

**SHIRE OF  
NORTHAMPTON**

*Late Items*

**16<sup>th</sup> December 2016**

**TOWN PLANNING REPORT**

**LATE ITEMS**

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<b>6.3.4</b>	<b>PROPOSED SOLAR THERMAL POWER STATION, KALBARRI</b>
	<p><b>LOCATION:</b> Lot 10792 George Grey Drive, Kalbarri</p> <p><b>APPLICANT:</b> Veris (previously known as Whelans)</p> <p><b>OWNER:</b> Allsage Pty Ltd</p> <p><b>FILE REFERENCE:</b> 10.6.1.3 (A4151/L10792GEO)</p> <p><b>DATE OF REPORT:</b> 13December 2016</p> <p><b>REPORTING OFFICER:</b> Kathryn Jackson – Consulting Planner</p> <p><b>RESPONSIBLE OFFICER:</b> Garry Keeffe – Chief Executive Officer</p> <p><b>APPENDICES:</b></p> <ol style="list-style-type: none"> <li>1 Extract of Appendices 2-9 (all following appendices have been provided as separate attachments)</li> <li>2 Application Covering Letter</li> <li>3 Response to Shire request for additional information</li> <li>4 Solar Thermal Design Statement</li> <li>5 Development Plans</li> <li>6 Level 1 Flora, Vegetation and Fauna Survey</li> <li>7 Avian Impact Advice</li> <li>8 Bushfire Management Plan</li> <li>9 Visual Impact Assessment</li> <li>10 Received Submissions</li> <li>11 Schedule of Submissions</li> <li>12 Noise Impact Assessment</li> <li>13 Soil &amp; Water Management Plan</li> </ol>

**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 Lot10792 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.

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;
- 28 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.

Advertising of the application was undertaken from 17 May 2016 until 15 June 2016. Following the advertising period the applicant was requested to submit 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.

The matter was then presented to the 18 November 2016 meeting of Council at which it was resolved:

*“That Council defer the application for the construction of the proposed Solar Thermal Power Station (Stage 1 only) upon Lot 10792 George Grey Drive, Kalbarri subject to:*

1. *Receipt of the following additional information:*
  - a. *Water and Soil Management Plan based on both Stage 1 & 2 of the proposal 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. The Water and Soil Management plan is to address items including surface, ground, and storm water, drainage, erosion and stabilisation of the land, 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.*
  - b. *Noise Management Plan based on both Stage 1 & 2 of the proposal prepared by a suitably qualified professional to the requirements of the Environmental Protection (Noise) Regulations 1997 to the approval of the Local Government, with all costs met by the applicant.*
  - c. *Plans that demonstrate based on both Stage 1 & 2 of the proposal the existing and proposed ground levels under the development area of the site in relation to the proposed built development.*
  - d. *Landscape and Visual Analysis Report based on both Stage 1 & 2 of the proposal prepared by a suitably qualified professional that explores the visual impact*

*that the development is expected to have on the landscape and surrounding area and proposes possible solutions to potential impacts identified.*

- e. *Further information relating to the impacts of the heat and reflection generated by the mirrors and their effect on the temperature of the air and surrounding area, weather impacts and nuisance to residents and motorists.*
2. *Councillors undertaking a site inspection at the subject site and surrounding areas.*
3. *The applicant being invited to present to Council on the matter to gain a better understanding of the application and project outcomes for Kalbarri and the region.”*

On Friday 9 December 2016 the applicant submitted in response to the above resolution a Noise Impact Assessment and Soil & Water Management Plan. These will be discussed in greater detail in the comment section of this report.

A site inspection was undertaken by Councillors and staff on 12 December 2016.

At the request of the applicant the matter is now returned to Council for further consideration.

#### **COMMUNITY & GOVERNMENT CONSULTATION:**

Clause 6.4.2 of the Scheme requires that where Council decides to give notice of an application it shall cause one or 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 of \$7 million. Shire staff had concern that this figure was inaccurate based on other renewable infrastructure projects in the region and sought confirmation from the applicant who reaffirmed that this was the correct construction cost.

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, 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.



It is not considered that any of the land uses listed within the Scheme’s zoning table can be applied to this application and therefore the proposal is considered a ‘use not listed’ and is required to be considered under Clause 3.2.5 of the Scheme which states:

*“If the use of land for a particular purpose 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 other use category Council may;*

- (a) determine that the use is consistent with the objectives and purpose of the particular Zone and is therefore permitted; or*
- (b) determine that the use may be consistent with the objectives and purpose of the particular Zone and thereafter follow the advertising procedures of Clause 6.4 in considering an Application for Planning Consent; or*
- (c) determine that the use is not consistent with the objectives and purpose of the particular Zone and is therefore not permitted.”*

Clause 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 adversely 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 the deemed provisions.

During the advertising period for Scheme No. 11, a submission was received from the applicant seeking modification of the zoning of Lot 10792 from Rural to Rural Smallholdings. This request by the applicant was in order to facilitate the subdivision of the land into a small number of mostly large lots, with a plan to sell three of these lots to partially finance the construction of the Solar Thermal Power Station. At Council's 17 November 2016 Ordinary Meeting, it was resolved to dismiss the applicant's submission and adopt the Draft Scheme without the proposed modification, but to instead invite the owner to submit a detailed proposal for consideration as an Amendment to Local Planning Scheme No. 11, following its Gazettal.

**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 adjoining land to the west before the proximity of the Power Station would prevent further development east. With the rate of residential expansion and the generous setback between the proposal and the adjoining land to the west it is not considered that this proposal detrimentally impacts upon future strategic planning of the surrounding area.

Pertaining to the subdivision potential and future use of the lot itself, whilst the Kalbarri Townsite Strategy does indicate that the lot should be protected for long term residential development, it is not considered that other potential land uses for the lot should be prohibited based on such a long term scenario given the current rate of growth and large tracts of land still available for urban development and that proposed land uses should be individually assessed on their merit for suitability in proximity to existing and proposed urban development.

The landowner of this property did lodge a submission during the advertising period for draft Local Planning Scheme No.11 which has been elaborated upon previously in this report. The submission was noted and the applicant advised that a separate Scheme Amendment was required should they wish to pursue the subdivision of the land.

## 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 large setbacks to site boundaries with a minimum distance of 1.6km to the western boundary and 2.2km to the nearest dwelling. It is considered that the separation distances to surrounding land uses is a key mitigation measure to minimise visual prominence of the proposed facility.

This comment does not however detract from the reality that this development will be a stark contrast to the existing natural environment and considered that it will stand out prominently once constructed. With such a large-scale development, the use of shiny surfaces and tall towers, the clearing of 26ha of all vegetation which will leave a light coloured sandy surface exposed this development will be clearly seen. It should also be noted that as they are tracking heliostat mirrors they will continually move to capture the sun's rays and redirect to the thermal receiver tower.

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/urban areas. The applicant has provided basic Visual Perspectives which have been included within **Appendix 9** to this report which demonstrate 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.

Should Council still have concerns about the impact of the development on the landscape and surrounding landowners, the Council can per its motion of deferral at its 18 November 2016 meeting to again instruct the applicant to provide a comprehensive Visual Impact Assessment which includes supporting documentation that explores the visual impact of the development on the landscape and surrounding area and proposes possible solutions to potential impacts identified.

#### 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. It is considered that 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 low based on the information supplied by the applicant. 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.

The applicant on 9 December 2016 provided a Noise Impact Assessment for this proposal. This document demonstrates that the application will meet the requirements of the *Environmental Protection (Noise) Regulations 1997*. A copy has been provided as **Appendix 12**.

It should be noted that per the requirements of the Environmental (Noise) Regulations 1997 that this assessment is based on the closest sensitive premises, in this instance a dwelling on the corner of Stiles Road and Beagle Road at a distance of 2.2km.

Even at this distance the Noise Management Plan provided concludes that the proposal can achieve the most stringent  $L_{A10}35\text{dB(A)}$  night time noise criterion for both Stage 1 and Stage 2 of the development coming in at  $L_{A10}35\text{dB(A)}$  at the closest existing dwelling.

As this is right on the edge of what is permitted and with further residential development permitted to be constructed as close as 1.6km from the site on the adjoining land to the west of the subject property it is considered appropriate that specific conditions relating to noise assessment, attenuation and monitoring be applied to the application to ensure that these noise levels are maintained and reduced wherever possible.

As noted within the Noise Impact Assessment “A more detailed assessment of noise emissions from actual equipment to be installed at the site should be undertaken during the detailed design phase of the project, and the environmental noise emissions confirmed”. Therefore, it is recommended by staff as a condition of approval to Council that a full and complete Noise Impact Assessment be submitted prior to commencement of works which ensures that the night time criterion of  $L_{A10} 35 \text{ dB(A)}$  is achieved at the western boundary of Lot 10792. Additionally, conditions relating to noise attenuation for the shed and noise monitoring equipment being installed at the closet residence at the commencement of the Power Station to ensure compliance and reduce the noise being emitted as far as practicable.

