species of local significance that were identified in the desktop inventory. Assessment techniques used for each species are summarised in Table 6.

No seasonal sampling was conducted during this fauna assessment. The conclusions presented are based upon opportunistic field data collected over a limited period of time and are indicative of the environmental condition of the site at the time. Some fauna species are reported as potentially occurring within the study area based on the presence of suitable habitat (quality and extent) within the study area or immediately adjacent. With respect to opportunistic observations, the possibility exists that certain species may not have been detected during field investigations due to seasonal inactivity during the field survey, species present within micro habitats not surveyed, cryptic species able to avoid detection and transient wide-ranging species not present during the survey period. Lack of observational data on some species should therefore not necessarily be taken as an indication that a species is absent from the site.

3.2 Fauna Survey Outcomes

A search of the DPaW Threatened Fauna Database (DEFL), Naturemap and the Protected Matters Search Tool identified 105 species of threatened, priority listed or specially protected fauna within a 10 km radius of the site, including 39 threatened species, six priority listed species and 60 migratory species that are recognised under international treaties (Appendix B, C). Of these species, 85 were considered unlikely to occur within the survey area as a result of unsuitable habitat, for example migratory marine species. Suitable habitat was present onsite for the remaining 20 species.

Targeted surveys and assessment of habitat suitability were undertaken for the 20 species identified as potentially occurring within the survey area. Results are presented in Table 6. The solar farm area was found to contain evidence of Tammar Wallaby (*Macropus eugenii subsp. derbianus*) in the form of old faecal material. The scats were well-weathered and there was no evidence of fresh activity. The location of the old activity was on the eastern boundary associated with dense *Acacia* shrub land and close to the Kalbarri National Park. Tammar Wallabies were reintroduced into the Kalbarri National Park in 2010 and public sightings and DPaW records suggest that the population is persisting in the area. These animals are at risk from predation by feral animals such as the Red Fox (*Vulpes vulpes*) and Feral Cat (*Felis catus*), particularly when joeys are first emerging from the pouch. Baiting and fire management programs in the adjoining Kalbarri National Park are likely to be important for the ongoing survival of this species in the area and operations on the solar farm should not impede the ability of DPaW to actively manage habitat for this species. No other threatened fauna were found to occur in the solar farm area and the habitat was unsuitable for the remaining species identified in Table 6.

Within the Proposed Wittecarra Creek Conservation Reserve, potential habitat was found for six listed species, however there was no evidence that any threatened species were currently using habitat in this area.

- An old record of Chuditch (*Dasyurus geoffroyi*) near the southern boundary of the proposed reserve area suggests that the *Casuarina* habitat fringing the saltmarsh was once suitable for this species. The habitat is not currently suitable due to an almost complete lack of understorey vegetation due to the closed nature of the woodland and a complete lack of den logs. There are however a number of mature *Eucalyptus camaldulensis* within the *Casuarina* woodland that contain hollows which could be suitable for chuditch in the future once these trees die and fall over. A more open canopy would also increase the understorey vegetation within this vegetation unit.
- Roosting and Breeding habitat was present within the *Casuarina* woodlands for Carnaby's Cockatoo (*Calyptorhynchus latirostris*). Suitable trees included nine *E. camaldulensis* and one *Casuarina obesa* that had diameters at breast height of between 70 and 100 cm. Four of the *E. camaldulensis* contained evidence of hollows. Foraging habitat was also present in the proteaceous heath ecotype. There was however, no evidence that the habitat trees or the foraging habitat were currently being used by this species.
- The habitat trees mentioned above were also potentially suitable for use by Osprey (*Pandion haliaetus*) and White-bellied Sea-Eagles (*Haliaeetus leucogaster*), given the proximity of this site to the ocean. Once again, there was no evidence that these species were using the area, despite the survey being completed during breeding season.
- The saltmarsh provides potential habitat for the Curlew Sandpiper (*Calidris ferruginea*) and the Grey Plover (*Pluvialis squatarola*). At the time of this survey, the lake contained minimal water, and it was not possible to adequately survey for these species, as they are unlikely to have been using the system under these conditions.

In addition to threatened fauna species, the field survey identified 39 common fauna species occurring within the survey area (Table 7). Of these species 26 were birds, six species were invertebrates, three species were mammals and two were reptiles. Reptile diversity is expected to be higher than observed in this area due to the sandy habitat and open heath land ecotypes. The season of this survey was not conducive to effective reptile surveys.

Table 6: Threatened Fauna Survey Outcomes for Lot 10792 George Grey Rd, Kalbarri (Solar Farm and Wittecarra Creek survey areas combined)

Class	Species	Cons Status	Habitat	Potentially Suitable Habitat	Evidence of Species Onsite	Comments
Bird	<i>Actitis hypoleucos</i> , Common Sandpiper	IA	Dawn survey within potential habitat; a wide range of coastal wetlands around muddy margins or rocky shores (Geering et al. 2007; Higgins & Davies 1996).	N	N	No suitable habitat or evidence of the species
Bird	<i>Calidris alba</i> , Sanderling	IA	Dawn survey within potential habitat; open sandy beaches exposed to open sea-swell and exposed sandbars and spits (Higgins & Davies 1996).	N	N	No suitable habitat or evidence of the species
Bird	<i>Calidris ferruginea</i> , Curlew Sandpiper	VU	Dawn survey within potential habitat; intertidal mudflats in sheltered coastal areas, non-tidal swamps, lakes and lagoons near the coast, and occasionally ephemeral and permanent lakes and dams with mud or sand edges (Higgins & Davies 1996).	Y	N	Saltmarsh contained minimal water at the time of survey but could support this species when inundated.
Bird	<i>Calidris ruficollis</i> , Red-necked Stint	IA	Dawn survey within potential habitat; mostly coastal areas, including sheltered inlets, bays, lagoons and estuaries with intertidal mudflats; ephemeral or permanent shallow wetlands near the coast or inland, and sometimes flooded paddocks or damp grasslands (Higgins & Davies 1996).	N	N	No suitable habitat or evidence of the species
Bird	<i>Calyptorhynchus latirostris</i> , Carnaby's Cockatoo	EN	Dawn sightings and calls to identify potential breeding and roosting trees. Identification of suitable breeding trees within the survey area (DBH > 50cm); Survey for foraging habitat (proteaceous heath/woodland, eucalypt woodlands or forest) and search for evidence of foraging and roosting e.g. chewed nuts, droppings and feathers.	Y	N	Roosting and Breeding habitat was present within the <i>Casuarina/E.camaldulensis</i> woodlands and foraging habitat was present in proteaceous heath within the proposed Wittecarra Creek Conservation Reserve. No evidence that the habitat is currently used by this species.
Bird	<i>Charadrius leschenaultia</i> , Greater Sand Plover	IA	Dawn survey within potential habitat; sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons (Stewart et al. 2007).	N	N	No suitable habitat or evidence of the species

Table 6 continued

Class	Species	Cons Status	Habitat	Potentially Suitable Habitat	Evidence of Species Onsite	Comments
Bird	<i>Charadrius mongolus</i> , Lesser Sand Plover	EN	Dawn survey within potential habitat; large intertidal sandflats or mudflats in sheltered bays and occasionally sandy ocean beaches, coral reefs and rocky outcrops.	N	N	No suitable habitat or evidence of the species
Bird	<i>Haliaeetus leucogaster</i> , White-bellied Sea-Eagle	IA	Diurnal sightings and calls to identify potential breeding and roosting trees. Survey of potential habitat for nests; coastal habitats near the ocean and around terrestrial wetlands. Require large areas of open water (Marchant & Higgins 1993) and large trees for nesting.	Y	N	Potential habitat trees present in the <i>Casuarina/E.camaldulensis</i> woodlands within the Wittecarra Creek Conservation Reserve.
Bird	<i>Leipoa ocellata</i> , Malleefowl	VU	Track surveys in sandy soils and searches for nesting mounds. Preferred habitat includes shrublands and low woodlands that are dominated by mallee vegetation, eucalypt or <i>Callitris</i> woodlands, <i>Acacia</i> shrublands or coastal heathlands (Marchant and Higgins 1993).	Y	N	Feral animal activity probably makes this area unsuitable for this species. No evidence (past or present) was found for this species onsite.
Bird	<i>Merops ornatus</i> , Rainbow Bee-eater	IA	Dawn survey for calling birds, nest search (long burrow) in flat or sloping ground, in the banks of rivers, creeks or dams (Higgins 1999).	N	N	No suitable habitat or evidence of the species
Bird	<i>Pandion haliaetus</i> , Osprey	IA	Diurnal sightings and calls to identify potential breeding and roosting trees. Survey of potential habitat for nests; coastal habitats around shallow waters (del Hoyo et al. 1992)	Y	N	Potential habitat trees present in the <i>Casuarina/E.camaldulensis</i> woodlands within the Wittecarra Creek Conservation Reserve.
Bird	<i>Pluvialis squatarola</i> , Grey Plover	IA	Dawn survey within potential habitat; sheltered embayments, estuaries and lagoons with mudflats and sandflats; terrestrial wetlands such as near-coastal lakes and swamps, or salt-lakes (Marchant and Higgins 1993).	Y	N	Saltmarsh contained minimal water at the time of survey but could support this species when inundated.
Bird	<i>Tringa nebularia</i> , Common Greenshank	IA	Dawn survey within potential habitat; sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass.	N	N	No suitable habitat or evidence of the species
Invert	<i>Idiosoma nigrum</i> , Shield-backed Trapdoor Spider	VU	Burrow search in suitable habitat. Clay soils of eucalypt woodlands and <i>Acacia</i> vegetation, with leaf-litter and twigs present (Main, 1996; 2003)	N	N	No suitable habitat or evidence of the species

Table 6 continued

Class	Species	Cons Status	Habitat	Potentially Suitable Habitat	Evidence of Species Onsite	Comments
Invert	<i>Synemon gratiosa</i> Graceful Sunmoth	P4	Search for potential habitat. Coastal dunes and Banksia woodlands (DEC 2011). Larvae feed on <i>Lomandra maritima</i> in coastal dune, or <i>Lomandra hermaphrodita</i> in Banksia woodland (Bishop et al. 2010, DEC 2011).	N	N	No Banksia woodlands or Lomandras present within survey area.
Mammal	<i>Dasyurus geoffroii</i> , Chuditch, Western Quoll	VU	Nocturnal survey and searches for faecal material and potential den sites in wooded habitat. Logs must have a diameter > 30 cm and a hollow with 7–20 cm diameter and 1 m length (Dunlop and Morris 2012)	Y	N	No den logs are currently present, however the <i>Casuarina/E.camaldulensis</i> woodlands contain mature standing trees with hollows that have the potential to provide habitat in the future, as the trees fall.
Mammal	<i>Macropus eugenii subsp. derbianus</i> Tammar Wallaby (WA subsp)	P5	Nocturnal surveys and search for faecal material onsite. Preferred habitat includes coastal scrub, heath, dry sclerophyll forest and thickets in mallee and woodland.	Y	Y	Old faecal material from a Tammar Wallaby was found in closed <i>Acacia</i> shrub land on the eastern boundary of the solar farm area.
Reptile	<i>Lerista axillaris</i> , Stripe-sided Robust Slider	P2	Observation of basking skinks and litter searches beneath <i>Acacia rostellifera</i> scrub on brown sandy loam. Known from only one locality 21 km S of Kalbarri.	N	N	No suitable habitat or evidence of the species. Soils onsite were predominantly deep yellow sands.
Reptile	<i>Lerista humphriesi</i> , Taper-tailed West-coast Slider	P3	Habitat undescribed for this species; in the absence of information survey technique was as for <i>L. axillaris</i> .	N	N	No evidence of the species
Reptile	<i>Pletholax gracilis subsp. edelensis</i> , Keeled Legless Lizard	P3	Search for suitable habitat; dense <i>Triodia</i> on pale brown loams; under <i>Spinifex longifolius</i> on white coastal dunes (Storr and Harold 1978), under low open <i>Triodia plurinervata</i> or low <i>Acacia</i> on light pink-brown sandy loam; and under very sparse <i>Acacia</i> over dense low heath on grey loamy sand.	N	N	No suitable habitat or evidence of the species

Table 7: Common fauna species identified during field survey of Lot 10792 George Grey Rd, Kalbarri (Solar Farm and Wittecarra Creek areas combined)

Family	Species	Common Name
Acanthizidae	<i>Acanthiza apicalis</i>	Inland Thornbill
Acanthizidae	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill
Acanthizidae	<i>Gerygone fusca</i>	Western Gerygone
Acanthizidae	<i>Sericornis frontalis</i>	White-browed Scrubwren
Acanthizidae	<i>Smicronis brevirostris</i>	Weebill
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike
Casuariidae	<i>Dromaius novaehollandiae</i>	Emu
Corvidae	<i>Corvus coronoides</i>	Australian Raven
Cuculida	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo
Cuculida	<i>Cacomantis pallidus</i>	Pallid Cuckoo
Cuculida	<i>Chrysococcyx basalis</i>	Bronze Cuckoo
Dicruridae	<i>Grallina cyanoleuca</i>	Magpie-lark
Dicruridae	<i>Rhipidura fuliginosa subsp. preissi</i>	Grey Fantail
Dicruridae	<i>Rhipidura leucophrys</i>	Willie Wagtail
Estrilidae	<i>Taeniopygia guttata</i>	Zebra Finch
Lycosidae	<i>Lycosa godeffroyi</i>	
Lycosidae	<i>Tasmanicosa leuckartii</i>	
Lycosidae	<i>Venator immansueta</i>	
Macropodidae	<i>Macropus eugenii subsp. derbianus</i>	Tammar Wallaby
Macropodidae	<i>Macropus fuliginosus</i>	Western Grey Kangaroo
Maluridae	<i>Malurus pulcherrimus</i>	Blue-breasted Fairy-wren
Maluridae	<i>Malurus splendens</i>	Splendid Fairy-wren
Meliphagidae	<i>Anthochaera carunculata</i>	Red Wattlebird
Meliphagidae	<i>Certhionyx niger</i>	Black Honeyeater
Meliphagidae	<i>Lichmera indistincta</i>	Brown Honeyeater
Molossidae	<i>Tadarida australis</i>	White-striped Freetail-bat
Nephilidae	<i>Nephila edulis</i>	
Nicodamidae	<i>Nicodamus mainae</i>	
Pachycephalidae	<i>Colluricincla harmonica</i>	Grey Shrike-thrush
Pachycephalidae	<i>Pachycephala pectoralis</i>	Golden Whistler
Pardalotidae	<i>Pardalotus striatus</i>	Striated Pardalote
Petroicidae	<i>Petroica cucullata</i>	Hooded Robin
Pomatostomidae	<i>Pomatostomus superciliosus</i>	White-browed Babbler
Scincidae	<i>Menetia greyii</i>	
Scincidae	<i>Morethia lineoocellata</i>	
Zodariidae	<i>Storena formosa</i>	
Zosteropidae	<i>Zosterops lateralis</i>	Silvereye

3.3 Introduced taxa

The goat (*Capra hircus*), feral pig (*Sus scrofa*), introduced fox (*Vulpes vulpes*), European rabbit (*Oryctolagus cuniculus*), feral cat (*Felis catus*), introduced rat (*Rattus rattus*) and introduced mouse (*Mus mus*) are likely to occur within the survey area (DoE 2015).

Evidence of fox activity was found in the solar farm area within the low open *Acacia* heath land and *Acacia* shrub land. Fox population densities appeared to be low-moderate, with one scat and three sets of tracks found within the 25 ha survey area. The probability of detecting introduced taxa was high due to the sandy nature of the soils and access tracks. The fox is an opportunistic predator and scavenger and has been recognised as a serious threat to Australian native fauna.

Goat scats were found in the solar farm and Wittecarra Creek areas under dense *Acacia* adjacent to more open areas of heath land. The density of goats in this area appeared to be relatively low with three sets of scats located in the Solar Farm area and 2 sets in the Wittecarra Creek area. Goats in this area are likely to compete with native herbivores for food and shelter and cause land and wetland degradation.

Faecal material from rabbits was also observed during the survey and evidence of this species was observed throughout the solar farm and Wittecarra Creek areas within the *Acacia* shrub lands and open heath lands. European rabbits are nocturnal grazers, foraging on green grass and herbs. They compete with native herbivores and can have a significant impact on plant regeneration by eating seeds and seedlings. Introduced rodents also compete with native fauna for food and nesting habitat and can have a significant impact on plant regeneration.

3.4 Potential impacts on fauna

The proposed solar farm area will require the complete clearing of vegetation on-site, in order to facilitate construction and to protect infrastructure. The Tammar Wallaby was the only listed species located within the survey area and animals appeared to be transient visitors to the site, as evidenced from the low levels of scattered activity observed. Clearing activities within the solar farm area are unlikely to contribute to significant loss of habitat or habitat fragmentation for this species, given the connectivity of the area to the surrounding Kalbarri National Park and uncleared areas of Lot 10792. Tammar Wallabies using the site at the time of clearing could be readily encouraged to move into the adjoining National Park and uncleared areas of Lot 10792 during clearing operations, using techniques such as clearing from a single point and in a single direction, and field survey and physical shepherding of animals ahead of the machine(s). The likelihood of individuals being injured during clearing operations could also be reduced using these techniques.

Another potential impact arising from this proposed development is associated with the solar farm infrastructure itself. Sunlight reflecting from the solar panels and collection units has the potential to temporarily blind fauna (and humans) accessing the area. The solar farm area is adjacent to the Kalbarri National Park on its southern and eastern boundary. In an effort to protect National Park users and fauna, vegetated buffers will be established around the solar farm to provide a visual separation. These buffers are 200 m deep on the southern boundary and 310 m deep on the eastern boundary (adjusted boundary). Fencing around the outside of the solar farm and buffers will provide a barrier to the movement of ground dwelling fauna. Studies on the impact of solar farms on fauna in Australia and other parts of the world suggest that there are no adverse effects on ground-dwelling fauna where buffers and fencing have been applied (Street *et al.* 2011; Kagan *et al.* 2014; RSPB 2014).

The risk to flying animals from solar farms is obviously higher and there is some evidence to suggest that concentrated solar power installations can cause bird fatalities through collisions and burns; as birds fly through the concentrated rays of sunlight or are affected by reflected light (Kagan *et al.* 2014; RSPB 2014). Much of the problem appears to lie in the 'lake effect', in which birds and their insect prey can mistake a reflective solar facility for a water body and then fly towards it. Given the apparent lack of data relating to the impact of solar farms on birds in Australia, and the presence of habitat for a large range of threatened bird species in the surrounding Kalbarri National Park and coastal areas, it is recommended that this situation be monitored and thought given to techniques that could reduce potential impacts.

4 THREATENED ECOLOGICAL COMMUNITIES

Subtropical and Temperate Coastal Saltmarsh Ecological Community

Coastal Saltmarsh is a mostly treeless plant community recognised by a low mosaic of succulent herbs, salt tolerant grasses and sedges. The community occurs in coastal areas under tidal influence, such as the tidal flats of estuaries, salt lakes and on edges of intermittently opened coastal lagoons. These communities are characterised by vegetation interspersed with unvegetated patches or salt pans (Saintilan 2009; Saintilan and Rogers 2013; English 2014).

Coastal saltmarsh vegetation is recognised nationally and globally as an ecosystem of high ecological value that is increasingly under threat. The Australian Government has just listed the Subtropical and Temperate Coastal Saltmarsh as a nationally Threatened Ecological Community (TEC), with a ranking of vulnerable. The vegetation type is also listed as a Priority Ecological Community (PEC) in Western Australia (English 2014). The flora that occurs in WA's coastal saltmarsh is richer than has been recorded in other states of Australia and mainly includes salt-tolerant vegetation (*halophytes*) such as grasses, herbs, reeds, sedges, and shrubs. The two most common plant families are salt bushes (*Chenopodiaceae*) and the grasses (*Poaceae*) (Saintilan 2009; English 2014).

In WA, the coastal saltmarsh occurs in a narrow coastal margin in subtropical and temperate zones - south of the Tropic of Capricorn (23° south latitude). The coastal saltmarsh vegetation helps to maintain the coastal habitat in healthy condition by filtering water as it flows towards the ocean, providing a fish nursery habitat and food and nutrients for fauna, and helping to buffer coastlines from damaging winds and wave action (English 2014).

Coastal saltmarsh occurs in the proposed Wittecarra Creek Conservation Reserve, which contains a salt lake that is under tidal influence. Flora that contributes to the community includes a range of salt tolerant species such as: *Tetricornia halocnemoides*, *Tetricornia indica* ssp. *biden*, *Atriplex amnicola*, *Enchylaena tomentosa*, *Rhagodia latifolia* subsp. *latifolia* and *Rhagodia preissii* subsp. *obovata*. This community is represented as coastal saltmarsh in Figure 3 and Table 4.

Although the saltmarsh areas may appear to be rather barren and harsh environments, they can be damaged by pressures including changes to drainage and water quality, weed invasion and erosion. The current unmanaged access to the Wittecarra Creek area is contributing to degrading processes affecting this community.

5 SUMMARY POINTS AND RECOMMENDATIONS

5.1 Solar Farm

Threatened Flora and Vegetation

- There were no species of threatened flora located within the solar farm area.
- A small area of standstone was mapped in the north eastern corner of the proposed clearing. While there were no populations of threatened flora associated with the outcrop, the sensitivity of this ecological community to disturbance is considered to be higher than that of the surrounding *Acacia* communities and the proponent has agreed to shift the proposed solar farm area to the west to avoid this ecotype. The adjusted boundary is shown in Figure 2 and was negotiated with the proponent onsite, so was able to be surveyed as part of this assessment.

Threatened Fauna

- The Tammar Wallaby was the only listed species found within the solar farm area and appeared to be a transient visitor to the site, as evidenced from low levels of scattered activity. Clearing within the solar farm area is unlikely to contribute to significant loss of habitat or habitat fragmentation for this species, given the connectivity of the area to the surrounding Kalbarri National Park and uncleared areas of Lot 10792.
- Tammar Wallabies using the site at the time of clearing should be encouraged to move into the adjoining National Park and uncleared areas of Lot 10792, using techniques such clearing from a single point and in a single direction, and field survey and physical shepherding of animals.
- Tammar Wallabies are at risk from predation by feral animals such as the Red Fox (*Vulpes vulpes*) and Feral Cat (*Felis catus*), particularly when joeys are first emerging from the pouch. Baiting and fire management programs in the adjoining Kalbarri National Park are likely to be important for the ongoing survival of this species in the area and operations on the solar farm should not impede the ability of DPaW to actively manage habitat for this species.
- Sunlight reflecting from the solar panels and collection units has the potential to temporarily blind fauna (and humans) accessing the area. The solar farm area is adjacent to the Kalbarri National Park on its southern and eastern boundary. In an effort to protect National Park users and fauna, vegetated buffers will be established around the solar farm to provide a visual separation. These buffers are 200 m deep on the southern boundary and 310 m deep on the eastern boundary (adjusted boundary). Fencing around the outside of the solar farm and buffers will provide a barrier to the movement of ground dwelling fauna.
- There is some evidence to suggest that concentrated solar power installations can cause bird fatalities through collisions and burns; as birds fly through the concentrated rays of sunlight or are affected by reflected light (Kagan et al. 2014; RSPB 2014). Much of the problem appears to occur from the “lake effect,” in which birds and their insect prey can mistake a reflective solar facility for a water body and then fly towards it. Given the apparent lack of data relating to the impact of solar farms on birds in Australia, and the presence of habitat for a large range of threatened bird species in the surrounding Kalbarri National Park and coastal areas, it is recommended that this situation be monitored and thought given to techniques that could reduce potential impacts. E.g. measures to reduce or shield harmful reflection.
- The Solar Farm will be fenced to exclude wildlife, the detail on the barrier fenceing will be supplied to Parks and Wildlife prior to the construction period. A recent meeting with Parks and Wildlife staff (17/10/2015) indicated a recent style of fence used in the region may have been successful to and the same should be used at the Solar Farm to exclude Tamar Wallabies from entering the site.

Weed management

- There were few weeds within the solar farm area. Weed management requirements are related to long term management of the site to ensure minimal impact on the nearby Kalbarri National Park. Ongoing maintenance activities should include management of weeds arising from clearing and solar farm activities, such that these do not spread offsite into the surrounding National Park.

5.2 Road Alignment

- No threatened flora, threatened fauna or diverse ecotype zones were located along the proposed road alignment west of the solar farm.

5.3 Proposed Wittecarra Creek Conservation Reserve

The proposed Wittecarra Creek Conservation Reserve contains a number of conservation values worthy of reservation:

- The area contains a vulnerable listed Threatened Ecological Community, known as the *Subtropical and Temperate Coastal Saltmarsh Ecological Community*. The community is associated with the salt pans and includes a range of salt tolerant species such as: *Tetricornia halocnemoides*, *Tetricornia indica ssp. biden*, *Atriplex amnicola*, *Enchylaena tomentosa*, *Rhagodia latifolia subsp latifolia* and *Rhagodia preissii subsp. obovata*.
- The area contains a population of *Chamelaucium marchantii* (P3) that dominates a small area of shrubland east of the saltmarsh.
- The coastal saltmarsh vegetation helps to maintain the nearby coastal habitat in healthy condition by filtering water as it flows towards the ocean, providing a fish nursery habitat and food, providing nutrients for fauna, and helping to buffer the coastline from damaging winds (English 2014).
- Roosting and Breeding habitat for Carnaby's Cockatoo is present within the *Casuarina* woodlands, in the form of nine large *E. camaldulensis* and one *C. obesa*, four of which contain existing hollows. Foraging habitat is also present for this species in the proteaceous heath ecotype, which is in pristine condition.
- The habitat trees mentioned above are also potentially suitable for use by Osprey (*Pandion haliaetus*) and White-bellied Sea-Eagles (*Haliaeetus leucogaster*), given the proximity of this site to the ocean, and the relative scarcity of large trees in this landscape.
- The saltmarsh provides potential habitat for the Curlew Sandpiper (*Calidris ferruginea*) and the Grey Plover (*Pluvialis squatarola*).
- The area is likely to provide a significant long-term ecological linkage between the coastal ecotypes to the west and the Kalbarri National Park to the east, via the Wittecarra Creek. The area is also likely to provide effective fire refuge due to edaphic barriers to fire associated with the saltmarsh.

Management considerations for the area include:

- There is a medium degree of disturbance from weeds, illegal firewood cutting, rubbish dumping and vehicle access in the western sections of the reserve area. This is affecting the saltmarsh area and *Casuarina* woodland ecotypes.
- Despite unmanaged access to the area, the presence of weeds is largely limited to vehicle tracks, saltmarsh and *Casuarina* woodland areas adjacent to farm land. None of the weeds present are declared or rated as a high priority for control in the State Environmental Weed Strategy. The weeds occur in manageable and readily accessible areas and would be eradicatable within the survey area, if the source can be managed.

- Evidence of fox, goat and rabbit activity was found onsite, however activity levels are quite low and dense ecotypes such as the proteaceous heath and Acacia shrub land are likely to provide good predator refuge for native species.

5.4 EPBC Act Considerations

There are no EPBC Act considerations or issues requiring referral as a result of the proposed clearing and development activities associated with the solar farm on Lot 10792.

6 REFERENCES

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7 APPENDICES

APPENDIX A: DPaW Threatened and Priority Flora database search generated August 2015.

Taxon	Status	Rank	IUCN	EPBC	Distribution
<i>Acacia gelasina</i>	2				Kalbarri NP, Eurardy
<i>Acacia leptospermoides</i> subsp. <i>obovata</i>	2				Kalbarri NP, Murchison River
<i>Acacia plautella</i>	3				Ajana, Wannoo Roadhouse, Murchison, Eurardy Station, Kalbarri NP, Cooloomia NR
<i>Acacia stereophylla</i> var. <i>cylindrata</i>	2				Kalbarri NP
<i>Acanthocarpus parviflorus</i>	3				Kalbarri N.P., Shark Bay
<i>Anthocercis intricata</i>	3				Dongara, Port Gregory, Denham, Kalbarri
<i>Anthotroche myoporoides</i>	3				Northampton, Yuna, Indarra, Kalbarri NP
<i>Arnocrinum drummondii</i>	3				Gunyidi, Watheroo, Kalbarri, Cooloomia, Mullewa
<i>Astroloma inopinatum</i>	1				Kalbarri
<i>Austroparmelina macrospora</i>	3				Kalgoorlie, Ninghan Stn, Wanjarri NR, Mount Harry, Kathleen, Bullfinch, Kalbarri
<i>Baeckea subcuneata</i>	2				Kalbarri N.P.
<i>Beyeria cinerea</i> subsp. <i>cinerea</i>	3				Murchison River, Kalbarri, Warroora Stn, Coolimba, Tamala Stn, Shark Bay
<i>Beyeria gardneri</i>	3				Murchison River, Eurardy Station, Badgingarra, Kalbarri NP, Indara NR, Marchagee NR, Watheroo NP, Coorow, Three Springs
<i>Bossiaea calcicola</i>	3				Shark Bay, Kalbarri, Hutt Lagoon, East Wallabi Is.
<i>Bossiaea inundata</i>	2				Kalbarri NP
<i>Caladenia barbarella</i>	T	EN	D	EN	NE of Kalbarri
<i>Caladenia bryceana</i> subsp. <i>cracens</i>	T	EN	B1ab(iii,i v,v)+B2a b(iii,iv,v)	VU	Northampton-Kalbarri, East Yuna NR
<i>Caladenia hoffmanii</i>	T	EN	B1b(iii)+ 2ab(iii)	EN	Geraldton-Kalbarri
<i>Caladenia longicauda</i> subsp. <i>minima</i>	2				East Yuna N.R., Kalbarri
<i>Caladenia wanosa</i>	T	EN	B1ab(iii) +B2ab(iii)	VU	Kalbarri-Mullewa
<i>Calectasia browneana</i>	2				Warradarge, Kalbarri
<i>Calothamnus cupularis</i>	2				Kalbarri N.P.
<i>Calytrix formosa</i>	3				Galena, Kalbarri N.P.
<i>Calytrix harvestiana</i>	2				Murchison House Station, Kalbarri, Yuna,
<i>Calytrix paucicostata</i>	2				Kalbarri
<i>Calytrix pimeleoides</i>	3				Kalbarri, Northampton, Ajana, Ogilvie

Appendix A continued

Taxon	Status	Rank	IUCN	EPBC	Distribution
<i>Calytrix purpurea</i>	2				Red Bluff, Kalbarri
<i>Carpobrotus sp. Thevenard Island</i> (M. White 050)	3				Thevenard Island, Francois Peron N.P., Cape Range N.P., Kalbarri N.P.
<i>Centrolepis cephaloformis subsp.</i> <i>murrayi</i>	3				Kalbarri, Recherche Arch.
<i>Chamelaucium marchantii</i>	3				Kalbarri
<i>Cryptandra glabriflora</i>	2				Kalbarri N.P.
<i>Dampiera sp. Jurien</i> (G. Lullfitz s.n. 10/7/1986)	2				Jurien, Kalbarri
<i>Desmocladius bififormis</i>	3				Kalbarri, Badgingarra
<i>Dicrastylis micrantha</i>	3				Useless Loop, Kalbarri, Nerren Nerren Station, Shark Bay
<i>Diuris recurva</i>	4				Kalbarri-Moora, W of Northampton
<i>Drakaea concolor</i>	T	EN	B1+2ce; C2a	VU	Murchison River, Kalbarri
<i>Enekbatus cristatus</i>	2				Kalbarri NP
<i>Eremophila microtheca</i>	4				W of Eneabba, NE of Kalbarri
<i>Eremophila occidens</i>	2				Cape Range, Kalbarri
<i>Eucalyptus arachnaea subsp.</i> <i>arrecta</i>	3				Mingenew - Morawa, Mullewa, East Yuna, Kalbarri
<i>Eucalyptus beardiana</i>	T	EN	D	VU	South of Shark Bay, Kalbarri NP
<i>Frankenia confusa</i>	4				Kalbarri, Galena, Ajana, Port Gregory, Corrigin
<i>Geleznowia sp. Red Bluff</i> (A. Crawford ADC 597)	2				Kalbarri
<i>Grevillea costata</i>	3				Kalbarri, Galena
<i>Grevillea leuoclada</i>	3				Kalbarri
<i>Grevillea rogersoniana</i>	3				Shark Bay, Hamelin Pool, Denham, Nanga, Kalbarri
<i>Grevillea stenomera</i>	2				Kalbarri, Tamala
<i>Guichenotia impudica</i>	3				Konnongorring, Wongan Hills, Corrigin, Kellerberrin, Tammin, Mogumber, Walgoolan, Kalbarri, Northampton
<i>Hemiandra sp. Kalbarri</i> (D. Bellairs 1505)	2				Kalbarri NP
<i>Hypocalymma angustifolium subsp.</i> <i>Hutt River</i> (S. Patrick 2982)	T	VU	D2		Arrino, Kalbarri
<i>Jacksonia velutina</i>	4				Kalbarri, Ajana, Binnu, East Yuna, Eradu, Watheroo, E of Hamelin Pool
<i>Keraudrenia saxatilis</i>	2				Kalbarri NP
<i>Lasiopetalum oldfieldii subsp.</i> <i>oldfieldii</i>	3				Kalbarri, Port Gregory, Yerina Springs
<i>Lasiopetalum oppositifolium</i>	3				Murchison River, Kalbarri, Red Bluff, Tamala Stn.
<i>Lechenaultia chlorantha</i>	T	EN	D	VU	Kalbarri
<i>Lepidobolus densus</i>	3				Coorow, Dirk Hartog Is., Shark Bay, Kalbarri NP, Three Springs, Morawa, Marchagee, Alexander Morrison N.P., North Wallambin, Billeranga Hills
<i>Lepidosperma rupestre</i>	4				Kalbarri N.P.

Appendix A continued

Taxon	Status	Rank	IUCN	EPBC	Distribution
<i>Liparophyllum congestiflorum</i>	4				Kalbarri, Hutt River, Eneabba
<i>Macarthuria intricata</i>	3				Shark Bay, Kalbarri
Taxon	Status	Rank	IUCN	EPBC	Distribution
<i>Malleostemon</i> sp. <i>Hardabutt Rapids</i> (D. Bellairs 1654A)	1				Nerren Nerren, Kalbarri
<i>Malleostemon</i> sp. <i>Kalbarri</i> (L.A. Craven 7083)	2				Kalbarri N.P.
<i>Malleostemon</i> sp. <i>Moonyoonooka</i> (R.J. Cranfield 2947)	2				Kalbarri, Geraldton
<i>Malleostemon</i> sp. <i>Yerina</i> (S.J. Patrick 2728)	1				Yerina Spring, Kalbarri, Binnu
<i>Melaleuca boeophylla</i>	2				Kalbarri, Overlander Roadhouse
<i>Melaleuca oldfieldii</i>	2				Kalbarri
<i>Microcorys tenuifolia</i>	3				Morawa, Kalbarri NP, Yuna, Wongan Hills, Marchagee
<i>Millotia jacksonii</i>	2				Kalbarri NP
<i>Mirbelia corallina</i>	3				Murchison River, Kalbarri
<i>Murchisonia fragrans</i>	2				Kalbarri, Mileura, Moorarie
<i>Paracaleana alcockii</i>	2				Galena, Kalbarri N.P.
<i>Personia brachystylis</i>	2				Kalbarri
<i>Philotheca kalbarriensis</i>	2				Kalbarri, Toolonga, Coolcalalaya Stn
<i>Physopsis chrysophylla</i>	3				Eurardy Stn, Shark Bay, Kalbarri
<i>Pileanthus aurantiacus</i>	1				Kalbarri
<i>Pileanthus bellus</i>	3				Kalbarri
<i>Pityrodia viscida</i>	4				Yandanooka, Mingenew, Kalbarri NP, Three Springs, Tathra N.P.
<i>Platysace</i> sp. <i>Kalbarri</i> (D. & B. Bellairs 1383)	2				Kalbarri
<i>Scaevola kallophylla</i>	4				Kalbarri, Greenough River
<i>Scaevola oldfieldii</i>	3				Kalbarri, Murchison River, Oakabella
<i>Scaevola</i> sp. <i>Golden hairs</i> (D. & B. Bellairs 1450 A)	1				Kalbarri
<i>Schoenus</i> sp. <i>Kalbarri</i> (K.R. Newbey 9352)	2				Kalbarri, Mt Augustus
<i>Scholtzia</i> sp. <i>Ajana</i> (T.A. Halliday 137)	3				Kalbarri N.P.
<i>Scholtzia</i> sp. <i>Eradu</i> (R.D. Royce 8016)	2				Eradu, Yuna, Coorow, Murchison River, Kalbarri
<i>Scholtzia</i> sp. <i>Eurardy</i> (J.S. Beard 6886)	2				Eurardy, Murchison House Station, Kalbarri, Meadow Station, Port Gregory
<i>Scholtzia</i> sp. <i>Folly Hill</i> (M.E. Trudgen 12097)	2				Hamelin, Ajana, Cooloomia, Kalbarri
<i>Scholtzia</i> sp. <i>Ross Graham Lookout</i> (S. Maley 6)	2				Kalbarri N.P.
<i>Scholtzia</i> sp. <i>Z-Bend</i> (Bellairs-Kalflora 912a)	2				Kalbarri N.P.
<i>Stachystemon nematophorus</i>	4			VU	Murchison River, Kalbarri
<i>Stenanthemum divaricatum</i>	3				Dirk Hartog Island, Quobba Stn, Dorre Is., Kalbarri, Shark Bay
<i>Thryptomene calcicola</i>	2				Kalbarri N.P.

Appendix A continued

Taxon	Status	Rank	IUCN	EPBC	Distribution
<i>Thryptomene johnsonii</i>	2				Kalbarri
<i>Thryptomene sp. Eagle Gorge</i> (A.G. Gunness 2360)	2				Kalbarri, Zuytdorp
Taxon	Status	Rank	IUCN	EPBC	Distribution
<i>Thryptomene sp. Wandana</i> (M.E. Trudgen MET 22016)	3				Eurardy, Yuna, Mt Singleton, Wandana NR, Kalbarri, Perenjori, McGaurans NR
<i>Thryptomene stenophylla</i>	2				Kalbarri, Geraldton
<i>Thryptomene striata</i>	2				Kalbarri
<i>Thysanotus sp. Kalbarri</i> (D. & B. Bellairs 1523 A)	2				Kalbarri NP
<i>Triodia bromoides</i>	4				Shark Bay, (Murchison River), Kalbarri
<i>Triodia dielsii</i>	3				Kalbarri
<i>Verticordia capillaris</i>	4				Ajana, Mullewa, Ardingly, Mingenew, Kalbarri, Yuna
<i>Verticordia dasystylis subsp. kalbarriensis</i>	2				Kalbarri
<i>Verticordia densiflora var. roseostella</i>	3				Eneabba to Burma Road, Yuna, Kalbarri
<i>Verticordia dichroma var. dichroma</i>	3				N of Kalbarri N.P. to N of Vermin Proof Fence
<i>Verticordia dichroma var. syntoma</i>	3				N of Kalbarri N.P. to N of Vermin Proof Fence
<i>Verticordia galeata</i>	2				Kalbarri N.P.
<i>Verticordia polytricha</i>	4				Kalbarri N.P. to Eurardy Station
<i>Verticordia x eurardyensis</i>	1				Eurardy Station, Kalbarri NP
<i>Xanthoparmelia norpraegnans</i>	2				Kalbarri, Bulla Bulling

APPENDIX B: Flora and Fauna Species Identified within 5 km of Survey area Through Nature Map

Generated from Nature Map (DPaW 2015) on 25 July 2015

Acanthizidae

1. 24260 *Acanthiza apicalis* (Broad-tailed Thornbill, Inland Thornbill)
2. 24261 *Acanthiza chrysorrhoa* (Yellow-rumped Thornbill)
3. 24265 *Acanthiza uropygialis* (Chestnut-rumped Thornbill)
4. 24269 *Calamanthus campestris* (Rufous Fieldwren)
5. 25530 *Gerygone fusca* (Western Gerygone)
6. 24278 *Pyrrholaemus brunneus* (Redthroat)
7. 25534 *Sericornis frontalis* (White-browed Scrubwren)
8. 24279 *Sericornis frontalis* subsp. *maculatus* (White-browed Scrubwren)
9. 30948 *Smicronis brevirostris* (Weebill)

Accipitridae

10. 25535 *Accipiter cirrocephalus* (Collared Sparrowhawk)
11. 24281 *Accipiter cirrocephalus* subsp. *cirrocephalus* (Collared Sparrowhawk)
12. 25536 *Accipiter fasciatus* (Brown Goshawk)
13. 24285 *Aquila audax* (Wedge-tailed Eagle)
14. 24286 *Aquila morphnoides* subsp. *morphnoides* (Little Eagle)
15. 24288 *Circus approximans* (Swamp Harrier)
16. 24293 *Haliaeetus leucogaster* (White-bellied Sea-Eagle) IA
17. 24295 *Haliastur sphenurus* (Whistling Kite)

Acrotylaceae

18. 26665 *Clavicornium ovatum*

Agamidae

19. 30833 *Amphibolurus longirostris* (Long-nosed Dragon)
20. 30899 *Ctenophorus adelaidensis* (Southern Heath Dragon, Western Heath Dragon)
21. 42384 *Ctenophorus butlerorum* (Shark Bay Heath Dragon)
22. 25460 *Ctenophorus maculatus* (Spotted Military Dragon)
23. 24881 *Ctenophorus maculatus* subsp. *maculatus* (Spotted Military Dragon)
24. 24882 *Ctenophorus nuchalis* (Central Netted Dragon)
25. 24886 *Ctenophorus reticulatus* (Western Netted Dragon)
26. 24904 *Moloch horridus* (Thorny Devil)
27. 24907 *Pogona minor* subsp. *minor* (Dwarf Bearded Dragon)

Agaricaceae

28. 38765 *Battarrea stevenii*

Aizoaceae

29. 18359 *Carpobrotus* sp. Thevenard Island (M. White 050) P3
30. 2798 *Carpobrotus virescens* (Coastal Pigface, Kolboko)
31. 2799 *Disphyma crassifolium* (Round-leaved Pigface)
32. 2810 *Gunniopsis septifraga*
33. 2823 *Tetragonia implexicoma* (Bower Spinach)

Amaranthaceae

- 34. 2717 *Ptilotus divaricatus* (Climbing Mulla Mulla)
- 35. 2719 *Ptilotus eriotrichus*
- 36. 41505 *Ptilotus gaudichaudii* subsp. *eremita*
- 37. 2729 *Ptilotus grandiflorus*
- 38. 2733 *Ptilotus humilis*
- 39. 2742 *Ptilotus manglesii* (Pom Poms, Mulamula)
- 40. 41001 *Ptilotus nobilis* subsp. *nobilis* (Yellow Tails)
- 41. 2747 *Ptilotus obovatus* (Cotton Bush)
- 42. 2751 *Ptilotus polystachyus* (Prince of Wales Feather)
- 43. 2763 *Ptilotus stirlingii* (Stirling's Mulla Mulla)
- 44. 40841 *Ptilotus stirlingii* subsp. *stirlingii*
- 45. 2766 *Ptilotus villosiflorus*

Ameiridae

- 46. *Nitocra* near sp. 4 (SAP)
- 47. *Nitocra* nr sp. 4

Anacardiaceae

- 48. 11027 *Schinus terebinthifolius* Y

Anadyomenaceae

- 49. 27074 *Microdictyon umbilicatum*

Anarthriaceae

- 50. 18049 *Lyginia imberbis*

Anatidae

- 51. 24312 *Anas gracilis* (Grey Teal)
- 52. 24315 *Anas rhynchotis* (Australasian Shoveler)
- 53. 24316 *Anas superciliosa* (Pacific Black Duck)
- 54. 24318 *Aythya australis* (Hardhead)
- 55. 24319 *Biziura lobata* (Musk Duck)
- 56. 24322 *Cygnus atratus* (Black Swan)
- 57. 24331 *Tadorna tadornoides* (Australian Shelduck, Mountain Duck)

Ancylidae

- 58. *Ferrissia petterdi*

Antennariidae

- 59. *Allenichthys glauerti*
- 60. *Histrio histrio*

Aphanopetalaceae

- 61. 3180 *Aphanopetalum clematideum*

Apiaceae

- 62. 6210 *Apium annum*
- 63. 6211 *Apium prostratum* (Sea Celery)
- 64. 6218 *Daucus glochidiatus* (Australian Carrot)
- 65. 16339 *Platysace* sp. Kalbarri (D. & B. Bellairs 1383) P2

Apocynaceae

- 66. 6565 *Alyxia buxifolia* (Dysentery Bush)
- 67. 6569 *Catharanthus roseus* (Pink Periwinkle) Y
- 68. 13006 *Sarcostemma viminale* subsp. *australe*

Araliaceae

- 69. 19253 *Trachymene ceratocarpa*
- 70. 6266 *Trachymene coerulea* (Blue Lace Flower)
- 71. 19042 *Trachymene coerulea* subsp. *leucopetala*
- 72. 6268 *Trachymene cyanopetala*
- 73. 6272 *Trachymene elachocarpa*
- 74. 6279 *Trachymene ornata* (Spongefruit)
- 75. 6280 *Trachymene pilosa* (Native Parsnip)

Araneidae

- 76. *Argiope protensa*
- 77. *Argiope trifasciata*
- 78. *Austracantha minax*
- 79. *Backobourkia collina*
- 80. *Backobourkia heroine*

Ardeidae

- 81. 25556 *Ardea alba* (Great Egret)
- 82. 41324 *Ardea modesta* (Eastern Great Egret) IA
- 83. 24340 *Ardea novaehollandiae* (White-faced Heron)
- 84. 24341 *Ardea pacifica* (White-necked Heron)
- 85. 25564 *Nycticorax caledonicus* (Rufous Night Heron)

Artamidae

- 86. 25566 *Artamus cinereus* (Black-faced Woodswallow)
- 87. 24355 *Artamus minor* (Little Woodswallow)
- 88. 24356 *Artamus personatus* (Masked Woodswallow)

Asparagaceae

- 89. 1207 *Acanthocarpus parviflorus* P3
- 90. 1208 *Acanthocarpus preissii*
- 91. 1209 *Acanthocarpus robustus*
- 92. 20797 *Acanthocarpus* sp. *Ajana* (C.A. Gardner 8596)
- 93. 1280 *Chamaescilla corymbosa* (Blue Squill)
- 94. 11299 *Chamaescilla corymbosa* var. *corymbosa*
- 95. 1308 *Laxmannia sessiliflora* (Nodding Lily)
- 96. 11732 *Laxmannia sessiliflora* subsp. *sessiliflora*
- 97. 1312 *Sowerbaea laxiflora* (Purple Tassels)
- 98. 1338 *Thysanotus manglesianus* (Fringed Lily)
- 99. 1343 *Thysanotus patersonii*
- 100. 1347 *Thysanotus ramulosus*
- 101. 29482 *Thysanotus* sp. *Kalbarri* (D. & B. Bellairs 1523 A) P2
- 102. 1356 *Thysanotus teretifolius*

Asphodelaceae

- 103. 1364 *Asphodelus fistulosus* (Onion Weed) Y

Asteraceae

104. 7814 *Actinobole condensatum*
105. 7827 *Angianthus cunninghamii* (Coast Angianthus)
106. 7830 *Angianthus microcephalus* (Small-headed Angianthus) P2
107. 7838 *Arctotheca calendula* (Cape Weed) Y
108. 7856 *Blennospora drummondii*
109. 7878 *Brachyscome iberidifolia*
110. 7891 *Calocephalus francisii* (Fine-leaf Beauty-heads)
111. 7916 *Centaurea melitensis* (Maltese Cockspur) Y
112. 7918 *Centipeda cunninghamii* (Common Sneezewood)
113. 7922 *Cephalopterum drummondii* (Pompom Head)
114. 7934 *Chthonocephalus tomentellus* P2
115. 7944 *Cotula bipinnata* (Ferny Cotula) Y
116. 7945 *Cotula coronopifolia* (Waterbuttons) Y
117. 7946 *Cotula cotuloides* (Smooth Cotula)
118. 8002 *Gnephosis tenuissima*
119. 8008 *Helianthus annuus* (Sunflower) Y
120. 8045 *Helipterum craspedioides* (Yellow Billy Buttons)
121. 12741 *Hyalosperma cotula*
122. 8086 *Hypochaeris glabra* (Smooth Catsear) Y
123. 13289 *Lawrencella davenportii*
124. 13284 *Lawrencella rosea*
125. 8114 *Myriocephalus appendiculatus* (White-tip Myriocephalus)
126. 8127 *Olearia axillaris* (Coastal Daisybush)
127. 8136 *Olearia homolepis*
128. 8148 *Olearia revoluta*
129. 42024 *Olearia* sp. Kennedy Range (G. Byrne 66)
130. 8172 *Podolepis canescens* (Bright Podolepis, Grey Podolepis)
131. 8173 *Podolepis capillaris* (Wiry Podolepis)
132. 8177 *Podolepis lessonii*
133. 8184 *Podotheca gnaphalioides* (Golden Long-heads)
134. 8188 *Pogonolepis stricta*
135. 13255 *Pterochaeta paniculata*
136. 8195 *Quinetia urvillei*
137. 8197 *Reichardia tingitana* (False Sowthistle) Y
138. 13241 *Rhodanthe chlorocephala* subsp. *rosea*
139. 13300 *Rhodanthe citrina*
140. 13291 *Rhodanthe condensata*
141. 13249 *Rhodanthe oppositifolia* subsp. *oppositifolia*
142. 13254 *Rhodanthe stricta*
143. 8200 *Schoenia cassiniana* (Schoenia)
144. 20161 *Senecio pinnatifolius*
145. 25884 *Senecio pinnatifolius* var. *latilobus*
146. 8225 *Siloxerus humifusus* (Procumbent Siloxerus)
147. 8231 *Sonchus oleraceus* (Common Sowthistle) Y
148. 8254 *Urospermum picroides* (False Hawkbit) Y
149. 38388 *Ursinia anthemoides* subsp. *anthemoides* Y
150. 8257 *Vellereophyton dealbatum* (White Cudweed) Y
151. 8268 *Vittadinia humerata*
152. 8275 *Waitzia acuminata* (Orange Immortelle)
153. 13330 *Waitzia acuminata* var. *albicans*

154. 8281 *Waitzia podolepis*
- Baetidae**
155. *Cloeon* sp.
156. *Cloeon* sp. 2 (SFM)
- Balaenopteridae**
157. 24051 *Megaptera novaeangliae* (Humpback Whale) T
- Barychelidae**
158. *Idiommata blackwalli*
- Batrachoididae**
159. *Halophryne ocellatus*
- Blenniidae**
160. *Istiblennius meleagris*
161. *Petroscirtes breviceps*
- Boidae**
162. 25241 *Antaresia stimsoni* subsp. *stimsoni* (Stimson's Python)
- Boraginaceae**
163. 17485 *Halgania anagalloides*
164. 10904 *Halgania bebrana*
165. 6696 *Halgania sericiflora*
166. 6707 *Heliotropium curassavicum* (Smooth Heliotrope)
- Boryaceae**
167. 1273 *Borya sphaerocephala* (Pincushions)
- Bothriuridae**
168. *Cercophonius granulatus*
- Brachionidae**
169. *Brachionus* cf. *nilsoni* (SAP) Y
170. *Brachionus quadridentatus cluniorbicularis*
- Brassicaceae**
171. 3000 *Brassica tournefortii* (Mediterranean Turnip) Y
172. 3030 *Lepidium lyratogynum*
173. 3070 *Sisymbrium irio* (London Rocket) Y
174. 3076 *Stenopetalum filifolium*
175. 19403 *Stenopetalum gracile*
- Burhinidae**
176. 24359 *Burhinus grallarius* (Bush Stone-curlew)
- Buthidae**
177. *Isometroides vescus*
178. *Urodacus hartmeyeri*
- Caenidae**
179. *Tasmanocoenis tillyardi*
- Campanulaceae**
180. 7396 *Isotoma hypocrateriformis* (Woodbridge Poison)
181. 9289 *Lobelia anceps* (Angled Lobelia)
182. 7403 *Lobelia heterophylla* (Wing-seeded Lobelia)
183. 7384 *Wahlenbergia capensis* (Cape Bluebell) Y
184. 7389 *Wahlenbergia preissii*
- Campephagidae**
185. 25568 *Coracina novaehollandiae* (Black-faced Cuckoo-shrike)
- Capparaceae**
186. 2981 *Capparis spinosa*
187. 11670 *Capparis spinosa* var. *nummularia* (Coastal Caper)

Carphodactylidae

- 188. 24967 *Nephrurus levis* subsp. *levis*
- 189. 24968 *Nephrurus levis* subsp. *occidentalis*

Caryophyllaceae

- 190. 2891 *Corrigiola litoralis* (Strapwort) Y
- 191. 2905 *Polycarpon tetraphyllum* (Fourleaf Allseed) Y
- 192. 2906 *Sagina apetala* (Annual Pearlwort) Y
- 193. 2908 *Sagina maritima* Y
- 194. 2909 *Silene gallica* (French Catchfly) Y
- 195. 2915 *Spergularia rubra* (Sand Spurry) Y
- 196. 2918 *Stellaria media* (Chickweed) Y

Castniidae

- 197. 33992 *Synemon gratiosa* (Graceful Sunmoth) P4

Casuariidae

- 198. 24470 *Dromaius novaehollandiae* (Emu)

Casuarinaceae

- 199. 1721 *Allocasuarina campestris*
- 200. 1731 *Allocasuarina huegeliana* (Rock Sheoak, Kwowl)
- 201. 1732 *Allocasuarina humilis* (Dwarf Sheoak)
- 202. 1742 *Casuarina obesa* (Swamp Sheoak, Kuli)

Celastraceae

- 203. 4730 *Stackhousia dielsii* (Yellow Stackhousia)
- 204. 4734 *Stackhousia muricata*
- 205. 9070 *Stackhousia pubescens* (Downy Stackhousia)
- 206. 43541 *Stackhousia* sp. Hairy fruited (E.N.S. Jackson 1387)
- 207. 43601 *Stackhousia* sp. Mid west coastal (D. & B. Bellairs 6561)
- 208. 4737 *Tripterococcus brunonis* (Winged Stackhousia)

Centrolepidaceae

- 209. 1121 *Centrolepis aristata* (Pointed Centrolepis)
- 210. 13121 *Centrolepis cephaliformis* subsp. *murrayi* P3
- 211. 1125 *Centrolepis drummondiana*
- 212. 1126 *Centrolepis eremica*
- 213. 1132 *Centrolepis mutica*
- 214. 1133 *Centrolepis pilosa*
- 215. 1134 *Centrolepis polygyna* (Wiry Centrolepis)

Centropagidae

- 216. *Boeckella* sp.

