

Appendix L
Bannister Road Upgrade Study -
Appearance

8. Appearance

8.1 Existing conditions

8.1.1 Context

The Shire of Boddington is characterised by a combination of informal rural landscapes and riverine vegetation communities associated with the Hotham River. The town centre features a mix of commercial and residential properties based around the spine of Bannister Road. This road is a major transport route and is wide enough to accommodate the large trucks associated with the local mining and farming industries.

The northern entry experience to the town begins upon crossing the Hotham River. The sense of arrival is characterised by a series of natural elements including rocky outcrops, undulating hills and the Hotham River.

The wide main street imparts a rural character and provides a sense of exposure. The openness allows clear views of the surrounding farmland to the south and undulating hills to the north.

The southern entry to the town centre is defined by the intersection of Farmers Avenue and Bannister Road. The area is characterised by cleared farmland and a stand of established Jarrah and Marri trees.

Further south the landscape is characterised by flood plain woodlands to the west and farmland to the east of the road.

Plate 1: Northern entry



Plate 2: Main Street – Bannister Road



Plate 3: Southern Entry



Plate 4: Flood plain woodlands on Bannister Marradong Road



8.1.2 Vegetation

The natural vegetation communities surrounding the town include *Eucalyptus wandoo* woodland and *Eucalyptus marginata* (Jarrah) open forest and *Corymbia calophylla* (Marri) open forest. The Hotham River valley features stands of *Eucalyptus rudis*, *Melaleuca sp.* and *Hypocalymma augustifolium* (White Myrtle)

The town centre contains a number of public open spaces. These feature a mixture of indigenous and exotic species, including:

Trees

- *Acacia baileyana*
- *Acacia acuminata*
- *Callitris preissii*
- *Casaurina obesa*
- *Eucalyptus astringens*
- *Eucalyptus calophylla*
- *Eucalyptus camaldulensis*
- *Eucalyptus citriodora*
- *Eucalyptus cladocalyx*
- *Eucalyptus patens*
- *Eucalyptus marginiata*
- *Eucalyptus rudis*
- *Eucalyptus torquata*
- *Eucalyptus wandoo*
- *Liquidambar styraciflua*
- *Melaleuca raphiophylla*

Plate 5: Existing vegetation



Shrubs

- *Banksia blechnifolia*
- *Eremophila nivea*
- *Grevillea sp.*
- *Petunia sp.*
- *Rosa sp.*
- *Xanthorrhoea sp.*

Plate 6: Existing shrubs



Street trees are a combination of two non-endemic species. An established avenue of *Lophostemon confertus* runs from the northern entry to the intersection of Forrest Street and Bannister Road and an avenue of *Magnolia grandiflora* continues from this point to the southern entry of the town.

Plate 7: Existing street trees



8.1.3 Streetscape features

Lighting

The current street lighting palette is standard Western Power luminaires and outreaches attached to existing power poles.

Feature pole top luminaires have been installed in Ken Austic Square as pedestrian lighting.

External furniture

Bin enclosures have recently been installed in the main street, parks and tourist bay, and are in good condition.

Bench seating is limited to the parks. They are proprietary aluminium slated seats and are in good condition.

Plate 8: Existing external furniture



A number of picnic shelters are located throughout the town. These differ widely in design, materials and condition.

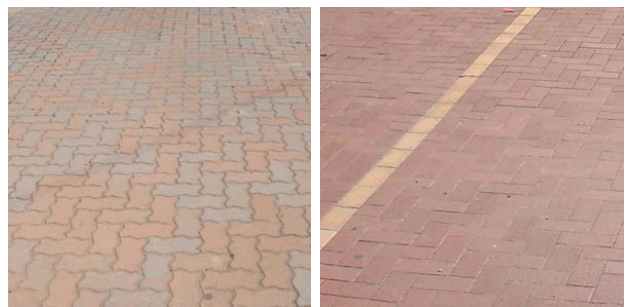
Plate 9: Existing picnic shelters



Paving

Footpaths to Bannister Road are paved with interlocking clay brick pavers. This paving is noticeably faded and stained. An area of feature paving extends from Ken Austic Square into the streetscape. Crushed bauxite paving is used around a small number of garden beds and trees.