#### Environmental Impact

##### **- Level 1 Flora and Fauna Survey**

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, the Department of Parks & Wildlife considered that the overall environmental impact and information supplied was acceptable. It will be a suggested condition of approval that the applicant adhere to an Environmental Impact Management Plan that is 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. The supplied Level 1 Survey will be referred to these Departments to confirm their endorsement.

**- Clearing**

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.

**- Soil and Water Management Plan**

The applicant has provided on 9 December 2016 a Soil and Water Management Plan (Appendix 13). This document was referred to the Department of Water who have indicated that the document is not supported. Some of the comments received include:

*“As advised in earlier correspondence to the proponent, the subject land is located partially within the Priority 2 Kalbarri Water Reserve. This warrants inclusion of information and management measures*

*aimed to protect the drinking water supplies for Kalbarri and Port Kalbarri. Groundwater is inferred to flow to the North – west, from recharge areas within the National Park to the south-east of Kalbarri (see DoW’s Kalbarri Water Reserve Drinking Water Source Protection Plan - Kalbarri and Port Kalbarri Town Water Supply).*

*Land use activity or change, and the appropriate management measures, within Public Drinking Water Source Areas (PDWSAs) is guided by the DoW’s Water Quality Protection Note 25 Land use compatibility tables for public drinking water source areas (‘the LUCT’). Solar Energy Production is compatible with conditions in P2 areas. Conditions 13, 22 & 24 indicate risks for which the listed and referenced management measures must be taken.*

*The proponent’s submitted plan states that the soils are sandy but does not provide any references or supporting information (i.e. bore logs, test pit data). Assuming soils are homogenous at depth in this location is risky due to a very good chance of impermeable strata (limestone caprock, over Tumblagooda sandstone) some unknown depth below the sandy topsoil. This also has implications for risks from draw-down, despite the nearest riparian vegetation of Wittecarra Creek being more than 500m from the proposed site of the Solar Farm. If surficial groundwater is flowing along the top of an impermeable or semi-permeable layer of limestone caprock or sandstone towards Wittecarra Creek, and is intercepted by the proponent’s bore (or contaminated by spillage of THS), even a small take, or variance of water quality could pose a risk to drinking water sources, and the vegetation health along the creek. These risks should be acknowledged and contingency actions outlined in the stormwater management plan. Similarly, the author’s description of a drain to be constructed, leading to a detention basin, within the Priority 2 Kalbarri Water Reserve should be discussed in terms of minimising risks (of construction, and infiltration pathways) to the P2 Water Reserve, in line with the DoW’s objectives for risk management in P2 areas. This discussion should address management and storage (if applicable) of THS, and contingency planning for emergency response actions, in line with the DoW’s Water Quality Protection Note 61 Tanks for ground level chemical storage, Water Quality Protection Note 52 Stormwater management at Industrial sites*



(2010), and WQPN 10 Contaminant spills - Emergency Response (2006).

Regarding the proposed Tank storage of 500L of diesel as indicated on the Site Layout plan view in the Appendix, this land use is compatible with conditions in P2 areas. The conditions and relevant guidance notes are listed on Page 25 of the LUCT (WQPN 25). The applicant should be encouraged to provide a stormwater (or environment) management plan to the Shire which addresses DoW guidance.

In DoW's earlier advice, BUWM was mentioned specifically in relation to any other future subdivisions, not at the Solar Farm itself. If the proponent was required to demonstrate compliance with the BUWM Design objectives for WSUD (which he is not, due to this proposal not being an Urban development) then to satisfy the geotechnical information requirements at this level of planning we would require evidence (bore logs or test pit data) to support the assumption that the sandy nature of the soils is reflected at depth in the soil profile. However, yes the DoW's Stormwater Management Manual for Western Australia provides an appropriate level guidance for management of surface water flow events at this scale. This translates to a Stormwater Management Plan at lot scale, for which the recommended preparation process is outlined in Chapter 5 of the manual.

There are multiple aspects that need to be included and improved within the Management Plan. For example there are major omissions such as the subject land being partially located within the Priority 2 Kalbarri Water Reserve (Public Drinking Water Source Area) which warrants inclusion of information and management measures aimed to protect the drinking water supplies for Kalbarri and Port Kalbarri guided by the Department of Water's Water Quality Protection Note 25 Land use compatibility tables for public drinking water source areas...

...DoW's Water Quality Protection Note 61 Tanks for ground level chemical storage provides guidance on tanks for ground level storage of liquid chemicals that are potentially polluting, toxic or hazardous (including fuel and lubricants) that will be used for 12

*months or more, in all settings. (If the tank is intended to be elevated, WQPN 56 applies). For ground level tanks in P2 areas, the following specific provisions apply, but the remainder of the general provisions for all settings which are set out in the WQPN 61, also apply, and should be demonstrated to DoW/Shire satisfaction”*

Another area of concern is erosion. While additional information is required to better address water erosion, given the consistent winds that the region experiences, wind erosion is a legitimate issue that needs to be addressed. Council has previously experienced issues with the Eco Flora and Capital Hill Developments with land being cleared and the Dust and Erosion Management measurements being largely unsuccessful and causing much nuisance and erosion. While water for dust suppression can be used temporarily with the hot winds a long term solution is required. The applicant has indicated allowing grass to grow under the development, however if this is not reticulated or initially assisted to grow it is not considered that this will occur in reality leaving the land bare and subject to wind, water and mechanical erosion. Information pertaining to wind erosion measures is required to be addressed.

It is also noted within the Plan that there is an approved Water Licence for this proposal. This is not correct as the existing licence is for the irrigation of mangoes only, and therefore the landowner would need to liaise with the Department of Water to gain a licence specifically for the Solar Thermal Power Station.

It is suggested that a condition of approval would be applied requiring that the applicant liaise with the Department of Water and Department of Environment Regulation to ensure that a Water and Soil Management Plan is submitted that is to their requirements and to the approval 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 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**

**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 16 December 2016 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 deemed to have lapsed if the development has not substantially commenced before the expiration of this period.**
- 3. Prior to commencement of any site or clearing works the landowner/proponent shall prepare, submit and adhere to 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 including for condition surveys and any costs associated with the design, construction and maintenance (over a specified defect liability period) of identified required upgrades. 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 any site or clearing works the landowner/proponent shall 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 setting out in detail the management commitments and actions to mitigate potential impacts on soil and water, with all costs met by the applicant. Once approved, the proponent from time to time is responsible to ensure, that all installations, activities and processes carried out at all times and in all respects in accordance with the Soil and Water Management Plan.**
- 5. Prior to commencement of any site or clearing works the landowner/proponent shall 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.**
- 6. Prior to commencement of any site or clearing works the landowner/proponent shall 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.**
- 7. Prior to commencement of any site or clearing works the landowner/proponent shall prepare, submit and adhere to a Noise Management Plan to the requirements of the Environmental Protection (Noise) Regulations 1997 and to the approval of the Local Government, with all costs met by the applicant. This Plan is to demonstrate that a maximum night time criterion of  $L_{A10}$  35 dB(A) can be achieved at the western boundary of Lot 10792 (1.6km from the site) and provide noise attenuation measures for the proposed outbuilding.**
- 8. Noise auditing is to be undertaken, with all costs to be met by the proponent, in accordance with the following:**

  - (a) A noise audit is to be undertaken which includes noise monitoring and acoustic analysis at locations determined by the local government including at the western boundary of Lot 10792, to assist in ensuring the development's compliance with the**

- Environmental Protection (Noise) Regulations 1997 and a maximum night time criterion of  $L_{A10}$  35 dB(A) at the western boundary of Lot 10792;**
- (b) A noise audit is to be undertaken at the commencement of operations upon the site, following the construction phase of the development;**
  - (c) Should a noise audit recommend that any measure(s) require to be undertaken by the proponent to reduce any noise level or impact, the proponent shall comply with any such recommendation, with all costs to be met by the proponent and all works at the site are to cease until the noise level breach has been resolved;**
  - (d) This condition does not prevent the Local Government from requiring the proponent to undertake additional noise audits, acoustic analysis or noise measurements at any time as directed, should the operations upon the site be altered or circumstances surrounding the development site change (e.g. construction of new dwellings).**
- 9. The applicant is required to provide to the Local Government evidence of having obtained a current licence under the Rights in Water and Irrigation Act 1914 to abstract groundwater for the intended purpose of solar power generation.**
- 10. 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.**
- 11. 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.**
- 12. 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.**
- 13. No signs or hoardings are to be erected on the lot without the prior written approval of the local government.**

- 14. 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.**
- 15. 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.**
- 16. The applicant is to provide interpretation signage for the proposed development to be installed in a location to the approval of the local government.**
- 17. A Decommissioning Management Plan to the requirements and approval of the local government is required to be submitted prior to any removal works.**

**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. The Plan shall incorporate a Traffic Statement or Assessment (as appropriate) in accordance with the WAPC guideline, “Transport Impact Assessment Guidelines (August 2016). Please note that the Shire would prefer that the site be accessed via Stiles Road.**