Ceratopogonidae

- 217. *Bezzia* sp. 2
- 218. *Bezzia* sp. 2 (SAP)
- 219. *Culicoides* sp.
- 220. *Nilobezzia* sp. 2
- 221. *Nilobezzia* sp. 2 (SAP)

Charadriidae

- 222. 25575 *Charadrius leschenaultii* (Greater Sand Plover) IA
- 223. 25576 *Charadrius mongolus* (Lesser Sand Plover) T
- 224. 24377 *Charadrius ruficapillus* (Red-capped Plover)
- 225. 24383 *Pluvialis squatarola* (Grey Plover) IA
- 226. 24386 *Vanellus tricolor* (Banded Lapwing)

Cheluidae

- 227. 43380 *Chelodina colliei* (Oblong Turtle)

Chenopodiaceae

- 228. 2450 *Atriplex amnicola* (Swamp Saltbush)
- 229. 2452 *Atriplex cinerea* (Grey Saltbush)
- 230. 2463 *Atriplex isatidea* (Coast Saltbush)
- 231. 11698 *Atriplex paludosa* subsp. *moquiniana*
- 232. 2504 *Dysphania plantaginella*
- 233. 2511 *Enchylaena tomentosa* (Barrier Saltbush)
- 234. 12064 *Enchylaena tomentosa* var. *tomentosa* (Barrier Saltbush)
- 235. 11728 *Rhagodia latifolia* subsp. *latifolia*
- 236. 11316 *Rhagodia latifolia* subsp. *recta*
- 237. 11240 *Rhagodia preissii* subsp. *obovata*
- 238. 11254 *Rhagodia preissii* subsp. *preissii*
- 239. 2593 *Sarcocornia quinqueflora* (Beaded Samphire)
- 240. 2633 *Sclerolaena uniflora* (Two-spined Saltbush)
- 241. 33319 *Tecticornia indica* subsp. *bidens*
- 242. 2644 *Threlkeldia diffusa* (Coast Bonefruit)

Chironomidae

- 243. *Botryocladus petrophilus*
- 244. *Chironomus* aff. *alternans* (V24)
- 245. *Chironomus* aff. *alternans* (V24) (CB)
- 246. *Cladotanytarsus* sp. A
- 247. *Cladotanytarsus* sp. A (SAP)
- 248. *Coelopynia pruinosa*
- 249. *Cricotopus 'brevicornis'*
- 250. *Cricotopus albitarsus*
- 251. *Cryptochironomus griseidorsum*
- 252. *Dicrotendipes jobetus*
- 253. *Harrisius* sp. B Y
- 254. *Larsia ? albiceps*
- 255. *Larsia albiceps*
- 256. *Nanocladius* sp. 1 (VCD7)
- 257. *Paracladopelma* sp. A (nr M2)
- 258. *Paracladopelma* sp. A (nr M2) (SAP)
- 259. *Polypedilum leei*
- 260. *Polypedilum watsoni*
- 261. *Procladius paludicola*
- 262. *Procladius* sp. (normal claws)
- 263. *Skusella*/"V12 ex-WA" (Cranston)
- 264. *Stenochironomus* sp. Y
- 265. *Tanytarsus bispinosus*
- 266. *Tanytarsus fuscithorax/semibarbitarsus*
- 267. *Tanytarsus* sp. H
- 268. *Tanytarsus* sp. H (SAP)

Chnoosporaceae

- 269. 27226 *Rosenvingea orientalis*

Chydoridae

- 270. *Euryalona orientalis*
- 271. *Pleuroxus* cf. *foveatus* (SAP)
- 272. *Pleuroxus foveatus*

Cladophoraceae

- 273. 26650 *Cladophora coelothrix*

Clupeidae

274. *Hyperlophus vittatus*
275. *Nematalosa vlaminghi*

Coenagrionidae

276. *Ischnura heterosticta heterosticta*
277. *Pseudagrion microcephalum*
278. *Xanthagrion erythroneurum*

Colchicaceae

279. 1386 *Burchardia rosea*
280. 1393 *Wurmbea dilatata*
281. 12072 *Wurmbea dioica subsp. alba*
282. 1398 *Wurmbea monantha*
283. 1399 *Wurmbea murchisoniana* P4

Columbidae

284. 24399 *Columba livia* (Domestic Pigeon) Y
285. 24401 *Geopelia cuneata* (Diamond Dove)
286. 25585 *Geopelia striata* (Zebra Dove)
287. 24403 *Geopelia striata subsp. placida* (Peaceful Dove)
288. 24407 *Ocyphaps lophotes* (Crested Pigeon)
289. 24409 *Phaps chalcoptera* (Common Bronzewing)
290. 25590 *Streptopelia senegalensis* (Laughing Turtle-Dove) Y

Commelinaceae

291. 1162 *Cartonema philydroides*

Convolvulaceae

292. 6609 *Bonamia rosea* (Felted Bellflower)
293. 6614 *Convolvulus remotus*
294. 6663 *Cuscuta epithimum* (Lesser Dodder, Greater Dodder) Y
295. 11021 *Cuscuta planiflora* Y
296. 31334 *Duperreya sericea*
297. 6658 *Wilsonia backhousei* (Narrow-leaf *Wilsonia*)

Corallinaceae

298. 26458 *Amphiroa anceps*
299. 26463 *Amphiroa gracilis*
300. 13141 *Haliptilon roseum*
301. 27067 *Metagoniolithon chara*

Corixidae

302. *Micronecta annae illiesi*

Corvidae

303. 24416 *Corvus bennetti* (Little Crow)
304. 25592 *Corvus coronoides* (Australian Raven)

Cracticidae

305. 24420 *Cracticus nigrogularis* (Pied Butcherbird)
306. 25595 *Cracticus tibicen* (Australian Magpie)
307. 25596 *Cracticus torquatus* (Grey Butcherbird)

Crassulaceae

308. 17701 *Crassula closiana*
309. 11563 *Crassula colorata var. colorata*

Cuculidae

310. 25598 *Cacomantis flabelliformis* (Fan-tailed Cuckoo)
311. 24427 *Cacomantis flabelliformis subsp. flabelliformis* (Fan-tailed Cuckoo)
312. 42307 *Cacomantis pallidus* (Pallid Cuckoo)

313. 24431 *Chrysococcyx basalis* (Horsfield's Bronze Cuckoo)

Cupressaceae

314. 36560 *Callitris arenaria* (Sandplain Cypress)

Cyperaceae

315. 741 *Baumea articulata* (Jointed Rush)

316. 743 *Baumea juncea* (Bare Twigrush)

317. 794 *Cyperus gymnocaulos* (Spiny Flat-sedge)

318. 20216 *Ficinia nodosa* (Knotted Club Rush)

319. 907 *Gahnia trifida* (Coast Saw-sedge)

320. 917 *Isolepis marginata* (Coarse Club-rush)

321. 930 *Lepidosperma costale*

322. 943 *Lepidosperma rupestre* (Kalbarri Lepidosperma) P4

323. 944 *Lepidosperma scabrum*

324. 945 *Lepidosperma squamatum*

325. 947 *Lepidosperma tenue*

326. 954 *Mesomelaena preissii*

327. 955 *Mesomelaena pseudostygia*

328. 992 *Schoenus grandiflorus* (Large Flowered Bogrush)

329. 998 *Schoenus latitans*

330. 1002 *Schoenus nanus* (Tiny Bog Rush)

331. 1009 *Schoenus pleiostemoneus*

332. 16254 *Schoenus* sp. G Broad Sheath (K.L. Wilson 2633)

333. 1035 *Tetraria microcarpa*

Cyprididae

334. *Alboa worooa*

335. *Candonocypris novaezelandiae*

336. *Cypretta baylyi*

337. *Cypricercus* sp. 415

338. *Cypricercus* sp. 415 'humped' (CB)

Cystoseiraceae

339. 26586 *Caulocystis uvifera*

340. 27090 *Myriodesma quercifolium*

Cyzicidae

341. *Caenestheria* sp. nov. a (nr. *lutraria*) (SAP)

Daphniidae

342. *Daphnia queenslandensis*

Dasyuridae

343. 24092 *Dasyurus geoffroii* (Chuditch, Western Quoll) T

344. 24109 *Sminthopsis dolichura* (Little long-tailed Dunnart)

345. 24112 *Sminthopsis granulipes* (White-tailed Dunnart)

Dicaeidae

346. 25607 *Dicaeum hirundinaceum* (Mistletoebird)

Dicruridae

347. 24443 *Grallina cyanoleuca* (Magpie-lark)

348. 24452 *Rhipidura fuliginosa* subsp. *preissi* (Grey Fantail)

349. 25614 *Rhipidura leucophrys* (Willie Wagtail)

Dictyotaceae

350. 27373 *Zonaria turneriana*

Dilleniaceae

- 351. 5108 *Hibbertia acerosa* (Needle Leaved Guinea Flower)
- 352. 5115 *Hibbertia conspicua* (Leafless Hibbertia)
- 353. 5120 *Hibbertia desmophylla*
- 354. 19685 *Hibbertia glabrisepala*
- 355. 5135 *Hibbertia hypericoides* (Yellow Buttercups)
- 356. 5158 *Hibbertia potentilliflora*
- 357. 5171 *Hibbertia spicata*
- 358. 11461 *Hibbertia spicata* subsp. *leptothea* P3
- 359. 11481 *Hibbertia spicata* subsp. *spicata*

Dioscoreaceae

- 360. 1509 *Dioscorea hastifolia* (Warrine, Wararn)

Diplodactylidae

- 361. 24919 *Crenadactylus ocellatus* subsp. *horni* (Clawless Gecko)
- 362. 24918 *Crenadactylus ocellatus* subsp. *ocellatus* (Clawless Gecko)
- 363. 24938 *Diplodactylus ornatus*
- 364. 42414 *Lucasium alboguttatum*
- 365. 25518 *Strophurus spinigerus*
- 366. 24942 *Strophurus spinigerus* subsp. *spinigerus*

Diptera

- 367. *Diptera* sp.

Droseraceae

- 368. 3098 *Drosera glanduligera* (Pimpernel Sundew)
- 369. 8910 *Drosera humilis*
- 370. 14298 *Drosera macrantha* subsp. *macrantha*
- 371. 11246 *Drosera neesii* subsp. *borealis*
- 372. 29177 *Drosera prostrata*
- 373. 3127 *Drosera radicans*
- 374. 3128 *Drosera ramellosa* (Branched Sundew)
- 375. 3129 *Drosera rechingeri*

Dytiscidae

- 376. *Batrachomatus wingi*
- 377. *Hyphydrus elegans*
- 378. *Laccophilus sharpi*
- 379. *Necterosoma regulare*

Ecdeiocolaeaceae

- 380. 1066 *Ecdeiocola monostachya*

Elapidae

- 381. 42381 *Brachyuropsis semifasciatus* (Southern Shovel-nosed Snake)
- 382. 25296 *Demansia psammophis* subsp. *reticulata* (Yellow-faced Whipsnake)
- 383. 25251 *Echiopsis curta* (Bardick)
- 384. 25366 *Hydrophis elegans* (Elegant Seasnake, Bar-bellied Seasnake)
- 385. 44656 *Hydrophis major*
- 386. 25248 *Neelaps bimaculatus* (Black-naped Snake)
- 387. 25253 *Parasuta gouldii*
- 388. 25261 *Pseudechis australis* (Mulga Snake)
- 389. 42416 *Pseudonaja mengdeni* (Western Brown Snake)
- 390. 25263 *Pseudonaja modesta* (Ringed Brown Snake)
- 391. 25266 *Simoselaps bertholdi* (Jan's Banded Snake)
- 392. 25267 *Simoselaps littoralis* (West Coast Banded Snake)

Emblingiaceae

393. 2989 *Emblingia calceoliflora*

Ericaceae

394. 6328 *Astroloma glaucescens*

395. 6336 *Astroloma serratifolium* (Kondrung)

396. 43109 *Conostephium laeve*

397. 6376 *Leucopogon cordifolius* (Heart-leaf Beard-heath)

398. 6403 *Leucopogon hispidus*

399. 6430 *Leucopogon planifolius*

400. 19577 *Leucopogon* sp. Kalbarri (J.M. Powell 1695)

401. 6448 *Leucopogon strongylophyllus*

402. 34736 *Lysinema pentapetalum*

Estrilidae

403. 30870 *Taeniopygia guttata* (Zebra Finch)

Euphorbiaceae

404. 4582 *Adriana quadripartita* (Bitter Bush)

405. 4583 *Adriana tomentosa*

406. 17422 *Adriana tomentosa* var. *tomentosa*

407. 34237 *Beyeria cinerea* subsp. *borealis*

408. 34236 *Beyeria cinerea* subsp. *cinerea* P3

409. 4599 *Beyeria lepidopetala* (Short-petalled *Beyeria*) T

410. 42868 *Euphorbia philochalix*

411. 4644 *Euphorbia sharkoensis*

412. 12097 *Euphorbia tannensis* subsp. *eremophila* (Desert Spurge)

413. 19584 *Monotaxis bracteata*

414. 4713 *Stachystemon axillaris* (Leafy *Stachystemon*)

415. 19953 *Stachystemon nematophorus* P4

Fabaceae

416. 3199 *Acacia acuaria*

417. 3200 *Acacia acuminata* (Jam, Mangard)

418. 3216 *Acacia andrewsii*

419. 3225 *Acacia ashbyae*

420. 3238 *Acacia bidentata*

421. 3242 *Acacia blakelyi*

422. 15472 *Acacia cavealis*

423. 3262 *Acacia cochlearis* (Rigid Wattle)

424. 3269 *Acacia coolgardiensis* (Spinifex Wattle)

425. 3323 *Acacia ericifolia*

426. 14077 *Acacia gelasina* P2

427. 3376 *Acacia idiomorpha*

428. 11611 *Acacia lasiocarpa* var. *lasiocarpa*

429. 3412 *Acacia latipes*

430. 11448 *Acacia leptospermoides* subsp. *leptospermoides*

431. 15477 *Acacia lineolata* subsp. *lineolata*

432. 15290 *Acacia neurophylla* subsp. *erugata*

433. 3466 *Acacia oldfieldii*

434. 3474 *Acacia oxyclada*

435. 16142 *Acacia puncticulata*

436. 3508 *Acacia quadrisulcata*

437. 19499 *Acacia ramulosa* var. *ramulosa*

438. 3515 *Acacia restiacea*

439. 3525 *Acacia rostelifera* (Summer-scented Wattle)

440. 3527 *Acacia saligna* (Orange Wattle, Kudjong)
441. 3532 *Acacia scirpifolia*
442. 3546 *Acacia signata*
443. 3549 *Acacia spathulifolia*
444. 12268 *Acacia sphenophylla*
445. 14145 *Acacia stereophylla* var. *cylindrata* P2
446. 3577 *Acacia tetragonophylla* (Kurara, Wakalpuka)
447. 3587 *Acacia ulicina*
448. 3604 *Acacia xanthina* (White-stemmed Wattle)
449. 3691 *Aotus phyllicoides*
450. 30232 *Bossiaea calcicola* P3
451. 30231 *Bossiaea inundata* P2
452. 3718 *Bossiaea rufa*
453. 3719 *Bossiaea spinescens*
454. 35839 *Cristonia stenophylla*
455. 17118 *Cullen leucanthum*
456. 11879 *Daviesia hakeoides* subsp. *hakeoides*
457. 16585 *Daviesia nudiflora* subsp. *nudiflora*
458. 3833 *Daviesia podophylla*
459. 14986 *Daviesia ramosissima*
460. 20473 *Gastrolobium ebracteolatum*
461. 3912 *Gastrolobium oxylobioides* (Champion Bay Poison)
462. 3938 *Glycine canescens* (Silky Glycine)
463. 19215 *Gompholobium glutinosum*
464. 3957 *Gompholobium tomentosum* (Hairy Yellow Pea)
465. 3970 *Indigofera australis* (Australian Indigo)
466. 40320 *Indigofera australis* subsp. *hesperia*
467. 19700 *Isotropis cuneifolia* subsp. *cuneifolia*
468. 3998 *Jacksonia angulata*
469. 14780 *Jacksonia arenicola*
470. 14783 *Jacksonia calcicola*
471. 4006 *Jacksonia cupulifera*
472. 14785 *Jacksonia rigida*
473. 4033 *Jacksonia velutina* P4
474. 3664 *Labichea cassioides*
475. 3667 *Labichea lanceolata* (Tall Labichea)
476. 11289 *Labichea lanceolata* subsp. *lanceolata*
477. 15428 *Leptosema aphyllum*
478. 16489 *Leptosema macrocarpum*
479. 17640 *Leptosema tomentosum*
480. 4060 *Lotus australis* (Austral Trefoil)
481. 4079 *Medicago polymorpha* (Burr Medic) Y
482. 4085 *Melilotus indicus* Y
483. 41444 *Mirbelia balsiformis*
484. 41442 *Mirbelia corallina* P3
485. 4097 *Mirbelia ramulosa*
486. 4100 *Mirbelia spinosa*
487. 4104 *Mirbelia trichocalyx*
488. 18444 *Senna charlesiana*
489. 12305 *Senna glutinosa* subsp. *chatelainiana*
490. 4203 *Sphaerolobium gracile*

491. 4220 *Swainsona canescens* (Grey Swainsona)
 492. 4256 *Templetonia retusa* (Cockies Tongues)
 493. 4292 *Trifolium campestre* (Hop Clover) Y
 494. 4325 *Viminaria juncea* (Swishbush, Koweda)
- Falconidae**
 495. 25621 *Falco berigora* (Brown Falcon)
 496. 25622 *Falco cenchroides* (Australian Kestrel)
 497. 25623 *Falco longipennis* (Australian Hobby)
- Frankeniaceae**
 498. 5193 *Frankenia confusa* P4
 499. 5209 *Frankenia pauciflora* (Seaheath)
- Galaxauraceae**
 500. 27340 *Tricleocarpa cylindrica*
- Galeommatidae**
 501. *Arthritica semen*
- Gekkonidae**
 502. 24959 *Gehyra variegata*
 503. 24961 *Heteronotia binoei* (Bynoe's Gecko)
- Gelidiaceae**
 504. 27195 *Pterocladia lucida*
- Gentianaceae**
 505. 6542 *Centaurium tenuiflorum* Y
 506. 41660 *Schenkia australis*
- Geraniaceae**
 507. 4333 *Erodium cicutarium* (Common Storksbill) Y
 508. 4335 *Erodium cygnorum* (Blue Heronsbill)
- Gerreidae**
 509. *Gerres subfasciatus*
- Gerridae**
 510. *Limnogonus* sp.
- Gobiidae**
 511. *Pseudogobius olorum*
- Gomphidae**
 512. *Austroepigomphus (Xerogomphus) gordonii*
 513. *Austrogomphus gordonii* Y
- Goodeniaceae**
 514. 7421 *Dampiera altissima* (Tall Dampiera)
 515. 11326 *Dampiera incana* var. *fuscescens*
 516. 11723 *Dampiera incana* var. *incana*
 517. 7453 *Dampiera lindleyi*
 518. 18441 *Dampiera* sp. *Jurien* (G. Lullfitz s.n. 10/7/1986) P2
 519. 7475 *Dampiera spicigera* (Spiked Dampiera)
 520. 7495 *Goodenia berardiana*
 521. 29362 *Goodenia coerulea*
 522. 17806 *Goodenia drummondii* subsp. *drummondii*
 523. 7513 *Goodenia hassallii*
 524. 7538 *Goodenia pulchella*
 525. 7570 *Lechenaultia chlorantha* (Kalbarri Leschenaultia) T
 526. 7574 *Lechenaultia floribunda* (Free-flowering Leschenaultia)
 527. 7577 *Lechenaultia hirsuta* (Hairy Leschenaultia)
 528. 7580 *Lechenaultia linarioides* (Yellow Leschenaultia)

529. 7588 *Lechenaultia subcymosa* (Wide-branching *Lechenaultia*)
530. 7593 *Pentaptilon careyi*
531. 7603 *Scaevola canescens* (Grey *Scaevola*)
532. 7606 *Scaevola crassifolia* (Thick-leaved Fan-flower)
533. 7614 *Scaevola globulifera*
534. 17026 *Scaevola kallophylla* P4
535. 7619 *Scaevola lanceolata*
536. 7634 *Scaevola phlebopetala* (Velvet Fanflower)
537. 7637 *Scaevola porocarya* (Striate-fruit *Scaevola*)
538. 7643 *Scaevola sericophylla*
539. 20449 *Scaevola* sp. Golden hairs (D. & B. Bellairs 1450 A) P1 Y
540. 7644 *Scaevola spinescens* (Currant Bush, Maroon)
541. 13152 *Scaevola thesioides* subsp. *thesioides*
542. 7648 *Scaevola tomentosa* (Raggedleaf Fanflower)
543. 7658 *Velleia discophora* (Cabbage Poison)
544. 7666 *Verreauxia reinwardtii* (Common *Verreauxia*)
- Gyrinidae**
545. *Aulonogyrus strigosus*
546. *Macrogyrus angustatus*
- Gyrostemonaceae**
547. 2784 *Gyrostemon ramulosus* (Corkybark)
548. 2788 *Gyrostemon subnudus*
549. 2791 *Tersonia cyathiflora* (Button Creeper)
- Haematopodidae**
550. 25627 *Haematopus fuliginosus* (Sooty Oystercatcher)
- Haemodoraceae**
551. 11434 *Anigozanthos humilis* subsp. *humilis*
552. 1410 *Anigozanthos kalbarriensis* (Kalbarri Catspaw)
553. 11565 *Anigozanthos manglesii* subsp. *quadrans*
554. 1418 *Conostylis aculeata* (Prickly *Conostylis*)
555. 12028 *Conostylis aculeata* subsp. *septentrionora*
556. 1427 *Conostylis candicans* (Grey Cottonhead)
557. 11979 *Conostylis candicans* subsp. *flavifolia*
558. 1446 *Conostylis prolifera* (Mat Cottonheads)
559. 1448 *Conostylis resinosa*
560. 1450 *Conostylis robusta*
561. 1456 *Conostylis stylidioides*
562. 1465 *Haemodorum discolor*
563. 1473 *Haemodorum simulans*
- Haemulidae**
564. *Plectorhinchus pictus*
- Halcyonidae**
565. 25549 *Todiramphus sanctus* (Sacred Kingfisher)
- Haloragaceae**
566. 33620 *Glischrocaryon angustifolium*
567. 6143 *Glischrocaryon aureum* (Common Popflower)
568. 6144 *Glischrocaryon flavescens*
569. 6148 *Gonocarpus confertifolius*
570. 11801 *Gonocarpus confertifolius* var. *helmsii*
571. 6180 *Haloragis trigonocarpa*

Hemerocallidaceae

572. 1262 *Arnocrinum drummondii* P3
573. 11834 *Corynotheca micrantha* var. *acanthoclada*
574. 11283 *Corynotheca micrantha* var. *micrantha*
575. 1259 *Dianella revoluta* (Blueberry Lily)
576. 1260 *Stypandra glauca* (Blind Grass)
577. 1361 *Tricoryne elatior* (Yellow Autumn Lily)

Hemicorduliidae

578. *Hemicordulia tau*

Hemiramphidae

579. *Hyporhamphus regularis*

Hirundinidae

580. 24491 *Hirundo neoxena* (Welcome Swallow)

Hydraenidae

581. *Gymnocthebius* sp. 3 (SAP)

Hydrochidae

582. *Hydrochus lateviridus*

Hydrodromidae

583. *Hydrodromidae* sp.

Hydrophilidae

584. *Berosus australiae*
585. *Helochares tatei*
586. *Hydrophilus* sp.

Hypericaceae

587. 5180 *Hypericum gramineum* (Small St John's Wort)

Ilyocyprididae

588. *Ilyocypris australiensis*

Iridaceae

589. 20154 *Lapeirousia anceps* Y Y
590. 30476 *Patersonia occidentalis* var. *latifolia*
591. 30472 *Patersonia occidentalis* var. *occidentalis*

Ixodidae

592. *Amblyomma triguttatum*

Juncaceae

593. 11922 *Juncus kraussii* subsp. *australiensis*
594. 1188 *Juncus pallidus* (Pale Rush)

Juncaginaceae

595. 33276 *Triglochin isingiana*
596. 147 *Triglochin mucronata*
597. 18587 *Triglochin nana*

Kyphosidae

598. *Kyphosus cornelii*

Labridae

599. *Thalassoma septemfasciata*

Lamiaceae

- 600. 6760 *Dicrastylis fulva*
- 601. 6837 *Hemiandra leiantha*
- 602. 6839 *Hemiandra pungens* (Snakebush)
- 603. 6849 *Hemigenia diplanthera*
- 604. 6858 *Hemigenia macrantha*
- 605. 6780 *Lachnostachys eriobotrya* (Lambswool)
- 606. 6781 *Lachnostachys ferruginea* (Rusty Lambstail)
- 607. 6811 *Pityrodia hemigenioides*
- 608. 41041 *Quoya atriplicina*
- 609. 41063 *Quoya loxocarpa*
- 610. 41062 *Quoya oldfieldii* (Oldfields Foxglove)
- 611. 41080 *Quoya verbascina* (Golden Bush)
- 612. 6939 *Westringia dampieri*

Lamponidae

- 613. *Lampona cylindrata*

Laridae

- 614. 25638 *Larus pacificus* (Pacific Gull)

Lauraceae

- 615. 2948 *Cassytha aurea*
- 616. 12073 *Cassytha aurea* var. *aurea*
- 617. 11351 *Cassytha aurea* var. *hirta*
- 618. 2951 *Cassytha flava* (Dodder Laurel)
- 619. 2956 *Cassytha pomiformis* (Dodder Laurel)
- 620. 2957 *Cassytha racemosa* (Dodder Laurel)
- 621. 11799 *Cassytha racemosa* forma *racemosa*

Lecanidae

- 622. *Lecane ludwigii*
- 623. *Lecane rhytida*

Leptoceridae

- 624. *Notalina spira*
- 625. *Notoperata* sp.
- 626. *Oecetis* sp.
- 627. *Triaenodes* sp.
- 628. *Triaenodes* sp. P1=P2 (PSW)
- 629. *Triplectides australis*

Leptophlebiidae

- 630. *Nyungara* sp.

Lethrinidae

- 631. *Lethrinus nebulosus*

Libellulidae

- 632. *Orthetrum caledonicum*
- 633. *Trapezostigma loewii*

Limnodynastidae

- 634. 25408 *Heleioporus albopunctatus* (Western Spotted Frog)
- 635. 25412 *Heleioporus psammophilus* (Sand Frog)
- 636. 25415 *Limnodynastes dorsalis* (Western Banjo Frog)
- 637. 25425 *Neobatrachus kunapalari* (Kunapalari Frog)
- 638. 25426 *Neobatrachus pelobatoides* (Humming Frog)

Loganiaceae

639. 16798 *Logania litoralis*

640. 6512 *Logania spermacoea*

Loranthaceae

641. 13267 *Amyema linophylla* subsp. *linophylla*

642. 2378 *Amyema melaleucaea*

643. 2401 *Nuytsia floribunda* (Christmas Tree, Mudja)

Lycosidae

644. *Hoggicosa castanea*

645. *Lycosa australicola*

646. *Lycosa godeffroyi*

647. *Tasmanicosa leuckartii*

648. *Venator immansueta*

Macropodidae

649. 24131 *Macropus eugenii* subsp. *derbianus* (Tammar Wallaby (WA subsp)) P5

650. 24132 *Macropus fuliginosus* (Western Grey Kangaroo)

Maluridae

651. 25651 *Malurus lamberti* (Variegated Fairy-wren)

652. 24544 *Malurus lamberti* subsp. *assimilis* (Variegated Fairy-wren)

653. 25652 *Malurus leucopterus* (White-winged Fairy-wren)

654. 24549 *Malurus leucopterus* subsp. *leuconotus* (White-winged Fairy-wren)

655. 24551 *Malurus pulcherrimus* (Blue-breasted Fairy-wren)

656. 25654 *Malurus splendens* (Splendid Fairy-wren)

Malvaceae

657. 4904 *Alyogyne cuneiformis* (Coastal Hibiscus)

658. 4905 *Alyogyne hakeifolia*

659. 42940 *Alyogyne* sp. Geraldton (R. Davis 3487)

660. 42921 *Alyogyne* sp. Kalbarri (P.G. Wilson 6720) Y

661. 42960 *Alyogyne* sp. Port Gregory (K.F. Kenneally 2382)

662. 40911 *Androcalva bivillosa* T

663. 40914 *Androcalva gaudichaudii*

664. 4999 *Brachychiton gregorii* (Desert Kurrajong, Ngalta)

665. 40872 *Commersonia borealis*

666. 40922 *Commersonia densiflora*

667. 19600 *Guichenotia basivirida*

668. 19885 *Guichenotia intermedia*

669. 5011 *Guichenotia ledifolia*

670. 5012 *Guichenotia macrantha* (Large-flowered Guichenotia)

671. 17781 *Hannafordia quadrivalvis* subsp. *quadrivalvis*

672. 4927 *Hibiscus drummondii* (Drummond's Hibiscus)

673. 5022 *Keraudrenia hermanniifolia*

674. 19892 *Keraudrenia velutina* subsp. *velutina*

675. 9099 *Lasiopetalum angustifolium* (Narrow Leaved Lasiopetalum)

676. 5043 *Lasiopetalum oldfieldii*

677. 17263 *Lasiopetalum oldfieldii* subsp. *oldfieldii* P3

678. 5044 *Lasiopetalum oppositifolium* P3

679. 4970 *Sida calyxhymenia* (Tall Sida)

Megapodiidae

680. 24557 *Leipoa ocellata* (Malleefowl) T

Meliphagidae

- 681. 24559 *Acanthagenys rufogularis* (Spiny-cheeked Honeyeater)
- 682. 24561 *Anthochaera carunculata* (Red Wattlebird)
- 683. 24564 *Certhionyx variegatus* (Pied Honeyeater)
- 684. 24567 *Epthianura albifrons* (White-fronted Chat)
- 685. 24570 *Epthianura tricolor* (Crimson Chat)
- 686. 25661 *Lichmera indistincta* (Brown Honeyeater)
- 687. 24582 *Lichmera indistincta* subsp. *indistincta* (Brown Honeyeater)
- 688. 42341 *Ptilotula penicillatus* (White-plumed Honeyeater)
- 689. 42344 *Purnella albifrons* (White-fronted Honeyeater)

Menyanthaceae

- 690. 36203 *Liparophyllum congestiflorum* P4

Meropidae

- 691. 24598 *Merops ornatus* (Rainbow Bee-eater) IA

Molluginaceae

- 692. 2839 *Macarthuria australis*
- 693. 2841 *Macarthuria intricata* P3

Molossidae

- 694. 24185 *Tadarida australis* (White-striped Freetail-bat)

Monacanthidae

- 695. *Monacanthus chinensis*

Monocentrididae

- 696. *Cleidopus gloriamaris*

Mugilidae

- 697. *Aldrichetta forsteri*
- 698. *Liza subviridis*
- 699. *Mugil cephalus*

Mullidae

- 700. *Parupeneus spilurus*

Muridae

- 701. 24223 *Mus musculus* (House Mouse) Y
- 702. 24224 *Notomys alexis* (Spinifex Hopping-mouse)
- 703. 24230 *Pseudomys albocinereus* (Ash-grey Mouse)
- 704. 24245 *Rattus rattus* (Black Rat) Y

Myobatrachidae

- 705. 41375 *Arenophryne xiphorhyncha* (Southern Sandhill Frog)
- 706. 25420 *Myobatrachus gouldii* (Turtle Frog)
- 707. 25433 *Pseudophryne guentheri* (Crawling Toadlet)

Myobiidae

- 708. *Radfordia notomys*

Myrtaceae

709. 10767 *Baeckea pentagonantha*
710. 5365 *Baeckea robusta*
711. 5368 *Baeckea subcuneata* P2
712. 17761 *Beaufortia aestiva*
713. 5401 *Calothamnus blepharospermus*
714. 34196 *Calothamnus chrysanthereus* (Claw Flower)
715. 35856 *Calothamnus glaber*
716. 5420 *Calothamnus oldfieldii*
717. 35696 *Calothamnus phellosus*
718. 35758 *Calothamnus quadrifidus* subsp. *homalophyllus* (Murchison Clawflower)
719. 35759 *Calothamnus quadrifidus* subsp. *obtusus*
720. 5429 *Calothamnus sanguineus* (Silky-leaved Blood flower, Pindak)
721. 5443 *Calytrix brevifolia*
722. 5450 *Calytrix depressa*
723. 5459 *Calytrix formosa* P3
724. 5460 *Calytrix fraseri* (Pink Summer Calytrix)
725. 5464 *Calytrix harvestiana* P2
726. 5465 *Calytrix leschenaultii*
727. 5468 *Calytrix oldfieldii*
728. 5470 *Calytrix paucicostata* P2
729. 5475 *Calytrix purpurea* P2
730. 5476 *Calytrix sapphirina*
731. 5479 *Calytrix strigosa*
732. 42580 *Chamelaucium gracile*
733. 5494 *Chamelaucium marchantii* P3
734. 5498 *Chamelaucium uncinatum* (Geraldton Wax)
735. 5520 *Darwinia oldfieldii*
736. 5534 *Darwinia virescens* (Murchison Darwinia)
737. 29556 *Enekbatus cristatus* P2
738. 5539 *Eremaea ebracteata*
739. 14102 *Eremaea ebracteata* var. *ebracteata*
740. 12895 *Eucalyptus arachnaea* subsp. *arachnaea*
741. 9141 *Eucalyptus baudiniana*
742. 35345 *Eucalyptus camaldulensis* subsp. *obtusa* (Blunt-budded River Red Gum)
743. 15494 *Eucalyptus diminuta*
744. 15804 *Eucalyptus dolichocera*
745. 5638 *Eucalyptus erythrocorys* (Illyarrie)
746. 5640 *Eucalyptus eudesmioides* (Malallie, Marlarli)
747. 5649 *Eucalyptus foecunda* (Narrow-leaved Red Mallee)
748. 5654 *Eucalyptus fruticosa*
749. 5658 *Eucalyptus gittinsii* (Northern Sandplain Mallee)
750. 5673 *Eucalyptus horistes*
751. 5681 *Eucalyptus jucunda* (Yuna Mallee)
752. 20303 *Eucalyptus kochii* subsp. *borealis*
753. 13018 *Eucalyptus mannensis* subsp. *vespertina*
754. 5722 *Eucalyptus obtusiflora* (Dongara Mallee)
755. 5725 *Eucalyptus oldfieldii* (Oldfield's Mallee)
756. 5730 *Eucalyptus oraria* (Ooragmandee)
757. 18348 *Eucalyptus pallida*
758. 5761 *Eucalyptus rigidula* (Stiff-leaved Mallee)

759. 29993 *Eucalyptus* sp. Kalbarri (M.I.H. Brooker 7937)
760. 14548 *Eucalyptus* *victrix*
761. 5861 *Malleostemon* *hursthousei*
762. 5864 *Malleostemon* *peltiger*
763. 25905 *Malleostemon* sp. Junga Dam (D. Bellairs 942)
764. 17399 *Malleostemon* sp. Yerina (S.J. Patrick 2728) P1
765. 37580 *Melaleuca* *acutifolia*
766. 19384 *Melaleuca* *bisulcata*
767. 5884 *Melaleuca* *calothamnoides*
768. 19048 *Melaleuca* *campanae*
769. 5887 *Melaleuca* *cardiophylla* (Tangling *Melaleuca*)
770. 5893 *Melaleuca* *concreta*
771. 5895 *Melaleuca* *conothamnoides*
772. 5908 *Melaleuca* *eleuterostachya*
773. 5911 *Melaleuca* *filifolia* (Wiry Honey-myrtle)
774. 15602 *Melaleuca* *fulgens* subsp. *steadmanii*
775. 19049 *Melaleuca* *idana*
776. 18452 *Melaleuca* *laetifica*
777. 5922 *Melaleuca* *lanceolata* (Rottnest Teatree, Moonah)
778. 19522 *Melaleuca* *lara*
779. 5926 *Melaleuca* *lateritia* (Robin Redbreast Bush)
780. 5930 *Melaleuca* *leiopyxis*
781. 18112 *Melaleuca* *leuropoma*
782. 18435 *Melaleuca* *longistaminea*
783. 41120 *Melaleuca* *marginata*
784. 5936 *Melaleuca* *megacephala*
785. 5945 *Melaleuca* *oldfieldii* P2
786. 5954 *Melaleuca* *psammophila*
787. 5958 *Melaleuca* *radula* (Graceful Honey-myrtle)
788. 5959 *Melaleuca* *rhaphiophylla* (Swamp Paperbark)
789. 19449 *Melaleuca* *stereophloia*
790. 5985 *Melaleuca* *undulata* (Hidden Honey-myrtle)
791. 5987 *Melaleuca* *viminea* (Mohan)
792. 13280 *Melaleuca* *viminea* subsp. *viminea*
793. 37680 *Micromyrtus* *collina* P1
794. 6008 *Phymatocarpus* *porphyrocephalus*
795. 20219 *Pileanthus* *peduncularis* subsp. *peduncularis*
796. 20229 *Pileanthus* *peduncularis* subsp. *pilifer*
797. 18250 *Pileanthus* *vernicosus*
798. 6029 *Scholtzia* *capitata*
799. 6035 *Scholtzia* *leptantha*
800. 14657 *Scholtzia* sp. Eradu (R.D. Royce 8016) P2
801. 14922 *Scholtzia* sp. Eurardy (J.S. Beard 6886) P2
802. 16837 *Scholtzia* sp. Kalbarri (N. Hoyle 623)
803. 20094 *Scholtzia* sp. Murchison (M.E. Trudgen 1685)
804. 16841 *Scholtzia* sp. Red Bluff (A. Gunness 2373)
805. 14659 *Scholtzia* sp. Ross Graham Lookout (S. Maley 6) P2
806. 15427 *Scholtzia* *spatulata*
807. 6040 *Scholtzia* *uberiflora*
808. 6041 *Scholtzia* *umbellifera*
809. 44683 *Thryptomene* *calvicola* P2 Y

810. 6055 *Thryptomene denticulata*
 811. 9194 *Thryptomene johnsonii* P2 Y
 812. 16820 *Thryptomene* sp. Eagle Gorge (A.G. Gunness 2360) P2
 813. 20366 *Thryptomene* sp. Red Bluff (A.G. Gunness 2358)
 814. 19693 *Thryptomene striata* P2
 815. 6067 *Thryptomene strongylophylla*
 816. 12399 *Verticordia capillaris* P4
 817. 14709 *Verticordia chrysostachys* var. *chrysostachys*
 818. 12405 *Verticordia cooloomia* P3
 819. 12413 *Verticordia densiflora* var. *roseostella* P3
 820. 12414 *Verticordia densiflora* var. *stelluligera*
 821. 14712 *Verticordia dichroma* var. *dichroma* P3
 822. 12423 *Verticordia etheliana* var. *formosa*
 823. 15622 *Verticordia lepidophylla* var. *lepidophylla*
 824. 6098 *Verticordia monadelpha* (Pink Woolly Featherflower)
 825. 12443 *Verticordia monadelpha* var. *callitricha*
 826. 10822 *Verticordia nobilis*
 827. 6102 *Verticordia oculata*
 828. 6107 *Verticordia pennigera*
 829. 6108 *Verticordia pholidophylla*
 830. 6109 *Verticordia picta* (Painted Featherflower)
 831. 6111 *Verticordia polytricha* (Northern Cauliflower) P4
 832. 15615 *Verticordia spicata* subsp. *spicata*

Naididae

833. *Naididae* (ex *Tubificidae*)

Nematoda

834. *Nematoda* sp.

Nemesiidae

835. *Aname mainae*

Nicodamidae

836. *Nicodamus mainae*

Nyctaginaceae

837. 2776 *Commicarpus australis* (Perennial Tar Vine)

Oecobiidae

838. *Oecobius navus*

Olacaceae

839. 2364 *Olax aurantia*

Oleaceae

840. 6500 *Jasminum calcareum*

Orchidaceae

841. 18035 *Caladenia bicalliata* subsp. *bicalliata*
 842. 15337 *Caladenia bryceana* subsp. *cracens* T
 843. 1586 *Caladenia discoidea* (Dancing Orchid)
 844. 1588 *Caladenia drummondii* (Winter Spider Orchid)
 845. 15349 *Caladenia flava* subsp. *maculata*
 846. 15355 *Caladenia hirta* subsp. *rosea*
 847. 15360 *Caladenia longicauda* subsp. *borealis*
 848. 44895 *Caladenia longicauda* subsp. *minima* P2
 849. 17760 *Caladenia nobilis*
 850. 15374 *Caladenia pachychila*
 851. 15378 *Caladenia reptans* subsp. *impensa*

852. 18019 *Caladenia vulgata*
 853. 1620 *Caladenia wanosa* (Kalbarri Spider Orchid) T
 854. 15114 *Cyanicula gemmata*
 855. 11049 *Diuris corymbosa*
 856. 30432 *Eriochilus dilatatus* subsp. *brevifolius*
 857. 15410 *Eriochilus dilatatus* subsp. *dilatatus*
 858. 8814 *Microtis brownii*
 859. 15425 *Prasophyllum calcicola*
 860. 41982 *Pterostylis microglossa*
 861. 1697 *Pterostylis scabra* (Bronze Shell Orchid)
 862. 18657 *Pterostylis* sp. *inland* (A.C. Beauglehole 11880)
 863. 16367 *Pyrorchis nigricans* (Red beaks, Elephants ears)
 864. 1701 *Thelymitra antennifera* (Vanilla Orchid)
 865. 1702 *Thelymitra campanulata* (Shirt Orchid)
 866. 1707 *Thelymitra flexuosa* (Twisted Sun Orchid)

Orobanchaceae

867. 7089 *Parentucellia latifolia* (Common Bartsia) Y

Otididae

868. 24610 *Ardeotis australis* (Australian Bustard)

Oxalidaceae

869. 4355 *Oxalis perennans*

Pachycephalidae

870. 25675 *Colluricincla harmonica* (Grey Shrike-thrush)
 871. 24613 *Colluricincla harmonica* subsp. *rufiventris* (Grey Shrike-thrush)
 872. 24618 *Oreoica gutturalis* (Crested Bellbird)
 873. 25679 *Pachycephala pectoralis* (Golden Whistler)
 874. 24623 *Pachycephala pectoralis* subsp. *fuliginosa* (Golden Whistler)
 875. 25680 *Pachycephala rufiventris* (Rufous Whistler)
 876. 24624 *Pachycephala rufiventris* subsp. *rufiventris* (Rufous Whistler)

Parastenocarididae

877. *Parastenocarididae* sp.

Pardalotidae

878. 25682 *Pardalotus striatus* (Striated Pardalote)

Parmeliaceae

879. 28158 *Xanthoparmelia neorimalis*

Pelecanidae

880. 24648 *Pelecanus conspicillatus* (Australian Pelican)

Petroicidae

881. 24650 *Drymodes brunneopygia* (Southern Scrub-robin)
 882. 24651 *Eopsaltria australis* subsp. *griseogularis* (Western Yellow Robin)
 883. 25693 *Microeca fascinans* (Jacky Winter)
 884. 24658 *Petroica cucullata* (Hooded Robin)
 885. 24659 *Petroica goodenovii* (Red-capped Robin)

Phalacrocoracidae

886. 25697 *Phalacrocorax carbo* (Great Cormorant)
 887. 24667 *Phalacrocorax sulcirostris* (Little Black Cormorant)
 888. 25699 *Phalacrocorax varius* (Pied Cormorant)

Phasianidae

889. 24671 *Coturnix pectoralis* (Stubble Quail)
 890. 24674 *Pavo cristatus* (Common Peafowl, Indian Peafowl) Y

Phreodrilidae

891. *Phreodrilidae* WA37 (SFM)

Phyllanthaceae

892. 4675 *Phyllanthus calycinus* (False Boronia)

893. 17626 *Phyllanthus erwinii*

894. 4685 *Phyllanthus scaber*

895. 4688 *Poranthera drummondii*

896. 4691 *Poranthera microphylla* (Small Poranthera)

897. 4706 *Sauropus crassifolius*

Physciaceae

898. 42104 *Buellia albula*

Pinguipedidae

899. *Parapercis haackei*

Pittosporaceae

900. 19421 *Marianthus bicolor* (Painted Marianthus)

901. 19745 *Pittosporum ligustrifolium*

902. 41300 *Pittosporum phillyreoides* (Weeping Pittosporum, Yaliti)

Plantaginaceae

903. 11785 *Plantago coronopus* subsp. *commutata* Y

904. 7299 *Plantago debilis*

905. 7102 *Stemodia viscosa* (Pagurda)

Pleidae

906. *Paraplea* sp.

Poaceae

907. 184 *Aira caryophyllea* (Silvery Hairgrass) Y

908. 12063 *Aristida holathera* var. *holathera*

909. 17234 *Austrostipa compressa*

910. 17235 *Austrostipa crinita*

911. 17237 *Austrostipa elegantissima*

912. 17244 *Austrostipa macalpinei*

913. 17246 *Austrostipa nitida*

914. 17251 *Austrostipa scabra*

915. 252 *Bromus madritensis* (Madrid Brome) Y

916. 258 *Cenchrus ciliaris* (Buffel Grass) Y

917. 259 *Cenchrus echinatus* (Burrgrass) Y

918. 41568 *Cenchrus setaceus* (Fountain Grass) Y

919. 267 *Chloris gayana* (Rhodes Grass) Y

920. 283 *Cynodon dactylon* (Couch) Y

921. 11485 *Ehrharta brevifolia* var. *cuspidata* Y

922. 349 *Ehrharta longiflora* (Annual Veldt Grass) Y

923. 370 *Eragrostis barrelieri* Y

924. 376 *Eragrostis curvula* (African Lovegrass) Y

925. 378 *Eragrostis dielsii* (Mallee Lovegrass)

926. 400 *Eriachne aristidea*

927. 8476 *Hordeum hystrix* (Mediterranean Region Barley Grass) Y

928. 468 *Lamarckia aurea* (Goldentop) Y

929. 492 *Neurachne alopecuroidea* (Foxtail Mulga Grass)

930. 11232 *Paractaenum novae-hollandiae* subsp. *novae-hollandiae*

931. 516 *Parapholis incurva* (Coast Barbglass) Y

932. 518 *Paspalidium clementii* (Clements Paspalidium)

933. 528 *Paspalum distichum* (Water Couch) Y

934. 40424 *Pentameris airoides* subsp. *airoides* Y

935. 551 *Phalaris minor* (Lesser Canary Grass) Y

936. 582 *Polypogon monspeliensis* (Annual Beardgrass) Y
 937. 10970 *Rostraria cristata* Y
 938. 11151 *Rostraria pumila* Y
 939. 606 *Setaria dielsii* (Diels' Pigeon Grass)
 940. 625 *Spinifex longifolius* (Beach Spinifex)
 941. 635 *Sporobolus virginicus* (Marine Couch)
 942. 673 *Themeda triandra*
 943. 17885 *Triodia bromoides* P4
 944. 17882 *Triodia danthonioides*
 945. 17880 *Triodia dielsii* P3
- Podargidae**
 946. 25703 *Podargus strigoides* (Tawny Frogmouth)
- Podicipedidae**
 947. 25704 *Podiceps cristatus* (Great Crested Grebe)
 948. 24681 *Poliocephalus poliocephalus* (Hoary-headed Grebe)
 949. 25705 *Tachybaptus novaehollandiae* (Australasian Grebe, Black-throated Grebe)
- Polygalaceae**
 950. 4550 *Comesperma calymega* (Blue-spike Milkwort)
 951. 4555 *Comesperma integerrimum*
 952. 4561 *Comesperma scoparium* (Broom Milkwort)
- Polygonaceae**
 953. 17739 *Acetosa vesicaria* Y
 954. 2409 *Emex australis* (Doublegee) Y
 955. 2412 *Muehlenbeckia adpressa* (Climbing Lignum)
- Pomacentridae**
 956. *Abudefduf sordidus*
- Pomatomidae**
 957. *Pomatomus saltatrix*
- Pomatostomidae**
 958. 24683 *Pomatostomus superciliosus* (White-browed Babbler)
- Portulacaceae**
 959. 2848 *Calandrinia corrigioloides* (Strap Purslane)
 960. 2854 *Calandrinia granulifera* (Pygmy Purslane)
 961. 2856 *Calandrinia liniflora* (Parakeelya)
 962. 2860 *Calandrinia polyandra* (Parakeelya)
 963. 2861 *Calandrinia polypetala*
 964. 2867 *Calandrinia remota*
- Primulaceae**
 965. 36375 *Lysimachia arvensis* (Pimpernel) Y
 966. 6484 *Samolus repens* (Creeping Brookweed)
- Procellariidae**
 967. 24692 *Pachyptila belcheri* (Slender-billed Prion)
- Proteaceae**
 968. 11837 *Adenanthos cygnorum* subsp. *cygnorum* (Common Woollybush)
 969. 1799 *Banksia ashbyi* (Ashby's Banksia)
 970. 1800 *Banksia attenuata* (Slender Banksia, Piara)
 971. 32627 *Banksia borealis* subsp. *borealis*
 972. 32524 *Banksia fraseri* var. *ashbyi*
 973. 1829 *Banksia lindleyana* (Porcupine Banksia)
 974. 1834 *Banksia menziesii* (Firewood Banksia)
 975. 1842 *Banksia prionotes* (Acorn Banksia)

976. 32079 *Banksia sessilis* var. *flabellifolia*
 977. 1855 *Banksia victoriae* (Woolly Orange Banksia)
 978. 15608 *Conospermum acerosum* subsp. *hirsutum*
 979. 15511 *Conospermum boreale*
 980. 15513 *Conospermum boreale* subsp. *boreale*
 981. 16849 *Conospermum microflorum*
 982. 1882 *Conospermum stoechadis* (Common Smokebush)
 983. 15611 *Conospermum stoechadis* subsp. *stoechadis* (Common Smokebush)
 984. 1885 *Conospermum triplinervium* (Tree Smokebush)
 985. 1954 *Grevillea annulifera* (Prickly Plume Grevillea)
 986. 1956 *Grevillea argyrophylla* (Silvery-leaved Grevillea)
 987. 15763 *Grevillea biformis* subsp. *biformis*
 988. 1966 *Grevillea brachystachya* (Short-spiked Grevillea)
 989. 1973 *Grevillea candelabroides*
 990. 8831 *Grevillea commutata*
 991. 18116 *Grevillea commutata* subsp. *commutata*
 992. 18130 *Grevillea commutata* subsp. *pinnatisecta*
 993. 2001 *Grevillea eriostachya* (Flame Grevillea, Kaliny-kalinypa)
 994. 8832 *Grevillea excelsior* (Flame Grevillea)
 995. 13430 *Grevillea hakeoides* subsp. *stenophylla*
 996. 2023 *Grevillea intricata*
 997. 2031 *Grevillea leucoclada* P3
 998. 2032 *Grevillea leucopteris* (White Plume Grevillea)
 999. 8838 *Grevillea pinaster*
 1000. 2097 *Grevillea stenomera* (Lace Net Grevillea) P2
 1001. 2109 *Grevillea trachythea* (Rough-fruit Grevillea)
 1002. 2136 *Hakea candolleana*
 1003. 2140 *Hakea circumalata*
 1004. 2146 *Hakea costata* (Ribbed Hakea)
 1005. 2175 *Hakea lissocarpha* (Honey Bush)
 1006. 16901 *Hakea orthorrhyncha* var. *filiformis*
 1007. 16902 *Hakea orthorrhyncha* var. *orthorrhyncha*
 1008. 2197 *Hakea prostrata* (Harsh Hakea)
 1009. 2198 *Hakea pycnoneura*
 1010. 2214 *Hakea trifurcata* (Two-leaf Hakea)
 1011. 2227 *Isopogon divergens* (Spreading Coneflower)
 1012. 2254 *Persoonia acicularis*
 1013. 2257 *Persoonia brachystylis* (Short-styled Persoonia) P2
 1014. 2290 *Petrophile conifera*
 1015. 40740 *Petrophile foremanii*
 1016. 2301 *Petrophile macrostachya*
 1017. 29192 *Petrophile pilostyla* subsp. *pilostyla*
 1018. 2307 *Petrophile semifurcata*
 1019. 15532 *Synaphea spinulosa* subsp. *spinulosa*
 1020. 2330 *Xylomelum angustifolium* (Sandplain Woody Pear)
- Psilotaceae**
 1021. 1 *Psilotum nudum*
- Psittacidae**
 1022. 25716 *Cacatua sanguinea* (Little Corella)
 1023. 25717 *Calyptorhynchus banksii* (Red-tailed Black-Cockatoo)
 1024. 24734 *Calyptorhynchus latirostris* (Carnaby's Cockatoo)

1025. 24742 *Nymphicus hollandicus* (Cockatiel)

Psoraceae

1026. 27998 *Psora crenata*
1027. 28000 *Psora decipiens*

Pteridaceae

1028. 12818 *Cheilanthes sieberi* subsp. *sieberi*

Pteropodidae

1029. 24173 *Pteropus scapulatus* (Little Red Flying-fox)

Pygopodidae

1030. 24993 *Aprasia smithi* (Black-tipped Worm-lizard)
1031. *Aprasia* sp.
1032. 24995 *Delma australis*
1033. 24999 *Delma grayii*
1034. 25004 *Delma tincta*
1035. 25005 *Lialis burtonis*
1036. 25006 *Pletholax gracilis* subsp. *edelensis* (Keeled Legless Lizard)P3
1037. 25007 *Pletholax gracilis* subsp. *gracilis* (Keeled Legless Lizard)
1038. 25008 *Pygopus lepidopodus* (Common Scaly Foot)
1039. 25009 *Pygopus nigriceps*

Rachycentridae

1040. *Rachycentron canadum*

Rallidae

1041. 25727 *Fulica atra* (Eurasian Coot)
1042. 25730 *Gallirallus philippensis* (Buff-banded Rail)

Ranunculaceae

1043. 10804 *Clematis linearifolia*

Recurvirostridae

1044. 25734 *Himantopus himantopus* (Black-winged Stilt)

Restionaceae

1045. 17685 *Chaetanthus aristatus*
1046. 17663 *Desmocladus asper*
1047. 17846 *Desmocladus parthenicus*
1048. 17621 *Harperia ferruginipes* P1
1049. 13774 *Lepidobolus densus* P3
1050. 18074 *Lepidobolus preissianus* subsp. *preissianus*

Rhamnaceae

1051. 16018 *Cryptandra arbutiflora* var. *borealis*
1052. 4794 *Cryptandra glabriflora* P2
1053. 31614 *Cryptandra multispina*
1054. 4802 *Cryptandra mutila*
1055. 14241 *Stenanthemum divaricatum* P3
1056. 16198 *Stenanthemum intricatum*
1057. 15065 *Stenanthemum notiale* subsp. *notiale*

Rhodomelaceae

1058. 26752 *Dasyclonium incisum*
1059. 26790 *Dipterosiphonia prorepens*

Rubiaceae

1060. 18256 *Opercularia spermacoea*

Rutaceae

- 1061. 4409 *Boronia coerulescens*
- 1062. 11274 *Boronia coerulescens* subsp. *spinescens*
- 1063. 4414 *Boronia cymosa* (Granite *Boronia*)
- 1064. 17664 *Boronia purdieana* subsp. *calcicola*
- 1065. 11381 *Boronia ramosa* subsp. *anethifolia*
- 1066. 4456 *Diplolaena grandiflora* (Wild Rose)
- 1067. 15274 *Diplolaena mollis*
- 1068. 38242 *Geleznovia* sp. *Marchagee* (A. Crawford ADC 1353)
- 1069. 38240 *Geleznovia* sp. *Red Bluff* (A. Crawford ADC 597) P2
- 1070. 4483 *Geleznovia verrucosa*
- 1071. 18539 *Philotheca brucei*
- 1072. 18508 *Philotheca sericea*

Salticidae

- 1073. *Holoplatys fusca*
- 1074. *Menemerus bivittatus*

Santalaceae

- 1075. 2332 *Anthobolus foveolatus*
- 1076. 10765 *Exocarpos sparteus* (Broom Ballart, Djuk)
- 1077. 2352 *Leptomeria preissiana*
- 1078. 2359 *Santalum spicatum* (Sandalwood, Wilarak)

Sapindaceae

- 1079. 11763 *Diplopeltis intermedia* var. *incana* (Grey Pepperflower)
- 1080. 11669 *Diplopeltis intermedia* var. *intermedia*
- 1081. 4748 *Diplopeltis petiolaris*
- 1082. 4754 *Dodonaea aptera* (Coast Hop-bush)
- 1083. 4756 *Dodonaea caespitosa*
- 1084. 4775 *Dodonaea pinifolia*

Sargassaceae

- 1085. 44573 *Sargassopsis decurrens*
- 1086. 27248 *Sargassum ligulatum*
- 1087. 27249 *Sargassum linearifolium*
- 1088. 42785 *Sirophysalis trinodis*

Sciaenidae

- 1089. *Protonibea* sp. Y

Scincidae

- 1090. 30893 *Cryptoblepharus buchananii*
- 1091. 25020 *Cryptoblepharus plagiocephalus*
- 1092. 25027 *Ctenotus australis*
- 1093. 25039 *Ctenotus fallens*
- 1094. 25087 *Cyclodomorphus celatus* (Western Slender Blue-tongue)
- 1095. 25123 *Lerista axillaris* (Stripe-sided Robust Slider, skink) P2
- 1096. 25129 *Lerista connivens*
- 1097. 25133 *Lerista elegans*
- 1098. 25141 *Lerista humphriesi* (Taper-tailed West-coast Slider, skink) P3
- 1099. 25144 *Lerista kendricki*
- 1100. 25148 *Lerista lineopunctulata*
- 1101. 30922 *Lerista micra*
- 1102. 25160 *Lerista planiventralis* subsp. *decora*
- 1103. 25165 *Lerista praepedita*
- 1104. 25184 *Menetia greyii*

1105. 25186 *Menetia surda* subsp. *cresswelli*
1106. 25191 *Morethia lineoocellata*
1107. 25203 *Tiliqua occipitalis* (Western Bluetongue)
1108. 25207 *Tiliqua rugosa* subsp. *rugosa*

Scolopacidae

1109. 41323 *Actitis hypoleucos* (Common Sandpiper) IA
1110. 25736 *Arenaria interpres* (Ruddy Turnstone) IA
1111. 24780 *Calidris alba* (Sanderling) IA
1112. 24784 *Calidris ferruginea* (Curlew Sandpiper) T
1113. 24788 *Calidris ruficollis* (Red-necked Stint) IA
1114. 30932 *Limosa lapponica* (Bar-tailed Godwit) IA
1115. 24808 *Tringa nebularia* (Common Greenshank) IA

Scolopendridae

1116. *Cormocephalus aurantiipes*
1117. *Cormocephalus turneri*
1118. *Ethmostigmus rubripes*
1119. *Scolopendra laeta*
1120. *Scolopendra morsitans*

Scorpaenidae

1121. *Centropogon australis*

Scorpididae

1122. *Microcanthus strigatus*

Scrophulariaceae

1123. 7055 *Dischisma capitatum* (Woolly-headed *Dischisma*) Y
1124. 7193 *Eremophila decipiens* (Slender Fuchsia)
1125. 14895 *Eremophila decipiens* subsp. *decipiens*
1126. 7198 *Eremophila deserti*
1127. 14191 *Eremophila glabra* subsp. *tomentosa*
1128. 7241 *Eremophila microtheca* (Heath-like *Eremophila*) P4
1129. 7246 *Eremophila oldfieldii* (Pixie Bush)
1130. 17168 *Eremophila oldfieldii* subsp. *oldfieldii*
1131. 7289 *Myoporum caprarioides* (Slender *Myoporum*)

Scutigeridae

1132. *Thereuopoda lesueurii*

Scytosiphonaceae

1133. *Petalonia fascia*

Selaginellaceae

1134. 6 *Selaginella gracillima* (Tiny Clubmoss)

Serpulidae

1135. *Serpulidae* sp. Y

Serranidae

1136. *Acanthistius serratus*
1137. *Epinephelus coioides*
1138. *Epinephelus tauvina*

Sillaginidae

1139. *Sillago schomburgkii*
1140. *Sillago* sp.