Plate 10: Existing paving treatments



Playgrounds

Playgrounds located within the town centre are furnished with proprietary play equipment items and are in good condition.

Plate 11: Existing playground equipment



Artwork

The bucking horse sculpture located in the tourist information bay was donated by the mining companies to the Shire in recognition of the annual rodeo.

The Cor-Ten steel 'silhouette' artworks located near Lions Weir reference the railway workers from the early 1900's.

Metal sculptures of a motor bike, man and emu are located in the Old School grounds. These works, as well as the colourful painted fence on Wuraming Avenue and the murals near Lions Weir indicate a strong sense of community.

Plate 12: Existing public artwork



8.1.4 Key destinations

The following places have been identified as key destinations in the town of Boddington:

- Tourist information bay
- Old school (used as Tourist Centre)
- Old bakery craft and antique store
- Boddington Hotel
- Service stations
- Farmers Reserve
- River Park
- Lions Weir

Plate 13: Existing key destinations



8.2 Site character preservation

The number of submissions for redevelopment in the town centre and residential areas has caused concern amongst the community. Recognising this concern, the Shire of Boddington held a workshop, allowing the community to make comment on the Draft Boddington Town Centre Design Guidelines. The Shire incorporated this input into the draft guidelines and released the Boddington Town Centre Design Guidelines (BTCDG) in 2007

'The uncertainty of being able to maintain the character and lifestyle of the town was considered a significant concern of the community.'

This recognises the importance to the community of retaining the town's existing character. The consultant team has acknowledged this in preparing the recommendations for the upgrade of the town centre.

8.3 Recommendations

It is recommended the town centre be upgraded to improve the safety, legibility and accessibility of the site. Any changes to the current landscape should be respectful of the existing town character as well as the cultural heritage and natural environment. Recommendations for the Bannister Road streetscape include:

- Clearly define entry environments to create a distinctive and memorable entry and departure experience
- Create tourist nodes that can be visually identified as attractive destinations
- Create a 'green' aesthetic within the town centre by adding to the existing vegetation and enhancing the existing public open space on Bannister Road
- Create a unified streetscape by establishing design guidelines
- Use the sites natural and cultural environment as a source of inspiration for furniture, materials and vegetation
- Interpret the cultural heritage of the area through integrated artworks
- Create a stronger connection between the town centre and its surrounding natural assets

8.3.1 Entry and departure experience

The northern and southern entries should mark an obvious transition from the surrounding environment to the main street. Entries should be designed to enhance the unique local character and showcase the town in a distinctive and memorable way. This will help to define the town centre of Boddington.

Northern Entry

The northern entry is the more significant entry as most traffic will be coming from Perth.

The north entry should reference the natural environment to the north of the town including the hills and river. Additionally the proposed plant species should reference the local vegetation community. It is proposed the following design elements be used for the northern entry:

- Contrasting foliage and seasonal colour for understorey planting.
- The use of grass trees to punctuate and draw the eye along the main street.
- High contrast painted bands to poles in colours which reference the natural environment.
- The accentuation of depth of field using contrast in form, texture, colour and spacing.
- Under pruning and up-lighting of existing key tree specimens.
- Subtle mounding to accentuate planting and capture storm water runoff.
- Feature paving treatments in materials which reference the river environment.
- High contrast paving bands to medians.
- Infill planting to foreground to match existing vegetation.
- Planting to draw attention to existing site features.
- Subtle mounding to accentuate planting and capture storm water runoff.