- e) **The Water and Soil Management plan is to address items including surface, ground and storm water, drainage, water usage (must be quantified), erosion (water, wind and other potential factors), groundwater drawdown impacts, waterways/foreshore reserve management and related management actions to these items and as otherwise directed by the Department of Water and Department of Environment Regulation. 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) **The Noise Management Plan is to address both construction and operational noise emissions (including the use of the back-up diesel generator). This Plan is to be based on the actual equipment to be installed at the site. The Plan will also need to demonstrate that a maximum night time criterion of  $L_{A10} 35$  dB(A) or below can be achieved at the western boundary of Lot 10792 (1.6km from the site) to achieve compliance for future potential housing upon the western adjoining lot. Regardless of the assessment outcomes the Shire expects that the outbuilding would be noise attenuated to reduce noise emissions to preserve the amenity of the area from mechanical noise and therefore the Plan will need to demonstrate what noise attenuation measures are being constructed into the design of the building (i.e. acoustic panelling).**
- g) **The applicant’s current RIWI licence GWL175917 authorises the take of 15,000 KL of groundwater for the sole purpose of irrigating 1 hectare of mangoes. The proposed additional use of groundwater for solar power generation must be submitted to the Department of Water Midwest Regional Office.**
- h) **All designs associated with the proposal are to comply with the requirements of the Civil Aviation Safety Authority (CASA).**

- i) This is planning approval only and a building permit for temporary and permanent structures must be obtained for this development prior to construction commencing.**
  
- j) 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



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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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.**

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PERTH | KARRATHA | BROOME | KUNUNURRA | KALGOORLIE  
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#### 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**

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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:

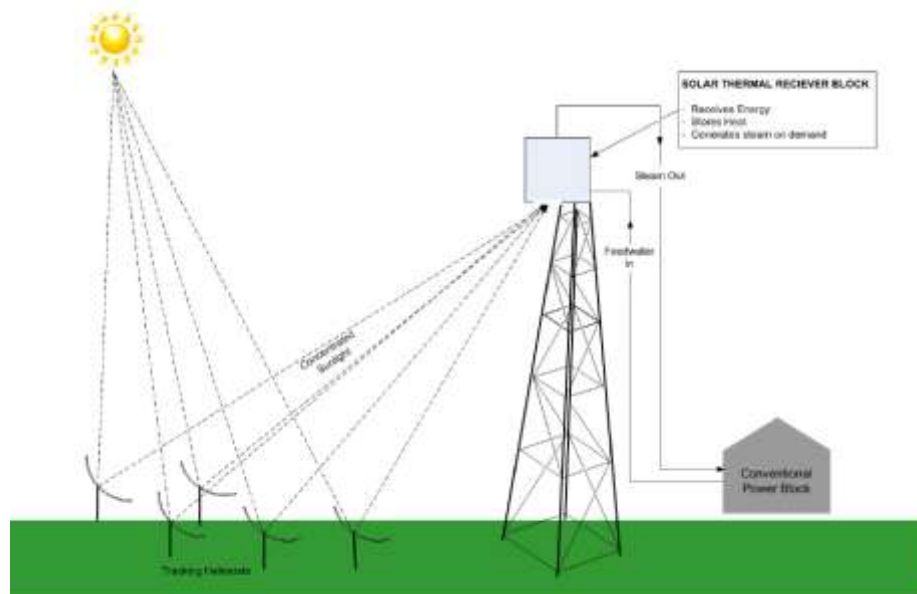
1. An array of mirrors (heliostats) installed at ground level reflect and focus sunlight onto a series of towers each supporting graphite blocks (solar thermal receivers) which collect the heat generated by the focused sunlight.
2. The heat from the concentrated sunlight is stored in the graphite blocks (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:



**AECOM**

## 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 being 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

## AECOM

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
- Shire 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

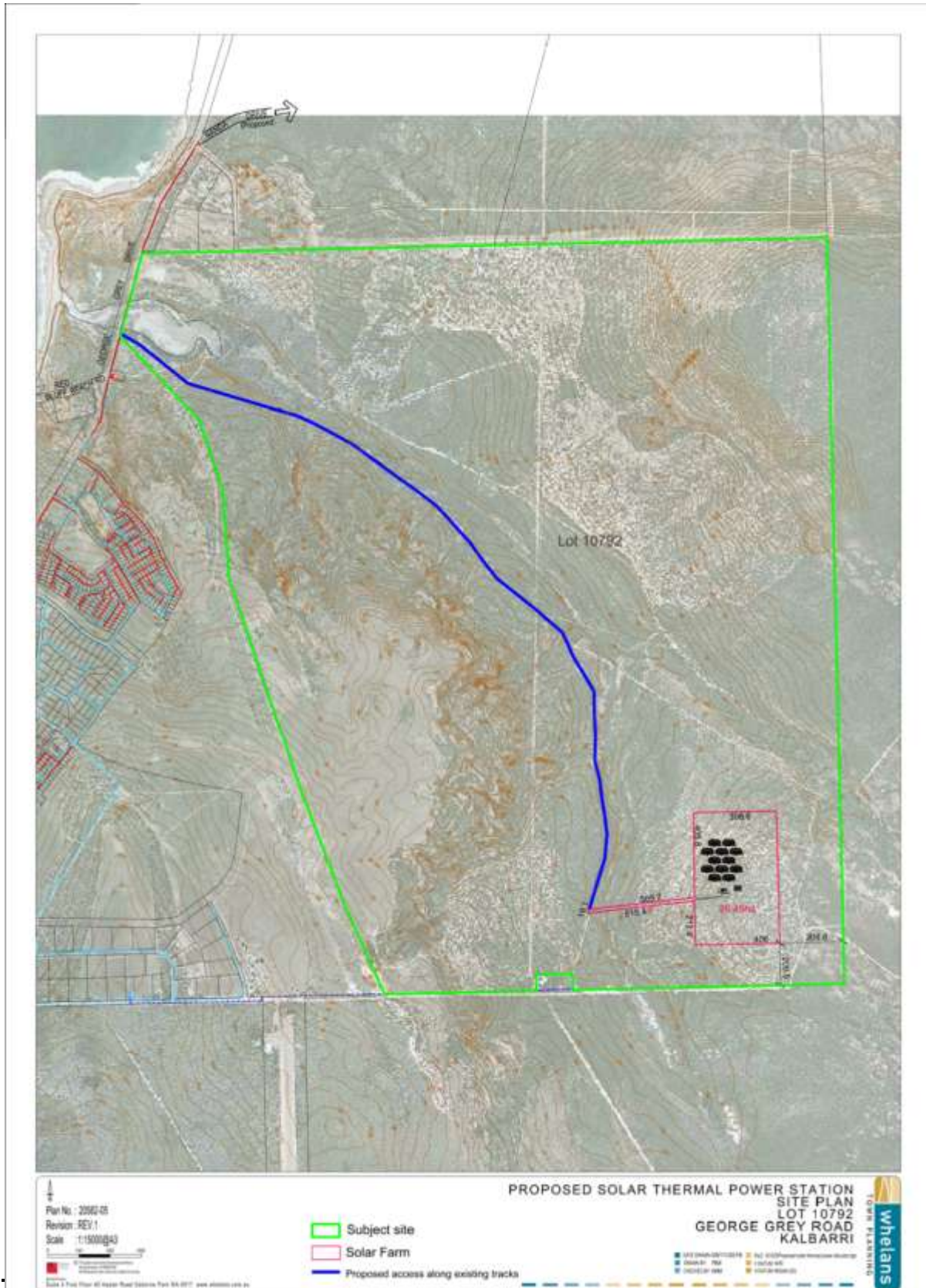
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[Joep.Vaessen@aecom.com](mailto:Joep.Vaessen@aecom.com)