Solanaceae

- 1141. 6945 *Anthocercis genistoides*
- 1142. 6947 *Anthocercis ilicifolia*
- 1143. 11537 *Anthocercis ilicifolia* subsp. *caldariola*
- 1144. 11725 *Anthocercis ilicifolia* subsp. *ilicifolia*
- 1145. 6948 *Anthocercis intricata* P3
- 1146. 6953 *Anthotroche walcottii*
- 1147. 6959 *Cyphanthera racemosa*
- 1148. 6976 *Nicotiana occidentalis* (Native Tobacco)
- 1149. 6978 *Nicotiana rotundifolia* (Round-leaved Tobacco)
- 1150. 6988 *Solanum americanum* (Glossy Nightshade) Y
- 1151. 7018 *Solanum lasiophyllum* (Flannel Bush, Mindjulu)
- 1152. 7025 *Solanum oldfieldii*
- 1153. 11241 *Solanum orbiculatum* subsp. *orbiculatum* (Round-leaved Solanum)
- 1154. 7037 *Solanum symonii*

Sparassidae

- 1155. *Isopedella saundersi*
- 1156. *Pediana occidentalis*

Sparidae

- 1157. *Acanthopagrus butcheri*
- 1158. *Rhabdosargus sarba*

Sphacelariaceae

- 1159. 27293 *Sphacelaria rigidula*

Staphylinidae

- 1160. *Staphylinidae* sp.

Stylidiaceae

- 1161. 7672 *Levenhookia octomaculata* (Eight-spotted Stylewort)
- 1162. 30278 *Stylidium androsaceum*
- 1163. 7696 *Stylidium calcaratum* (Book Triggerplant)
- 1164. 7715 *Stylidium dispernum*
- 1165. 7720 *Stylidium elongatum* (Tall Triggerplant)
- 1166. 17412 *Stylidium kalbarriense*
- 1167. 7773 *Stylidium petiolare* (Horn Triggerplant)
- 1168. 25837 *Stylidium purpureum*
- 1169. 7785 *Stylidium repens* (Matted Triggerplant)
- 1170. 19247 *Stylidium septentrionale*
- 1171. 17510 *Stylidium* sp. *Kalbarri* (A. Carr 145)
- 1172. 17578 *Stylidium udusicola*

Surianaceae

- 1173. 3181 *Stylobasium australe*
- 1174. 3182 *Stylobasium spathulatum* (Pebble Bush)

Sylviidae

- 1175. 24834 *Cincloramphus mathewsi* (Rufous Songlark)

Synchaetidae

- 1176. *Synchaeta tremula*

Tabanidae

- 1177. *Tabanidae* sp.

Tarsipedidae

- 1178. 24167 *Tarsipes rostratus* (Honey Possum, Noolbenger)

Teloschistaceae

- 1179. 30455 *Xanthoria elixii*

1180. 30454 *Xanthoria filsonii*

Testudinellidae

1181. *Testudinella cf. amphora* (SAP)

Thelypteridaceae

1182. 54 *Cyclosorus interruptus*

Theridiidae

1183. *Latrodectus hasseltii*

Threskiornithidae

1184. 24844 *Threskiornis molucca* (Australian White Ibis)

1185. 24845 *Threskiornis spinicollis* (Straw-necked Ibis)

Thymelaeaceae

1186. 5231 *Pimelea angustifolia* (Narrow-leaved Pimelea)

1187. 5246 *Pimelea gilgiana*

1188. 5254 *Pimelea leucantha*

1189. 5256 *Pimelea microcephala* (Shrubby Riceflower, Banjine)

1190. 11185 *Pimelea microcephala* subsp. *microcephala*

1191. 5263 *Pimelea sessilis*

Tripterygiidae

1192. *Helcogramma decurrens*

Unionicolidae

1193. *Koenikea nr australica* (=verrucosa)

Urolophidae

1194. *Urolophus* sp.

Urticaceae

1195. 12670 *Parietaria cardiostegia*

Varanidae

1196. 25218 *Varanus gouldii* (Bungarra or Sand Monitor)

1197. 25526 *Varanus tristis* (Racehorse Monitor)

Veliidae

1198. *Microvelia* (*Austromicrovelia*) *peramoena*

1199. *Microvelia peramoena*

Verbenaceae

1200. 6734 *Phyla nodiflora* var. *nodiflora* Y

Verrucariaceae

1201. 27983 *Placidium pilosellum*

1202. 27984 *Placidium squamulosum*

Vespertilionidae

1203. 24194 *Nyctophilus geoffroyi* (Lesser Long-eared Bat)

1204. 24205 *Vespadelus finlaysoni* (Finlayson's Cave Bat)

Violaceae

1205. 5216 *Hybanthus calycinus* (Wild Violet)

1206. 12007 *Hybanthus floribundus* subsp. *floribundus*

Vitaceae

1207. 4853 *Clematicissus angustissima*

Xanthorrhoeaceae

1208. 1252 *Xanthorrhoea drummondii*

Zodariidae

1209. *Euasteron carnarvon*

1210. *Masasteron sampeyae*

1211. *Storena formosa*

Zosteropidae

1212. 25765 *Zosterops lateralis* (*Grey-breasted White-eye, Silvereye*)

Zygophyllaceae

1213. 4385 *Zygophyllum apiculatum* (*Gallweed*)

1214. 4390 *Zygophyllum fruticosum* (*Shrubby Twinleaf*)

APPENDIX C: EPBC Act Protected Matters Report



Australian Government
Department of the Environment

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

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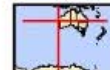
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Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	38
Listed Migratory Species:	35

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	64
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	12
Nationally Important Wetlands:	1
Key Ecological Features (Marine):	1



EPBC Act Protected Matters Report

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[Summary](#)

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[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

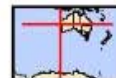
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Summary

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National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
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Listed Threatened Species:	38
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This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

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A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	64
Whales and Other Cetaceans:	12
Critical Habitats:	None
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Commonwealth Reserves Marine:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	12
Nationally Important Wetlands:	1
Key Ecological Features (Marine):	1

Details

Matters of National Environmental Significance

Commonwealth Marine Area [\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name

EEZ and Territorial Sea

Marine Regions [\[Resource Information \]](#)

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name

[North-west](#)

[South-west](#)

Listed Threatened Species [\[Resource Information \]](#)

Name	Status	Type of Presence
Birds		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Calyptorhynchus latirostris Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding likely to occur within area
Diomedea exulans amsterdamensis Amsterdam Albatross [82330]	Endangered	Species or species habitat may occur within area
Diomedea exulans exulans Tristan Albatross [82337]	Endangered	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area

Name	Status	Type of Presence
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta_cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta_steady White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris_impavida Campbell Albatross [82449]	Vulnerable	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Bettongia penicillata_ogilbyi Woylie [66844]	Endangered	Species or species habitat known to occur within area
Dasyurus geoffroyi Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Neophoca cinerea Australian Sea-lion [22]	Vulnerable	Species or species habitat may occur within area
Other		
Idiosoma nigrum Shield-backed Trapdoor Spider, Black Rugose Trapdoor Spider [66798]	Vulnerable	Species or species habitat may occur within area
Plants		
Beyeria lepidopetala Small-petalled Beyeria, Short-petalled Beyeria [18362]	Endangered	Species or species habitat likely to occur within area
Caladenia barbarella Small Dragon Orchid, Common Dragon Orchid [66686]	Endangered	Species or species habitat may occur within area
Caladenia bryceana_subsp_cracens Northern Dwarf Spider-orchid [64556]	Vulnerable	Species or species habitat known to occur within area
Caladenia hoffmani Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat likely to occur within area
Drakaea concolor Kneeling Hammer-orchid [56777]	Vulnerable	Species or species habitat likely to occur within area
Hypocalymma longifolium Long-leaved Myrtle [8081]	Vulnerable	Species or species

Name	Status	Type of Presence
Lechenaultia chlorantha Kalbarri Leschenaultia [16763]	Vulnerable	habitat likely to occur within area Species or species habitat likely to occur within area
Stachystemon nematophorus Three-flowered Stachystemon [81447]	Vulnerable	Species or species habitat may occur within area
Wurmbea tubulosa Long-flowered Nancy [12739]	Endangered	Species or species habitat may occur within area

Reptiles

Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Egernia stokesii badia Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]	Endangered	Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Sharks

Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area
Carcharodon carcharias Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species

[Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered*	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Sterna anaethetus Bridled Tern [814]		Foraging, feeding or related behaviour likely to occur within area
Sterna caspia Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered*	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered*	Species or species habitat may occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Larus pacificus Pacific Gull [811]		Foraging, feeding or related behaviour known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleishy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Sterna anaethetus Bridled Tern [814]		Foraging, feeding or related behaviour likely to occur within area
Sterna caspia Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species

Name	Threatened	Type of Presence
Thalassarche impavida Campbell Albatross [64459]	Vulnerable*	habitat may occur within area Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Fish		
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Hallichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus subelongatus West Australian Seahorse [66722]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species

Name	Threatened	Type of Presence
Mitotichthys meraculus Western Crested Pipefish [66259]		habitat may occur within area Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paegnius Rough-snout Ghost Pipefish [68425]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stigmatopora olivacea a pipefish [74966]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Mammals		
Neophoca cinerea Australian Sea-lion [22]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Aipysurus pooleorum Shark Bay Seasnake [66061]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area
Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [80]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area

Name	Status	Type of Presence
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Kalbarri	WA

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Mammals		
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

Plants

Name	Status	Type of Presence
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Prosopis spp. Mesquite, Algaroba [68407]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area

Nationally Important Wetlands [\[Resource Information \]](#)

Name	State
Murchison River (Lower Reaches)	WA

Key Ecological Features (Marine) [\[Resource Information \]](#)

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Western rock lobster	South-west

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-27.76882 114.13957

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [Office of Environment and Heritage, New South Wales](#)
- [Department of Environment and Primary Industries, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment, Water and Natural Resources, South Australia](#)
- [Parks and Wildlife Commission NT, Northern Territory Government](#)
- [Department of Environmental and Heritage Protection, Queensland](#)
- [Department of Parks and Wildlife, Western Australia](#)
- [Environment and Planning Directorate, ACT](#)
- [Birdlife Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Museum Victoria](#)
- [Australian Museum](#)
- [South Australian Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Atherton and Canberra](#)
- [University of New England](#)
- [Ocean Biogeographic Information System](#)
- [Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [Geoscience Australia](#)
- [CSIRO](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

[Commonwealth of Australia](#)
Department of the Environment
GPO Box 787
Canberra ACT 2601 Australia
+61 2 6274 1111

APPENDIX D: Flora Plot Maps and Species Lists

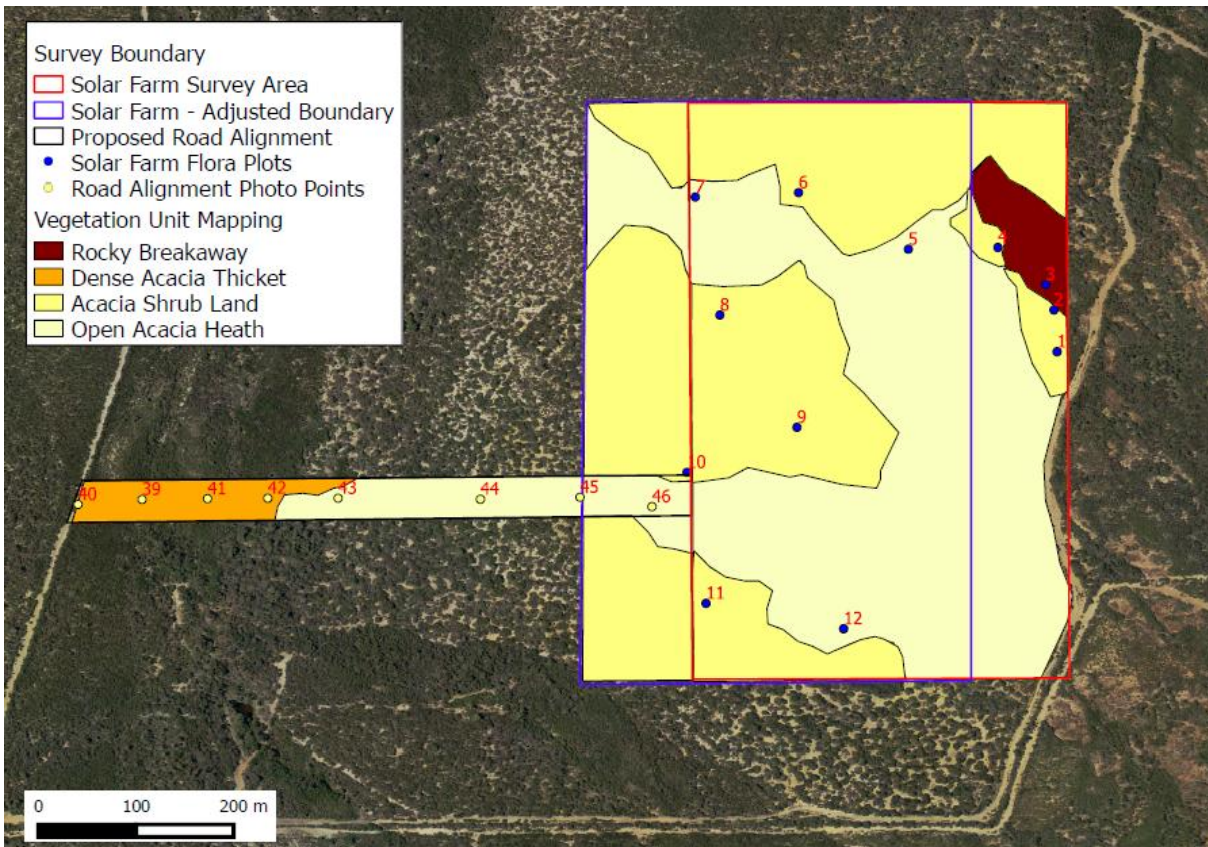


Figure: Flora Plots in the Solar Farm and Proposed Road Alignment Survey Areas

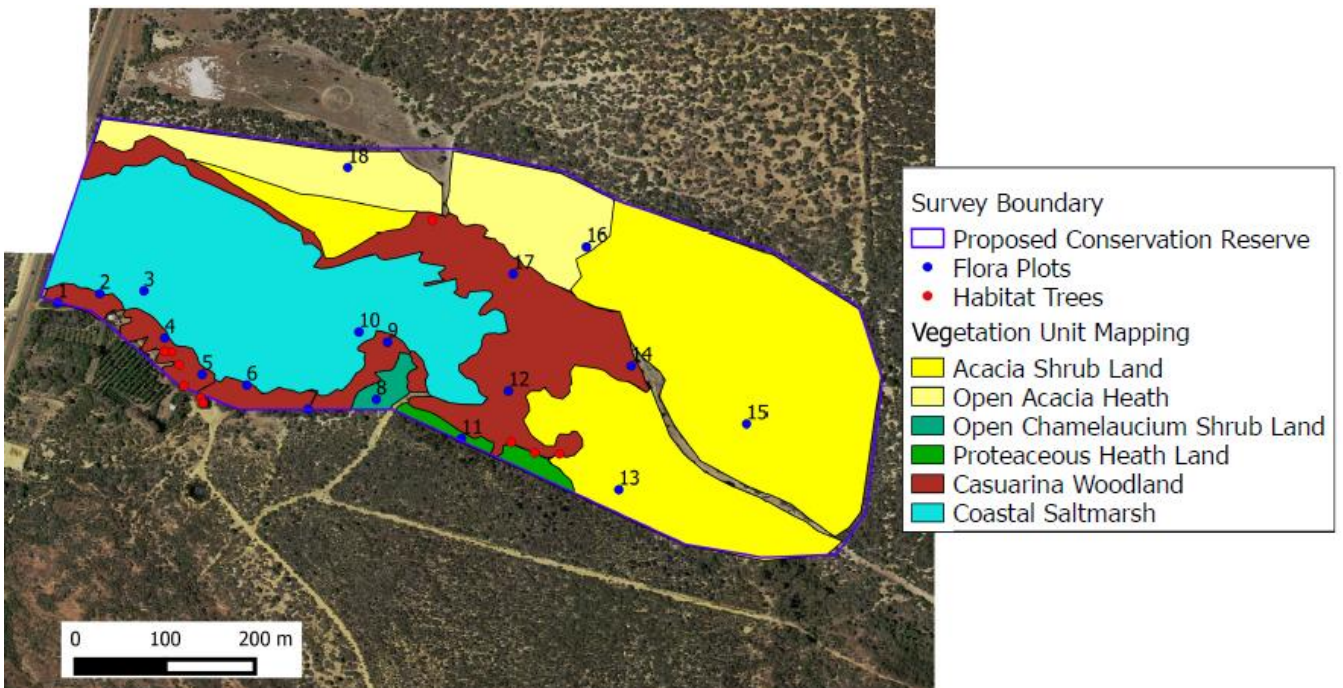


Figure: Flora Plots in the Proposed Wittecarra Creek Conservation Reserve Survey Area

SOLAR FARM FLORA PLOTS

Plot 1: Tall *Acacia* dominated shrub land on yellow sand.



Family	Species	Common Name
Asteraceae	<i>Arctotheca calendula*</i>	Cape Weed
Asteraceae	<i>Lawrencella rosea</i>	
Asteraceae	<i>Podotheca gnaphliodes</i>	Golden Long-heads
Fabaceae	<i>Acacia oldfieldii</i>	
Fabaceae	<i>Jacksonia cupulifera</i>	
Goonediaceae	<i>Goodenia berardiana</i>	
Myrtaceae	<i>Melaleuca megacephala</i>	
Myrtaceae	<i>Scholtzia sp. Red Bluff</i>	
Poaceae	<i>Austrostipa nitida</i>	
Myrtaceae	<i>Baeckea robusta</i>	
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya

Plot 2: Rock edge yellow sand



Family	Species	Common Name
Araliaceae	<i>Trachymene ornata</i>	Spongefruit
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Fabaceae	<i>Leptosema aphyllum</i>	
Myrtaceae	<i>Melaleuca megacephala</i>	

Plot 3: Red Sandstone rocky outcrop



Family	Species	Common Name
Asparagaceae	<i>Thysanotus manglesianus</i>	Fringed Lily
Asteraceae	<i>Calocephalus francisii</i>	Fine-leaf Beauty-heads
Asteraceae	<i>Gnephosis tenuissima</i>	
Asteraceae	<i>Helipterum craspedioides</i>	Yellow Billy Buttons
Asteraceae	<i>Pogonolepis stricta</i>	
Casuarinaceae	<i>Allocasuarina campestris</i>	
Fabaceae	<i>Jacksonia cupulifera</i>	
Myrtaceae	<i>Calothamnus quadrifidus ssp homalophyllus</i>	Murchison Claw Flower
Portulacaceae	<i>Calandrinia ployandra</i>	Parakeelya
Proteaceae	<i>Grevillea pinaster</i>	
Proteaceae	<i>Hakea orthorrhyncha</i>	Bird Beak Hakea

Plot 4: Tall dense *Acacia*/ *Scholtzia* shrub land 5-7m tall



Family	Species	Common Name
Araliaceae	<i>Trachymene ornata</i>	Sponge fruit
Asparagaceae	<i>Thysanotus manglesianus</i>	Fringed Lily
Asteraceae	<i>Arctotheca calendula</i> *	Cape Weed
Asteraceae	<i>Podotheca gnaphliodes</i>	Golden Long-heads
Fabaceae	<i>Acacia oldfieldii</i>	
Fabaceae	<i>Jacksonia cupulifera</i>	
Fabaceae	<i>Labichea lanceolata</i>	
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Goonediaceae	<i>Goodenia berardiana</i>	
Myrtaceae	<i>Calothamnus quadrifidus</i> ssp <i>homalophyllus</i>	Murchison Claw Flower
Myrtaceae	<i>Melaleuca megacephala</i>	
Myrtaceae	<i>Scholtzia</i> sp. Red Bluff	
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya
Proteaceae	<i>Grevillea pinaster</i>	

Plot 5: low and open *Acacia* heath over yellow sand



Family	Species	Common Name
Araliaceae	<i>Trachymene ornata</i>	Spongefruit
Asparagaceae	<i>Thysanotus manglesianus</i>	Fringed Lily
Asteraceae	<i>Olearia axillaris</i>	Coastal Daisybush
Asteraceae	<i>Podotrochea gnaphiodes</i>	Golden Long-heads
Ericaceae	<i>Astroloma glaucescens</i>	
Fabaceae	<i>Acacia oldfieldii</i>	
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Fabaceae	<i>Leptosema aphyllum</i>	
Myrtaceae	<i>Calothamnus quadrifidus ssp homalophyllus</i>	Murchison Claw Flower
Myrtaceae	<i>Melaleuca megacephala</i>	
Poaceae	<i>Ehrharta longifolia*</i>	
Polygalaceae	<i>Comesperma scoparium</i>	Broom Milkwort
Polygonaceae	<i>Muehlenbeckia adpressa</i>	Climbing Lignum
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya
Proteaceae	<i>Grevillea pinaster</i>	
Proteaceae	<i>Hakea orthorrhyncha</i>	Bird Beak Hakea
Restionaceae	<i>Desmocladus asper</i>	
Solanaceae	<i>Solanum lasiophyllum</i>	Flannel Bush

Plot 6: Low and open *Acacia* heath over yellow sand



Family	Species	Common Name
Asteraceae	<i>Gnephosis tenuissima</i>	
Asteraceae	<i>Podotheca gnaphliodes</i>	Golden Long-heads
Casuarinaceae	<i>Allocasuarina campestris</i>	
Fabaceae	<i>Acacia scirpifolia</i>	
Haloporaceae	<i>Glischrocaryon aureum</i>	Common Pop Flower
Myrtaceae	<i>Calytrix brevifolia</i>	
Poaceae	<i>Ehrharta longifolia</i> *	

Plot 7: Low and open *Acacia* heath over yellow sand



Family	Species	Common Name
Asteraceae	<i>Podotrocha gnaphliodes</i>	Golden Long-heads
Casuarinaceae	<i>Allocasuarina campestris</i>	
Cupressaceae	<i>Callitris arenaria</i>	Sandplain Cypress
Ericaceae	<i>Leucopogon cordifolius</i>	Heart-leaf Beard heath
Fabaceae	<i>Acacia scirpifolia</i>	
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Halogoraceae	<i>Glischrocaryon aureum</i>	Common Popflower
Myrtaceae	<i>Melaleuca megacephala</i>	
Myrtaceae	<i>Scholtzia sp. Red Bluff</i>	
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya
Proteaceae	<i>Conospermum stoechadis</i>	Common Smokebush
Proteaceae	<i>Grevillea leucopteris</i>	White Plume Grevillea
Solanaceae	<i>Solanum lasiophyllum</i>	Flannel Bush
Stylidiaceae	<i>Stylidium sp. Kalbarri</i>	

Plot 8: Tall *Acacia scirpifolia* shrub land over yellow sand



Family	Species	Common Name
Asteraceae	<i>Podotrochea gnaphliodes</i>	Golden Long-heads
Cupressaceae	<i>Callitris arenaria</i>	Sandplain Cypress
Fabaceae	<i>Acacia scirpifolia</i>	
Halimoraceae	<i>Glischrocaryon aureum</i>	Common Pop Flower
Myrtaceae	<i>Melaleuca megacephala</i>	
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya
Proteaceae	<i>Banksia prionotes</i>	Acorn Banksia
Proteaceae	<i>Grevillea leucoptervis</i>	White Plume Grevillea

Plot 9: *Acacia scirpifolia* shrub land on yellow soil



Family	Species	Common Name
Asteraceae	<i>Podotrocha gnaphliodes</i>	Golden Long-heads
Casuarinaceae	<i>Allocasuarina campestris</i>	
Cupressaceae	<i>Callitris arenaria</i>	Sandplain Cypress
Ericaceae	<i>Leucopogon cordifolius</i>	Heart-leaf Beard heath
Fabaceae	<i>Acacia scirpifolia</i>	
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Halogoraceae	<i>Glischrocaryon aureum</i>	Common Pop Flower
Myrtaceae	<i>Melaleuca megacephala</i>	
Myrtaceae	<i>Scholtzia sp. Red Bluff</i>	
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya
Proteaceae	<i>Conospermum stoechadis</i>	Common Smoke Bush
Proteaceae	<i>Grevillea leucopteris</i>	White Plume Grevillea
Solanaceae	<i>Solanum lasiophyllum</i>	Flannel Bush
Stylidiaceae	<i>Stylidium sp. Kalbarri</i>	

Plot 10: *Acacia scirpifolia* shrubland on yellow soil



Family	Species	Common Name
Asteraceae	<i>Podotrochea gnaphliodes</i>	Golden Long-heads
Casuarinaceae	<i>Allocasuarina campestris</i>	
Cupressaceae	<i>Callitris arenaria</i>	Sandplain Cypress
Fabaceae	<i>Acacia scirpifolia</i>	
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Halogoraceae	<i>Glischrocaryon aureum</i>	Common Pop Flower
Lamiaceae	<i>Lachnostachys eriobotrya</i>	Lambswool
Myrtaceae	<i>Baeckea robusta</i>	
Myrtaceae	<i>Melaleuca megacephala</i>	
Myrtaceae	<i>Scholtzia sp. Red Bluff</i>	
Myrtaceae	<i>Thryptomene denticulata</i>	
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya
Proteaceae	<i>Conospermum stoechadis</i>	Common Smoke Bush
Proteaceae	<i>Grevillea leucopteris</i>	White Plume Grevillea
Solanaceae	<i>Solanum lasiophyllum</i>	Flannel Bush

Plot 11: *Acacia scirpifolia* shrub land on yellow soil



Family	Species	Common Name
Asteraceae	<i>Podotrochea gnaphiodes</i>	Golden Long-heads
Casuarinaceae	<i>Allocasuarina campestris</i>	
Cupressaceae	<i>Callitris arenaria</i>	Sandplain Cypress
Fabaceae	<i>Acacia scirpifolia</i>	
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Halimoraceae	<i>Glischrocaryon aureum</i>	Common Pop Flower
Myrtaceae	<i>Melaleuca megacephala</i>	
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya
Proteaceae	<i>Grevillea leucopteris</i>	White Plume Grevillea
Solanaceae	<i>Solanum lasiophyllum</i>	Flannel Bush

Plot 12: Low *Acacia* scrub on yellow sand



Family	Species	Common Name
Asteraceae	<i>Podotrochea gnaphliodes</i>	Golden Long-heads
Casuarinaceae	<i>Allocasuarina campestris</i>	
Cupressaceae	<i>Callitris arenaria</i>	Sandplain Cypress
Ericaceae	<i>Leucopogon cordifolius</i>	Heart-leaf Beard heath
Fabaceae	<i>Acacia scirpifolia</i>	
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Halogoraceae	<i>Glischrocaryon aureum</i>	Common Pop Flower
Myrtaceae	<i>Melaleuca megacephala</i>	
Myrtaceae	<i>Scholtzia sp. Red Bluff</i>	
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya
Proteaceae	<i>Conospermum stoechadis</i>	Common Smoke Bush
Proteaceae	<i>Grevillea leucopteris</i>	White Plume Grevillea
Solanaceae	<i>Solanum lasiophyllum</i>	Flannel Bush
Stylidiaceae	<i>Stylidium sp. Kalbarri</i>	

PROPOSED ROAD ALIGNMENT WEST OF SOLAR FARM

Images along the proposed alignment



WPT 39 – *Acacia*/ *Melaleuca* thicket



WPT 40 – Dense *Acacia scirpifolia*



BA01 – Mature *Banksia prionotes*, surrounded by many dead stags. Healthy *Banksias* associated only with the ridgeline



WPT 41 Dense *Acacia*/ *Melaleuca* scrub with occasional *Grevillea leucoptervis*



WPT 42 *Acacia scirpifolia* thicket



WPT 43 Open *Acacia* shrubland

Images continued



WPT 44 *Acacia oldfieldii* shrub land



WPT 45 *Acacia oldfieldii* shrub land



WPT 46 Open *Acacia* shrub land

Species observed along the proposed road alignment

Family	Species	Common Name
Anarthriaceae	<i>Lyginia imberbis</i>	
Asparagaceae	<i>Thysanotus manglesianus</i>	Fringed Lily
Fabaceae	<i>Acacia oldfieldii</i>	
Fabaceae	<i>Acacia scirpifolia</i>	
Fabaceae	<i>Gompholobium tomentosum</i>	Hairy Yellow Pea
Fabaceae	<i>Jacksonia cupulifera</i>	
Fabaceae	<i>Labichea lanceolata</i>	Tall Labichea
Fabaceae	<i>Leptosema aphyllum</i>	
Fabaceae	<i>Acacia quadrisulcata</i>	
Iridaceae	<i>Patersonia occidentalis var. latifolia</i>	
Lamiaceae	<i>Lachnostachys eriobotrya</i>	Lambswool
Myrtaceae	<i>Baeckea robusta</i>	
Myrtaceae	<i>Calytrix brevifolia</i>	
Myrtaceae	<i>Melaleuca megacephala</i>	
Myrtaceae	<i>Scholtzia sp. Red Bluff</i>	
Myrtaceae	<i>Thryptomene denticulata</i>	
Polygalaceae	<i>Comesperma scoparium</i>	Broom Milkwort
Polygonaceae	<i>Muehlenbeckia adpressa</i>	
Portulacaceae	<i>Calandrinia ployandra</i>	Parakeelya
Proteaceae	<i>Banksia prionotes</i>	Acorn Banksia
Proteaceae	<i>Grevillea leucopteris</i>	White Plume Grevillea
Stylidiaceae	<i>Stylidium sp. Kalbarri</i>	

WITTECARRA CREEK CONSERVATION RESERVE

Plot 1: Casuarina/ Eucalypt woodland with an understorey of dense litter over brown loamy sand



Family	Species	Common Name
Casuarinaceae	<i>Casuarina obesa</i>	Swamp Sheoak
Loranthaceae	<i>Amyema linophylla subsp. linophylla</i>	
Myrtaceae	<i>Eucalyptus camaldulensis subsp. obtusa</i>	Blunt-budded River Red Gum

Plot 2: Fringing vegetation dominated by *Atriplex*, *Tetrcornia* and weeds



Family	Species	Common Name
Aizoaceae	<i>Mesembryanthemum crystallinum</i> *	Ice plant
Asteraceae	<i>Arctotheca calendula</i> *	Cape Weed
Asteraceae	<i>Sonchos oleraceus</i> *	Common Sow Thistle
Casuarinaceae	<i>Casuarina obesa</i>	Swamp Sheoak
Chenopodiaceae	<i>Atriplex amnicola</i>	Swamp Salt Bush
Chenopodiaceae	<i>Chenopodium album</i> *	Fat Hen
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Chenopodiaceae	<i>Tetrcornia indica ssp. bidens</i>	Green Samphire
Fabaceae	<i>Melilotus indicus</i> *	
Loranthaceae	<i>Amyema linophylla subsp. linophylla</i>	
Poaceae	<i>Ehrharta longiflora</i> *	
Poaceae	<i>Eriachne aristidea</i>	
Poaceae	<i>Hordeum hystrix</i> *	Barley Grass

Plot 3: Samphire over salt pan



Family	Species	Common Name
Aizoaceae	<i>Gunnioopsis septifraga</i>	
Chenopodiaceae	<i>Tetrcornia halocnemoides</i>	Red Samphire
Chenopodiaceae	<i>Tetrcornia indica ssp. bidens</i>	Green Samphire
Crassulaceae	<i>Crassula colorata</i>	

Plot 4: *Casuarina* woodland with weedy understorey



Family	Species	Common Name
Aizoaceae	<i>Mesembryanthemum crystallinum</i> *	Ice plant
Asteraceae	<i>Arctotheca calendula</i> *	Cape Weed
Asteraceae	<i>Sonchos oleraceus</i> *	Common Sow Thistle
Casuarinaceae	<i>Casuarina obesa</i>	Swamp Sheoak
Chenopodiaceae	<i>Atriplex amnicola</i>	Swamp Salt Bush
Chenopodiaceae	<i>Chenopodium album</i> *	Fat Hen
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Chenopodiaceae	<i>Tetricornia indica ssp. bidens</i>	Green Samphire
Fabaceae	<i>Acacia rostellifera</i>	Summer-scented Wattle
Fabaceae	<i>Melilotus indicus</i> *	
Poaceae	<i>Ehrharta longiflora</i> *	
Poaceae	<i>Eriachne aristidea</i>	
Poaceae	<i>Hordeum hystrix</i> *	Barley Grass

Plot 5: *Casuarina* woodland



Family	Species	Common Name
Casuarinaceae	<i>Casuarina obesa</i>	Swamp Sheoak
Chenopodiaceae	<i>Atriplex amnicola</i>	Swamp Salt Bush
Chenopodiaceae	<i>Rhagodia latifolia subsp. latifolia</i>	
Chenopodiaceae	<i>Rhagodia preissii subsp. obovata</i>	
Fabaceae	<i>Acacia rostellifera</i>	Summer-scented Wattle
Lauraceae	<i>Cassytha aurea var. aurea</i>	
Loranthaceae	<i>Amyema linophylla subsp. linophylla</i>	
Myrtaceae	<i>Eucalyptus camaldulensis subsp. obtusa</i>	Blunt-budded River Red Gum

Plot 6: Melaleuca thicket



Family	Species	Common Name
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Lauraceae	<i>Cassythia aurea var. aurea</i>	
Myrtaceae	<i>Melaleuca raphiophylla</i>	Swamp Paperbark

Plot 7: Open *Casuarina* Woodland



Family	Species	Common Name
Casuarinaceae	<i>Casuarina obesa</i>	Swamp Sheoak
Lauraceae	<i>Cassythia aurea var. aurea</i>	
Loranthaceae	<i>Amyema linophylla subsp. linophylla</i>	

Plot 8: Chamelaucium heath land



Family	Species	Common Name
Amaranthaceae	<i>Ptilotus polystachyus</i>	Prince of Wales Feather
Asteraceae	<i>Calocephalus francisii</i>	Fine-leaf Beauty-heads
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Dilleniaceae	<i>Hibbertia spicata</i>	
Fabaceae	<i>Acacia rostelifera</i>	Summer-scented Wattle
Fabaceae	<i>Acacia scirpifolia</i>	
Goodeniaceae	<i>Dampiera spicigera</i>	Spiked Dampiera
Myrtaceae	<i>Calothamnus sanguineus</i>	Silky-leaved Blood flower
Myrtaceae	<i>Chamelaucium marchantii</i> (P3)	
Myrtaceae	<i>Melaleuca megacephala</i>	
Poaceae	<i>Austrostipa macalpinei</i>	
Proteaceae	<i>Banksia menziesii</i>	Firewood Banksia
Solanaceae	<i>Anthocercis ilicifolia subsp. caldariola</i>	

Plot 9: Open *Casuarina* woodland



Family	Species	Common Name
Casuarinaceae	<i>Casuarina obesa</i>	Swamp Sheoak
Chenopodiaceae	<i>Atriplex amnicola</i>	Swamp Salt Bush
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Lauraceae	<i>Cassytha aurea var. aurea</i>	
Loranthaceae	<i>Amyema linophylla subsp. linophylla</i>	

Plot 10: Samphire wetland fringe



Family	Species	Common Name
Aizoaceae	<i>Gunnioopsis septifraga</i>	
Aizoaceae	<i>Mesembryanthemum crystallinum</i> *	Ice plant
Asteraceae	<i>Arctotheca calendula</i> *	Cape Weed
Chenopodiaceae	<i>Tetradornia halocnemoides</i>	Red Samphire
Chenopodiaceae	<i>Tetradornia indica ssp. bidens</i>	Green Samphire
Crassulaceae	<i>Crassula colorata</i>	
Poaceae	<i>Hordeum hystrix</i> *	Barley Grass
Poaceae	<i>Parapholis incurva</i>	Coast Barb Grass
Poaceae	<i>Rostraria cristata</i>	

Plot 11: Proteaceous Heath Land



Family	Species	Common Name
Amaranthaceae	<i>Ptilotus polystachyus</i>	Prince of Wales Feather
Araliaceae	<i>Trachymene ornata</i>	
Fabaceae	<i>Acacia rostellifera</i>	Summer-scented Wattle
Fabaceae	<i>Acacia scirpifolia</i>	
Fabaceae	<i>Labichea lanceolata</i>	
Goodeniaceae	<i>Dampiera spicigera</i>	Spiked Dampiera
Haemodoraceae	<i>Conostylis robusta</i>	
Haemodoraceae	<i>Conostylis stylidioides</i>	
Lauraceae	<i>Cassythia aurea var. aurea</i>	
Malvaceae	<i>Commersonia densiflora</i>	
Malvaceae	<i>Lasiopetalum sp.</i>	(specimen with Herbarium)
Myrtaceae	<i>Calothamnus sanguineus</i>	Silky-leaved Blood flower
Myrtaceae	<i>Melaleuca megacephala</i>	
Poaceae	<i>Austrostipa macalpinei</i>	
Poaceae	<i>Austrostipa nitida</i>	
Poaceae	<i>Eriachne aristada</i>	
Polygalaceae	<i>Comesperma scoparium</i>	Broom Milkwort
Portulacaceae	<i>Calandrinia polyandra</i>	Parakeelya
Proteaceae	<i>Banksia menziesii</i>	Firewood Banksia
Proteaceae	<i>Banksia prionotes</i>	Acorn Banksia
Solanaceae	<i>Anthocercis ilicifolia subsp. caldariola</i>	

Plot 12: *Casuarina* woodland/ fringing vegetation



Family	Species	Common Name
Aizoaceae	<i>Mesembryanthemum crystallinum</i> *	Ice plant
Casuarinaceae	<i>Casuarina obesa</i>	Swamp Sheoak
Chenopodiaceae	2 <i>Enchylaena tomentosa</i>	Barrier Saltbush
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Chenopodiaceae	<i>Tetricornia indica ssp. bidens</i>	Green Samphire
Myrtaceae	<i>Melaleuca raphiophylla</i>	Swamp Paperbark

Plot 13: *Acacia*/ *Melaleuca* shrub land on grey sand



Family	Species	Common Name
Aizoaceae	<i>Mesembryanthemum crystallinum</i> *	Ice plant
Asteraceae	<i>Arctotheca calendula</i> *	Cape Weed
Chenopodiaceae	3 <i>Enchylaena tomentosa</i>	Barrier Saltbush
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Fabaceae	<i>Acacia rostelifera</i>	Summer-scented Wattle
Lauraceae	<i>Cassutha aurea var. aurea</i>	
Myrtaceae	<i>Melaleuca raphiophylla</i>	Swamp Paperbark
Poaceae	<i>Eriachne aristada</i>	

Plot 14: *Acacia* shrub land



Family	Species	Common Name
Chenopodiaceae	<i>Atriplex amnicola</i>	Swamp Salt Bush
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Fabaceae	<i>Acacia rostellifera</i>	Summer-scented Wattle
Fabaceae	<i>Acacia scirpifolia</i>	
Myrtaceae	<i>Melaleuca megacephala</i>	
Poaceae	<i>Austrostipa nitida</i>	
Poaceae	<i>Eriachne aristada</i>	

Plot 15: Open Melaleuca/ *Acacia* heath land



Family	Species	Common Name
Araliaceae	<i>Trachymene ornata</i>	
Asparagaceae	<i>Thysanotus manglesianus</i>	Fringed Lily
Chenopodiaceae	<i>Atriplex amnicola</i>	Swamp Salt Bush
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Fabaceae	<i>Acacia rostellifera</i>	Summer-scented Wattle
Fabaceae	<i>Acacia scirpifolia</i>	
Myrtaceae	<i>Melaleuca megacephala (tall)</i>	
Poaceae	<i>Austrostipa macalpinei</i>	
Poaceae	<i>Austrostipa nitida</i>	
Poaceae	<i>Eriachne aristada</i>	
Portulacaceae	<i>Calandrinia ployandra</i>	Parakeelya
Solanaceae	<i>Anthocercis ilicifolia subsp. caldariola</i>	

Plot 16 *Casuarina* woodland



Family	Species	Common Name
Aizoaceae	<i>Mesembryanthemum crystallinum</i> *	Ice plant
Asteraceae	<i>Arctotheca calendula</i> *	Cape Weed
Asteraceae	<i>Sonchos oleraceus</i> *	Common Sow Thistle
Casuarinaceae	<i>Casuarina obesa</i>	Swamp Sheoak
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Chenopodiaceae	<i>Tetricornia indica ssp. bidens</i>	Green Samphire
Loranthaceae	<i>Amyema linophylla subsp. linophylla</i>	

Plot 17 Low open *Acacia* heath



Family	Species	Common Name
Araliaceae	<i>Trachymene ornata</i>	
Asparagaceae	<i>Acanthocarpus</i> sp. Ajana	
Asteraceae	<i>Arctotheca calendula</i> *	Cape Weed
Chenopodiaceae	<i>Rhagodia latifolia subsp latifolia</i>	
Crassulaceae	<i>Crassula colorata</i>	
Fabaceae	<i>Acacia rostelifera</i>	Summer-scented Wattle
Fabaceae	<i>Acacia scirpifolia</i>	
Fabaceae	<i>Labichea lanceolata</i>	
Myrtaceae	<i>Baeckea pentagonantha</i>	
Myrtaceae	<i>Melaleuca megacephala</i>	
Polygonaceae	<i>Muehlenbeckia adpressa</i>	
Portulacaceae	<i>Calandrinia ployandra</i>	Parakeelya
Solanaceae	<i>Anthocercis ilicifolia subsp. caldariola</i>	

APPENDIX E: Condition Rating Scale (Keighery 1994)

Vegetation Condition Rating	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very good	Vegetation structure altered, obvious signs of disturbance.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate to it.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management.
Completely Degraded	Vegetation structure not intact; the area completely or almost completely without native species.

APPENDIX F: Criteria Used in the Environmental Weed Strategy for Western Australia

- Invasiveness ability to invade bushland in good to excellent condition or ability to invade waterways. (Score as yes or no).
- Distribution - wide current or potential distribution including consideration of known history of wide-spread distribution elsewhere in the world. (Score as yes or no).
- Environmental Impacts - ability to change the structure, composition and function of ecosystems. In particular an ability to form a monoculture in a vegetation community. (Score as yes or no).

The rating of each weed was then determined by the following scoring system:

- High - a weed species would have to score yes for all three criteria. Rating a weed species as high would indicate prioritising this weed for control and/or research i.e. prioritising funding to it.
- Moderate - a weed species would have to score yes for two of the above criteria. Rating a weed species as moderate would indicate that control or research effort should be directed to it if funds are available, however it should be monitored (possibly a reasonably high level of monitoring).
- Mild - a weed species scoring one of the criteria. A mild rating would indicate monitoring of the weed and control where appropriate.
- Low - a weed species would score none of the criteria. A low ranking would mean that this species would require a low level of management

AVIAN IMPACT ISSUES

COMPARISON OF HIGH SINGLE TOWERS VS SMALL MULTIPLE TOWER SYSTEMS

There has been significant publicity recently of the adverse impact of high tower CSP systems on bird life, particularly with the recently commissioned Ivanpah project on the Mojave desert and also the Crescent Dunes project at Tonopah, Nevada.

Essentially the problem arises from the extremely high concentration of thermal energy entering the receiver with single tower projects. For example, the Crescent Dunes project of 110 MW_{electrical} has over 300 MW_(thermal) power being concentrated at the receiver. Ivanpah has 3 towers of similar size (140 m).

In the small multi-tower systems, for example the Solastor Alassa project in Cyprus, there is also 300 MW thermal being collected, but it is spread over 300 towers, at least 40 m apart.

The effects of this for a bird flying through the concentrated sun's rays are two fold:-

1. The power (strength) of the concentrated rays
2. The width of the concentrated rays, which affects the time the bird takes to fly through, i.e. the "residence time" of exposure.

There is a third factor, which is the "visibility" of the receiver. Whilst there are no definitive studies yet, it is possible that the glaring white light produced by the vertical receivers on the high towers could also contribute to birds being dazzled and flying into the concentrated beams.

In the multi-tower Solastor system, the aperture is under the receiver block and not visible to flying birds.

The affect of the two factors described above on a bird flying at 20 km/hr through the concentrated rays for each system can be quantified as follows (Figures are for comparison purposes and not necessarily correct in absolute terms):-

High Tower

Beam Strength	300,000 kW _(th)
Bird Velocity	20 km/hr (say 6 m/sec)
Beam Width (10 m below receiver)	100 m
Residence Time	$\frac{100 \text{ m}}{6 \text{ m/sec}}$ or 17 secs
Thermal Energy imparted to bird is	$\frac{300,000 \times 17}{3600} = 1,400 \text{ kWh}$
or	5,040 MJ (very significant and potentially deadly)

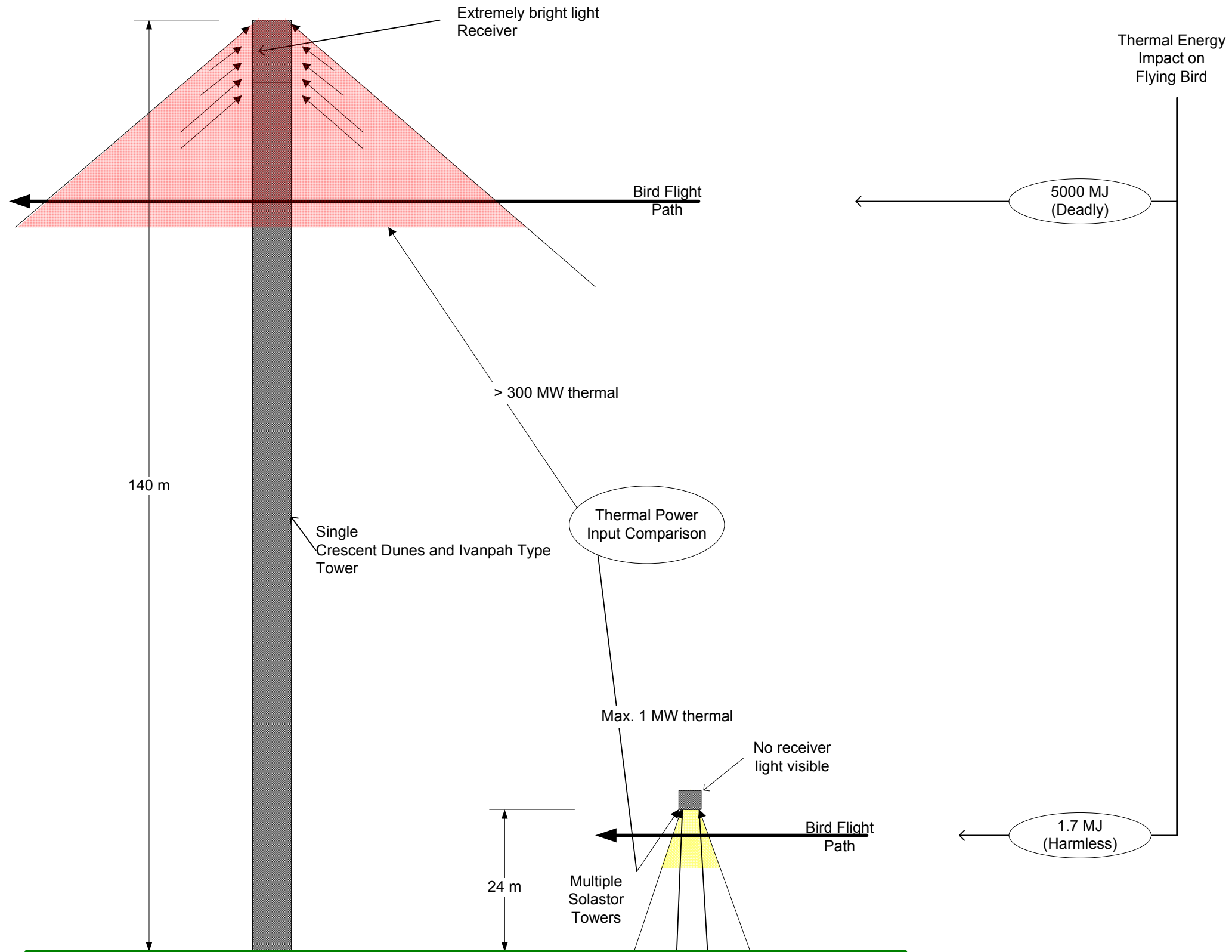
Solastor Tower

Beam Strength	1,000 kW _(th)
Bird Velocity	20 km/hr (say 6 m/sec)
Beam Width (5 m below receiver)	10 m
Residence Time	$\frac{10 \text{ m}}{6 \text{ m/sec}}$ or 1.7 secs
Thermal Energy imparted to bird is	$\frac{1,000 \times 1.7}{3600} = 0.47 \text{ kWh}$
Or	1.7 MJ (insignificant)

It can be seen that there is 3,000 times more energy imparted to the body of a bird flying through the concentrated high tower sun rays than that passing through the Solastor tower rays.

There has never been any observed bird fatalities at the Solastor plants.

COMPARATIVE IMPACTS ON BIRDS HIGH TOWERS VS MULTIPLE SMALL TOWERS



**Solar Farm, proposed
Lot 6 on
Lot 10792 George
Grey Road,
Kalbarri WA**

Bushfire Management Plan



11/01/2016

Kathryn Kinnear

Bio Diverse Solutions

DOCUMENT CONTROL

Title: Bushfire Management Plan Solar Farm, Lot 6 on Lot 10792 George Grey Road Kalbarri WA

Author (s): Kathryn Kinnear

Reviewer (s): Vernon Butterley & Brian Rourke

Job No. : WHEL033

Client: TEA Investments No1 Pty Ltd

REVISION RECORD

Revision	Summary	Revised By	Date
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DISCLAIMER

The recommendations and measures contained in this assessment report are based on the requirements of the Australian Standards 3959 – Building in Bushfire prone Areas, Guidelines for Planning in Bushfire Prone Areas (WAPC, 2015), State Planning Policy 3.7 (WAPC, 2015) and CSIRO’s research into Bushfire behaviour. These are considered the minimum standards required to balance the protection of the proposed dwelling and occupants with the aesthetic and environmental conditions required by local, state and federal government authorities. They DO NOT guarantee that a building will not be destroyed or damaged by a bushfire. All surveys and forecasts, projections and recommendations made in this assessment report and associated with this proposed subdivision are made in good faith on the basis of the information available to the fire protection consultant at the time of assessment. The achievement of the level of implementation of fire precautions will depend amongst other things on actions of the landowner or occupiers of the land, over which the fire protection consultant has no control. Notwithstanding anything contained within, the fire consultant/s or local government authority will not, except as the law may require, be liable for any loss or other consequences (whether or not due to negligence of the fire consultant/s and the local government authority, their servants or agents) arising out of the services rendered by the fire consultant/s or local government authority. There is a need for individual landowners to protect their property in line with the BMP noting that, despite any management measures outlined in the BMP, during a bushfire event, fire appliances may not be able to protect each house.



Bio Diverse Solutions
55 Peppermint Drive
Albany WA 6330



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- APPENDIX G – WORKS PROGRAM

Photo:
Grass Patch Bushfires 2015
Source:
ABC radio website
19/11/15



1. Introduction

TEA Investments No1 Pty Ltd commissioned Bio Diverse Solutions (Bushfire Consultants) to undertake a fire hazard assessment and prepare a Bushfire Management Plan (BMP) to guide all future bushfire management as part of a proposed Solar Farm Development Application (DA) for a solar farm on a future Lot 6, on the greater Lot 10792 George Grey Drive Kalbarri.

The basic requirements of any BMP is to identify potential issues or problems relating to environmental fire threats and recommend specific actions by certain persons, agencies, authorities and developers to ensure, as much as practical, that the lives and assets of the location are not put at undue threat from any unplanned fire event. A BMP takes into account various physical attributes of the land, including topographical and vegetation properties, local climatic impacts, biodiversity, past and current land use, past fire history and management practices, local authority fire management obligations, road access, water supplies, adjacent property and tenure, and future obligations by various parties should the development application be successful.

The planning for BMP's takes into consideration standards and requirements specified in various documents such as *Bushfires Act 1954*, Australian Standard (AS) 3959-2009, Guidelines for Planning in Bushfire Prone Areas (WAPC, 2015) and State Planning Policy 3.7 (WAPC, 2015). These plans have developed to ensure uniformity to bushfire management with interpretation of onsite vegetation types, site design, and building standards. There are no buildings proposed for this subdivision, and there is no requirement to build to AS3959-2009 in this regard, however the WAPC (2015) guidelines have been used to ensure uniformity in vegetation classifications and bushfire risk (current recommended WAPC & DFES methodology).

The subject area is described as the proposed Solar Farm development area on proposed lot 6, on the greater Lot 10792 George Grey Drive Kalbarri and is shown in Location Mapping (Appendix A) and the proposed Subdivision Guide Plan, Appendix B.

1.1. Statutory Conditions

This BMP has been prepared to address bushfire management issues associated with the proposed solar farm development, new land management requirements and future fire management protocols for the future owners of Lot 6 and the Solar Farm lease area. This BMP is consistent with State and Local Government planning instruments, in particular Guidelines for Planning in Bushfire Prone Areas (WAPC, 2015) and State Planning Policy 3.7 (WAPC, 2015).

On the 7th December 2015 the *Fire and Emergency Services (Bush Fire Prone Areas) Order 2015; Planning and Development (Local Planning Scheme) Amendment Regulations 2015; Planning and Development Act 2005 State Planning Policy 3.7 - Planning in Bushfire Prone Areas* and the *Building Amendment Regulations (No.3)* were published in the WA Government Gazette. The Western Australian State Bushfire Prone Mapping was also publicly released.

This means that:

1. **Emergency Services (Bush Fire Prone Areas) Order 2015:** 4 (1) *The areas of the state described in the Bushfire Prone Areas dataset are designated as bush fire prone areas.*
2. **Planning and Development (Local Planning scheme) Amendment Regulations 2015:** 78D (1) *Unless subclause (2) applies, before commencing any development on a development site a person (the developer) must cause to be prepared a bushfire attack level assessment for the development site if the development site _*
 - (a) *is in a bushfire prone area; and*
 - (b) *has been in a bushfire prone area for a period of at least 4 months.*

(2) *A developer is not required under subclause (1) to cause to be prepared a bushfire attack level assessment for a development site if:*

 - (a) *a BAL contour map has been prepared in relation to the development site; or*
 - (b) *because the terrain of the development site it is not possible to calculate the bushfire attack level of the development site.*
3. **Planning and Development Act 2005 State Planning Policy 3.7 (SPP 3.7)- Planning in Bushfire Prone Areas:** *The intent of this policy is to implement effective, risk based land*

use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. The application of SPP 3.7 applies to all higher order strategic planning documents, strategic planning proposals, subdivision and development applications located in designated bushfire prone areas.