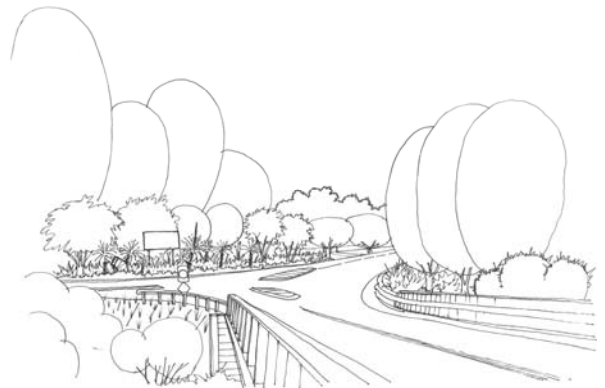
Figure 8: Northern entry location



Plate 14: Existing northern entry environment



Figure 9: Proposed northern entry environment



Southern Entry

The southern entry is less significant. It

should relate to the northern entry using a similar design rationale to create a coherent entry and departure experience. Additionally proposed plant species should relate to the flood plain and woodland environment.

Figure 10: Southern entry location



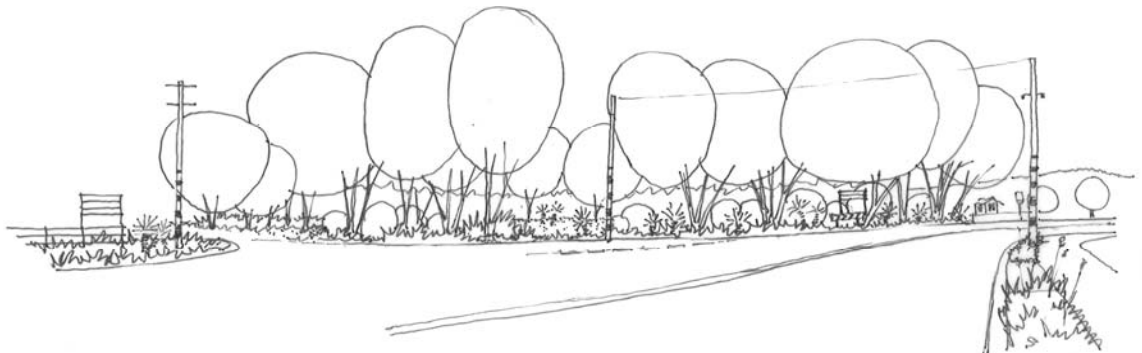
It is proposed the following design elements be used for the southern entry:

- Contrasting foliage and seasonal colour for understorey planting
- The use of grass trees to punctuate and draw the eye along the main street
- High contrast painted bands to poles in colours which reference the flood plain and woodland environment
- The accentuation of depth of field using contrast in form, texture, colour and spacing
- Under pruning and up-lighting of existing key tree specimens
- Subtle mounding to accentuate planting and capture storm water runoff
- Feature paving treatments

Plate 15: Existing southern entry environment



Figure 11: Proposed southern entry location



8.3.2 Tourist Nodes

At present there is little

emphasis on encouraging tourists to stop and enjoy the town. Key destinations should be enhanced to create distinctive tourist nodes. The use of landscape elements can assist in achieving this objective, including:

- Contrasting paving materials
- High density feature planting
- Upgrades to street furniture and amenities.

Figure 12: Existing tourist destinations



8.3.3 Public Open Space

Vegetation for each public open space must be selected to reflect the local character and complement the existing vegetation communities.

Figure 13: Existing Public open space



There is a significant opportunity for the improvement of River Park. Species used in the upgrade of this landscape should be sensitive to the naturally occurring *Eucalyptus rudis* woodland. Maximising the use of this natural asset will encourage use by local visitors and tourists.

Farmers Reserve has a mixture of established Jarrah and Marri trees. Shrub species associated with this forest community include *Boronia crenulata* and *Hibbertia commulata*.

Central Park will require a more formalised approach to design. However, the plant palette will still include endemic and indigenous species to complement the existing stand of Jarrah trees.