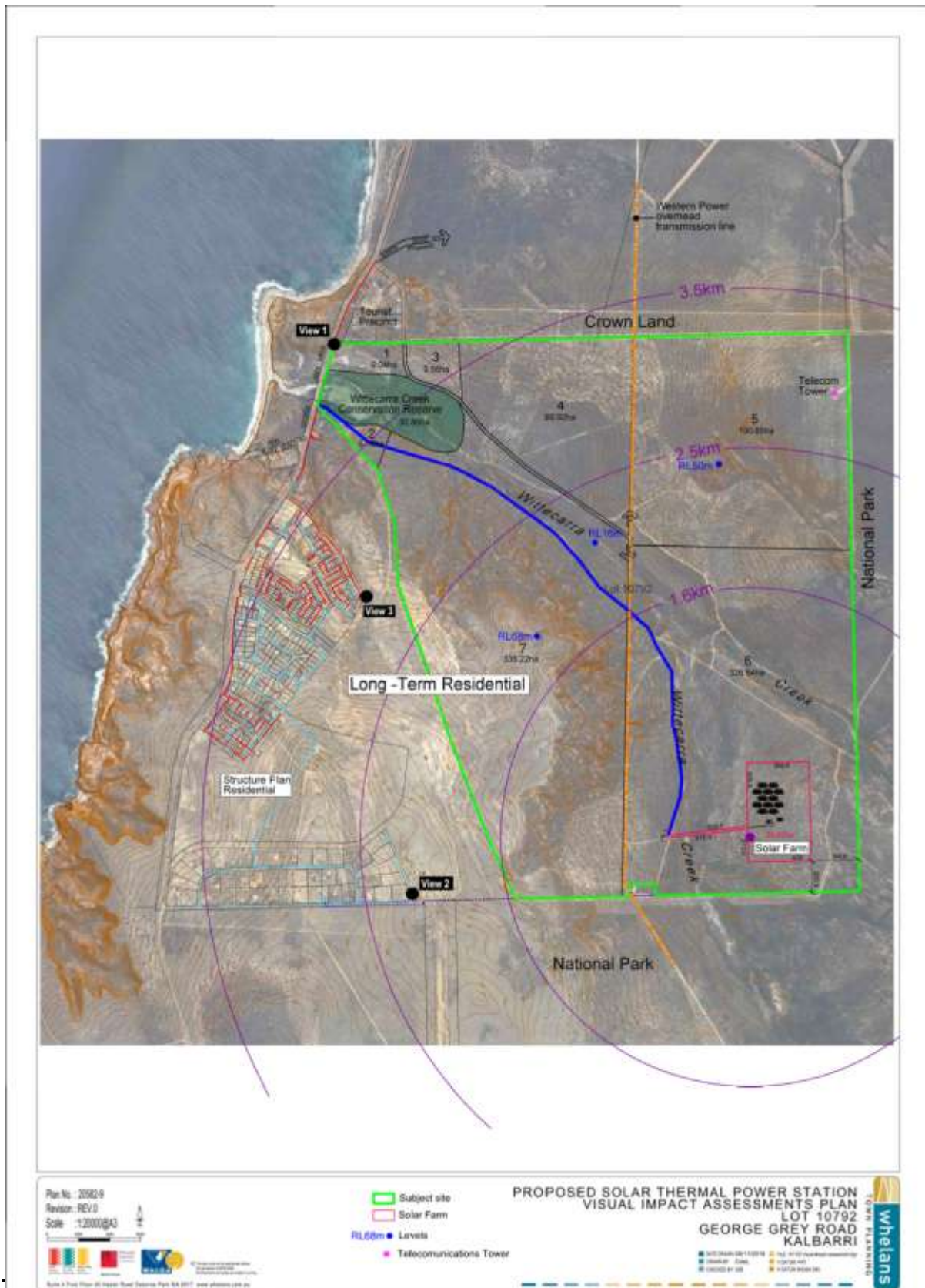
Engineers involved in this statement:

**Joep Vaessen**  
Principal Engineer – Renewable Energy

**Wayne Goodwin**  
Renewable Project Lead

**David Meyer**  
Senior Engineer – Drainage and Waterways









View 1 - George Grey Drive



View 2 - Beagle Road



View 3 - Darwinia Drive

Plan No : 2016-0  
Revision: REV 0  
Scale : NTS



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

DATE DRAWN: 28/10/2016  
DRAWN BY: [Name]  
CHECKED BY: [Name]



**6.3.5 PROPOSED RELOCATED SINGLE DWELLING – LOT 242 (NO. 12) PERSOONIA STREET, KALBARRI**

<b>LOCATION:</b>	<b>Lot 242 (No. 12) Persoonia St, Kalbarri</b>
<b>FILE REFERENCE:</b>	<b>10.6.1.1 / 12 PER / A4246</b>
<b>APPLICANT:</b>	<b>Building Lines</b>
<b>OWNER:</b>	<b>L &amp; M Nichols</b>
<b>DATE OF REPORT:</b>	<b>14 December 2016</b>
<b>RESPONSIBLE OFFICER:</b>	<b>Debbie Carson – Planning Officer</b>
<b>APPENDICES:</b>	
	<b>1. Photographs of proposed relocated single dwelling</b>
	<b>2. Site, floor and elevation plans</b>

**AUTHORITY / DISCRETION:**

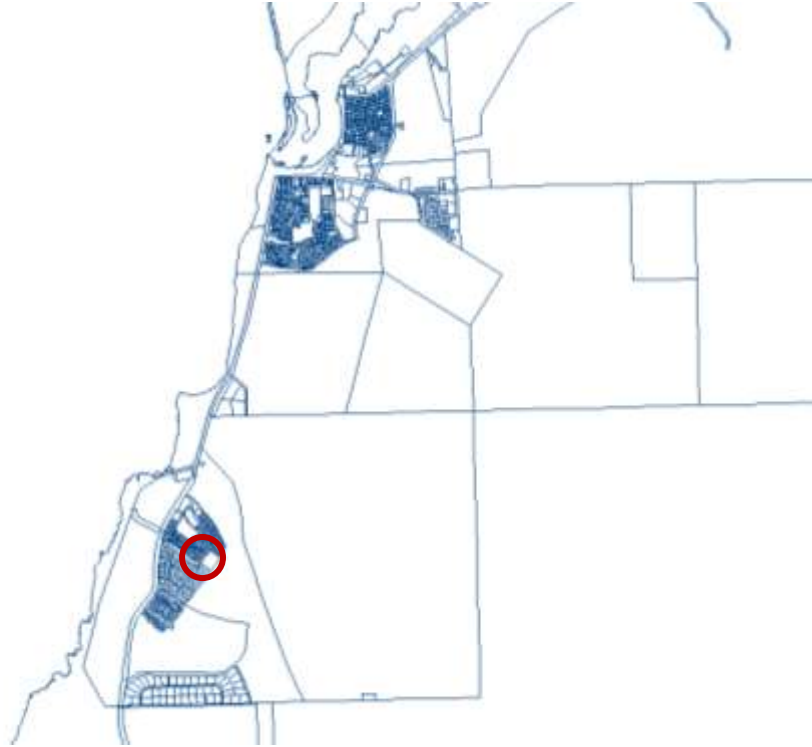
**Quasi-Judicial**

*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 single dwelling on Lot 242 (No. 12) Persoonia Street, Kalbarri. The proposed development requires Council consideration given the application is for a relocated dwelling. The Applicant has undertaken some improvements to the design of the front façade of the dwelling upon request, and have included a pergola with an angled roof as well as some timber paneling to the front and side elevations of the patio/deck area. This report recommends conditional approval of the application.

**Figure 1 – Location Plan – Lot 255 (No. 58) Flora Boulevard, Kalbarri**



**Figure 2 – Site Plan – Lot 255 (No. 58) Flora Boulevard, Kalbarri**



**BACKGROUND:**

An application has been received for the development of a single dwelling upon Lot 242 (No. 12) Persoonia Street, Kalbarri. Figure 1 provides a Location Plan for the subject property.

The single dwelling is comprised of one transportable building. Photographs of the existing building (without modifications such as additional timber paneling and additional skillion-roofed pergola) are included in **Appendix 1**.

The proposed single dwelling is to be sited at the rear of the lot with the following setbacks:

Front (internal boundary) –	19.65m
Side (N/E) -	1.5m
Side (S/W) -	5.1m
Rear (adjoining Lot) -	3.0m

The dwelling has a proposed setback of 19.65 metres from the front boundary, 1.5 and 5.1 metres from the side boundaries. It is proposed to be setback 3.0 metres from the rear boundary.

The wall cladding comprises fibre cement panels and the dwelling itself is rectangular in shape measuring 12.2 x 3.35 metres with a total area of 40.84m<sup>2</sup>. The roof of the dwelling is proposed to have no pitch with pressed steel seam welded roofing panels. The finished floor level of the dwelling is proposed to be an average of 300mm above natural ground level. Forward of the dwelling, there is proposed to be a 3.0 x 6.0 metre patio/deck area at the same finished floor level as the dwelling. The patio and deck will comprise a timber frame and floor, insulated patio roof panels and decorative timber trim paneling at the top and skirting of front and side facades. A skillion-roofed pergola (with 5° pitch) will be located adjacent to the deck area and be of a timber framed construction with Colorbond roof sheeting and fibre cement infill panels and fascia.

The proposed single dwelling has a vehicular access (driveway) with a 3.0 metre width widening to a two (2) car bays with a turnaround area, forward of the building.

The transportable floor plan consists of one bedroom, kitchen and living area and one bathroom/laundry. A copy of the applicant's site, floor and elevation plans have been included as **Appendix 2** to this report.

Since initially lodging the application and after being made aware of the need for additional works to remediate the appearance of the transportable dwelling to be more house-like, the applicant included the skillion-roof pergola structure with fibre cement infill fascias, and the decorative timber panelling to the front and side elevations.

**The Proposal:**

In consideration of the application the following information is provided:

Lot Size	545m <sup>2</sup>
Existing Development	Vacant
Existing Services	Water, Power, Phone & Sewer.
Access & Frontage	Persoonia Street
Topography	Slightly sloping site
Vegetation	Cleared
Surrounding Land Uses	Residential R20 and 'Tourist Accommodation'

**COMMUNITY CONSULTATION:**

Nil.

**FINANCIAL & BUDGET IMPLICATIONS:**

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 Town Planning Scheme No. 9 –Kalbarri Townsite*

The land is zoned “Residential R20” under *Town Planning Scheme No. 9 – Kalbarri Townsite* with a “Single Dwelling” listed as a permitted use.