- 4. Building Amendment Regulations (No.3):** Outlines the definition of the bushfire prone area as designated under the *Fire and Emergency Services Act 1998* Regulation 31BA applicable building standards for buildings and incidental structures in bushfire prone areas.

(WA Australian Government Gazette, 2015)

The publicly released bushfire prone mapping (Bushfire Prone Area Mapping, OBRM, 8/12/15) outlines the site to be Bushfire Prone as per the above regulations as is situated within 100m of >1 ha of bushfire prone vegetation. Refer to extract from the Office of Bushfire Risk Management (OBRM) as released in December 2015 Appendix A.

This document and the recommendations contained are aligned to the following policy and guidelines:

- AS 3959-2009 “Construction of Buildings in Bushfire Prone Areas” current and endorsed standards;
- State Planning Policy 3.7 Planning in Bushfire-Prone Areas (2015);
- Guidelines for Planning in Bushfire Prone Areas (2015);
- *Fire and Emergency Services (Bush Fire Prone Areas) Order 2015; Planning and Development (Local Planning Scheme) Amendment Regulations 2015;*
- *Bushfires Act 1954;* and
- Shire of Northampton current Fire Break Notice.

1.2. Suitably Qualified Bushfire Consultant

This BMP has been prepared by Kathryn Kinnear (nee White), who has 10 years operational fire experience with the DEC (1995-2005) (now known as DPaW) and has the following accreditation in Fire Management:

- Incident Control Systems;
- Operations Officer;
- Prescribed Burning Operations;
- Fire and Incident Operations;
- Wildfire Suppression 1, 2 & 3;
- Structural Modules – Hydrants and hoses, Introduction to Structural Fires, and Fire extinguishers; and
- Ground Controller.

Kathryn Kinnear currently has the following Tertiary Qualifications:

- BAS Technology Studies & Environmental Management;
- Diploma Business Studies; and
- Associate Diploma of Environmental Management.

Kathryn Kinnear is presently pending approval as a Level 1 BAL Assessor and is classified as an “Experienced Practitioner” pending provisional accreditation. Kathryn Kinnear is presently a member of Fire Protection Australia Association and a committee member of the Bushfire Subcommittee Western Australia. Kathryn is a suitably qualified Bushfire Practitioner to prepare this Bushfire Management Plan.

2. Aims of this Plan

The aim of this BMP is to reduce the occurrence of, and minimise the impact of bushfires, thereby reducing the threat to life, property and the environment. The BMP has been prepared by Bio Diverse Solutions (Bushfire Consultants) for TEA Investments No1 with the “Subject site” being the proposed solar farm facility on future Lot 6 within the greater Lot 10792 George Grey Drive Kalbarri

The BMP plan aims to:

- Protect remnant vegetation values and fauna habitat from wildfire;
- Give guidance on fuel reduction strategies for protection of assets at the Solar Farm;
- Guide development of the Solar farm facility;
- Detail water locations;
- Define access to and from the Solar Farm;
- Assist in multi-agency coordination across conservation values, fire control and land management; and
- Enable timely response for emergency fire controls.

2.1. Planning Context

The land is currently zoned rural within the Shire of Northampton (SoN). A Development Approval (DA) is before the SoN to develop 25 ha area within Lot 6 for a Solar Farm. This BMP is to support the DA process and the final and endorsed document is to guide the developer, future Lot 6 owner and future lease owner of the Solar Farm to meet bushfire mitigation and control procedures.

2.2. Site inspection

To assess the property for bushfire risks and ensure that every aspect of the proposal meets the planning requirements, a site inspection was undertaken on the 16th and 17th September 2015 by Kathryn Kinnear (Bushfire Consultant, Bio Diverse Solutions) to assess the bushfire vegetation/fuels, site conditions and develop bushfire mitigation procedures.

The site was assessed as having a “**Moderate**” bush fire hazard rating due to the presence of shrubland and heath vegetation types.

2.3. Objectives

The objectives of this BMP are:

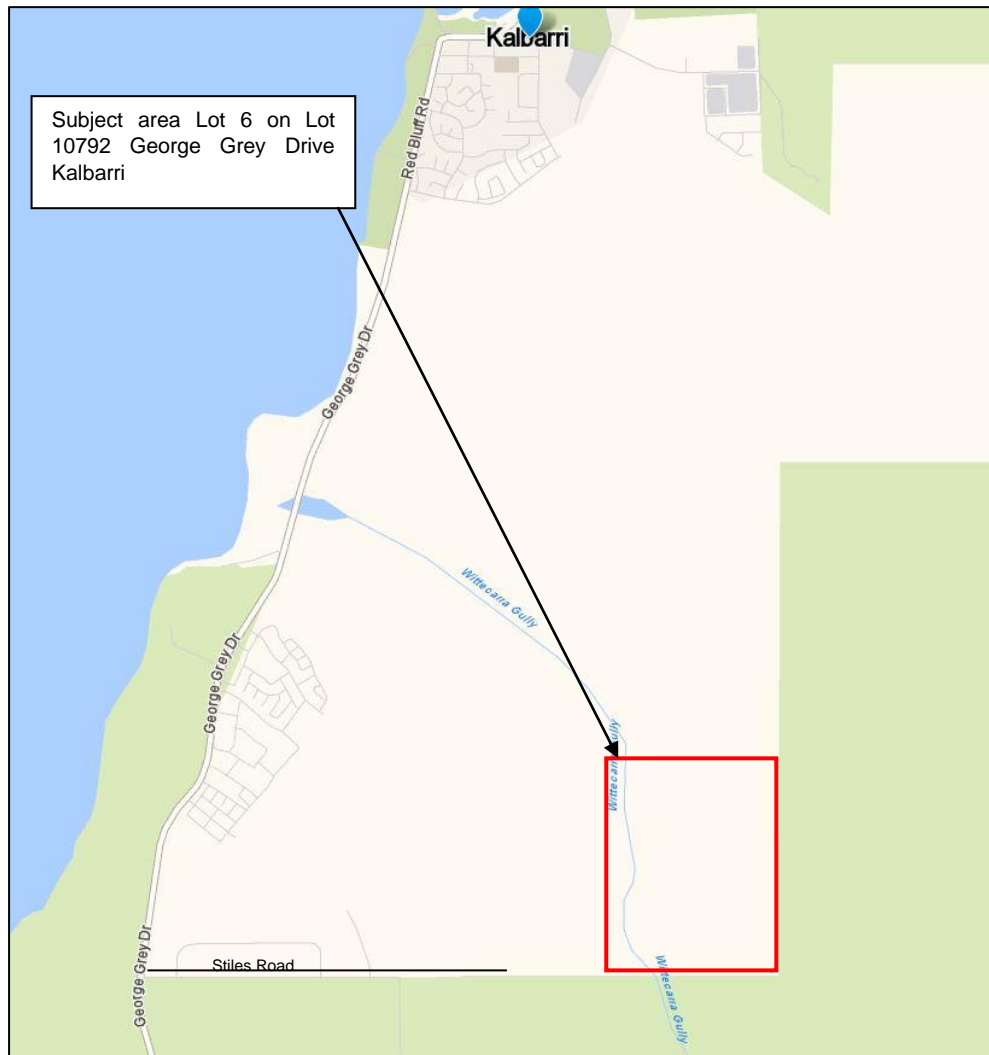
- Achieve consistency with objectives and policy measures of SPP 3.7, AS3959-2009 (current and endorsed standards) and the Guidelines for Planning in Bushfire Prone Areas (2015);
- Understand and document the extent of the bushfire risk to the subject site;
- Prepare bushfire risk management measures for bushfire management of all land within the subject area with due regard to people, property, infrastructure and the environment;
- Nominate organisations responsible for bushfire management and associated works within the subject area; and
- Aligned to the recommended assessment procedure which evaluates the effectiveness and impact of proposed, as well as existing, bushfire risk management measures and strategies.

3. Description of the area

3.1. Location

The subject site is located approximately 3.5 km south-south west of Kalbarri townsite and is a small portion (proposed lot 6) of Lot 10792 George-Grey Drive, Kalbarri. This BMP report relates to a proposed 25 ha solar farm in the south east corner of the block of proposed Lot 6 (Figure 1) and the management procedures of the future lot 6. The site is accessible off Stiles Road to the south west of the lot. Please refer to Figure 1 below – Locality map and Location/Subject Site Mapping Appendix A.

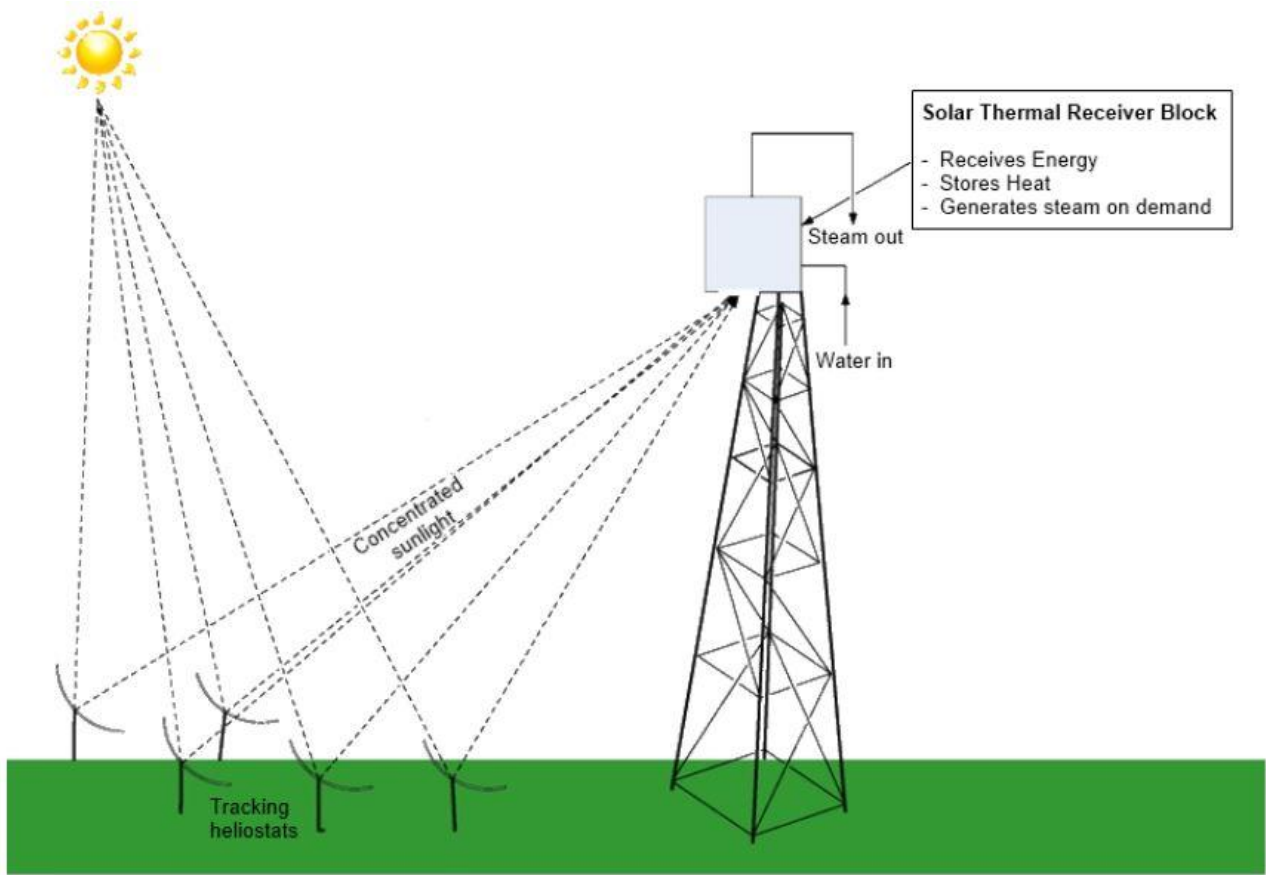
Figure 1 – Subject site locality



3.2. Development proposal

It is proposed that lot 10792 George Grey Drive will be subdivided into 6 lots, refer to the Subdivision Guide Plan as supplied by Whelans Appendix B. A portion of lot 6 (25ha) is proposed to be developed for a solar farm (Development Approval process before the SoN). The solar farm is being developed to supply a continuous electricity supply for the town of Kalbarri. The proposed solar farm is designed to collect and store solar energy as heat ready for use on demand, it involves a central tower (Receiver/Storage/Boiler unit) and up to 25 mirrors directing the solar energy into the tower, the heat is then transformed into steam and electricity within the towers. 25 modules are proposed for the 25 ha site giving 24 hour power generation to Kalbarri townsite. Refer to Figure 2 over the page.

Figure 2 – Diagrammatic of Solar technology proposed for the site



Source: Solastor, www.solastor.com.au

4. Desktop Assessment – Regional Setting

4.1. Current site land use

Lot 6 (Subject Site) was once part of a larger rural holding owned by the Browne's (*Pers comms* B. Rourke, 2015). Lot 10792 George Grey Drive was subdivided off and sold to B.Rourke (Allsage Pty Ltd/TEA Investments No1 Pty Ltd) and has been vacant land since de-stocking by the previous owner. Previous land uses included grazing of cattle and possibly sheep. Feral goat tracks were noted near a water hole in the south west of the site. Refer to Photographs 1 and 2 below.



Photograph 1 – View of Lot 6 from the south west corner of lot.



Photograph 2 – View of Lot 6 from Stiles Road Reserve (west of lot).

The only vegetation clearing within the subject site is for informal tracks and a large cleared area to the west of the proposed solar farm. Illegal dumping of vehicles and rubbish is evident across the site, as is illegal access into the area from motorbikes, horse riders and 4WD's. Refer to Photographs 3 and 4.



Photograph 3 – View of informal tracks accessible only by 4wd within the subject site. View along southern boundary of lot 6.



Photograph 4 – View of cleared area to the west of the solar farm site, undertaken from previous owners.

4.2. Surrounding land uses

To the south and east of the solar farm area is the Kalbarri National Park (KNP). To the west is private property associated with the subdivision/residential development of Lots 9502 and 9505 George Grey Drive Kalbarri. To the north is proposed lot 5 of Lot 10792 George Grey Drive - private land. Refer to Photographs 5 and 6.



Photograph 5 – View of Kalbarri National Park to the east of Lot 6.



Photograph 6 – View of a dumped 4wd to the north of lot 6 along a 4WD track.

Along the western boundary is a Western Power transmission power line which is a main power transmission line to the Kalbarri townsite, refer to Photograph 7. Adjacent to lot 10792 to the west is proposed subdivision – Lot 9502 and 9505 George Grey Drive Kalbarri, refer to Photograph 8.



Photograph 7 – View of Western Power main transmission line to Kalbarri townsite.



Photograph 8 – View of the residential subdivision area of lot 9502 and 9505 George Grey Drive Kalbarri, west of lot 10792.

4.3. Climate

Kalbarri experiences a warm Mediterranean climate, characterised by hot, dry summers and mild, winters. These seasons extend into the autumn and spring months, which are transitional periods between the main seasons (BoM, 2014).

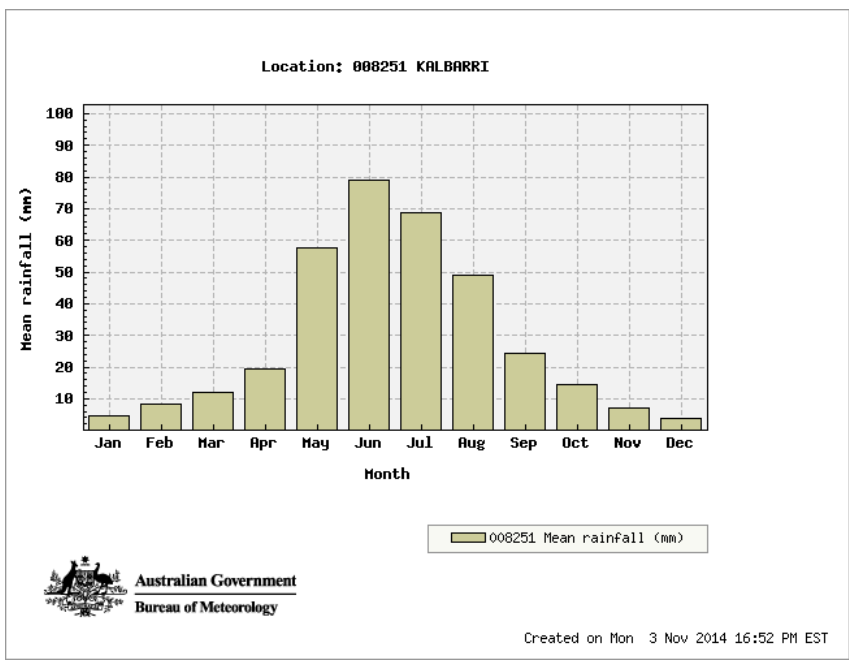
The climate of the region is strongly influenced by the position of the axis of the band of high pressure known as the sub-tropical ridge, and in the warmer months by the development in the easterlies to the north of the ridge of a trough of low pressure near the West Coast. For much of

the year the ridge is located to the south allowing the east or south-easterly winds to prevail. During the cooler months the ridge periodically moves to the north allowing cold fronts to pass over the west coast and deliver much of the annual rainfall. Sometimes these fronts interact with tropical cloud bands from the northwest and this can enhance the amount of rainfall produced.

4.3.1. Rainfall

Long term climate statistics from Kalbarri Bureau of Meteorology (BOM) station (Site number 008251) indicates an annual mean rainfall of 374.3mm (BOM, 2014), which occurs on 44 rain days, approximately 80% usually falls between May and September. Flooding is rare to the region, however heavy rain may be produced by strong winter cold fronts or, by summer storms or by decaying tropical cyclones. The highest mean monthly rainfall is 79.0mm recorded in June, with the driest month being December with 3.9mm mean rainfall. It is not unusual for there to be extended dry periods during the warmer months. Please refer to Kalbarri BOM Station - Annual Rainfall graph below (Figure 3).

Figure 3 – BoM Rainfall for Kalbarri Station (#008251)



(BoM, 2014)

4.3.2. Temperature

Mean monthly air temperatures range from 34.3°C in February to 21.8°C in July (BoM , 2014). Summer maximum temperatures are strongly dependent upon the arrival time of the reliable sea breezes. Heatwaves are associated with strong easterly winds and the late arrival or absence of the sea breeze. The average minimum temperature ranges from 9.6°C in July to 20.7°C in February. Please refer to average temperatures over the page for Kalbarri BoM Station Figure 4 and Figure 5.

Figure 4 – Mean Max Temperatures

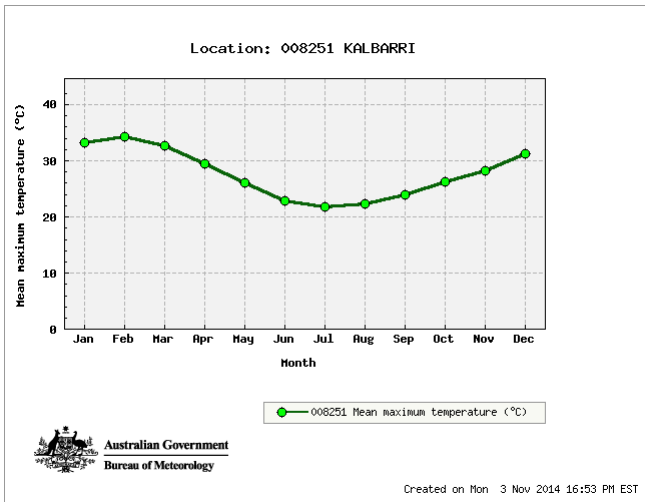
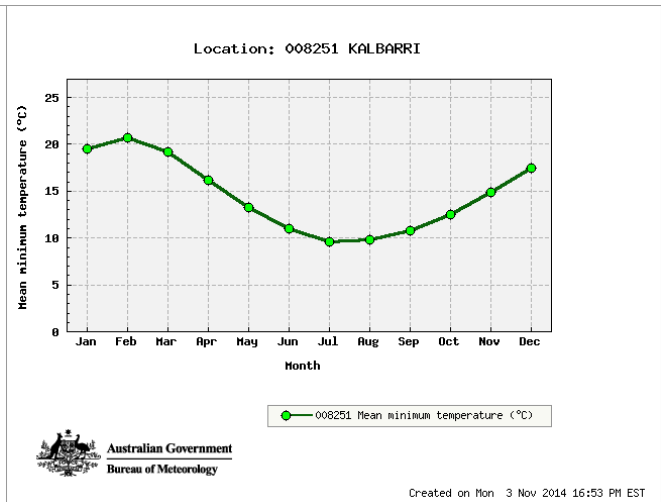


Figure 5 – Mean Min Temperatures



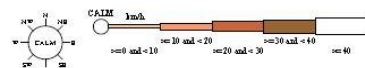
(BoM, 2014)

4.3.3. Wind

Winds are mainly easterly but varied in the warmer summer months by reliable afternoon sea breezes from the south and south west and in the cooler months by the westerlies that are associated with the bulk of the annual rainfall. Despite the occurrence of strong winds or gales, average wind speeds in winter are considerably lighter than in summer (BoM, 2014). Please refer to Figure 6 and 7 below.

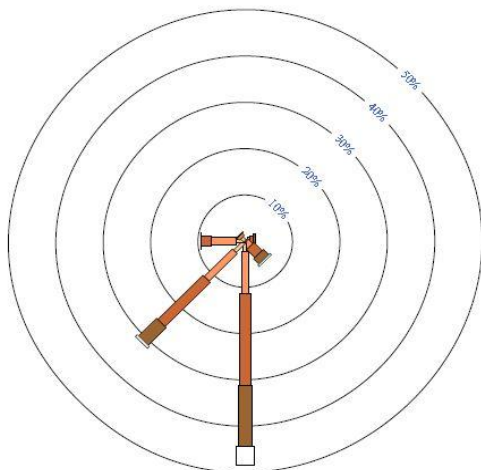
Figure 6 – Summer (Jan) wind rose BoM

Rose of Wind direction versus Wind speed in km/h (01 Nov 1970 to 30 Sep 2010)
 Custom times selected, refer to attached note for details
KALBARRI
 Site No: 008251 • Opened Aug 1970 • Still Open • Latitude: -27.7119° • Longitude: 114.166° • Elevation 6m
 An asterisk (*) indicates that calm is less than 0.5%.
 Other important info about this analysis is available in the accompanying notes.



3 pm Jan
1109 Total Observations

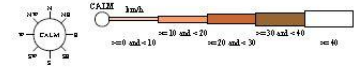
Calm*



(BoM, 2014)

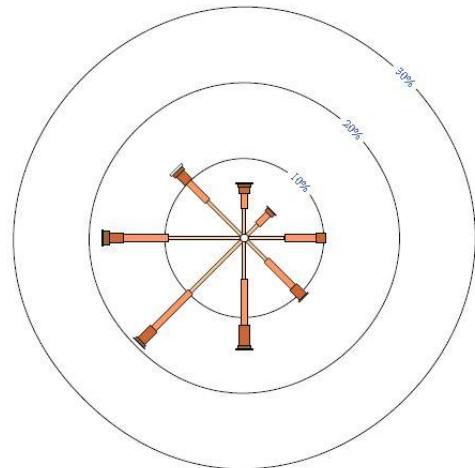
Figure 7– Winter (July) wind rose BoM

Rose of Wind direction versus Wind speed in km/h (01 Nov 1970 to 30 Sep 2010)
 Custom times selected, refer to attached note for details
KALBARRI
 Site No: 008251 • Opened Aug 1970 • Still Open • Latitude: -27.7119° • Longitude: 114.166° • Elevation 6m
 An asterisk (*) indicates that calm is less than 0.5%.
 Other important info about this analysis is available in the accompanying notes.



3 pm Jul
1107 Total Observations

Calm 3%



4.4. Prevalent Fire Weather

Weather significantly affects the behaviour of bushfires and time of low humidity and strong winds will lead to more aggressive bushfires and extreme bushfire events. Seasonal factors affect fuel moistures and fuel availability, and affect the intensity of fires. The south west of WA is one of the

most bushfire prone regions in the world due to the combination of a Mediterranean-type climate with hot dry summers and the presence of large areas of flammable native vegetation (Bushfire CRC, 2015).

Fire weather is characterised by mid-level disturbances across the south west of Western Australia, bringing unstable atmospheric conditions (thunder and lightning) from the north or north-west wind directions. Very dangerous fire weather conditions often follow a sequence of hot days and easterly winds when the trough deepens near the coast and moves inland. Winds can change from easterly to northerly, then westerly very quickly during these climatic events. This is characteristic of “Extreme” Fire Weather conditions to the area with hot, dry conditions prior to storm events. Risk of lightning strikes, spark ignition, arson and other causes of fire give rise to uncontrolled bushfires under these conditions.

Prevalent winds which most bushfire events occur in the region during summer (bushfire season) are from the east (dry land based winds), south and south-west direction (afternoon sea breezes). Conditions tend to be dry through the day with low relative humidity. High winds and excess fuels can lead to hazardous conditions for residents. Strong south and south-westerly winds exist at the subject site during dry (afternoon) summer periods (Figure 6). These circumstances place the subject site under the most risk from wildfire events.

4.5. Climate Change

Climate change is expected to impact on the future rainfall pattern of the area. It is recognised that the average rainfall has already declined by 20%-30% over the past few decades and that the long term impact of climate change may lead to a shift in rainfall, as well as dryer climatic conditions for the region. The long term changes are predicted to impact on the flora, fauna and water availability for the region (Climate Commission 2010).

The Climate Commission (Climate Commission 2010) estimates that
“...Rainfall patterns in Western Australia have changed over the last 40 years. There is significant evidence that climate change has contributed to the marked drying trend in the southwest of the state.”

The construction of the proposed development is not predicted to be affected by sea-level rise, however could be affected from increased intensity rainfall events or extended drying periods. Increased extreme weather from climate change could affect fire frequency and behaviour in Western Australia (DEC, 2012), this Bushfire Management Plan has been prepared to reduce the risk of fire on the proposed lot 6 and thereby reducing bushfire risks on the proposed solar farm.

4.6. Topography

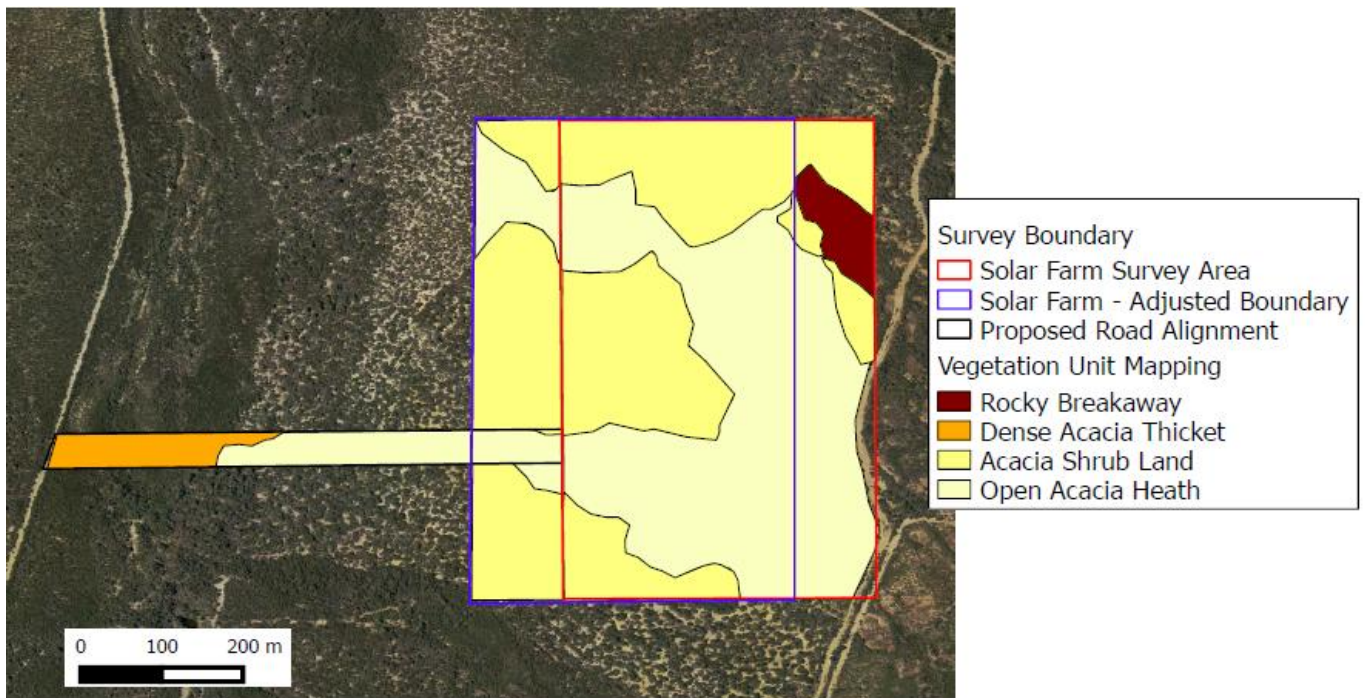
The subject site is located on a north-westerly facing slope in an undulating landscape on the Geraldton Sandplains with the average “Effective Slope” (AS3959-2009) classified for the site as between 1.4° (degrees) to 3.4°, with an average assessed over 5 slopes of 2.3°. The northern, eastern and southern slopes vary between 2.3° to 3.4° (near breakaway country) and to the west ranges between 1.4° to 1.5° with gentle slopes to the creek to the west. Please refer to slope analysis on the Vegetation Classes Map Appendix C.

4.7. Bushfire fuels – Vegetation

Site survey was undertaken for the preparation of a Flora, Vegetation and Fauna Report (Bio Diverse Solutions 2015) by Karlene Bain (Botanist and Zoologist) and Kathryn Kinnear (Bushfire Consultant) on the 16th and 17th September 2015. The site was assessed for the purpose of a Flora, Vegetation and Fauna Report on the proposed clearing areas of the solar farm and for the Bushfire Management Plan.

The flora survey found a total of 4 Vegetation units were described within the flora survey, refer to Figure 8.

Figure 8 Vegetation units surveyed within the Solar Farm boundary



The 25ha within the solar farm is proposed to be completely cleared of vegetation, with the remainder of lot 6 vegetation observed to be Tall Acacia Shrubland, Open Acacia Heath, Dense Acacia thicket and *Calothamnus* over red sandstone breakaways. Refer to the vegetation unit descriptions in Table 1 as per the Flora and Vegetation Survey (2015). Assessment of vegetation types against AS3959-2009 vegetation types is given at the end of each citation.

Table 1 - Description Of Vegetation Units Mapped within the Solar Farm Area


Vegetation Unit Description	Image
<p>Tall <i>Acacia</i> shrub land on deep yellow sand. 50-90% cover; 3-7 m high. Overstorey of <i>Acacia oldfieldii</i> or <i>Acacia scirpifolia</i>, <i>Labichea lanceolata</i>, <i>Jacksonia cupulifera</i>, <i>Allocasuarina campestris</i>, <i>Callitris arenaria</i>, <i>Grevillea leucopteris</i> and <i>Banksia prionotes</i> (occasional); understorey of <i>Baeckea robusta</i>, <i>Melaleuca megacephala</i>, <i>Solanum lasiophyllum</i>, <i>Lachnostachys eriobotrya</i> and <i>Scholtzia sp.</i> Red Bluff; and a sparse ground cover of <i>Calandrinia polyandra</i>, <i>Trachymene ornata</i>, <i>Podotheca gnaphliodes</i>, <i>Arctotheca calendula</i>*, <i>Goodenia berardiana</i>, <i>Ehrharta longifolia</i>*, <i>Austrostipa nitida</i> and <i>Schenkia australis</i>. In the proposed conservation reserve, this vegetation unit also included <i>Acacia rostelifera</i>, <i>Anthocercis ilicifolia</i> subsp. <i>caldariola</i>, <i>Atriplex amnicola</i>, <i>Rhagodia latifolia</i> subsp. <i>latifolia</i>, <i>Acacia rostelifera</i>, <i>Austrostipa macalpinei</i> and <i>Eriachne aristada</i>.</p> <p>Vegetation Type D (13) (AS959-2009)</p>	

Table 1 cont.

Vegetation Unit Description	Image
<p>Sparse <i>Calothamnus</i> over red sandstone breakaways. 0.8-2m high; Overstorey of <i>Calothamnus quadrifidus ssp homalophyllus</i>, <i>Hakea orthorrhyncha</i>, <i>Scholtzia sp. Red Bluff</i>, <i>Jacksonia cupulifera</i> and <i>Grevillea pinaster</i>; Understorey of <i>Thysanotus manglesianus</i>; ground cover of <i>Calandrinia polyandra</i>, <i>Calocephalus francisii</i>, <i>Podotheca gnaphalioides</i>, <i>Calocephalus francisii</i>, <i>Gnephosis tenuissima</i>, <i>Helipterum craspedioides</i> and <i>Pogonolepis stricta</i>.</p> <p>Vegetation Type D (13) (AS959-2009)</p>	
<p>Low, open <i>Acacia</i> heath land 0.8-3 m high over deep yellow sand. Overstorey dominated by <i>Acacia oldfieldii</i>, <i>Acacia scirpifolia</i>, <i>Labichea lanceolata</i>, <i>Olearia axillaris</i>, <i>Calothamnus quadrifidus ssp homalophyllus</i>, <i>Melaleuca megacephala</i>, <i>Allocasuarina campestris</i>, <i>Calytrix brevifolia</i>, <i>Grevillea leucopteris</i> and <i>Callitris arenaria</i> (occasional); understorey dominated by <i>Thysanotus manglesianus</i>, <i>Leptosema aphyllum</i>, <i>Comesperma scoparium</i>, <i>Solanum lasiophyllum</i>, <i>Glischrocaryon aureum</i>, <i>Thryptomene denticulata</i> (occasional) and <i>Astroloma glaucescens</i> (occasional); and sparse ground cover of <i>Trachymene ornata</i>, <i>Podotheca gnaphliodes</i>, <i>Gnephosis tenuissima</i>, <i>Muehlenbeckia adpressa</i>, <i>Arctotheca calendula*</i>, <i>Stylidium sp. Kalbarri</i>, <i>Calandrinia polyandra</i> and <i>Desmocladus asper</i>.</p> <p>Vegetation Type C (10/11) (AS959-2009)</p>	
<p>Dense <i>Acacia</i> Thicket 5-8 m tall. Dense thickets of <i>Acacia scirpifolia</i>, <i>Melaleuca megacephala</i>, <i>Labichea lanceolata</i>, <i>Grevillea leucopteris</i> and <i>Jacksonia cupulifera</i>. Understorey of <i>Gompholobium tomentosum</i>, <i>Patersonia occidentalis var. latifolia</i> (occasional), <i>Stylidium sp. Kalbarri</i>, <i>Calandrinia ployandra</i> and <i>Comesperma scoparium</i>.</p> <p>Vegetation Type D (13) (AS959-2009)</p>	

Detailed vegetation survey was not undertaken of the remainder of lot 6 (outside of the solar farm area), broad scale mapping of the vegetation types was undertaken for the purpose of the BMP report to 200-300m from the proposed solar farm boundary (Bushfire Prone Vegetation). The purpose of this mapping is to assess the bushfire hazards to the solar farm. Refer to Vegetation Classes Map Appendix C.

The site assessment revealed two vegetation types for the subject site (internal and external) classified as per the AS3959-2009 criteria as:

- **Open Heath (Type C 10 & 11)** – Found in areas wet areas affected by poor soil fertility or shallow soils. Shrubs 1-2 m high often comprising of *Banksia*, *Acacia* *Hakea* and *grevillea*. Wet heaths occur in sands adjoining dunes of the littoral (shore) zone. Montane heaths occur on shallow or water logged soils. (AS3959-2009);

- **Open Scrub (Type D 13)** – *TreeFound in wet areas and/or areas affected y porr soil fertility or shallow soils; >30% foliage cover. Dry heaths occur in rocky areas. Shrubs >2m high. Typical of coastal wetlands and tall heaths.*

These assessments are based on dominant tree/vegetation heights and vegetation structure according to Table 2.3 AS3959-2009 (AMD No2. FEB 2011).

4.8. Conservation Significance

Vegetation, flora and fauna survey was undertaken of the solar farm (note the scope of report included a proposed Conservation Reserve near Wittecarra Creek north of the subject site) in September 2015 (Bio Diverse Solutions, 2015). The vegetation is in excellent condition across much of the solar farm area. A search of the DPaW Threatened Flora Database (DEFL), the WA Herbarium database (WAHerb), the Declared Rare and Priority Flora Species List (TFPL), Naturemap and the Protected Matters Search Tool identified 112 species of declared rare and priority listed flora within a 5km radius of the site (s), including 10 DRF and 102 priority listed species. Of these species, 38 were considered unlikely to occur within the survey area as a result of unsuitable habitat. Suitable habitat was present onsite for the remaining 74 species, but despite targeted searches only one species was found during field surveys, *Chamelaucium marchantii* (P3).

During the field survey 88 species, consisting of 29 families and 66 genera were found. The most common families were Myrtaceae, Fabaceae, Poaceae and Asteraceae. Kalbarri National Park is located to the east and south this area is also significant for a range of threatened and priority listed fauna and contains a high diversity of common fauna, particularly endemic birds and reptiles. Of particular interest are the coastal thickets adjacent to low open heath in the southern areas that are possibly occupied by *Macropus eugenii subsp. derbianus* (Tammar Wallaby).

The Vegetation, Flora and Fauna Survey (2015) found the following recommendations for the solar farm area:

Threatened Flora and Vegetation

- *There were no species of threatened flora located within the solar farm area.*
- *A small area of standstone was mapped in the north eastern corner of the proposed clearing. While there were no populations of threatened flora associated with the outcrop, the sensitivity of this ecological community to disturbance is considered to be higher than that of the surrounding Acacia communities and the proponent has agreed to shift the proposed solar farm area to the west to avoid this ecotype. The adjusted boundary is shown in Figure 2 and was negotiated with the proponent onsite, so was able to be surveyed as part of this assessment.*

Threatened Fauna

- *The Tammar Wallaby was the only listed species found within the solar farm area and appeared to be a transient visitor to the site, as evidenced from low levels of scattered activity. Clearing within the solar farm area is unlikely to contribute to significant loss of habitat or habitat fragmentation for this species, given the connectivity of the area to the surrounding Kalbarri National Park and uncleared areas of Lot 10792.*
- *Tammar Wallabies using the site at the time of clearing should be encouraged to move into the adjoining National Park and uncleared areas of Lot 10792, using techniques such clearing from a single point and in a single direction, and field survey and physical shepherding of animals.*
- *Tammar Wallabies are at risk from predation by feral animals such as the Red Fox (*Vulpes vulpes*) and Feral Cat (*Felis catus*), particularly when joeys are first emerging from the pouch. Baiting and fire management programs in the adjoining Kalbarri National Park are likely to be important for the ongoing survival of this species in the area and operations on*

the solar farm should not impede the ability of DPaW to actively manage habitat for this species.

- *Sunlight reflecting from the solar panels and collection units has the potential to temporarily blind fauna (and humans) accessing the area. The solar farm area is adjacent to the Kalbarri National Park on its southern and eastern boundary. In an effort to protect National Park users and fauna, vegetated buffers will be established around the solar farm to provide a visual separation. These buffers are 200 m deep on the southern boundary and 310 m deep on the eastern boundary (adjusted boundary). Fencing around the outside of the solar farm and buffers will provide a barrier to the movement of ground dwelling fauna.*
- *There is some evidence to suggest that concentrated solar power installations can cause bird fatalities through collisions and burns; as birds fly through the concentrated rays of sunlight or are affected by reflected light (Kagan et al. 2014; RSPB 2014). Much of the problem appears to occur from the “lake effect,” in which birds and their insect prey can mistake a reflective solar facility for a water body and then fly towards it. Given the apparent lack of data relating to the impact of solar farms on birds in Australia, and the presence of habitat for a large range of threatened bird species in the surrounding Kalbarri National Park and coastal areas, it is recommended that this situation be monitored and thought given to techniques that could reduce potential impacts. E.g. measures to reduce or shield harmful reflection.*
- *The Solar Farm will be fenced to exclude wildlife, the detail on the barrier fencing will be supplied to Parks and Wildlife prior to the construction period. A recent meeting with Parks and Wildlife staff (17/10/2015) indicated a recent style of fence used in the region may have been successful to and the same should be used at the Solar Farm to exclude Tamar Wallabies from entering the site.*

Weed management

- *There were few weeds within the solar farm area. Weed management requirements are related to long term management of the site to ensure minimal impact on the nearby Kalbarri National Park. Ongoing maintenance activities should include management of weeds arising from clearing and solar farm activities, such that these do not spread offsite into the surrounding National Park.*

4.9. Assets

There are no dwellings or assets associated with previous farming practises on the lot. Infrastructure assets (future) include facilities for electricity power infrastructure supply (towers, mirrors and operational shed). There is extensive remnant native vegetation surrounding the solar farm on site, which is valued for biodiversity conservation and water source protection (production bores in the south west).

Once developed, the values which will be potentially affected by fire include:

- **Human lives:** there will be no human lives at stake associated with permanent dwellings etc. The Kalbarri Townsite is located within 3.5km to the north west of the subject site and proposed subdivision to the west (1.5km).
- **Assets:** the solar farm will contain solar towers (25), mirrors and infrastructure for future power transmission lines.
- **Environmental Conservation Values:** Remnant native vegetation on Lot 6 and adjacent Kalbarri National Park (KNP) conservation values.

4.10. Access

Vehicle access to the subject site is from Stiles Road to the west, a new access track to the facility is proposed along adjacent western private property and into lot 6 to the solar farm.

4.11. Firebreaks

There are some existing firebreaks/tracks within lot 6. The firebreaks to the south bordering the KNP are predominantly tracks associated with 4wd Access. Department of Parks and Wildlife (DPaW) have 30m firebreaks along the northern boundary of the national park bordering Stiles road and the southern border of lot 10792 George Grey Road. The firebreak along the Western Power transmission line is cleared to 10-15m, and is maintained by Western Power (western edge of lot 6). Firebreaks along the eastern and northern western sides of Lot 6 are in the form of tracks which are not necessarily along the boundary.

4.12. Water Supply

There is presently no fire fighting water supply points located on the subject site.

5. Potential Bushfire Issues and Bushfire Hazards

The bushfire hazard assessment provides a measure of the fire intensity and likelihood of bushfire attack measures on a dwelling, subdivision or residential area (Planning for Bushfire Protection, Edition 2 2010). This measure can provide an assessment of the land for suitability for residential construction and takes into account:

1. Vegetation Assessment – type and class in each direction;
2. Distance - between the predominant vegetation class and proposed building;
3. Topography and slope – with reference to accessibility; and
4. Land use – surrounding and internal to the proposal.

(Refer to Planning for Bushfire Protection, Edition 2, 2010)

This methodology has been used to determine the potential bushfire risk and bushfire hazards on the solar farm although there is no provision for any future dwellings on the properties, the methodology gives a uniform method of risk/hazards for the purposes of bushfire risk ratings.

The Vegetation type for the subject site has been classified as per AS3959-2009 criteria as Heath (Type C) and Acacia Shrubland and Thickets (Type D). The bushfire hazard (risk) ratings have been assessed as per the methodology as outlined in the Guidelines for Planning in Bushfire Prone Areas (2015) (Appendix 2). Please refer to Table 1 below.

Table 2 – Bushfire Hazard Level Categories

Table 3: Hazard levels and characteristics

HAZARD LEVEL	CHARACTERISTICS
Low	<ul style="list-style-type: none"> • devoid of standing vegetation (less than 0.25ha cumulative area); • areas which, due to climatic conditions or vegetation (e.g. rainforest), do not experience bushfires; • inner urban or suburban areas with maintained gardens and very limited standing vegetation (less than 0.25ha cumulative area); • low threat vegetation, including grassland managed in a minimal fuel condition (i.e. to a nominal height of 100mm), maintained lawns, vineyard and orchards; and • pasture or cropping areas with very limited standing vegetation that is shrubland, woodland or forest with an effective up slope*, on flat land or an effective down slope* of less than 10 degrees, for a distance greater than 100 metres.
Moderate	<ul style="list-style-type: none"> • areas containing pasture or cropping with an effective down slope* in excess of 10 degrees for a distance greater than 100 metres; • unmanaged grasslands; • open woodlands; • open shrublands; • low shrubs on areas with an effective up slope*, on flat land or an effective down slope* of less than 10 degrees, for a distance greater than 100 metres or flat land; • suburban areas with some tree cover; and • forest and woodlands with a permanent grass understorey or at most, a scrub understorey structure consisting of multiple areas of <0.25ha and not within 20 metres of each other or single areas of <1ha and not within 100 metres of other scrub areas.
Extreme	<ul style="list-style-type: none"> • forests with a scrub understorey which is multi-tiered; • woodlands with a scrub understorey which is multi-tiered; • tall shrubs; and • any area of vegetation not otherwise categorised as low or moderate.

(WAPC, 2015)

Internal Solar farm Bushfire Risks

The solar farm will be cleared to the outer boundary of the 25 ha of the development area as depicted on the Bushfire Hazards Mapping Appendix D. A 20m Low Fuel Zone will be maintained within the perimeter of the boundary, this will give the solar farm area (internal) a bushfire classification as **“Low threat vegetation and Non Vegetated areas”** (AS3959-2009) or **“Low”**

bushfire hazard (as per WAPC Guidelines, Table 2). Refer to Bushfire Hazard Mapping Appendix D.

External Bushfire Risks

Surrounding the solar farm in Lot 6 (to a 200m distance to “Bushfire Prone Vegetation”) there will be uncleared/modified Acacia Shrubland and thickets Vegetation Type D which is classified as a “**Moderate**” bushfire hazard (as per WAPC Guidelines, Table 2). The open Acacia heaths (Vegetation Type C) would most likely be classified as a “**Moderate**” bushfire hazard (as per WAPC Guidelines, Table 2) (note there is no bushfire hazard allocated for open heaths in Table 2). These areas all have low effective slopes.

The KNP reserve to the east and south has similar vegetated areas and slopes and would most likely be a moderate bushfire risk. The adjacent risks in lot 6 and KNP are deemed to be moderate bushfire hazards, which under hot windy conditions can give rise to moderate and possible hot and intense fires in north (summer mid-level disturbances) and south/south westerly (prevailing summer) wind conditions (Figure 6).

Refer to Bushfire Hazard Mapping Appendix D.

Proposed Bushfire Risk Rating

The bushfire risk for the solar farm development has been rated a “**Moderate**” (as per Table 2, WAPC 2015) due to the presence of external native vegetation of Acacia shrublands and thickets and Acacia heath vegetation. Risk of ignition to the south and south west in adjacent KNP reserves or west from private properties could give rise to wildfire entering the lot from these areas and with subsequent wind changes could pose threat to life and property in adjacent areas.

The proposal has outlined a number of strategies to minimise and mitigate the risk of bushfire to assets in the solar farm and limit the spread or ignition of bushfire into lot 6, these are outlined in **Section 6 – Bushfire Management/Mitigation Plan**.

6. Bushfire Management/Mitigation Plan

The management issues (Elements) which relate to subdivision and development as described in the newly released Guidelines for Planning in Bushfire Prone Areas (WAPC, 2015) include:

- Element 1: Location
- Element 2: Siting and Design of Development
- Element 3: Vehicle Access; and
- Element 4: Water

(WAPC, 2015)

The solar farm does not propose any habitable buildings and therefore Element 1 and Element 2 do not apply to the solar farm development. The bushfire risk for the solar farm development has been rated a “**Moderate**” (as per Table 2, WAPC 2015) due to the presence of external native vegetation of Acacia shrublands and thickets and Acacia heath vegetation. Risk of ignition to the south and south west in adjacent KNP reserves or west from private properties could give rise to wildfire entering the lot from these areas and with subsequent wind changes could pose a threat to life and property in adjacent areas.

There are low effective slopes across the subject site. This BMP has been developed for asset protection and recommends bushfire mitigation procedures which are site specific and will not be assessed as per the above elements as a “usual BMP” applies to development. The most effective available method of reducing bushfire threat to the solar farm structures is to implement a range of fuel management techniques to reduce the fire hazard, or opportunity for an asset to catch fire. These measures include:

- Water supply for fire fighting;
- Access – including fire access tracks;
- Prescribed burning (fuel reduction)
- Mechanical alteration of fuels; and
- Site security.

These measures will be outlined in the following sections.

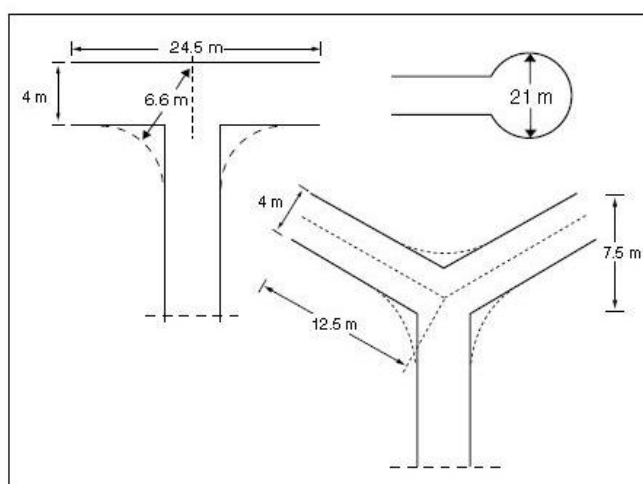
6.1. Water supply for fire fighting

There is presently one dam on Lot 6 located in the south west corner (see Bushfire Management Plan Appendix E), this is not a year round water supply point, with annual drying out in summer. The formal water supply for fire fighting for the area is presently from adjacent DFES supply points at the Capitol Hill development (1.5km west).

In the event of a bushfire on the solar farm site there should be a permanent water supply on the Solar Farm dedicated for bushfire control within the property. This shall be a standalone fire fighting tank (minimum of 50,000L) strategically located with a hardstand turnaround area for fire appliances and appropriate couplings. This facility shall be built in the first stage of development and is recommended close to the access track/entry gate area (see Bushfire Management Plan Appendix E).

Turnaround areas are required adjacent to any fire fighting water points. The standard of a turnaround area is to accommodate 3.4 fire appliances and to enable them to turn around safely as shown diagrammatically in Figure 9.

Figure 9 – Turnaround area standards



Turn around area measurements.

(Planning for Bushfire Protection Ed 1 WAPC, 2001)

The fire fighting water supply tank would need to meet DFES requirements and be to the following recommended standards:

- Minimum of 50,000L in capacity;
- The tank should be fitted with an outlet at the base of the tank (75mm Storz Fitting with gate valve);
- Above ground and constructed of concrete or metal;
- Lease owner to be responsible to ensure the tanks are maintained in working order and all fittings are in place;
- Procedures put in place in site operation manual to ensure the tank is maintained at full capacity at all times; and
- Hardstand turnaround areas suitable for 3.4 appliances are provided within 3m of the tank (see Figure 9).

6.2. Fuel reduction strategies

The vegetation within the solar farm is to be cleared for the proposed infrastructure. In regards to burning areas of lot 6 for fuel reduction, the dominant species present in Lot 6 are 'short-rotation' species that respond well to frequent fire as it is known they store their seed in the soil (e.g. the acacias). It is noted that some of the proteaceous species such as the banksias (closer to the creeklines) need a longer rotation to reach full maturity and seed production. The vegetation is relatively open and sparse across most of the areas that the proteaceous species occur, e.g. associated with the rock outcrops and open acacia shrublands. It is predicted that bushfire in these ecotypes could be patchy if it was introduced under the right conditions (i.e. not all of the banksia population would burn), fire is likely to leave some mature trees alive, and so there is still capacity for regeneration of these species post-fire. A rotation of 8-10 years is deemed a likely scenario, however further advice may be sought from DPaW prior to burning implemented.

Based on the above and consideration for conservation of species, a series of 6 cells for prescribed burning has been proposed for lot 6 (around the solar farm site) with a rotation between 8-15 years depending on the location and vegetation diversity. Refer to Fuel Reduction Plan (guide) Appendix F.

The densely unburnt areas closer to the creeks in the west and north of the subject area may have a shorter rotation (8 years) and patches may remain unburnt (due to sparse adjacent vegetation as noted above). These areas (proposed Cell 4, 5 and 6) are not exposed to fire from the adjacent national park due to the extensive firebreak system in KNP and the tracks to the south and west (powerline). The slower growing heaths and shrublands (Cell 1) may have a longer rotation (up to

10-15 years) as these areas are more prone to slower growth periods and fuel loads are reduced (especially in low heath areas).

Cell 2 and 3 (east and south of the solar farm) may require different strategies deployed as these areas are to have a minimum of 200-300m “Vegetative Buffer” for protection of wildlife from the solar farm and the KNP. Strip burning or “cool burns” from the solar farm boundary may be deployed in this area to create “mosaics” and many areas within the cell (s) may remain unburnt (i.e. up to 60% vegetation remaining). Consideration of the balance between the minimum 200m buffer requirement and protection of the solar farm asset (s) will need to be considered (especially along the southern boundary) as strong prevailing southerly winds exist in dry summer periods which may place high risk of the solar farm to bushfire (see Figure 6). Rotation may be up to 15 years in these areas, depending on previous burn methodology and result (s).

There are no firebreaks to differentiate the creek areas, however possibly burning on a moisture differential in the wetter areas may allow longer periods/pockets to remain unburnt. The cells are based on the existing 4wd track network and do not rely on further clearing for firebreaks, control burning strategies or access. Refer to the Fuel Reduction Plan Appendix F.

The solar farm proposes to have a 20m Low Fuel Zone within the perimeter of the development area. This will ensure there is a “defendable zone” for asset protection and bushfire attack. This is to be maintained as a 20m internal slashed break to <50mm in height at all times. It is recommended that this is incorporated into the internal operational management plan for the solar farm and lease documentation for the site.

6.2.1. Prescribed burning parameters

The following parameters/strategies are recommended for the property. (Sampling and fuel calculation should be as approved by Department of Fire & Emergency Services procedures):

- Shrubland and heaths fuels are maintained to maximum of 8 T/ha (Type C and D).
- Fuel reduction to be achieved (solar farm only) through slashing vegetation to <50mm in height in the solar farm 20m Low fuel buffer (see BMP Appendix E);
- Prescribed burning on lot 6 should be carried out in consultation with the Solar farm leasee/site manager, DFES, DPAW (adjacent neighbour and any flora and fauna concerns/advice) and the SoN in accordance with the *Bushfires Act 1954*. This will be the responsibility of land owner as deemed appropriate.
- Possible cells for hazard reduction/prescribed burning as a guide is outlined in the Fuel Reduction Plan Appendix F, final boundaries and burn areas will be subject to site conditions and methodology deployed.
- A maximum of 15 years rotation for the area is a recommended, but could be subject to further investigation during prescription preparations and following wildfire events.
- Care should be taken to burn under mild conditions and when moisture differentials are present in the landscape that will naturally protect banksias, dense Acacia thickets, and adjacent wetland ecotypes (Wittecarra Creek).
- One priority flora population is known to exist in the breakaway country/rocky outcrops on site and is shown in the Bushfire Management Plan Appendix E.
- Strip burning, mosaics and burning on moisture differentials are preferable for biodiversity of the vegetation and fauna values.

The SoN advises the following in regards to burning:

*The gazetted “**Prohibited Burning Period**” within the Shire of Northampton: **15th October** to midnight on the **1st of March** each year, dates inclusive.*

*The gazetted ” **Restricted Burning Period**” (PERMITS REQUIRED) within the Shire of Northampton: **15th September** to midnight on both dates inclusive and **2nd March** to midnight on the **15th April**, both dates inclusive.*

When and how to burn:

Advice is available – further advice on how to protect your home, when and how to burn is available from the Shire or your local Bushfire Brigade. If you have questions, please contact them.

The safety of our whole community is at stake.

