



Statutory Planning Committee

Agenda Attachments

**Tuesday 11 August 2015
9.00 am**

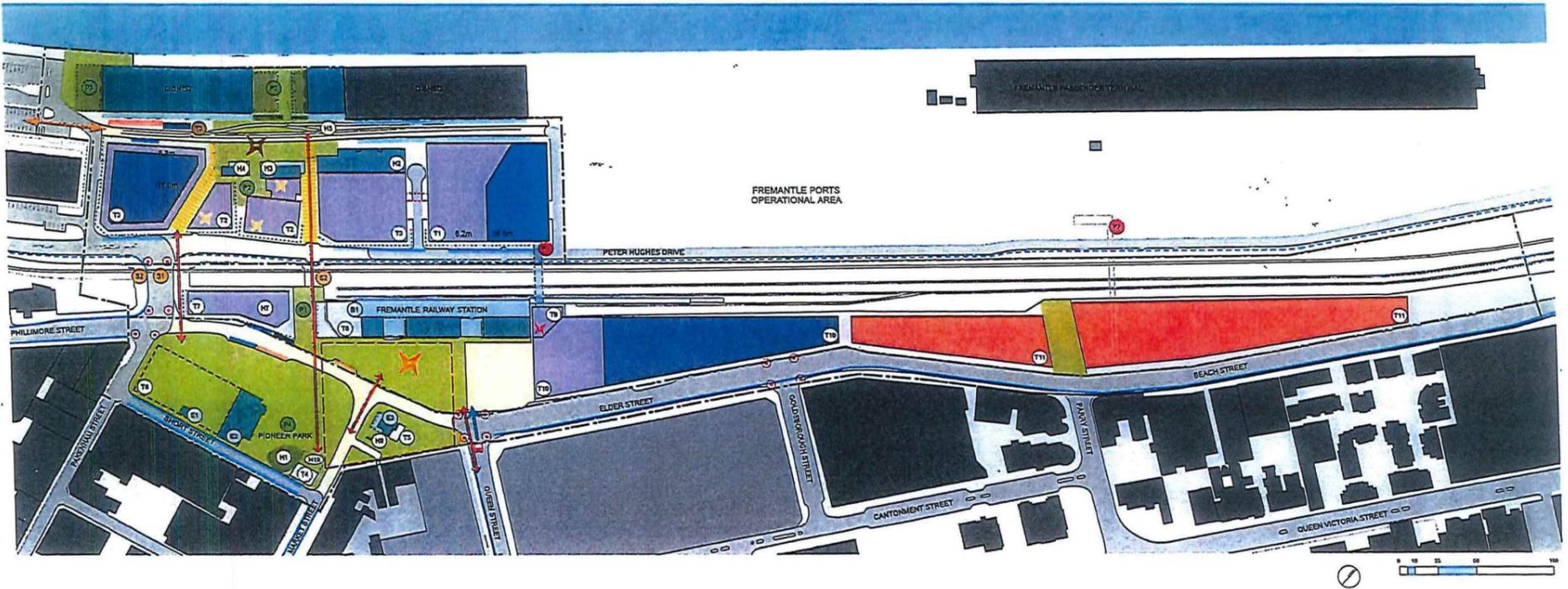
Report Category

- 9 Statutory Items for Decision**
- 10 Policy Items for Discussion/Decision**
- 11 Confidential Items (Statutory & Policy)**



ITEM NO: 9.1

Endorsement Victoria Quay Commercial Precinct Plan and Fremantle Station Precinct Plan



9

1.0 EXECUTIVE SUMMARY

Integrated Indicative Development Plan showing Pioneer Park Precinct, Station Precinct and the Commercial Precinct

KEY URBAN DESIGN ELEMENTS

- Station Square
- Relocated bus interchange east of Queen Street
- Key pedestrian connections
- Retention of east-west linear open space connections within Victoria Quay
- Primary public space located within heritage curtilage adjacent to important heritage buildings
- Key new buildings adjacent to heritage buildings

OPEN SPACE/ PUBLIC SPACE

- Primary public space in Victoria Quay Commercial Precinct
- Fremantle Railway Station forecourt
- Key public space linking the port to Fremantle Railway Station and city
- Sheltered public space
- Public space with commercial alfresco use
- Pioneer Park with increased amenity
- Public Open Space

HERITAGE BUILDINGS AND CURTILAGE

- C and D Sheds
- Moreton Bay Fig Tree
- Amenities Building (CY O'Connor Centre)
- Old Police Station (former Migrant Immigration Office)
- Waiting Room
- Remnant railway tracks
- Old Oil Store
- Taylor Memorial Drinking Fountain and Horse Trough
- Archaeological site

EXISTING BUILDINGS

- Electrical sub-station
- Puppet Theatre
- Pump Station No.3

HEIGHTS

- 1 - 2 storeys
- 2 - 3 storeys
- 2 - 3 storeys (subject to CoF approval)
- 3 - 4 storeys
- 4 - 6 storeys
- 10+ storeys
- Existing buildings within precinct area

NEW BUILDINGS

- Podium/tower building type (Ports Administration)
- Perimeter/street edge building type (West End vernacular)
- Low rise building type (Port vernacular)
- Public use building to highlight Pioneer Park's archaeology.
- Pumping Station extension to support new use
- Pioneer Park student or hotel building option
- Retail/commercial building (requires removal of redundant track)
- Western extension to Fremantle Railway Station (subject to approval)
- Eastern building to Fremantle Railway Station (subject to existing infrastructure being relocated or incorporated and approval)
- Air-space development over Bus Interchange (potential staff and commuter decked parking, public parking or commercial development, subject to approval)
- Commercial use providing corner activation for decked car parking building

TRANSPORT AND ACCESS

- Bus interchange entry from Queen Street (subject to road network redesign)
- CAT Bus Stop
- Taxi stand
- Bike lane
- Bike lane shared path
- Universal access parking
- Street parking
- Bike parking
- Proposed pedestrian overpass (subject to approval. To provide connection between Fremantle Railway Station and the Commercial Precinct development)
- Existing pedestrian overpass to Fremantle Ports Passenger Terminal (proposed Station Precinct's development may need to accommodate within the building envelope)
- Canopy to Platform 3 (to improve patron amenity)
- Drop-off zone
- Indicative location of traffic signals

STREETScape & MOVEMENT

- New road connection across rail line (subject to approval)
- New pedestrian on-grade access over railway line (subject to approval)
- Shared street
- Shared path and pedestrian only connection

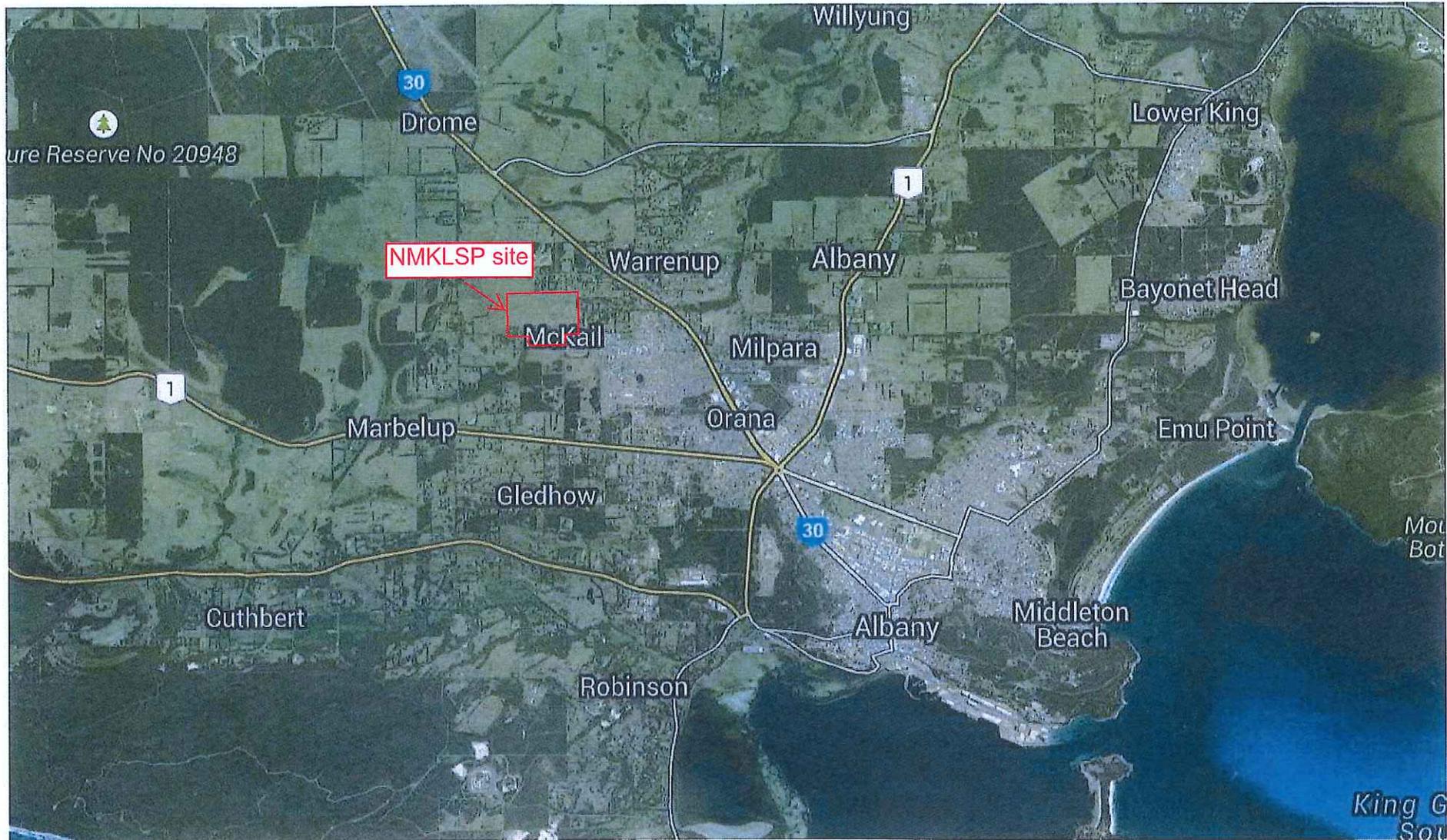
ATTACHMENT 2

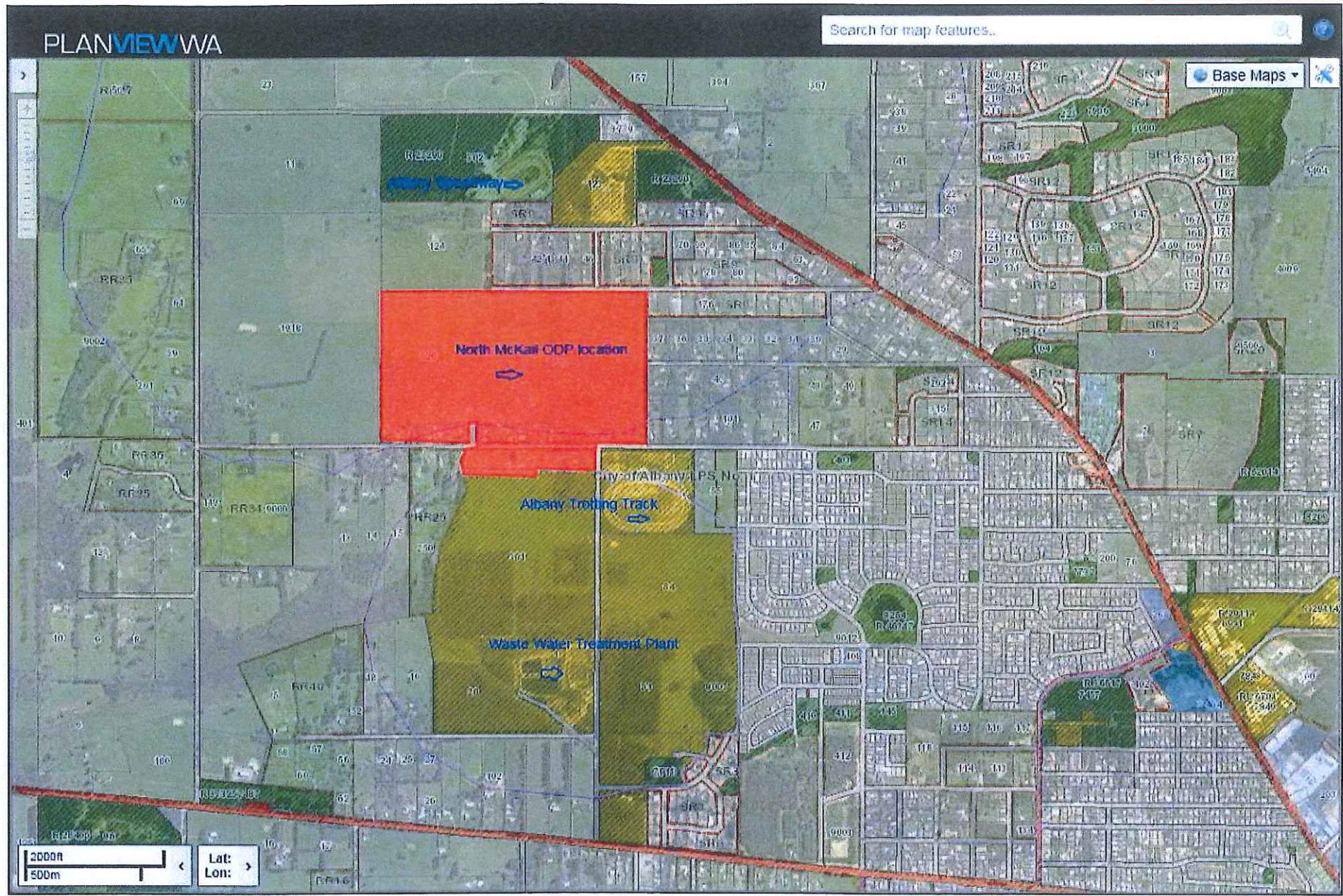


ITEM NO: 9.2

North McKail, Local Structure Plan, Albany

Attachment 1a: Bird's eye
Locality Plan Map





ATTACHMENT 3: SCHEDULE OF SUBMISSIONS NMKLSP

**City of Albany
Local Planning Scheme No.1
North McKail Local Structure Plan
Schedule of Submissions**

No.	Name/Address of submitter	Summary of submissions	City of Albany officer comments	WAPC recommendations
1	Department of Planning PO Box 1108 ALBANY WA 6331	<p>We have identified that there are a number of issues which require further consideration, these being:</p> <ol style="list-style-type: none"> Incorporation of the Speedway Buffer onto the ODP map with appropriate noise mitigation actions into the ODP text: <p>Currently the noise plot within Attachment 3 only to 61dB(A), buffer and noise mitigation will be required to 40dB(A).</p> <ol style="list-style-type: none"> Incorporation of the Trotting Track buffer onto the ODP map giving an indication of the area which prohibits residential dwellings from being constructed: <p>Section 4.2 Attachment 3 recommends that prior to subdivision noise emissions of paceway are confirmed at the boundaries of Lots 300 and 507.</p> <ol style="list-style-type: none"> Incorporating an appropriate 	<p>Submission upheld.</p> <p>These matters can be addressed as follows:</p> <ol style="list-style-type: none"> The proponent has revised the application of the Quiet House Design Guidelines with 'Q1' and 'Q2' areas identified within the Speedway Buffer area, which can be indicated on plan. These dwellings will provide an acoustic barrier to those beyond, effectively reducing the noise contour to the south. <p>It is recommended that this modification is incorporated into the final Outline Development Plan.</p> <ol style="list-style-type: none"> This matter has been considered by the proponent and the noise buffer around the trotting track can be delineated on plan. It has also been found that the residential lots that will be created closest to the trotting track will only have to be constructed to level 'Q3' of the Quiet House Design Guidelines. <p>It is recommended that these modifications are incorporated onto the final Outline</p>	<p>Noted.</p> <p>Agreed modifications for these issues incorporated into modified ODP/LSP.</p>

		<p>location and area for a primary school site as required by the Department of Education (DoE).</p> <p>A suggested DoE site location was suggested close to the paceway with the inclusion of a regional park in the vicinity.</p> <p>4. Incorporation of an area of land to function as district open space providing for a full-size football oval, netball courts, etc. for Albany's north-western suburbs.</p> <p>Public open space calculations within section 4.6 require checking. There may be approximately 2200m² of public open space missing, which will assist in achieving area needed for district open space.</p> <p>Other public open space considerations:</p> <ul style="list-style-type: none"> • Remove Lot 124 from area calculations; • Check basin calculations are no including a rainwater tank for each lot to attenuate a 1:1 rainfall event (see reference on p28(ii)); and • The road widening deduction should be removed from the figures. <p>The following plans within the ODP</p>	<p>Development Plan.</p> <p>3. The proponent has discussed these requirements with the Department of Education and has identified a suitable primary school site toward the north-eastern corner of Lot 507, which is co-located with a football oval. If necessary, it may be possible to extend the primary school site over part of Lot 37 Morgan Road.</p> <p>It is recommended that this modification is incorporated into the final Outline Development Plan.</p> <p>4. A 1.86ha area of land has been identified adjacent to the primary school site, which can function as district open space and incorporates a football oval. Other public open space areas have been identified and can accommodate a five-a-side soccer pitch and basketball court.</p> <p>The public open space calculations have been revised accordingly.</p> <p>It is recommended that these modifications are incorporated onto the final Outline Development Plan and into the attendant planning report.</p> <p><i>Land Use and Zoning Plan</i></p> <p>It is acknowledged that there are zoning errors on this plan and it recommended that it is modified to accurately reflect the current zonings.</p>	
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		<p>also require amending:</p> <p>Land Use and Zoning Plan:</p> <ul style="list-style-type: none"> • Incorrect zonings indicated on the plan. <p>Local and Neighbourhood Context:</p> <ul style="list-style-type: none"> • Remove the far north 'Potential Local Centre'; • The speedway buffer is missing from the plan; and • The proposed Wastewater Treatment Plant (WWTP) buffer is incorrect. <p>Outline Development Plan:</p> <ul style="list-style-type: none"> • Include the Speedway, WWTP and Trotting Track buffers; • Indicate the road widening more clearly; • Include a primary school site; • Include an appropriately sized regional park; • Relocate the local centre across from the Trotting Track; and • Show cycle and pedestrian paths. <p>Outline Development Plan – Plan details:</p> <ul style="list-style-type: none"> • Increase Q2 house design areas; and • Increase the Trotting Track buffer (as per Amendment No. 271 buffer 	<p><i>Local and Neighbourhood Context</i></p> <p>It is agreed that the far north 'Potential Local Centre' is unnecessary. It is also acknowledged that the speedway buffer should be incorporated into the plan and that the WWTP buffer is incorrect.</p> <p>It is recommended that this plan is modified to:</p> <ul style="list-style-type: none"> • Remove the far north 'Potential Local Centre'; • Incorporate the speedway buffer; and • Incorporate the correct WWTP buffer. <p><i>Outline Development Plan</i></p> <p>These matters have been discussed with the proponent and, as outlined above, it has been agreed that 'Q1' and 'Q2' Quiet House Design areas will be incorporated onto the plan, rather than the Speedway Buffer.</p> <p>It has also been agreed that an appropriately sized district park should be included. A "regional park", which would describe the Centennial Park Sporting Precinct, appears to be an error in the Department of Planning advice.</p> <p>The remaining matters are also agreed, although the relocation of the local centre, perhaps better described as reorientation, is considered unnecessary with the application of 'Q3' Quiet House Design Guidelines. It should also be noted that the proponent has provided a supplementary pathways plan for clarity of the footpath and dual-use path locations.</p>	
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		requirements).	<p>It is recommended that this plan is modified to:</p> <ul style="list-style-type: none"> • Include expanded 'Q1' and 'Q2' Quiet House Design areas along the northern extent of Lots 507 and 526 in lieu of the Speedway Buffer; • Include the WWTP and Trotting Track buffers; • Indicate the road widening more clearly; • Include a primary school site; • Include an appropriately sized district park; and • Show cycle and pedestrian paths. <p><i>Outline Development Plan – Plan details</i></p> <p>These matters have been agreed with the proponent.</p> <p>It is recommended that this plan is modified to:</p> <ul style="list-style-type: none"> • Increase Q2 house design areas; and • Increase the Trotting Track buffer (as per Amendment No. 271 buffer requirements). 	
2	Telstra Locked Bag 2525 PERTH WA 6330	No objection.	Noted.	Noted.
3	Water Corporation PO Box 100 LEEDERVILLE WA 6007	No objection to the intent of the <i>McKail North Outline Development Plan</i> (ODP) and <i>Wood & Grieve Preliminary Engineering Services</i> (ES) report. However, the following comments should be noted: All rezoning and development	Noted. Any future rezoning or development applications within the WWTP buffer Special Control Area will be referred to the Water Corporation for advice. It is understood that the reticulated water and	Noted and upheld. Agreed modifications for these issues incorporated into modified ODP/LSP.

		<p>applications within the (Wastewater Treatment Plant buffer) Special Control Area are to be referred to the Corporation for advice.</p> <p>No existing reticulated sewer services exist within the proposed development area. A sewer plan and staging strategy will need to be defined by the developer. Pump stations should be located within public open space wherever possible, for buffer purposes and potential future water treatment and supply to the environment.</p> <p>Existing reticulated water services within the area are inadequate for the proposed development. A water plan and staging strategy will need to be defined by the developer.</p> <p>It is noted that the Albany Wastewater Treatment Plant buffer overlaps the Future Urban area and will require definition of compatible land uses. Residential is to be excluded.</p> <p>It is noted that Local Planning Scheme No. 1 includes a revised buffer for a Special Control Area. Zoning and development applications should be approved in accordance with the Corporation's Information Sheet and be referred to the Corporation for advice.</p> <p>Both Willyung pump stations D and F will need to be built to service the</p>	<p>sewer networks will have to be upgraded and extended at the time of subdivision.</p> <p>As per the Water Corporation's advice, residential land uses will be excluded from any areas affected by the WWTP buffer.</p>	
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		<p>proposed development.</p> <p>The DN200 water mains in Lancaster Road will need to be upgraded in size. The water main in Morgan Road will need upgrading in size. There is a proposal to install a new supply main to Mt. Barker. A service corridor will be required for this main.</p> <p>It is noted that <i>“staging is most likely to be directed by the provision of deep sewer services.”</i> As a result, development will occur from the designated sewer catchments in the report. Noted in ES report Figure 3 Wastewater Reticulation Services. It would be helpful if staging of land areas could be more specific so the Corporation can program its works. However, in concept, a pump station and pressure main will need to be built before land can be developed.</p>		
4	Western Power GPO Box L921 PERTH WA 6842	No objection.	Noted.	Noted.
5	Department of Water PO Box 525 ALBANY WA 6331	The Department approved the local water management strategy for the site in January 2013. As the site is developed, urban water management plans will be required to be prepared. These documents will need to be prepared in accordance with the approved local water management strategy.	An urban water management plan, or plans, prepared in accordance with the approved local water management strategy will be required at the time of subdivision.	Noted and upheld. Agreed modifications for these issues incorporated into modified ODP/LSP.