The objectives of the Residential zone include:

- (a) *to ensure that land uses are compatible and complementary to the residential purpose of the Zone;*
- (b) *to provide a mix of housing types to cater for the range of demands created by a diverse population, which chooses to live in and visit the town;*
- (c) *promote and safeguard health, safety, convenience, the general welfare and the amenities of the residential areas and their inhabitants;*
- (d) *ensure that other uses and activities compatible with the predominant use are allowed for;*
- (e) *promote “modified grid” subdivision patterns for new development as a means of improving legibility in preference to the widespread use of culs de sac;*
- (f) *promote the use of water sensitive urban design; and*
- (g) *promote the orientation of dwellings and lots to encourage energy efficiency.*

Additionally, clause 5.10 contains the following provisions in regard to relocated buildings:

*“...a building which has been previously constructed on a building site whether within the Scheme Area or elsewhere and whether occupied or not.”*

Clause 5.21 contains the following provisions in regard to relocated buildings:

*“A relocated building may not be transported to and placed on any lot or utilised for any purpose within the Scheme Area without the prior written approval of Council and in accordance with any conditions contained in such approval.*

*In considering whether or not to grant approval for a relocated building Council shall have special regard to:*

- a) *the existing appearance and proposed external materials and finishes of the building, and any alterations proposed thereto;*
- b) *the amenity of the locality, including the existing buildings in the area;*
- c) *the visual prominence of the site on which the building is to be located;*
- d) *any landscaping or screening proposed for the site; and*

- e) *all applicable statutes, by-laws and regulations relating to buildings applicable both to the relocated building and the lot upon which it is to be located following transportation.*

*In granting an approval for a relocated building Council may impose conditions which require landscaping to be established within a specified time and thereafter maintained.”*

These provisions of the Scheme will be further discussed in the Comment section of this report.

**POLICY IMPLICATIONS:**

*Local: Shire of Northampton Local Planning Policy - Relocated Dwellings and Second-hand Cladding Materials.*

Local Planning Policy – Relocated Dwellings & Second Hand Cladding Materials (2013)

Council adopted the *Relocated Dwellings & Second Hand Cladding Materials Local Planning Policy* on 21 July 2005 and the policy was amended on 22 February 2013. However the intent of this policy is to govern second-hand buildings and second-hand building materials and cannot be applied in this case.

The other Local Planning Policy that performs a similar function in guiding the application process and regulating prefabricated shed structures addresses the same key issues but again cannot be applied due to the subject matter being considered different.

A Local Planning Policy shall not bind Council in respect of any application for Planning Consent but Council shall take into account the provisions of the policy and objectives which the policy was designed to achieve before making its decision.

**STRATEGIC IMPLICATIONS:**

Nil.

**COMMENT:**

The proposed single dwelling - relocated building is considered to comply with the provisions of *the Residential Design Codes (2013)*, with provisions for site works,

stormwater management, materials and colours, and screening of rubbish bins and clothes drying area considered to be matters that can be dealt with by Planning Conditions.

Consideration must be given to whether the proposed development meets the objectives and standards outlined by *Town Planning Scheme No. 9- Kalbarri Townsite*, in relation to the zone and Relocated Buildings provisions and in particular, provisions relating to visual amenity.

### **Visual Appearance**

Clause 5.21 of Scheme No. 9 relates specifically to relocated buildings and states that Council shall have special regard to the existing appearance and proposed external materials and finishes of the buildings. The proposed building is in new condition and has fibre cement panels for exterior wall cladding (colour not provided). The patio/deck and pergola will be of timber frame and have a combination timber and fibre cement fascia and trim to add architectural relief to the stark rectangular features of the dwelling itself. The front façade has a window and set of sliding doors. The dwelling itself is proposed to be set back towards the rear of the property, almost 20 metres from the front boundary.

Under the provisions of *Town Planning Scheme No. 9* the amenity of the locality including existing buildings in the area is a key consideration. Examples of existing buildings in close proximity to the proposed development are included below.







**VOTING REQUIREMENT:**

*Absolute Majority Required:* No.

**CONCLUSION:**

Whilst the dwelling itself is a plain rectangular structure with no pitched roof, it is considered that the additions to the front façade help to add architectural relief to the building, and the location towards the rear of the property, and the addition of proposed landscaping and garden forward of the house will help to improve the visual amenity of the dwelling.

It is therefore recommended that Council grant development approval to the proposed relocated single dwelling subject to conditions.

**OFFICER RECOMMENDATION – ITEM 6.3.5**

**APPROVAL**

- 1 Grant formal development approval for a relocated single dwelling to be constructed upon Lot 242 (No. 12) Persoonia Street, Kalbarri subject to the following conditions:**
- a) Development shall be in accordance with the attached approved plan(s) dated 19 December 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) 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;**
  - c) A schedule indicating colour of materials of the proposed relocated single dwelling is to be submitted for assessment and approval by the Local Government prior to the issue of a building permit;**
  - d) Any space between the ground level and the floor level of the relocated dwelling shall be suitably enclosed to the approval of the Local Government;**
  - e) Any soils disturbed or deposited on site shall be stabilised to the approval of the Local Government;**
  - f) Installation of crossing place/s to the standards and specifications of the Local Government;**
  - g) All stormwater is to be disposed of on-site to the specifications and approval of the local government;**
  - h) A building permit shall be issued by the Local Government prior to the commencement of any work on the site;**

- i) Access, maneuvering and car parking areas to be paved/sealed, drained and thereafter maintained to the approval of the local government; and**
  
- j) Bin storage and clothes drying areas shall be provided to the rear of the dwelling, or screened from the view from the street, to the approval of the local government.**

**Advice Notes:**

**Note 1:** *If the development/use the subject of this approval is not substantially commenced within a period of 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 so lapsed, no development must be carried out without the further approval of the local government having first been sought and obtained;*

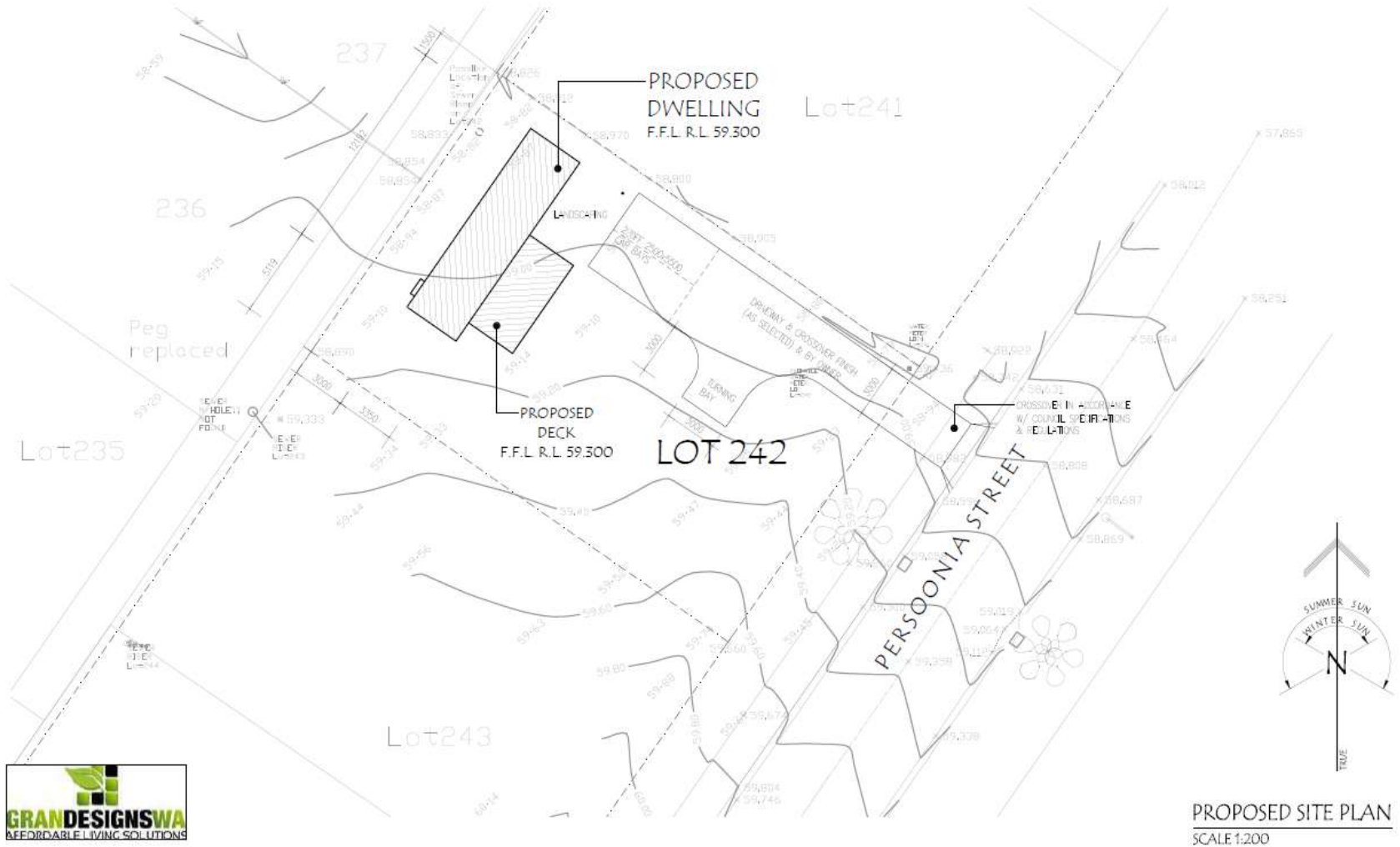
**Note 3:** *If an applicant or owner is aggrieved by this determination there is a right of review by the State Administrative Tribunal in accordance with the Planning and Development Act 2005 Part 14. An application must be made within 28 days of determination.*