Fuel depots: in respect of land owner and/or occupied by the lease is situated, has any container normally used to contain liquid or gas fuel, including the land on which any ramp or supports are constructed, the land shall be clear of all flammable material;

(SoN, 2015)

6.2.2. Protocols for Prescribed Burning

Prescribed burning within the areas will be considered in consultation with DPaW (neighbour east and south and flora and fauna advice) and the SoN to ensure strategic low fuel areas are maintained to minimize the risk of extensive unplanned bushfire for the solar farm asset protection. Consultation with DPaW and the SoN will determine appropriate strategy and timing for the prescribed burns, information exchange and the Fuel Reduction Plan (Appendix F) will be used as a guide for future prescribed burns.

Due to limited resources and knowledge in conducting large scale prescribed burns, the aim of the lot owner of lot 6 is to have support from SoN Bushfire Brigades to assist with the planning and conduct all ongoing fuel reduction burns within the area. All such burns must comply with a written prescribed fire plan approved by SoN including a pre-burn checklist that considers water quality issues, any environmental impacts and burn parameters. A copy of this shall be forwarded to DPaW prior to commencement as the adjacent neighbour and for any flora and fauna concerns.

Where a burn may impact on water quality (northern extent of lot 6 is within the Kalbarri Water Reserve) or known threatened flora or fauna the burn will be evaluated to modify or defer. In liaison with DPaW's Regional Fire Co-ordinator, the Department of Water (DoW's) Operations Manager/Catchment staff can provide input and considerations before any prescribed burning takes place as well as the ability under certain circumstances to halt or suspend any imminent burn.

6.3. Vehicle Access

Vehicle access technical standards along access tracks are outlined in Table 3 and shall apply to the subject site; these standards are the minimum requirements from Guidelines for Planning in Bushfire Prone Areas (WAPC, 2015).

Table 3– Vehicular Access Technical Standards

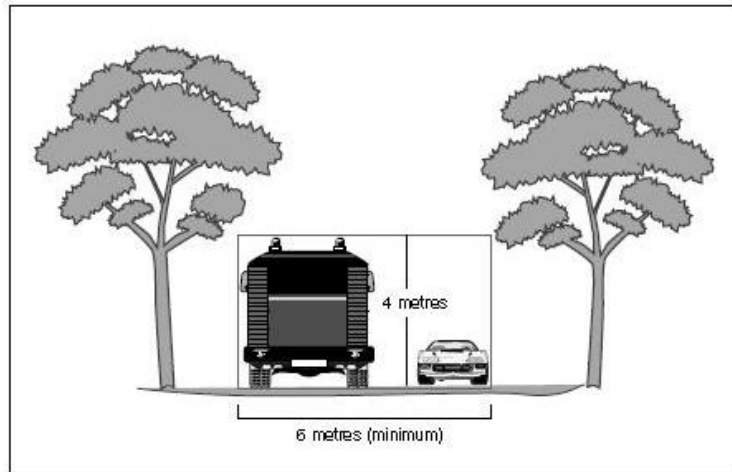
Technical requirements	Internal Access/Private Driveways	Fire Service Routes
Minimum trafficable surface (m)	6	6*
Horizontal clearance (m)	6	6
Vertical clearance (m)	4.5	4.5
Minimum weight capacity(t)	15	15
Maximum crossfall	1 in 33	1 in 33
Curves minimum inner radius(m)	8.5	8.5
Passing Bays	200m intervals, 20m min length, combined width with Access way min 6m.	200m intervals, 20m min length, combined width with FSA 6m.
Turn around areas	Every 500 metres, within 3m of fire fighting tank.	Every 500 metres, should allow 3.4 fire appliance to turnaround. Minimum Diameter 10m
Signs		To DFES & SoN standards
Gates		To DFES & SoN standards

(WAPC, 2015)

There are no public roads proposed into Lot 6 the internal access (driveway) will be along the private property to the west off Stiles Road. The access tracks into the solar farm will be to be a minimum standard as per “Fire Service Access” Routes (FSA) for safety of bushfire volunteers (in the event of a bushfire) and the safety of Water Corporation Crews while working in the bore fields (south west). The standards of the access ways are to meet as per Table 3, Column 1.

As per Table 3 a vertical and horizontal clearance is required for fire appliance and emergency access. The access ways and FSA require 6m trafficable surface, and a 4m vertical clearance and are shown in Figure 10.

Figure 10 – Minimum EAW and FSA width and vertical clearance



Minimum road width and vertical clearance.

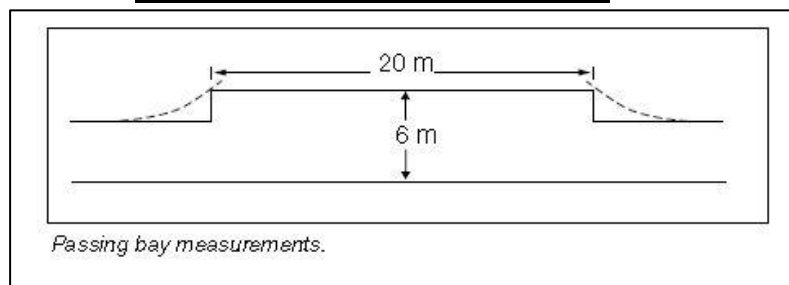
(Planning for Bushfire Protection Ed 1 WAPC, 2001)

Passing bays are to be placed every 200m. The standard of these will meet:

- Every 200m;
- Minimum length of 20m; and
- Minimum width of 2m (i.e. the combined width of the passing bay and constructed private driveway to be a minimum of 6m).

Please refer to Figure 11 for the generic construction of a passing bay.

Figure 11– Passing bay standards



Passing bay measurements.

(Planning for Bushfire Protection Ed 1 WAPC, 2001)

Turnaround areas are required every 500m, the standards of these are shown in Figure 9. These will be implemented along the access tracks and Fire Service Access for the safety of fire fighting personnel.

6.3.1. Emergency Access Ways

As there are no permanent habitable dwellings for lot 6, Emergency Access Ways (EAW's) are not proposed as part of this development.

6.3.2. Fire Service Access Routes

Fire Service Access Routes (FSA) will be along the existing internal 4wd access tracks and a formal FSA maintained from the north of the solar farm to the proposed remainder of subdivision in the north of lot 6. At the completion of the internal access tracks to the subdivision north, light unit fire appliance and heavy unit (truck appliances) will have suitable access in an emergency throughout the area, meeting the minimum acceptable standards as outlined in Table 3, column 2.

6.3.3. Gates

Gates are proposed at entry/exit points of the solar farm and along the FSA in the north and are shown in the Bushfire Management Plan Appendix E. These will be locked and are to meet minimum requirements wide enough to accommodate 3.4 Heavy Duty Fire Appliances.

Gate standards will be as follows:

- Minimum width 3.6 metres;
- Approved by the SoN; and
- Locked but a dedicated lock available for Bushfire Brigades for Emergency Access.

6.3.4. Signage

A sign is proposed at the northern FSA of the Solar Farm as shown in the Bushfire Management Plan Appendix F.

Any new signage shall be to the DFES and SoN recommended wording for signage as appropriate:

- 'Fire Service Access'; or
- 'Emergency Access Only'.

The signage shall meet the following standards:

- Minimum height above ground level 0.9 metres;
- Design and construction to be approved by relevant local government; and
- Lettering height 100mm.

Refer to Bushfire Management Plan Appendix F for the location of signs.

6.3.5. Individual Fire breaks

Firebreaks are required by the SoN for rural size properties. It is the responsibility of property owner to review the SoN fire break notice. The SoN's "Annual Fire Break Notice" is uploaded on the Shire's website sets out the requirements for firebreaks and shall be adhered to by rural size properties. The Fire Break Order is updated annually and the current version should be accessed from the Shire website:

www.northampton.wa.gov.au/

A firebreak regime of the existing 4wd tracks and the western powerline easement to the west is shown in the Bushfire Management Plan Appendix F. This combined with the prescribed burning regime will lessen the impact of bushfire escaping or entering the property.

6.4. Site Security

It was evident, while carrying out field inspections of the subject area that many illegal entries are made to the property. Vandalised gates (adjacent (east) National Park gate), newly created "bashed tracks", dumping of vehicles, rubbish dumping and numerous motorbike tracks were all observed.

Illegal entry into the property can increase the risk of bushfire. It is recommended that illegal access is controlled by fencing and gating to the solar farm and gated access into the proposed lot 6. Regular patrols by the solar farm personnel should occur to ensure gates are locked and identify any illegal access. Improved security through maintenance of signposting, gates and barricades and blocking illegal ingress. Documentation of site security should be contained in the operational management plan prepared for the solar farm.

7. Shire of Northampton Fire Protection Plan

The Shire of Northampton manages and maintains Volunteer Bush Fire Brigades strategically located throughout the district, with a membership of over 100 trained volunteers. Training and induction courses are held regularly and land owners are encouraged to attend these. For more information refer to the SoN.

The SoN publishes annually a 'Fire Regulations Notice' (Bush Fire Notice) pursuant to Section 33 of the *Bush Fires Act 1954*. This document guides land owners on management of fire on their property. This should be accessed online from:

www.northampton.wa.gov.au

7.1. Fire Fighting Facilities

The Kalbarri Bush Fire Brigade (BFB) is the closest emergency services and is less than 5km from entrance to Lot 6 and the Solar Farm. The BFB services maintain 3.4 fire appliance vehicles/trucks and fast attack units, this is also backed up with a modern communication system for call outs as well as communication on the fire ground. These are typical of bush fire brigades for fire fighting services within Western Australia.

The Kalbarri BFB has the following:

- Fully equipped fire station;
- Volunteer trained members;
- A communications and call out system;
- Protective clothing issue to volunteers; and
- DFES approved fire appliances.

Response times can vary depending on commitments of volunteers, fire events current at time and priority of the fire services in the south west of Western Australia during summer periods. DFES recommends that homeowners take care to prepare their individual dwellings for fire season and take precautions against fire as per the **'Bushfire Preparedness – Prepare. Act. Survive.'**

It is generally acknowledged that during large wildfire events, local resources may not be able to respond to every lot due to strategic deployments of services, priorities within the area or state and/or present commitments of volunteers and resources. It is therefore recommended that land owners implement strategies as recommended by DFES to protect life and property during the fire season.

7.2. Fire Suppression Actions

The following protocols/actions for the subject site are recommended:

- Local Government (Shire of Northampton) through their Bush Fire Brigade Organisation is the Controlling Authority for fire suppression operations on the area.
- Bushfire in or threatening the area will be contained to the smallest possible area, either by direct attack or by back burning from established buffers or fire lines taking into consideration the likely threats to life and property as well as the impact of suppression activity on the water quality and conservation objectives of the reserve.
- Irrespective of fire weather forecasts, whenever reserve vegetation will burn and whenever burns on adjoining lands are imminent, a high level of vigilance and preparedness will be maintained.

8. Summary

8.1. Overall Fire Threat

TEA Investments No 1 commissioned Bio Diverse Solutions (Bushfire Consultants) to undertake a bushfire hazard assessment and prepare a BMP to guide all future fire management for the proposed solar farm and proposed lot 6 of Lot 10792 George Grey Drive Kalbarri. The subject area has been rated as having a **Moderate** Bushfire Hazard as defined by the Hazard Assessment Procedure in Guidelines for Planning in Bushfire Prone Areas (WAPC, 2015) due to internal and adjacent heath and shrubland bushfire risks.

There are no new residences proposed for the solar farm proposal and lot 6 therefore AS3959-2009 and building to BAL does not apply to this plan. The subject site is required to have bushfire management for the protection of the solar farm assets, enhancement of biodiversity values contained within the site and to ensure any bushfire risks are managed so that the site does not become a bush fire risk to adjacent properties/reserves.

There are low effective slopes across the subject site. This BMP has been developed for asset protection and recommends bushfire mitigation procedures which are site specific and will not be assessed as per the above elements as a “usual BMP” applies to development. The most effective available method of reducing bushfire threat to the solar farm structures is to implement a range of fuel management techniques to reduce the fire hazard, or opportunity for an asset to catch fire. These measures include:

- Water supply for fire fighting;
- Access – including fire access tracks;
- Prescribed burning (fuel reduction)
- Mechanical alteration of fuels; and
- Site security.

The BMP has been prepared to verify the hazard rating, document control mechanisms to reduce the risk of fire to the proposed solar farm infrastructure and give recommendations to lot 6 owner and the solar farm leasee. This BMP plan has identified a number of ways fire risk can be mitigated and managed across the lot to ensure there is protection to life, property and biodiversity assets.

To mitigate fire risks this report outlines:

- **Water:** There is presently one (non-permanent) water point on the subject site, a strategically placed “dedicated fire fighting tank” (50,000L) will be placed in the solar farm to assist with bushfire control strategies. Adjacent public water points are within 2km of the subject site at Capitol Hill Development (Stiles Road).
- **Fuel reduction strategies:** A series of 6 cells are proposed on Lot 6 which can include less intense fuel reduction strategies in the west and north along creek lines and encourage mosaic and strip burns. A 20m Low Fuel Zone is proposed in the solar farm directly inside the perimeter of the development area.
- **Vehicular access:** The internal existing 4wd access within the subject site allows for Fire Service Access Ways for fire fighting purposes. New access roads into the solar farm are proposed and will meet the minimum DFES requirements. The implementation of vehicular access to acceptable standards and meets technical standards as outlined in Table 3.
- **Site Security:** that illegal access is controlled by fencing and gating to the solar farm and gated access into the proposed lot 6. Regular patrols by the solar farm personnel to be documented into the operational solar farm manual.

This report provides details of the fire management strategies proposed to be implemented across the site to ensure adequate protection of life, property and biodiversity assets. To ensure the mitigation measures are implemented responsibilities are outlined in the following sections for the

lot owner and developer, the solar farm leasee and SoN. An initial works and ongoing works program is also provided in Appendix G.

8.2. Lot 6 Owner and Developer Responsibilities

It is recommended that the owner of lot 6 and the developer of the solar farm shall be responsible for the following:

- Implement this document, Bushfire Management Plan of Lot 6, 10792 George Grey Drive Kalbarri as it applies to the property;
- Comply with standards as outlined by the Shire of Northampton DA conditions;
- Maintain firebreaks in accordance with the SoN Annual Fire Break Order and the requirements contained within this BMP;
- Implement fuel reduction strategies on lot 6 in consultation with DFES, SoN and DPAW;
- Ensure a 50,000L dedicated fire fighting tank is installed within the solar farm with 50,000L maintained at all times – recommend this forms part of the lease documentation;
- Ensure a hardstand is developed and maintained around the around any permanent water source in the property;
- Comply with minimum vehicle construction and maintenance standards as outlined by this BMP and construct access to the following standards as outlined in Table 3:

Table 3 – Vehicular Access Technical Standards

Technical requirements	Internal Access Ways/driveways	Fire Service Routes
Minimum trafficable surface (m)	6	6
Horizontal clearance (m)	6	6
Vertical clearance (m)	4	4
Maximum grades	1 in 8	1 in 8
Maximum grades >50m	1 in 5	1 in 5
Maximum average grade	1 in 7	1 in 7
Minimum weight capacity(t)	15	15
Maximum crossfall	1 in 33	1 in 33
Curves minimum inner radius(m)	12	12
Passing Bays	200m intervals, 20m min length, combined width with access way 6m.	200m intervals, 20m min length, combined width with FSA 6m.
Turn around areas	Every 500 metres, & within 3m of fire fighting tank.	Every 500 metres, should allow 3.4 fire appliance to turnaround. Minimum Diameter 10m
Signs	N/A	As per DFES requirements
Gates	N/A	As per DFES requirements

(WAPC, 2014)

- Maintaining the subject site to minimise bushfire fuels and mitigate the risk of bushfire in accordance with the SoN Fire Control Order (yearly advise brochure updated annually);
- Ensuring the Leasee of the solar farm is aware of and complies with the BMP; and
- Periodical review of the Bushfire Management Plan (recommended every 5 years).

A works program has been developed to guide the Lot owner and developer of the solar farm outlining responsibilities, completion times and standards. Please refer to Appendix G.

8.3. Solar Farm Leasee

- To take measures to protect their own assets on their lease property;
- Implement this document, Bushfire Management Plan of the solar farm development area on Lot 6, 10792 George Grey Drive Kalbarri as it applies to the property;

- Ensure that the Low Fuel Zone are maintained to 20 metres around the perimeter of the solar farm to <50mm vegetative height at all times (see Appendix E);
- Fuel depots: in respect of land owner and/or occupied by the lease is situated, has any container normally used to contain liquid or gas fuel, including the land on which any ramp or supports are constructed, the land shall be clear of all flammable material;
- Maintaining the property to minimise bushfire fuels and mitigate the risk of fire in accordance with SoN annual Fire Break Notice;
- Maintain 50,000L of water in dedicated fire fighting tank at all times;
- Undertake regular patrols of fences, gates and signs to ensure all in good condition and visible;
- The Solar farm Leasee is aware of:
 - The endorsed and approved Bushfire Management Plan,
 - A hard copy of the A4 book “Prepare. Act. Survive”,
 - Fire Control Information supplied by the Shire of Northampton (annual updated advice brochure); and
- It is the responsibility of the Solar Farm to maintain annually in good order and condition Low fuel zones, water supply, access and internal driveway standards.

Future modifications other than requirements as set out in this Bushfire Management Plan can only be done with written agreement from the SoN.

8.4. Shire of Northampton Responsibility

At approval and endorsement of this Bushfire Management Plan, the Shire of Northampton has statutory control and responsibility to ensure that aspects of the Bushfire Management Plan and community fire safety are maintained.

It is recommended the Shire of Northampton be responsible for the following:

- Provide advice on standards and methods to achieve community fire protection to owners/occupiers of land through issue and enforcement of the current SoN Fire control Order (yearly advice brochure updated annually);
- Developing and maintaining District Fire Fighting Facilities and related infrastructure;
- Maintaining public roads and access consistent with the standards this Bushfire Management Plan and in the Guidelines for Planning in Bushfire Prone Areas (WAPC, 2015) and
- SoN, through their Bush Fire Brigade Organisation is the Controlling Authority for fire suppression operations on the area.

9. Conclusions

This Bushfire Management Plan has been developed to guide all future fire management for the proposed solar farm and newly subdivided lot 6 at 10792 George Grey Drive Kalbarri. This plan has utilised some principles as outlined in Guidelines for Planning in Bushfire Prone Areas (WAPC, 2015) with specific recommendations for:

- Accessible “Emergency Access Ways” along access tracks for BFB personnel for fire fighting operations, access and egress in fire events;
- Containing all bushfire mitigation strategies within lot 6 and not reliant on any prescribed burning operation from adjacent neighbours for asset protection;
- Additional strategic fire fighting 50, 000L water supply tank;
- A Strategic 20m Low Fuel Zone within the perimeter of the solar farm, maintained to <50mm in height at all times;
- Fuel reduction strategies through prescribed burning; and
- Increased site security.

In summary it is recommended to the Lot owner at 6, that in undertaking the proposed solar farm development at Lot 10792 George Grey Drive Kalbarri, they:

- Adhere to conditions of Development Approval as issued by the Shire of Northampton;
- If any changes to this Bushfire Management Plan nor mitigation procedures changes occurs, the plan is updated to reflect these changes, with approval from the Shire of Northampton and DFES (copy supplied to DPaW); and
- Implement this document, Bushfire Management Plan standards of construction and recommendations.

10. References

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State Land Information Portal (SLIP) (2015) map of Bushfire Prone Areas. Office of Bushfire Risk management (OBRM) data retrieved from:

<https://mapsengine.google.com>

Appendices

Appendix A – Location Mapping

Appendix B – Approved Subdivision Guide Plan

Appendix C - Vegetation Classes Map

Appendix D – Bushfire Hazards – solar farm

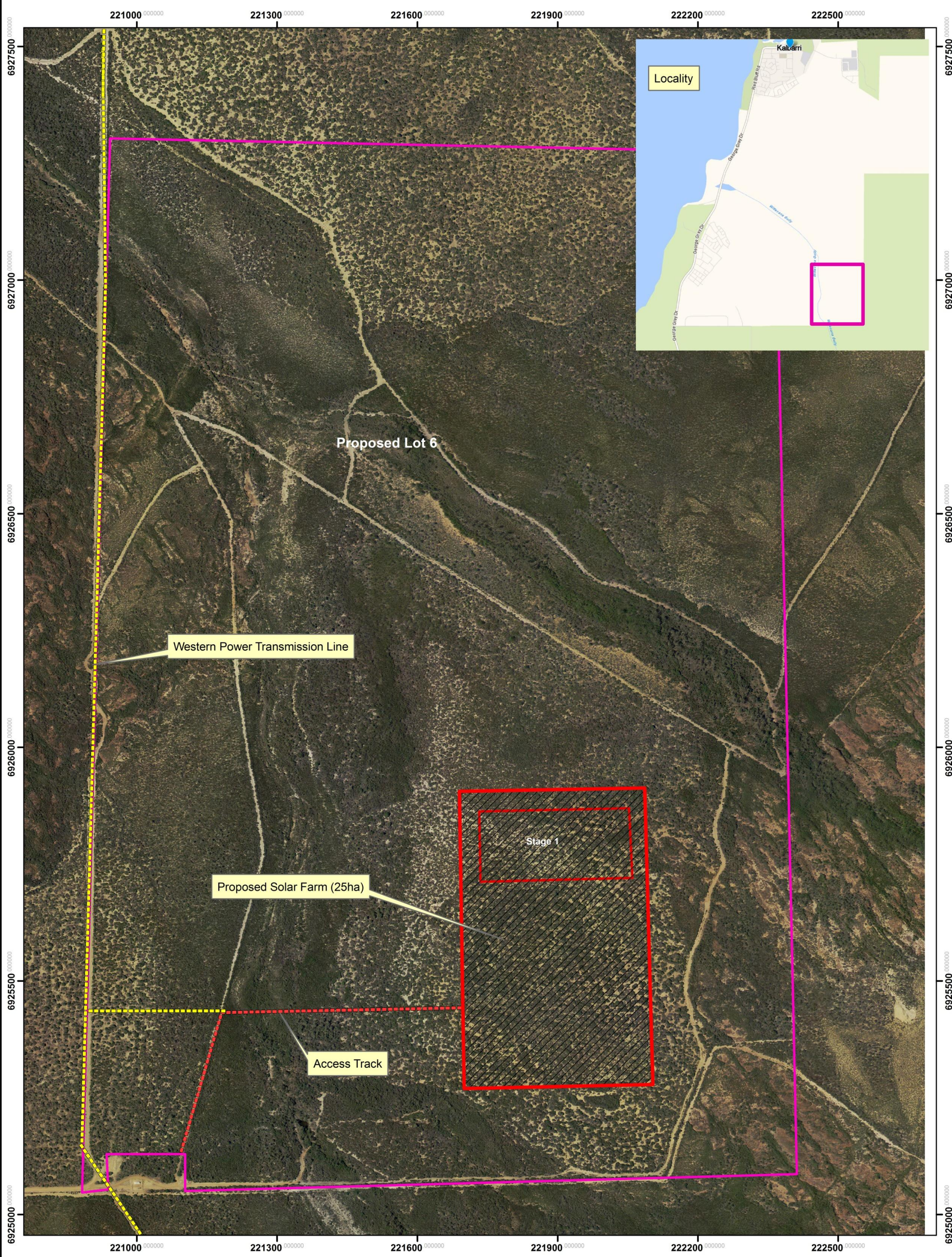
Appendix E – Bushfire Management Plan

Appendix F –Fuel Reduction Plan






Appendix G – Works Program

Appendix A



Location Mapping



Legend

	Solar Farm		Lot 6
	Western Power transmission line		Stage 1
	Access track		

Scale
1:7,000 @ A3
MGA GDA 94 Zone 50



BIO DIVERSE SOLUTIONS

55 Peppermint Drive
Albany, WA 6330
Australia

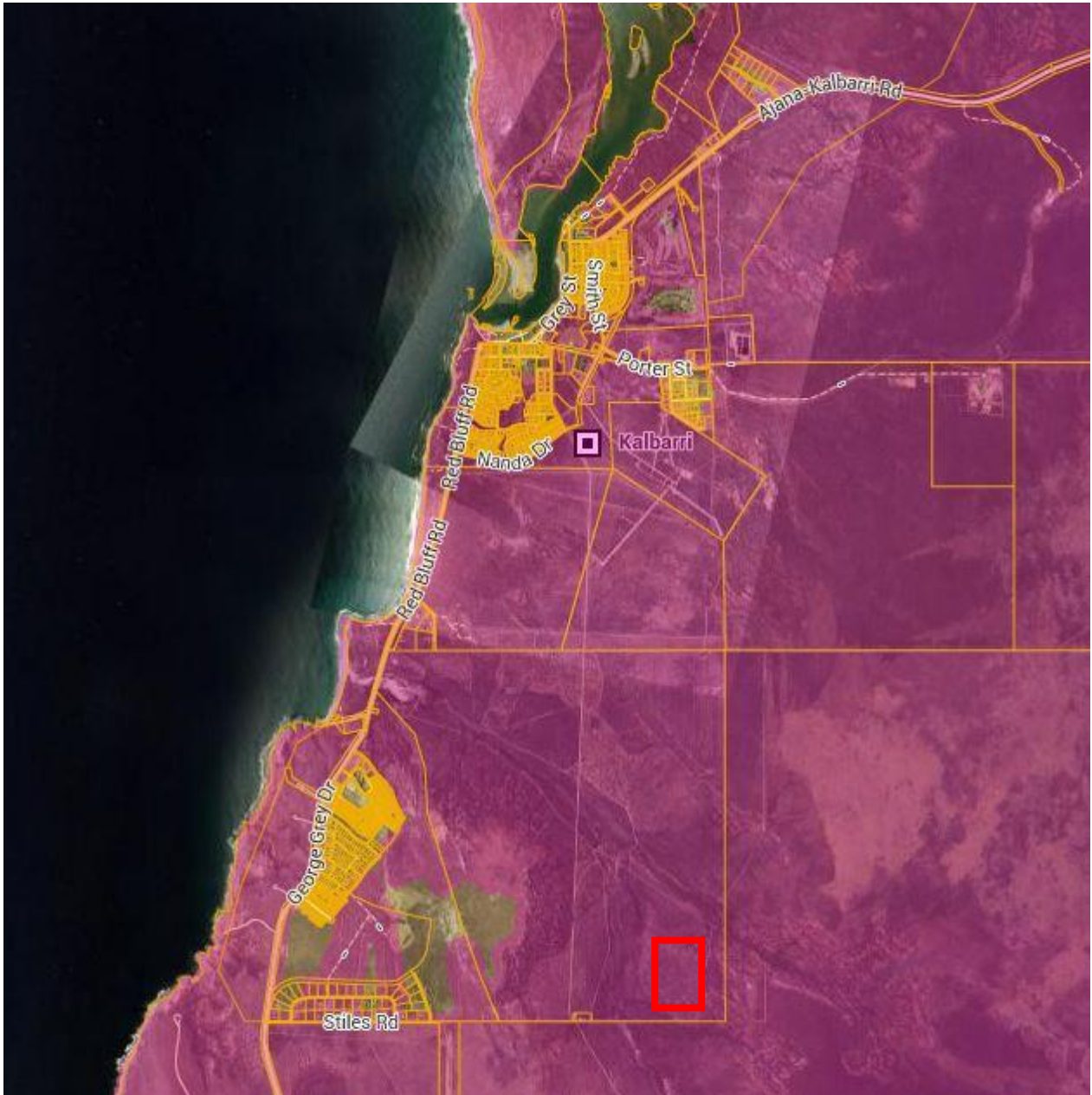
Tel: 08 9841 3936
Fax: 08 9841 3938
Mob: 0447 555 516

CLIENT TEA Investments No 1
Lot 10792 George Grey Road
Kalbarri WA

Location Mapping

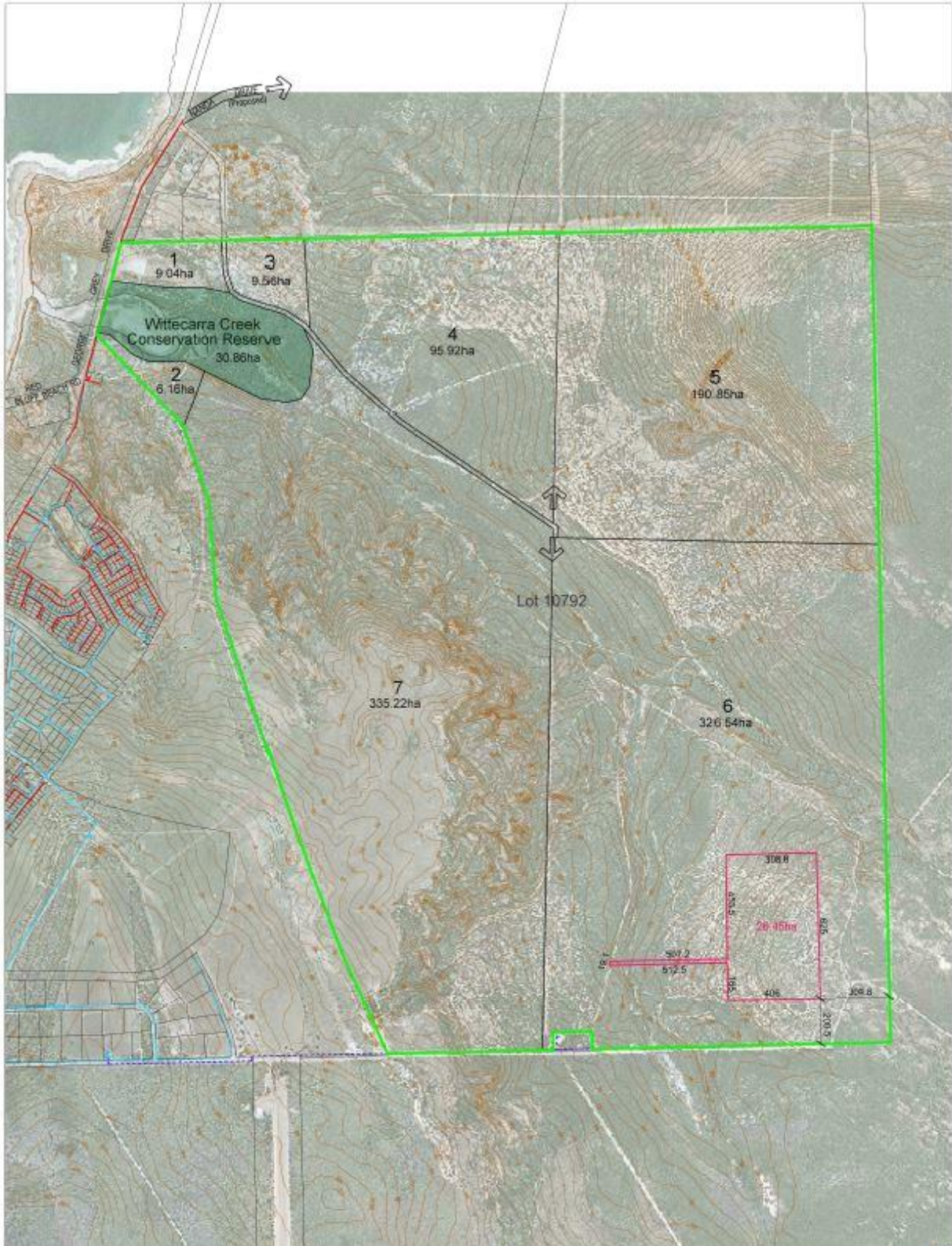
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OBRM BUSHFIRE PRONE MAPPING 7/12/15



Appendix B

Subdivision Guide Plan



Plot No.: 20882-3
 Revision: REV0
 Scale: 1:15000@A3

Subject site
 Solar Farm

LOT 10792
 GEORGE GREY ROAD
 KALBARRI

Plan 2

■ CALC DRAIN 1:114.0215 ■ ALL-10-100m 1000Pa 200
■ SHEDDING: C&A ■ 1:107500 845
■ SHEDDING: V&B ■ 1:107500 845



Scale 4 Post-Flow 40 Hester Road Opotika Park WA 6317 www.whelans.com.au

Appendix C

Vegetation Classes Map

221600 000000

221900 000000

222200 000000

6926000 0000000

6926000 0000000

6925500 0000000

6925500 0000000

6925000 0000000

6925000 0000000

221600 000000

221900 000000

222200 000000



Legend

- Slope degrees
- 100m to Bushfire Prone Vegetation
- Solar Farm Development Area
- Open Acacia heath -Type C
- Dense Acacia thicket - Type D
- Acacia Shrubland - Type D
- Rocky breakaway - Type D
- Access track
- Lot 6

Scale
1:4,000 @ A3
MGA GDA 94 Zone 50

0 20 40 80 120 160 200 Meters

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Australia

Tel: 08 9841 3936
Fax: 08 9841 3936
Mob: 0447 555 516

CLIENT: TEA Investments No 1 Lot 10792 George Grey Road Kalbarri WA		
Vegetation Classes Map		
STATUS	FILE	DATE
FINAL	WHEL033	25/11/2015

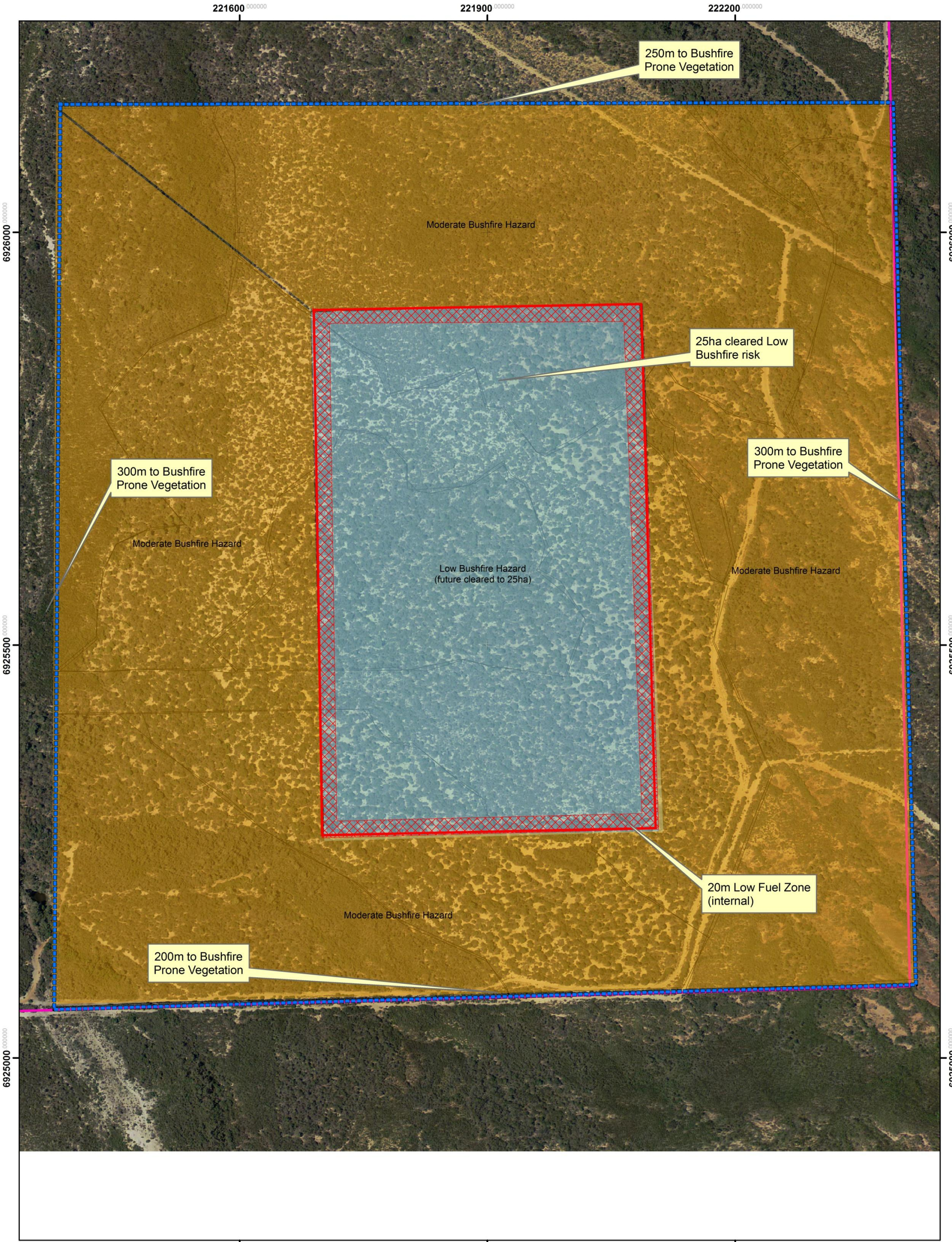
Appendix D

Bushfire Hazards – Solar Farm

221600 000000

221900 000000

222200 000000



Legend

- 20m Low Fuel Zone
- Solar Farm Development Area
- Distance to Bushfire Prone Vegetation
- Moderate bushfire risk
- Low Bushfire Risk

Scale
1:4,000 @ A3
MGA GDA 94 Zone 50



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Albany, WA 6330
Australia
Tel: 08 9841 3936
Fax: 08 9841 3936
Mob: 0447 555 516

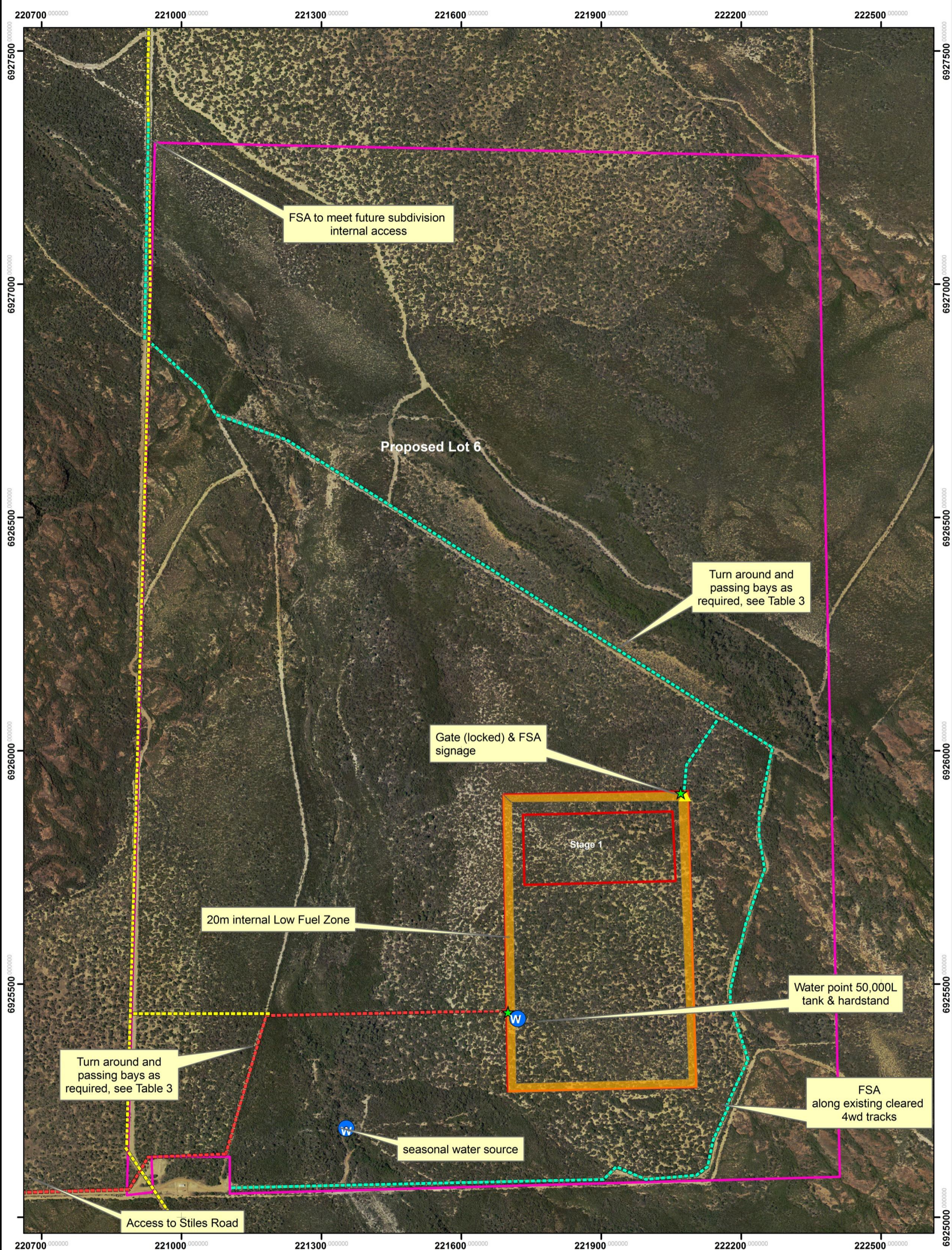
CLIENT TEA Investments No 1
Lot 10792 George Grey Road
Kalbarri WA

Bushfire Hazard Mapping

FINAL	WHEL033	11/11/2015
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Appendix E

Bushfire Management Plan



Legend

- Gate
- Fire Service Access (FSA)
- Western Power transmission line
- Stage 1
- Sign
- 20m Low Fuel Zone
- Access track
- Lot 6
- Water Point
- Solar Farm

Scale: 1:7,000 @ A3
MGA GDA 94 Zone 50

50 100 200 300 400 500 Meters

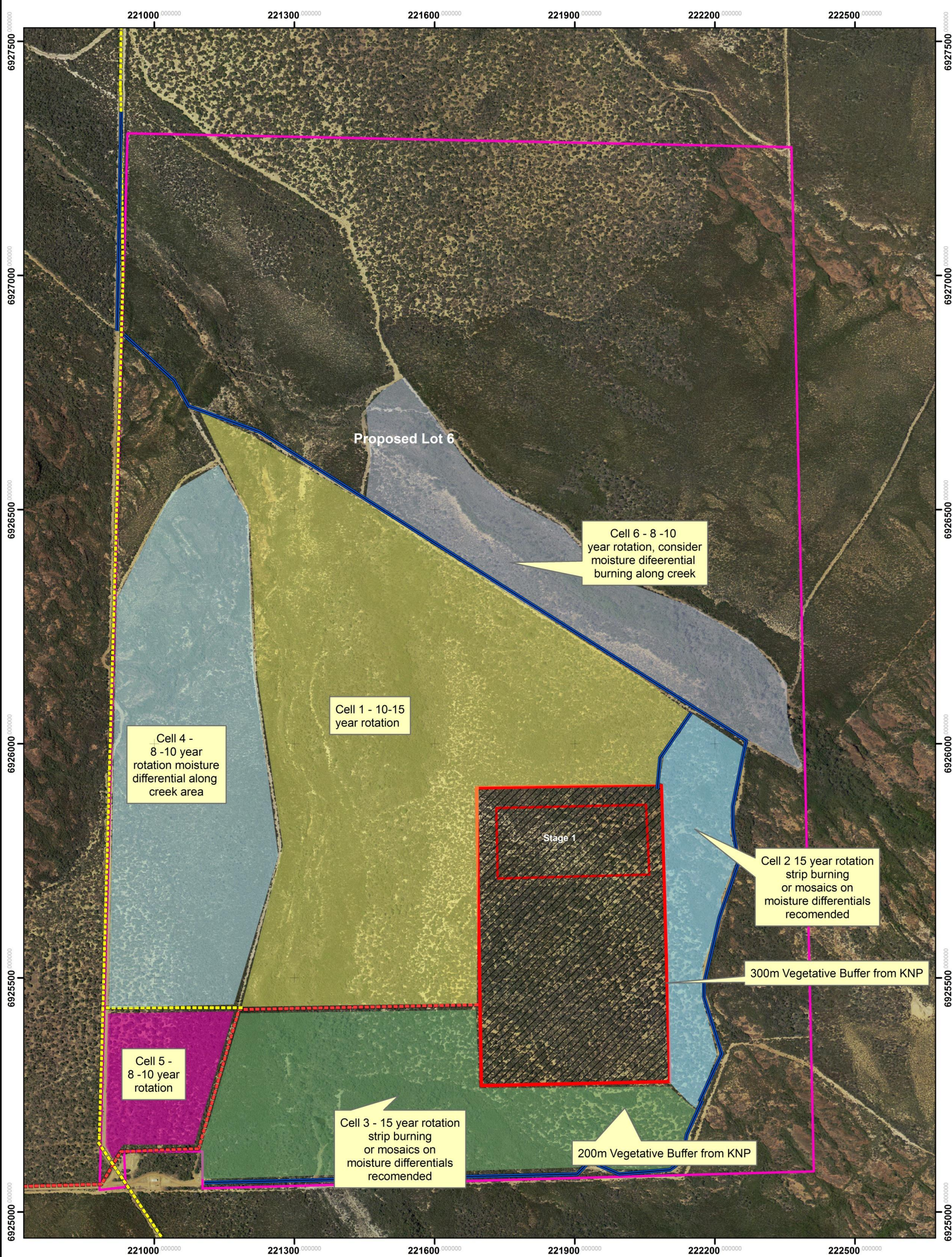
55 Peppermint Drive
Albany, WA 6330
Australia

Tel: 08 9841 3936
Fax: 08 9841 3938
Mob: 0447 555 516

CLIENT: TEA Investments No 1 Lot 10792 George Grey Road Kalbarri WA		
Bushfire Management Plan		
STATUS: FINAL	FILE: WHEL033	DATE: 11/11/2015

Appendix F

Fuel Reduction Plan

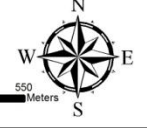


Legend

- Fire Service Access
- Cell 5
- Cell 6
- ▭ Cell 4
- ▭ Cell 1
- ▭ Cell 2
- ▭ Cell 3
- ▨ Solar Farm
- - - Western Power transmission line
- - - Access track
- ▭ Lot 6
- ▭ Stage 1



Scale
1:7,000 @ A3
MGA GDA 94 Zone 50



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55 Peppermint Drive
Albany, WA 6330
Australia

Tel: 08 9841 3936
Fax: 08 9841 3936
Mob: 0447 555 516

CLIENT: TEA Investments No 1
Lot 10792 George Grey Road
Kalbarri WA

Fuel Reduction Plan

STATUS: FINAL	FILE: WHEL033	DATE: 11/11/2015
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Appendix G

Works Program

Bushfire Mitigation Initial Works Plan Lot 6 & Developer

Item	Standard required/Task Description	To be completed by	Liaison with	Further information
Internal Access Tracks to Solar Farm	6m internal access tracks, standards as per Table 3.	Developer	N/A	As outlined in Bushfire Management Plan Section 6.3 & Table 3
Fire Service Access	6m horizontal clearance and 4m vertical clearance, to Standards in Table 3 to meet north-west to new subdivision.	Lot 6 owner	N/A	As outlined in Bushfire Management Plan Section 6.3 & Table 3
Water Points	Additional fire fighting tank strategically located, hard stands implemented.	Developer and Lot 6 owner	DFES	As outlined in Bushfire Management Plan
20m Low Fuel Zone	Maintained to <50mm at all times	Developer & Lessee of Solar farm	N/A	As outlined in Bushfire Management Plan
Firebreaks	To Shire of Northampton Standard as outlined in annual Firebreak Order.	Lot 6 owner	SoN	As outlined in Bushfire Management Plan and Shire of Northampton Fire break order.
Signs	Installed at FSA location shown on BMP Map	Developer & Lessee of Solar farm	SoN	Standards as outlined in Bushfire Management Plan Section 6.3.4 and locations noted in BMP Map Appendix F.
Gates	Installed at FSA location shown on BMP Map	Developer & Lessee of Solar farm	SoN	Standards as outlined in Bushfire Management Plan Section 6.3.3 and locations noted in BMP Map Appendix F.
Fuel reduction	Max 15 year rotation as outlined in fuel reduction plan	Lot 6 owner within 8-15 years or as prescription states	DPAW, SoN & DFES	As outlined in Bushfire Management Plan and in consultation with the Shire of Northampton, DPAW and DFES.

Bushfire Mitigation Annual/Ongoing Maintenance Plan

Item	Standard required/Task Description	To be completed by	Liaison with	Further information
Internal Access Tracks	6m internal access tracks, maintained for emergency access. 6m horizontal clearance and 4m vertical clearance. Standards to Table 3, column 1	Annual check of clearance for heavy duty trucks Leasee of Solar farm	N/A	As outlined in Bushfire Management Plan Table 3 and BMP Mapping Appendix E.
Fire Service Access	6m horizontal clearance and 4m vertical clearance. Standards in Table 3, column 2..	Lot 6 owner	N/A	As outlined in Bushfire Management Plan Table 3 and BMP Mapping Appendix E.
Fire fighting tank	<ul style="list-style-type: none"> • Check valves in working order; • Check water level; and • Ensure hardstand clear and maintained surfaces. 	Leasee of Solar farm	DFES	As outlined in Bushfire Management Plan
20m Low Fuel Zone	Slashed and maintained regularly <50mm in height	Leasee of Solar farm	DFES	As outlined in report Section 6.3.6 and BMP Mapping Appendix E.
Firebreaks	To Shire of Northampton Standard as outlined in annual Firebreak Order.	Lot 6 owner & Leasee of Solar farm	SoN	As outlined in report Section 6.3.5 and Shire of Northampton Fire break order.
Signs	Ensure in place & visible along FSA locations at gates shown on BMP Map.	Lot 6 owner & Leasee of Solar farm	N/A	As outlined in report Section 6.3.4 and BMP Mapping Appendix E.
Gates	In working order along strategic fire break locations shown on BMP Map. Ensure locked and no signs of illegal entry.	Lot 6 owner & Leasee of Solar farm	Kalbarri BFB re- locks	As outlined in report Section 6.3.3 and BMP Mapping Appendix E.
Fuel reduction	Max 15 year rotation as outlined in fuel reduction plan in consultation with SoN, DPaW & DoW	Within 8 years or as prescription states	DPAW, SoN & DoW	As outlined in Fuel reduction strategy Appendix F and Section 6.2 in report
Review of BMP Report	After completion of new infrastructure to update mapping and locations of infrastructure and access. Every 5 years to update burn history & maintenance requirements	Lot 6 Owner and Leasee of solar farm	N/A	Copied to SoN.

APPENDIX G: Definitions of Conservation codes

Under the Wildlife Conservation Act 1950, the Minister for the Environment may declare species of flora to be protected if they are considered to be in danger of extinction, rare or otherwise in need of special protection. Schedules 1 and 2 deal with those that are threatened and that are presumed extinct, respectively.

- **T: Threatened Flora (Declared Rare Flora — Extant)**

Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such (Schedule 1 under the Wildlife Conservation Act 1950).

Threatened Flora (Schedule 1) are further ranked by the Department according to their level of threat using International Union for Conservation of Nature (IUCN) Red List criteria:

CR: Critically Endangered – considered to be facing an extremely high risk of extinction in the wild

EN: Endangered – considered to be facing a very high risk of extinction in the wild

VU: Vulnerable – considered to be facing a high risk of extinction in the wild.

- **X: Presumed Extinct Flora (Declared Rare Flora — Extinct)**

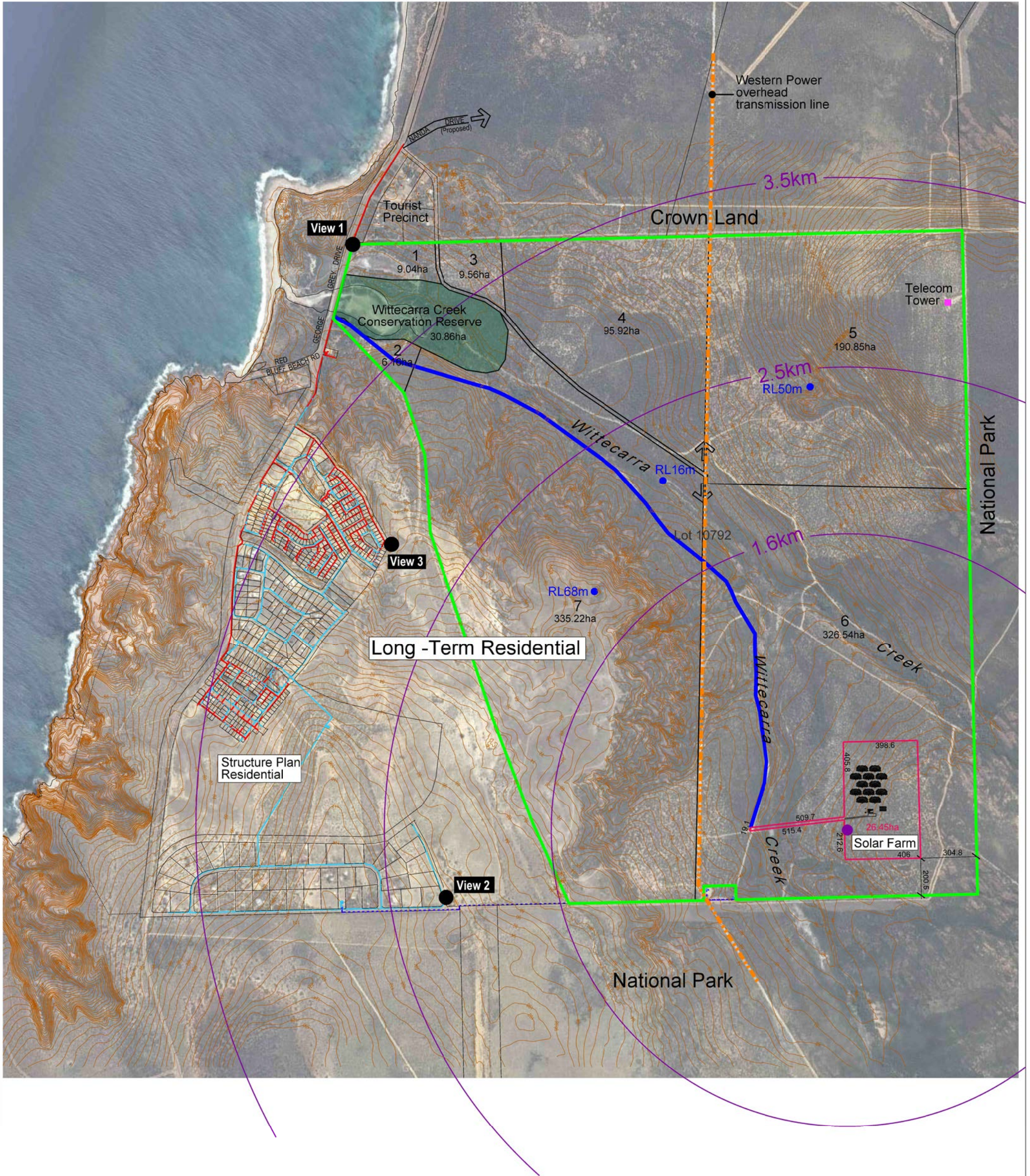
Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such (Schedule 2 under the Wildlife Conservation Act 1950).

Taxa that have not yet been adequately surveyed to be listed under Schedule 1 or 2 are added to the Priority Flora List under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna.

Taxa that are adequately known, are rare but not threatened, or meet criteria for Near Threatened, or that have been recently removed from the threatened list for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. “Conservation Dependent” species are placed in Priority 5.