6	Department of Environment and Conservation 120 South Coast Highway CENTENNIAL PARK WA 6330	DEC has no objections to the current ODP but will retain an interest in the formerly proposed planted vegetation buffer when a new ODP is proposed for Lot 123 Link Road and/or Lot 124 Gladville Road.	Noted.	Noted.
7	Department of Education 151 Royal Street EAST PERTH WA 6004	<p>The Department of Education has reviewed the document and wishes to make the following comments:</p> <ul style="list-style-type: none"> • The Department has been advised that this development would have approximately 700 residential lots and notes that full development may only be achieved in the longer term. • These lots and any further future development to the west are expected to contain its own primary school as identified in point 3.6 <i>Social and Community Services</i> of the Outline Development Plan. • As the need for a primary school has been recognised, the Department considers that it is necessary to identify a potential site at a higher level than the Conceptual District Structure Plan. By identifying a more detailed location, the Department and landowners will gain certainty of having a site that will provide facilities for the McKail North residential development. • The detailed site location will need 	<p>Submission upheld.</p> <p>The proponent has discussed these requirements with the Department of Education and has identified a suitable primary school site toward the north-eastern corner of Lot 507, which is co-located with a football oval. If necessary, it may be possible to extend the primary school site over part of Lot 37 Morgan Road.</p> <p>It is recommended that this modification is incorporated into the final Outline Development Plan.</p>	<p>Noted and upheld. Agreed modifications for these issues incorporated into modified ODP/LSP.</p>

		<p>to have a due diligence site inspection carried out by the Department's consultants GHD to ensure that the proposed site is suitable for a primary school.</p> <p>To enable the Department to support the <i>McKail North Outline Development Plan</i> it will require more certainty regarding the location of the primary school, as outlined above.</p>		
8	<p>Department of Fire and Emergency Services 5 Hercules Crescent CENTENNIAL PARK WA 6330</p>	<p>DFES expects the methodology included in the 'Planning for Bush Fire Protection' document is applied to any development.</p>	<p>Noted.</p> <p>There is no significant risk of bushfire in the draft Outline Development Plan area. However, the appropriate setbacks from vegetation will be assessed at the time of subdivision and development.</p>	<p>Noted and upheld.</p>
9	<p>Department of Regional Development and Lands PO Box 1143 WEST PERTH WA 6872</p>	<p>No comments.</p>	<p>Noted.</p>	<p>Noted.</p>
10	<p>Albany Harness Racing Club PO Box 665 ALBANY WA 6331</p>	<p>We believe a buffer zone should be implemented east of Timewell Road and south of Lancaster Road on the corner. This is consistent with the City's planning, as a buffer zone has been placed on the east end of the present stables and south of the Harness Club and track.</p>	<p>Submission upheld.</p> <p>This matter has been considered by the proponent and the noise buffer around the trotting track can be delineated on plan. It has also been found that the residential lots that will be created closest to the trotting track will only have to be constructed to level 'Q3' of the Quiet House Design Guidelines.</p> <p>It is recommended that these modifications are</p>	<p>Noted and upheld.</p> <p>Agreed modifications for these issues incorporated into modified ODP/LSP.</p>

			incorporated onto the final Outline Development Plan.	
11	Public submission	<p>My concern is that we are down-gradient of the development and that all runoff will discharge into our property, eventually reporting to the lake in the southern part of our block (approximately 14ha).</p> <p>I would therefore like to be reassured that provisions have been made to (a) arrest the rate of flow and thus minimise downstream erosion and (b) capture the runoff of nutrients, bearing in mind the tendency to use excessive quantities of garden fertiliser in residential areas.</p>	<p>Noted.</p> <p>A local water management strategy has been developed for the subject land and approved by the Department of Water. It will be supplemented by urban water management plans to detail the management of stormwater on-site.</p> <p>The drainage infrastructure will be designed to attenuate runoff to pre-development rates. The stormwater drainage design will minimise downstream erosion and capture the runoff of nutrients.</p>	Noted and upheld.
12	Public submission	As adjoining owners we totally support and endorse this proposal.	Noted.	Noted.
13	Public submission	<p>I purchased my lot in late 1986 and moved here in April 1987.</p> <p>Owing to the fact that I came off a farm, where I'd lived all my life until that point, I wanted space and to be able to have my miniature horses, birds, etc. and to enjoy the wild bird life and animals. I have also planted a number of trees and shrubs to encourage the bird life.</p> <p>A great number of kangaroos, both at the front and rear of our properties will sadly be affected if the plans go ahead, so this should be considered.</p>	<p>Noted.</p> <p>The proposed draft Outline Development Plan will provide property owners with the opportunity to subdivide and develop their land, should they wish to do so. However, there is no obligation to do so, leaving those landowners free to enjoy their property as they do at present.</p> <p>As outlined above, drainage infrastructure will be designed to attenuate runoff to pre-development rates. The stormwater drainage design will minimise downstream erosion and capture the runoff of nutrients.</p>	Noted.

		I am totally opposed to having my small holding developed. I don't mind the plans for the north and south of Lancaster Road, provided that the water runoff does not affect my property.		
14	Public Submission	<p>In 1986 we purchased our lot on Lancaster Road, McKail because it was rural and had some natural bush.</p> <p>We have made this property our life and intend to live out our lives here.</p> <p>The plan shows that our land and several other properties are not required for the proposed changes because they all face Lancaster Road. As our home is located on more than one of the proposed subdivisional lots, its demolition would be required in order for our lot to be subdivided.</p> <p>Lots 1-13 Lancaster Road are 4000m² in area and leaving them as they are would have no impact on the proposed development.</p> <p>The majority of local residents are retired and have no desire to be relocated.</p> <p>When considering the proposal, the City must have consideration for the local bushland providing a habitat for white and red-tailed cockatoos. We and our neighbours have retained our bush partly for this reason; there is</p>	<p>Noted.</p> <p>As outlined above, the proposed draft Outline Development Plan will provide property owners with the opportunity to subdivide and develop their land, should they wish to do so. However, there is no obligation to do so, leaving those landowners free to enjoy their property as they do at present.</p> <p>The draft Outline Development Plan has been referred to the Department of Environment and Conservation (now the Department of Parks and Wildlife), who have no objection to the proposal.</p> <p>The draft Outline Development Plan area primarily applies to cleared farm land, which will lead to very little loss of habitat.</p>	Noted.

		<p>also an abundance of rosella redcap parrots and blue wrens around these blocks. Should the proposal proceed, the environmental authorities must be advised in order to arrange protection for these species.</p> <p>It is quite simple for the City to exclude the Lancaster Road properties from the proposed development but allow it to proceed from our rear boundaries, extending into the cleared farm land, thereby preserving the current environment for both wildlife and the local residents.</p> <p>We object to the proposed subdivision.</p>		
15	Public submission	<p>We bought our property in 1986 to retire on, which we are doing quite happily.</p> <p>As far as the rest of the development plan is concerned, we have no problem with it. We enjoy living here and we have no desire to sell or leave here until we wish to.</p>	<p>Noted.</p> <p>As outlined above, the proposed draft Outline Development Plan will provide property owners with the opportunity to subdivide and develop their land, should they wish to do so. However, there is no obligation to do so, leaving those landowners free to enjoy their property as they do at present.</p>	Noted.
16	Public submission	<p>We are writing this letter in disgust, as the McKail North Outline Development Plan gives no regard to residents already living on Lancaster Road and their current lifestyle.</p> <p>The reason we bought here was for the rural lifestyle. The Outline Development Plan makes no consideration to maintaining some of</p>	<p>Noted.</p> <p>As outlined above, the proposed draft Outline Development Plan will provide property owners with the opportunity to subdivide and develop their land, should they wish to do so. However, there is no obligation to do so, leaving those landowners free to enjoy their property as they do at present.</p>	Noted.

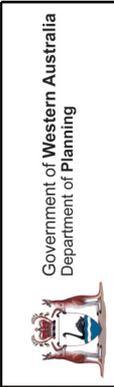
		<p>that current lifestyle, instead choosing to make it as boxed in with houses as possible. These smaller blocks will have a huge impact on the privacy and quietness of the location. What about the current animals we have on our property. Is this going to be limited? Will we have to give up this rural lifestyle?</p> <p>By having a road that runs along our boundary we would feel we would be completely boxed in.</p> <p>Some questions we have:</p> <p>Will our zoning be changed? Will our rates go up? Will our water rates go up? Will we be forced to pay for deep sewage, even though we all have septic?</p> <p>Is there a plan for a barrier fence to be constructed along the northern boundary of our properties, at no cost to us?</p> <p>Is there a plan to upgrade the width of Lancaster road to accommodate the increase in traffic?</p>	<p>However, it is acknowledged that should the proposed developments proceed, it will fundamentally alter the character of the area.</p> <p>Any existing legal uses on the affected land, such as the keeping of stock, will be permitted to continue as a non-conforming use right, until such time as the land is subdivided and developed.</p> <p>In answer to the questions posed:</p> <p><i>Will our zoning be changed?</i></p> <p>The zoning was changed in 2010 as part Town Planning Scheme Amendment No. 277.</p> <p><i>Will our rates go up?</i></p> <p>Excepting annual increases, rates should only increase if the Gross Rental Value (GRV) increases. This may happen if the land is subdivided and developed in accordance with the Outline Development Plan.</p> <p><i>Will our water rates go up?</i></p> <p>The water rates should not increase as a result of this plan.</p> <p><i>Will we be forced to pay for deep sewage, even though we all have septic?</i></p> <p>Once the area is developed or if sewer infrastructure passes the property (even if it services another development), the Water Corporation may require its connection to the reticulated sewer network. However, wider</p>	
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			<p>contributions to the cost of sewerage infrastructure will only be required if the land is subdivided or developed.</p> <p><i>Is there a plan for a barrier fence to be constructed along the northern boundary of our properties, at no cost to us?</i></p> <p>Fencing is ordinarily a civil matter for neighbours to resolve between themselves. However, most developers construct fences as part of their development.</p> <p><i>Is there a plan to upgrade the width of Lancaster road to accommodate the increase in traffic?</i></p> <p>It is the City of Albany's intention to widen Lancaster Road in the long term.</p>	
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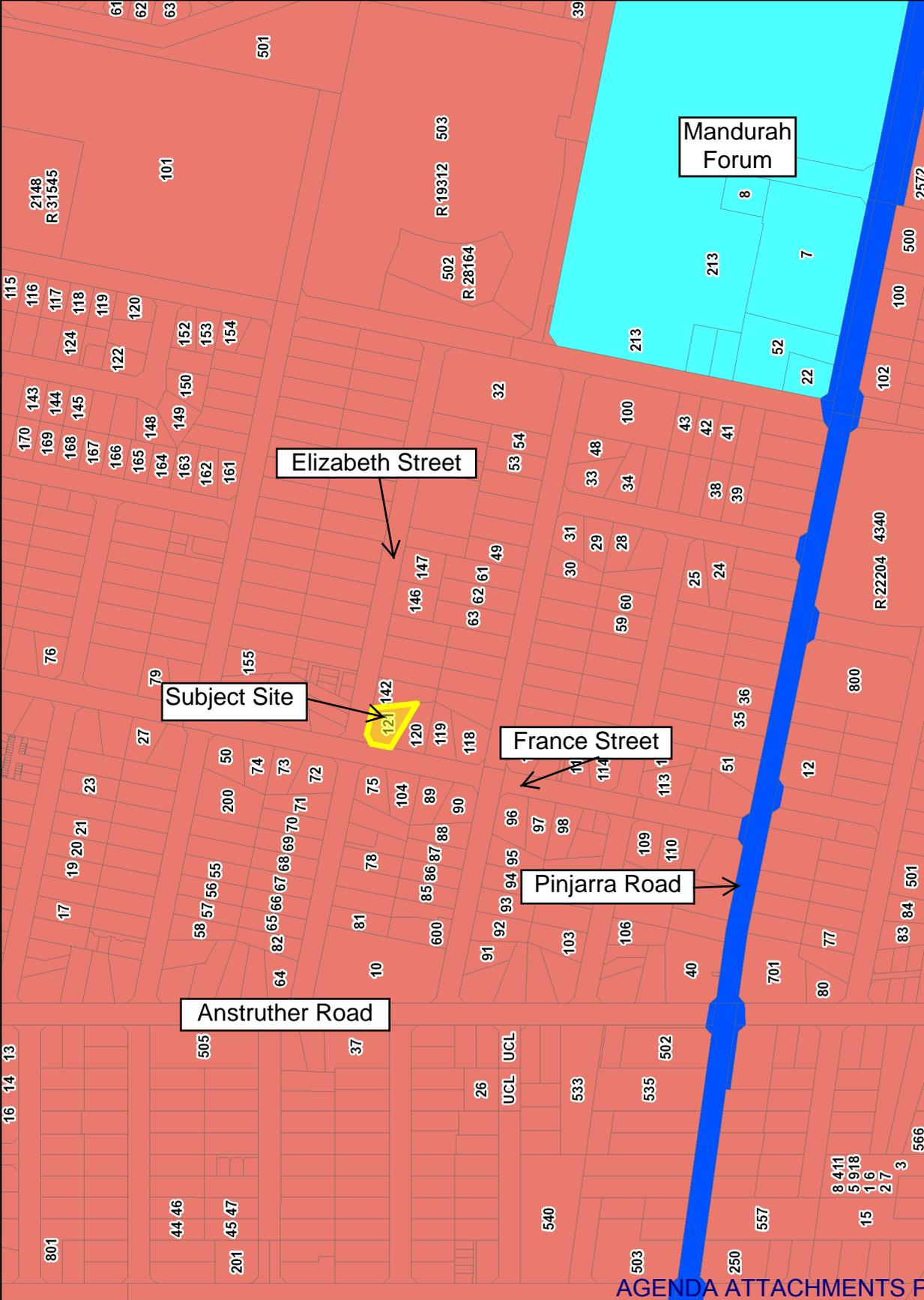
ITEM NO: 9.3

Subdivision to Create 7 Survey Strata Lots for Residential Purposes



- Legend**
- Local Government Area
 - Cadastral (View 1)
 - Public Transport Stops
 - Standard Bus
 - Public Transport Routes
 - School Bus
 - Standard Bus
 - Region Scheme Boundary
 - Region Scheme Zones and Rest
 - Other regional roads
 - Regional centre
 - Urban

Notes:
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 Produced by: FUNCTIONALITY TO COME
 Date produced: 30-Jun-2015



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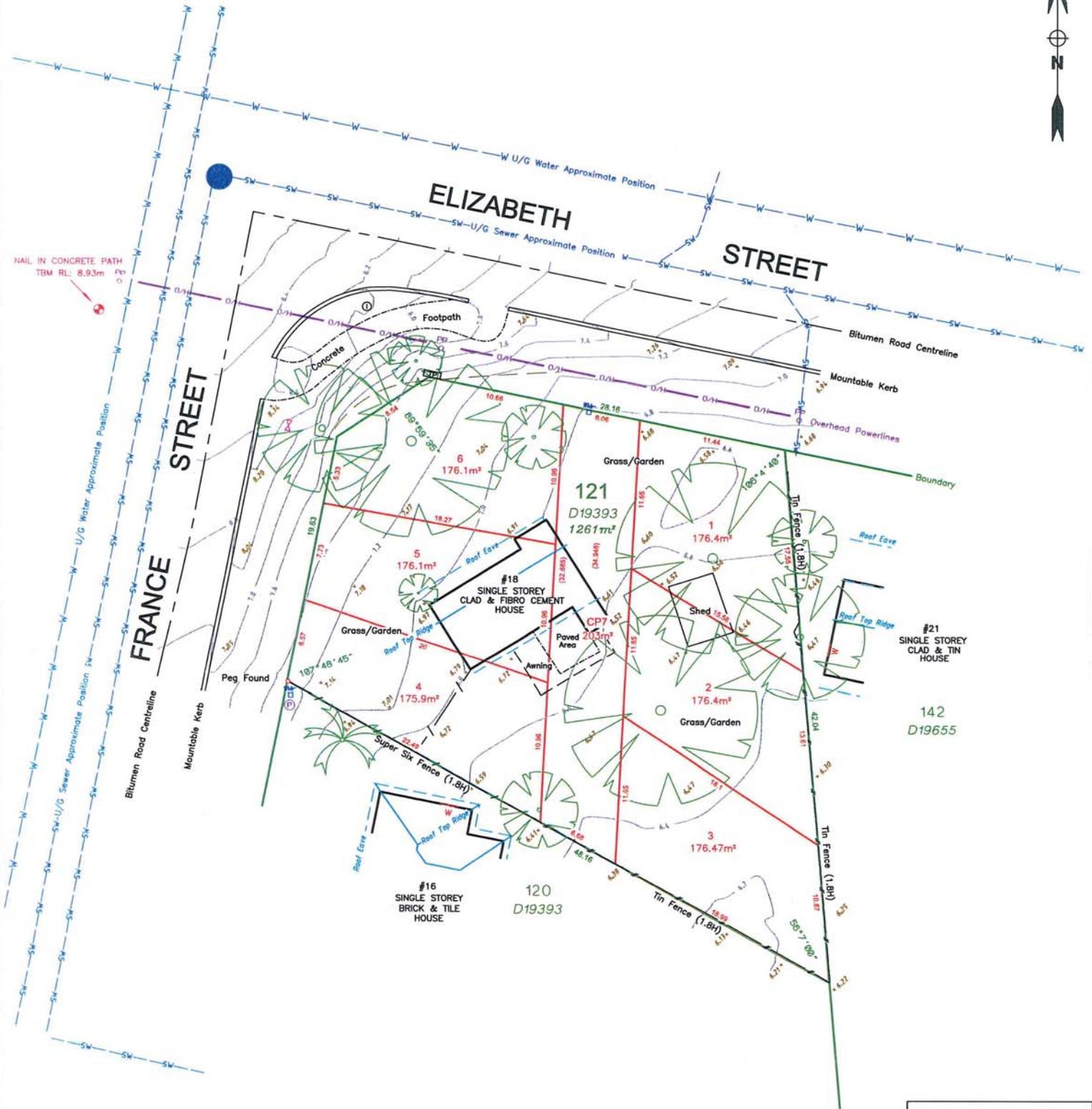
Projection: WGS 1984 Web Mercator Auxiliary: Sphere

PlanViewWA Map

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PlanViewWA
[Link to viewer](#)

DEPARTMENT OF PLANNING	
DATE	FILE
18/05/2015	559-15



APPROVED BY CLIENT

Proposed Survey Strata		
ORIGINAL LOT	121	1261m ²
PROPOSED LOT 1	1	176.4m ²
PROPOSED LOT 2	2	176.4m ²
PROPOSED LOT 3	3	176.47m ²
PROPOSED LOT 4	4	175.9m ²
PROPOSED LOT 5	5	176.1m ²
PROPOSED LOT 6	6	176.1m ²
PROPOSED LOT	CP7	203.6m ²

THE TITLE BOUNDARIES AS SHOWN HEREON WERE NOT MARKED AT THE TIME OF SURVEY AND HAVE BEEN DETERMINED BY PLAN DIMENSIONS ONLY, POSITIONED OVER EVIDENCE OF OCCUPATION. IT SHOULD BE NOTED THAT UNDERGROUND SERVICES ARE SHOWN BUT NEED TO BE VERIFIED BY THE RELEVANT AUTHORITY PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION, AND THE CERTIFICATE OF TITLE SHOULD BE CHECKED FOR EASEMENTS AND ENCUMBRANCES. THEREFORE, NO RESPONSIBILITY IS TAKEN FOR BOUNDARY POSITIONS AND SERVICE LOCATIONS.

LEGEND	ELECTRICITY		GAS / DRAINAGE		COMMS / GENERAL		STORMWATER		VEGETATION		WATER	
	⊕	⊙	⊕	⊙	⊕	⊙	⊕	⊙	⊕	⊙	⊕	⊙
	DOMESTIC POWER POLE	POWER POLE	GAS MARKER	WINDOW	POST BOX	TRAFFIC SIGN	SEPTIC TANK	BUSH EDGE	BUSH	BORE	HYDRANT	METER
	GUY (ANCHOR) WIRE	POWER POLE w. LIGHT	CATHODIC PT	POST BOX	GULLY TRAP	TELECOM PIT	SEWER ID (VENT)	PALM TREE	SHRUB	HYDRANT	METER	STOP VALVE
	LIGHT POLE	POWER TRANSFORMER	GULLY TRAP	TELECOM PIT	SEWER MANHOLE	ESQUARE/ROUND	SEWER MANHOLE	TREE	TAP			
	POWER DOME	STAY POLE										

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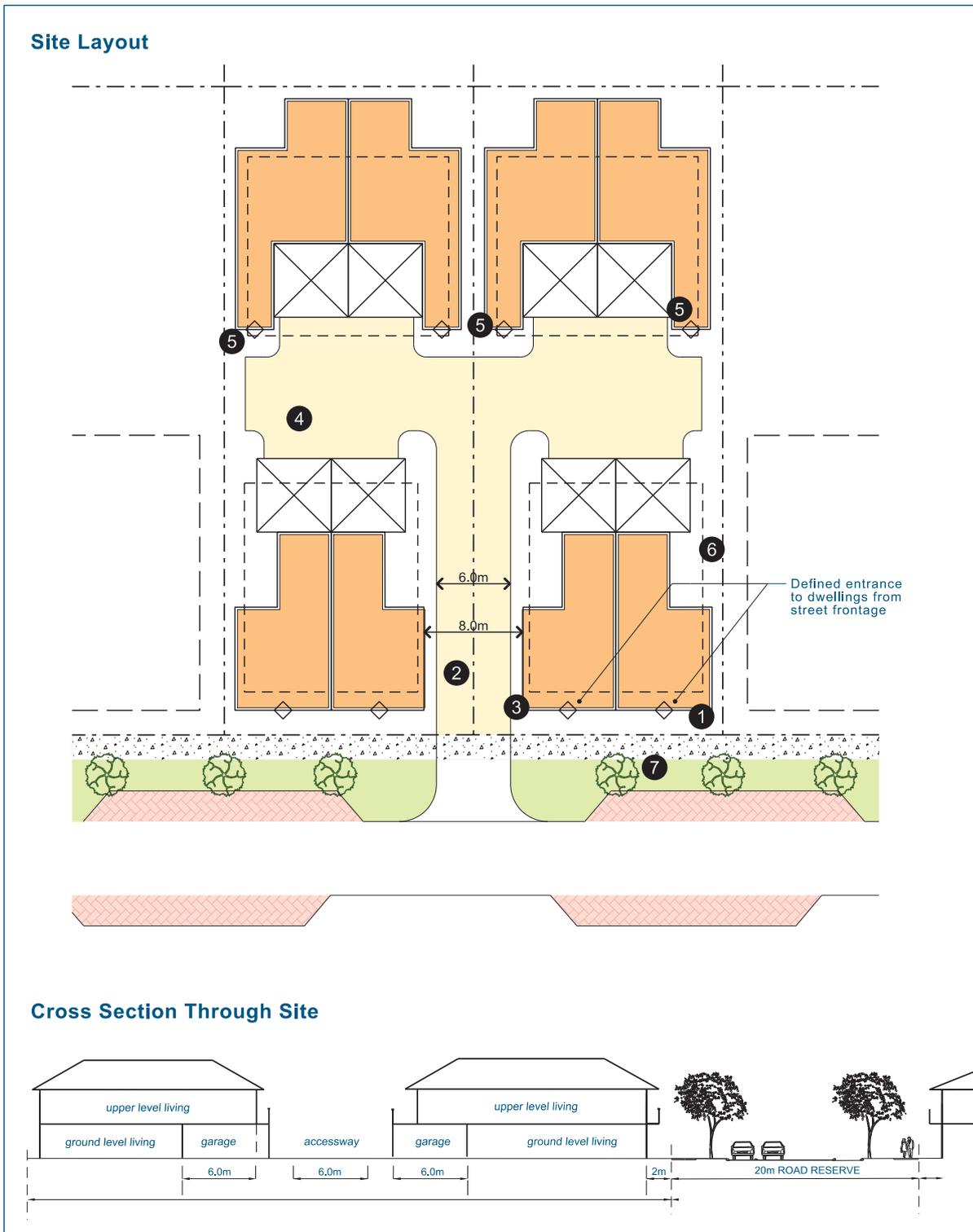
(08) 9583 5511
 www.ausurv.com.au

25 DAVEY STREET
 MANDURAH, W.A. 6210
 mandurah@ausurv.com.au

CLIENT	JOE HOFMAN	
TITLE	SURVEY STRATA LOT 121 ON PLAN 19393 #18 FRANCE STREET, MANDURAH	
SCALE	1:300 @ A3	
CONTOUR INTERVAL	0.2m	
SURVEYED	DATE	28/04/2015
DRAWN	DATE	28/04/2015
APPROVAL	DATE	07/05/2015

REVISION NO.	A	
HORIZONTAL DATUM	ASSUMED	
VERTICAL DATUM	AHD (SEWER)	
PLAN NUMBER	001	

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Requirements

- ① 2.0m front setback, with balconies permitted to be 1.0m setback from boundary. Clearly defined entrance to dwelling from street, with no private open space / courtyards at ground level permitted within front setback.
- ② Shared crossover between two lots with a total width of 6.0m (3.0m each on each lot). Buildings setback 1.0m from driveway.
- ③ Setback to be landscaped and provided with suitable lighting.
- ④ Driveway in an 'L' shape configuration, with all parking off rear portion of access
- ⑤ Defined entrances to rear dwellings.
- ⑥ Possible extent of upper storey element shown dotted. Side boundaries to be as per Residential Design Codes.
- ⑦ Upgraded street verge, with quality landscaping treatment, street trees and new footpath. Visitor parking may be constructed to City of Mandurah specifications, where suitable or as informal on-street parking.