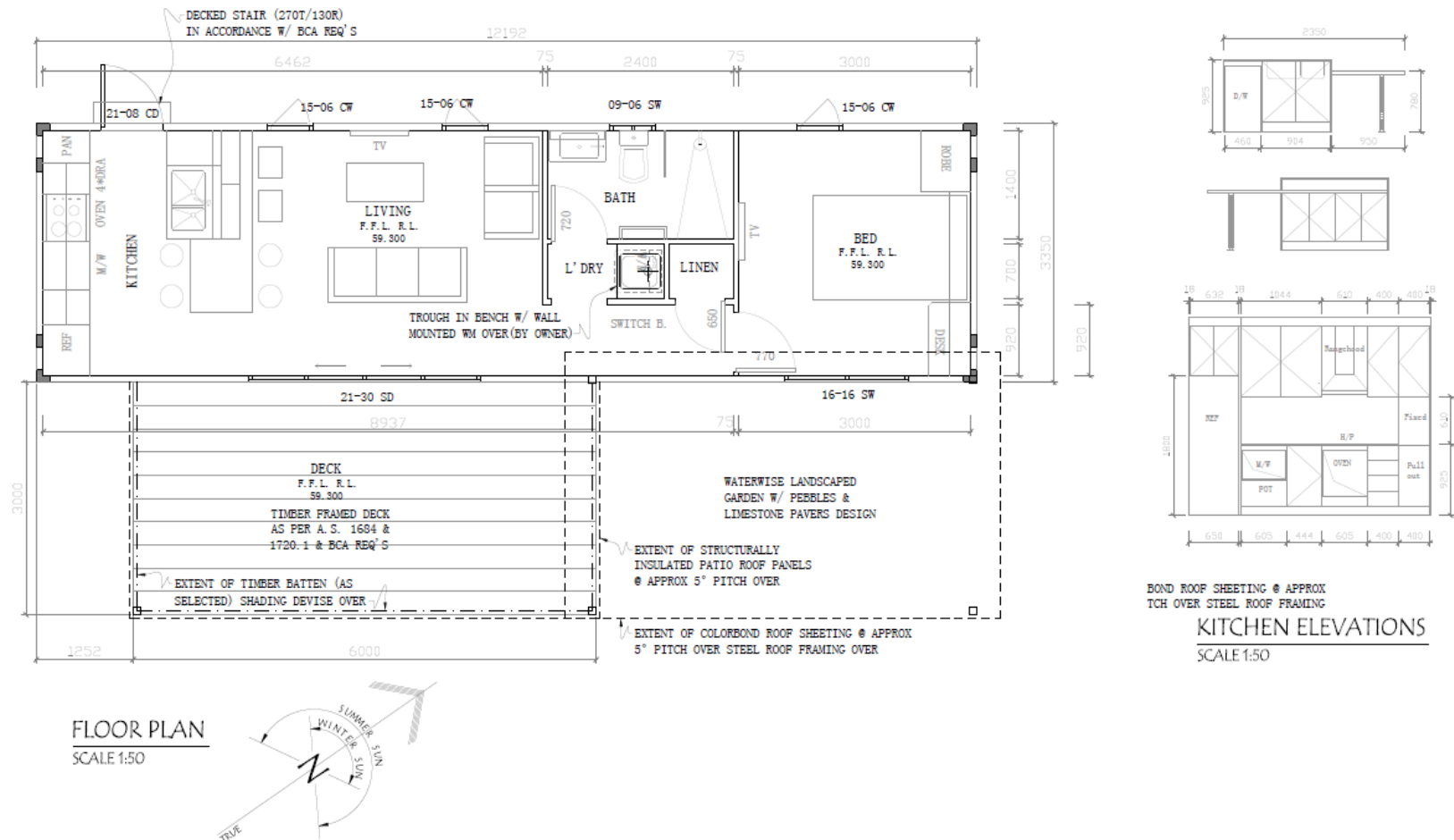
**APPENDIX 1 – Photographs of Proposed Relocated Single Dwelling (not showing skillion roofed pergola or timber panelling added for architectural relief)**