8.3.4 Streetscape continuity

The visitor experience of the town needs to provide a feeling of continuity. Achieving uniformity along Bannister Road will distinguish it from its surrounding context and assist in maintaining and enhancing the existing site character. This will create a more enjoyable experience for both pedestrians and road-users. A sense of continuity can be achieved through unifying the following elements:

- vegetation
- materials
- street furniture
- lighting
- paving

8.3.5 Vegetation palette

Plant species provide an aesthetic and ecological link between the town centre to the greater landscape. The selected plant palette will be based on the existing Schedule of Recommended Plants

(*Boddington Town Centre Design Guidelines 2007*). Species endemic to the Shire of Boddington should be used where possible. Refer to Appendix E for a list of recommended plant species.

Streetscape

A limited street tree species palette is recommended to maintain a visual hierarchy for traffic and pedestrian routes. This will enhance legibility throughout the town site.

The existing avenue of *Lophostemon* and *Magnolia* trees should be preserved and maintained. Any proposed trees should complement these existing species. The selected species should provide shade to pedestrian paths and on-street car parking. Where appropriate, street trees should be located to provide framing of vistas.

As illustrated in Figure 14 and Figure 15, street trees will be installed in planted 'nibs' between on-street car bays. This will visually narrow the existing wide road to create a sense of enclosure and encourage the slow of vehicular traffic. Medium to tall clean-stemmed trees, capable of being progressively under-pruned should be used in conjunction with low groundcovers to maintain sightlines and address security issues.

Groundcover species are to be consistent along the length of the streetscape. This will visually unite the differing street tree species and help the streetscape to read as a whole. Where appropriate, planted areas should be replace hard paved surfaces to address issues of surface runoff and heat absorption.

Figure 14: Smaller trees to planted nibs to reinforce existing streetscape

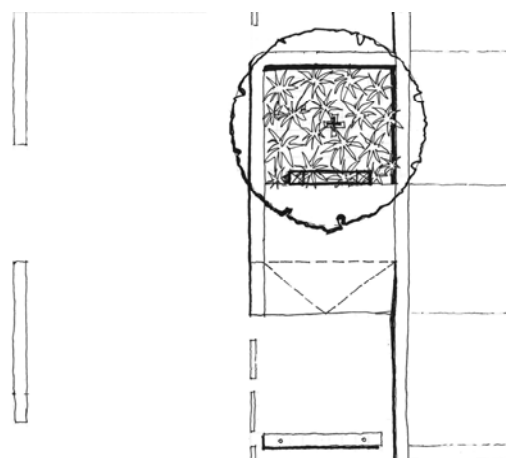
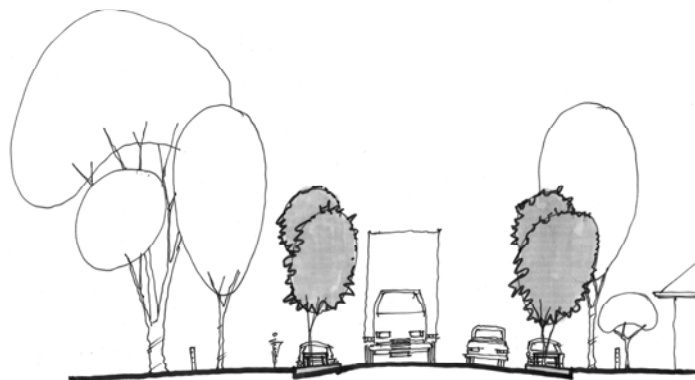


Figure 15: Vertical canopies to limit road interference



Public Open Space

Vegetation for each public open space must be selected to reflect the local character and complement the existing vegetation.

The River Park planting should include species associated with *Eucalyptus rudis* woodland. A significant opportunity exists for the improvement of the Hotham River edge of this park. Maximising the use of this natural asset will encourage use by local visitors and tourists.