Figure 4 - Residential R60 Site Layout



- Plan Legend**
- Designated Shared Crossover Location
 - - - Mixed Use Shared Access Way Location
 - Precinct Plan Boundary
- Refer to Clause 2.3.8 and 2.4.6 of the Precinct Plan regarding the provisions relating to the Shared Driveways Plan*

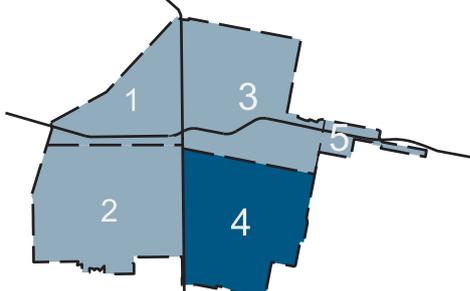


Figure 5 - Shared Driveway Locations Plan 4 of 5 (South-East)



ITEM NO: 9.4

Modification of Frasers Landing Outline Development Plan



VISION

PURPOSE AND INTENT

Fraser's Mandurah undertake to develop Pl Lot 440 Wanjeep Street through to the completion of all built form in a series of 'Hamlets' as shown on the Outline Development Plan (ODP). Any departure from this undertaking will require a modification to the ODP in the context of the public road network, public open space and detailed area plans.

RESIDENTIAL: Each hamlet shall be designed to ensure:

- 'Hamlets' are to be bounded on all sides by public roads (apart from those edges adjoining adjacent properties);
- Dwelling units to front public roads;
- A high level of pedestrian and vehicular permeability;
- Private roads within each 'Hamlet' to comply to City of Mandurah (C.O.M) specifications (eg for waste collection vehicle access);
- Maximum tree retention (in common areas and road reserves);
- Optimum solar passive orientation;
- Optimum passive surveillance of public/commercial spaces.

MIXED USE/COMMERCIAL: The mixed use/commercial precincts shall be designed based on 'Main Street' principles with buildings designed and oriented to streets and public spaces, on-street parking provided, pedestrian movements being maximised and robust building design being utilised to accommodate potential change of uses over time.

The building layout and open space areas shown within the hamlets are indicative only (with the exception of significant habitat lines identified on the ODP) and shall be subject to further design as part of the detailed area plan requirements.

OUTLINE DEVELOPMENT PLAN PROVISIONS

Development within the ODP shall be limited to a maximum of 1250 dwelling units. Density and dwelling yield within each 'hamlet' shall be determined through the preparation and required approval of detailed area plans and be generally in accordance with those indicated in the ODP.

Detailed Area Plans shall be prepared and approved for each 'Hamlet' as a condition of subdivision to create the 'Hamlet Lots' and/or prior to development approval being issued and shall be in accordance with the purpose and intent of the Outline Development Plan.

The Detailed Area Plans shall address the following:

- Height
- Site layout, dwelling location, type and yield
- Land use
- Vehicle parking and access (including visitor/on street parking)
- Setbacks to streets and dwellings
- Architectural design elements
- Any other element deemed necessary by the City of Mandurah to ensure appropriate built form outcomes

Any proposed changes to the ODP which affect the size of the Core Conservation Reserve shall be referred to the EPA as a proposal in accordance with Section 38 of the Environmental Protection Act 1986.

Contributions toward road upgrades/community infrastructure will be subject to discussion and agreement between Council and the proponent.

A development staging plan is required to be prepared and submitted prior to consideration being given for final approval of the ODP.

- The following management plans will be required to be prepared, approved and implemented to the specifications and satisfaction of the City of Mandurah in accordance with Appendix 10 of Town Planning Scheme No. 3 (Scheme Amendment No. 78).
- Tree Management Plan
 - Wildlife Management Plan
 - Flora Relocation Management Plan
 - Mosquito Management Plan
 - Foreshore and 'Core Conservation Reserve' Management Plan
 - Nutrient and Irrigation Management Plan
 - Artificial Water Body Management Plan
 - Acid Sulfate Soils Management Plan
 - Urban Water Management Plan
 - Vegetation Retention Management Plan

A Strata Title Management Plan and Management Statement will be required to be prepared and approved to the specifications and satisfaction of the City of Mandurah as a condition of any subdivision approval.

APPROXIMATE DWELLING YIELD FOR EACH 'HAMLET'

HAMLET	SINGLE LOTS	TOWNHOUSES	APARTMENTS	TOTAL
1. Wanjeep Commercial Node	-	10	-	10
2. Ethly Hamlet	10	30	50	90
3. Wanjeep Hamlet	30	40	70	140
4. Wanjeep Hamlet	25	40	60	125
5. Waterfront Hamlet	5	45	100	150
6. Inlet Hamlet	5	45	135	185
7. Quay Commercial Node	-	-	-	-
8. Inlet Apartments	5	55	200	260
9. Wanjeep Commercial Node	-	10	-	10
10. Southern Hamlet	25	40	60	125
11. Southern Hamlet	15	30	30	75
12. Southern Hamlet	5	30	45	80
TOTAL	125	375	750	1250

LEGEND

- ODP BOUNDARY
- RESIDENTIAL
- MIXED USE/COMMERCIAL
- PUBLIC OPEN SPACE
- ARTIFICIAL WATER BODY
- GAZETTED ROADS
- 'HAMLET' BOUNDARY/NUMBER
- SIGNIFICANT HABITAT TREE



DESIGN PRINCIPLES

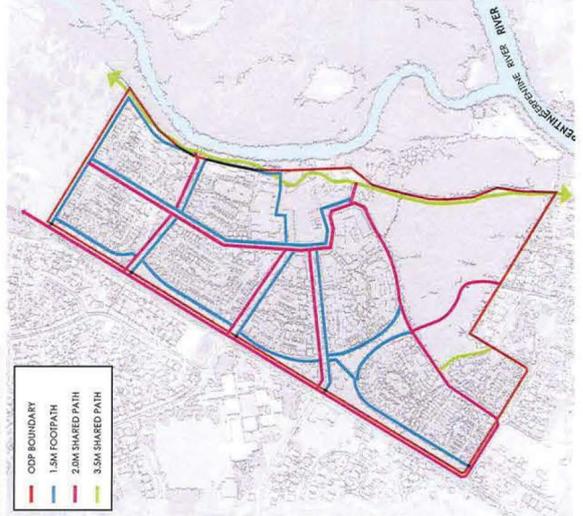
FILE REF: A1889
COUNCIL APPROVED
 DATE 26 / 6 / 2006
 APPROVED / ENDORSED BY
 WAPC ON 10 / 10 / 2006

MAXIMUM HEIGHT LIMIT PLAN



- Maximum height limits are supported in principle but shall be subject to more detailed design to address:
- Impacts on existing and prospective visual amenity.
 - Visual impacts on the local skyline and on views from natural areas.
 - The range, value and appropriateness of design solutions.
 - Additional criteria as set out in the City of Mandurah's "Points of Difference" report to Council.

SITE PATH NETWORK PLAN



LEGEND

- Boundary
- Frasers Hamlets R50
- Residential R30 - R80
- Residential R20 - R40
- ✳ Potential Retail Location
- Core Conservation Reserve (POS)
- Public Open Space
- Lake
- Access Street A / B
- Other Roads
- Dual Use Path
- - - Footpath (on one side of all "Other Roads")



PLAN 1: OUTLINE DEVELOPMENT PLAN

BUSHFIRE MANAGEMENT

Those lots identified in the Bushfire Management Plan as being in close proximity to the conservation reserve and Regional Open Space shall incorporate measures to mitigate bushfire risk in accordance with Australian Standard AS3959.

RESIDENTIAL DENSITY CODES PLAN

At the time of subdivision, a Residential Density Code Plan is to be submitted consistent with any residential density ranges shown on the Structure Plan, and shall be approved by the WAPC at the time the subdivision application is being determined. The Residential Density Code Plan shall thereafter form part of the Structure Plan.

Further detail regarding Residential Density Code Plans can be found in Part 1, Clause 2.1 of the ODP.

PERMISSIBILITY

Land Use Permissibility for zones within the Outline Development Plan shall be in accordance with the Residential zone under the Scheme, except for the variations listed in Clause 1.2 and Table 2 of the Outline Development Plan.

Owner / Address	Submission (Summarised comments)	Council's Comment	WAPC Comment
1. Water Corporation	a. If the revised ODP is adopted, the Corporation will consider whether infrastructure planning and the timing of projects in this area needs to be adjusted.	a. Noted.	a. Dismissed. The developer will be required to provide standard reticulated potable water and wastewater services to the area subject to the modified ODP.
2. B Burns (received via email)	a. Prefer no access to Birchley Road as there is already a lot of traffic using Birchley Road to access the boat ramp.	a. Access to Birchley Road is proposed in the approved ODP and a reduction in traffic volume is anticipated, on the basis that the overall dwelling yield has substantially decreased.	a. Dismissed. The ODP already proposes access to Birchley Road and the additional traffic using Birchley Road should be less than previously expected due to the significantly reduced lot yield.
3. D Templeman MLA (received via email)	a. This part of the tributary should be closed to motorised vessels as part of the ODP process. b. A low-impact landing should be provided for paddle craft.	a. The tributary is outside the ODP area; however, this matter has been raised (separately) with the Department of Transport. b. Noted. The City of Mandurah is currently discussing a proposal for a non-powered launch site at Frasers Landing with the applicant.	a. Dismissed. The closure of a waterway to motorised vessels is beyond the scope of an outline development plan and can only be achieved through a separate statutory process managed by the Department of Transport. b. Dismissed. The adjacent waterway is outside the ODP area and is not Crown land.
4. O & J McGann 5 Cassowary Crescent, Coodanup	a. Frasers are abandoning the concept and vision that purchasers bought into. b. Landowners have obtained legal advice which indicates Frasers' conduct is misleading and deceptive. c. Changing conditions do not negate the fact that people have bought into a particular lifestyle. d. Proposes the concept they bought into be maintained by: <ul style="list-style-type: none"> • retaining hamlets 1-6 as strata lots; • requiring homes in hamlets 1-6 harmonise with existing homes; • retaining 30 per cent of land in hamlets 1-6 as bushland; • completing outdoor & recreational 	a. Whilst the City of Mandurah acknowledges this concern, the loss of project vision is not a material planning consideration; however, the proponent indicates they remain committed to the Frasers Landing concept and vision. b. Noted. However, this is not a material planning consideration. c. Noted, see above (4a). c. It is recommended the undeveloped portions of Hamlets 2 & 3 be identified as 'Frasers Hamlets R50' and created as survey strata lots.	a. Dismissed. This is not a material planning consideration; however, the use of local development plans, design guidelines and the addition of a concept plan for the 'Serpentine Investigation Precinct' should assist with maintaining the built form. b. Dismissed. This is not a material planning consideration. c. Dismissed. The planning system is not static and needs to be able to change to take into account changing circumstances. d. Dismissed. Hamlets 2 and 3 have already been subdivided and the survey strata lots and common property created in accordance with the existing ODP.

<p>5. L & C Doak 34 Birchley Road, Coodanup</p>	<p>facilities as promised; and</p> <ul style="list-style-type: none"> allowing hamlets 7-12 to become freehold. 	<p>a. T intersection is directly in line with our house.</p> <p>b. Our house shall be compromised and be subject to damage from reckless driving.</p> <p>c. If there are less houses, access onto Birchley will not be required.</p> <p>d. A roundabout would slow drivers down.</p>	<p>a. Noted. The detailed road design will incorporate traffic calming measures to ensure low speeds and reduce any impact to surrounding existing properties.</p> <p>b. As above (5a).</p> <p>c. The approved ODP already proposes access to/from Birchley Road.</p> <p>d. As above (5a).</p>	<p>a. Dismissed. Agree with the Council's comment.</p> <p>b. Dismissed. If necessary, the detailed intersection design can incorporate traffic calming measures.</p> <p>c. Dismissed. The current ODP proposes the local road network connect with Birchley Road, and this will improve access to/from the site as well as the site's permeability.</p> <p>d. Dismissed. An outline development plan should not be used to determine the detailed design of a local road intersection. This should be determined through the normal subdivision and development control process.</p>
<p>6. Canoe Trail Friends of Mandurah and Pinjarra</p>	<p>a. Suggest that a canoe/kayak launch facility be provided east of the artificial lake.</p> <p>b. Would like to see the tributary closed to all motorised vessels.</p> <p>c. Is there sufficient clearance around the osprey nest pole, which is not marked on the ODP?</p>	<p>a. Noted. The City of Mandurah is currently discussing a proposal for a non-powered launch site at Frasers Landing with the applicant.</p> <p>b. The tributary is outside of the ODP area; however, the City of Mandurah has raised this matter separately with the Department of Transport.</p> <p>c. The osprey pole is located within the Core Conservation Reserve.</p>	<p>a. Dismissed. The adjacent waterway is outside the ODP area and is not Crown land.</p> <p>b. Dismissed. The closure of a waterway to motorised vessels is beyond the scope of an outline development plan and can only be achieved through a separate statutory process managed by the Department of Transport.</p> <p>c. Dismissed. Outline development plans should not contain such specific detail.</p>	
<p>7. B & G Harvey 19 Whimbrel Crescent, Coodanup</p>	<p>a. Including freehold lots will erode the protection provided by the <i>Strata Titles Act</i>.</p> <p>b. Reconfiguration of the internal road is opposed for the following reasons:</p>	<p>a. The proposal to include freehold lots would not affect the rights of owners of existing survey strata lots.</p> <p>b. The fire management plan has been prepared (in accordance with government</p>	<p>a. Dismissed. Agree with the Council's comment.</p> <p>b. Dismissed. The landowner/proponent has prepared a bushfire management plan to</p>	

	<ul style="list-style-type: none"> Increased fire risk in the CCR due to ease of access; Increased access to the CCR for all traffic; Incentive for increased speed; Increased access to dump rubbish within the CCR and the area in general. <p>c. Non-compliance with original proposal and approvals:</p> <ul style="list-style-type: none"> No fire management plan for the existing ODP; Disregard for fire management controls on site; Inclusion of national rental affordability scheme homes within existing hamlets; Building structural changes to double brick; and Brick clad house in Hamlet 2. 	<p>policy) to ensure measures are in place to mitigate risk.</p> <p>Further management of the CCR is controlled through a separate management plan.</p> <p>Detailed road design will incorporate traffic calming measures to ensure low speeds.</p> <p>c. Disregard for fire management controls is considered to be an ongoing matter which the City can address separate to the ODP process.</p> <p>The proponent has confirmed that there is no intention to include national rental affordability scheme homes within the ODP area.</p> <p>The ODP text states that LDPs & design guidelines will be in place to ensure that future built form is consistent with Frasers existing amenity.</p>	<p>the City of Mandurah's specifications, and the modified ODP does not (compared to the existing ODP) provide an increased level of accessibility to the core conservation reserve or the area more generally.</p> <p>c. Dismissed. In this respect:</p> <ul style="list-style-type: none"> The landowner/proponent has prepared a bushfire management plan to the City of Mandurah's specifications. The potential inclusion (or not) of national rental affordability scheme housing within the ODP area is not a material planning consideration. The use of local development plans and design guidelines should assist with maintaining the built form.
<p>8. R & W Baynard 25 Whimbrel Crescent, Coodanup</p>	<p>a. Concerned with what Frasers are proposing (i.e. bigger lots with green title tenure).</p> <p>b. Please read submissions with passion for what is right.</p>	<p>a. Noted. The inclusion of freehold lots rather than survey strata is not a material planning consideration.</p> <p>b. Noted.</p>	<p>a. Dismissed. Agree with the Council's comment.</p> <p>b. Dismissed. Each submission will be considered on its merits.</p>
<p>9. H & K Evans 5 Whimbrel Crescent, Coodanup</p>	<p>a. Concerned with what Frasers are proposing.</p> <p>b. Support the joint submission prepared by MW Urban.</p> <p>c. How will the impact of mosquitoes be managed.</p>	<p>a. Noted.</p> <p>b. Noted.</p> <p>c. Prior to site works the proponent will be required to prepare and submit a mosquito management plan to ensure measures are in place to mitigate any risks. It is relevant to note that LDPs will require each dwelling have at least one entertaining area that can be fully screened and all window openings be fixed with insect screens.</p>	<p>a. Dismissed. The form of subdivision (that is, freehold or survey strata) is not a material planning consideration.</p> <p>b. Noted.</p> <p>c. Dismissed. The local planning scheme requires the proponent prepare a mosquito management plan prior to undertaking any ground-disturbing activities.</p> <p>It is likely the landowner/proponent will also be required, as a condition of subdivision approval (if granted), to place a notification on the certificate of title advising of the mosquito problem.</p>

<p>10. D & E Newnan 21 & 6 Whimbrel Crescent, Coodanup</p>	<p>a. Conversion of hamlets 5-10 to freehold departs from the current environment, bringing with it additional traffic, noise and damage to the environment.</p> <p>b. A mix of strata titled and freehold lots will be difficult to manage, particularly within the same hamlet. Frasers indicated that hamlets 2 and 3 will be entirely strata title.</p> <p>c. Will the Council maintain streetscapes to the same standard as those within current hamlets?</p> <p>d. Extending Lakewood Parkway to Birchley Road, alongside the conservation area, will impact on fauna and flora. Given it runs parallel with Wanjeep Street, this extension could be used as a 'raceway'.</p> <p>e. Frasers won a prestigious UDIA award for environmental excellence, the modified ODP detracts from the original concept. Frasers original vision was and would be an example of how developments should be handled.</p>	<p>a. Given lot yield has reduced, traffic generated is considered to reduce also. Environmental management plans are required to be prepared to ensure that the integrity, function, and value of the environment is maintained and enhanced.</p> <p>b. The City of Mandurah recommends the undeveloped portions of Hamlets 2 and 3 be zoned 'Frasers Hamlets R50'. The proponent has indicated that these portions will be included as strata if supported by existing strata councils.</p> <p>c. On completion of the initial developer maintenance period, maintenance of any public road reserves is carried out to the specification of the City.</p> <p>d. It should be noted that the existing ODP includes a significant portion of Lakewood Parkway alongside the CCR. Management plans and traffic calming measures will be in place to reduce concerns surrounding the environment and traffic.</p> <p>e. Noted; however, the conditions of the federal approval and requirement to prepare and implement a number of environmental management plans still need to be carried out.</p>	<p>a. Dismissed. Freehold lots do not have a greater impact than survey strata lots. Rather, it is the number of lots/dwellings that determines the extent of any impact on existing residential development.</p> <p>b. Dismissed. Hamlets 2 and 3 have already been subdivided and survey strata and freehold lots created. As a result, even if the undeveloped portions of hamlets 2 and 3 are subdivided and survey strata lots created, these would be created on a separate survey strata plan, be subject to a separate management statement and have a separate body corporate.</p> <p>Allowing these freehold lots to be subdivided to create freehold lots would not create any additional management issues.</p> <p>c. Dismissed. This is beyond the purview of an outline development plan.</p> <p>d. Dismissed. The existing ODP already proposes a north-south oriented connection, part of which abuts the proposed conservation reserve.</p> <p>e. Dismissed. This is not a material planning consideration.</p>
<p>11. P & M Walters 68 Whimbrel Crescent, Coodanup</p>	<p>a. We see this proposal as inimical to our interests.</p>	<p>a. Whilst the City of Mandurah acknowledges this concern, the loss of project vision is not considered to be a material planning consideration. However, the proponent has indicated that they remain committed to the Frasers Landing concept and vision.</p>	<p>a. Dismissed. The proposed modifications would not affect the rights of landowners - although it may affect landowner expectations, this is not a material planning consideration.</p>

	<p>b. Support the joint submission prepared by MW Urban.</p> <p>c. Concerned future residents will use communal open space areas without contributing to maintenance.</p> <p>d. Concerned the change from strata titled hamlets to freehold lots will weaken the ability to enforce the envisioned high quality built form throughout the remainder of the estate.</p> <p>e. The design of hamlets 4-6 should remain in accordance with the existing endorsed ODP.</p>	<p>b. Noted.</p> <p>c. In effect any future freehold lot owners utilising communal space areas will be trespassing, which is not considered to be a material planning consideration.</p> <p>d. Local development plans and design guidelines endorsed by the City of Mandurah are considered to ensure the amenity of Frasers is maintained. This forms part of the ODP text and officer recommendation.</p> <p>e. Hamlet 4 has recently received a conditional approval for a survey strata subdivision based on the existing ODP. The detailed design of other hamlets is still to be undertaken and will be considered at subdivision stage.</p>	<p>b. Noted.</p> <p>c. Dismissed. The possibility that potential, future residents will trespass on private property is not a material planning consideration and any trespass that does occur would be a matter for the affected parties to address.</p> <p>d. Dismissed. The same development standards apply to survey strata and freehold lots. However, additional more-detailed standards could be imposed through the preparation (by the proponent) and adoption (by the Council) of local development plans and design guidelines.</p> <p>e. Dismissed. Hamlet 4 has already been subdivided and survey strata lots created, in accordance with the existing ODP. In respect of Hamlets 5 and 6, the WAPCs <i>Structure Plan Preparation Guidelines</i> state that structure plans should not include the proposed lot layout.</p>
<p>12. MW Urban on behalf of the residents of Frasers Landing</p>	<p>a. Submission prepared on behalf of residents. A petition containing 30 signatures providing confirmation.</p> <p>b. Loss of Frasers vision – residents wish to see the estate completed according to the original vision.</p> <p>c. Concept of hamlets – the modified ODP will undermine the vision of Frasers being made up of self-contained, strata titled 'hamlets' consisting of a centrally located communal open space and private roads / paths maintained and used by the residents of that hamlet.</p> <p>d. Property tenure – a primary concern is that future hamlets 5-10 are proposed to be freehold lots, rather than strata titled in accordance with the approved ODP.</p>	<p>a. Noted.</p> <p>b. Whilst the City acknowledges this concern, the loss of project vision is not considered to be a material planning consideration, however the proponent has indicated that they remain committed to the Frasers Landing concept and vision.</p> <p>c. As above (12b), the inclusion of freehold lots rather than survey strata is not considered to be a material planning consideration</p> <p>d. The inclusion of freehold lots rather than survey strata is not considered to be a material planning consideration. Hamlet 4 has recently received a conditional approval</p>	<p>a. Noted. Each submission will be afforded equal weight and considered on its merits.</p> <p>b. Dismissed. This is not a material planning consideration; however, the use of local development plans, design guidelines and the addition of a concept plan for the 'Serpentine Investigation Precinct' should assist with maintaining the built form.</p> <p>c. Dismissed. The form of subdivision (that is, freehold or survey strata) is not a material planning consideration.</p> <p>d. Dismissed. The form of subdivision (that is, freehold or survey strata) is not a material planning consideration.</p>