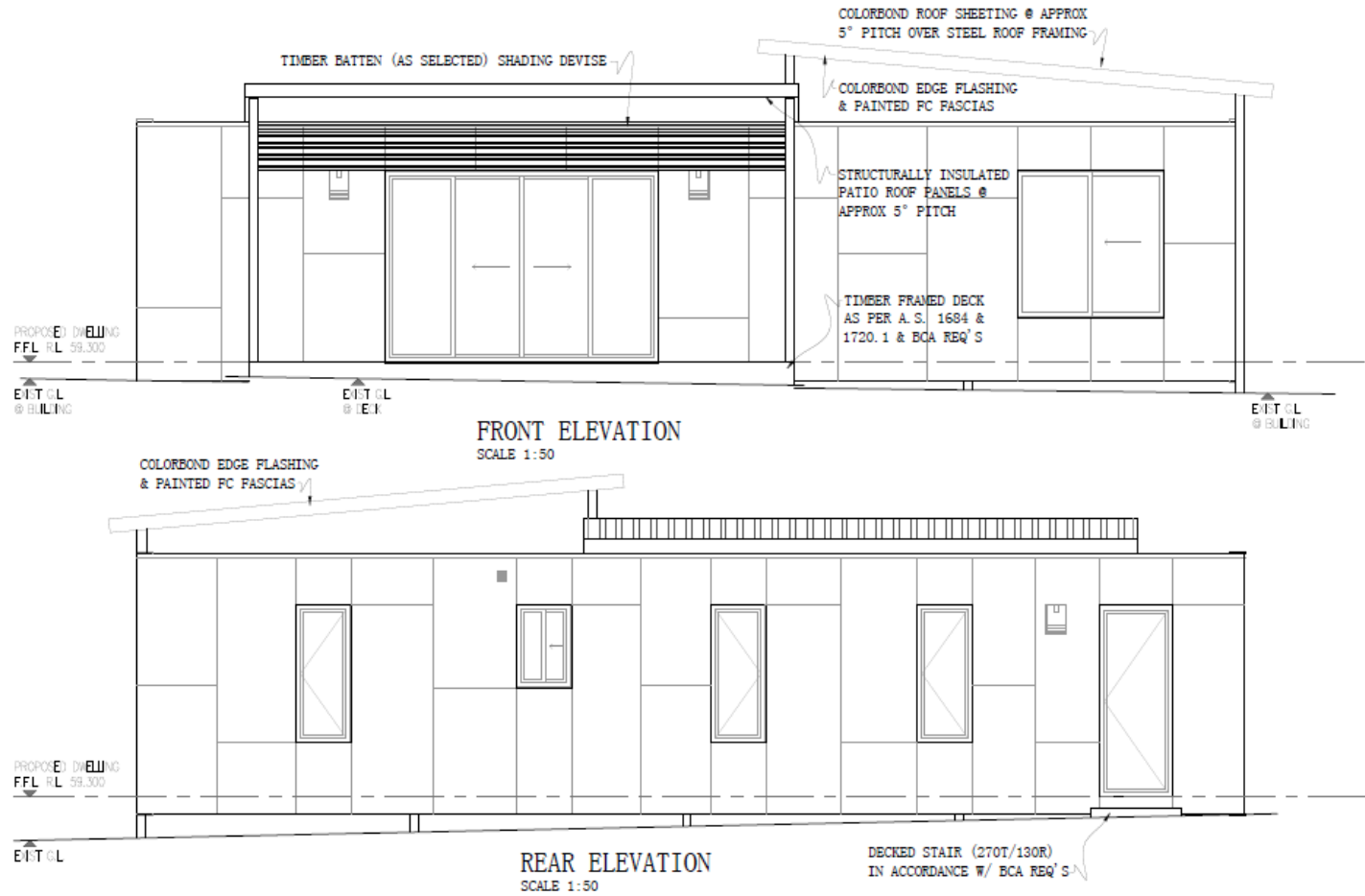




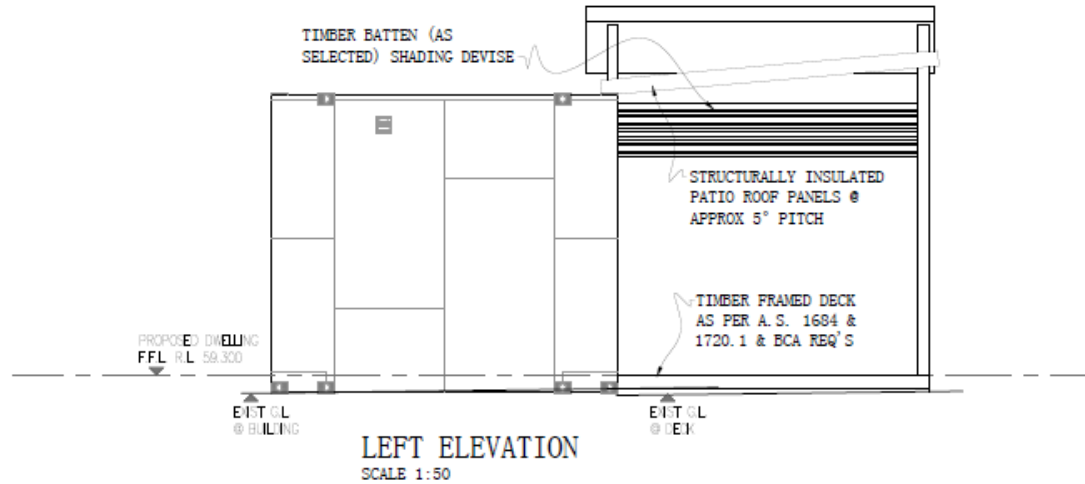
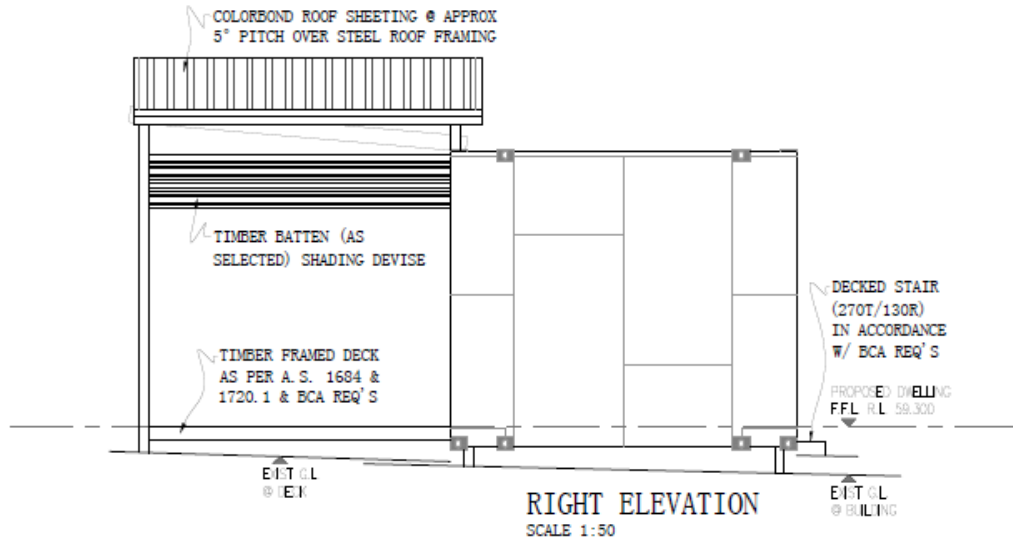
**APPENDIX 2 – Site, Floor and Elevation Plans**











**ADMINISTRATION & CORPORATE REPORT**

**LATE ITEMS**

6.5.13	KALBARRI COMMUNITY BUS	2
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**6.5.13**

**KALBARRI COMMUNITY BUS**

<b>LOCATION:</b>	<b>Kalbarri</b>
<b>FILE REFERENCE:</b>	<b>10.2.5</b>
<b>DATE OF REPORT:</b>	<b>13 December 2016</b>
<b>REPORTING OFFICER:</b>	<b>Garry Keeffe</b>
<b>APPENDICES:</b>	<b>Various Bus Information/Details</b>

**SUMMARY:**

This item should also be referred to when discussing Agenda Item 6.5.5

Recommend Council to consider disposing of the existing Kalbarri Community Bus and replacing it with a new bus.

**BACKGROUND:**

In recent months issues have been arising with the ongoing maintenance of the Kalbarri based community bus, in particular front window replacement. The situation now is that no replacement windows are manufactured and in order to replace the current window, modifications have to be undertaken to the main front frame of the bus at a cost of \$12,000, plus the window of an estimated \$5,000 top \$6,000. The front windscreen was replaced in February 2016 at a cost of \$5,306.

The bus will need to be taken to Perth to have the modifications undertaken.

The reason is that the bus is a custom made bus from a company that no longer exists.

The bus was purchased in 2002 and was located in Northampton then purchased by the Kalbarri community when the new Higer bus was purchased in 2012. The bus has travelled in excess of 110,000km.

The bus cannot be hired out in the current condition it is in and as a result has been taken off the road and the Northampton based bus has been taken to Kalbarri to accommodate bookings for a bus over the December/January period. Fortunately the Northampton bus has no bookings for use in the Northampton area for the above period however this will change as soon as the Christmas break is completed when schools will require the buses for transport to swimming lessons etc.

**COMMENT:**

With the ongoing issue of getting front windows for this bus which now has resulted in major modifications required, it is recommended that Council dispose of this bus and purchases either a new or good quality second hand bus.

Preliminary investigations into a bus the same as the Northampton Bus have been undertaken. Options costed exclusive of GST are:

- Higer Munro 28 seat including driver, purchase price \$135,000, delivery 6 weeks ex Sydney.
- Yutong Bus 28 seat including driver, purchase price \$130,000, delivery 4 weeks.
- Toyota Coaster Deluxe 21 seat including driver, purchase price \$103,103 which includes bulbar, tow bar and stone guard, delivery 4 months.

Additional costs to the above prices would also be incurred for a roo-bar at \$3,500 and window stone guard at \$2,000. Depending on the type of bus, the Council would be looking at a purchase price of between \$103,000 and \$140,500.

The current Higer Bus has operated fairly efficiently with no major problems arising since its purchase. The bus has a Cummins motor and Alison automatic transmission. All brakes, door opening etc are all air operated.

WA Hino who was a distributor of the Higer Bus now sells the Yutong bus in preference to the Higer. The Yutong Company produces 70,000 buses per annum in comparison to the Higer at 20,000 buses per annum.

Both buses have the same engine and transmission however the Yutong Cummins engine is the American built engine, the Higer is the Japanese built engine.

The other alternative is to purchase a second hand bus. Based on internet prices only the following are available:

- 2013 Toyota Coaster, 5 speed manual and travelled 31,483km is valued at \$49,947 GST exclusive. Located in Perth.
- 2015 Mitsubishi Fuso Rosa Deluxe, 6 speed manual and travelled 100km so still in new condition, 22 seats including driver, valued at \$89,990 GST exclusive. Located in Bunbury. Immediate delivery/collection

There are others but they are older or are very large coaches. A majority of relatively late model buses of reasonable value are in the eastern states.

The existing bus is unlikely to attract any significant trade value and this would be the preferred option rather than Council trying to sell the bus to any interested person.

**FINANCIAL & BUDGET IMPLICATIONS:**

There is an opportunity for Council to purchase a new bus within the current budget.

As per Agenda Item 6.5.5, the budget allocation of \$90,000 towards the Kalbarri Foreshore Parkland Redevelopment is now unlikely to be used due to the grant application for this project being unsuccessful.

In addition, if the Council opts to purchase two Isuzu trucks that are reported on within the Works Report, there is a budget savings of \$40,000. Further a provision of \$30,000 was made for a new grinder pump, the actual cost is \$25,125 and therefore a savings of \$4,875 has occurred.

The above budget provision not to be used and savings allows for \$134,875, round to \$135,000 to be used for the purchase of a new community bus.

**STATUTORY IMPLICATIONS:**

The Local Government Tender regulations stipulate that for purchase of any goods or services over the value of \$150,000, public tenders must be called. There are some exemptions, primarily costs for situations in an emergency, and also where the supplier has been declared a preferred supplier by the WA Local Government Association.

With the total cost of the bus not expected to be more than \$150,000, Council has the power to purchase a bus outright.

**VOTING REQUIREMENT:**

Absolute Majority required as is a change to the adopted budget.