Farmers Reserve has a mixture of established Jarrah and Marri trees. Shrub species associated with this forest community include *Boronia crenulata* and *Hibbertia commulata*.

Central Park will require a more formalised approach to design. However, the plant palette will still include endemic and indigenous species to complement the existing stand of Jarrah trees.

8.3.6 Material palette

It is recommended that a consistent materials palette be implemented across the site to create a unified streetscape. Where appropriate, this palette will include local and recycled materials. In line with the BTCDG, colours and materials should reference the local natural and built environment.

Suggested material palette includes:

- Jarrah – references the surrounding vegetation community and rural environment
- Crushed bauxite – references the locally occurring geology
- Granite – references the surrounding rocky outcrops
- Cor-Ten steel – references the rural environment and agricultural heritage

Plate 16: Material palette examples



8.3.7 External furniture

The street furniture palette should maintain a cohesive visual aesthetic and complement the existing character of the site. Selected furniture should also be durable and low-maintenance. Identifying the area of highest pedestrian activity will help to establish where street furnishings are needed most. These areas include:

- the intersection of Forrest Street and Bannister Road
- prominent tourist nodes
- parks
- town centre streetscape

The proposed street furniture should reference locally occurring materials, as outlined in the material palette, and be designed to enhance the existing character of the site. Such designs may include jarrah bollards and wheel stops recalling the surrounding rural fences.

Plate 17: External furniture examples



8.3.8 Lighting

Proposed lighting for Bannister Road should address three distinct situations to enhance the townscape experience:

- street/car park lighting
- pedestrian lighting
- feature lighting

The existing street lighting is attached to power transmission poles. It is proposed that the existing regime be retained and no additional poles be introduced until underground power is established to the length of Bannister Road. As and when this occurs, the street lighting is to be replaced with galvanised steel outreach pole street lighting.

Pole-top lighting should be included along major pedestrian routes and in public open spaces where night-time pedestrian activity is desirable. The pole and luminaires in this situation would be of a higher standard than that of street lighting, and be of a scale appropriate to their location.

The inclusion of a pedestrian lighting scheme will increase the both the security and usability of public spaces.

Feature lighting should be used to draw attention to specific locations and features, such as artworks or entry environments. Up-lighting to key tree specimens and architectural forms will enliven the night-time visitor experience.

It is recommended that solar power be incorporated into the lighting scheme where appropriate to promote sustainability in the community.

Plate 18: Examples of uplighting to key features



8.3.9 Paving and walls

Unifying the streetscape paving treatment will assist in defining the town centre.

It is proposed that the existing Bannister Road pedestrian paving be replaced with larger exposed aggregate concrete unit pavers. The use of a larger unit will properly address the scale of the wide streetscape. Concrete aggregates should reference local materials such as granite and bauxite. Aggregate mixes and concrete colour can be varied throughout the landscape to highlight key destinations.

In situ concrete paving should be used in areas with lower public exposure. The use of colours and aggregates complementary to those used in unit paving will provide visual cohesion between high and low exposure areas.

Tactile and directional unit pavers are to be installed to meet Australian Standards.

Plate 19: Paving treatment examples



Loose paving types such as cracked bauxite gravel should be limited to areas of low pedestrian use. This paving type is ideal for use as a contrasting material in the entry environments.

The use of seating and retaining walls within public open spaces can help to define spaces and enhance the character of the site. Masonry walls should be composed of locally-derived materials such as granite and 'coffee rock. These walls should be used in high-exposure areas to maximise value for expenditure.

It is recommended Bannister Road is resealed to achieve a uniform finish to the road surface.

8.3.10 Playgrounds

The proposed playgrounds should be standard proprietary equipment to comply with Australian playground standards (AS 4685 - 2004).

The installation of timber playgrounds elements is preferable to complement the existing rural character. Colour selections should reference the local environment.