- **Priority 1** - Poorly known Taxa. Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey;
- **Priority 2** - Poorly Known Taxa. Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey;
- **Priority 3** - Poorly Known Taxa. Taxa which are known from several populations, and the taxa are not believed to be under immediate threat (i.e. not currently endangered), either due to the number of known populations (generally >5), or known populations being large, and either widespread or protected. Such taxa are under consideration for declaration as 'rare flora' but are in need of further survey;
- **Priority 4** - Rare Taxa. Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5-10 years; and

Priority 5 - Taxa that are not threatened but are subject to a specific conservation program, the cessation of which would result in the taxon becoming threatened within five years



Plan No. : 20582-9
 Revision : REV.0
 Scale : 1:20000@A3



- Subject site
- Solar Farm
- RL68m ● Levels
- Telecommunications Tower

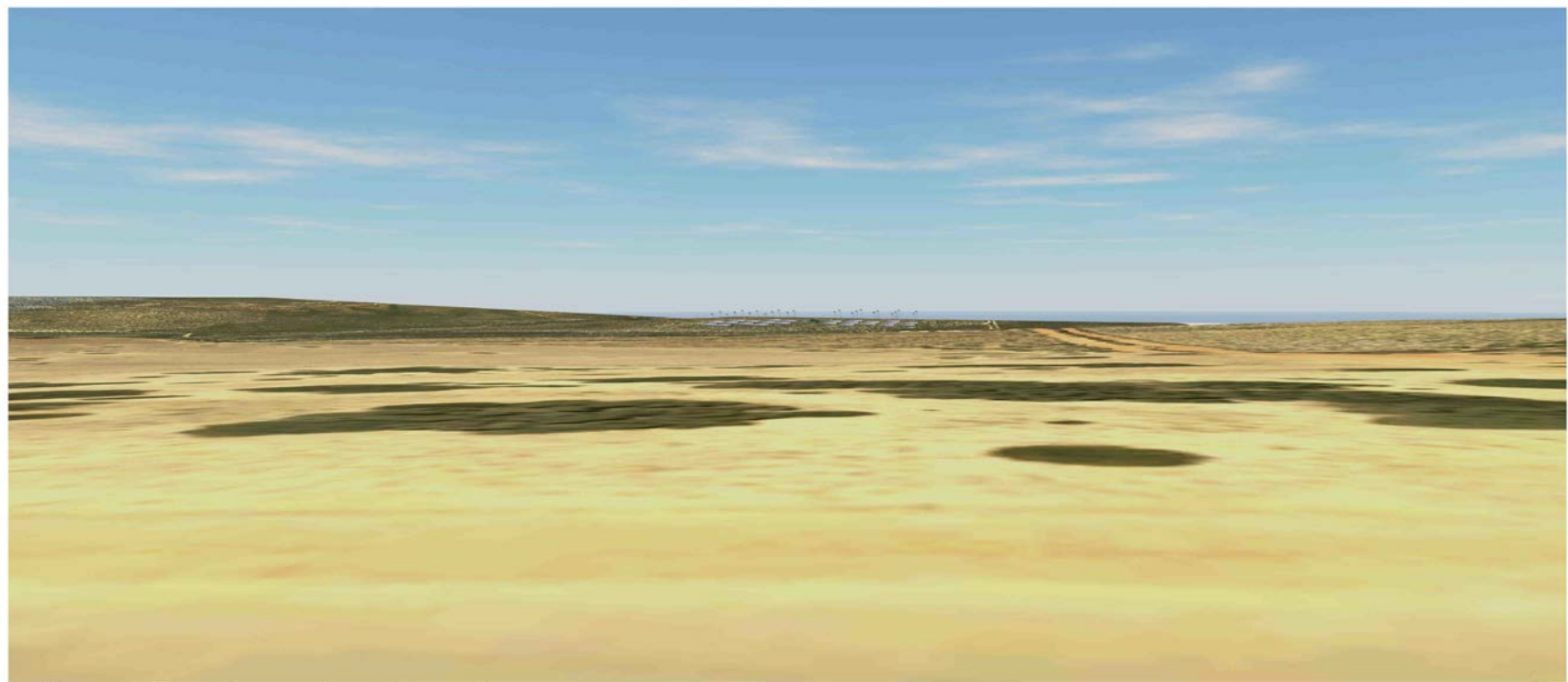
**PROPOSED SOLAR THERMAL POWER STATION
 VISUAL IMPACT ASSESSMENTS PLAN
 LOT 10792
 GEORGE GREY ROAD
 KALBARRI**

DATE DRAWN: 08/11/2016 FILE: 161102 Visual impact assessment.dgn
 DRAWN BY: CdeL V DATUM: AHD
 CHECKED BY: VB H DATUM: MGA94 (50)





View 1 - George Grey Drive



View 2 - Beagle Road



View 3 - Darwinia Drive

Plan No. : 20582-8
 Revision : REV.0
 Scale : NTS



Suite 4 First Floor 40 Hasler Road Osborne Park WA 6017 www.whelans.com.au

PROPOSED SOLAR THERMAL POWER STATION
 VISUAL IMPACT PERSPECTIVES
 LOT 10792 GEORGE GREY ROAD
 KALBARRI

DATE DRAWN: 26/10/2016 FILE: 161026 Power Station Visual Impact Perspectives.dgn
 DRAWN BY: CdeL CHECKED BY: MM



10.6.1.3

POSTED
1027322

A4151



L 107 92 GEO HW

Telstra Plan Services

Level 18, 275 George Street
Brisbane, QLD 4000

Postal Address:
Locked Bag 3820
Brisbane, QLD 4000

Email: F0501488@team.telstra.com

Date **24/05/2016**

Your Ref: 10.6.1.3 – A4151 – L10792 GEO / OCR27434
Our Ref: PF178294-1

Hayley Williams
planner@northampton.wa.gov.au

Dear Mark,

Re: Proposed Solar Thermal Power Station – Lot 10792 George Grey Drive, Kalbarri.

Thank you for your communication dated **24/05/16** in relation to the address specified above.

The purpose of this letter is to notify you that Telstra's plant records indicate that there are **Telstra assets** located within the area of the proposal. We note that our plant records merely indicate the approximate location of the Telstra assets and may not be up to date. These records should not be relied upon by you as they may not depict a true and accurate reflection of the exact location of the assets.

We suggest that you contact Dial Before You Dig for a detailed site plan and engage a Telstra Accredited Plant Locator (APL) to determine the exact location of the asset. To obtain a list of Telstra Accredited Plant Locators (APL) please phone 1100 or visit www.1100.com.au.

Once the precise location of the Telstra assets has been established, you can either arrange for the Telstra assets to be relocated or re-align your proposal to ensure they are no longer impacted.

Telstra's Asset Relocation team can be engaged to obtain a quote to relocate the assets from the location in question. The relocation of the assets are carried at the cost of the disturber. Please phone 1800 810 443 or email F1102490@team.telstra.com to arrange for an asset relocation.

Alternatively, once your proposal has been re-aligned to eliminate any impact to Telstra's assets, please contact F0501488@team.telstra.com for a re-evaluation of your proposal so that Telstra can be assured that its assets will not be affected by your development.

As these assets comprise an essential component of the Telstra network, we take this opportunity to highlight Telstra's rights and requirements to ensure that they are understood. The following is stated for your information:

(1) As you may be aware, Telstra's existing facilities are grandfathered under the *Telecommunications Act 1997* (Cth). Schedule 3 of the *Telecommunications Act* enables such facilities to legally occupy land in perpetuity for the duration of that facilities' use.

(2) Part 1 of Schedule 3 of the *Telecommunications Act 1997* (Cth) authorises a carrier to enter land and exercise any of the following powers:

- inspect the land
- install a facility
- maintain a facility

In the case of installation and planned maintenance a notification will be afforded and such work will generally proceed during business hours. However, from time to time, certain activities need to be carried out without delay in order to protect the integrity of the network. Such activities may require access without notice and at any time of the day or night.

(3) If you subdivide the land at any time in the future it may become necessary, in the opinion of Telstra to remove, or alter the position of a facility. In these circumstances the carrier may enter the land and do anything necessary or desirable for that purpose. Under clause 53 of Schedule 3 to the *Telecommunications Act*, the person who proposes to subdivide the land is liable to pay the carrier the reasonable cost of anything reasonably done by the carrier in this regard.

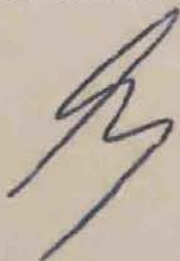
(4) There is a requirement that all access to Telstra's network is facilitated by Telstra, via the normal channels available to all customers Australia wide. Tampering with, or interfering with telecommunications infrastructure or a facility owned or operated by a carrier (being Telstra) is an offence under the *Criminal Code Act 1995* (Cth). Heavy penalties may apply for breach of this prohibition, and any damages suffered, or costs incurred, by Telstra as a result of any such interference may be claimed against you. This means that you are not permitted to interfere with, repair or relocate Telstra's infrastructure, either personally or through a contractor without approval and authorisation from Telstra.

(5) Individuals owe Telstra a duty of care that must be observed when working in the vicinity of Telstra's communication plant or assets. If Telstra's facilities are damaged as a result of any property development or any interference with such facilities, the person will be liable in tort (negligence) for any loss or damage (including consequential loss) suffered by Telstra and/or any member of the public. Telstra will not hesitate to take action to recover such loss or damage caused by such interference to Telstra's Network.

Telstra would also appreciate due confirmation in the event that the applicant contemplates divesting its interest or control of this land, that the information contained here is passed on to the prospective owners.

If you have any questions regarding the information in this letter, please do not hesitate to contact myself at F0501488@team.telstra.com.

Yours sincerely,



Lachlan Smith

Telstra Telstra Plan Services



Government of **Western Australia**
Department of **Mines and Petroleum**

DL

POSTED
OCR27341

Your ref: 10.6.1.3-A4151-L10792 GEO/OCR27434
Our ref: A2421/201401
Enquiries: Elias Peiris - Ph 08 9222 3533 Fax 08 9222 3633
Email: elias.peiris@dmp.wa.gov.au

Mr Garry Keeffe
Chief Executive Officer
Shire of Northampton
PO Box 61
Northampton WA 6535

Dear Mr Keeffe

**PROPOSED SOLAR THERMAL POWER STATION LOT 10792 GEORGE
GREY DRIVE, KALBARRI**

Thank you for your letter dated 17 May 2016 for inviting comment on the above development application.

The Department of Mines and Petroleum has determined that this proposal raises no significant issues with respect to mineral and petroleum resources, geothermal energy, and basic raw materials.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Rick Rogerson'.

Rick Rogerson
Executive Director
GEOLOGICAL SURVEY OF WESTERN AUSTRALIA

25 May 2016

Comments Regarding the Proposed Solar Thermal Power Station

To Garry Keeffe, CEO Shire of Northampton

Thanks for the opportunity to comment on the proposed Solar Thermal Power Station in Kalbarri.

Two weeks ago I sent an email to the Town Planner, Hayley, with a list of questions regarding the proposal. She responded saying my questions were also raised during Council's assessment of the proposal and that you'll be requiring further information from the Applicant to support their application; and that once you have this information I will be advised.

It is now two days before the public comment period closes and as I have heard nothing more in response to my questions I am having to make comments with inadequate information on which to base them. Therefore I'll include the same list of questions here. I suspect I will have more comments when those questions are answered.

Firstly though, I live at the eastern end of Explorer Ave, about 2.5 km from the proposed solar thermal power station. On paper this appears to be a reasonable distance; however it concerns me that my home is in direct line of sight from the proposed site—meaning there is nothing to provide a sound barrier between my home and the proposed power station. The same can be said of nine other occupied properties on the eastern side of the crest in Explorer Ave and Stiles Road; four of which are located closer to the proposed site than my property is.

Below is a photo taken at my home, the proposed power station site is clearly visible on the ridge in the background. The rocky outcrop in the picture is mentioned in the power station site evaluation as the reason the site was moved slightly westward (in order to avoid the outcrop). The power line is approximately one third of the way between my home and the proposed site.



Comments Regarding the Proposed Solar Thermal Power Station

I am all for improving Kalbarri's power service. I am also a firm believer that renewable energy is the way forward. I do not, however, want to hear industrial generators or other noise from my home.

My questions are as follows:

1. The site was chosen because it is "remote from civilisation". I take it that is because of noise—how much noise will the power station make?
2. How much water will the power station use?
3. Will it supply power to all of Kalbarri when the grid goes offline?
4. Are the "vegetation buffers to provide visual separation" supposed to hide the mirrors only, or also the 12 x 24m high towers?
5. How tall are the 22 cooling towers?
6. Will this plant use superheated salt; and if so, what is the process involved—does the salt need replacing at intervals and what is the disposal plan if it does?
7. Are you aware that Morawa committed to a similar plan a few years ago, and pulled out due to feeling it was "beyond the capacity" of the Council? Does this indicate there will be a financial—or other—commitment expected from Northampton Shire Council?
8. Has Council been in touch with other councils where there are similar installations and/or the Morawa Council to see what changed their minds?
9. What was the outcome of the Dept. of Environment Regulation's request (Appendix 5) regarding their concerns about the potential impact of heavy rainfall in Wittecarra Gully due to land clearing?
10. Will the ground around the mirrors be sealed? If so, would there be a requirement to catch rainwater, both for use at the plant and for storage in case of bushfire?
11. Many of the councillors who attended an information session about four years ago are no longer on Council. Have the new councillors been given a similar briefing?
12. This is Stage One—what is the proposed number of towers in the long-term planning?

Thank you again for the opportunity to comment.

Regards

Jacqueline Willbond

10-8-1-3 PC
A4151 L10792 GEO
1CR27342

Hayley Williams

From: GRANT Bronte <Bronte.Grant@water.wa.gov.au>
Sent: Monday, 30 May 2016 9:06 AM
To: Hayley Williams
Subject: RE: DoW Request for Addition Information - Proposed Solar Thermal Power Station Lot 10792 George Grey Drive Kalbarri SoN ref. 10.6.1.3-A4151 - L107792 GEO / OCR27434 | DoW ref WRD322946 PA7773

Dear Hayley

Yes there are a lot of bugs around!! The DoW's requirements are as contained in the email sent in 2015 below. The DoW would like for the proponent to provide information pertaining to:

Waterways management

Proposed demarcation of the proposed foreshore reserve and identification of any surface water management issues caused by proposed clearing of land. Proponent to commit to ensuring stormwater is retained on site in line with *Better Urban Water Management (WAPC 2008)* and the *Stormwater Management Manual for Western Australia*.

Water resource protection

Reference be made to the WQPN25 and WQPN65 – provide a summary of management actions to ensure groundwater resources are protected from any potential risks from the land use activity change, for example provide detail of hydrocarbon storage (if required) and spill response; and

Groundwater licensing

Will groundwater need to be accessed for the proposed development? If so what volumes will be required? Identify any potential impacts of drawdown on groundwater dependant vegetation. The proponent must obtain a licence under the Rights in Water and Irrigation Act 1914 if required.

I hope this helps Hayley, please give me a call should you wish to discuss further.

From: WRAY Kerry
To: 'vernon.butterly@whelans.com.au'
Cc: 'nicholas.detchon@dpaw.wa.gov.au'; 'planner@northampton.wa.gov.au'
Subject: DoW Reply - Solar Farm - Wittecarra Creek

Hi Vernon

The proposed solar farm is located partially within the Priority 2 Kalbarri Water Reserve, but is located outside the Source Protection Plan (2006):

"The vulnerability of the groundwater system is high because the aquifer is unconfined and is recharged by surface water runoff."

Storage and use of toxic and hazardous substances such as chemicals and fuels in the P2 Kalbarri Water Reserve may require additional WQPNs and conditions which may apply, depending on volume and type of storage of these substances.

According to the DoW's Draft WQPN 25 Land use compatibility in public drinking water source areas, sections 19 & 20.

The matter of the conservation reserve for Wittecarra Creek is largely within the jurisdiction of DPaW, but the riparian foreshore area. This will require the proponent to investigate and determine an appropriate riparian foreshore area.

Future subdivisions need to adhere to *Better Urban Water Management* (WAPC 2008) and the *Stormwater Management* (WAPC 2008).

Any abstraction and use of groundwater for the proposal will require the proponent to obtain a groundwater licence. A groundwater licence, proclaimed under the *Rights in Water and Irrigation Act 1914*, is required to be licensed.

If there was to be a groundwater licence, riparian vegetation of Wittecarra Gully would need to be protected.

Based on existing data (no depth to groundwater mapping or nearby bores), it is unclear whether the riparian vegetation. Drawdown of the groundwater table would vary depending on aquifer transmissivity and the proponent that drawdown impacts on Wittecarra Gully would be considered at the time of a licence.

I trust this information will be of assistance, please call or email if you wish to discuss,

Regards

Kerry

Ms Kerry Wray | A/Natural Resource Management Officer | Water and Land Use Coordination
Department of Water
kerry.wray@water.wa.gov.au
(08) 6364 7721

Yours sincerely

Bronte Grant
Natural Resource Management Officer
Water and Land Use | Department of Water
08 9965 7431
bronte.grant@water.wa.gov.au

From: Hayley Williams [mailto:planner@northampton.wa.gov.au]

Sent: Thursday, 26 May 2016 5:42 PM

To: GRANT Bronte

Subject: Re: DoW Request for Addition Information - Proposed Solar Thermal Power Station Lot 10792 George Grey Drive Kalbarri SoN ref. 10.6.1.3-A4151 - L107792 GEO / OCR27434 | DoW ref WRD322946 PA7773

Thanks Bronte.

Sorry I have been unavailable this week, sick kids at home!

The information we sent through is all we have received from the applicant. It would be much appreciated if you can advise us of DoWs requirements so that we can ensure the applicant provides this. If it is integral to the application then I would rather not issue planning approval subject to conditions but rather have DoW happy with the information submitted.

I will be back in the office on Tuesday.

Thanks,
Hayley

Sent from Hayley's iPhone

On 25 May 2016, at 1:37 PM, GRANT Bronte <Bronte.Grant@water.wa.gov.au> wrote:

Dear Hayley

Proposed Solar Thermal Power Station Lot 10792 George Grey Drive Kalbarri SoN ref. 10.6.1.3-A4151 - L107792 GEO / OCR27434 | DoW ref WRD322946 PA7773

Tried to call, will touch base with you some stage tomorrow (I will be out in the field in the morning, hopefully our paths cross).

Thank you for the above referral dated 17 May 2016 requesting DoW comment and advice for the proposed development at Lot 10792 George Grey Drive Kalbarri. The DoW provided advice to Wheelans and the Shire of Northampton on 24 April 2016 on the water resource management issues that need to be addressed in the development application for the proposed Solar Thermal Power Station (email attached). On review of the development application, Wheelans have not considered the advice provided by the DoW on 24 April 2016 and therefore is unable to adequately assess the proposal.

Hayley can you please confirm that all relevant documentation for the development application has been provided to the DoW for review.

Save time with Water Online

As your organisation is registered to use Water Online, we encourage you to lodge future referrals electronically via the Water Online customer portal at www.water.wa.gov.au. **Water Online** provides the fastest and most efficient process for submitting referrals or requests for planning advice. If you have any questions regarding the Water Online portal please contact our Business Support Unit on 1800 508 885 (select Option 2) or planning.enquiries@water.wa.gov.au.

Thank you Hayley. Should you wish to discuss the above or require further information please contact myself by email bronte.grant@water.wa.gov.au or phone 08 9965 7431.

Yours sincerely

Bronte Grant
Natural Resource Management Officer
Water and Land Use | Department of Water
08 9965 7431
bronte.grant@water.wa.gov.au

Disclaimer:

This e-mail is confidential to the addressee and is the view of the writer, not necessarily that of the Department of Water, which accepts no responsibility for the contents. If you are not the addressee, please notify the Department by return e-mail and delete the message from your system; you must not disclose or use the information contained in this email in any way. No warranty is made that this material is free from computer viruses.

<mime-attachment>

Disclaimer:

This e-mail is confidential to the addressee and is the view of the writer, not necessarily that of the Department of Water, which accepts no responsibility for the contents. If you are not the addressee, please notify the Department by return e-mail and delete the message from your system; you must not disclose or use the information contained in this email in any way. No warranty is made that this material is free from computer viruses.

Your Ref: 10.61.3 – A4151 – L10792 GEO / ocr27434
 Our Ref: JT1 2013 09269 V01 - DEV343904
 Enquiries: Ross Crockett
 Direct Tel: 9420 2013



30th May 2016

Shire of Northampton
 P.O. Box 61
 NORTHAMPTON W.A. 6535

Attention of: Hayley Williams

NORTHAMPTON SHIRE				
File: 10.6.1.3				
7 JUN 2016				
Admin	Eng	Hgh Bldg	Town Plan	Range
			DC	

PROCESSED
10/27/2016

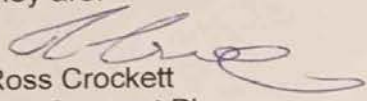
**Re: Development Application - Lot 10792 George Grey Drive, Kalbarri
 Shire of Northampton**

Thank you for your letter dated 17th May 2016. The Water Corporation offers the following comments in regard to this proposal.

Water and Wastewater

The development is remote from the Water Corporation's Water & Wastewater services. This proposal does not appear to affect Water Corporation assets however it is adjacent to the Corporation's water bores (See Plan).

If the Department of Water hasn't been included for comment it is recommended that they are.


 Ross Crockett
 Development Planner
 Land Planning
 Assets Planning Group



08/27/25
 Screen 009/26.10 KALEBA001 Date Plotted: 20/05/18 11:53:07 Coordinate System: NAD83 Zone 99 Height Datum: AHD
 This drawing is a preliminary design and is not intended for construction. It is the property of the City of Vancouver and is not to be used for any other purpose without the written consent of the City of Vancouver. The user is responsible for verifying the accuracy of the information shown on this drawing. The City of Vancouver is not responsible for any errors or omissions in this drawing. The user is responsible for obtaining all necessary permits and approvals for any construction project. The user is responsible for obtaining all necessary permits and approvals for any construction project. The user is responsible for obtaining all necessary permits and approvals for any construction project.

10.8.1.3 DC

PROPOSED
OCR27343

A4151 L10792 GEO

Hayley Williams

From: Customer Service Centre SSR <customer.service.centre.ssr@westernpower.com.au>
Sent: Monday, 30 May 2016 2:44 PM
To: Hayley Williams
Subject: Ref# 10.6.1.3 - A4151 - L10792 GEO/OCR27434 - PROPOSED SOLAR THERMAL POWER STATION - LOT 10792 GEORGE GREY DR, KALBARRI
Attachments: SOLA.pdf; WE_n4436869_REQUEST_FOR_QUOTATION_AND_GRANT_OF_LICENCE_FOR_DIGITAL_DATA_....pdf

Dear Hayley

Thank you for contacting us about your proposed work.

As your proposed work is near energised electrical installations and powerlines, the person in control of the work site must ensure that no person, plant or material enters the "Danger Zone" of an overhead powerline or other electrical network assets.

The "Danger Zone" is set out in Western Australian Occupational Safety and Health Regulation 1996 – Specifically Reg 3.64. ([Link](#))

Any information provided to you by Western Power should not be used in isolation and we recommend that you refer to the Occupational Safety and Health Act 1984 and Occupational Safety and Health Regulations 1996. These documents outline WorkSafe WA requirements for working near electricity.

For queries relating to these requirements, visit [WorkSafe](#) or contact WorkSafe on 1300 307 877.

To help you plan your works around Western Power's infrastructure, please follow the links below:

[Working Near Electricity](#)

[Dial Before You Dig](#)

If you require information about Western Power's infrastructure including plans, please complete a request for Digital Data attached.

If you require Western Power to complete work on your behalf, please complete the appropriate application form using the link below:

[Customer applications](#)

Should your project involve any changes to existing ground levels around poles and structures, or you will be working underneath power lines or around underground cables, please contact Western Power on 13 10 87.

We are obliged to point out that any change to Western Power's network is the responsibility of the individual developer.

Kind regards

Kelly

Customer Service Coordinator

Customer Service

Western Power – 363 Wellington Street Perth WA 6000

T: (Fault / Emergencies) 13 13 51 & (General Enquiries) 13 10 87 | F: (08) 9225 2660

E: enquiry@westernpower.com.au



Electricity Networks Corporation, trading as Western Power
ABN: 18 540 492 861

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Enquiries: Isabel Huston on 08 9956 1238
Our Ref: 07/655, D16#311077
Your Ref: 10.6.1.3 – A4151 – L10792 GEO/OCR27434

15 June 2016

Garry Keeffe
Chief Executive Officer
Shire of Northampton
PO Box 61
Northampton WA 6535

By email: council@northampton.wa.gov.au and planner@northampton.wa.gov.au

ATTENTION: Hayley Williams

Dear Mr Keeffe

Development Application for Solar Thermal Power Station on Lot 10792 George Grey Drive, Kalbarri

Thank you for consulting Main Roads on the proposed development of a solar thermal power station on Lot 10792 George Grey Drive, Kalbarri.

It is considered that the proposal would have no detrimental impact on the level of service, amenity or safety of users of the Main Roads network. Accordingly, Main Roads has no objection or further comments on the proposed development.

If you would like any further information please contact Isabel Huston on 08 9956 1238

Yours sincerely

Bernie Miller
Regional Manager
Mid West-Gascoyne Region



Government of **Western Australia**
Department of **Parks and Wildlife**
Regional and Fire Management Services Division - Midwest Region

Your ref: 10.6.1.3-A4151-
L10792GEO/OCR27434
Our ref: 39544
Enquiries: Liz Rushforth
Phone: 08 9688 6000
Fax: 08 9652 1922
Email: elizabeth.rushforth@dpaw.wa.gov.au

Ms Hayley R Williams
Principle Planner
Shire of Northampton
PO Box 61
NORTHAMPTON WA 6535

Dear Ms Williams

**PROPOSED SOLAR THERMAL POWER STATION – LOT 10792 GEORGE GREY DRIVE,
KALBARRI**

Thank you for your letter of 17 May 2016 seeking comments on the above proposed solar thermal power station.

The Department of Parks and Wildlife (Parks and Wildlife) considers that concerns raised in previous correspondence on this proposal with regard to impacts to flora and fauna have been adequately addressed.

With regard to bushfire mitigation, paragraph 3 of section 6.2 of the submitted Bushfire Management Plan indicates that the proposed fuel reduction strategy is reliant to some degree on the presence of firebreaks within Kalbarri National Park. Parks and Wildlife reiterate previous advice that all fire protection requirements should be provided for on the property itself and should not place impositions or reliance upon the management of the adjoining National Park.

Thank you for the opportunity to comment on this application. Should you have any queries regarding this advice, please contact Land Use Planning Coordinator Liz Rushforth on (08) 9688 6000 or Elizabeth.Rushforth@dpaw.wa.gov.au

Yours sincerely

Nigel Sercombe
REGIONAL MANAGER
Midwest Region

15 June 2016

SCHEDULE OF SUBMISSIONS – PROPOSED SOLAR THERMAL POWER STATION

Date Received	Submission Number	Submitter	Comments from Submitter	Officer Response
24/5/2016	1 Your ref: PF178294-1	Telstra Plan Services Locked Bag 3820 Brisbane QLD 4000	There are Telstra assets within the area of the proposal. You can either re-align your proposal or arrange for Telstra assets to be relocated to ensure they are not impacted	Noted.
25/5/2016	2	Department of Mines and Petroleum Mineral House 100 Plain Street East Perth WA 6004	No issues raised	Noted.
27/5/2016	3	Jacq Willbond jacqwillbond@westnet.com.au	<p>How much noise will the power station make?</p> <p>How much water will the power station use?</p> <p>Will it supply power to all of Kalbarri when the grid goes offline?</p> <p>Are the vegetation buffers to provide visual separation supposed to hide the mirrors only, or also the towers?</p> <p>How tall are the cooling towers?</p> <p>Will the plant use superheated salt; if so what is the process involved – does the salt need replacing at intervals; what is the disposal plan if it does?</p> <p>Are you aware that Morawa committed a similar plan a few years ago and pulled out? Does this indicate there will be a financial – or other – commitment expected from the council?</p> <p>Has the council done its own research or be in touch with other councils where there are other installations?</p> <p>What was the outcome of the Department of Environment Regulations request regarding their concerns about the potential impact of heavy rainfall in Wittecarra Gully due to land clearing?</p> <p>Will the ground around the mirrors be sealed? If so would there be a requirement to catch rainwater, both for use at the plant and for storage in case of bushfire?</p> <p>Many of the councillors who attended an information session about four years ago are no longer on council. Have the new councillors been given a similar briefing?</p> <p>This is stage one – what is the proposed number of towers in the long term planning?</p>	<p>This submission was provided to the proponent, with no response provided on the matters raised.</p> <p>Additional information and plans have now been submitted by the applicant which address many of the matters raised.</p> <p>Additionally Shire staff recommend the imposition of conditions that ensure the appropriate protection and management of the land to the requirements of the statutory authorities and the local government.</p>
30/5/2016	4	Department of Water Bronte.Grant@water.wa.gov.au	<i>Waterways Management</i>	<p>Condition:</p> <p>“The applicant is to prepare, submit and adhere to a Water and Soil Management Plan (including surface, ground, storm water,</p>

SCHEDULE OF SUBMISSIONS – PROPOSED SOLAR THERMAL POWER STATION

	Your ref: WRD322946 PA7773		Proposed demarcation of the proposed foreshore reserve and identification of any surface water management issues caused by clearing of land. Commit to ensuring stormwater is retained on site <i>Water resource protection</i> Provide a summary of management actions to ensure groundwater resources are protected from any potential risks from the land use change. <i>Groundwater Licensing</i> Will groundwater need to be accessed for the proposed development? If so what volumes will be required? Identify any potential impacts of drawdown on groundwater dependant vegetation. Proponent must obtain a licence if required	drainage, water usage, groundwater drawdown, waterways/foreshore reserve management and related management actions to these items) to the requirements of Department of Water and the approval of the Local Government, with all costs met by the applicant.”
30/5/2016	5 Your ref: JT1 2013 09269 V01 – DEV343904	Water Corporation PO Box 100 Leederville WA 6902	Does not appear to affect Water Corporation assets Recommend that Department of Water is included for comment	Noted.
30/5/2016	6	Western Power 363 Wellington Street Perth WA 6000	Person in control of the work must ensure no person, plant or materials enters the “Danger Zone” of an overhead power line or other electrical network assets	Noted.
15/6/2016	7	Main Roads Western Australia PO Box 165 Geraldton WA 6531	No objections raised	Noted.
15/6/16	8	Department of Parks and Wildlife PO Box 72 Geraldton WA 6531	All fire protection requirements should be provided on the property itself	Bushfire Management Plan to be amended accordingly.

6.4.1	ACCOUNTS FOR PAYMENT	2
6.4.2	MONTHLY FINANCIAL STATEMENTS – OCTOBER 2016	7

6.4.1 ACCOUNTS FOR PAYMENT

FILE REFERENCE:	1.1.1
DATE OF REPORT:	10 November 2016
DISCLOSURE OF INTEREST:	Nil
REPORTING OFFICER:	Leanne Rowe/Grant Middleton
APPENDICES:	1. List of Accounts

SUMMARY

Council to authorise the payments as presented.

BACKGROUND:

A list of payments submitted to Council on 18st November 2016, for confirmation in respect of accounts already paid or for the authority to those unpaid.

FINANCIAL & BUDGET IMPLICATIONS:

A list of payments is required to be presented to Council as per section 13 of the Local Government Act (Financial Management Regulations 1996).

POLICY IMPLICATIONS:

Council Delegation F02 allows the CEO to make payments from the Municipal and Trust accounts. These payments are required to be presented to Council each month in accordance with Financial Management Regulations 13 (1) for recording in the minutes.

VOTING REQUIREMENT:

Absolute Majority Required:

OFFICER RECOMMENDATION – ITEM 6.4.1

That Municipal Fund Cheques 21049 to 21064 inclusive totalling \$38,713.86, Municipal EFT payments numbered EFT15627 to EFT15689 inclusive totalling \$377,967.07, Trust Fund Cheques 2169 to 2176, totalling \$2,164.50, Direct Debit payments numbered GJ0405 to GJ0412 inclusive totalling \$211,333.44 be passed for payment and the items therein be declared authorised expenditure.



SHIRE OF NORTHAMPTON
FINANCE REPORT – 18 NOVEMBER 2016

Chq #	Date	Name	Description	Amount
21049	12/10/2016	ALINTA ENERGY	GAS CHARGES	237.30
21050	12/10/2016	TELSTRA	TELEPHONE CHARGES	4161.07
21051	12/10/2016	SYNERGY	ELECTRICITY CHARGES	19887.30
21052	12/10/2016	WATER CORPORATION	WATER USE & SERVICE CHARGES	10168.17
21053	14/10/2016	LANDGATE	PCYC LEASE SURRENDER	165.80
21054	25/10/2016	PETTY CASH - NORTHAMPTON	PETTY CASH RECOUP	163.75
21055	25/10/2016	AUSTRALIA POST	POSTAGE	337.02
21056	25/10/2016	DR ALASTAIR MACKENDRICK	HEARING TEST	275.00
21057	25/10/2016	GERALDTON MOWER & REPAIR SPECIALISTS	PARTS	386.20
21058	25/10/2016	KLEENHEAT GAS	GAS FACILITY FEE	69.30
21059	25/10/2016	MARINA HOME & LEISURE	HARDWARE	17.99
21060	25/10/2016	NORTHAMPTON TOURIST ASSOCIATION INC.	CONTRIBUTION AUSTRALIA DAY 2017	500.00
21061	25/10/2016	SHIRE OF NORTHAMPTON	DOT VEHICLE LICENSES/JETTY LICENSE	820.90
21062	25/10/2016	TELSTRA	TELEPHONE CHARGES	214.96
21063	25/10/2016	PETTY CASH - NCCA	NCCA PETTY CASH RECOUP	147.20
21064	25/10/2016	WATER CORPORATION	PIONEER HOMES HEADWORKS	1161.90
				\$38,713.86

SHIRE OF NORTHAMPTON
FINANCE REPORT – 18 NOVEMBER 2016

ELECTRONIC FUND TRANSFERS – MUNICIPAL ACCOUNT

EFT #	Date	Name	Description	Amount
EFT15627	14/10/2016	AUSTRALIAN TAXATION OFFICE	BAS SEPTEMBER 2016	32866.00
EFT15628	20/10/2016	ATOM SUPPLY	PARTS	186.27
EFT15629	20/10/2016	LAND INSIGHTS	REVIEW COASTAL STRATEGY - 20% PROJECT	11660.00
EFT15630	20/10/2016	PURCHER INTERNATIONAL	PARTS	183.39
EFT15631	20/10/2016	GLENN BANGAY	REIMB WESTNET	79.95
EFT15632	20/10/2016	NEIL BROADHURST	REIMB TELSTRA	321.80
EFT15633	25/10/2016	ALAN CRAGAN BOBCAT & EXCAVATOR HIRE	LUCKY BAY/CEMETERY EXCAVATOR HIRE	1452.00
EFT15634	25/10/2016	ALLIED PUMPS	SALLY'S TREET PUMP STATION	20225.70
EFT15635	25/10/2016	KALBARRI IGA	GOODS	36.10
EFT15636	25/10/2016	BATAVIA CONCRETE	LUCKY BAY CONCRETE SUPPLY	5682.86
EFT15637	25/10/2016	BOSTON CONTRACTING	BINNU WEST ROAD WATER CART HIRE	11651.75
EFT15638	25/10/2016	BUNNINGS BUILDING SUPPLIES	FENCING MATERIALS	245.00
EFT15639	25/10/2016	CLARKSON FREIGHTLINES	FREIGHT	294.25
EFT15640	25/10/2016	MW & NT CLIFTON	WANN BORE SITE DRILLING/CASING BORE	12496.54
EFT15641	25/10/2016	BS & JA COCKRAM	LUCKY BAY ERECT TOILETS/SHED	20375.50
EFT15642	25/10/2016	COERCO PTY LTD	LUCKY BAY 4000LT POLY SEPTIC TANK	1570.80
EFT15643	25/10/2016	BOC GASES AUSTRALIA LTD	INDUSTRY GASES	65.04
EFT15644	25/10/2016	COOL COAST MAINTENANCE	FABRICATE DOOR	250.00
EFT15645	25/10/2016	COVS PARTS PTY LTD	PARTS	141.90
EFT15646	25/10/2016	D-TRANS	PARTS	945.18
EFT15647	25/10/2016	ECO-FLORA CRANE, TRUCK & EXCAVATOR SERVICES	GRADE VON BIBRA ROAD	240.00
EFT15648	25/10/2016	FREEMANS LIQUID WASTE PTY LTD	PUMP OUT SEPTICS	1078.00
EFT15649	25/10/2016	GERALDTON TROPHY CENTRE	NCCA RELIEF SHIRTS	61.20
EFT15650	25/10/2016	GERALDTON & MIDWEST SECURITY	SECURITY SYSTEM	262.90

SHIRE OF NORTHAMPTON
FINANCE REPORT – 18 NOVEMBER 2016

EFT #	Date	Name	Description	Amount
EFT15651	25/10/2016	GHD PTY LTD	KALBARRI - SHARK BAY ROAD REVIEW	5500.00
EFT15652	25/10/2016	GILLIAN GOAD	NCCA REIMB BUDGET CONF EXP	66.74
EFT15653	25/10/2016	GREAT SOUTHERN FUEL SUPPLY	FUEL PURCHASES	31072.21
EFT15654	25/10/2016	HASLEBYS HARDWARE SUPPLIES	DYNAMIC LIFT, FERTILISER, HARDWARE	1555.52
EFT15655	25/10/2016	C + J HANSON PLUMBING CONTRACTORS	PLUMBING	605.00
EFT15656	25/10/2016	NR & DJ HAYNES	NTON GOLF GUTTERS/DOWNSPIPES	3052.50
EFT15657	25/10/2016	HEARING & AUDIOLOGY	HEARING TESTS	250.00
EFT15658	25/10/2016	KALBARRI EXPRESS FREIGHT	FREIGHT	296.15
EFT15659	25/10/2016	KALBARRI PHARMACY	PROTECTIVE CLOTHING	15.99
EFT15660	25/10/2016	KALBARRI WAREHOUSE	HAND CLEANER & LYNCH PIN	168.95
EFT15661	25/10/2016	KALBARRI CARRIERS	KAL COURTS FREIGHT LIMESTONE BLOCKS	20907.26
EFT15662	25/10/2016	KALBARRI PEST CONTROL	GENERAL PEST CONTROL	280.00
EFT15663	25/10/2016	KALBARRI CAMP & COMMUNITY HALL INC	REIMB UTILITIES	4056.71
EFT15664	25/10/2016	KALBARRI SITEWORKS	KALB VERGE MOWING	1210.00
EFT15665	25/10/2016	LGISWA	16/17 WCARE, PROP, LIABILITY INS 2ND INS	91992.77
EFT15666	25/10/2016	JOHN MATHIESON	PLUMBING	121.00
EFT15667	25/10/2016	MW GROUP AFFILIATED AGRICULT SOC	CONTR 2016 MID WEST DISTRICT DISPLAY	250.00
EFT15668	25/10/2016	CENTREL PTY LTD	FUEL PURCHASES	2210.06
EFT15669	25/10/2016	M L COMMUNICATIONS	IPEC PHONE SYSTEMS	6116.71
EFT15670	25/10/2016	NORTHAMPTON IGA & LIQUOR STORE	REFRESHMENTS/GOODS	458.00
EFT15671	25/10/2016	NORTHAMPTON ROAD TRANSPORT	GRAVEL CARTAGE	1320.00
EFT15672	25/10/2016	NORTHAMPTON AUTO ELECTRICS	PLANT AUTO ELECTRICAL	894.30
EFT15673	25/10/2016	NORTHAMPTON PHARMACY	WC MEDICATION	123.45
EFT15674	25/10/2016	NORTHAMPTON FAMILY STORE	UNIFORMS	19.95
EFT15675	25/10/2016	PATIENCE SANDLAND PTY LTD	NTON OVAL ENTRY MULCH	264.00
EFT15676	25/10/2016	PEMCO DIESEL PTY LTD	PARTS	6546.10



SHIRE OF NORTHAMPTON
FINANCE REPORT – 18 NOVEMBER 2016

EFT #	Date	Name	Description	Amount
EFT15677	25/10/2016	PURCHER INTERNATIONAL	SERVICE AND PARTS	330.49
EFT15678	25/10/2016	MIDWEST SWEEPING CONTRACTORS	STREET SWEEPING	1870.00
EFT15679	25/10/2016	OWEN SIMKIN	WATER CUSTODIAN	79.80
EFT15680	25/10/2016	LARRY SMITH PLANNING	NTON LPS - PROGRESS PAYMENT 1	5000.00
EFT15681	25/10/2016	ST JOHN AMBULANCE NORTHAMPTON	DEFIBRILATOR PADS	1693.50
EFT15682	25/10/2016	SUNFLAME ELECTRICAL	ELECTRICAL	997.50
EFT15683	25/10/2016	THURKLE'S EARTHMOVING & MAINTENANCE PTY LTD	GRAVEL PUSHUP OGILVIE WEST, ERRIARY, RALPHS, BROOKS	22506.00
EFT15684	25/10/2016	LANDGATE	VALUATION EXPENSES	255.35
EFT15685	25/10/2016	WESTERN RESOURCE RECOVERY PTY LTD	PUMP OUT SEPTIC TANKS	400.00
EFT15686	25/10/2016	NORTHAMPTON TYRES	16 TYRES, REPAIRS	5765.50
EFT15687	25/10/2016	WILLIAMS & HUGHES	LEGAL - LEASES, DEED OF ASSIGNMENT	5394.53
EFT15688	25/10/2016	WOODCOCK CT & L	LUCKY BAY PUMP & TANK, BOOTS, 200LT POLY TANK, HARDWARE	5548.90
EFT15689	28/10/2016	GERALDTON EARTHMOVING CONTRACTORS	LUCKY BAY ACCESS TRACK, CARTAGE ROADBASE/YELLOW SAND, INSTAL 6 TANKS, CONST TOILET PADS	26400.00
				\$377,967.07

SHIRE OF NORTHAMPTON
FINANCE REPORT – 18 NOVEMBER 2016

TRUST FUND CHEQUES

Chq #	Date	Name	Description	Amount
2169	11/10/2016	GRANT MIDDLETON	REFUND BUS BOND	200.00
2170	12/10/2016	TRACIE BASSETT	REFUND BUS BOND	200.00
2171	12/10/2016	KALBARRI DEVELOPMENT ASSOCIATION	REFUND BUS BOND	200.00
2172	13/10/2016	KALBARRI NETBALL ASSOCIATION	KIDSPORT	580.00
2173	13/10/2016	WILSONS SIGN SOLUTIONS	HKS MEMORIAL WALL PLAQUE	170.50
2174	24/10/2016	KERRY O'CONNOR	REFUND BOND ALLEN CENTRE	200.00
2175	24/10/2016	RAILWAYS JUNIOR BASKETBALL CLUB	KIDSPORT	514.00
2176	25/10/2016	NORTHAMPTON COMMUNITY NEWS	ONELIFE - ADVERTISING SEPT 2016	100.00
				\$2,164.50



SHIRE OF NORTHAMPTON
FINANCE REPORT – 18 NOVEMBER 2016

DIRECT DEBITS

Jnl #	Date	Name	Description	Amount
	6/10/2016	PAYROLL	FN/E 05/10/2016	84,646.00
	7/10/2016	CLICKSUPER	SUPERANNUATION FN/E 5/10/2016	18,838.33
	20/10/2016	PAYROLL	FN/E 19/10/2016	81,374.00
	21/10/2016	CLICKSUPER	SUPERANNUATION FN/E 19/10/2016	18,206.93
GJ0405	31/10/2016	NAB BANK FEES	FEES	278.28
GJ0406	31/10/2016	BPOINT	FEES	1,725.81
GJ0407	31/10/2016	BPAY	FEES	363.44
GJ0409	31/10/2016	CEO CORPORATE CARD	WESTNET	104.94
			BANK CHARGES	9.00
			LUCKY BAY TOILET PRODUCTS	141.90
			REFRESHMENTS	311.20
			NR1 FUEL	104.01
			OFFICE MTCE DOT CABINET	426.01
			VEHICLE LICENSING	159.05
GJ0410	31/10/2016	DCEO CORPORATE CARD	BANK CHARGES	9.00
			RANGERS CONFERENCE ACCOMM	1,756.83
			PLANT VEHICLE PERMITS	200.00
GJ0411	31/10/2016	WESTNET	FEES	66.00
GJ0412	31/10/2016	NAB	CEO SS LOAN 152 FACILITY FEE	2,612.71
				<u>\$211,333.44</u>

6.4.2 MONTHLY FINANCIAL STATEMENTS – OCTOBER 2016

FILE REFERENCE:	1.1.1
DATE OF REPORT:	7 November 2016
DISCLOSURE OF INTEREST:	Nil
REPORTING OFFICER:	Grant Middleton
APPENDICES:	1. Monthly Financial Report for October 2016 2. Schedule Format provided as separate attachment (Appendix B)

SUMMARY

Council to adopt the draft monthly financial reports as presented.

BACKGROUND:

This information is provided to Council on a monthly basis in accordance with provisions of the Local Government Act 1995 and Local Government (Financial Management) Regulations 1996.

The Draft Monthly Statements of Financial Activity for the period ending 31 October 2016 are attached, and include:

Compilation Report

Monthly Summary Information

Statement of Financial Activity by Program

Statement of Financial Activity By Nature or Type

Statement of Capital Acquisitions and Capital Funding

Statement of Budget Amendments

Note 1 Significant Accounting Policies (presented annually)

Note 2 Explanation of Material Variances

Note 3 Net Current Funding Position

Note 4 Cash and Investments

Note 5 Budget Amendments (as required)

Note 6 Receivables

Note 7 Cash Backed Reserves

Note 8 Capital Disposals

Note 9	Rating Information
Note 10	Information on Borrowings
Note 11	Grants and Contributions
Note 12	Trust
Appendix A	Details of Capital Acquisitions
Appendix B	Detailed Schedules (separate presentation)

FINANCIAL & BUDGET IMPLICATIONS:

Total operating expenditure at 31st October 2016 is under budget by \$143,420 and capital expenditure is under budget by \$848,281 which is largely due to the major capital works commencing later this calendar year.

Depreciation expense is now on budget with the processing of the Plant & Equipment and Furniture and Equipment revaluation. The revaluation had been delayed pending approval of the process and revised values by Moore Stephen audit staff during their audit visit during October.

STATUTORY IMPLICATIONS:

Local Government (Financial Management) Regulation 34 1996
Local Government Act 1995 section 6.4

POLICY IMPLICATIONS:

Council is required annually to adopt a policy on what it considers to be material as far as variances that require to be reported for Council. The current Council Policy sets the material variance at \$5,000.

VOTING REQUIREMENT:

Simple Majority Required:

OFFICER RECOMMENDATION – ITEM 6.4.2

That Council adopts the Monthly Financial Report for the period ending 31 October 2016.

SHIRE OF NORTHAMPTON
MONTHLY FINANCIAL REPORT
For the Period Ended 31 October 2016

LOCAL GOVERNMENT ACT 1995
LOCAL GOVERNMENT (FINANCIAL MANAGEMENT) REGULATIONS 1996

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Compilation Report	
Monthly Summary Information	
Statement of Financial Activity by Program	
Statement of Financial Activity By Nature or Type	
Statement of Capital Acquisitions and Capital Funding	
Statement of Budget Amendments	
Note 1	Significant Accounting Policies (presented annually)
Note 2	Explanation of Material Variances
Note 3	Net Current Funding Position
Note 4	Cash and Investments
Note 5	Budget Amendments (presented as per budget review process)
Note 6	Receivables
Note 7	Cash Backed Reserves
Note 8	Capital Disposals
Note 9	Rating Information
Note 10	Information on Borrowings
Note 11	Grants and Contributions
Note 12	Trust
Appendix A	Details of Capital Acquisitions
Appendix B	Detailed Schedules (presented separately)

Shire of Northampton

Compilation Report

For the Period Ended 31 October 2016

Report Purpose

This report is prepared to meet the requirements of *Local Government (Financial Management) Regulations 1996*, Regulation 34 .

Overview

Summary reports and graphical progressive graphs are provided on page 3, 4 and 5.
No matters of significance are noted.

Statement of Financial Activity by reporting program

Is presented on page 6 and shows a surplus as at 31 October 2016 of \$4,781,093.

Note: The Statements and accompanying notes are prepared based on all transactions recorded at the time of preparation and may vary.

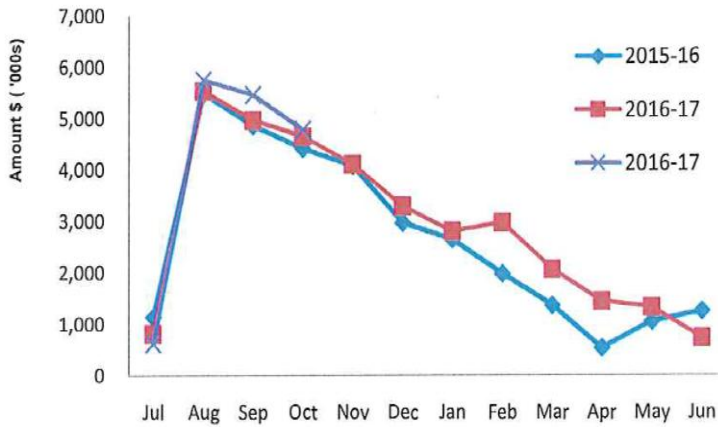
Preparation

Prepared by: Grant Middleton/Leanne Rowe

Date prepared: 7/10/2016

Shire of Northampton
Monthly Summary Information
For the Period Ended 31 October 2016

Liquidity Over the Year (Refer Note 3)



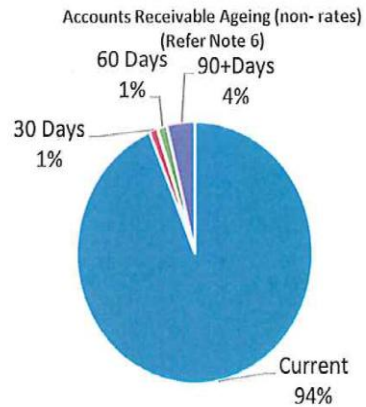
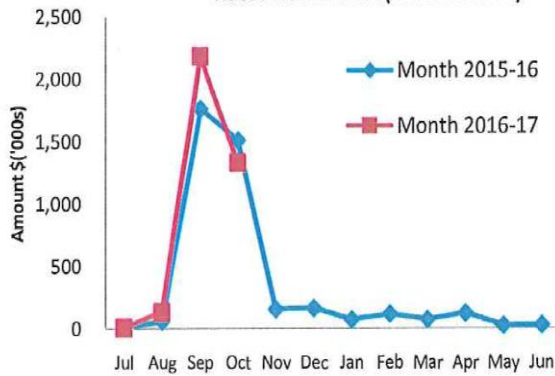
Cash and Cash Equivalents as at period end

Unrestricted	\$ 3,453,023
Restricted	\$ 3,003,369
	\$ 6,456,391

Receivables

Rates	\$ 1,125,731
Other	\$ 127,048
	\$ 1,252,779

Rates Receivable (Refer Note 6)

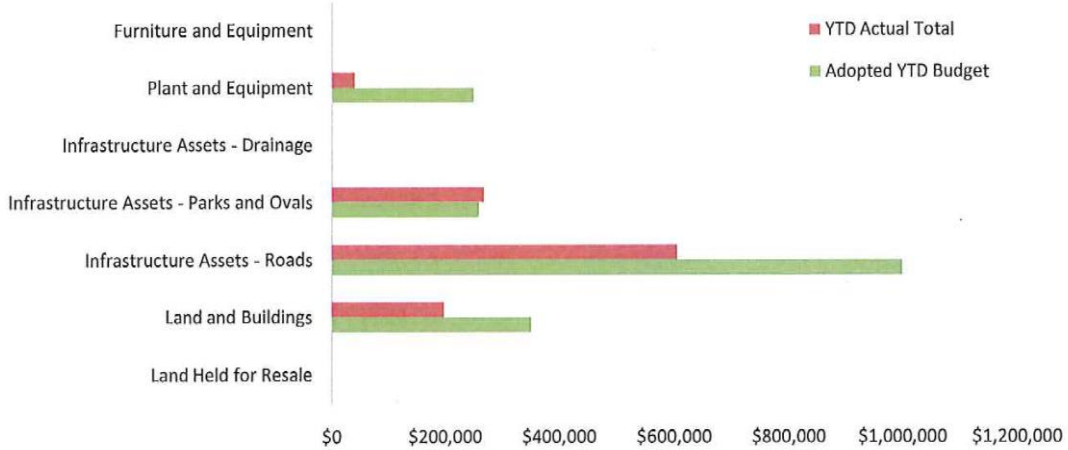


Comments

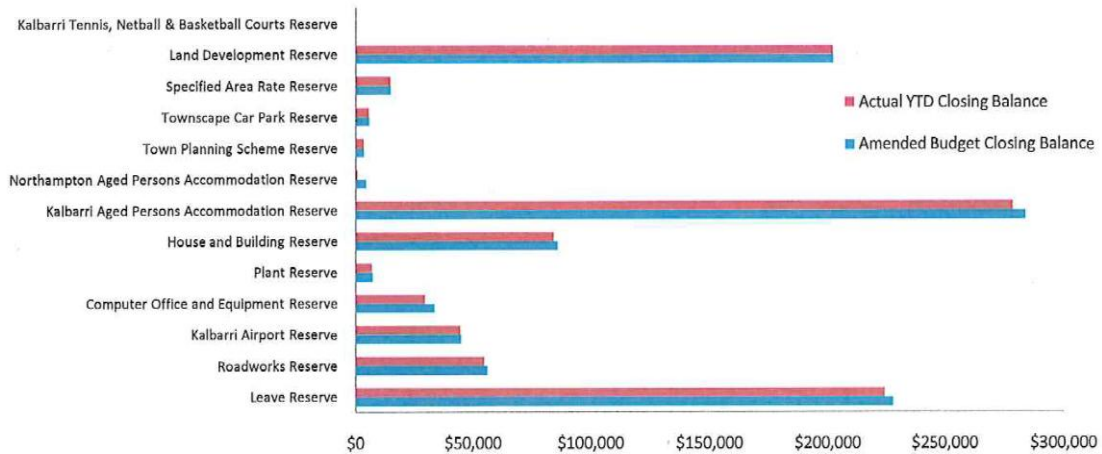
This information is to be read in conjunction with the accompanying Financial Statements and notes.

Shire of Northampton
Monthly Summary Information
For the Period Ended 31 October 2016

Capital Expenditure Program YTD (Refer Note 13)



Year To Date Reserve Balance to End of Year Estimate (Refer Note 7)



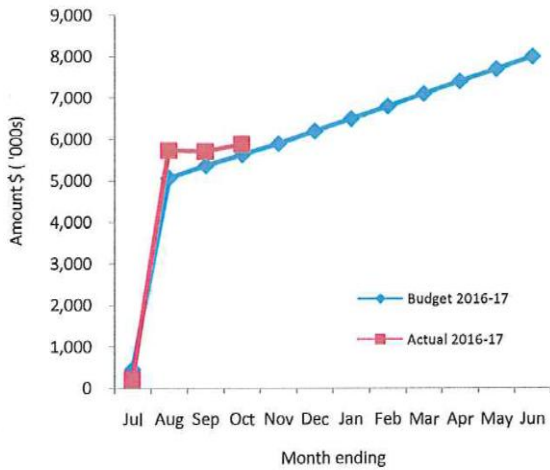
Comments

This information is to be read in conjunction with the accompanying Financial Statements and notes.

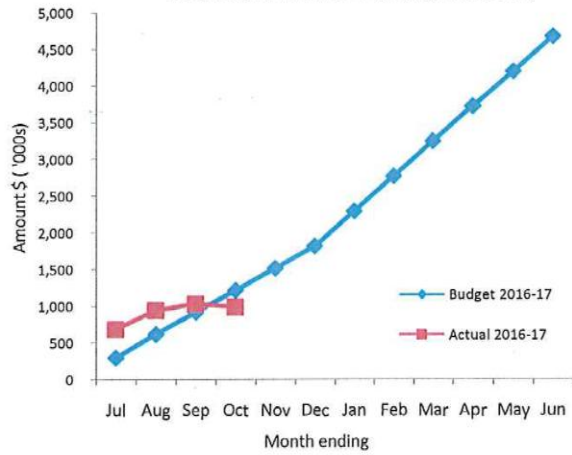
Shire of Northampton
Monthly Summary Information
For the Period Ended 31 October 2016

Revenues

Budget Operating Revenues -v- Actual (Refer Note 2)

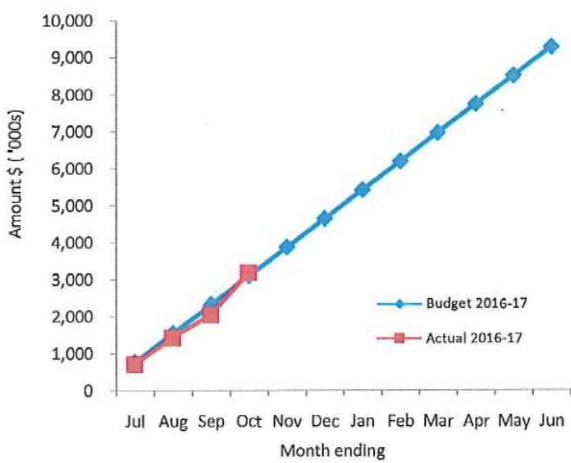


Budget Capital Revenue -v- Actual (Refer Note 2)

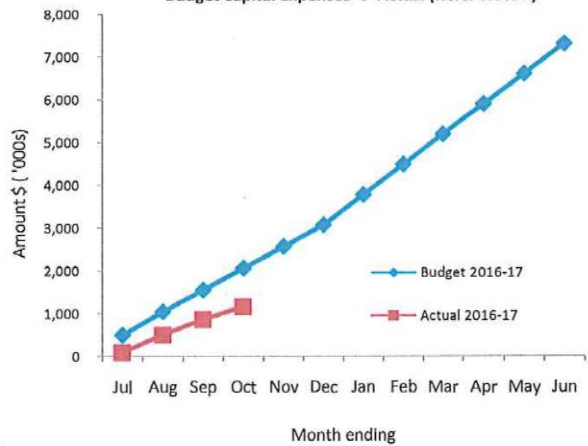


Expenditure

Budget Operating Expenses -v- YTD Actual (Refer Note 2)



Budget Capital Expenses -v- Actual (Refer Note 2)



Comments

This information is to be read in conjunction with the accompanying Financial Statements and notes.