	<p>Marketing displayed and contracts of sale signed by residents stated that Frasers Landing would comprise of strata schemes.</p> <p>Frasers have indicated that strata titled tenure is a deterrent for prospective purchasers; however, 21 strata titled houses in hamlets 2 & 3 have recently been sold or are under contract.</p> <p>Given their location adjacent to existing hamlets 2 & 3, it is imperative that hamlets 4-6 are retained as strata titled hamlets.</p> <p>The inclusion of the undeveloped portions of hamlets 2 & 3 ("known as hamlets 21 & 31) would be supported by residents, provided the built form and landscaping of these hamlets is preserved.</p> <p>e. Open space & landscaping – residents are concerned that future freehold owners will use the communal open space areas as well as private roads without contributing to maintenance.</p> <p>The original developer commitment for 30% of every hamlet to be retained as natural bushland will not be met.</p> <p>f. Built form quality – the change from strata titled lots to freehold will weaken the ability to enforce the envisaged high quality built form throughout the remainder of the ODP area.</p> <p>Residents bought into the project expecting this architectural style and quality of construction to be maintained. Housing products currently advertised suggest a relaxing of the design requirements.</p>	<p>for a survey strata subdivision based on the existing ODP. Detailed design of other hamlets is still to be undertaken and will be considered at subdivision stage.</p> <p>e. In effect any future freehold owners utilising communal spaces would be trespassing, which is not considered to be a material planning consideration.</p> <p>Noted, however Liveable Neighbourhoods requires an open space contribution of 10%. The ODP proposes 17.9% (being 7.1543 ha).</p> <p>f. The City of Mandurah intends to endorse the developer design guidelines, and assess new homes against the design guidelines via a note on the LDP, this forms part of the officer recommendation.</p> <p>Furthermore, all future lots will be covered by LDPs required to be approved by the City.</p>	<p>Hamlets 2 and 3 have already been subdivided and survey strata and freehold lots created.</p> <p>Hamlet 4 has already been subdivided and strata lots created pursuant to the current ODP.</p> <p>In respect of hamlets 5 and 6, the WAPCs <i>Structure Plan Preparation Guidelines</i>, do not indicate that a structure plan should dictate the form of subdivision (that is, freehold or strata).</p> <p>e. Dismissed. The possibility that potential, future residents will trespass on private property is not a material planning consideration and any trespass that does occur would be a matter for the affected parties to address.</p> <p>The landowner/developer's original intention is noted; however, this is not a material planning consideration. In this respect, it is more important to note that WAPC policy requires 10 per cent of the gross subdividable area be ceded for public open space purposes, and the modified ODP meets this requirement.</p> <p>f. Dismissed. The same development standards apply to survey strata and freehold lots. However, additional more-detailed standards could be imposed through the preparation (by the proponent) and adoption (by the Council) of local development plans and design guidelines.</p>
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	<p>g. Environmental vision – there is concern the proposal will compromise the award winning environmental vision for Frasers Landing.</p> <p>h. In view of the above, we consider:</p> <ul style="list-style-type: none"> The future hamlets of Frasers Landing should be strata titled. If the City supports freehold lots, they should be limited to stages south of Landings Boulevard. Part 1 of the ODP text should identify the requirement for strata titling. Building design elements and finishes should be in accordance with the original vision and be incorporated into Part 1 of the ODP text or adopted as a local planning policy. The design of hamlets 4-6 should remain in accordance with the existing ODP. The design of hamlets 8-10 should be reconsidered to incorporate hamlet 7. The undeveloped portions of hamlets 2 & 3 (“known as hamlets 21 & 31”) should be incorporated into hamlets 2 & 3 as strata lots. 	<p>g. Noted, however the conditions of the federal environmental approval remain in place, whilst a number of environmental management plans are required to be endorsed to ensure that the integrity, function, and value of the environment is maintained and enhanced.</p> <p>h. See comments below:</p> <ul style="list-style-type: none"> The inclusion of freehold lots rather than survey strata is not considered to be a material planning consideration. Noted, see comment (12f) Hamlet 4 has recently received a conditional approval for a survey strata subdivision based on the existing ODP. Detailed design of other hamlets is still to be undertaken and will be considered at subdivision stage. Detailed design of other hamlets is still to be undertaken and will be considered at subdivision stage. Noted, Hamlets 21 & 31 being zoned “Frasers Hamlets R50” forms part of the officer recommendation. The proponent has indicated it is their intention to develop these portions as strata title subject to the approval of the existing strata councils. 	<p>g. Dismissed. Agree with the Council's comments.</p> <p>h. In respect of the points raised:</p> <ul style="list-style-type: none"> Dismissed. Stipulating that lots be created through a survey strata plan would be inconsistent with the WAPCs <i>Structure Plan Preparation Guidelines</i>, which do not indicate that a structure plan should dictate the form of subdivision (that is, freehold or strata). Dismissed. The City of Mandurah has determined that the preparation (by the proponent) and adoption (by the Council) of local development plans and design guidelines can provide an appropriate level of guidance to development of the land. Dismissed. Hamlet 4 has already been subdivided and strata lots created pursuant to the current ODP. In respect of hamlets 5 and 6, the WAPCs <i>Structure Plan Preparation Guidelines</i> state that the proposed lot layout should not form part of a structure plan's statutory component. Dismissed. The WAPCs <i>Structure Plan Preparation Guidelines</i> state that the proposed lot layout should not form part of a structure plan's statutory component. Dismissed. While the landowner / proponent may intend to subdivide these sites to create survey strata lots, the form of subdivision (that is, freehold or survey strata) is not a material planning consideration.
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13. Department of Water	<p>a. Groundwater may not be available and the proponent may need to consider developing water trading, water reuse and recycling strategies.</p> <p>b. The proposal is located within the Peel-Harvey Catchment and specific policies apply.</p>	<p>a. Noted</p> <p>b. Noted</p>	<p>a. Dismissed. The development of water trading, reuse and recycling strategies should be addressed through the preparation of water management plans.</p> <p>b. Upheld. The provisions of <i>State Planning Policy No. 2.1: The Peel Harvey Coastal Plain Catchment</i> apply to the ODP area and will be considered by the WAPC when it decides whether to endorse the ODP.</p>
14. Roberts Day on behalf of Frasers Pty Ltd	<p>a. The project has not performed to commercial expectation and it has become critical to review the project design, in order to improve marketability.</p> <p>b. The proponent held a residents information session on 13 May 2014, overall the mood was positive.</p> <p>c. The results of a questionnaire indicate:</p> <ul style="list-style-type: none"> • residents value living amongst the trees and close to bushland; and • residents consider tree retention to be the key to maintaining the vision for the estate, as well as housing style and design. <p>d. The commitment to the Frasers Landing vision is ongoing and unchanged. It is intended to retain connection to mature trees, which is seen as a major asset for the project and by the residents.</p> <p>e. Housing designs and styles are recognised as an asset and contributor to the distinctiveness and amenity of the estate. This will continue, with strong design guidelines for purchasers.</p> <p>f. The proponent will maintain high quality streets and public spaces to further develop the amenity of Frasers Landing.</p> <p>g. Hamlet 4 will be strata titled, Hamlets 21 & 31 may be strata titled subject to strata council approval.</p>	<p>a. Noted</p> <p>b. Noted</p> <p>c. Noted</p> <p>d. Noted</p> <p>e. Noted. The requirement for the City's endorsement of the design guidelines and inclusion on the LDPs forms part of the officer recommendation.</p> <p>f. Noted</p> <p>g. Noted, Hamlets 21 & 31 being zoned "Frasers Hamlets R50" forms part of the officer recommendation.</p>	<p>a. Noted. The planning system does allow for the review and, where necessary, modification of local structure planning.</p> <p>b. Dismissed. This is not a material planning consideration.</p> <p>c. Noted.</p> <p>d. Noted.</p> <p>e. Upheld. This is consistent with the requirements of the modified ODP adopted by the Council.</p> <p>f. Noted.</p> <p>g. Dismissed. In respect of the undeveloped portions of hamlets 2 and 3, the type of subdivision (that is, freehold or survey strata) is not a material planning consideration. In relation to hamlet 4,</p>

	<p>h. More freehold development provides benefits to existing and future residents of Hamlets 2, 3 & 4 due to orientation of streets and better pedestrian connectivity along public streets rather than through other hamlets.</p> <p>i. Frasers Property has actively engaged with residents, listened to collective and individual queries and concerns, highlighted how they are to be addressed within the ODP or accommodated changes where possible and appropriate. This is reflective of the ongoing commitment to the vision of Frasers Landing.</p>	<p>h. Noted</p> <p>i. Noted</p>	<p>hamlet 4 has already been subdivided and freehold and survey strata lots created.</p> <p>h. Noted.</p> <p>i. Noted. Whilst the developer's attempts to engage with the community are laudable, the developer's consultation programme and intentions are not material planning considerations.</p>
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OUTLINE DEVELOPMENT PLAN

LEGEND

- Boundary
- Frasers Hamlets R50
- Residential R30 - R80
- Residential R20 - R40
- * Potential Retail Location
- Core Conservation Reserve (POS)
- Public Open Space
- Lake
- Access Street A / B
- Other Roads
- Dual Use Path
- Footpath (on one side of all "Other Roads")
- Serpentine Investigation Precinct (Refer Plan 2)



Refer to Plan 2

DESIGN GUIDELINES

Design Guidelines shall be prepared by the proponent and endorsed by the Council, and shall be implemented by the proponent and the Council via a note on the Local Development Plans thereafter.

CORE CONSERVATION RESERVE

Any proposed changes to the ODP which affect the size of the Core Conservation Reserve shall be referred to the EPA as a proposal in accordance with Section 38 of the Environmental Protection Act 1986.

SIGNIFICANT HABITAT TREE

The Inactive Whistling Kite Nest identified to the north of the ODP area shall be retained as part of the future development.

SERPENTINE INVESTIGATION PRECINCT

Development within the Serpentine Investigation Precinct shall be generally in accordance with Plan 2, including relevant annotations.

BUSHFIRE MANAGEMENT

Those lots identified in the Bushfire Management Plan as being in close proximity to the conservation reserve and Regional Open Space shall incorporate measures to mitigate bushfire risk in accordance with Australian Standard AS3959.

RESIDENTIAL DENSITY CODES PLAN

At the time of subdivision, a Residential Density Code Plan is to be submitted consistent with any residential density ranges shown on the Structure Plan, and shall be approved by the WAPC at the time the subdivision application is being determined. The Residential Density Code Plan shall thereafter form part of the Structure Plan.

Further detail regarding Residential Density Code Plans can be found in Part 1, Clause 2.1 of the ODP.

PERMISSIBILITY

Land Use Permissibility for zones within the Outline Development Plan shall be in accordance with the Residential zone under the Scheme, except for the variations listed in Clause 1.2 and Table 2 of the Outline Development Plan.

PLAN 1: OUTLINE DEVELOPMENT PLAN

SERPENTINE INVESTIGATION PRECINCT



Plan 2: Serpentine Investigation Precinct

Development of this precinct is to be generally in accordance with this plan and the annotated principles

1:2000 @ A3



FRA MAN RD3 017A 141209



DISCLAIMER

Build form and dwelling yields are illustrative only.

This plan has been prepared based on all residential lots storing their own drainage on site by the use of soakwells or other accepted means. Vegetation retention in the potential swale areas will need to be determined during detailed design when exact storage volumes and tree locations are available while complying with relevant environmental approvals. Assumes discharge of any storm event in excess of 1 in 10 to the foreshore reserve subject to relevant authorities' approvals.

Frasers Landing Outline Development Plan Schedule of Modifications

- (a) Part 1 of the ODP is to be updated in accordance with the attached document, which shows the required modifications using tracked changes.
- (b) The annotation on Plan 1 of the ODP relating to design guidelines is to be modified to read as follows:
"Design guidelines shall be prepared by the proponent, endorsed by the Council and incorporated into the ODP as a modification to the ODP."
- (c) The annotations on Plan 1 relating to:
 - (i) the residential design codes plan;
 - (ii) the Serpentine investigation precinct;
 - (iii) land use permissibility;are to be deleted.
- (d) Section 2.3.2 (Outer Metropolitan Perth and Peel Sub-regional Strategy) of Part 2 of the ODP is to be deleted and replaced with a section which considers the draft *South Metropolitan Peel Sub-regional Planning Framework*.
- (e) Section 2.5.1 of Part 2 of the ODP is to be modified so that it refers to State Planning Policies, as opposed to 'Statements of Planning Policy'.

1.0 Outline Development Plan ~~Zones~~ Precincts

The Outline Development Plan Map (Plan 1) ~~applies~~ includes the following ~~zones~~ precincts ~~applicable within the Outline Development Plan area:~~

- a) Frasers Hamlets
- b) Residential R20-R40
- c) Residential R30-R80

1.1 Character of ~~Zones~~ Precincts

~~Land use, subdivision and development shall be guided by the statements outlined in the following table. Specific development provisions and guidance are included in Part 1 of the ODPOutline Development Plan, or will be provided in other instruments, provided for in Part 1 of the ODPOutline Development Plan. The following table sets out the objectives, density range and character of each precinct:~~

TABLE 1: CHARACTER AND OBJECTIVES OF ~~ZONES~~ PRECINCTS

Element	Frasers Hamlets	Residential R20-R40	Residential R30-R80
Locational Criteria	Generally located away from water and conservation areas	Located near areas of high amenity, near the foreshore, conservation areas or other areas of high amenity	Located adjacent to areas of high amenity, near the foreshore, conservation areas or other areas of high amenity
Objective	To provide a variety of high quality housing in a grouped dwelling environment	To provide a range of conventional freehold housing in low to medium density	To provide a variety of housing at medium to high density, with some opportunities for mixed use development
Density (Range)	R50	R20-R40	R30-R80
Building Character	Generally grouped dwellings with a balance of private and communal open space	Generally single dwellings with ample private open space	A mix of compact dwellings in a higher density environment, which may provide for flexibility in land uses
Public Realm Character	Communal open space and streets, designed for flexibility to retain trees where practicable	Generally served by a range of pocket, local and neighbourhood parks with a range of functions	Generally located close to a high quality public realm drawing on exceptional amenity such as bushland and water bodies
Typical Land Uses	Grouped dwellings	Single dwellings	Residential, some mixed use

1.2 Land Uses

Land use permissibility ~~for zones~~ within the Outline Development Plan area shall be in accordance with the Residential zone under the Scheme, ~~except for the variations listed in Table 2.~~

~~The abbreviations used in Table 2 have the same meanings as symbols in the Scheme, which are:~~

- ~~P~~ is consistent with the objectives of the Scheme and may be developed after planning approval.
- ~~AA~~ may be developed after Council has granted planning approval. Council may advertise proposal.
- ~~SA~~ may be developed after Council has granted planning approval. Must be advertised.
- ~~IP~~ not permitted unless incidental to predominant use.
- ~~X~~ not permitted.

TABLE 2- LAND USE PERMISSIBILITY VARIATIONS

USES	Frasers Hamlets	Residential R20-R40	Residential R30-R80
Additional			
Accommodation	AA	AA	AA
Aged Persons Home	AA	AA	AA
Aged Persons Village	AA	AA	AA
Bed and Breakfast Accommodation	SA	SA	SA
Car Park	SA	SA	SA
Chalet	SA	SA	SA
Child Care Premises	SA	SA	SA
Civic Use	P	P	P
Consulting Rooms	IP	IP	SA
Convenience Store	X	X	SA
Corner Shop	SA	SA	AA
Display Home Centre	AA	AA	AA
Dwelling (Single House, Group, Multi)	P	P	P
Guesthouse	SA	SA	AA
Home Occupation	AA	AA	P
Kindergarten	SA	SA	SA
Land Sales Office	P	P	P
Lodging House	SA	SA	SA
Lunch Bar	X	X	SA
Medical Centre	X	X	SA
Nursing Home	SA	SA	SA
Office	X	X	SA
Public Utility	P	P	P
Public Worship - Place of	X	X	SA
Restaurant	X	X	SA
Serviced Apartment	SA	SA	SA
Shop	X	X	SA

1.2.1 Retail and Commercial Uses

- a) Retail floorspace (NLA) for the Outline Development Plan is limited to a maximum of 2000sqm, and shall be located within the Amenity precinct
- b) For the following uses, there is a general presumption against their establishment in the Residential R30-R80 precinct, except on land identified as Local Centre:
 - Convenience Store
 - Lunch Bar
 - Medical Centre
 - Office
 - Public Worship - Place of
 - Restaurant
 - Shop
- c) Unless otherwise approved, parking for commercial and retail floorspace shall be provided at the ratio of one bay per 25sqm NLA

1.3 Reserves: Open Space

1.3.1. Public ~~O~~open ~~S~~space shall be distributed generally in accordance with the areas shown on Plan 1 – Land Use Zones and Reserves and shall be generally developed in accordance with the ~~O~~open ~~S~~space description in Table 1.

1.3.2. Land credited as public open space within the development area includes:

- a) ~~t~~he ~~E~~core ~~E~~conservation ~~R~~reserve;
- b) ~~P~~ublic ~~O~~open ~~S~~space adjacent to the tributary foreshore;
- c) ~~N~~eighbourhood and local parks; and
- d) ~~C~~ommunal ~~O~~open ~~S~~space within the Hamlets Precinct.

1.3.3. In accordance with ~~C~~clause 3.3.3 of WAPC ~~P~~olicy ~~D~~evelopment ~~C~~ontrol ~~P~~olicy ~~N~~o.1.3: ~~S~~trata ~~T~~itles, calculation for the provision of public open space shall allow up to 50% of the total 10% public open space to be provided for the Hamlet precinct as communal open space within the survey strata subdivision subject to the open space being useable and developed for general recreation purposes.

~~1.3.4. An updated public open space schedule shall be provided at the time of subdivision application for determination by the WAPC, upon the advice of the City of Mandurah. The schedule is to include the amount of land developed or proposed for development, the land provided as open space to date, and the open space proposed in the application for subdivision.~~

2.0 Other Requirements

2.1 Residential Density Codes Plan

2.1.1. Plan 1 defines the broad residential density ranges that apply to specific areas within the Outline Development Plan. Lot specific residential densities, within the defined residential density ranges, are to be subsequently assigned in accordance with a ~~R~~residential ~~D~~ensity ~~C~~ode ~~P~~lan ~~approved by the WAPC.~~

2.1.2. ~~A~~For the R20-R40 and R30-R80 areas, a ~~R~~residential ~~D~~ensity ~~C~~ode ~~P~~lan is to be submitted to the City of Mandurah at the time of subdivision, ~~to the WAPC~~ and shall indicate the ~~R~~residential ~~D~~ensity ~~C~~oding applicable to each lot within the ~~subdivision and shall be consistent with the Outline Development Plan, and the Residential Density Ranges identified on Plan 1 and locational criteria contained in Section 5.0 specified density range.~~

2.1.3. The residential density code plan is to be processed as a minor modification to the Outline Development Plan and be approved by the City of Mandurah and the Western Australian Planning Commission prior to the subdivision application being determined for the Residential R20-R40 and Residential R30-R80 areas.

2.1.3.4. ~~The Residential Density Code Plan~~When lodging the proposed residential density code plan, the proponent shall ~~is to~~ include a summary of the proposed dwelling yield of the subdivision and an updated schedule of public open space .

~~2.1.4. Approval of the Residential Density Code Plan shall be undertaken at the time of determination of the subdivision application by the WAPC. The approved Residential Density Code Plan shall then form part of the Outline Development Plan and shall be used for the determination of future development applications. Variations to the Residential Density Code Plan will require further approval of the WAPC.~~

~~2.1.5. Residential Density Code Plans are not required if the WAPC considers that the subdivision is for one or more of the following:-~~

- a) ~~the amalgamation of lots;~~
- b) ~~consolidation of land for “superlot” purposes to facilitate land assembly for future development;~~

~~c) the purposes of facilitating the provision~~

~~of access, services or infrastructure; or
d) land which by virtue of its zoning or
reservation under the Outline
Development Plan cannot be developed
for residential purposes.~~

2.2 Local Development Plans

2.2.1. Local Development Plans shall be prepared for all lots within the subject site.

~~2.2.2. Local Development Plans are to be prepared as a condition of subdivision approval.~~

~~2.2.2. A local development plan may elaborate upon provisions of the Outline Development Plan.~~

2.2.3. Local Development Plans are to be prepared in accordance with ~~or with due regard to Liveable Neighbourhoods, the Residential Design Codes State Planning Policy No. 3.1: Residential Design Codes, and all the Management Plans management plans~~ specified in Appendix 10 of the *City of Mandurah Town Planning Scheme No. 3*.

2.2.4. Those lots identified in a Bushfire Management Plan as requiring additional development or construction requirements may be identified accordingly ~~in by Local Development Plans~~

~~2.2.5. Where trees are required to be retained on private lots, Local Development Plans shall identify Tree Protection Zones~~

~~2.2.6. A Local Development Plan may be used to elaborate, expand or vary any land use and development provisions of the Outline Development Plan, the Scheme, Local Planning Policies and the Residential Design Codes.~~

~~2.2.7. In assessing Local Development Plans the following provisions shall apply:~~

~~2.2.7.1. Council may waive any requirement to advertise a Local Development Plan where the land the subject of a Local Development Plan is in single ownership and the adjoining land is in the same ownership.~~

~~2.2.7.2. Where subject to clause 2.2.7.1, the timeframe for Council approval of the Local Development Plan shall be 21 days.~~

~~2.2.7.3. Local Development Plans shall be adopted by the City as if they were part of the Outline Development Plan and shall be included in a Schedule to the Outline Development Plan.~~

~~2.2.8. In assessing development on lots subject of a Local Development Plan, the following provisions shall apply:~~

~~2.2.8.1. Development and/or land use proposals that comply with the provisions of an approved Local Development Plan are exempt from requiring planning approval under Clause 7.1 of the Scheme.~~

~~2.2.8.2. Variations to the Residential Design Codes contained in Local Development Plans will be considered to constitute 'Deemed to comply' and therefore do not require neighbour consultation or planning approval.~~

~~2.2.8.3. Where variations to an approved Local Development Plan are proposed, these shall be dealt with as an R Codes Variation Application.~~

2.3. Serpentine Investigation Precinct

2.3.1. Plan 1 identifies the Serpentine Investigation Precinct.

2.3.2. Land within the Serpentine Investigation Precinct shall be developed generally in accordance with the detailed design concept for the precinct included as Plan 2, including relevant annotations.

~~2.3.3. Development outcomes annotated on Plan 2 shall be required, as appropriate~~

~~a) Prior to subdivision;~~

~~b) To be included in Local Development Plans; or~~

~~c) To be included in Design Guidelines~~

2.4 Further Reporting and Management Plans Required

2.4.1. To facilitate development of the project area, further reporting and/or management plans are to be prepared, as applicable, to the satisfaction of the relevant authority as outlined in [Table 3 below Appendix 10 of the City of Mandurah Town Planning Scheme No. 3](#).