Plate 20: Standard playground equipment examples



8.3.11 Public art

The proposed Boddington Artworks should:

- reference the cultural and natural elements of the site to enhance the town identity
- maximise visual impact
- complement the existing artworks, architecture and landscape
- provide interpretation of the European and Aboriginal heritage
- involve community participation in the creation process where appropriate

The integration of artworks will enhance the streetscape experience and identify Bannister Road as the town centre.

To achieve this, artwork should be located in:

- public open spaces
- the main streetscape
- entry environments
- tourist nodes

Differences in location allow for the works of varying scale, form and materials. This approach adds interest and variety to the streetscape experience.

Plate 21: Artwork examples



8.3.12 Drainage and irrigation

'An approach is required that maximises on-site use of water.' (regarding catchment management and drainage), Shire of Boddington Local Planning Strategy September 2007.

Collection and recycling of storm water plays an important role developing sustainability initiatives in the town of Boddington. An opportunity exists to retain and recycle runoff from hard and paved surfaces. Integration of storm water flow paths and water sensitive design techniques will reduce financial commitment required for drainage infrastructure and help to achieve a more balanced water cycle.

The main objectives for the recycling and collection of storm water are:

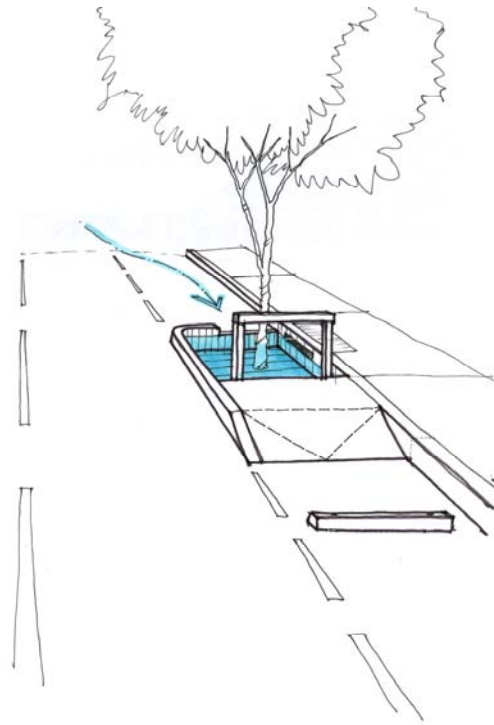
- minimise negative impacts on the Hotham River

- minimise, if not eliminate, the use of scheme and bore irrigation
- maximise the use of on-site water
- create a sense of connection to the riverine environment

Achieving these objectives will require the adoption of several water treatment measures including:

- swales to collect storm water runoff
- open irrigation systems to direct water on to street planting (refer to Figure 16)
- utilisation of existing irrigation systems and tanker watering where appropriate

Figure 16: Utilise storm water as street nib irrigation. Side entry pit integrated to dispose of overflow into piped drainage system



8.4 Maintenance

It is essential that a maintenance program and establishment irrigation costs are included in the landscape budget from the outset. All landscaped areas visible from public areas/streets are to be maintained in a tidy and healthy state. In order to keep maintenance costs low, the following recommendations should be adhered to when planning soft landscaped areas:

- Mulch all planted surfaces to a minimum depth of 75mm. This will reduce weed growth and evaporation from the soil surface.
- Incorporate stockpiled site topsoil into all planted areas prior to planting. This will increase the nutrient level and water retention properties of the soil.
- Avoid the use of turf. Native ground cover species can be used as a substitute to turf where appropriate.
- Modify the microclimate through the arrangement of landscape elements such as trees, shrubs, landforms and structures to create external environments which are protected from temperature extremes and harsh windy conditions.
- Group plants with similar water requirements to help prevent over watering of drought tolerant species.
- Finish planting beds 50mm below paved surfaces to create a water reservoir.
- Slope ground surfaces and paved areas towards planting areas. Ensure paving edges are detailed to allow runoff into planting beds.
- Avoid directing large volumes of water over steep embankments or slopes where erosion may occur.
- Provide shallow, dished areas around individual plants to trap rainfall and runoff for infiltration into garden beds.