SHIRE OF NORTHAMPTON
STATEMENT OF FINANCIAL ACTIVITY
(Statutory Reporting Program)
For the Period Ended 31 October 2016

Note	Adopted Budget	Adopted YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)	Var.
	\$	\$	\$	\$	%	
Operating Revenues						
Governance	50,200	16,724	22,770	6,046	36.15%	▲
General Purpose Funding	5,782,398	4,653,225	4,573,848	(79,377)	(1.71%)	▼
Law, Order and Public Safety	91,280	30,416	46,856	16,440	54.05%	▲
Health	52,500	17,496	17,303	(193)	(1.10%)	▲
Education and Welfare	195,585	65,184	75,933	10,749	16.49%	▲
Housing	33,196	11,064	12,385	1,321	11.94%	▲
Community Amenities	838,127	780,822	797,084	16,262	2.08%	▲
Recreation and Culture	45,750	15,232	17,643	2,411	15.83%	▲
Transport	167,210	163,064	163,401	337	0.21%	▲
Economic Services	167,745	55,900	103,785	47,885	85.66%	▲
Other Property and Services	123,818	41,256	38,820	(2,436)	(5.91%)	▲
Total Operating Revenue	7,547,809	5,850,383	5,869,828	19,445		▲
Operating Expense						
Governance	(834,493)	(269,184)	(329,505)	(60,321)	(22.41%)	▼
General Purpose Funding	(104,457)	(34,804)	(36,819)	(2,015)	(5.79%)	▼
Law, Order and Public Safety	(341,833)	(119,384)	(132,884)	(13,500)	(11.31%)	▼
Health	(205,562)	(68,484)	(66,306)	2,178	3.18%	▲
Education and Welfare	(245,937)	(81,940)	(99,117)	(17,177)	(20.96%)	▼
Housing	(115,122)	(38,316)	(40,575)	(2,259)	(5.89%)	▼
Community Amenities	(1,475,160)	(491,560)	(398,919)	92,641	18.85%	▲
Recreation and Culture	(1,742,590)	(542,280)	(635,262)	(92,982)	(17.15%)	▼
Transport	(3,913,696)	(1,290,180)	(1,386,192)	(96,012)	(7.44%)	▼
Economic Services	(278,173)	(92,692)	(126,762)	(34,070)	(36.76%)	▼
Other Property and Services	(40,508)	(13,444)	66,651	80,095	595.77%	▲
Total Operating Expenditure	(9,297,531)	(3,042,268)	(3,185,688)	(143,420)		▼
Funding Balance Adjustments						
Add back Depreciation	3,623,365	1,207,772	1,199,412	(8,360)	(0.69%)	▼
Adjust (Profit)/Loss on Asset Disposal	12,000	(1,000)	931	1,931	(193.15%)	▼
Adjust Provisions and Accruals	0	0	0	0		
Net Cash from Operations	1,885,643	4,014,887	3,884,484	(130,403)		▼
Capital Revenues						
Grants, Subsidies and Contributions	3,776,775	1,024,064	964,389	(59,675)	(5.83%)	▼
Proceeds from Disposal of Assets	135,000	56,270	20,909	(35,361)	(62.84%)	▼
Total Capital Revenues	3,911,775	1,080,334	985,298	(95,036)		▼
Capital Expenses						
Land Held for Resale	0	0	0	0		
Land and Buildings	(2,306,030)	(350,456)	(198,022)	152,434	43.50%	▲
Infrastructure - Roads	(2,998,860)	(999,588)	(604,656)	394,932	39.51%	▲
Infrastructure - Parks & Ovals	(778,550)	(259,500)	(268,460)	(8,960)	(3.45%)	▼
Infrastructure - Footpaths	(432,840)	(144,272)	(42,640)	101,632	70.44%	▲
Infrastructure - Drainage	0	0	0	0		
Heritage Assets	0	0	0	0		
Plant and Equipment	(609,980)	(249,048)	(40,805)	208,243	83.62%	▲
Furniture and Equipment	0	0	0	0		
Total Capital Expenditure	(7,126,260)	(2,002,864)	(1,154,583)	848,281		▲
Net Cash from Capital Activities	(3,214,485)	(922,530)	(169,285)	753,245		▲
Financing						
Proceeds from New Debentures	400,000	0	0	0		
Proceeds from Advances	0	0	0	0		
Self-Supporting Loan Principal	22,043	7,344	1,633	(5,711)	(77.77%)	▼
Transfer from Reserves	343,500	114,500	346,500	232,000	202.62%	▲
Advances to Community Groups	0	0	0	0		
Repayment of Debentures	(177,773)	(59,258)	(39,608)	19,649	33.16%	▲
Transfer to Reserves	(107,157)	(35,719)	(90,860)	(55,141)	(154.37%)	▼
Net Cash from Financing Activities	480,613	26,867	217,665	190,797		▲
Net Operations, Capital and Financing	(848,229)	3,119,224	3,932,864	813,640		▲
Opening Funding Surplus(Deficit)	848,229	848,229	848,229	0	0.00%	
Closing Funding Surplus(Deficit)	0	3,967,453	4,781,093	813,640		▲

Indicates a variance between Year to Date (YTD) Budget and YTD Actual data as per the adopted materiality threshold. Refer to Note 2 for an explanation of the reasons for the variance.

This statement is to be read in conjunction with the accompanying Financial Statements and notes.

SHIRE OF NORTHAMPTON
STATEMENT OF FINANCIAL ACTIVITY
(By Nature or Type)
For the Period Ended 31 October 2016

Note	Adopted Budget	Adopted YTD Budget (a)	YTD Actual (b)	Var. \$ (b)-(a)	Var. % (b)-(a)/(a)	Var.
Operating Revenues						
Rates	9	\$ 4,206,481	\$ 4,234,528	\$ 4,202,925	\$(31,603)	(0.75%) ▼
Operating Grants, Subsidies and Contributions	11	2,066,265	672,109	684,298	12,189	1.81% ▲
Fees and Charges		1,164,763	889,650	945,553	55,903	6.28% ▲
Interest Earnings		110,300	54,096	35,836	\$(18,260)	(33.75%) ▼
Other Revenue		0	0	1,216	1,216	
Profit on Disposal of Assets	8	0	0	0	0	
Total Operating Revenue		7,547,809	5,850,383	5,869,828	19,445	▲
Operating Expense						
Employee Costs		(2,610,020)	(869,776)	(787,318)	82,458	9.48% ▲
Materials and Contracts		(2,131,893)	(715,872)	(709,357)	6,515	0.91% ▲
Utility Charges		(364,375)	(121,372)	(90,626)	30,746	25.33% ▲
Depreciation on Non-Current Assets		(3,623,365)	(1,207,772)	(1,199,412)	8,360	0.69% ▲
Interest Expenses		(62,923)	(20,964)	(19,475)	1,489	7.10% ▲
Insurance Expenses		(220,260)	(73,272)	(223,662)	\$(150,390)	(205.25%) ▼
Other Expenditure		(272,695)	(34,240)	(154,907)	\$(120,667)	(352.42%) ▼
Loss on Disposal of Assets	8	(12,000)	1,000	(931)	(1,931)	
Total Operating Expenditure		(9,297,531)	(3,042,268)	(3,185,688)	(143,420)	
Funding Balance Adjustments						
Add back Depreciation		3,623,365	1,207,772	1,199,412	\$(8,360)	(0.69%) ▼
Adjust (Profit)/Loss on Asset Disposal	8	12,000	(1,000)	931	1,931	(193.15%) ▼
Adjust Provisions and Accruals		0	0	0	0	
Net Cash from Operations		1,885,643	4,014,887	3,884,484	(130,403)	
Capital Revenues						
Grants, Subsidies and Contributions	11	3,776,775	1,024,064	964,389	\$(59,675)	(5.83%) ▼
Proceeds from Disposal of Assets	8	135,000	56,270	20,909	\$(35,361)	(62.84%) ▼
Total Capital Revenues		3,911,775	1,080,334	985,298	(95,036)	
Capital Expenses						
Land Held for Resale		0	0	0	0	
Land and Buildings	13	(2,306,030)	(350,456)	(198,022)	152,434	43.50% ▲
Infrastructure - Roads	13	(2,998,860)	(999,588)	(604,656)	394,932	39.51% ▲
Infrastructure - Parks & Ovals	13	(778,550)	(259,500)	(268,460)	\$(8,960)	(3.45%) ▼
Infrastructure - Footpaths		(432,840)	(144,272)	(42,640)	101,632	
Infrastructure - Drainage		0	0	0	0	
Heritage Assets		0	0	0	0	
Plant and Equipment	13	(609,980)	(249,048)	(40,805)	208,243	83.62% ▲
Furniture and Equipment	13	0	0	0	0	
Total Capital Expenditure		(7,126,260)	(2,002,864)	(1,154,583)	848,281	
Net Cash from Capital Activities		(3,214,485)	(922,530)	(169,285)	753,245	
Financing						
Proceeds from New Debentures		400,000	0	0	0	
Proceeds from Advances		0	0	0	0	
Self-Supporting Loan Principal		22,043	7,344	1,633	\$(5,711)	(77.77%) ▼
Transfer from Reserves	7	343,500	114,500	346,500	232,000	202.62% ▲
Advances to Community Groups		0	0	0	0	
Repayment of Debentures	10	(177,773)	(59,258)	(39,608)	19,649	33.16% ▲
Transfer to Reserves	7	(107,157)	(35,719)	(90,860)	\$(55,141)	(154.37%) ▼
Net Cash from Financing Activities		480,613	26,867	217,665	190,797	
Net Operations, Capital and Financing		(848,229)	3,119,224	3,932,864	813,640	
Opening Funding Surplus(Deficit)	3	848,229	848,229	848,229	0	0.00%
Closing Funding Surplus(Deficit)	3	0	3,967,453	4,781,093	813,640	

Indicates a variance between Year to Date (YTD) Budget and YTD Actual data as per the adopted materiality threshold. Refer to Note 2 for an explanation of the reasons for the variance.

This statement is to be read in conjunction with the accompanying Financial Statements and notes.

SHIRE OF NORTHAMPTON
STATEMENT OF CAPITAL ACQUISITIONS AND CAPITAL FUNDING
For the Period Ended 31 October 2016

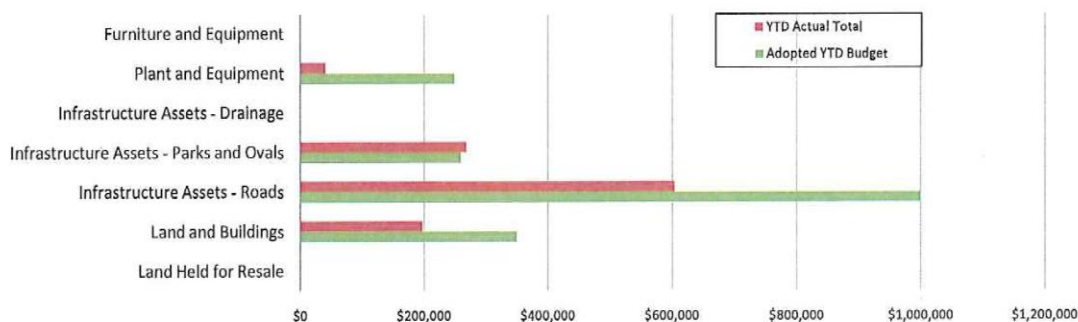
YTD 31 10 2016						
Capital Acquisitions	Note	YTD Actual New / Upgrade/Renewal (a)	YTD Actual Total (b) = (a)	Adopted YTD Budget (c)	Amended Annual Budget	Variance (b) - (c)
Land Held for Resale	13	\$ 0	\$ 0	\$ 0	\$	\$ 0
Land and Buildings	13	198,022	198,022	350,456		(152,434)
Infrastructure Assets - Roads	13	604,656	604,656	999,588		(394,932)
Infrastructure Assets - Footpaths	13	42,640	42,640	144,272		(101,632)
Infrastructure Assets - Parks and Ovals	13	268,460	268,460	259,500		8,960
Infrastructure Assets - Drainage	13	0	0	0		0
Plant and Equipment	13	40,805	40,805	249,048		(208,243)
Furniture and Equipment	13	0	0	0		0
Capital Expenditure Totals		1,154,583	1,154,583	2,002,864	0	(848,281)

Funded By:

Capital Grants and Contributions	964,389	1,024,064	3,776,775	59,675
Borrowings	0	0	400,000	0
Own Source Funding - Cash Backed Reserves				
Total Own Source Funding - Cash Backed Reserves	-346,500	114,500	343,500	(461,000)
Own Source Funding - Operations	536,694	808,030	(4,655,275)	(271,336)
Capital Funding Total	1,154,583	2,002,864	0	(848,281)

Comments and graphs

Capital Expenditure Program YTD



Note 2: EXPLANATION OF MATERIAL VARIANCES (> \$5,000)

Reporting Program	Var. \$	Var. %	Var.	Timing/ Permanent	Explanation of Variance
Operating Revenues	\$	%			
Governance	6,046	36.15%	▲	Permanent	Var includes repayment of \$10,000 loan from NCCA
General Purpose Funding	(79,377)	(1.71%)	▼	Timing	Var due to discount allowed budget profile
Law, Order and Public Safety	16,440	54.05%	▲	Timing	Var due to advance quarterly ESL payment
Education and Welfare	10,749	16.49%	▲	Permanent	Additional NCCA revenue compared to budget
Community Amenities	16,262	2.08%	▲	Timing	Actuals and budget will converge as year progresses
Economic Services	47,885	85.66%	▲	Timing	Kalbarri spec area rate and lease budget profile
Operating Expense					
Governance	(60,321)	(22.41%)	▼	Timing	Annual Insurance Payments processed in July
Law, Order and Public Safety	(13,500)	(11.31%)	▼	Timing	Actuals and budget will converge as year progresses
Education and Welfare	(17,177)	(20.96%)	▼	Permanent	Additional NCCA expenditure compared to budget
Community Amenities	92,641	18.85%	▲	Timing	Refuse invoices and Town Planning consultancy fees
Recreation and Culture	(92,982)	(17.15%)	▼	Timing	Actuals and budget will converge as year progresses
Transport	(96,012)	(7.44%)	▼	Timing	Increased O&M postings pending road program start
Economic Services	(34,070)	(36.76%)	▼	Timing	Actuals and budget will converge as year progresses
Other Property and Services	80,095	595.77%	▲	Timing	Short term var due to insurance budget profile
Capital Revenues					
Grants, Subsidies and Contributions	(59,675)	(5.83%)	▼	Timing	Var due to Binu West % part RRG grant funding rec'd
Proceeds from Disposal of Assets	(35,361)	(62.84%)	▼	Timing	Only DCEO vehicle traded to October 2016
Capital Expenses					
Land and Buildings	152,434	43.50%	▲	Timing	Actuals and budget will converge as year progresses
Infrastructure - Roads	394,932	39.51%	▲	Timing	Actuals and budget will converge as year progresses
Infrastructure - Parks & Ovals	(8,960)	(3.45%)	▼	Timing	Actuals and budget will converge as year progresses
Infrastructure - Footpaths	101,632	70.44%	▲	Timing	Actuals and budget will converge as year progresses
Plant and Equipment	208,243	83.62%	▲	Timing	Actuals and budget will converge as year progresses
Financing					
Self-Supporting Loan Principal	(5,711)	(77.77%)	▼	Timing	Actuals and budget will converge as year progresses
Repayment of Debentures	19,649	33.16%	▲	Timing	Loan payments processed quarterly
Transfer to Reserves	(55,141)	(154.37%)	▼	Timing	Transfers to be processed during October
Transfer from Reserves	232,000	202.62%	▲	Timing	Transfers to be processed during October

SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

Note 3: NET CURRENT FUNDING POSITION

		Positive=Surplus (Negative=Deficit)	
	Note	YTD 31 Oct 2016	30th June 2016
		\$	\$
Current Assets			
Cash Unrestricted	4	3,453,023	723,776
Cash Restricted	4	3,003,369	3,578,772
Receivables - Rates	6	1,125,731	160,199
Receivables -Other	6	127,048	87,046
Receivables - Rubbish		145,912	46,487
Emergency Services Levy		117,972	63,798
Interest / ATO Receivable/Trust		65,320	107,167
Land Held for Resale		233,182	245,455
Inventories		74,207	10,555
		8,345,762	5,023,256
Less: Current Liabilities			
Payables		(322,253)	(315,761)
Income Received in Advance		(1,974,978)	(2,329,780)
Provisions/Accruals/Adjustment		(239,048)	(245,455)
		(2,536,279)	(2,890,996)
Less: Cash Reserves	7	(1,028,391)	(1,284,031)
Net Current Funding Position		4,781,093	848,229

Note 3 - Liquidity Over the Year



Comments - Net Current Funding Position

SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

Note 4: CASH AND INVESTMENTS

	Interest Rate	Unrestricted \$	Restricted \$	Trust \$	Total Amount \$	Institution	Maturity Date
(a) Cash Deposits							
Municipal Bank Account	0.00%	451,573			451,573	National	At Call
Trust Bank Account	0.00%			212,656	212,656	National	At Call
WATC (OCDF) - Horrocks	1.45%		-		0	WATC	N/A
WATC (OCDF) - Binnu/White Cliffs	1.45%		1,974,978		1,974,978	WATC	N/A
Cash On Hand	Nil	1,450			1,450	N/A	On Hand
(b) Term Deposits							
Municipal Investments							
TD 75-922-****	TBA	1,000,000			1,000,000	National	28-Nov-16
TD 16-236-****	2.46%	500,000			500,000	National	15-Dec-16
TD 16-236-****	2.68%	1,000,000			1,000,000	National	15-Feb-17
TD 16-236-****	2.69%	500,000			500,000	National	10-Apr-17
Reserves Investments							
TD 16-236-****	2.90%		721,105		721,105	National	15-Oct-16
TD 16-236-****	2.90%				0	National	15-Oct-16
A/C 83-970-****	2.98%		307,286		307,286	National	28-Nov-16
Total		3,453,023	3,003,369	212,656	6,669,048		

Comments/Notes - Investments

SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

Note 6: RECEIVABLES

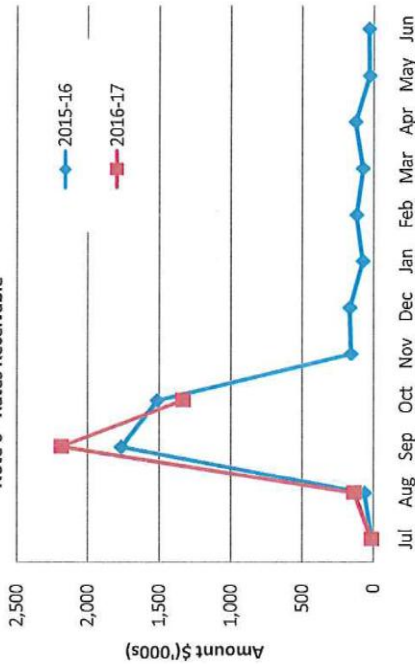
Receivables - Rates Receivable

Opening Arrears Previous Years
Levied this year
Less Collections to date
Equals Current Outstanding

Net Rates Collectable
% Collected

YTD 31 Oct 2016	30 June 2015
\$ 229,706	\$ 212,108
4,202,321	3,799,302
(3,306,297)	(3,763,045)
1,125,731	248,365
74.60%	93.81%

Note 6 - Rates Receivable



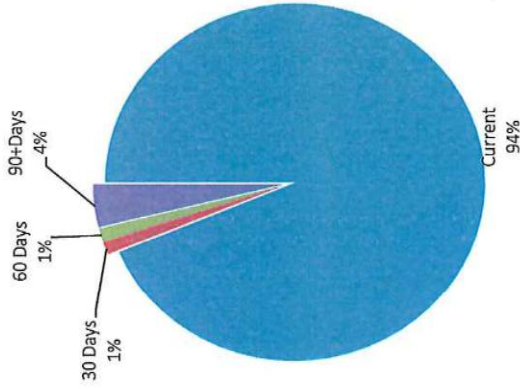
Comments/Notes - Receivables Rates

Receivables - General

Receivables - General
Total Receivables General Outstanding

Amounts shown above include GST (where applicable)

Note 6 - Accounts Receivable (non-rates)



Current	30 Days	60 Days	90+Days
\$ 119,042	\$ 1,438	\$ 1,666	\$ 4,903
			127,048

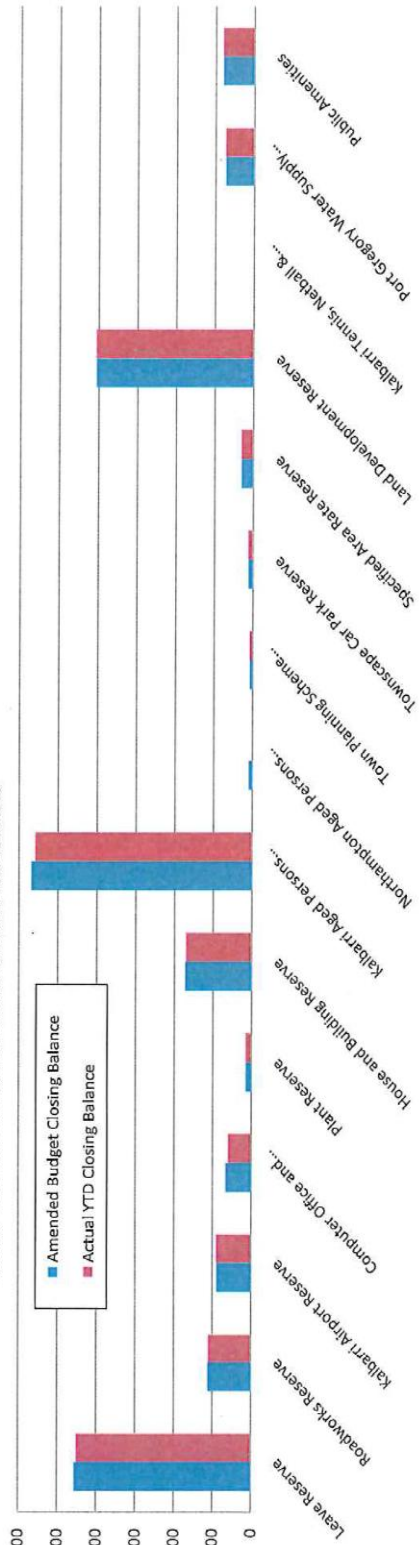
Comments/Notes - Receivables General

SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

Note 7: Cash Backed Reserve

2016-17	Opening Balance	Amended Budget Interest Earned	Actual Interest Earned	Amended Budget Transfers In (+)	Actual Transfers In (+)	Amended Budget Transfers Out (-)	Actual Transfers Out (-)	Transfer out Reference	Amended Budget Closing Balance	Actual YTD Closing Balance
Leave Reserve	\$ 217,874	5,000	1,740	\$ 5,000	5,000	0	0		227,874	224,614
Roadworks Reserve	54,245	2,000	690	0	0	0	0		56,245	54,935
Kalbarri Airport Reserve	24,703	200	70	20,000	20,000	0	0		44,903	44,773
Computer Office and Equipment Reserve	32,087	1,500	533	0	0	0	(3,000)		33,587	29,620
Plant Reserve	6,979	300	112	0	0	0	0		7,279	7,091
House and Building Reserve	73,537	2,500	870	10,000	10,000	0	0		86,037	84,407
Kalbarri Aged Persons Accommodation Reserve	268,859	8,000	2,773	7,157	7,157	0	0		284,016	278,789
Northampton Aged Persons Accommodation Reserve	164,044	5,500	1,915	0	0	(165,000)	(165,000)		4,544	959
Town Planning Scheme Reserve	13,096	0	0	0	0	(9,500)	(9,500)		3,596	3,596
Townscape Car Park Reserve	5,758	0	0	0	0	0	0		5,758	5,758
Specified Area Rate Reserve	15,000	0	0	0	0	0	0		15,000	15,000
Land Development Reserve	202,271	0	0	0	0	0	0		202,271	202,271
Kalbarri Tennis, Netball & Basketball Courts Reserve	169,078	0	0	0	0	(169,000)	(169,000)		78	78
Port Gregory Water Supply Reserve	36,500	0	0	0	0	0	0		36,500	36,500
Public Amenities	0	0	0	40,000	40,000	0	0		40,000	40,000
	1,284,031	25,000	8,703	82,157	82,157	(343,500)	(346,500)	0	1,047,688	1,028,391

Note 7 - Year To Date Reserve Balance to End of Year Estimate



SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

Note 8 CAPITAL DISPOSALS

Cost	Actual YTD Profit/(Loss) of Asset Disposal		Disposals	Adopted Current Budget YTD 31.10.2016			Comments
	Accum Depr	Proceeds		Profit (Loss)	Adopted Annual Budget Profit/(Loss)	Actual Profit/(Loss)	
\$	\$	\$	\$	\$	\$	\$	
23,000	(1,159)	20,909	(931)	1,000	(931)	(1,931)	Plant and Equipment Hyundai Santa Fe 2013 101NR P251 (DCEO)
			0	1,000	0	(1,000)	Toyota Prado DSL Wagon 2013 131NR P223 (MWS)
			0	0	0	0	Mitsubishi Canter 4x2 Maintenance NR107 P167
			0	(1,000)	0	1,000	Mitsubishi Truck NR7949 P136 (Prime Mover)
			0	(13,000)	0	13,000	Iveco Powerstar 6x4 NR1209 P177 Tip Truck
23,000	(1,159)	20,909	(931)	(12,000)	(931)	11,069	

Comments - Capital Disposal/Replacements

SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

RATE TYPE		Rate in \$	Number of Properties	Rateable Value \$	Rate Revenue \$	Interim Rates \$	Back Rates \$	Total Revenue \$	Amended Budget Rate Revenue \$	Amended Budget Interim Rate \$	Amended Budget Back Rate \$	Amended Budget Total Revenue \$
Differential General Rate												
	General GRV	0.077550	1,577	20,016,809	1,552,271	5,276		1,557,547	1,553,079	0	0	1,553,079
	General UV	0.012375	512	179,477,737	2,221,036			2,221,036	2,221,037	0	0	2,221,037
	Sub-Totals		2,089	199,504,546		5,276	0	3,778,583	3,774,116	0	0	3,774,116
Minimum Payment												
	General GRV	520.00	969	3,781,019	509,080	0	0	509,080	503,880	0	0	503,880
	General UV	520.00	53	655,079	22,360	0	0	22,360	27,560	0	0	27,560
	Sub-Totals		1,022	4,436,098		0	0	531,440	531,440	0	0	531,440
	Write-offs							4,310,023				4,305,556
	Discounts							(19)				0
	Amount from General Rates							(150,751)				(142,500)
	Ex-Gratia Rates							4,159,253				4,163,056
	Specified Area Rates							0				0
	Totals							43,068				43,425
								4,202,321				4,206,481

Comments - Rating Information

SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

10. INFORMATION ON BORROWINGS
(a) Debenture Repayments

Particulars	Principal 01-Jul-15	New Loans	Principal Repayments		Principal Outstanding		Interest Repayments	
			Actual \$	Amended Budget \$	Actual \$	Amended Budget \$	Actual \$	Amended Budget \$
Other Property								
Loan 152 - Staff Housing *	375,242		7,705	15,508	367,537	359,734	11,987	23,818
Loan 154 - Staff Housing	350,000		0	31,110	350,000	318,890		12,260
Recreation & Culture								
Loan 147 - Kalbarri Bowling Club*	6,432		1,633	3,315	4,799	3,117	106	175
Loan 148A - Kalbarri Library Extensions	100,735		12,202	24,655	88,533	76,080	1,576	3,350
Loan 151 - Kalbarri Bowling Club*	17,137		0	3,220	17,137	13,917		885
Transport								
Loan 149 - Plant Purchases	190,717		0	63,465	190,717	127,252		9,390
Loan 153 - Plant Purchases	323,900		18,069	36,500	305,831	287,400	5,805	13,045
	1,364,163	0	39,608	177,773	1,324,555	1,186,390	19,475	62,923

* Self supporting loan

All debenture repayments were financed by general purpose revenue except loans 147, 151 & 152 which are self supporting loans.

(b) New Debentures

No new debentures were raised during the reporting period.

SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

Note 11: GRANTS AND CONTRIBUTIONS

Program/Details GL	Grant Provider	Approval	2016-17 Amended Budget	Variations Additions (Deletions)	Operating	Capital	Recoup Status Received	Recoup Status Not Received
GENERAL PURPOSE FUNDING		(Y/N)	\$	\$	\$	\$	\$	\$
4611 Grants Commission - General	WALGGC	Y	813,145	0	813,145	0	202,537	610,608
4621 Grants Commission - Roads	WALGGC	Y	674,110	0	674,110	0	168,714	505,397
0293 Northampton Creative Arts	Lottery West	Y	0	0	0	0	1,333	0
LAW, ORDER, PUBLIC SAFETY								
0583 Bush Fire Brigade Operating Grant	Dept. of Fire & Emergency Serv.	Y	33,780	0	33,780	0	20,693	13,087
0583 Grant FESA - SES	Dept. of Fire & Emergency Serv.	Y	33,000	0	33,000	0	15,500	15,500
EDUCATION AND WELFARE								
1083 Pioneer Lodge - Building Development	Royalties For Regions (MWDIC)	Y	704,545	90,909	0	704,545	90,909	613,636
1163 NCAA Fundraising			0	0	0	0	100	0
COMMUNITY AMENITIES								
3865 Horrocks Community Centre		Y	0	0	0	0	22,208	0
RECREATION AND CULTURE								
4763 Heritage Advisory Services	State Heritage Office	Y	6,500	0	6,500	0	656	5,844
4523 Kalbarri Foreshore Redevelopment	National Stronger Regions	N	180,000	0	0	180,000	0	180,000
4523 Finger Jetty	Department of Transport	Y	80,000	0	0	80,000	0	80,000
4473 Kalbarri Tennis, Netball & Basketball	CSRF	Y	225,000	0	0	225,000	204,012	20,988
4473 Kalbarri Tennis, Netball & Basketball	Royalties for Regions	Y	226,680	0	0	226,680	0	226,680
4473 Kalbarri Tennis, Netball & Basketball	Kalbarri Sport & Rec Club	Y	20,000	0	0	20,000	0	20,000
Seniors Week	Seniors WA	Y	0	0	0	0	0	0
TRANSPORT								
5481 RRG Grants - Capital Projects	Regional Road Group	Y	326,667	0	0	326,667	130,667	196,000
5209 Binu West	Roads to Recovery	Y	323,253	0	0	323,253	323,253	(0)
5209 White Cliff's	Roads to Recovery	Y	600,000	0	0	600,000	0	600,000
5205 RFR - Binu West	State Government	Y	751,495	0	0	751,495	0	0
6281 MRWA Maintenance Grants	Main Roads WA	Y	161,000	0	161,000	0	161,000	0
ECONOMIC								
5005 Lucky Bay	Tourism WA Coastal Nodes Grant	Y	147,885	0	0	147,885	0	147,885
5005 Lucky Bay	Royalties for Regions Funding - 16/	Y	191,250	0	0	191,250	191,250	0
TOTALS			5,498,310	90,909	1,721,535	3,776,775	1,533,833	3,236,624
	Operating		1,721,535				569,444	
	Non-operating		3,776,775				964,389	
			<u>5,498,310</u>				<u>1,533,833</u>	

SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

Note 12: TRUST FUND

Funds held at balance date over which the Shire has no control and which are not included in this statement are as follows:

Description	Opening Balance 1 Jul 16	Amount Received	Amount Paid	Closing Balance 31-Oct-16
Town Planning - Security Bonds	\$ 0	\$	\$	\$ 0
Transportable Housing Bond	26,275			26,275
Footpath Deposits	38,556		(9,000)	29,556
Retentions - Subdivisions	69,794		0	69,794
Building Levies (BCITF & BRB)	182	9,633		9,815
Community Bus Bond	6,000	1,000	(1,400)	5,600
Unclaimed Monies - Rates	4,336	0		4,336
Nomination Deposits	0	0		0
Aged Unit Bond	0		0	0
Council Housing Bonds	520	760	(760)	520
BROC - Management Funds	1			1
RSL Hall Key Bond	650	420	(420)	650
Special Series Plates	220	310	(200)	330
Kidsport	2,356	3,716		6,072
Northampton Child Care Association	62,768	0	(10,000)	52,768
Horrocks Memorial Wall	3,367	250	(341)	3,276
One Life	3,813	0	(150)	3,663
Kalbarri Camp School	25,152	0	(25,152)	0
	243,990	16,089	(47,423)	212,656

Level of Completion Indicators



SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

Note 13: CAPITAL ACQUISITIONS

% of Completion	Level of Completion Indicator	Infrastructure Assets	YTD for the Period Ended 31 October 2016				Strategic Reference / Comment
			Amended Annual Budget	Amended YTD Budget	YTD Actual	Variance (Under)/Over	
1.00	●	Governance					
		DCEO Vehicle	(40,000)	(40,000)	(40,805)	(805)	
1.02	●	Governance Total	(40,000)	(40,000)	(40,805)	(805)	
0.04	○	Education and Welfare					
		Pioneer Lodge (Car Park)	(95,465)	0	(4,028)	(4,028)	
0.00	○	Pioneer Lodge (8 Units) Construction Costs	(1,269,545)	0	(4,412)	(4,412)	
0.01	○	Education and Welfare Total	(1,365,010)	0	(8,440)	(4,412)	
0.00	○	Community Amenities					
		Develop Binnu Refuse Site	(45,100)	(15,032)	0	15,032	
0.00	○	Sally's Tree Grinder Pump	(30,000)	(10,000)	(18,387)	(8,387)	
1.32	●	Horrocks Community Centre	(110,400)	(73,592)	(145,600)	(72,008)	
0.88	●	Communities and Amenities Total	(185,500)	(98,624)	(163,987)	(65,363)	
0.62	○	Recreation And Culture					
		Floating Finger Jetty - northern boat ramp	(80,000)	(26,664)	(49,911)	(23,247)	
0.00	○	DUP - Pathways Kalbarri Foreshore Redevelopment	(270,000)	(90,000)	0	90,000	
0.03	○	Kalbarri Tennis, Netball & Basketball Courts	(755,520)	(251,832)	(25,595)	226,237	
0.00	○	Replace BBQ Kalbarri Marina	(4,000)	(1,333)	0	1,333	
0.00	○	Horrocks - Replace Shelter/slab	(16,680)	(5,558)	0	5,558	
0.16	○	Lions Park - Playground/Shelter/BBQ etc	(45,380)	(15,121)	(7,408)	7,713	
0.07	○	Recreation And Culture Total	(1,171,580)	(390,508)	(82,914)	330,841	
0.20	○	Transport					
		Road Construction	(2,998,860)	(999,588)	(604,656)	394,932	
0.26	○	Footpath Construction	(162,840)	(54,272)	(42,640)	11,632	
0.00	○	4 Wheel Light tip Truck - Kalbarri	(82,810)	(27,603)	0	27,603	
0.00	○	Prime Mover	(220,000)	(73,333)	0	73,333	
0.00	○	Tip Truck - Northampton	(210,000)	(70,000)	0	70,000	
0.00	○	Works Manager 4 Wheel Drive	(57,170)	(38,112)	0	38,112	
0.17	○	Transport Total	(3,731,680)	(1,262,908)	(647,296)	615,612	

Level of Completion Indicators

- 0% ○
- 20% ○
- 40% ●
- 60% ●
- 80% ●
- 100% ●

SHIRE OF NORTHAMPTON
NOTES TO THE STATEMENT OF FINANCIAL ACTIVITY
For the Period Ended 31 October 2016

Note 13: CAPITAL ACQUISITIONS

% of Completion	Level of Completion Indicator	YTD for the Period Ended 31 October 2016					Variance (Under)/Over	Strategic Reference / Comment
		Infrastructure Assets	Amended Annual Budget	Amended YTD Budget	YTD Actual			
0.33	○	Other Property and Services						
		Lucky Bay Caravan and Camp Grounds	(632,490)	(210,824)	(211,141)	(317)		
0.33	○	Other Property and Services Total	(632,490)	(210,824)	(211,141)	(317)		
0.16	○	Capital Expenditure Total	(7,126,260)	(2,002,864)	(1,154,583)	875,556		
		By Class						
0.00	○	Land Held for Resale	0	0	0	0		
0.09	○	Land and Buildings	(2,306,030)	(350,456)	(198,022)	152,434		
0.20	○	Infrastructure Assets - Roads	(2,998,860)	(999,588)	(604,656)	394,932		
0.10	○	Infrastructure Assets - Footpaths	(432,840)	(144,272)	(42,640)	101,632		
0.34	○	Infrastructure Assets - Parks and Ovals	(778,550)	(259,500)	(268,460)	(8,960)		
0.07	○	Plant and Equipment	(609,980)	(249,048)	(40,805)	208,243		
0.00	○	Furniture and Equipment	0	0	0	0		
0.16	○	Capital Expenditure Total by Class	(7,126,260)	(2,002,864)	(1,154,583)	848,281		

Shire of Northampton
Schedule Format
2015/2016
Summary

	Ytd Actual 31/10/2016	Ytd Budget 31/10/2016	Annual Budget 30/06/2017
Operating Revenue			
Governance	-22,770	-16,724	-50,200
General Purpose Funding	-4,574,591	-4,653,225	-5,782,398
Law, Order, Public Safety	-46,856	-30,416	-91,280
Health	-17,303	-17,496	-52,500
Education and Welfare	-76,033	-65,184	-195,585
Housing	-12,385	-11,064	-33,196
Community Amenities	-797,084	-780,822	-838,127
Recreation and Culture	-18,299	-15,232	-45,750
Transport	-163,401	-163,064	-167,210
Economic Services	-104,395	-44,392	-133,205
Other Property and Services	-38,820	-41,256	-123,818
Total Operational Revenue	-5,871,936	-5,838,875	-7,513,269
Operating Expenditure			
Governance	307,664	290,184	835,493
General Purpose Funding	36,819	34,804	104,457
Law, Order, Public Safety	132,884	119,384	341,833
Health	66,306	68,484	205,562
Education and Welfare	99,117	81,940	245,937
Housing	40,575	38,316	115,122
Community Amenities	398,625	491,560	1,475,160
Recreation and Culture	634,867	542,280	1,627,590
Transport	1,386,192	1,338,512	4,015,696
Economic Services	126,762	92,692	278,173
Other Property and Services	-66,651	13,444	40,508
Total Operating Expenditure	3,163,159	3,111,600	9,285,531
Capital Revenue			
Governance	-20,909	-20,000	-20,000
General Purpose Funding	0	0	0
Law, Order, Public Safety	0	0	0
Health	0	0	0
Education and Welfare	-90,909	0	-1,269,545
Housing	0	0	0
Community Amenities	-22,208	-6,332	-9,500
Recreation and Culture	-205,645	-358,728	-907,215
Transport	-1,121,052	-715,464	-2,116,415
Economic Services	-191,250	-113,044	-339,135
Other Property and Services	0	-5,168	-15,508
Total Capital Revenue	-1,651,973	-1,218,736	-4,677,318

**Shire of Northampton
Schedule Format
2015/2016
Summary**

	Ytd Actual 31/10/2016	Ytd Budget 31/10/2016	Annual Budget 30/06/2017
Capital Expenditure			
Governance	40,805	40,000	40,000
General Purpose Funding	0	0	0
Law, Order, Public Safety	0	0	0
Health	0	0	0
Education and Welfare	8,440	0	1,365,010
Housing	0	10,368	31,110
Community Amenities	163,987	98,624	185,500
Recreation and Culture	96,748	400,904	1,202,770
Transport	665,365	1,296,228	3,831,645
Economic Services	211,141	210,824	632,490
Other Property and Services	71,357	5,168	15,508
Total Capital Expenditure	1,257,843	2,062,116	7,304,033
Profit/Loss Sale of Asset	21,841	-1,000	12,000
Net (Profit)/Loss	-3,102,908	-1,883,895	4,398,977

**Schedule Format
2015/2016
General Purpose Revenue - Schedule 3**

	YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
RATES			
<i>Operating Revenue</i>			
0263	0	-832	-2,500
4033	0	-6,428	-19,287
0264	-8,238	0	0
4501	-4,310,036	-4,305,556	-4,305,556
4560	150,751	85,500	142,500
4511	-10,487	-9,164	-27,500
4541	0	0	0
4591	-16,360	-5,500	-16,500
4530	0	0	0
4711	0	-432	-1,300
4570	19	0	0
Total Operating Income	<u>-4,194,350</u>	<u>-4,242,412</u>	<u>-4,230,143</u>

<i>Operating Expenditure</i>			
4012	18,765	20,532	61,600
4022	2,898	3,180	9,550
4032	0	0	0
4052	3,101	1,700	5,100
4062	2,030	500	1,500
4072	861	4,164	12,500
4082	8,392	4,164	12,500
4102	166	52	165
4172	0	0	0
4522	59	0	0
Total Operating Expenditure	<u>36,273</u>	<u>34,292</u>	<u>102,915</u>

GENERAL PURPOSE GRANT FUNDING

<i>Operating Revenue</i>			
4611	-202,537	-203,286	-813,145
4621	-168,714	-168,527	-674,110
0223	0	0	0
4603	-8,990	-39,000	-65,000
Total Operating Income	<u>-380,241</u>	<u>-410,813</u>	<u>-1,552,255</u>

<i>Operating Expenditure</i>			
4642	546	512	1,542

**Schedule Format
2015/2016
Governance / Members - Schedule 4**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
GOVERNANCE				
	<i>Operating Income</i>			
0013	CONTRIBUTIONS	0	-64	-200
	<i>Operating Expenditure</i>			
0012	MEMBERS TRAVELLING	87	1,000	3,000
0022	CONFERENCE EXPENSES	17,135	18,588	20,500
0032	ELECTION EXPENSES	0	500	1,500
0052	ALLOWANCES	0	4,332	13,000
0062	MEMBERS EXPENSES OTHER	1,648	3,200	9,600
0072	REFRESHMENTS & RECEPTIONS	5,724	5,332	16,000
0092	ADMIN ALLOC TO GOVERNANCE	45,559	42,864	128,594
0102	INSURANCE	3,619	1,204	3,620
0112	SUBSCRIPTIONS	21,349	10,192	30,580
0122	PUBLIC RELATIONS	0	0	0
0132	MEETING ATTENDANCE FEES	0	6,616	19,850
0142	ASSET DEPRECIATION	0	104	315
0152	COUNCIL CHAMBERS MAINT	3,783	280	870
	<i>Total Operating Expenditure</i>	98,904	94,212	247,429
ADMINISTRATION				
	<i>Operating Income</i>			
0133	CONTRIBUTIONS	-11,052	-1,332	-4,000
0153	REBATES AND COMMISSIONS	-7,014	-11,000	-33,000
0233	- OTHER CHARGES	-506	-264	-800
0243	- PHOTOCOPYING	-255	-400	-1,200
0253	- INFO SEARCH FEE	-2,610	-3,664	-11,000
0293	GRANT - REVENUE (VARIOUS)	-1,333	0	0
	<i>Total Operating Income</i>	-22,770	-16,660	-50,000
0283	PROFIT/LOSS SALE OF ASSET	21,841	-1,000	-1,000
	<i>Operating Expenditure</i>			
0272	- SALARIES - MUNICIPAL	140,998	163,168	489,510
0282	- LONG SERVICE LEAVE	14,205	0	0
0302	ADMIN SUPERANNUATION	22,156	22,200	66,610
0312	- INSURANCE	33,694	13,232	39,705
0332	- CONFERENCES & SEMINAR	2,875	2,448	7,350
0342	- TRAINING COSTS	548	1,664	5,000
0372	- OFFICE MAINTENANCE	15,937	12,924	38,805
0382	- ACCRUED ANNUAL LEAVE	0	0	0
0392	ACCRUED LS LEAVE	0	0	0
0402	INT ON LOANS	0	0	0
0408	CONSULTANCY - FINANCIAL PLANS/VALUATIONS	7,200	12,332	37,000

Schedule Format
2015/2016
Governance / Members - Schedule 4

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
0412	COMMUNITY CENSUS	0	0	0
0422	- PRINTING & STATIONERY	8,874	4,332	13,000
0432	- TELEPHONE	9,386	7,116	21,350
0442	- ADVERTISING	582	332	1,000
0452	- OFFICE EQUIPT MTCE	5,218	4,332	13,000
0462	- BANK CHARGES	4,942	4,000	12,000
0482	- POSTAGE & FREIGHT	956	2,000	6,000
0492	- OFFICE EXPENSES OTHER	4,089	4,828	14,500
0495	OFFICE SECURITY EXPENSES	478	332	1,000
0496	CAPITAL WORKS PLAN - R4R	0	0	0
0497	INDIGENOUS COMMUNITIES - DLG	0	0	0
0498	DROUGHT ASSISTANCE PROJECTS	0	0	0
0502	- COMPUTER EXPENSES	35,772	16,028	48,095
0512	ROUNDING ACCOUNT	0	0	0
0532	ACCRUED INTEREST ON LOANS	0	0	0
0572	- VEHICLE RUNNING EXP.	4,565	4,664	14,000
0592	- FRINGE BENEFITS TAX	7,952	12,372	37,125
0602	EXPENSES - GRANT RELATED	417	0	0
0672	- AUDIT FEES	1,000	8,232	24,700
0692	- LEGAL EXPENSES	5,567	3,332	10,000
0732	ADMIN UNIFORMS	57	1,332	4,000
0762	BAD DEBTS WRITE OFF	0	332	1,000
0174	DEPRECIATION	14,214	19,500	58,500
0742	LESS ALLOCATED FROM GOVERNANCE	-341,267	-321,080	-963,250
0942	ADMIN ALLOC TO GENERAL ADMIN	208,343	196,020	588,064
	Total Operating Expenditure	208,760	195,972	588,064
	Capital Income			
0175	PROCEEDS SALE OF ASSETS	-20,909	-20,000	-20,000
	Capital Expenditure			
0134	FURNITURE AND EQUIPMENT	0	0	0
0164	PLANT & EQUIPMENT	40,805	40,000	40,000
0184	PRINCIPAL ON LOANS	0	0	0
	Total Capital Expenditure	40,805	40,000	40,000

**Schedule Format
2015/2016
Law, Order and Public Safety - Schedule 5**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
FIRE PREVENTION				
<i>Operating Revenue</i>				
0583	EMERGENCY SERVICES LEVY	-41,193	-23,592	-70,780
0584	REIMBURSEMENTS	0	0	0
0585	KALBARRI SES EQUIPMENT/BUILDING GRANT	0	0	0
0613	VOLY FIRE CONTRIB - NPTON	0	0	0
0623	REIMBURSEMENTS	0	-2,000	-6,000
0325	GRANT FUNDS - EQUIPMENT	0	0	0
0673	FIRE INFRINGEMENTS	0	-332	-1,000
	<i>Total Operating Revenue</i>	-41,193	-25,924	-77,780
0335	DISPOSAL OF ASSETS	0	0	0
0683	PROFIT/LOSS SALE OF ASSET	0	0	0
<i>Operating Expenditure</i>				
1042	FIRE INSURANCE	8,400	2,800	8,400
1052	COMM. MTCE AND REPAIRS	4,009	1,220	3,690
1062	FIRE CONTROL EXP. OTHER	17,166	8,104	24,340
1072	AERIAL INSPECTIONS	0	500	1,500
1082	FIRE FIGHTING	2,548	2,936	8,820
1122	BURN OFF FEE REFUND	0	0	0
1132	ADMIN ALLOC TO FIRE PREVN	6,245	5,872	17,627
1142	KALBARRI SES OPERATIONS	17,574	16,500	33,000
1144	KALBARRI SES EQUIPMENT/BUILDING GRANT	0	0	0
1152	PORT GREGORY FIRE SHED	5,061	40	130
1154	ISSEKA FIRE SHED	0	48	145
1156	HORROCKS FIRE/AMBULANCE SHED	126	40	130
1158	BINNU FIRE SHED	41	12	40
1304	ASSET DEPRECIATION	15,034	17,000	51,000
1104	FIRE BRIGADE HQ (RAILWAY STN COSTS TO 12	193	708	2,140
	<i>Total Operating Expenditure</i>	76,396	55,780	150,962
<i>Capital Revenue</i>				
0525	GOVERNMENT GRANTS	0	0	0
<i>Capital Expenditure</i>				
0338	LAND & BUILDINGS	0	0	0
0334	PLANT & EQUIPMENT	0	0	0
0514	PLANT & EQUIPMENT	0	0	0
	<i>Total Capital Expenditure</i>	0	0	0

**Schedule Format
2015/2016
Law, Order and Public Safety - Schedule 5**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
ANIMAL CONTROL				
<i>Operating Revenue</i>				
0763	- FINES AND PENALTIES	-450	-164	-500
0773	- DOG REGISTRATION	-4,386	-3,332	-10,000
0783	- REIMBURSEMENTS/OTHER	0	0	0
0803	- IMPOUNDING FEES	-100	-164	-500
0833	MISC GRANTS	0	0	0
	<i>Total Operating Revenue</i>	-4,936	-3,660	-11,000
<i>Operating Expenditure</i>				
1162	DOG CONTROL EXPENSES	5,547	5,672	17,030
1172	ADMIN ALLOC TO ANIMAL CON	1,194	1,120	3,371
1192	CAT CONTROL EXPENSES	650	1,552	4,670
	<i>Total Operating Expenditure</i>	7,391	8,344	25,071
<i>Capital Expenditure</i>				
1164	DOG POUND CAGES	0	0	0
OTHER LAW, ORDER AND PUBLIC SAFETY				
<i>Operating Revenue</i>				
0843	ILLEGAL CAMPING FINES	-727	-832	-2,500
0873	PROFIT/LOSS FROM SALE OF ASSET	0	0	0
<i>Operating Expenditure</i>				
1212	SALARIES (RANGER)	41,495	48,096	144,300
1232	CONTROL EXPENSES OTHER	3,684	2,664	8,000
1242	FLOOD CONTROL EXPENSES - KALBARRI	0	0	0
4122	ABANDONED VEHICLES	264	0	0
4132	LAW & ORDER ASSET DEPRECN	3,653	4,500	13,500
	<i>Total Operating Expenditure</i>	49,097	55,260	165,800

**Schedule Format
2015/2016
Education and Welfare - Schedule 6**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
PRE-SCHOOL				
Operating Revenue				
1043	GRANT - NOCCA BUILDING	0	0	0
1113	NCAA - SUSTAINABILITY FUNDING (MONTHLY) D	-11,074	-12,692	-38,085
1123	NCCA CCB/CCR REBATE REVENUE (WEEKLY)	-15,384	-17,332	-52,000
1133	NCCA SESSION FEES (WEEKLY)	-25,734	-16,664	-50,000
1143	NCCA MEMBERSHIP REVENUE	-1,910	-332	-1,000
1163	NCCA FUNDRAISING/GRANTS REVENUE	-100	0	0
1103	NCCA - REIMBURSEMENTS	0	0	0
	Total Operating Revenue	-54,202	-47,020	-141,085
Operating Expenditure				
1312	NCCA - BUILDING RELATED EXPENSES	7,384	6,700	20,130
1322	NCCA OPERATING EXPENDITURE (PAYROLL/SUPE	50,085	43,816	131,465
1332	NCCA - GRANT RELATED EXPENSES (GST FREE)	12,656	0	0
1342	NCCA - SUPERANNUATION	3,507	3,204	9,620
1352	NCCA TRUST TRANSFER (NET PROFIT)	0	2,176	6,537
1314	YOUTH PROGAM	0	664	2,000
1412	ASSET DEPRECIATION	7,129	7,000	21,000
3202	KALBARRI CHILD CARE CENTRE	1,674	3,972	11,935
	Total Operating Expenditure	82,434	67,532	202,687
Capital Expenditure				
1316	LAND & BUILDINGS	0	0	0
WELFARE				
Operating Revenue				
0853	AGED UNITS RENTAL INCOME	-21,832	-18,164	-54,500
Operating Expenditure				
2362	KALBARRI AGED HOUSING MAINT	16,682	14,408	43,250
2332	NORTHAMPTON AGED CARE	0	0	0
Capital Revenue				
0715	LOAN INCOME - AGED HOUSIN	0	0	-400,000
0815	TRANSFER FROM AGED RESERV	0	0	-165,000
1083	GRANTS	-90,909	0	-704,545
	Total Capital Revenue	-90,909	0	-1,269,545

Schedule Format
2015/2016
Education and Welfare - Schedule 6

		YTD Actual	YTD Budget	Annual Budget
		31/10/2016	31/10/2016	30/06/2017
	<i>Capital Expenditure</i>			
3052	PIONEER LODGE (CARPARK)	4,028	0	95,465
3062	PIONEER LODGE (8 UNITS) CONSTRUCTION COST	4,412	0	1,269,545
	<i>Total Capital Expenditure</i>	8,440	0	1,365,010

**Schedule Format
2015/2016
Health - Schedule 7**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
PREVENTATIVE SERVICES				
<i>Operating Revenue</i>				
1673	- FOOD VENDORS	0	-500	-1,500
1753	REIMBURSEMENTS	0	0	0
1763	CONTRIBUTIONS	-6,525	-13,164	-39,500
	<i>Total Operating Revenue</i>	-6,525	-13,664	-41,000
1764	PROFIT/LOSS ON SALE ASSET	0	0	0
<i>Operating Expenditure</i>				
2012	SALARIES	30,077	37,580	112,750
2022	HEALTH SUPERANNUATION	5,040	5,820	17,470
2032	ACCRUED ANNUAL & LS LEAVE	0	0	0
2042	CONTROL EXPENSES OTHER	12,217	5,932	17,810
2052	VEHICLE RUNNING EXPENSES	3,438	4,164	12,500
2082	HEALTH BUILDING MAINT	71	20	70
2102	ADMIN ALLOC TO HEALTH	2,764	2,600	7,802
	<i>Total Operating Expenditure</i>	53,607	56,116	168,402
<i>Capital Revenue</i>				
1375	PROCEEDS SALE OF ASSET	0	0	0
1396	GOVERNMENT GRANTS	0	0	0
	<i>Total Capital Revenue</i>	0	0	0
<i>Capital Expenditure</i>				
1324	PLANT AND EQUIPMENT - HLT	0	0	0
OTHER HEALTH				
<i>Operating Revenue</i>				
2023	LEASE - DOCTORS SURGERY (NORTHA	-10,300	-3,332	-10,000
2033	RENTAL LOT 43 BATEMAN STREET (DC	0	0	0
2043	REIMBURSEMENTS - OTHER	-478	-500	-1,500
2093	RENT LOT 14 CALLION WAY	0	0	0
	<i>Total Operating Revenue</i>	-10,778	-3,832	-11,500
<i>Operating Expenditure</i>				
2053	PROFIT/LOSS SALE ASSET	0	0	0
2312	DOCTOR SURGERY - KALBARRI	1,940	984	2,975
2342	DOCTORS SURGERY - NORTHAMPTON	1,581	1,220	3,685

**Schedule Format
2015/2016
Health - Schedule 7**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
2382	ASSET DEPRECIATION	9,179	10,164	30,500
2392	LOT 7 STEPHEN STREET	0	0	0
1385	DISPOSAL OF ASSETS (P/L)	0	0	0
1375	PROCEEDS SALE OF ASSET	0	0	0
	Total Operating Expenditure	12,699	12,368	37,160
	 Capital Revenue			
2083	LAND SALES RESERVE	0	0	0
	 Capital Expenditure			
0834	LAND & BUILDINGS	0	0	0
1644	FURNITURE AND EQUIPMENT	0	0	0
	Total Capital Expenditure	0	0	0