~~2.4.2. Two or more of the following may be combined into one document if supported by the relevant authority.~~

TABLE 3: TIMING OF FURTHER REPORTING AND MANAGEMENT PLANS

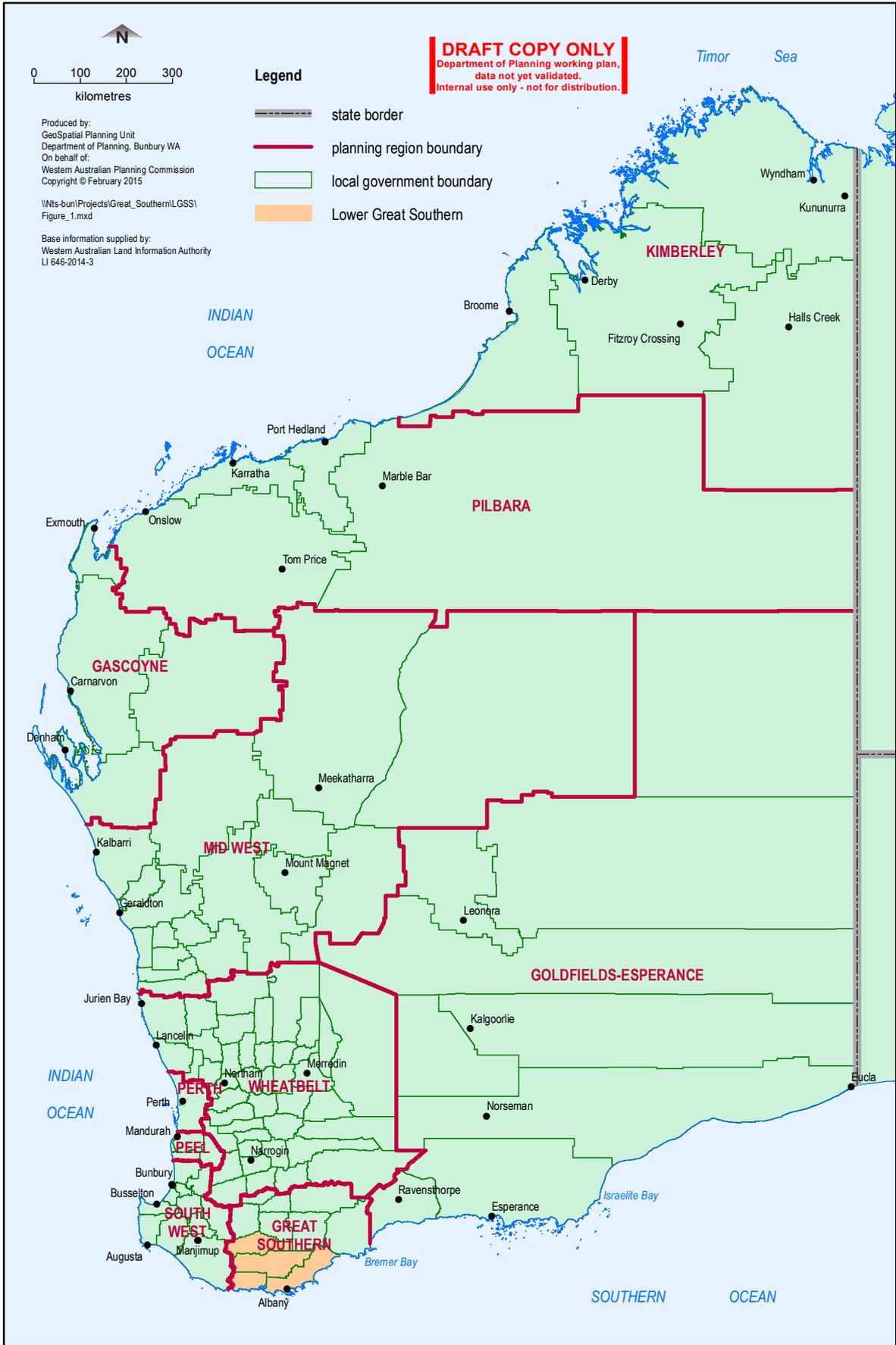
Report	When Required	Approved By
Environmental Assessment Report	With ODP	WAPC Bushfire
Management Plan	With ODP	WAPC
Engineering Servicing Report	With ODP	WAPC
Review of Aboriginal Heritage	With ODP	WAPC
Coodanup Local Community Identity	With ODP	WAPC
Transport Planning	With ODP	WAPC
Preliminary Irrigation Water Supply Assessment	With ODP	WAPC
Transport Impact Assessment	With Subdivision	WAPC
Residential Density Code Plan	With Subdivision	WAPC POS
Schedule	With Subdivision	WAPC
Landscape/POS Management Plan	Condition of Subdivision	City of Mandurah
Local Development Plan	Condition of Subdivision	City of Mandurah
Urban Water Management Plan	Prior to Site Works	City of Mandurah
Nutrient & Irrigation & Fill Management Plan	Prior to Site Works	City of Mandurah
Artificial Water Body Management Plan	Prior to Site Works	City of Mandurah
Vegetation Retention Management Plan	Prior to Site Works	City of Mandurah
Flora Relocation Management Plan	Prior to Site Works	City of Mandurah
Foreshore and Core Conservation Reserve Management Plan	Prior to Site Works	City of Mandurah
Mosquito Management Plan	Prior to Site Works	City of Mandurah
Wildlife Management Plan	Prior to Site Works	City of Mandurah
Design Guidelines	Prior to building licence	City of Mandurah

~~Note: Some of the above plans have been approved under the previous Outline Development Plan, and may be applicable without further modification (or with only minor modification) required~~



ITEM NO: 10.1

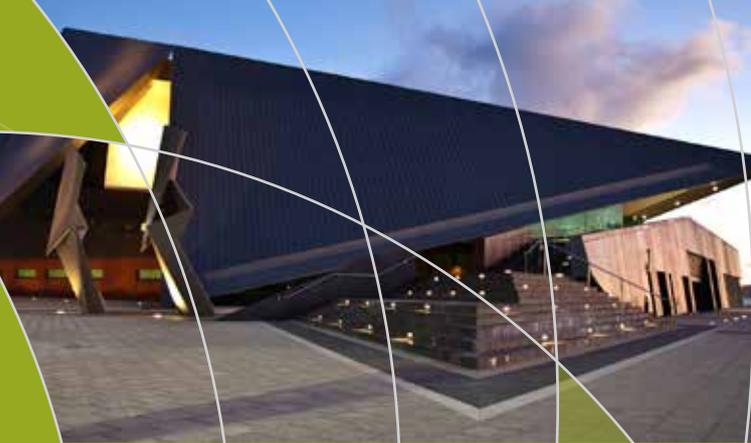
Draft Lower Great Southern Strategy 2015





Western
Australian
Planning
Commission

draft
lower **Great**
Southern 2015
Strategy



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Chairperson's foreword

The Lower Great Southern region is renowned for its spectacular coastal and agricultural landscapes, rich natural resources, pristine natural environment and quality lifestyle opportunities.

The Lower Great Southern has potential for considerable population growth, economic development and infrastructure investment in the medium term.

The key population centre of the City of Albany; and the Shires of Cranbrook, Denmark and Plantagenet, have economic, infrastructure and natural resource synergies to support future growth.

The region has grown and new challenges have emerged since the Lower Great Southern Strategy was first developed in 2007. The 2015 Strategy provides guidance and actions to help meet these challenges and balance economic, social and environmental considerations.

The Lower Great Southern Strategy 2015 should be read in conjunction with the Western Australian Planning Commission's *Great Southern Regional Planning and Infrastructure Framework* and the Great Southern Development Commission's *Great Southern Regional Blueprint*. The three documents are complementary and provide strategic direction for growth of the region over the next 20 years.

I commend the collaborative approach taken by State Government agencies, Local Governments and key stakeholders in preparing the draft Strategy 2015 and look forward to receiving public submissions.



Eric Lumsden PSM
Chairman
Western Australian Planning Commission

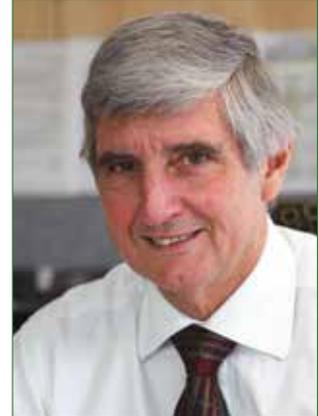


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Appendices

See Appendices document

Part 1 – Executive summary

1.1 Lower Great Southern Region

The Lower Great Southern is situated within the Great Southern region, incorporating the City of Albany and the Shires of Denmark, Plantagenet and Cranbrook (Figure 1). The Lower Great Southern is about 360km south of Perth and covers an area of 14828km² with 330km of coastline. It comprises some of the most productive agricultural land in the State. The region is recognised as a major residential and tourist destination. Its natural features and climate are attracting a growing number of new residents seeking a 'sea-change' or 'tree change' lifestyle. Responding to the growth potential of the Lower Great Southern requires sensitive planning and management of its land use, infrastructure and natural resource assets.

1.2 Purpose and Scope

The purpose of this strategy is to guide land use planning and provide strategic direction for the Lower Great Southern over the next 20 years. Specifically, the strategy aims to:

- provide guidance at a sub-regional level in the use of land to balance economic, social and environmental considerations;
- assist local government in preparing, reviewing and implementing local planning strategies and schemes, and other local planning and development matters;
- identify additional land of regional significance that may be required for regional open space purposes; and

- ensure land required for important regional infrastructure, priority agricultural land, economic growth opportunities, water sources and basic raw materials is identified and retained for those purposes.

Actions to achieve these aims are provided and have been assigned short (3-5 years), medium (5-10 years) or long (10+ years) implementation timeframes. This strategy recognises that some of the identified implementation actions are reflective of the ongoing core business of State agencies, local government and other groups. Whilst the WAPC often will not have a direct decision making or implementation role in such actions, they have been included in this strategy as they are important in achieving the vision for the Lower Great Southern and their ongoing implementation is supported. The strategy also does not duplicate the comprehensive set of statements of planning policy prepared by the WAPC; however, the strategy has been prepared in the context of these policies and in accordance with their principles and objectives.

A summary of the objectives and actions of the Lower Great Southern Strategy is contained in Table 1 (see Page 3). Part Two of the strategy contains a vision and discussion of strategic directions for the region. Part Three describes how implementation of the strategy is to occur.

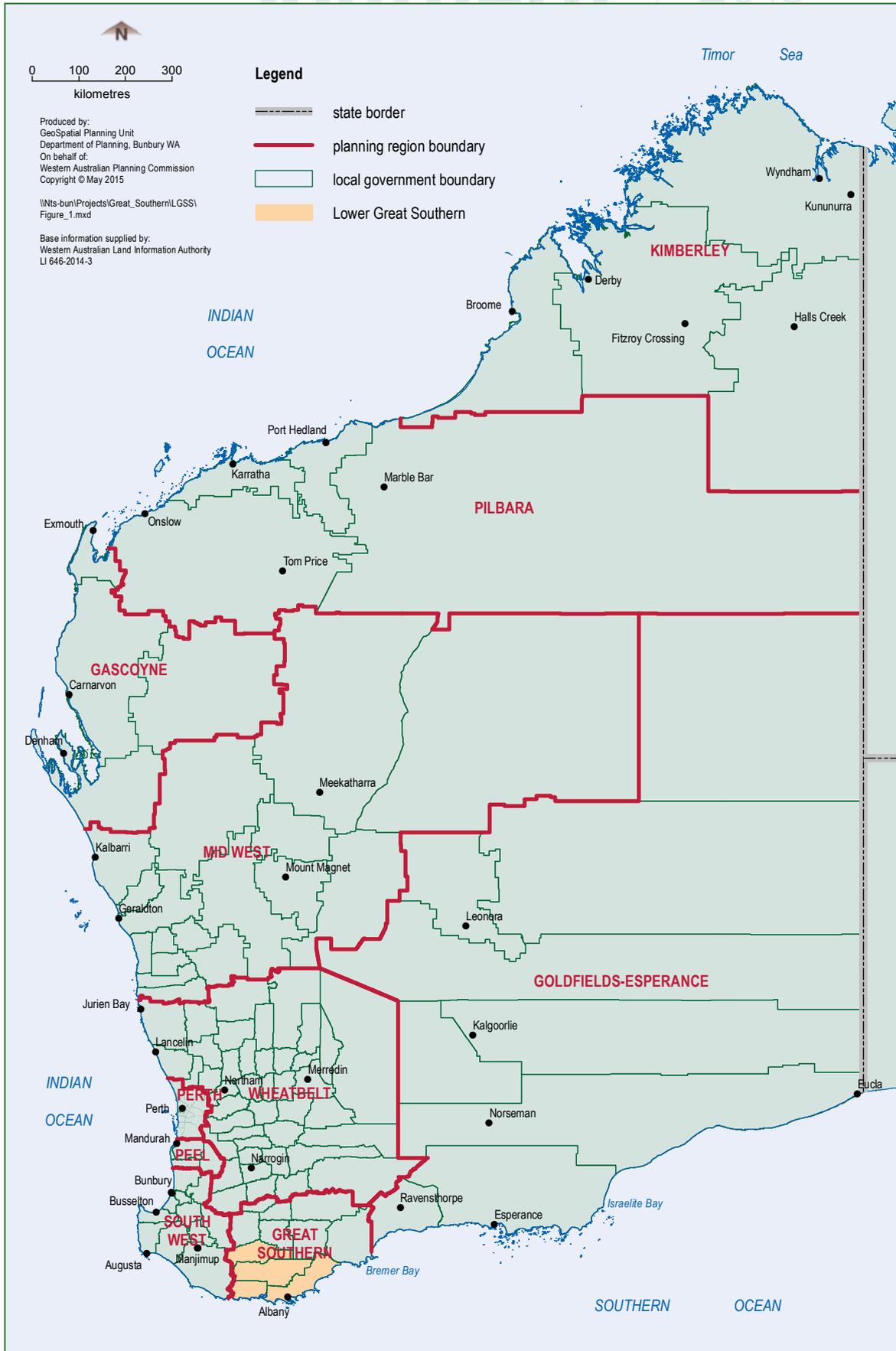


Figure 1: Lower Great Southern region

Table 1: Objectives and Actions of the Lower Great Southern Strategy 2015

2.3 Economic Growth			
Objective	Actions	Timeframe	Responsibility
Secure long term economic prosperity for the Lower Great Southern region	Capitalise on regional economic advantages in agriculture and primary production, tourism, natural resources and clean energy production	Ongoing	State government Local government Community/ private sector
	Secure the necessary regional infrastructure to stimulate investment, growth and development in the Lower Great Southern	Short term/ ongoing	DSD RDA GSDC LG
	Work towards a diversified economic base in the Lower Great Southern in order to maximise advantages from long term regional, national and global economic trends	Ongoing	GSDC LG Community/ private sector
	Focus on growing secondary and downstream processing industries, particularly within the agricultural and primary production sectors	Short term	GSDC LG DAFWA Community/ private sector

2.4 Climate Change			
Objective	Actions	Timeframe	Responsibility
Support the Lower Great Southern community in being adaptive and resilient to climate change	Provide efficiency in development form and servicing in settlements	Ongoing	DoP/WAPC LG Utility agencies
	Provide for alternative and supplementary water and energy supplies to be utilised, including self-supply where appropriate	Ongoing	LG DoP/WAPC Community
	Develop emergency and risk management plans that are cognizant of increased risks that may result from climate change	Ongoing	DFES LG
	Carefully manage essential natural resources, particularly water supplies and agricultural land	Ongoing	DAFWA DoW LG DoP/WAPC
	Develop and adopt strategies to mitigate identified impacts of climate change	Ongoing	DoP/WAPC LG

2.5 Settlements			
Objective	Actions	Timeframe	Responsibility
Ensure that identified settlements develop in a sustainable manner	Ensure that Albany is promoted as a regional centre; Mount Barker and Denmark are promoted as sub-regional centres; and Frankland River and Cranbrook are promoted as towns	Ongoing	State government Local government Community
	In regional and sub-regional centres and towns, appropriately zone sufficient land for urban development and a variety of housing types, in accordance with endorsed local planning strategies	Ongoing	LG
	For villages identified for expansion that do not currently have endorsed plans, prepare and have endorsed by the WAPC a townsite strategy and/or conceptual structure plan	Short term	LG
	Where constraints to townsite development have been identified in endorsed local planning strategies, seek inclusion in the townsite development program where appropriate	Ongoing	LG LandCorp
	Utilise innovative zonings in local planning schemes to stimulate commercial and economic growth in villages identified for expansion	Ongoing	LG DoP/WAPC
	Appropriately zone sufficient land for light, general and service industry in accordance with endorsed local planning strategies	Ongoing	LG DoP/WAPC

2.6 Infrastructure			
Port of Albany			
Objective	Actions	Timeframe	Responsibility
Maintain and enhance function of the Port of Albany in light of envisaged long term growth and productivity within the wider Great Southern region	Maintain the special control area around the port to facilitate its ongoing protection	Ongoing	LG
	Investigate options for a future inland port facility	Short term	PoA DoP/WAPC LG
	Secure road, rail and other necessary infrastructure corridors to the port	Ongoing	MRWA PTA DoP/WAPC LG
	Give primacy to maintenance of port function and operations when considering land uses that may impact on these	Ongoing	LG DoP/WAPC



Roads			
Objective	Actions	Timeframe	Responsibility
Provide a strategic road network in Albany that facilitates the safe and efficient movement of freight to the Port of Albany; and protect access to the port along the principal freight routes of Chester Pass Road, Albany Highway, Hanrahan Road, Princess Royal Drive and the proposed Ring Road	Preserve Chester Pass Road and Hanrahan Road in Albany as a major freight route, until such time as the Albany Ring Road provides the more expedient and safer route for freight transport between the east and the port	Ongoing	MRWA
	Secure land requirements for stages two and three of the Ring Road	Long term	MRWA
	Utilise the Albany Traffic Model to develop and evaluate options for provision of a legible distributor road network within Albany; and to manage cross-traffic movements on Chester Pass Road and the Ring Road	Ongoing	MRWA DoP/WAPC LG
	Undertake design refinements for stages two and three of the Ring Road with consideration of: <ul style="list-style-type: none"> optimising road and rail alignment along Lower Denmark Road and intersection with Hanrahan Road; grade separation between Princess Royal Drive and the railway line at the eastern end of Princess Royal Drive; future upgrade to Princess Royal Drive, with the potential for upgrading to a four-lane dual carriageway, while protecting the artificial wetland to the north, public and commercial amenity values of the foreshore and potential visual impact; and catering for increased traffic using Frenchman Bay Road and Princess Royal Drive to access York Street 	Short term	MRWA DoP/WAPC LG PTA
	Progress construction of additional stages of the Albany Ring Road	Long term	MRWA
	Introduce and maintain measures to minimise potential conflicts between the Ring Road and other heavy freight routes and adjacent land uses, including: <ul style="list-style-type: none"> structure planning; land use and development controls for adjacent properties, based on the recommendations of the Albany Heavy Freight Access Study; and road planning standards to minimise potential road user conflict and the negative noise and visual impact of the road on adjacent properties 	Ongoing	MRWA DoP/WAPC LG

Roads (cont.)			
Objective	Actions	Timeframe	Responsibility
	<p>Implement the noise mitigation measures recommended by the Albany Heavy Freight Access Study including, where appropriate:</p> <ul style="list-style-type: none"> • appropriate uses adjacent to the major freight access roads in local planning schemes to prevent conflicts between incompatible uses; • investigating the use of special control areas to implement development and building standards to reduce the impact of noise on adjacent residential buildings; and • incorporating design guidelines for redevelopment areas backing on to major freight routes 	Short term	LG DoP/WAPC
Develop an effective regional road network, including catering for the needs of freight, local and tourist traffic	Manage the interaction between operational requirements of Main Roads WA for freight and regional traffic purposes, and the needs of local traffic in established settlements	Ongoing	MRWA LG
	Investigate access options to Down Road to facilitate truck movements from the south-west and west to the woodchip mill in the vicinity of Marbellup North Road	Short term	DoP/WAPC GSDC LandCorp
	Undertake road improvement and maintenance projects to enable safe and expedient transport of freight and agricultural commodities	Ongoing	MRWA LG
	Provide ongoing funding for the Wingebellup Road and Woogenellup Road upgrade projects	Ongoing	MRWA LG
	Provide additional passing lanes, where necessary, on major regional freight roads	Ongoing	MRWA
	Seal Salt River Road linking Cranbrook to Chester Pass Road along the northern boundary of the Stirling Range National Park	Medium term	LG MRWA
	Secure funding for the upgrade of Nornalup-Tindale Road	Short term	LG GSDC
	Investigate options and feasibility of providing an alternative means of access/egress to Denmark townsite across the Denmark River	Short term	LG

Rail			
Objective	Actions	Timeframe	Responsibility
Maximise the use of rail for freight haulage into the Port of Albany	Plan for additional rail infrastructure to improve rail capacity, including: <ul style="list-style-type: none"> • passing loops, where required, to maintain freight access to the port; • extensions into strategic industrial sites; • rail realignments and a rail loop at the port and Mirambeena industrial estate to meet future growth in the freight task; • a rail spur extension at Yerriminup industrial estate; and • grade separation between Princess Royal Drive and the railway at the eastern end of Princess Royal Drive 	Short term	DoP/WAPC GSDC PTA LandCorp PoA
	Investigate alternative options to encourage the transfer of road freight to rail and evaluate their costs and benefits	Short term	DoP/WAPC GSDC
Protect the railway corridor between the Port of Albany and South Coast Highway	Consider the effects of noise, including the outcomes from the Albany Heavy Freight Access Study, when planning for future land uses adjacent to the railway line to secure its efficient operation	Ongoing	LG DoP/WAPC
Airports			
Objective	Actions	Timeframe	Responsibility
Ensure the continued efficient operation of the Albany airport	Maintain airport noise and safety buffers and obstacle limitation surface in the local planning scheme	Ongoing	LG
Preserve opportunities for potential future expansion of the Albany airport	Maintain appropriate zonings and manage land uses in and around Albany airport	Ongoing	LG DoP/WAPC
Develop opportunities for complementary commercial activities to locate at Albany airport	Undertake conceptual design and planning to guide consideration and establishment of complementary commercial uses	Short term	LG
	Investigate the potential for co-location of land uses that may be able to utilise existing airport noise buffers	Medium term	LG
Develop and maintain the regional airstrip network to provide emergency access	Monitor, evaluate and upgrade as necessary the regional airstrip network for RFDS emergency access	Ongoing	LG

Service Infrastructure and Utilities			
Objective	Actions	Timeframe	Responsibility
Provide and protect water and wastewater infrastructure and treatment facilities	Provide reticulated sewerage to the priority areas of Weedon Hill, Minsterly Road, Inlet Drive, Beveridge Road (Denmark); Milpara, Gledhow, Robinson, Yakamia (Albany); and Kendenup (Plantagenet) if and when funding becomes available under the Infill Sewerage Program or through other means	Short term/ Ongoing	Water Corporation
	Where appropriate, zone buffer distances around water treatment plants as special control areas in local planning schemes	Short term (completed in some schemes)	LG
	Establish an ongoing dialogue between Water Corporation and relevant agencies to better understand demand for services and develop solutions for provision of water services in priority areas	Ongoing	Water Corporation DoP/WAPC LG
Provide adequate, affordable and reliable power supplies	Determine the capacity of current and potential power supply options and identify power supply requirements	Ongoing	Western Power
Build on existing renewable energy sources and investigate potential new sources to supplement conventional supplies	Support and encourage development of alternative sources of power to supplement and/or replace traditional electricity supply with wind and solar	Ongoing	LG GSDC DoP/WAPC Electricity service providers
Provide suitable alternative servicing options in settlements where normal servicing methods are restricted and/or unavailable	Investigate alternative methods for wastewater disposal, including grey water re-use and alternative non-potable systems in residential and industrial subdivisions	Short term	LG DoH
	Investigate and develop, where appropriate, innovative approaches to supplying country towns with water and sewerage services that enhance environmental, social and economic outcomes and performance of current traditional methods	Medium term	LG DoP/WAPC
Maximise the opportunities presented by the provision of a natural gas pipeline	Identify and secure a gas pipeline alignment that economically will service as many settlements and strategic industrial areas as possible, and maximise economic benefits to the Lower Great Southern	Short term	DSD/DRD
	Collaborate with the private sector to identify and secure a suitable end user of the gas resource, in order to increase viability of the construction phase of the project	Medium term	DSD/DRD GSDC

Service Infrastructure and Utilities (cont.)			
Objective	Actions	Timeframe	Responsibility
Provide high-quality telecommunications infrastructure and services	Improve and/or upgrade telecommunications infrastructure where necessary, in particular services to rural and coastal communities and principal highways; and improve mobile phone coverage and high-speed broadband data transmission	Ongoing	Service providers
	Upgrade VHF capability and repeater stations in appropriate coastal areas	Ongoing	DoT



Public Transport, Walking and Cycling			
Objective	Actions	Timeframe	Responsibility
Improve public transport, walking and cycling opportunities in the Lower Great Southern and connectivity with the wider region	Investigate the demand and feasibility for inter-town public transport services in the Lower Great Southern	Short term	DoT GSDC DoP/WAPC LG
	Investigate opportunities for the provision of passenger rail services from Perth to Albany	Long term	DoT PTA
	Investigate improved regional linkages with the national coach network	Medium term	PTA
	Expand the network of cycle and pedestrian ways	Ongoing	LG DSR
	Include the investigation and design of cyclist facilities on stages two, three and four of the Albany Ring Road that will facilitate the connection of Frenchman Bay Road and the Albany Waterfront for cyclists	Short term	MRWA DoP/WAPC LG
	Identify public and community based transport opportunities, where necessary, when preparing planning strategies and structure plans	Ongoing	LG DoP/WAPC