- Regularly maintain mulches and eliminate irrigation spill-over to achieve minimum water requirements and avoid runoff of irrigation water.
- Install stone pitching to steep embankments to trap water and reduce erosion. Plant between pitching stones.
- Uphold and enhance the established character of the site whilst achieving maximum value for expenditure on maintenance services.
- Foster cooperation between maintenance contractors and the local council and community to develop, manage, operate and enhance community facilities and services.
- Maintain an aesthetically pleasing, healthy and safe environment.

8.4.1 Contractors Report

Maintenance contractors shall submit a monthly report to ensure that regular maintenance is provided. This report will detail all maintenance actions performed and any accidents or damages that may have occurred during the maintenance liability period.

8.5 Underground power

Overhead power lines currently run along the eastern side of Bannister Road. The lines also cross the road at multiple locations, to provide street light and property connections on the western side of Bannister Road. The type of power line, poles, and street lighting system is shown in Photo 8.

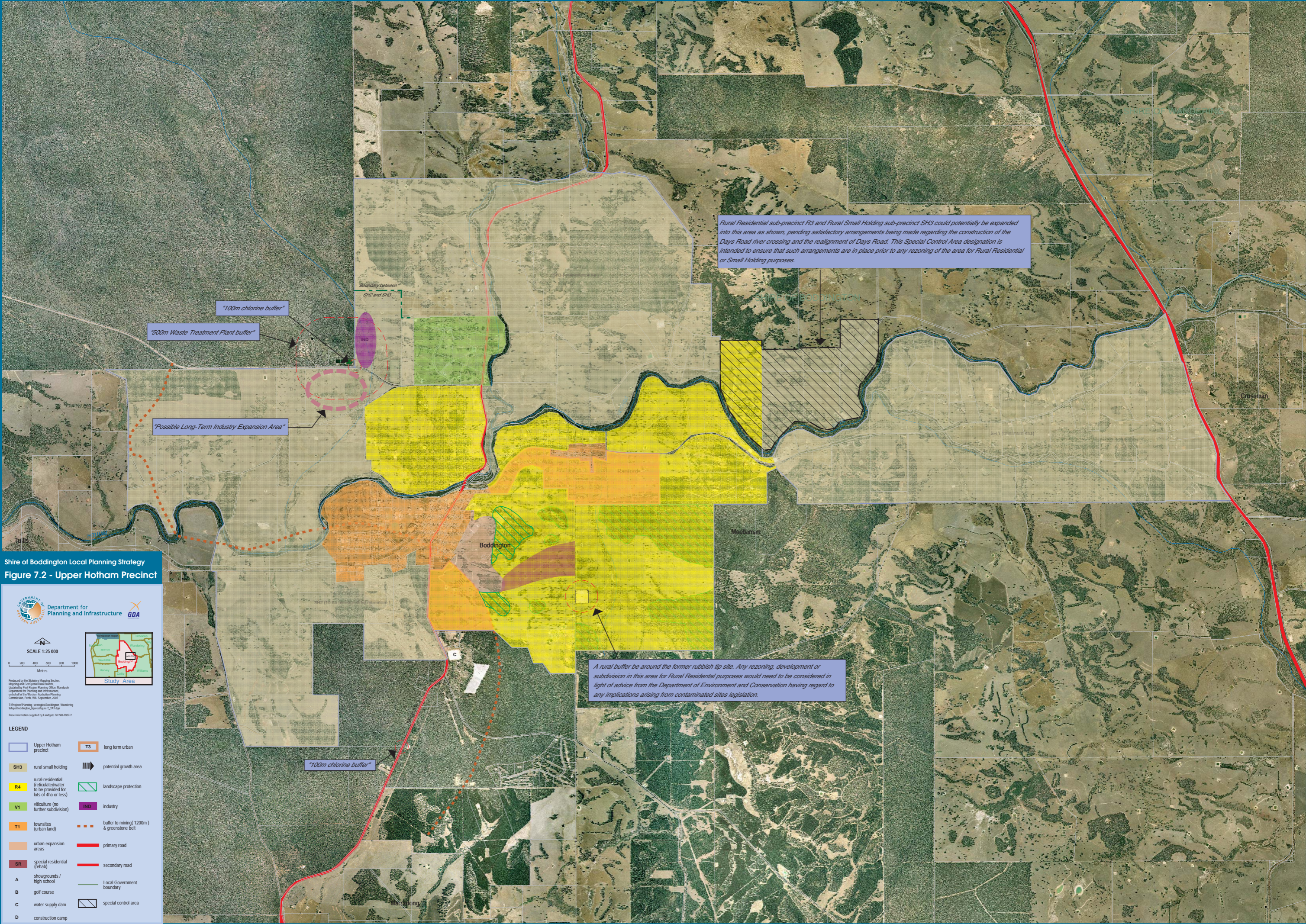
Photo 8: Overhead power lines



The day to day height of the overhead lines can prohibit the flow of some truck movements along Bannister Road. Currently, high loads require Western Power to temporarily raise lines that traverse Bannister Road. An associated cost to the transportation process is incurred. With the redevelopment of the Boddington Gold Mine, the transportation of these high dimensioned loads may become more common.

The lines are not aesthetically pleasing. During the consultation process, stakeholders expressed a negative view regarding the look of the lines. The improved aesthetics associated with underground lines is demonstrated in Figure 17, which shows the before and after views of the process in Hampton Street, Bridgetown WA.

Appendix M
Local Planning Strategy Map