**Schedule Format
2015/2016
Housing - Schedule 9**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
STAFF HOUSING				
<i>Operating Revenue</i>				
2833	CONTRIBUTIONS	0	0	0
2843	RESIDENTIAL RENTAL	-9,838	-8,564	-25,696
2853	CHARGES - STAFF RENTALS	0	0	0
	<i>Total Operating Revenue</i>	-9,838	-8,564	-25,696
2873	PROFIT/LOSS ON SALE ASSET	0	0	0
<i>Operating Expenditure</i>				
3162	- LOT 71 MITCHELL	0	0	0
3172	- OVAL RESIDENCE	1,010	1,896	5,700
3192	- LOT 10 ESSEX	0	0	0
3212	- LOT 454 FITZGERALD	4,154	1,060	3,205
3222	ASSET DEPRECIATION	18,850	17,664	53,000
3232	- LOT 43 BATEMAN ST	1,100	1,116	3,365
3242	LOT 42 BATEMAN STREET	1,104	1,276	3,840
3252	ADMIN ALLOC TO STAFF HOUS	1,979	1,860	5,587
3262	INTEREST ON LOANS	0	4,084	12,260
3282	605 SALAMIT PLACE	4,312	3,096	9,300
3432	LOT 23 RAKE PLACE NORTHAMPTON	3,625	1,888	5,680
	<i>Total Operating Expenditure</i>	36,134	33,940	101,937
<i>Capital Revenue</i>				
2425	LOAN LIABILITY - HOUSING	0	0	0
<i>Capital Expenditure</i>				
2494	LAND & BUILDINGS - STAFF HOUSING	0	0	0
2534	PRINCIPAL ON LOANS	0	10,368	31,110
	<i>Total Capital Expenditure</i>	0	10,368	31,110
HOUSING OTHER				
<i>Operating Revenue</i>				
3013	RENT LOT 11 HAMPTON ROAD	0	0	0
3003	REIMBURSEMENTS - HOUSING OTHER	-2,547	-2,500	-7,500
	<i>Total Operating Revenue</i>	-2,547	-2,500	-7,500
<i>Operating Expenditure</i>				
3422	ESL PAYMENTS FOR MISC PROPERTY	0	332	1,000
3442	RESIDENCE - LOT 6 ROBINSON ST	855	832	2,510
3452	LOT 11 HAMPTON ROAD	0	0	0

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		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
3482	LOT 74 SEVENTH AVENUE	1,811	1,544	4,655
3492	14 CALLION WAY KALBARRI - DOCTO	1,775	1,668	5,020
	Total Operating Expenditure	4,441	4,376	13,185
	Capital Revenue			
2455	LAND SALES RESERVE	0	0	0
	Capital Expenditure			
3034	43 BATEMAN STREET	0	0	0

**Schedule Format
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Community Amenities - Schedule 10**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
SANITATION - HOUSEHOLD				
<i>Operating Revenue</i>				
3253	- KALBARRI RESIDENTIAL	-373,163	-372,240	-372,240
3263	- OTHER RESIDENTIAL	-223,491	-220,770	-220,770
3273	- 240 LITRE CARTS	-668	-1,332	-4,000
	<i>Total Operating Revenue</i>	-597,323	-594,342	-597,010
<i>Operating Expenditure</i>				
3812	DOMESTIC REFUSE COLLECT.	92,381	123,332	370,000
3826	DEPRECIATION - REFUSE SITES	724	716	2,150
3832	PURCHASE OF 240L CARTS	1,800	1,000	3,000
3854	NORTHAMPTON REFUSE SITE	44,278	52,144	156,440
3856	KALBARRI REFUSE SITE MAINTENANCE	52,411	54,576	163,750
3858	BINNU REFUSE SITE MAINTENANCE	10,375	1,916	5,750
3860	PORT GREGORY REFUSE SITE MAINTENANCE	1,433	3,232	9,715
3861	LUCKY BAY REFUSE COLLECTION	2,662	4,164	12,500
3888	ACCRUED INTEREST ON LOANS	0	0	0
3890	INTEREST ON LOANS	0	0	0
3892	ADMIN ALLOC TO SANITATION	1,570	1,476	4,431
	<i>Total Operating Expenditure</i>	207,634	242,556	727,736
<i>Capital Expenditure</i>				
3304	REFUSE - FURNITURE & EQUIP	0	0	0
SANITATION - OTHER				
<i>Operating Revenue</i>				
3313	GRANTS - OTHER	0	0	0
3323	REFUSE SITE FEES -OTHER	-13,487	-45,000	-45,000
3343	- INDUSTRIAL	-113,520	-114,180	-114,180
3353	- COMMERCIAL	-8,173	-3,072	-9,227
3373	- CARAVAN PARKS	0	0	0
3383	INDUSTRIAL REFUSE COLLECTION - GST	-27,060	-9,020	-27,060
3403	REIMBURSEMENT- WHARF BINS (GST)	0	0	0
3405	REIMBURSEMENTS - DRUMMUSTER	0	-1,332	-4,000
	<i>Total Operating Revenue</i>	-162,240	-172,604	-199,467
<i>Operating Expenditure</i>				
3722	IND/COMM REFUSE COLLECT	56	0	0
3772	STREET REFUSE COLLECT/LITTER	32,363	37,296	111,900
3774	DRUM MUSTER	947	1,332	4,000
	<i>Total Operating Expenditure</i>	33,366	38,628	115,900

**Schedule Format
2015/2016
Community Amenities - Schedule 10**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
	<i>Capital Expenditure</i>			
3305	REFUSE - LAND AND BUILDING	0	15,032	45,100
3335	REFUSE SITE CAPITAL	0	0	0
3336	PRINCIPAL ON LOANS	0	0	0
	<i>Total Capital Expenditure</i>	0	15,032	45,100

SANITATION - SEWERAGE

	<i>Operating Revenue</i>			
3543	CHARGES - SEPTIC TANKS	-590	-332	-1,000
3553	SEPTIC TANK INSPECTIONS	-429	-332	-1,000
	<i>Total Operating Revenue</i>	-1,019	-664	-2,000

TOWN PLANNING AND REGIONAL DEVELOPMENT

	<i>Operating Revenue</i>			
3743	PLANNING FEES	-21,700	-10,000	-30,000
3823	REIMBURSE (ADVERTISING/PLANNING COMMIS	0	-48	-150
3833	REIMBURSEMENTS	-10,762	0	0
	<i>Total Operating Revenue</i>	-32,462	-10,048	-30,150
3935	P/L ON SALE OF ASSET	0	0	0
	<i>Operating Expenditure</i>			
4202	SALARIES	25,150	22,244	66,740
4212	SUPERANNUATION-PLANNING	1,713	2,116	6,350
4232	PRINTING & STATIONERY	0	80	250
4242	ADVERTISING	0	332	1,000
4252	INSURANCE	3,587	1,160	3,490
4262	CONFERENCE EXPENSES	0	664	2,000
4272	VEHICLE OPERATING COSTS	653	1,164	3,500
4282	CONSULTANTS EXPENSES	8,505	11,664	35,000
4302	LEGAL EXPENSES	894	2,000	6,000
4322	NORTHAMPTON TOWNSCAPE	0	0	0
4342	HORROCKS TOWNSCAPE	0	0	0
4372	TOWN PLAN SCHEME EXPENSES	15,868	72,332	217,000
4382	CONTROL EXPENSES	1,535	1,180	3,550
4402	ASSET DEPRECIATION	1,554	2,100	6,300
4472	TP - ACCRUED LS LEAVE	0	0	0
4482	TP ACCRUED ANNUAL LEAVE	0	0	0
4852	PLANNING BUILDING MAINT	95	28	95
4862	FRINGE BENEFITS TAX PLANN	2,284	3,036	9,115

**Schedule Format
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Community Amenities - Schedule 10**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
4872	ADMIN ALLOC TO TOWN PLAN	2,423	2,276	6,839
	Total Operating Expenditure	64,261	122,376	367,229
	Capital Revenue			
3905	PROCEEDS OF ASSETS	0	0	0
7480	TOWN PLANNING SCHEME RESERVE TO MUNI	0	-6,332	-9,500
	Capital Expenditure			
4014	PLANT & EQUIPMENT	0	0	0
OTHER COMMUNITY AMENITIES				
	Operating Revenue			
3802	LAND SALES RESERVE	0	0	0
3853	CHARGES - CEMETERY FEES	-2,159	-1,932	-5,800
3863	REIMBURSEMENTS	-535	-332	-1,000
3883	FUNERAL DIRECTORS LICENSE	-300	-100	-300
3893	BUS HIRE	-1,046	-800	-2,400
	Total Operating Revenue	-4,041	-3,164	-9,500
	Operating Expenditure			
4422	NORTHAMPTON CEMETERY MAIN	5,533	9,464	28,420
4432	ASSET DEPRECIATION	712	700	2,100
4442	TOWN PARK TOILETS	7,704	5,068	15,235
4452	ASSET DEPRECIATION	10,473	10,332	31,000
4462	KALBARRI CEMETERY MAINT	7,783	6,464	19,425
4572	KINGS PARK TOILETS	5,803	4,764	14,315
4582	LIONS PARK TOILETS NPTON	8,605	4,692	14,090
4592	SALLY'S TREE TOILETS	8,360	5,688	17,080
4652	JETTY TOILETS -KALBARRI	6,361	3,444	10,365
4732	HORROCKS TOILETS/CHGROOMS	8,329	11,860	35,595
4752	PORT GREGORY TOILET BLOCK	5,738	6,876	20,645
4802	CHINAMANS TOILET BLOCK	4,327	5,724	17,210
4807	BINNU TOILETS	7,801	7,588	22,780
4812	RED BLUFF TOILET BLOCK	1,536	2,672	8,035
4766	PROFIT/LOSS SALE OF ASSET	0	0	0
4842	COMMUNITY BUS	4,299	2,664	8,000
	Total Operating Expenditure	93,364	88,000	264,295

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Community Amenities - Schedule 10**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
	<i>Capital Revenue</i>			
3865	HORROCKS COMMUNITY CENTRE GRANTS	-22,208	0	0
	<i>Capital Expenditure</i>			
3324	KALBARRI CEMETERY DEVELOPMENT	0	0	0
3344	PUBLIC AMENITIES	18,387	10,000	30,000
3360	HORROCKS COMMUNITY CENTRE	145,600	73,592	110,400
	<i>Total Capital Expenditure</i>	163,987	83,592	140,400

**Schedule Format
2015/2016
Recreation and Culture - Schedule 11**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
PUBLIC HALLS				
<i>Operating Revenue</i>				
4043	REIMBURSEMENTS	-1,226	-2,332	-7,000
4053	CHARGES - HALL HIRE	-487	-100	-300
4063	ALLEN COMM. CENTRE	-391	-500	-1,500
	<i>Total Operating Revenue</i>	-2,105	-2,932	-8,800
<i>Operating Expenditure</i>				
4672	- PORT GREGORY HALL	1,519	908	2,745
4682	- ALMA HALL	372	1,856	5,575
4692	- BINNU HALL	10,182	5,340	16,060
4702	- RSL HALL	5,707	5,804	17,430
4704	OGILVIE HALL/SCHOOL	0	0	0
4712	- AJANA HALL	3,604	2,372	7,145
4772	- ALLEN COMM. CENTRE	25,197	18,996	57,010
4782	- HORROCKS COMMUNITY KITCHENS	6,553	7,128	21,400
4792	ASSET DEPRECIATION	31,393	31,000	93,000
4832	ADMIN ALLOC TO HALLS	410	384	1,156
3534	DEPRECIATION	0	0	0
	<i>Total Operating Expenditure</i>	84,936	73,788	221,521
<i>Capital Expenditure</i>				
3514	LAND & BUILDINGS	0	0	0
3515	BINNU HALL	0	0	0
	<i>Total Capital Expenditure</i>	0	0	0
SWIMMING AREAS AND BEACHES				
<i>Operating Revenue</i>				
3973	CONTRIBUTIONS	-2,108	-3,000	-9,000
3975	CONTRIBUTIONS/DONATIONS	0	0	0
3976	TRUST BOND CONTRIBUTION - CAPITAL HILL/I	0	0	0
4293	KALBARRI JETTY BERTH FEES	0	0	0
4303	RESERVE LEASES - KALBARRI FORESHORE	-4,741	-1,564	-4,695
	<i>Total Operating Revenue</i>	-6,850	-4,564	-13,695
<i>Operating Expenditure</i>				
3982	ASSET DEPRECIATION	17,069	16,332	49,000
4952	- KALBARRI F/SHORE RES.	103,526	58,272	174,855
4972	- HORROCKS F/SHORE RES.	48,616	28,872	86,640
5012	- PORT GREGORY F/SHORE	51	1,860	5,595

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Recreation and Culture - Schedule 11

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
5042	ENVIROFUND GRANTS - HUTT RIVER	0	0	0
6742	- HORROCKS FORESHORE	52	0	0
	Total Operating Expenditure	169,314	105,336	316,090
	Capital Income			
4513	KALBARRI TOURISM SPECIFIED RATE RESERVE	0	0	0
4523	GRANTS	0	-86,664	-260,000
4526	LAND SALES RESERVE	0	0	0
	Total Capital Income	0	-86,664	-260,000
	Capital Expenditure			
3664	FORESHORE INFRASTRUCTURE	49,911	26,664	80,000
3669	LITTLE BAY REDEVELOPMENT	0	0	0
3670	HORROCKS FORESHORE SEAWALL	0	0	0
3674	KALBARRI BOAT RAMP UPGRADE	0	0	0
3684	HORROCKS JETTY	0	0	0
3694	DUP FOOTPATH - SCHEDULE 11	0	90,000	270,000
4527	MISC GRANT	0	0	0
3672	ZUYTDORP MEMORIAL	0	0	0
	Total Capital Expenditure	49,911	116,664	350,000
OTHER RECREATION AND SPORT				
	Operating Revenue			
4333	- EDUCATION DEPT - OVAL	-2,861	-924	-2,780
4373	CONTRIBUTIONS & DONATIONS	0	0	0
4383	CONTRIBUTIONS	0	0	0
4423	LEASES & RENTALS	-2,774	-892	-2,685
4433	INTEREST REIMBURSEMENT	-106	-352	-1,058
4453	REIMBURSEMENTS- REC. CTRE/GOLF CLUB	-1,468	-2,876	-8,632
4455	TRUST BOND CONTRIBUTION - CAPITAL HILL	0	0	0
4563	KALBARRI CAMP SCHOOL - GENERAL INCOME	0	0	0
4573	KALBARRI CAMP SCHOOL - BUS INCOME	-1,216	0	0
4583	KALBARRI CAMP SCHOOL - CAMP INCOME (A	0	0	0
	Total Operating Revenue	-8,426	-5,044	-15,155
4393	PROFIT/LOSS ON SALE	0	0	0

Schedule Format
2015/2016
Recreation and Culture - Schedule 11

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
<i>Operating Expenditure</i>				
4962	- KALBARRI OVAL RESERVE	6,968	8,544	25,660
4969	KALBARRI SKATE PARK	2,771	4,364	13,115
4982	- HORROCKS OVAL RESERVE	139	1,292	3,895
4992	- PARKS, RES, GARDENS GEN	88,812	72,204	216,645
4998	PARKS & GARDENS - PORT GREGORY	820	848	2,550
5002	ADMIN ALLOC TO OTHER REC	6,313	5,940	17,820
5022	- LIONS PARK	4,437	2,004	6,050
5032	- BI-CENTENIAL PARK	1,786	2,576	7,740
5072	NORTHAMPTON COMMUNITY CENTRE	18,888	20,384	61,195
5082	- KALBARRI REC CENTRE	4,758	4,872	14,645
5092	HORROCKS - MATT BURRELL (TENNIS/BOWLS,	1,094	504	1,515
5102	INTEREST ON LOANS	1,682	1,468	4,410
5112	NORTHAMPTON BOWLING CLUB	0	0	0
5115	KALBARRI GOLF & BOWLING CLUB	0	2,000	6,000
5122	- NORTHAMPTON REC OVAL	47,887	40,264	120,830
5142	EXHIBITION HALL NPTN OVAL	0	0	0
5162	BINNU RECREATION AREA	0	0	0
5169	NORTHAMPTON GOLF CLUBHOUSE	3,414	1,136	3,415
5172	ASSET DEPRECIATION	85,194	93,332	280,000
5182	HORROCKS COMMUNITY CENTRE	2,472	1,028	3,090
5192	REC - ACCRUED ANNUAL LEAV	0	0	0
5212	ACCRUED INTEREST ON LOANS	0	0	0
5262	KALBARRI CAMP SCHOOL - BUILDING/GROUN	7,435	4,716	14,160
5272	KALBARRI CAMP SCHOOL - SPARE (EXBUS EXP	0	0	0
5282	KALBARRI CAMP SCHOOL - EVENT EXPENDITU	0	0	0
	<i>Total Operating Expenditure</i>	284,869	267,476	802,735
<i>Capital Revenue</i>				
3775	SS LOAN - BOWL CLUBS	-1,633	-2,176	-6,535
3777	LAND SALES RESERVE	0	0	0
4473	GRANTS	-204,012	-157,224	-471,680
7395	TFR FROM KALBARRI TENNIS NETBALL RESERV	0	-112,664	-169,000
	<i>Total Capital Revenue</i>	-205,645	-272,064	-647,215
<i>Capital Expenditure</i>				
3624	PRINCIPAL ON LOANS	13,835	10,396	31,190
3654	SKATE PARK CONSTRUCTION	0	0	0
3714	LAND & BUILDING	25,595	251,832	755,520
3715	FURNITURE & EQUIPMENT	0	0	0
3716	PARKS & OVALS INFRASTRUCTURE	7,408	22,012	66,060
3734	PLANT & EQUIPMENT	0	0	0
	<i>Total Capital Expenditure</i>	46,838	284,240	852,770

**Schedule Format
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Recreation and Culture - Schedule 11**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
TELEVISION AND RADIO REBROADCASTING				
<i>Operating Expenditure</i>				
5232	T.V. RECEIVER STATION	0	0	0
5242	ASSET DEPRECIATION	0	0	0
	Total Operating Expenditure	0	0	0
LIBRARIES				
<i>Operating Revenue</i>				
4613	CHARGES - LOST BOOKS	0	-16	-50
4623	REIMBURSEMENTS	0	-16	-50
4653	INTERNET ACCESS FEE - KALBARRI	-168	-164	-500
	Total Operating Revenue	-168	-196	-600
<i>Operating Expenditure</i>				
5312	SALARIES	14,109	15,568	46,710
5322	LIBRARY SUPERANNUATION	1,237	1,480	4,440
5332	LIBRARY OPERATING OTHER	1,118	2,800	8,400
5334	LIBRARY INTERNET SERVICE	548	744	2,250
5342	LIBRARY BUILDING MTCE	693	228	690
5352	ACCRUED ANNUAL LEAVE	0	0	0
5372	ASSET DEPRECIATION	0	0	0
5402	ADMIN ALLOC TO LIBRARIES	31,021	29,184	87,559
	Total Operating Expenditure	48,726	50,004	150,049
OTHER CULTURE				
<i>Operating Revenue</i>				
4703	150 YEAR CELEBRATIONS - REVENUE (INC BRI)	-34	0	0
4713	MOONIEMIA CENTRE REIMB	0	0	0
4763	GRANT - HERITAGE ADVISORY SERVICE	-656	-2,164	-6,500
4773	CHARGES - OLD POLICE STN	-61	-332	-1,000
4793	GOVERNMENT GRANTS	0	0	0
	Total Operating Revenue	-751	-2,496	-7,500
<i>Operating Expenditure</i>				
1712	NORTHAMPTON NEWS BUILDING	1,567	1,200	3,615
5512	OLD RAILWAY STATION	798	856	2,600
5522	OLD POLICE STATION	2,600	1,428	4,315
5532	CHIVERTON HOUSE	4,540	4,620	13,875

Schedule Format
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Recreation and Culture - Schedule 11

		YTD Actual	YTD Budget	Annual Budget
		31/10/2016	31/10/2016	30/06/2017
5542	MOONIEMIA CENTRE	1,318	996	2,995
5552	KALBARRI ART & CRAFT CNTR	460	1,128	3,390
5572	HIST PROJECTS/HERITAGE SITES	1,312	4,112	12,340
5582	OLD ROADS BOARD BUILDING	2,756	400	1,225
5592	LYNTON HISTORICAL SITE	1,096	896	2,700
5622	DONATIONS BY COUNCIL	0	0	0
5642	OTHER EXPENDITURE	0	0	0
5652	ASSET DEP'N CULTURE	29,810	29,332	88,000
5662	GRANT EXP - INC SENIORS WEEK ETC	0	0	0
5672	NORTHAMPTON 150TH CELEBRATION	0	0	0
5682	LOT 175 KAIBER ST KALBARRI (EX ST JOHNS BI	764	708	2,140
	Total Operating Expenditure	47,021	45,676	137,195

**Schedule Format
2015/2016
Transport - Schedule 12**

	YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
CONSTRUCTION OF ROADS, BRIDGES AND DEPOTS			
<i>Capital Expenditure</i>			
5030	15,093	171,960	515,900
5060	23,782	118,732	356,230
5090	42,640	54,272	162,840
5150	0	0	0
5180	0	0	0
5210	127,359	299,876	899,650
5214	0	0	0
5215	438,422	409,020	1,227,080
5224	18,069	33,320	99,965
	Total Capital Expenditure	1,087,180	3,261,665
<i>Capital Revenue</i>			
5205	0	-250,496	-751,495
5206	0	0	0
5207	0	0	0
5209	-323,253	-307,748	-923,253
5481	-130,667	-108,888	-326,667
5561	0	0	0
5208	0	0	0
5483	0	0	0
7485	0	0	0
	Total Capital Revenue	-667,132	-2,001,415
MAINTENANCE OF ROADS, BRIDGES AND DEPOTS			
<i>Operating Expenditure</i>			
5982	9,453	8,892	26,682
5992	5,805	7,476	22,435
6002	0	0	0
6262	17,536	6,972	20,930
5850	405,617	359,928	1,079,821
5860	6,606	2,868	8,605
5910	6,578	7,824	23,505
5920	500	664	2,000
5930	14,547	10,544	31,640
5950	72	80	250
5960	33,701	41,664	125,000
5980	0	0	0
5990	96,028	150,000	450,000
6000	0	0	0
6010	0	0	0

**Schedule Format
2015/2016
Transport - Schedule 12**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
3994	DEPRECIATION	830,539	775,000	2,325,000
	Total Operating Expenditure	1,426,981	1,371,912	4,115,868
	Operating Revenue			
6223	CONTRIBUTION (INC STREET LIGHTING)	0	-1,164	-3,500
6281	- MRD MAINTENANCE	-161,000	-161,000	-161,000
6351	DIRECTIONAL ADVERT SIGNS	0	0	0
	Total Operating Revenue	-161,000	-162,164	-164,500

ROAD PLANT PURCHASES

	Operating Revenue			
4265	CONTRIBUTIONS	0	0	0
	Total Operating Revenue	0	0	0
	Operating Expenditure			
3610	LESS PLANT DEP N WRITTEN BACK	-74,501	-65,548	-196,654
4275	PROCEEDS SALE OF ASSETS	0	0	0
4395	DISPOSAL OF VEHICLES (P/L)	0	0	0
	Total Operating Expenditure	-74,501	-65,548	-196,654
	Capital Revenue			
4345	LOAN LIABILITY - PLANT	0	0	0
4285	- UTILITIES (PROCEEDS OF TRADE)	0	-20,000	-30,000
4315	- MACHINERY (PROCEEDS OF TRADE)	0	-28,332	-85,000
	Total Capital Revenue	0	-48,332	-115,000
4405	DISPOSAL OF MACHINERY (P/L)	0	0	13,000
	Capital Expenditure			
4034	LAND & BUILDINGS	0	0	0
4214	ROAD PLANT/MACHINERY	0	170,936	512,810
4224	UTILITIES (VEHICLES)	0	38,112	57,170
4234	TRUCKS	0	0	0
4254	OTHER EQUIPMENT	0	0	0
	Total Capital Expenditure	0	209,048	569,980

**Schedule Format
2015/2016
Transport - Schedule 12**

	YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017	
AERODROMES				
<i>Operating Revenue</i>				
5113	CHARGES - LANDING FEES	-1,473	-588	-1,770
5133	HANGAR SITE LEASE	-928	-312	-940
5183	CITY OF GN/GRN - OPERATING CONTRIBUTIOI	0	0	0
	<i>Total Operating Revenue</i>	-2,401	-900	-2,710
<i>Operating Expenditure</i>				
5902	ADMIN ALLOCATED TO AERODROMES	5,972	5,616	16,857
5912	ASSET DEPRECIATION	15,057	16,664	50,000
5932	KALBARRI AIRPORT MTCE	12,682	9,868	29,625
5935	OLD KALBARRI AIRPORT	0	0	0
	<i>Total Operating Expenditure</i>	33,712	32,148	96,482
<i>Capital Revenue</i>				
5163	Airport Reserve	0	0	0

**Schedule Format
2015/2016
Economic Services - Schedule 13**

	YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
RURAL SERVICES			
<i>Operating Revenue</i>			
5513	0	0	0
	CONTRIBUTIONS/GRANTS		
<i>Operating Expenditure</i>			
6232	0	0	0
	GRANT EXPENDITURE (NACC) PREVIOUS		
TOURISM AND AREA PROMOTION			
<i>Operating Revenue</i>			
5543	0	0	0
	CONTRIBUTIONS		
5563	-53,779	-17,924	-53,780
	LEASES/RENTALS		
5573	0	-1,500	-4,500
	CARAVAN PARK LICENCES		
5583	0	0	0
	REIMBURSEMENTS		
5593	-31,131	-10,500	-31,500
	KAL TOURISM SPEC RATE		
	-84,911	-29,924	-89,780
	<i>Total Operating Revenue</i>		
<i>Operating Expenditure</i>			
6322	0	0	0
	CARAVAN PARKS/CAMPING GDS		
6362	101	0	0
	SPARE (EX HERITAGE - RAILWAY CARRIA		
6372	71,963	31,356	94,077
	TOURISM & PROMOTION GENERAL		
6382	0	0	0
	AREA PROMOTION		
6392	449	500	1,500
	ASSET DEPRECIATION		
6402	1,769	11,876	35,650
	LUCKY BAY		
	74,282	43,732	131,227
	<i>Total Operating Expenditure</i>		
<i>Capital Income</i>			
5005	-191,250	-113,044	-339,135
	GRANTS - TOURISM & AREA PROMOTIO		
7335	0	0	0
	TFR FROM COASTAL MANAGEMENT RES		
	-191,250	-113,044	-339,135
	<i>Total Capital Income</i>		
<i>Capital Expenditure</i>			
5016	211,141	210,824	632,490
	INFRASTRUCTURE ASSETS - TOURISM		
BUILDING CONTROL			
<i>Operating Revenue</i>			
5653	-4,133	-6,664	-20,000
	- BUILDING PERMITS		
5673	-2,558	-2,000	-6,000
	S/POOL INSPECTION FEES		
5713	0	-332	-1,000
	BUILDING REIMBURSEMENTS		
5733	0	0	0
	DEMOLITION FEES		
	-6,691	-8,996	-27,000
	<i>Total Operating Revenue</i>		

**Schedule Format
2015/2016
Economic Services - Schedule 13**

	YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
<i>Operating Expenditure</i>			
6412	22,072	23,908	71,730
6422	3,043	3,700	11,110
6432	1,614	1,332	4,000
6442	5,784	5,688	17,080
6452	0	0	0
6462	0	0	0
6472	71	20	70
6492	11,369	4,000	12,000
5195	0	0	0
6512	3,754	3,532	10,596
	<i>Total Operating Expenditure</i>	47,708	126,586
<i>Capital Revenue</i>			
5175	0	0	0
5185	0	0	0
<i>Capital Expenditure</i>			
5124	0	0	0

**Schedule Format
2015/2016
Economic Services - Schedule 13**

	YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017	
OTHER ECONOMIC SERVICES				
<i>Operating Revenue</i>				
5933	REIMBURSMENTS	-856	-1,500	-4,500
5943	GRANT - LIVING COMMUNITIES PROGRA	0	0	0
5983	ELECTRICITY SUPPLY REIMBU	0	0	0
5993	PT GREGORY SPEC AREA RATE	-11,937	-3,972	-11,925
	<i>Total Operating Revenue</i>	-12,793	-5,472	-16,425
<i>Operating Expenditure</i>				
6752	- PORT GREGORY	1,340	4,344	13,040
6812	KITSON CIRCUIT LIA INDUSTRIAL UNITS P	3,432	2,436	7,320
	<i>Total Operating Expenditure</i>	4,772	6,780	20,360

**Schedule Format
2015/2016
Other Property and Services - Schedule 14**

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
PRIVATE WORKS				
<i>Operating Revenue</i>				
6153	- PLANT HIRE	-5,077	-4,664	-14,000
<i>Operating Expenditure</i>				
6912	PRIVATE WORKS - SCH 14	412	5,552	16,690
OTHER PROPERTY AND SERVICES				
<i>Operating Revenue</i>				
6590	SELF SUPPORTING LOAN INTEREST REIMBURSEMENT	0	-7,936	-23,818
5613	CONTRIB - HALF WAY BAY COTTAGE SURVEYS	0	0	0
5623	LEASE FEES - HALF WAY BAY COTTAGES	-16,000	-5,332	-16,000
7045	NORTHAMPTON LIA (EX MWDC GRANT ETC)	0	0	0
	<i>Total Operating Revenue</i>	-16,000	-13,268	-39,818
<i>Operating Expenditure</i>				
5633	GRANTS & CONTRIBUTIONS	0	0	0
6659	INTEREST ON LOANS - CEO HOUSE (SELF SUPPORT)	11,987	7,936	23,818
6768	HALF WAY BAY COTTAGES	0	0	0
7015	PROCEED FROM SALE ASSET	0	0	0
7025	PROFIT / LOSS ON SALE	0	0	0
7035	SALE / DISPOSAL ACCOUNT	0	0	0
7065	PROFIT LOSS LAND HELD FOR RESALE VALUE	0	0	0
	<i>Total Operating Expenditure</i>	11,987	7,936	23,818
<i>Capital Revenue</i>				
5633	GRANTS & CONTRIBUTIONS	0	0	0
6591	SELF SUPPORTING LOAN - REIMB CEO PRINCIPAL	0	-5,168	-15,508
6654	LOAN LIABILITY - SELF SUPPORTING LOAN	0	0	0
7490	NORTHAMPTON INDUSTRIAL UNITS TFR TO MUNI	0	0	0
7500	LAND DEVELOPMENT RESERVE TRANSFER TO MUNI	0	0	0
	<i>Total Capital Revenue</i>	0	-5,168	-15,508
<i>Capital Expenditure</i>				
6574	SUBDIVISIONS	0	0	0
6758	NORTHAMPTON INDUSTRIAL UNITS	0	0	0
6592	PRINCIPAL ON LOANS - CEO HOUSE (SELF SUPPORT)	7,705	5,168	15,508
6664	LOAN PAYMENT	0	0	0
	<i>Total Capital Expenditure</i>	7,705	5,168	15,508

**Schedule Format
2015/2016
Other Property and Services - Schedule 14**

YTD Actual YTD Budget Annual Budget
31/10/2016 31/10/2016 30/06/2017

PUBLIC WORKS OVERHEADS

Operating Expenditure

7112	ENGINEERING SALARIES	38,000	41,164	123,500
7122	ENGINEERING BUILD MAINT	140	20	70
7132	ENG. OFFICE & OTHER EXP.	7,458	4,456	13,400
7142	VEHICLE RUNNING EXPENSES	2,054	3,000	9,000
7152	SUPERANNUATION OF WORKMEN	68,938	76,120	228,363
7162	SICK AND HOLIDAY PAY	46,499	81,664	245,000
7172	INSURANCE ON WORKS	75,615	24,292	72,885
7182	LONG SERVICE LEAVE	13,797	8,332	25,000
7192	PROTECTIVE CLOTHING	11,196	6,664	20,000
7202	PUBLIC LIABILITY INSURANC	0	0	0
7222	ACCRUED ANNUAL LEAVE	0	0	0
7232	ADMIN ALLOC TO PWOH	10,477	9,856	29,572
7242	STAFF TRAINING	7,400	7,096	21,300
7252	ALLOWANCES	79	2,628	7,900
7282	FRINGE BENEFIT TAX	2,876	3,824	11,475
7302	LESS ALLOC. TO WKS & SRVS	-319,970	-269,152	-807,465
	<i>Total Operating Expenditure</i>	-35,440	-36	0

PLANT OPERATION

Operating Revenue

6323	REIMBURSEMENTS	0	0	0
6423	CONTRIBUTIONS	0	-1,664	-5,000
6433	INSURANCE CLAIMS - VEHICLES	0	-332	-1,000
6443	DIESEL FUEL REBATE	-17,213	-16,664	-50,000
	<i>Total Operating Revenue</i>	-17,213	-18,660	-56,000

Operating Expenditure

7312	FUELS AND OILS	6,140	75,000	225,000
7322	TYRES AND TUBES	13,849	8,332	25,000
7332	PARTS AND REPAIRS	65,298	65,000	195,000
7342	REPAIR WAGES	39,890	36,864	110,600
7352	INSURANCE AND LICENSES	39,891	12,952	38,865
7362	EXPENDABLE TOOLS/STORES	5,945	5,460	16,385
7382	ADMIN ALLOC TO PLANT OP'N	3,242	3,048	9,151
7502	LESS ALLOC. TO WKS & SRVS	-189,095	-206,664	-620,001
	<i>Total Operating Expenditure</i>	-14,840	-8	0

**Schedule Format
2015/2016
Other Property and Services - Schedule 14**

	YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
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MATERIALS

Capital Expenditure

6620	MATERIALS PURCHASED	0	0	0
6630	STOCK RECEIVED CONTROL	63,652	0	0
6750	LESS MATERIALS ALLOCATED	0	0	0
	<i>Total Capital Expenditure</i>	63,652	0	0

SALARIES AND WAGES

Operating Revenue

6941	REIMB. - WORKERS COMPENS.	-530	-4,664	-14,000
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Operating Expenditure

6810	GROSS SALARIES FOR YEAR	389,819	357,928	1,073,790
6820	GROSS WAGES FOR YEAR	542,855	554,080	1,662,244
6830	WORKERS COMPENSATION	0	0	0
6890	SALARIES ALLOC FRM SCH 20	-389,920	-357,928	-1,073,790
6900	WAGES ALLOC FRM SCH 20	-571,523	-554,080	-1,662,244
	<i>Total Operating Expenditure</i>	-28,770	0	0

**Schedule Format
2015/2016
Funds Transfers/Reserve Funds**

RESERVE TRANSFERS

	YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
<i>Schedule 15 Reserves</i>			
7120	690	0	0
7130	70	0	0
7140	112	0	0
7150	0	0	0
7160	0	0	0
7170	2,773	0	0
7190	0	0	0
7210	533	0	0
7220	870	0	0
7240	1,740	0	0
7250	0	0	0
7260	0	0	0
7270	0	0	0
7271	0	0	0
7280	0	0	0
7290	1,915	0	0
7300	0	0	0
7301	0	0	0
7303	0	0	0
7305	0	0	0
7315	0	0	0
7325	0	0	0
7180	0	0	0
7320	0	0	0
7380	0	0	0
7385	0	0	0
7410	0	0	0
7470	0	0	0
7435	0	0	0
7445	0	0	0
Net Transfers to Reserve	8,703	0	0

RESERVE BANK ACCOUNTS

	Balance	YTD
0741	0	0
0861	224,614	1,740
0801	54,935	690
0821	44,772	70
0841	29,620	533
0881	84,407	870

**Schedule Format
2015/2016
Funds Transfers/Reserve Funds**

RESERVE TRANSFERS		YTD Actual	YTD Budget	Annual Budget
		31/10/2016	31/10/2016	30/06/2017
0871	KAL AGED PERSONS ACCOMM RESRV	278,789	2,773	
0761	BRIDGE RECON RES BANK	0	0	
0911	NPTON AGED PERSONS BANK	959	1,915	
0961	TPS REVIEW RESERVE	3,596	0	
0811	BUS RESERVE BANK	0	0	
0831	PLANT RESERVE BANK	7,091	112	
0851	SPORT & RECREATION RESERVE	0	0	
0791	PUBLIC AMENITIES RESERVE	40,000	0	
1871	COASTAL MANAGEMENT RESERVE	0	0	
0731	KAL TOURISM SPEC RATE RES	15,000	0	
0891	FOOTPATH RESERVE	0	0	
0901	TOWNSCAPE CARPARK RESERVE	5,758	0	
0965	NORTHAMPTON INDUSTRIAL UNITS RESERVE	0	0	
0091	MAJOR LAND TRANS BANK	202,271	0	
0975	150TH ANNIVERSAY RESERVE BANK	0	0	
1881	KAL BARRI TENNIS NETBALL RESERVE BANK	78	0	
Total		991,890	8,703	

Schedule Format

2015/2016

Trust Funds

TRUST FUND

	YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
EXPENSES			
8260 RETENTIONS	0	0	0
8280 HOUSING BONDS	0	0	0
8300 NORTHAMPTON CEMETERY FUNDS	0	0	0
8320 TAXATION INSTALMENTS	0	0	0
8330 MISCELLANEOUS GOVT GRANT	0	0	0
8340 KALBARRI YAC FUNDS	0	0	0
8350 KALBARRI AIRPORT SECURITY	0	0	0
8360 HOSPITAL BENEFIT FUND	0	0	0
8380 GALENA DONATIONS	0	0	0
8390 SALE OF LAND - OUTSTANDING RATES	0	0	0
8400 CEMETERY PURCHASES	0	0	0
8420 COMMUNITY BUS BOND EXPENSE	1,400	0	0
8422 WILA GUTHARRA	0	0	0
8430 RATES REFUNDED	0	0	0
8440 UNCLAIMED MONIES	0	0	0
8450 LEASE PAID IN ADVANCE	0	0	0
8460 MISCELLANEOUS DEPOSITS	0	0	0
8470 NOMINATION DEPOSITS	0	0	0
8480 HOUSING BOND INTEREST EXP	0	0	0
8490 BATAVIA REGIONAL ORGANISATION OF COUNCILS FU	0	0	0
8500 KALBARRI YOUTH SPACE PROJECT	0	0	0
8510 BUILDING TRAINING FUND	0	0	0
8520 FOOTPATHS/CYCLEWAYS	0	0	0
8530 INTEREST ON F/PATH INVEST	0	0	0
8540 TRANSPORTABLE HOUSE BONDS	0	0	0
8550 BURN OFF FEES	0	0	0
8560 HORROCKS WATER SUPPLY	0	0	0
8570 SALE OF HISTORICAL BOOKS	0	0	0
8580 SALE OF DIRECTORY	0	0	0
8590 HERITAGE GRANTS	0	0	0
8602 REDONE (KALBARRI PARK/BEACH SHELTERS)	0	0	0
8610 CONSERVATION INCENTIVES	0	0	0
8620 TOWNSCAPE PROCESS RECORD	0	0	0
8630 DROUGHT/FLOOD RELIEF FUND	0	0	0
8640 SPECIAL ISSUE LICENSE PLA	200	0	0
8650 GALENA MANAGEMENT PLAN	0	0	0
8660 LCDC-LAND PLANNING PROJEC	0	0	0
8670 DOLA - FOOTPATH & OTHER G	0	0	0
8680 SPORT & REC STUDY KALB.	0	0	0
8620 TOWNSCAPE PROCESS RECORD	0	0	0
8630 DROUGHT/FLOOD RELIEF FUND	0	0	0
8640 SPECIAL ISSUE LICENSE PLA	200	0	0
8650 GALENA MANAGEMENT PLAN	0	0	0
8660 LCDC-LAND PLANNING PROJEC	0	0	0

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
8670	DOLA - FOOTPATH & OTHER G	0	0	0
8680	SPORT & REC STUDY KALB.	0	0	0
8690	COASTWEST GRANTS	0	0	0
8700	PORT KALB RETENTION FUNDS	0	0	0
8710	KAL T/SCAPE PLAYGRND FUND	0	0	0
8720	BINNU TOWN BORE MONEY	0	0	0
8730	LANDSCAPING DOLA SUBDIVIS	0	0	0
8740	NPTON TOWNSCAPE EXPENSES	0	0	0
8750	KAL SCHOLL RDWISE FUNDS	0	0	0
8760	KALBARRI T/SCAPE FUNDS	0	0	0
8770	GWALLA WALLS FUND - EXP	0	0	0
8780	RSL HALL KEY BOND - EXPEN	420	0	0
8790	SAFER NPTON RDWISE FUNDS	0	0	0
8800	PORT GREG/HORROCKS RD DEV	0	0	0
8810	NABAWA RD FUNDING EXPEND	0	0	0
8820	AGED PERSONS UNITS BONDS	760	0	0
8830	YOUTH GRANT - SKATEBOARD	0	0	0
8840	DEPT OF TPT - SPEC PLATES	0	0	0
8850	AGED UNITS RENTAL EXPENSE	0	0	0
8860	BRB LEVY EXPENSE	0	0	0
8870	KALBARRI SALLYS TREE PLAYGROUND	0	0	0
8880	CDO GRANT	0	0	0
8891	PEET PARK DONATIONS - EXP	0	0	0
8893	AUCTION - EXPENSES	0	0	0
8896	KIDSPORT - EXPENSES	1,284	0	0
8897	NCCA - EXPENSES	10,000	0	0
8899	COMMUNITY SKATE PARK - EXPENSES	0	0	0
8901	HORROCKS MEMORIAL WALL - EXPENDITURE	341	0	0
8903	ONELIFE NORTHAMPTON - EXPENSES	150	0	0
8906	KALBARRI CAMP SCHOOL - EXPENDITURE	25,152	0	0
	TOTAL EXPENSES	39,907	0	0
	INCOME			
8261	RETENTIONS	0	0	0
8281	HOUSING BONDS	-760	0	0
8301	FOOTPATH DEPOSITS	9,000	0	0
8311	GROUP ASSURANCE	0	0	0
8321	TAXATION INSTALMENTS	0	0	0
8331	MISCELLANEOUS GOVT GRANT	0	0	0
8341	KALBARRI YAC FUNDS	0	0	0
8351	KALBARRI AIRPORT SECURITY	0	0	0
8361	HOSPITAL BENEFIT FUND	0	0	0
8381	ASU UNION FEES	0	0	0
8391	MEU UNION FEES	0	0	0
8401	CEMETERY FUNDRAISING	0	0	0
8421	COMMUNITY BUS BOND INCOME	-1,000	0	0
8423	WILA GUTHARRA	0	0	0
8431	STAFF BANKING	0	0	0
8441	RATES OVERPAID	0	0	0

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
8451	UNCLAIMED MONIES	0	0	0
8461	LEASE PAID IN ADVANCE	0	0	0
8471	MISCELLANEOUS DEPOSITS	0	0	0
8481	NOMINATION DEPOSITS	0	0	0
8491	INTEREST ON HOUSING BOND	0	0	0
8501	RETAIL STUDY GRANT	0	0	0
8511	BUILDING TRAINING FUND	-9,633	0	0
8521	FOOTPATHS/CYCLEWAYS	0	0	0
8531	INTEREST ON F/PATH INVEST	0	0	0
8541	TRANSPORTABLE HOUSE BONDS	0	0	0
8551	BURNING OFF FEES	0	0	0
8561	HORROCKS WATER SUPPLY	0	0	0
8571	SALE OF HISTORICAL BOOKS	0	0	0
8581	SALE OF DIRECTORY	0	0	0
8591	HERITAGE GRANTS	0	0	0
8601	KALBARRI ASSESMENT STUDY	0	0	0
8611	CONSERVATION INCENTIVES	0	0	0
8621	TOWNSCAPE PROCESS RECORD	0	0	0
8631	DROUGHT/FLOOD RELIEF FUND	0	0	0
8641	SPECIAL ISSUE LICENSE PLA	-200	0	0
8651	GALENA MANAGEMENT PLAN	0	0	0
8661	LCDC-LAND PLAN PROJECT	0	0	0
8671	DOLA GRANT FOR KAL FOOTPT	0	0	0
8681	SPORT & REC STUDY KALB.	0	0	0
8691	COASTWEST GRANTS	0	0	0
8701	PORT KALB RETENTION FUNDS	0	0	0
8711	KAL T/SCAPE PLAYGRND FUND	0	0	0
8721	BINNU TOWNSITE BORE MONEY	0	0	0
8731	INCOME - LANDSCAPING DOLA	0	0	0
8741	NPTON TOWNSCAPE INCOME FD	0	0	0
8751	KAL SCHOOL RDWISE FUNDS	0	0	0
8761	KALBARRI T/SCAPE FUNDS	0	0	0
8771	GWALLA WALLS FUND - INC	0	0	0
8781	RSL HALL KEY BOND - INCOM	-420	0	0
8791	SAFER NPTN RDWISE FUND IN	0	0	0
8801	PORT GREG/HORROCKS RD DEV	0	0	0
8811	NABAWA ROAD FUNDING	0	0	0
8821	AGED PERSONS UNITS BONDS	0	0	0
8831	YOUTH GRANT - SKATEBOARD	0	0	0
8841	DEPT TPT - SPEC PLATES	-110	0	0
8851	AGED UNITS RENTAL INCOME	0	0	0
8861	BRB LEVY RECEIVED	0	0	0
8871	KALBARRI SALLYS TREE PLAYGROUND	0	0	0
8881	CDO GRANT	0	0	0
8890	PEET PARK DONATIONS - INC	0	0	0
8892	AUCTION - INCOME	0	0	0
8894	PUBLIC OPEN SPACE (POS)	0	0	0
8895	KIDSPORT - INCOME	-5,000	0	0
8898	NCCA - INCOME	0	0	0
8900	COMMUNITY SKATE PARK - INCOME	0	0	0

		YTD Actual 31/10/2016	YTD Budget 31/10/2016	Annual Budget 30/06/2017
8902	HORROCKS MEMORIAL WALL - INCOME	-250	0	0
8904	ONELIFE NORTHAMPTON - INCOME	0	0	0
8905	KALBARRI CAMP SCHOOL - INCOME	0	0	0
	TOTAL INCOME	-8,373	0	0
	Trust Fund Movement	31,534	0	0
0711	TRUST FUND BANK	-31,334		
	Difference	200		

ADMINISTRATION & CORPORATE REPORT

6.5.1	2017 COUNCIL MEETING DATES	2
6.5.2	EXTENDED LIQUOR TRADING HOURS – NORTHAMPTON IGA	4
6.5.3	NATURE PLAYGROUND SALLY’S TREE KALBARRI	5

6.5.1

2016 COUNCIL MEETING DATES

FILE REFERENCE:	4.1.1
DATE OF REPORT:	10 November 2016
REPORTING OFFICER:	Grant Middleton

SUMMARY:

Council to formally resolve/determine meeting dates for the 2017 calendar year to allow advertising of the dates and times.

BACKGROUND:

As per the provisions of Section 5.25(g) Regulation 12 of the Local Government Act 1995, Council must at least once each year give local public notice of the dates and the time and place at which ordinary Council meetings are to be held within the next 12 months. Currently all Council meetings are held on the third Friday of each month.

Current practice has been for meetings in February, June and October be held in Kalbarri with all other meetings held in Northampton and each meeting is to commence at 1.00pm.

The following dates would apply for Friday meetings in 2017:

No meeting January	July 21 st
February 17 th	August 18 th
March 17 th	September 15 th
April 21 st	October 20 th
May 19 th	November 17 th
June 16 th	December 15 th

Place of meetings are also to be advised within the notice and Council must resolve venues for each meeting. It is recommended that the status quo remain.

STATUTORY IMPLICATIONS:

State: Local Government Act 1995 - Section 5.25(g) Regulation 12 of the Local Government Act 1995. Council must at least once each year give local public notice of the dates and the time and place at which ordinary Council meetings are to be held within the next 12 months.

VOTING REQUIREMENT:

Simple Majority Required:

OFFICER RECOMMENDATION – ITEM 6.5.1

- 1. That Council holds their ordinary meetings on the third Friday of each month for 2017 excluding January.**
- 2. That all meetings commence at 1.00pm.**
- 3. That the February, June and October meetings be held at the Allen Centre in Kalbarri with all other meetings to be held at the Northampton Council Chambers.**

6.5.2	EXTENDED LIQUOR TRADING HOURS – NORTHAMPTON IGA	
	LOCATION:	Northampton IGA
	FILE REFERENCE:	5.2.2
	DATE OF REPORT:	10 November 2016
	REPORTING OFFICER:	Grant Middleton

SUMMARY:

Council to support an application for extending liquor trading hours for the Northampton IGA

BACKGROUND:

A request has been received from Northampton IGA to extend their liquor trading hours on three Sundays leading up to Christmas and New Year, being Sunday the 11th December 2016, Sunday 18th December 2016 and Sunday 1st January 2017 with the hours of trading being from 9.00am to 1.00pm.

COMMENT:

The IGA Store needs to obtain permission from the WA Police however local government comment and permission is also required.

The IGA were provided approval by Council in 2016 for extended opening hours on three days over the Christmas and New Year period and as no concerns arose from prior approvals Council is again recommended to approve the request.

STATUTORY IMPLICATIONS:

State: Liquor Act

VOTING REQUIREMENT:

Simple Majority Required:

OFFICER RECOMMENDATION – ITEM 6.5.2

That Council advise Northampton IGA that it has no objections for them to extend their liquor trading hours on the Sunday 11th December 2016, Sunday 18th December 2016 and Sunday 1st January 2017 from 9.00am to 1.00pm as requested.

6.5.3 NATURE PLAYGROUND SALLY'S TREE KALBARRI

LOCATION:	Sally's Tree, Kalbarri
FILE REFERENCE:	10.6.7
DATE OF REPORT:	10 November 2016
REPORTING OFFICER:	Grant Middleton
APPENDICES:	
1.	Concept Plan Nature Based Playground
2.	Letter from Kalbarri Development Association

SUMMARY:

The Kalbarri Development Association (KDA) has provided a concept plan of a nature based playground proposed for the Sally's Tree area in Kalbarri.

LOCALITY PLANS:

The concept plan provided as appendices 1 shows the proposed structures, apparatus and approximate location of the nature play area.

BACKGROUND:

The Kalbarri Development Association Foreshore Redevelopment Sub-committee has recently received the concept plan for the new playground from Natural Play Australia. The concept plan is intended to assist with obtaining quotations for the purchase and installation of the equipment and the grant application process. The concept plan has been presented to community members and has generally gained acceptance. The committee is seeking feedback and support from Council so they can commence fundraising and applying for grant funding.

COMMENT:

Council will need to determine if they approve of the nature playground concept and the proposed position of the play ground adjacent to Sally's Tree.

There are three stages currently identified in the Corporate Business Plan associated with development of the Kalbarri foreshore area with stage 1 being adopted in the 2016/2017 Budget. However Council's contribution towards the playground is listed in the Corporate Business Plan for 2019/2020. Council will need to consider the timing of this project and if there are any changes to the Corporate Business Plan to bring the timing of this project forward.

The Works Manager Mr Neil Broadhurst has reviewed the proposed plan and whilst there are no major issues with the concept plan there will be a requirement for further discussion if Council decides to adopt a final proposal for the nature based playground. Considerations such as the location, size, set back from river, sand stabilization to avoid erosion, provision of shade and shelter, drink fountains etc will all need to be considered.

FINANCIAL & BUDGET IMPLICATIONS:

The Adopted 2016/2017 Budget and the 2016-2020 Corporate Business Plan (CBP) have the following three stages identified for Kalbarri Foreshore Re-development:

Stage 1

Budget 2016/2017 = The current budget includes a contribution of \$90,000 from Council for the construction of DUP pathways and a limestone retaining wall. Total cost = \$270,000, Grant funding from the National Stronger Regions fund = \$180,000. This was not approved in the current funding round.

Stage 2

Corporate Business Plan 2017/2018 – \$91,000 listed for Shelters and BBQ's

Stage 3

Corporate Business Plan 2019/2020 – \$91,500 listed for Playgrounds, lighting etc.

STATUTORY IMPLICATIONS:

VOTING REQUIREMENT:

Simple Majority Required:

OFFICER RECOMMENDATION – ITEM 6.5.3

For Council consideration

Appendices 1



CONCEPT DESIGN PLAN VIEW

The plan view shows a rectangular site bounded by a 'BOUNDARY'. Key features include a 'River' on the right side, a 'Water Front' area, and a 'PLAY'S TREE' area. Numbered callouts (1-16) identify specific elements. 'Xa' markers are placed throughout the site. A north-south orientation is indicated by a compass rose.













STAINLESS SLIDE



LOG HILL



C	SCALE	3000MM
B	SCALE	3000MM
A	SCALE	3000MM
REV	SCALE	3000MM
DATE	SCALE	3000MM

ISSUED FOR QUOTATION

KALBARI SHIRE
ADVENTURE PLAYGROUND

CONCEPT DESIGN
PLAN VIEW

DESIGNED: ANDREW DALBREY
CHECKED:
DATE:
DRAWING NO: 00027/11/15 - PLAYGRD
SCALE: 1:100 @ A3

- 1. IRONED BRANZ/VALA
- 2. IRONED BRANZ/VALA
- 3. IRONED BRANZ/VALA
- 4. IRONED BRANZ/VALA
- 5. IRONED BRANZ/VALA
- 6. IRONED BRANZ/VALA
- 7. IRONED BRANZ/VALA
- 8. IRONED BRANZ/VALA
- 9. IRONED BRANZ/VALA
- 10. IRONED BRANZ/VALA
- 11. IRONED BRANZ/VALA
- 12. IRONED BRANZ/VALA
- 13. IRONED BRANZ/VALA
- 14. IRONED BRANZ/VALA
- 15. IRONED BRANZ/VALA
- 16. IRONED BRANZ/VALA

- WOOD / PLASTIC COMPOSITE DECKING (TBC)
- BOAT DECKING
- WASHED RIVER SAND TO 300MM
- FINE BARK MULCH TO 300MM
- LIMESTONE ROCK WALL
- PLANTED AREAS TBC (AUS NATIVES)
- SMALL FEATURE TREE / SHRUB TBC
- EXISTING TREE TO REMAIN
- SITE BOUNDARY
- FRUIT TREES

Appendices 2

Councillors
Shire of Northampton.
28th October 2016

Kalbarri Development Association Inc
PO Box 6
Kalbarri WA 6536

Dear Shire of Northampton Council,

RE: New foreshore playground at Sally's Tree, Kalbarri.

The Kalbarri Development Association Inc.'s(KDA) foreshore redevelopment subcommittee have received a concept plan for a new playground for the Kalbarri foreshore near Sally's Tree. Following discussions with community members, CEO Gary Keeffe and Kalbarri councillors the committee has focussed on progressing a nature playground at Sally's Tree as per the adopted Foreshore redevelopment plan.

Several companies were asked to submit quotes for concept plans and one company was selected– Natural Play Australia. This was due to their offer of a free concept plan with no obligation to use their company if the concept plan was adopted.

We received this plan two weeks ago and it was presented to interested parties, including Shire workers, at a workshop conducted by Kidsafe WA in Kalbarri. This workshop discussed what nature playgrounds were and the reasons for having them along with some ideas of what the safety issues may be and the fact that Australian Standards for nature playgrounds are under review currently and should be released next year. Kidsafe also advised that they were available for consultation on any issues we may have.

The playground concept was discussed with the Kidsafe representative when they were here and they could see no immediate concerns and also recommended this designer and builder. The advice given to us was that this company offered the best value for money and that he did not import any materials for his playgrounds as he owned an engineering business and manufactured most of the equipment himself.

As these plans were designed from photos of the area, Google earth pictures and DOLA information there could be changes to them after an onsite visit but as they are purely a concept design at this stage for funding purposes we ask that this is taken into account when viewed by council.

Following on from this workshop this concept has been presented to various community members and this consultation is ongoing. The current feedback is:

- The slides are aluminium – the planner advised that these have been CSIRO tested and they do not get any hotter than plastic slides, he manufactures them himself and they are covered if there is concerns.

- Extra swings would be added as currently there is only one swing in the plan,
- We need to ensure there is an area / suitable play for toddlers – the brief to the planner was for 0-15yrs age group and disable friendly.

Any further feedback will be taken into account including any feedback from council.

Once we have collated the feedback we would like to cost the project in detail and gain Council support for proceeding with grant applications and fundraising. The approximate costing for this playground is \$200,000 which the KDA and Foreshore Redevelopment committee are happy to submit for grants to fund this as we realise that Shire funding is limited. We would ask that the Shire advise what funding either monetary or in kind could be offered as this will need to be included in any grant application submitted.

Yours sincerely

MJ Eastland