Photo courtesy: Colin Richardson

Community Services and Facilities			
Objective	Actions	Timeframe	Responsibility
Provide new or expand existing community services and facilities in accordance with settlement function	Provide community, health and social services according to established needs and to cater for the region's ageing demographic	Ongoing	DoH LG
	Identify shortfalls in the provision of community services and infrastructure in settlements and coordinate integrated programs for service provision, including development contribution plans in local planning schemes	Ongoing	LG DoP/WAPC GSDC
	Identify in local planning strategies and zone appropriately in local planning schemes adequate and suitable land for: <ul style="list-style-type: none"> • health facilities, particularly for the elderly; • education, particularly additional secondary and tertiary facilities that provide region-specific specialist training; • recreation, including passive and active facilities; and • law and order facilities and other government services 	Ongoing	LG DoP/WAPC DoH DET
	Implement strategies and projects that focus on provision of suitably located tertiary education and specialist facilities offering training in fields beneficial to growth and development of the region	Short term	DTWD DET LG
	Develop new and/or upgrade existing recreational boating facilities along the coast, as necessary	Medium term	DoT LG

2.7 Strategic Industry			
Objective	Actions	Timeframe	Responsibility
Provide adequate, environmentally acceptable and appropriately located strategic industrial areas to cater for future industrial development	Secure infrastructure provision to existing industrial sites (Yerriminup and Mirambeena) to maximise the potential for use of these sites	Short term	LandCorp DSD GSDC
	Undertake studies to determine infrastructure and servicing requirements for the industrial investigation area at Cranbrook	Short term	LG GSDC
	Investigate mechanisms to address constraints related to electricity headworks and infrastructure provision in strategic industrial estates	Short term	Western Power
	Undertake comprehensive feasibility studies and structure planning of Mirambeena and surrounding investigation area (including the area to the existing railway line) to take into account: <ul style="list-style-type: none"> • preserving suitable land for strategic industry; • identifying infrastructure requirements and alignments, in particular power, water and the extension of the rail spur; and • identifying a suitable location for an intermodal transfer facility/inland port 	Short term	LandCorp DoP/WAPC GSDC LG
	Investigate opportunities for the equitable provision of common user infrastructure to strategic industrial areas	Medium term	
	Undertake studies to determine the feasibility of investigation areas at Albany (Figure 2) for future intermodal facilities and/or other industrial land uses	Medium term	

2.8 Agriculture, Forestry, Fisheries and Aquaculture

Objective	Actions	Timeframe	Responsibility
Facilitate sustainable development of the agricultural sector and maximise opportunities for diversification of agriculture and downstream processing	Zone land identified as being of State, regional or local agricultural significance in endorsed local planning strategies as priority agriculture in local planning schemes	Short term (completed in some schemes)	LG
	Complete high quality agricultural land (HQAL) mapping for the region to identify priority agricultural areas	Short term	DAFWA DoW
	In local planning schemes, provide suitable permissibility of land uses to encourage agricultural activity and carefully manage potential conflicting uses within rural zones	Ongoing	LG DoP/WAPC
	Investigate potential for a future intensive agriculture/horticultural precinct(s) within the Lower Great Southern taking into account land capability, water supply, service and infrastructure availability, and potential impacts on the environment and existing land use	Medium term	DoW DAFWA DoP/WAPC LG
	Foster and support establishment of intensive livestock enterprises in appropriate locations within agricultural areas	Short term	DAFWA LG
	Maintain scope within planning strategies and schemes for the forestry and plantation industries to be supported in appropriate areas	Ongoing	LG DoP/WAPC
Manage the impact of salinity on agricultural land	Prepare guidelines for development of saline-affected land in areas subject to land use change in local planning strategies	Short term	DAFWA DoP/WAPC
	When preparing local planning schemes or amendments, local government to have regard to the extent of saline land when determining the appropriate use of the land	Ongoing	LG DoP/WAPC
	Promote appropriate land care initiatives to rehabilitate degraded agricultural land	Ongoing	DAFWA
Manage conflict between fishing operations and other land uses	Prepare and distribute informative and educational material regarding identified environmental impacts to all leaseholders	Ongoing	LG DoF
Provide for the expansion of aquaculture in appropriate areas	Assess the suitability of the sites determined in the Department of Fisheries study for aquaculture	Ongoing	DER
	Use the South Coast Management Group's draft guidelines for land-based aquaculture development in the South coast region of WA when assessing aquaculture proposals	Ongoing	LG DoF

2.9 Mineral Resources and Basic Raw Materials

Objective	Actions	Timeframe	Responsibility
Maximise opportunities to enable mineral exploration and extraction in accordance with acceptable environmental and amenity standards	Review and update the Albany Regional Basic Raw Materials Study (1996)	Medium term	DMP DoP/WAPC
	Ascertain the implications of the Walpole Wilderness Area for the future mining and extraction of gravel, under the auspices of the State gravel supply strategy	Medium term	DMP DPaW
	Fund a strategic assessment of the prospect for limestone in the Lower Great Southern, under the auspices of the State lime strategy	Medium term	DMP
	Identify existing and potential sites for basic raw material and agricultural mineral extraction in local planning strategies and protect them in local planning schemes, including consideration of neighbouring land uses, visual impact issues and appropriate buffer areas where necessary	Short term (completed or partially completed in some LGA's)	LG DMP DoP/WAPC
	Retain areas of high prospective geology as general rural zoning to allow for exploration or extraction	Ongoing	LG DoP/WAPC

2.10 Long Term Water Supplies

Objective	Actions	Timeframe	Responsibility
Provide existing and future populations with adequate and sustainable water supplies	Ensure a whole-of-catchment approach to the integration of natural water resource use and land management	Ongoing	DoW LG DoP/WAPC
	Secure future potable water source areas	Ongoing	Water Corporation DoW
	Promote water conservation initiatives and reduced consumption in settlements	Ongoing	Water Corporation DoW LG
	Recognise public drinking water source areas in local planning strategies and protect them, where appropriate, in local planning schemes	Ongoing (completed for existing PDWSA's in Lower Great Southern)	DoW LG DoP/WAPC

2.11 Bushfire Risk			
DoP/WAPC	Actions	Timeframe	Responsibility
Through planning and management processes, build resilience to bushfire risk in the Lower Great Southern region	Ensure settlement and land use planning in strategies and schemes is in accordance with the principles, objectives and provisions of the WAPC's planning framework for bushfire risk management	Ongoing	LG DoP/WAPC
	Planning proposals including rezoning, structure planning, subdivision and development to incorporate bushfire assessment and management measures as required by WAPC's policy framework, as appropriate	Ongoing	LG DoP/WAPC Development industry
	Develop sufficient bushfire response plans and procedures in the context of likely increased occurrence of bushfires in the region	Ongoing	DFES LG DPaW
	Foster awareness of bushfire risk and the need for property owners to take responsibility for individual preparedness measures in at-risk areas of the region	Ongoing	DFES LG
	Continue implementation of fuel-load reduction programs in parks and reserves, particularly where in proximity to established settlements	Ongoing	DPaW LG



2.12 Coastal Planning and Management

Objective	Actions	Timeframe	Responsibility
Minimise potential environmental impacts from coastal development proposals through effective management and recognition of coastal processes including sea level rise, and appropriate setbacks	Carry out studies to broadly identify vulnerable coastal areas and provide guidance for more detailed risk assessments and management responses	Short term	DoP/WAPC LG DoT
	Prepare coastal and foreshore management plans in parks and reserves where there are likely to be conflicts between different user groups	Ongoing	LG DPaW
	Include requirements for the preparation of foreshore management plans as a condition of subdivision and development likely to have impacts on coastal and estuarine foreshore areas	Ongoing	DoP/WAPC LG DoW
Provide and maintain public access to coastal and estuarine foreshores	Identify land appropriate for protection and enhancement of the coastal vegetation corridor, in order to protect biodiversity and cater for public access, and for possible regional open space	Ongoing	DoP/WAPC LG
	Identify priority sites around the coast and estuaries required for public access in local planning strategies and protect them through appropriate mechanisms in local planning schemes	Ongoing	LG DoP/WAPC DoW DPaW

2.13 Tourism

Objective	Actions	Timeframe	Responsibility
Maximise opportunities for the development and growth of a sustainable tourism industry	Update tourism components of local planning strategies as necessary to respond to changing needs of the tourism sector and take advantage of emerging markets	Ongoing	LG TWA DoP/WAPC
	Zone identified strategic tourism sites in endorsed local planning strategies solely for tourism development in local planning schemes, to protect them for that purpose	Short term (partially completed in some schemes)	LG TWA DoP/WAPC
	Maintain and improve, where necessary, existing linkages to major tourism attractions and develop additional tourism routes in the Lower Great Southern	Ongoing	LG MRWA
	Provide adequate and consistent signage to tourism destinations	Ongoing	LG MRWA

2.14 Environment

Vegetation and Biodiversity Conservation

Objective	Actions	Timeframe	Responsibility
Protect threatened flora, fauna and ecological communities	Identify and acquire land to add to the formal conservation reserve system	Ongoing	DPaW
	Develop conservation strategies to encourage the management and protection of highly valued remnant vegetation on both public and private land	Ongoing	DPaW LG
	Develop additional incentives for the protection of remnant vegetation on private land	Ongoing	DPaW DoP/WAPC LG
	Develop and implement recovery plans for all critically endangered, endangered and vulnerable flora, fauna and ecological communities	Ongoing	DPaW
	Finalise Albany Regional Vegetation Survey (ARVS) phase 2	Short term	DoP/WAPC
	Carry out vegetation surveys based on ARVS methodology in other suitable areas of the region	Medium term	DPaW DoP/WAPC LG
Maintain and improve coverage of native vegetation from existing levels	Protect and manage remnant native vegetation or revegetate using various local native species in remnant vegetation linkages and river and wetland catchments	Ongoing	DPaW NRM Groups
	Support initiatives that aim to increase native vegetation and/or perennial cover throughout the landscape, to reduce salinity and improve land and water quality	Ongoing	DPaW NRM Groups

Vegetation and Biodiversity Conservation (cont.)			
Objective	Actions	Timeframe	Responsibility
Utilise land use planning processes where appropriate to assist in establishing and protecting identified macro corridors	Identify remnant vegetation linkages (macro corridors) at a localised scale, in local planning strategies	Ongoing	LG DPaW
	In local planning strategies ensure urban growth takes into account the need to identify and protect remnant vegetation and other high conservation value vegetation	Ongoing	WAPC LG DPaW
	Promote opportunities for conservation lots in appropriate locations that provide a net benefit to biodiversity and meet planning and environmental objectives	Ongoing	DPaW WAPC LG
	Investigate use of region-specific planning guidelines to facilitate creation and protection of macro corridors	Short term	DoP/WAPC
	Incorporate recommendations of ARVS phase 2 and any further vegetation surveys into local planning strategies, schemes and structure plans	Short term	DoP/WAPC LG



Rivers, Estuaries and Wetlands			
Objective	Actions	Timeframe	Responsibility
Identify and map the extent of important riparian, estuarine and wetland areas	Undertake estuarine and river floodplain mapping for high risk flooding areas	Medium term (some mapping completed)	DoW
	Identify regionally important river and estuarine foreshores and fringing habitats with high conservation value; and other priority sites requiring public ownership and protect them through appropriate mechanisms	Ongoing	LG DoP/WAPC DoW
Maintain the environmental and water quality of rivers and wetlands through effective catchment management practices	Maintain revegetation in the upper Denmark catchment in order to maintain reduced stream salinity	Ongoing	DoW DER LG Plantation companies
	Consider downstream impacts when assessing clearing applications in the upper catchments of river systems	Ongoing	DER
	Support established programs that aim to increase the level of perennial vegetation cover, including native vegetation and perennial crops	Ongoing	DPaW LG NRM Groups DoW
Conserve and maintain the conservation and biodiversity values of riparian, estuarine and wetland environments	Encourage fencing and revegetation of rivers, floodplains and estuaries to reduce sediment and nutrient transportation	Ongoing	DoW DPaW LG NRM Groups
	Ensure potential nutrient point sources are developed only where compatible with codes of practice, and particularly outside estuarine and river floodplains	Ongoing	DER DAFWA LG
	Ensure no direct discharge occurs to rivers and estuaries from stormwater and industrial wastewater	Ongoing	LG DoW DER

Landscape			
Objective	Actions	Timeframe	Responsibility
Identify and protect valued landscape features and viewsheds	Incorporate appropriate provisions in local planning schemes to guide development in landscape priority areas that have been identified in endorsed local planning strategies	Short term	LG DoP/WAPC
	Ensure that new development takes into consideration existing natural, rural and urban landscape values	Ongoing	LG

2.15 Cultural Heritage			
Objective	Actions	Timeframe	Responsibility
Ensure consideration of cultural heritage takes place in planning for the Lower Great Southern	Incorporate consideration of important cultural heritage sites and related matters into strategic and statutory planning	Ongoing	DAA LG DoP/WAPC
	Promote cultural tourism through the use of informative interpretive material at cultural heritage sites	Ongoing	TWA GSDC

2.16 Regionally Significant Natural Areas			
Objective	Actions	Timeframe	Responsibility
Establish a network of regional open space in the Lower Great Southern	Undertake detailed investigation of the extent of the areas in Table 3 to be secured for regional open space	Long term	DoP/WAPC DPaW DoW LG
	Investigate appropriate protection mechanisms for regionally significant areas	Medium term	DoP/WAPC LG DPaW

Part 2 – Strategic directions

The Lower Great Southern Strategy (LGSS) focuses on the area's regional land use and infrastructure needs for the next 20 years. This section discusses the key challenges facing the Lower Great Southern and the strategic approach taken to address them.

A vision, objectives and actions which address the key issues and identified challenges provide the foundation for the strategy. The vision, objectives and actions have been determined taking into account previous planning and sustainability strategies, the original 2007 LGSS, and with input from stakeholders and the community.

Lead agencies have been nominated for specific actions; however, it is expected that a cross-agency collaborative approach will be necessary in order to achieve maximum benefit to the region.

2.1 Vision

The following vision for the Lower Great Southern strategy has been developed with input from stakeholders and the community:

In the year 2035, the Lower Great Southern is a productive, innovative and successful area for intensive primary production and downstream processing. It is an attractive business, lifestyle and tourism destination with quality cultural, built and natural landscapes. It is recognised as a centre of excellence in natural resource management and provides a diverse range of health and wellbeing, higher education, training and employment opportunities. It is equipped to respond to local and global challenges and has supportive, vibrant, accessible and safe communities that embrace their Indigenous and European heritage.



2.2 Planning Objectives and Key Issues

The following objectives and issues guide the formation of the strategy.

2.2.1 Economic development

To enable the economic potential and growth of the Lower Great Southern to be planned, utilised, encouraged and achieved.

2.2.2 Infrastructure development

To ensure that well planned and adequate infrastructure is provided in accordance with community and economic development needs of the Lower Great Southern.

2.2.3 Community development

To enhance the Lower Great Southern as a place to live, promote orderly urban growth while recognising environmental and other constraints, and encourage the provision of a range of residential living environments. To ensure that the community is supported by adequate and appropriate community services and facilities.

2.2.4 Environment

To conserve and enhance the natural environment, biodiversity, resources and distinctive landscapes of the Lower Great Southern.

2.2.5 Key planning issues in the Lower Great Southern

The key planning issues to be addressed in the strategy are:

- planning for economic growth and development;
- planning for adaptation to climate change;

- providing sustainable settlements and community development with appropriate services, infrastructure and economic opportunities;
- ensuring sufficient port access and protection of major road corridors is maintained;
- identifying and fostering development of strategic industrial sites;
- protecting agricultural land and promoting agricultural diversification, farm forestry and secondary processing of products within the region;
- sustainable development of fisheries and aquaculture;
- securing sustainable access to mineral resources and basic raw materials;
- securing long-term water supplies;
- managing risk of bushfires;
- promoting tourism and protecting significant tourism sites;
- sustainable use, management and conservation of the terrestrial, coastal and marine environments and important cultural heritage areas; and
- determining appropriate mechanisms for securing regional open space.

2.3 Economic Growth

Sustainable economic growth is a key component of ensuring the ongoing prosperity of the Lower Great Southern region. As the Lower Great Southern contains the primary population, industrial and commercial service centres for the wider Great Southern region, its economic performance will have wider impacts and influences on the Great Southern region as a whole.

Economic growth in the Lower Great Southern is currently steady. Primary production is the key driver whilst retail trade, construction and tourism make substantial contributions. Key themes for economic growth into the future will be maximising value from existing opportunities, diversification of the economic base, and fostering growth in secondary and downstream processing. It is expected that achieving these key outcome will provide flow-on effects to other market sectors such as small business and trades.

Stronger economic growth will help address current challenges across the region such as seasonal employment fluctuations, proportionally lower incomes than the State average, housing affordability and achieving sustainable population growth.

Great Southern Regional Blueprint

The draft Great Southern Regional Blueprint 2015 has been prepared by the Great Southern Development Commission (GSDC). It establishes priorities for economic development and growth of the Great Southern region, which incorporates the Lower Great Southern, and provides an analysis of local, regional, national and global factors influencing the region. A strategic economic growth plan and proposed transformational projects responding to these influences are set out in the Blueprint, incorporating use of the comparative advantages present in the region to maximise benefits over the long term.



Photo courtesy: Colin Richardson

Whilst the Blueprint will provide key guidance for the direction of economic growth and development within the Lower Great Southern, the regional planning framework including the Lower Great Southern Strategy will play an important role in strategic planning and decision making to assist in achieving the economic aims that the Blueprint sets out for the region.

An over-arching objective and set of actions related to economic growth are provided below. More specific actions related to particular issues are included in the following sections.

2.4 Climate Change

Climate change, and capacity to adapt to it, is a key factor affecting all aspects of growth and development in the Lower Great Southern. Climate change will present both challenges and opportunities for the region.

Climate projections point to drier conditions across the South West of WA in the future. Current global climate models all agree on the direction of change in winter (June to August) across the South West with a mean reduction in winter rainfall of approximately 20%. This will place increasing pressure on agriculture in drier, inland areas. The reduction in run-off in the South West has also been substantial, affecting water storage for human use.

Objectives and Actions for Economic Growth			
Objective	Actions	Timeframe	Responsibility
Secure long term economic prosperity for the Lower Great Southern region	Capitalise on regional economic advantages in agriculture and primary production, tourism, natural resources and clean energy production	Ongoing	State government Local government Community/ private sector
	Secure the necessary regional infrastructure to stimulate investment, growth and development in the Lower Great Southern	Short term/ ongoing	DSD RDA GSDC LG
	Work towards a diversified economic base in the Lower Great Southern in order to maximise advantages from long term regional, national and global economic trends	Ongoing	GSDC LG Community/ private sector
	Focus on growing secondary and downstream processing industries, particularly within the agricultural and primary production sectors	Short term	GSDC LG DAFWA Community/ private sector

Results from Indian Ocean Climate Initiative (IOCI) research for South West WA projects that relative to 1960-1990:

- By 2030, rainfall will decrease by between 2-20%, summer temperatures will increase by between 0.5-2.1°C, winter temperatures will increase by between 0.5-2.0°C; and
- By 2070, rainfall will decrease by between 5-60%, summer temperatures will increase by between 1.0-6.5°C, and winter temperatures will increase by between 1.0-5.5°C.

Average global sea level is projected to increase by a further 0.5m to 1.0m this century. A sea level rise of 0.5m will lead to increases in the frequency of coastal flooding. For example flooding that is currently considered a 1-in-100 year event would occur every year in most parts of WA.

Expected implications, trends and opportunities resulting from climate change include:

- existing threats to the function and diversity of marine and terrestrial ecosystems (and therefore the benefits on which human activity depends) are exacerbated, resulting in adverse changes to hydrology, fire risk and fire regimes, spread of dieback, weed invasion, soil salinity and feral animals;
- coastal changes resulting from sea level rise, storm surge and changes to storm frequency and intensity, potentially affecting coastal urban settlements and vulnerable and valuable coastal habitats. For example, increased salinity of inlets and erosion of the soft coast;
- changes in marine ecosystems affecting biodiversity and viability of fisheries;
- changes in the nature and geographic range of agricultural and forestry activities, and indirect responses such as bushfire risk, pests and diseases. Changes include new crops, diversification enterprises, demands for bio-energy sources and carbon storage, and revegetation/plantation incentives to meet water, soil and biodiversity objectives;
- demands for alternative land uses and industries in agricultural regions;
- diminished run off for recharging water resources, effects on waterways and wetlands, pressure for water recycling and protection of soil and water quality;
- opportunities for mitigation responses such as carbon sequestration, revegetation with native species, and expansion of renewable energy infrastructure such as wind farms and solar energy. The South West has some of the best wind resources in Australia. Mallee eucalypts, which have been established in the Wheatbelt to help manage dryland salinity, could also provide biomass for electricity generation;
- coastal management that plans for coastal change, including development setbacks, shoreline stabilisation techniques and managed re-alignment in response to sea level rise, storm events and changes in wind and wave regimes;
- settlement patterns influenced by fuel costs, changes in land use and new environmental constraints such as flooding – an important issue for remote settlements; and
- land use planning and risk management to plan for and respond to coastal erosion, extreme weather events (floods, storms), bushfires and mosquito-borne diseases.

The effects of climate change could, cumulatively and over time, significantly alter the environmental systems and assets on which the region's well-being relies. However, the realised impacts of climate change do not only come from changes in the climate system, but are also dependent on management changes and adaptive measures that may be taken directly in response to climate change.

Strategic planning for the Lower Great Southern therefore presents an important opportunity to minimise the negative effects of climate change, by planning to adapt to change, and for the region to contribute to climate change mitigation. The complexity of potential effects and responses

makes direct management of climate effects very challenging, raising the need for a prudent, adaptive and integrated approach to planning; and for risk assessment and management to be incorporated into decision making processes. A number of over-arching actions related to climate change are provided below. More specific actions related to particular issues are included in the following sections.

Objectives and Actions for Climate Change			
Objective	Actions	Timeframe	Responsibility
Support the Lower Great Southern community in being adaptive and resilient to climate change	Provide efficiency in development form and servicing in settlements	Ongoing	DoP/WAPC LG Utility agencies
	Provide for alternative and supplementary water and energy supplies to be utilised, including self-supply where appropriate	Ongoing	LG DoP/WAPC Community
	Develop emergency and risk management plans that are cognizant of increased risks that may result from climate change	Ongoing	DFES LG
	Carefully manage essential natural resources, particularly water supplies and agricultural land	Ongoing	DAFWA DoW LG DoP/WAPC
	Develop and adopt strategies to mitigate identified impacts of climate change	Ongoing	DoP/WAPC LG

2.5 Settlements

This strategy places each existing settlement into a hierarchy taking into account population; the range and diversity of goods and services offered, such as community facilities, health, education, shopping, finance and manufacturing; and housing needs over the period of the strategy. It designates a range of settlements within the Lower Great Southern from the highest to lowest order of service.

The objectives of the settlement hierarchy are to:

- identify the role that each settlement plays in the regional settlement pattern;
- direct population growth to those areas where expansion is planned in order to support an increased range and level of service provision and economic activity in association with existing settlements;
- ensure that settlement planning takes into account population growth, geographic location, size (both in population and land use activities) and economic drivers in establishing the likely demand for housing, services and infrastructure; and
- ensure efficient and equitable provision of infrastructure and services.

2.5.1 Settlement Hierarchy

Regional Centre

A regional centre contains services and facilities which reflect the needs of the local community and that of the regional population. It has a larger population base than any other centre in its region. It offers a high level of services such as senior high schools, tertiary education, regional hospital, cultural and entertainment facilities, regional community facilities, department stores and specialist retail shops. It is a major employment centre in a region with local and State government and private sector offices. It is located at the convergence of main road access, rail and/or port infrastructure.

Sub-Regional Centre

A sub-regional centre contains services and facilities which reflect the needs of the local community and that of the agricultural population in its hinterland. It has a smaller population base than a regional centre and provides services to, and is a goods transfer base for, smaller settlements such as towns and villages. Sub-regional centres usually offer services such as a high school, district hospital, commercial centre with multiple retail outlets, supermarkets, specialty and convenience stores and community and entertainment facilities including district sporting facilities.

Town

A town contains services and facilities that reflect the needs of the local community and that of the agricultural population in its district. It provides services to, and is a goods transfer base for, smaller settlements such as villages. It has a smaller population base than that of a sub-regional centre. It is a centre for weekly retail and offers limited services and community facilities.

Village

A village is a small settlement where a general store and/or fuel depot serves the daily needs of the local and agricultural community. The general store usually is the focal point of the village and may include a community hall.