Rural Residential sub-precinct R3 and Rural Small Holding sub-precinct SH3 could potentially be expanded into this area as shown, pending satisfactory arrangements being made regarding the construction of the Days Road river crossing and the realignment of Days Road. This Special Control Area designation is intended to ensure that such arrangements are in place prior to any rezoning of the area for Rural Residential or Small Holding purposes.

A rural buffer be around the former rubbish tip site. Any rezoning, development or subdivision in this area for Rural Residential purposes would need to be considered in light of advice from the Department of Environment and Conservation having regard to any implications arising from contaminated sites legislation.

Shire of Boddington Local Planning Strategy
Figure 7.2 - Upper Hotham Precinct

Department for Planning and Infrastructure

SCALE 1:25 000
 0 200 400 600 800 1000
 Metres

Study Area

Produced by the Statutory Mapping Section, Planning and Geographical Information Branch, Shire of Boddington Planning Office, Mandurah on behalf of the Western Australian Planning Commission, Perth, WA, September 2007
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Base information supplied by Landgate G1.2.00.2007.2

LEGEND

Upper Hotham precinct	T3 long term urban
SH3 rural small holding	potential growth area
R4 rural residential (reticulated water to be provided for lots of 4ha or less)	landscape protection
V1 viticulture (no further subdivision)	industry
T1 townships (urban land)	buffer to mining (1200m) & greenstone belt
urban expansion areas	primary road
SR special residential (rehab)	secondary road
A showgrounds / high school	Local Government boundary
B golf course	special control area
C water supply dam	
D construction camp	

Appendix N
List of Abbreviations

ABS	Australian Bureau of Statistics
ARI	Average Recurrence Interval
BGM	Boddington Gold Mine
BOS	Boddington Old School
HACC	Home and Community Care
LPS	Shire of Boddington Local Planning Strategy
LPS2	Shire of Boddington Local Planning Scheme No. 2
PDWSA	Public Drinking Water Source Area
POS	Public Open Space
SES	State Emergency Services
SKM	Sinclair Knight Merz
WAPC	Western Australian Planning Commission
WWTP	Waste Water Treatment Plant

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