<p><b>OFFICER RECOMMENDATION – ITEM 6.5.8</b></p> <p><b>That Council progress with the purchase of a new community bus for Kalbarri, (Council to determine type of bus and purchase price) and trade-in</b></p>
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**the 2002 custom made bus and if no trade-in occurs the bus be offered for sale to the general public.**

**APPENDICES 1 – Yutong Specifications**

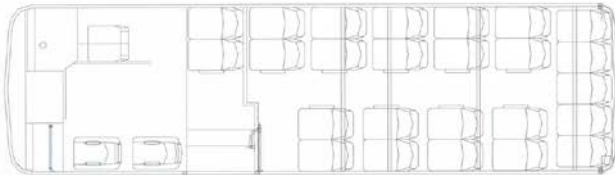


World's largest bus manufacturer ✦ Best load capacity in its class ✦ Streamlined design  
 Reverse&internal cameras for added safety(OHS) ✦ Electrocoating technology  
 100% ADR ✦ Full scale Crash Tested ✦ Many more safety&design features

## YUTONG ZK6760DAA

Item	Standard specification
Length*Width*Height ( mm )	7625*2320*3060
Interior Height ( mm )	1910
Wheelbase ( mm )	4100
Track Front /Rear ( mm )	1860/1640
Overhang Front/Rear ( mm )	1210/2315
G.V.M ( kg )	8000
Chassis Manufacturer	Zhengzhou Yutong Bus Co.,Ltd.
Engine Arrangement	Front-mounted
Braking Distance ( km )	≤ 10 ( v=30km/h )
Fuel Consumption ( L/100km )	15
Engine Model	ISB4.5E5140 US version+ACR
Engine Type	4 cylinders, turbocharged & charge air cooled
Displacement ( L )	4.5
Max. Power ( kW/rpm ) +HP	103/2500+140
Max. Torque ( N.m/rpm )	550/1100-1600
Fuel / Emission	Diesel ( Euro V )
Approach/Departure Angle ( ° )	17.5/10
Max. Speed ( km/h )	100
Max. Grade Ability ( % )	30
Fuel Tank ( L )	140
Luggage Capacity ( m <sup>3</sup> )	0.5
Transmission	ALLISON 2100, US version
Front/Rear Axle	Front axle DONGFENG forged steel I beam design disc brake, rear axle DONGFENG drum brake
Suspension	Leaf Spring
Steering System	Right hand drive
Braking System	WABCO ABS, dual circuit brake system
Wheel+Tyre	245/70R19.5, 6+1
Electric Wirings Alternator	2 Accumulator 6-QA-150Ah
Body Structure	All steel body
Interior Trimmings	Grey color decoration
Door And Door Pumps	1 passenger doors ( front pneumatic door )
Seats	2+2 type, 27+1, fixed seat, driver seat dumping and adjustable
A/C System	Cooling capacity 16000kcal/h
Defrosting System	Engine heat defrost system
Audio& Video System	DVD player, front 15" LCD, double motion eye, driver colorful monitor
Wipers	Wipers
Option	Aluminium wheel rim, no-independent water-heater

Specifications subject to change without notice



WABCO



Allison  
Transmission



BOSCH



**APPENDICES 2 – Higer Bus Specifications**



**Standard Features**

- Reverse Cycle roof mounted air-con (heat/cool)
- 28 x ADP68 fixed back cloth seats with 3-point safety belts
- PA / microphone system
- Multi Media Stereo System inc sat nav/Bluetooth
- Tinted saloon glass windows
- Driver's electric blinds
- Cruise control
- Plug door with automatic fold out step
- Alloy wheels
- Rear luggage space
- Cloth seats
- Vinyl floor
- ABS/ASR
- Reverse/security camera

**Luxury Pack (extra cost)**

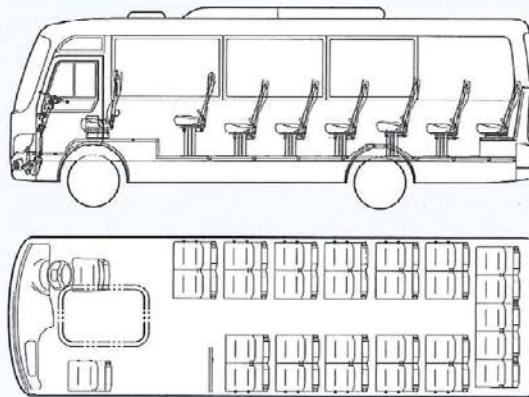
- Leather seats
- Carpet / coin rubber floor
- Luggage rack
- LCD screen
- Overhead heated electric mirrors

**Further Options (extra cost)**

- Thermo King X-500 air-conditioning (heat/cool)
- Hopper windows
- Wheelchair access (local fit)
- 2-3 seating
- Choice of exterior colours
- Tow bar / bull bar / nudge bar
- Long range fuel tank (240 litres)
- 2 year driveline warranty extension (4 years total)

All details correct at time of printing and subject to change without notice

**Seating Plan**



**Parts, Service and Warranty**

A competitive purchase price is one thing, but operators also need to consider reliability, back-up and operating costs over the life of their vehicle.

This is where Higer's commitment to parts and service makes the difference. Investment in an extensive Australia-wide dealer and service network gives every Higer customer access to

outstanding customer support, so if a vehicle does need work, downtime is minimised.

Combine this with locally supported componentry and a 2 year 200,000km warranty (2 year extended warranty also available) and it's easy to see why more people are getting on board with Higer.



For more information and a free test drive call your nearest Higer dealer on 1300 850 206 or visit [higer.com.au](http://higer.com.au)



Overall Dimensions	
Model	H7170 7.6m
Dimensions mm	7535 x 2270 x 2982
Wheelbase mm	4100
Overhang mm (front/rear)	1192/2243
Rated capacity (seats)	28 + 1

Performance	
Max. speed	100km/h
Max. gradeability	25%
Min. turning diameter	17m

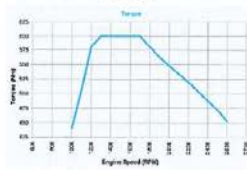
Engine	
Cummins 4 cylinder, turbocharged, intercooled, 4 stroke water cooled direct injection diesel engine	
Capacity	3.8 litres
Model	Cummins ISF (Euro 5)
Torque	600Nm (413lb ft) @ 1300-1700rpm
Power	126kW (168hp) @ 2600rpm

Transmission	
Allison T2200 6-speed automatic transmission	

Differential	
Ratio	5.38

Suspension	
Leaf spring	
GVM kg	7990

Braking System	
Front disc, rear drum, dual circuit full air with Wabco ABS/ASH	
Energy storage spring parking brake acting on rear axle with manual control valve	
Auxiliary engine exhaust brake	



Front Axle	
Forged steel I beam design	

Rear Axle	
Fully floating axles, hypoid differential	

Steering System	
ZF 8090 power steering with tilt and height adjustment	

Wheels & Tyres	
Wheels	Polished alloy 17.5 x 9
Tyres	235/75 R17.5
Spare tyre	Spare wheel included (1)

Frame	
Ladder, riveted and bolted	

Capacity	
Fuel tank	120 litres



With the 2 for 3 seating option, the H7170 is more versatile than ever



\*Suitable only for children aged under 12 in 3 seat configuration



Issued October 2016

H7170 App 2015.indd 1

20/06/2015 10:11:05 AM

2013 Toyota Coaster Manual 4x2

Dealer Car - Used



**\$54,942\***  
Excl. Govt. Charges

🕒 31,483 km  
ODOMETER

📖 Manual  
TRANSMISSION

🚗 4cyl 4.0L Turbo Diesel  
ENGINE



**Have you driven or owned a car like this?**  
Write a review by sharing your experience to help others make the right decision.

[Write a review](#)

**Seller's Comment**

PRICED TO SALE !!!! This 22 seater bus is in fanatstic condition with ducted aircon, power steering and Ideal for the school bus or maybe a camper conversion...

Details	Features	Specifications
Vehicle	X7R50R 21st Bus 4x2 4.0DT WB:3935mm GVM:4990kg	
Price	\$54,942* Excl. Govt. Charges	
Kilometres	31,483	
Colour	White	
Transmission	5 speed Manual	
Body	2 doors 21 seat	
Drive Type	4x2	
Engine	4 cylinder Diesel Turbo Intercooled 4.0L	
Registration Plate	1GBE571	
Registration Expiry	December 2016	
Build Date	Check with seller	
Compliance Date	Check with seller	
Towing Braked	2,000	
Towing Not Braked	680	
Stock	22794	
Fuel Economy Combined		

**Comprehensive Carfacts History Report**



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Dealer Ad

Ad Ref #:105023

**2015 Mitsubishi Fuso Rosa Deluxe - For Sale**

**\$98,990\***



**Description**

NEW 2015 PLATE FUSO ROSA DELUXE BUS,  
22 SEATS,  
DIESEL ENGINE,  
6 SPEED MANUAL TRANS.,  
REVERSE CAMERA, SAT NAV, AUTO SWING DOOR, DUCTED AIR CON,  
READY FOR DELIVERY TODAY.

CALL TORREN FOR MORE ONFO ON 0417961940

"BEST DEAL IN AUSTRALIA "!!!!!!!!!!!!"  
"FREE DELIVERY PRIXCAR SYD, MELB, ADELAIDE, BRISBANE THIS WEEK ONLY !!!!

**Contact Seller**

[1\) Click to show phone number\(s\)](#)

Torren Pyke



0417XXXXXX

[2\) Click to send call back request to dealer](#)

Located: Glen Inis, Western Australia, 6230

**Details**

Price	\$98,990
Price Notes	PLUS ON ROADS
Year Built	2015
Condition	New
Location	Western Australia
Make,Model	Mitsubishi Fuso , Rosa Deluxe
Type	Passenger Bus
GVM	5,900kg
KMs	100km
Ad Reference	105023
Stock Number	.T.B.A.
Last Modified	12/12/2016