The settlement hierarchy identifies existing villages and assessment of their growth potential is required in the context of each local government's local planning strategy or a separate settlement strategy. Social, environmental, economic and infrastructure issues must be addressed before expansion can be considered. Where villages have been identified for expansion, townsites strategies and/or conceptual structure plans need to be prepared by local government and endorsed by the WAPC.

The settlement hierarchy is depicted in Figures 2 and 6; and Table 2.

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Figure 2

Table 2: Settlement Hierarchy of the Lower Great Southern

	City of Albany	Shire of Cranbrook	Shire of Denmark	Shire of Plantagenet
Regional Centre	Albany			
Sub-Regional Centre			Denmark	Mount Barker
Town		Cranbrook Frankland River		
Village	Wellstead Elleker Cheynes Beach Torbay Hill Kalgan Manypeaks South Stirling Redmond Torbay Youngs Siding	Tenterden	Peaceful Bay Nornalup Bow Bridge	Kendenup Rocky Gully Narrakup Porongurup

2.5.2 Consolidation of Settlements

The State Planning Strategy 2050 promotes the consolidation of existing settlements to make regional communities sustainable in the long term. The aim of this strategy is to build on existing communities in order to support local and regional economies; concentrate investment in the improvement of services and infrastructure; enhance the quality of life in these communities; and deliver sustainable outcomes for settlements in the Lower Great Southern. For these reasons the majority of settlement growth in the region is to be in the existing urban areas of Albany, Denmark, Mount Barker, Cranbrook and Frankland River.

2.5.3 Industry and Commercial Growth

Each of the major settlements of Albany, Denmark, Mount Barker and Cranbrook has local industrial sites. It is important that local governments determine the demand for industrial land and identify suitable locations for local industries

in local planning strategies and schemes. Infrastructure requirements, setbacks and appropriate separation distances from existing and proposed residential and rural residential areas should be considered with the view to consolidating townsites and ensuring sufficient land is available for existing local businesses wishing to relocate or for new industry. Integration of transport and land use planning should ensure that industrial sites are appropriately located near major transport routes.

Prospects for commercial activity will be tied closely to the future population, which in turn will depend on the future employment structure and ability to sustain a working population. Commercial development and redevelopment should be addressed in a coordinated and structured manner, with emphasis placed on improving the depth and quality of existing retail centres, in particular historical town centres, to broaden the range of facilities and services whilst maintaining their character.

Efforts should be made to confine new shopping areas and office developments, including government agencies and offices, to existing town centres. The geographic spread of bulky goods and showroom development, particularly along major highways are a concern. The location of these uses adjacent to designated centres is the preferred option. In the smaller townsites and villages, utilisation of 'enterprise' zones such as those currently established in Rocky Gully and Kendenup will be considered as a mechanism to stimulate commercial and economic growth and support their ongoing sustainability.

Guidance for the consolidation of existing commercial centres and establishment of a hierarchy of well-located centres should be incorporated into local planning strategies. The concentration of retail and commercial activities in geographically confined, yet highly accessible areas is encouraged.

2.5.4 Infrastructure Provision

Cost and availability of services in regional settlements, particularly power, water and reticulated sewerage, can affect the release of residential and industrial lots. This can lead to developers looking toward rural land as an alternative, resulting in fragmentation of rural land and creation of small rural lots that will no longer be available for agricultural production. Other impacts affecting regional development can also arise including unsustainable patterns of urban land development; and increased pressure on local government to bear the costs for extension of services.

Alternative infrastructure provision and innovative approaches to the supply of water and sewerage services, such as new technologies across the spectrum of centralised and diffuse systems, is an option that could be explored by communities and government agencies in areas that are environmentally and socially appropriate and



Photo courtesy: Colin Richardson

where the cost of extending traditional services is a constraint to growth. These approaches should deliver water and sewerage solutions that at least match, and preferably enhance the environmental, social and economic outcomes and performance of current traditional methods. Development of alternative technologies for townsite water and wastewater services should also take into account predicted population and industrial growth and community expectations.

2.5.5 Sea change

Coastal locations nationally are experiencing population growth due to an increasing desirability to live by the coast for lifestyle reasons. Denmark and Albany have had significant population increases based on this trend and will continue to experience growth in the future. There are many challenges associated with this growth ranging over the spectrum of environmental, social, economic and infrastructure pressures. Coastal locations also attract many of Australia's local, national and international tourists which increase the complexity of managing growth and development in these areas.

2.5.6 Rural Living

The location and amount of land for rural living purposes is to be determined through the local planning strategy process and in accordance with WAPC rural planning policy (SPP 2.5). Other relevant matters such as environmental and fire hazard considerations are also to be taken into account in this process.

2.5.7 Key Planning Issues for the Region's Settlements

Key planning issues for settlements are outlined below. Actions to address these issues are contained both in this section and within sections of the strategy relating to specific matters.

Albany

- preserving efficient heavy freight access corridors to the port;
- resolving constraints on the development of the Mirambeena strategic industrial estate;
- examining demand, availability and infrastructure requirements to ensure a suitable amount and variety of industrial land is provided;
- investigating potential for western expansion of Pendeen industrial estate;
- creating an integrated urban road network, based on outputs from the Albany Traffic Model;
- protecting the city centre from fringe commercial development and resolving traffic issues;
- identifying opportunities for infill urban development and providing strategies to consolidate growth of the City and prevent sprawl;
- fostering tourism development in key tourist areas;
- guiding development of the Albany waterfront;
- accommodating predicted increases in the proportion of aged people in the community and meeting their associated care and health needs;
- developing cultural and recreation facilities to cater for future growth;
- identifying sites for future regional private recreation facilities (e.g. motor sport);
- providing more opportunities for tertiary study;
- identifying and protecting future water resources for the city;
- protecting agricultural areas against fragmentation, particularly rural living subdivision and development;

- retaining priority agricultural land within Albany's development front for primary production;
- protecting basic raw materials and mineral resources from encroachment by incompatible land uses;
- achieving a balance between conservation and urban development and protecting Albany's natural assets;
- considering ways of protecting remaining urban native vegetation by implementing recommendations of the Albany Regional Vegetation Survey (2010 and 2014) through land use planning processes; and
- managing risks associated with sea level rise and climate change on existing and proposed infrastructure and coastal development areas.

Denmark

- developing the new industrial site identified in the Local Planning Strategy;
- managing heavy freight through-traffic along South Coast Highway;
- consolidating the existing urban settlement;
- rapid population growth and associated development pressures;
- increased pressure on utility services during holiday periods;
- extending the reticulated sewerage system to existing residential areas;
- managing growth in the town centre to ensure adequate parking, accessibility and the attractive townscapes and rural character of the town are maintained;
- loss of agricultural land through fragmentation for rural living purposes;
- managing bushfire risk to the townsite; and
- managing the environmental qualities of Wilson Inlet and other waterways.

Mount Barker

- resolving development constraints (infrastructure) to Mount Barker and the Yerriminup strategic industrial estate;
- identifying additional industrial and service industrial land in reasonable proximity to Mount Barker and with good access and exposure to Albany or Muir Highway;
- managing impacts of Albany Highway on the town centre;
- improving the Mount Barker townscape and consolidating the existing townsite;
- retaining the existing level of services, encouraging economic development and minimising economic leakage to Albany;
- continued expansion of infill sewerage whilst overcoming constraints due to the presence of hard rock;
- costs associated with infrastructure provision for residential expansion;
- managing bushfire risk to the townsite;
- managing land use conflicts between rural-residential and intensive agriculture land uses;
- minimising fragmentation of rural land; and
- managing impacts on local road networks from heavy vehicles.

Cranbrook

- progressing establishment of a proposed industrial transport hub near the townsite;
- cost of development and subsequent effect on viability;
- extending reticulated sewerage to unserviced areas of the townsite;
- ensuring the proposed Water Corporation pipeline extension in 2018 occurs to provide security of water supply; and
- monitoring potential salinity impacts on the townsite.

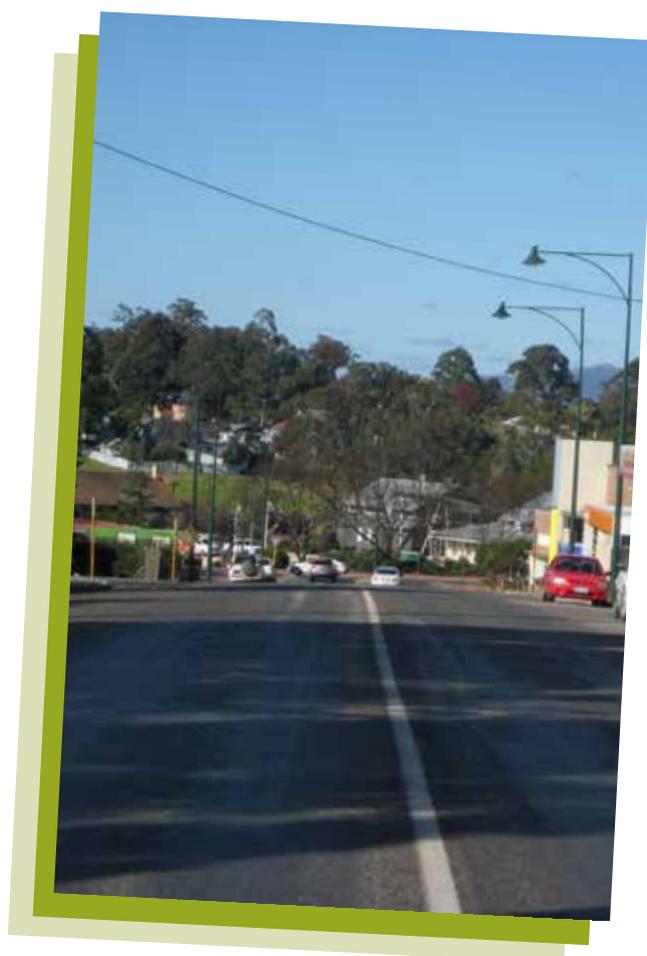
Frankland River

- provision of an upgraded and secure water supply;
 - provision of an upgraded power supply;
 - provision of suitable services to residential land to accommodate future growth;
 - provision of an appropriate amount of suitably serviced industrial land; and
 - fostering growth of viticulture and niche agricultural products.
- size and location of existing lots;
 - addressing land use, subdivision and settlement patterns in Kendenup and the existing fragmented rural surrounds;
 - incorporation of land for tourist accommodation;
 - impacts of historical subdivision and current development trends;
 - impacts of development on village character and amenity, and that of surrounding areas;
 - access to reliable communications services; and
 - impact of natural hazards such as bushfires.

Villages

There are many common issues facing villages in the Lower Great Southern. The following provides a summary of these issues. Where growth of villages is proposed in local planning strategies, issues relevant to that particular village should be addressed in townsite development plans and/or conceptual structure plans.

- ageing and/or inadequate infrastructure and the cost of upgrades;
- cost of providing and/or extending infrastructure and services to support development;
- issues relating to the tenure of land adjacent in and adjacent to villages, in particular limited availability of freehold land and conservation reserves, national parks and native title claims adjacent to town sites;
- maintenance of existing community assets;
- loss of community services and facilities such as health and education;
- coastal and foreshore management issues;
- groundwater pollution and impacts of on-site effluent disposal;
- consideration of innovative planning, developmental and servicing approaches to support ongoing sustainability of villages;



Objectives and Actions for Settlements			
Objective	Actions	Timeframe	Responsibility
Ensure that identified settlements develop in a sustainable manner	Ensure that Albany is promoted as a regional centre; Mount Barker and Denmark are promoted as sub-regional centres; and Frankland River and Cranbrook are promoted as towns	Ongoing	State government Local government Community
	In regional and sub-regional centres and towns, appropriately zone sufficient land for urban development and a variety of housing types, in accordance with endorsed local planning strategies	Ongoing	LG
	For villages identified for expansion that do not currently have endorsed plans, prepare and have endorsed by the WAPC a townsite strategy and/or conceptual structure plan	Short term	LG
	Where servicing and/or other constraints to townsite development have been identified in endorsed local planning strategies, seek inclusion in the townsite development program where appropriate	Ongoing	LG LandCorp Utility agencies
	Utilise innovative zonings in local planning schemes to stimulate commercial and economic growth in villages identified for expansion	Ongoing	LG DoP/WAPC
	Appropriately zone sufficient land for light, general and service industry in accordance with endorsed local planning strategies	Ongoing	LG DoP/WAPC

2.6 Infrastructure

Planning for, providing and maintaining essential infrastructure is a fundamental requirement for the prosperity and growth of the Lower Great Southern. This section describes existing infrastructure supporting and connecting the region; and provides actions to effectively plan for upgrading and/or providing new infrastructure in the region as necessary. Key regional infrastructure is shown in Figure 2.

2.6.1 Port of Albany

The Port of Albany is a State and regional asset that is critical to economic development in the Great Southern region. The port's infrastructure needs to be developed and its functions protected to accommodate growth in trade and ensure its continued viability as a key State asset.

Anticipated growth in export product will result in increased road and rail freight to the port. A key challenge will be to ensure that freight can access the port in an economically, environmentally and socially acceptable manner. The port is the main export hub for commodities in the Great Southern

Objectives and Actions for Port of Albany

Objective	Actions	Timeframe	Responsibility
Maintain and enhance function of the Port of Albany in light of envisaged long term growth and productivity within the wider Great Southern region	Maintain the special control area around the port to facilitate its ongoing protection	Ongoing	LG
	Investigate options for a future inland port facility	Short term	PoA DoP/WAPC LG
	Secure road, rail and other necessary infrastructure corridors to the port	Ongoing	MRWA PTA DoP/WAPC LG
	Give primacy to maintenance of port function and operations when considering land uses that may impact on these	Ongoing	LG DoP/WAPC

region. Therefore, any changes to its operation or inefficiencies in gaining access will also affect areas outside the Lower Great Southern area.

The viability of the Port of Albany has the potential to be threatened if freight activity associated with the growth in port operations is perceived as having an adverse impact on adjacent land uses. Planning measures are required to protect its long-term viability. Where possible, impacts from port activities on adjacent land uses should also be minimised through careful planning of layout and use of improved technologies and processes. The Port of Albany noise modelling project provides the basis for determining appropriate measures under the City of Albany's local planning scheme.

The planning and provision of additional road and rail infrastructure outlined in the following sections is a high priority, given the Port of Albany's peak freight task for all commodities, particularly grain and woodchips. The port receives commodities from a much larger catchment than the Lower Great Southern, and it is important to

take account of the impact of the growth of farm forestry and increased grain harvest from areas to the north when planning for additional transport infrastructure.

2.6.2 Roads

Ring Road

In accordance with the Albany Ring Road Planning Study (MRWA, 2001) the alignment of a heavy haulage ring road around Albany has been determined and the first stage (Menang Drive, which connects Chester Pass Road and Albany Highway) has been constructed. Stages 2 (Link Road) and 3 (George Street) have been identified for construction in the longer term, subject to funding being secured. Completion of the ring road will provide more efficient heavy vehicle access to the Port of Albany and improve traffic safety within the town centre by reducing road use conflicts.

In the short term, further planning and preliminary designs for the remainder of the ring road need to be developed to resolve land requirements, design and planning issues.

Regional roads

Transport demands in the Lower Great Southern will require a number of strategic road and transport improvements. The demands that will drive the need for these improvements include growth in agriculture, forestry and related industries; growth in viticulture and winery development; continued population growth; and increasing tourist numbers.

The impact of heavy freight movements on communities and tourism is significant for all local governments in the Lower Great Southern. A balance needs to be struck between key issues

such as protecting road and rail freight access to the port; minimising the impact of increasing heavy road freight on local communities; and providing a road network to meet the needs of freight, tourists and local users.

The regional road network is an important infrastructure asset for tourism in the Lower Great Southern, given the high self-drive nature of visitors and the often dispersed nature of tourism experiences available in the region. Many roads accessing tourism sites are gravel surfaced, which can raise safety issues for tourists. Conversely tourism traffic can increase pressure on certain parts of the road network, particularly in rural areas. Tourism signage along the road network is also an important factor in promotion and accessibility.



Objectives and Actions for Roads			
Objective	Actions	Timeframe	Responsibility
Provide a strategic road network in Albany that facilitates the safe and efficient movement of freight to the Port of Albany; and protect access to the port along the principal freight routes of Chester Pass Road, Albany Highway, Hanrahan Road, Princess Royal Drive and the proposed Ring Road	Preserve Chester Pass Road and Hanrahan Road in Albany as a major freight route, until such time as the Albany Ring Road provides the more expedient and safer route for freight transport between the east and the port	Ongoing	MRWA
	Secure land requirements for stages two and three of the Ring Road	Long term	MRWA
	Utilise the Albany Traffic Model to develop and evaluate options for provision of a legible distributor road network within Albany; and to manage cross-traffic movements on Chester Pass Road and the ring road	Ongoing	MRWA DoP/WAPC LG
	Undertake design refinements for stages two and three of the Ring Road with consideration of: <ul style="list-style-type: none"> • optimising road and rail alignment along Lower Denmark Road and intersection with Hanrahan Road; • grade separation between Princess Royal Drive and the railway line at the eastern end of Princess Royal Drive; • future upgrade to Princess Royal Drive, with the potential for upgrading to a four-lane dual carriageway, while protecting the artificial wetland to the north, public and commercial amenity values of the foreshore and potential visual impact; and • catering for increased traffic using Frenchman Bay Road and Princess Royal Drive to access York Street 	Short term	MRWA DoP/WAPC LG PTA
	Progress construction of additional stages of the Albany Ring Road	Long term	MRWA

Objectives and Actions for Roads (cont.)			
Objective	Actions	Timeframe	Responsibility
Provide a strategic road network in Albany that facilitates the safe and efficient movement of freight to the Port of Albany; and protect access to the port along the principal freight routes of Chester Pass Road, Albany Highway, Hanrahan Road, Princess Royal Drive and the proposed Ring Road	Introduce and maintain measures to minimise potential conflicts between the Ring Road and other heavy freight routes and adjacent land uses, including: <ul style="list-style-type: none"> • structure planning; • land use and development controls for adjacent properties, based on the recommendations of the Albany Heavy Freight Access Study; • providing for adequate separation of sensitive land uses from the Ring Road (particularly urban residential) in local planning strategies and schemes; and • road planning standards to minimise potential road user conflict and the negative noise and visual impact of the road on adjacent properties 	Ongoing	MRWA DoP/WAPC LG
	Implement the noise mitigation measures recommended by the Albany Heavy Freight Access Study including, where appropriate: <ul style="list-style-type: none"> • appropriate uses adjacent to the major freight access roads in local planning schemes to prevent conflicts between incompatible uses; • investigating the use of special control areas to implement development and building standards to reduce the impact of noise on adjacent residential buildings; and • incorporating design guidelines for redevelopment areas backing on to major freight routes 	Short term	LG DoP/WAPC
Develop an effective regional road network, including catering for the needs of freight, local and tourist traffic	Manage the interaction between operational requirements of Main Roads WA for freight and regional traffic purposes, and the needs of local traffic in established settlements	Ongoing	MRWA LG
	Investigate access options to Down Road to facilitate truck movements from the south-west and west to the woodchip mill in the vicinity of Marbellup North Road	Short term	DoP/WAPC GSDC LandCorp
	Undertake road improvement and maintenance projects to enable safe and expedient transport of freight and agricultural commodities	Ongoing	MRWA LG
	Provide ongoing funding for the Wingebellup Road and Woogenellup Road upgrade projects	Ongoing	MRWA LG

Objectives and Actions for Roads (cont.)			
Objective	Actions	Timeframe	Responsibility
Develop an effective regional road network, including catering for the needs of freight, local and tourist traffic	Provide additional passing lanes, where necessary, on major regional freight roads	Ongoing	MRWA
	Seal Salt River Road linking Cranbrook to Chester Pass Road along the northern boundary of the Stirling Range National Park	Medium term	LG MRWA
	Secure funding for the upgrade of Nornalup-Tindale Road	Short term	LG GSDC
	Investigate options and feasibility of providing an alternative means of access/egress to Denmark townsite across the Denmark River	Short term	LG

2.6.3 Rail

As with road, the growth in port trade is a key driver for rail transport. Shifting the transfer of freight, particularly grain and woodchips, from truck to rail has environmental and social benefits and plays a key role in improving the sustainability of the Lower Great Southern, particularly in the Albany urban area where conflict with heavy vehicles and general traffic is an issue.

Capacity of the Great Southern line

The potential transfer of road freight to rail will place greater pressure on the rail network in the vicinity of Albany. The rail line to the port has the capacity to handle the freight task for grain and woodchips in the short term; however, its capacity will need to be sufficient to cater for potential increases in demand in the future. Further rail infrastructure may be required, including a loop line within the port and grade separation between Princess Royal Drive and the rail line at the eastern end of Princess Royal Drive.

Transfer of general freight to rail

Opportunities for transfer of general freight to rail via an intermodal transfer facility, and locating future industrial land near the existing railway line to increase the potential use of rail should be explored. To facilitate the transfer of freight from road to rail it will be necessary to provide additional rail infrastructure. An extension of the existing rail spur to the Albany Plantation Export Company woodchip mill into Mirambeena would allow other industries, including the timber processing precinct at Down Road West, to use rail instead of road to transport product. It also would provide additional opportunities for an intermodal transfer facility to be established. As the commercial viability of these alternatives will be a key issue, Government will need to work with the relevant industry bodies.

Protection of the railway corridor

Rail access needs to be protected to support the long-term viability of the port. The potential noise impacts on sensitive land uses adjacent to the railway line could have an adverse impact on the economic viability and operation of the railway.

Impact of strategic receival points

The creation of strategic receival points can have significant impacts on road infrastructure, including increased traffic dust and noise, due to changing transport patterns. These impacts may be heightened where there are extraordinary grain road freight movements from on-rail strategic receival points, such as in Cranbrook. Where possible, these impacts should be minimised and are an issue for further investigation. Encouraging location of any new strategic receival points next to existing rail infrastructure is recommended.

Objectives and Actions for Rail			
Objective	Actions	Timeframe	Responsibility
Maximise the use of rail for freight haulage into the Port of Albany	Plan for additional rail infrastructure to improve rail capacity, including: <ul style="list-style-type: none"> • passing loops, where required, to maintain freight access to the port; • extensions into strategic industrial sites; • rail realignments and a rail loop at the port and Mirambeena industrial estate to meet future growth in the freight task; • a rail spur extension at Yerriminup industrial estate; and • grade separation between Princess Royal Drive and the railway at the eastern end of Princess Royal Drive 	Short term	DoP/WAPC GSDC PTA LandCorp PoA
	Investigate alternative options to encourage the transfer of road freight to rail and evaluate their costs and benefits	Short term	DoP/WAPC GSDC LG
Protect the railway corridor between the Port of Albany and South Coast Highway	Consider the effects of noise, including the outcomes from the Albany Heavy Freight Access Study, when planning for future land uses adjacent to the railway line to secure its efficient operation	Ongoing	LG DoP/WAPC

2.6.4 Airports

Operation of the Albany airport (including potential runway extensions and other development) needs to be acknowledged and protected through planning processes from encroaching land use, including residential and special rural development. The Australian noise exposure forecast contours should be recognised in the local planning scheme to prevent incompatible development near the airport that could affect its long-term viability.

A special control area exists in Albany's Local Planning Scheme to specify appropriate land use and development, including maximum building heights. The special control area affects land outside the airport boundary, including the Mirambeena strategic industrial estate.

There are opportunities for the development of complementary commercial enterprises to locate near the airport, including flight training schools. It may be necessary to zone land appropriately for commercial uses.

Local governments should consider protecting smaller regional airstrips under local planning strategies and schemes in order to provide certainty for the emergency access needs of the Royal Flying Doctor and other services.

Objectives and Actions for Airports			
Objective	Actions	Timeframe	Responsibility
Ensure the continued efficient operation of the Albany airport	Maintain airport noise and safety buffers and obstacle limitation surface in the local planning scheme	Ongoing	LG
Preserve opportunities for potential future expansion of the Albany airport	Maintain appropriate zonings and manage land uses in and around Albany airport	Ongoing	LG DoP/WAPC
	Undertake conceptual design and planning to guide consideration and establishment of complementary commercial uses	Short term	LG
Develop opportunities for complementary commercial activities to locate at Albany airport	Investigate the potential for co-location of land uses that may be able to utilise existing airport noise buffers	Medium term	LG
Develop and maintain the regional airstrip network to provide emergency access	Monitor, evaluate and upgrade as necessary the regional airstrip network for RFDS emergency access	Ongoing	LG

2.6.5 Service Infrastructure and Utilities

Electricity

Historically, the two primary issues with electricity supply in the Lower Great Southern have been unreliability and lack of capacity to meet growing industrial demand. The upgrading of electricity supply infrastructure also is an important issue, given that faulty power lines can cause bushfires. Identification of the existing shortfalls in power supply and where upgrades and new infrastructure are necessary (in particular upgrading the capacity of the power mains from Muja) to accommodate future power requirements for domestic and industrial use are required.

The development of strategic industry is limited due to the unreliability of power and the cost of infrastructure requirements (including headworks charges) to upgrade existing feeder lines to Mirambeena and Yerriminup. For development of new industries away from Albany, electricity extensions are likely to be a constraint. The proposed extension of the natural gas pipeline from Bunbury would improve the capacity and reliability of energy supply for new and existing industries.

To improve the reliability of energy supply in the Lower Great Southern, alternative sources of power should be investigated. Building on existing renewable sources such as wind farms and biomass power stations has the potential to improve energy supply reliability in the region. The south coast also has excellent wave energy resources.

Gas

It is expected that gas will become increasingly important in meeting primary energy requirements. Mining and large industrial processing projects typically have provided the impetus for establishment of natural gas to previously unserved areas. The Lower Great Southern has the potential for industry growth through downstream processing of its agricultural commodities, timber and mineral deposits.

The potential for increased diversification of industry will gain impetus once the Dampier to Bunbury gas pipeline is extended to Albany. A corridor alignment has been selected in an effort to secure a corridor and provide improved services to towns and industries not directly on the pipeline route. Establishment of an appropriate land use planning framework to facilitate securing the corridor is required. Construction of the pipeline is also likely to be contingent on prior identification of a major customer to assist commercial viability of the project.



Water and wastewater infrastructure

The level to which the Water Corporation's water and wastewater infrastructure and facilities, such as water treatment plants, storage facilities and pump stations, are protected in local planning strategies and local planning schemes varies. Where necessary, particularly for wastewater treatment facilities, appropriate buffers should be identified and incorporated into local planning schemes.

Historically, Western Australia has relied much more heavily on septic tanks than other States, leading to a considerably high proportion of country towns without sewerage. Low-lying properties near rivers and other wetlands are most susceptible to septic tank flooding and overflowing, particularly in winter. The provision of reticulated sewerage will assist in preserving water quality and preventing pollution and eutrophication to rivers, wetlands and estuaries in areas of high risk.

The Sewerage Infill Program is funded by the State government and currently administered by the Water Corporation. Funding for the Program has been curtailed and deferred in recent years due to State budget constraints. Consideration will be given to new infill projects on a case-by-case basis subject to funding availability and priority. In this context it is also important that other means of providing infill sewerage to priority areas are pursued.

This strategy recognises the areas of Weedon Hill, Minsterly Road, Beveridge Road and Inlet Drive in Denmark (next to Wilson Inlet); Milpara, Gledhow, Robinson industrial area and Yakamia in Albany; and Kendenup north of Mount Barker as high priorities for reticulated sewerage connection, if and when funding becomes available under the Sewerage Infill Program or through other means.

Telecommunications

It is important that the existing telecommunications disadvantage experienced by rural and remote areas is addressed, especially considering that the rural, broadacre cropping and forestry sectors account for the majority of the region's total exports. If the Lower Great Southern's communities and economy are to grow and prosper, effective access to telecommunications services is very important. Improvement of access and speeds to any communication network will provide opportunities for residents and businesses to communicate more effectively, improve service levels and streamline their operations. The greatest opportunities will be in the smaller centres where e-health, e-education and e-commerce will become achievable objectives.

Given the extent of recreational and commercial boating activity in the Lower Great Southern and the dangerous coastline of the south coast, it is essential that radio services are provided efficiently for marine and safety purposes. The VHF radio communications network along the south coast needs to be maintained and more repeater stations provided to ensure more complete VHF communications coverage.

While accessibility to public internet access terminals and internet service providers has improved in the Lower Great Southern in recent years, the reliability and quality of such services needs to be improved to meet consumer demand and expectations. Limited geographic coverage for mobile phone telecommunications also remains an issue for households and businesses, particularly to the east and in some scattered pockets of the Lower Great Southern.

Apart from the existing gaps in telecommunications services, the combination of increased direct and indirect economic activity in farm forestry, industrial processing, population expansion, increasing travel and tourism through the area, and the worldwide trend toward greater reliance on convenient and cheap communications, will increase demand for telecommunications over the next 20 years.

Objectives and Actions for Service Infrastructure and Utilities

Objective	Actions	Timeframe	Responsibility
Provide and protect water and wastewater infrastructure and treatment facilities	Provide reticulated sewerage to the priority areas of Weedon Hill, Minsterly Road, Inlet Drive, Beveridge Road (Denmark); Milpara, Gledhow, Robinson, Yakamia (Albany); and Kendenup (Plantagenet) if and when funding becomes available under the Sewerage Infill Program or through other means	Short term/ Ongoing	Water Corporation
	Where appropriate, zone buffer distances around water treatment plants as special control areas in local planning schemes	Short term (completed in some schemes)	LG
	Establish an ongoing dialogue between Water Corporation and relevant agencies to better understand demand for services and develop solutions for provision of water services in priority areas	Ongoing	Water Corporation DoP/WAPC LG
Provide adequate, affordable and reliable power supplies	Determine the capacity of current and potential power supply options and identify power supply requirements	Ongoing	Western Power
Build on existing renewable energy sources and investigate potential new sources to supplement conventional supplies	Support and encourage development of alternative sources of power to supplement and/or replace traditional electricity supply, particularly wind and solar	Ongoing	LG GSDC DoP/WAPC Electricity service providers
Provide suitable alternative servicing options in settlements where normal servicing methods are restricted and/or unavailable	Investigate alternative methods for wastewater disposal, including grey water re-use and alternative non-potable systems in residential and industrial subdivisions	Short term	LG DoH
	Investigate and develop, where appropriate, innovative approaches to supplying country towns with water and sewerage services that enhance environmental, social and economic outcomes and performance of current traditional methods	Medium term	LG DoP/WAPC
Maximise the opportunities presented by the provision of a natural gas pipeline	Identify and secure a gas pipeline alignment that economically will service as many settlements and strategic industrial areas as possible, and maximise economic benefits to the Lower Great Southern	Short term	DSD/DRD
	Collaborate with the private sector to identify and secure a suitable end user of the gas resource, in order to increase viability of the construction phase of the project	Medium term	DSD/DRD GSDC

Objectives and Actions for Service Infrastructure and Utilities (cont.)			
Objective	Actions	Timeframe	Responsibility
Provide high-quality telecommunications infrastructure and services	Improve and/or upgrade telecommunications infrastructure where necessary, in particular services to rural and coastal communities and principal highways; and improve mobile phone coverage and high-speed broadband data transmission	Ongoing	Service providers
	Upgrade VHF capability and repeater stations in appropriate coastal areas	Ongoing	DoT



Photo courtesy: Colin Richardson

2.6.6 Public Transport, Walking and Cycling

Reducing car use and increasing the use of public transport, walking and cycling is a key component of sustainable development. This strategy supports the provision of town bus services and additional walking and cycling infrastructure in settlements of the Lower Great Southern, particularly the main population centre of Albany. While it is acknowledged that the population base of most settlements is too small to support a comprehensive public transport service, existing community based transport services for youth, schools and the elderly are encouraged. New residential, school and commercial development should be designed to allow efficient access to these services in the future.

Regional bus services should be supported and expanded where necessary. Opportunities to provide a passenger rail service from Perth to Albany that utilises the existing railway line and historic stations should be investigated.

Regional recreational trails, such as the Bibbulmun Track, Denmark-Nornalup Trail and the Munda Biddi trail to Albany, should be identified in local planning strategies and protected, given their importance for regional tourism and recreation.

The street network of new residential areas also should be designed to be conducive to walking and cycling, in accordance with the WAPC's Liveable Neighbourhoods policy, with an adequate provision of footpaths and cycle paths.

Objectives and Actions for Public Transport, Walking and Cycling

Objective	Actions	Timeframe	Responsibility
Improve public transport, walking and cycling opportunities in the Lower Great Southern and connectivity with the wider region	Investigate the demand and feasibility for inter-town public transport services in the Lower Great Southern	Short term	DoT GSDC DoP/WAPC LG
	Investigate opportunities for the provision of passenger rail services from Perth to Albany	Long term	DoT PTA
	Investigate improved regional linkages with the national coach network	Medium term	PTA
	Expand the network of cycle and pedestrian ways	Ongoing	LG
	Include the investigation and design of cyclist facilities on stages two, three and four of the Albany Ring Road that will facilitate the connection of Frenchman Bay Road and the Albany Waterfront for cyclists	Short term	MRWA DoP/WAPC LG
	Identify public and community based transport opportunities, where necessary, when preparing planning strategies and structure plans	Ongoing	LG DoP/WAPC

2.6.7 Community Services and Facilities

Adequate and appropriate provision of community services in the settlements of the Lower Great Southern is required. Higher-order services should be concentrated in Albany, Mt Barker and Denmark. This strategy supports the improved coordination of planning and the provision and expansion of these services where needed; and ensuring that existing services in the smaller settlements are retained and, where possible, enhanced. A coordinated approach to planning for community services, including responsibility for capital expenditure, maintenance, and coordination of program delivery, is required. Relevant service providers should ensure consultation with local government authorities when planning for and providing community services.

Health care services

The regional demand that will arise from increasing numbers of elderly residents and retirees will require improved aged care facilities, medical services and specialists. Incentive schemes are required for the recruitment and retention of health care professionals and specialists. More specialists and special medical units should be encouraged to locate in Albany, Mt Barker and Denmark; and programs established to enhance provision of these services to small and/or remote settlements in the region. Land availability for government services may not be an issue since many services are mobile and can be accommodated in existing community buildings.

Education facilities

Existing primary and secondary school provision is adequate and includes private and public facilities, which cater for a wide student age range. There are also a relatively high level of tertiary education facilities available including the University of WA Albany Centre, Great Southern Institute of Technology (GSIT) and Denmark Agricultural College.

However it remains common for many families, particularly in rural or remote areas, to move out of the Lower Great Southern to pursue higher education. This 'tertiary drain' of whole families or students for further education can have numerous impacts on regional communities such as skills shortages, loss of youth, and reduced capacity for innovation.

There is significant potential within the region for these matters to be addressed through focused strategies that build on the existing educational opportunities on offer. Introduction of more specialist tertiary campuses and annexes relevant to local major industries is supported and encouraged. This type of education would help build a better-skilled region, improve industry and innovation, increase retention of the knowledge base and local youth, and stimulate the economy.

Recreation

High-quality, well-planned and sustainable recreational facilities are paramount to the health of a region. They encourage physical activity, support community wellbeing and cohesion and have the potential to attract State or national events that have a positive social and economic impact. The provision of sporting and recreation facilities in the Lower Great Southern is considered generally to be sufficient: however, an additional regional facility may be required in the long term. It is important that existing facilities are protected and that land is identified and set aside for future regional recreational facilities. The location of each site should take into consideration its use and the impact it would have on existing adjacent land uses.

Recreational boating facilities

Coastal and estuarine areas around Albany and Denmark are popular for recreational boating and this will continue to grow in proportion to population growth. The option of providing improved and/or additional boat launching facilities should be considered in appropriate locations. Such facilities should be adequate and appropriate to the weather conditions and depth

of the water body, and be located so as to prevent conflict with other users as well as being sensitive to the existing marine environment. Additional access for recreational boat users should however not include permanent opening of non-naturally occurring estuary or inlet openings.

Objectives and Actions for Community Services and Facilities			
Objective	Actions	Timeframe	Responsibility
Provide new or expand existing community services and facilities in accordance with settlement function	Provide community, health and social services according to established needs and to cater for the region's ageing demographic	Ongoing	DoH LG
	Identify shortfalls in the provision of community services and infrastructure in settlements and coordinate integrated programs for service provision, including development contribution plans in local planning schemes	Ongoing	LG DoP/WAPC GSDC
	Identify in local planning strategies and zone appropriately in local planning schemes adequate and suitable land for: <ul style="list-style-type: none"> • health facilities, particularly for the elderly; • education, particularly additional secondary and tertiary facilities that provide region-specific specialist training; • recreation, including passive and active facilities; and • law and order facilities and other government services 	Ongoing	LG DoP/WAPC DoH DET
	Implement strategies and projects that focus on provision of suitably located tertiary education and specialist facilities offering training in fields beneficial to growth and development of the region	Short term	DTWD DET LG
	Develop new and/or upgrade existing recreational boating facilities along the coast, as necessary	Medium term	DoT LG

2.7 Strategic Industry

This strategy identifies existing and potential future strategic industry sites within the Lower Great Southern (Figure 2). Development of existing sites is encouraged whilst potential future sites will require suitable demand analysis and feasibility studies prior to their consideration for inclusion into local planning strategies and/or schemes.

The Mirambeena and Yerriminup strategic industrial sites provide opportunities for the establishment of industries which can process local resources such as timber, agriculture, viticulture and fishing products. Both are well situated with access to the main rail link to the Port of Albany and to Albany Highway. New major industrial developments with a high transport requirement are encouraged to locate near the existing transport infrastructure at either site.

The ability of the port to cater for the needs of large-scale industrial activity is of prime importance to the development of these sites. The capacity of existing power infrastructure and the cost of upgrading existing feeder lines to

Mirambeena and Yerriminup are also limiting major industrial development. As such a coordinated approach to the provision of service infrastructure is required between infrastructure providers and future industrial lessees.

2.7.1 Mirambeena

Mirambeena strategic industrial estate is located on the corner of Albany Highway and Down Road, north of Albany. The estate is zoned special industry to cater for industries that may have specific environmental requirements, and a buffer has been identified and incorporated into the City of Albany's local planning scheme.

The site has good road access from Albany Highway and an opportunity exists to provide a rail connection to the port via an extension of the woodchip mill rail spur. Given the relative ease of access to the rail network at Mirambeena, provision should be made to accommodate the potential for an intermodal transfer facility for the transfer of general freight or other commodities. This could significantly reduce the use of Albany



Highway for freight to and from Perth. Mirambeena may also be a candidate for inland storage and/or operations associated with the Port of Albany, due to availability of road and rail services and relatively close proximity to Albany.

Development issues for the establishment of strategic industries at Mirambeena include:

- Capacity of existing service infrastructure: As new industries come on stream, upgrades to power and water will be needed to meet industry requirements. Alternative energy sources, in particular gas, should also be investigated in order to provide the impetus for the establishment of major industries, in particular downstream processing.
- Environment: Any future industrial development further west along Down Road of the existing industries will be affected by the need to protect the Marbellup catchment. Only industry with no waste discharges and minimum risk to the environment would be acceptable in the Marbellup catchment.
- Height limitations: The location of Mirambeena near the Albany airport means industrial development needs to take into consideration height and heat constraints due to the airport's obstacle limitation surface. Development of industries likely to affect local atmospheric conditions (e.g. heat plumes) or requiring structures greater than 110 metres in height should not be developed beneath the northern approach to the airport. The obstacle limitation surface requires development that may affect the airport to be referred to the Civil Aviation Safety Authority. The potential impact of this on strategic industrial development at Mirambeena needs further examination.

In light of these issues a land use compatibility study and structure planning of Mirambeena to determine appropriate land uses, re-examine area and buffer boundaries, and provide rail access to the site should be undertaken.

2.7.2 Yerriminup

Yerriminup industrial estate is located six kilometres south of Mt Barker. The site is owned by LandCorp and has been subject to an environmental and engineering analysis and some subdivision approvals. Buffer areas around the site have been identified so that industries with significant buffer requirements may be accommodated.

The estate is adjacent to Albany Highway and is easily accessible by road; however, access upgrades are required as part of developing the site. A rail service can be provided as the Great Southern rail line forms the western boundary of the estate. A rail spur would need to be built to allow industries to access the rail network.

Infrastructure cost including headworks charges, availability and capacity, and road upgrading requirements are major development issues for the establishment of industries at Yerriminup. Options are available to supply power and water to the estate: however, costs of supply are currently prohibitive and there is uncertainty regarding the ability to provide guaranteed long-term supply required for industrial development.

2.7.3 Other Potential Sites

The Shire of Cranbrook's Strategic Community Plan 2013-2015 and draft Local Planning Strategy review (2014) identify the Shire's intention to investigate establishment of an intermodal transport facility and industrial hub to the south west of Cranbrook townsite. The purpose of the facility would be to stimulate economic activity in the Shire and capitalise on location and existing availability of regional transport linkages. This strategy supports designation of the site as an investigation area for the proposed intermodal facility.

The CSBP fertiliser site on Hanrahan Road and Lower Denmark Road in Albany is zoned light industry (restricted use for fertiliser manufacture and storage). This site may be suitable for other industrial land uses, including a broader range of

light industry and/or a potential inland storage area for the port. Investigations are required relating to land use suitability, appropriate zoning, potential environmental impacts, amenity impacts on urban areas to the north, buffers, access and impacts on the future Albany Ring Road. This strategy supports designation of the site as an investigation area in order for these matters to be considered.

Objectives and Actions for Strategic Industry			
Objective	Actions	Timeframe	Responsibility
environmentally acceptable and appropriately located strategic industrial areas to cater for future industrial development	Secure infrastructure provision to existing industrial sites (Yerriminup and Mirambeenaa) to maximise the potential for use of these sites	Short term	LandCorp DSD GSDC
	Undertake studies to determine infrastructure and servicing requirements for the industrial investigation area at Cranbrook	Short term	LG GSDC
	Investigate mechanisms to address constraints related to electricity headworks and infrastructure provision in strategic industrial estates	Short term	Western Power
	Undertake comprehensive feasibility studies and structure planning of Mirambeenaa and surrounds (including the area to the existing railway line) to take into account: <ul style="list-style-type: none"> • preserving suitable land for strategic industry; • identifying infrastructure requirements and alignments, in particular power, water and the extension of the rail spur; and • identifying a suitable location for an intermodal transfer facility/inland port 	Short term	LandCorp DoP/WAPC GSDC LG
	Investigate opportunities for the equitable provision of common user infrastructure to strategic industrial areas	Medium term	LandCorp GSDC
	Undertake studies to determine the feasibility of investigation areas at Cranbrook and Albany (Figure 2) for future intermodal facilities and/or other industrial land uses	Medium term	LG GSDC DoP/WAPC

2.8 Agriculture, Forestry, Fisheries and Aquaculture

2.8.1 Agriculture

Over the past 20 years, the rate of conversion of agricultural land from primary production to other land uses has intensified in the Lower Great Southern. Demand for rural living lots has, in some cases, led to the ad hoc subdivision and development of regionally important agricultural land.

Agricultural land is a finite resource that is often sought for a variety of competing purposes, and must be managed sustainably for the long term. Given that agriculture is the cornerstone of the economy in the Lower Great Southern, planning should ensure that its agricultural base is protected from loss of agricultural land due to unplanned subdivision and permanent land use changes. Fragmentation of rural land should only be contemplated where provided for by the WAPC's relevant policies.

In order to protect agricultural land and guide future land use, zoning, subdivision and development in these areas, WAPC rural planning policy (SPP 2.5) requires priority agricultural land to be zoned priority agriculture in local planning schemes. Figure 3 identifies priority agricultural land in areas which, combined with adequate rainfall (greater than 700mm annually), provide the best and most flexible opportunities for agricultural production. This land was identified using broad-scale mapping, which is suitable for regional planning purposes. Each area has been rounded off and some smaller or isolated lots may not be included at the scale used.

As a component of the local planning strategy assessment process, each local government should consider its priority agricultural areas and take into account other local topographic, infrastructure, social, economic and other factors to refine the broad regional zoning to local cadastral detail.

A key difference between priority agriculture and general agriculture zones is the way land uses are treated through local planning schemes. In general, land uses that provide for food production should be given greater permissibility than other land uses in priority agricultural areas.

Intensive agriculture

There has been considerable diversification of agricultural production in recent years, with viticulture being the most prominent, but crops such as cut flowers and berries also are being produced in greater volumes.

The Lower Great Southern is also increasingly being recognised as having favourable climate, locational and land characteristics for intensive livestock industries and this has resulted in recent establishment of free range pork and poultry farms.

It is therefore important that when preparing local planning strategies and schemes, local governments consider opportunities for diversification of agricultural land use in specific areas where the land is suitable for more intensive agricultural pursuits and adequate water supplies are available.

Farm forestry

From 1988 to the mid-2000s, there was rapid growth in the plantation timber industry in the higher rainfall belt of the Great Southern region. This growth resulted in changes to the landscape, transport usage and rural populations in the Lower Great Southern. More recently farm forestry production has declined following issues with investment schemes: however, there are signs that the industry is stabilising in the region. In addition carbon sequestration plantations may increase into the future. This land use can have impacts from a visual landscape perspective, can result in long term land use change and can compete with food production land uses on priority agricultural land. As such there remains a need for State and local planning to manage tree plantations appropriately through policies, strategies and schemes.

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Figure 3

Potential downstream processing industry opportunities

In the Lower Great Southern unique opportunities exist for value adding, branding, niche marketing and further diversification of agricultural products and the establishment of industries that can process local resources. For example Albany has been a centre for secondary processing of fish, wool and meat, and a timber processing precinct on Down Road has been established. In Mount Barker there is an existing sheep abattoir and regional saleyards have recently been established.

New secondary processing opportunities are likely to arise in the region, particularly if growth in intensive enterprises such as pork and poultry farms occurs. The provision of a future gas pipeline from Bunbury will likely improve the prospects of downstream processing opportunities in the Lower Great Southern.

In order to maximise economic and social development, the further processing and value-adding of agricultural products is encouraged. However, all new industrial projects should be assessed on the basis of their net economic, social and environmental benefit to the region and its population, with high priority given to waste treatment, disposal and the provision of pollution-control mechanisms.

Salinity

One of the threats to the productivity of agricultural land is a changed hydrology as a result of clearing and replacement of deep-rooted species with annual shallow-rooted crops and pasture. This is associated with a significant salinity risk. Infrastructure such as roads, rail, water and wastewater facilities and buildings can be affected by salinity. It is important that affected areas are identified to prevent inappropriate use of the land.

The Shire of Cranbrook has the highest risk of salinity, although north eastern parts of the Shire of Plantagenet are affected to a degree. There are other small pockets of salinity risk in the rural areas of the City of Albany. The Shire of Denmark

does not appear to be affected by soil salinity. This strategy supports land use decision making that is cognizant of the need to avoid increasing salinity risk; and ongoing measures to manage this risk and restore affected areas.

2.8.2 Fisheries and Aquaculture

Provided that growth in fishing can be managed sustainably and that land use conflicts can be managed, the fishing industry has an opportunity to grow. Implications for planning include:

- minimising conflicts between fishing operations and other beach users; and
- ensuring land for aquaculture projects is sited appropriately so as to minimise social and environmental impacts.

The major issues associated with commercial fishing leases revolve around the level of development and the environmental management of each site. It also is an area of potential conflict since fishing seasons often coincide with peak holiday seasons. Issues regarding the impact of access on surrounding dunes, blow-outs, trampling, track maintenance, vehicle management and conflicts with other beach users also need to be considered.

There is great potential for development of the aquaculture industry throughout the Lower Great Southern, particularly land-based aquaculture using inland saline waters, which could provide significant economic benefits. Both marine and land-based aquaculture comes with a range of environmental and social issues. Accordingly, the siting of aquaculture developments requires careful consideration of visual impact, access, and waste disposal issues.

Objectives and Actions for Agriculture, Forestry, Fisheries and Aquaculture			
Objective	Actions	Timeframe	Responsibility
Facilitate sustainable development of the agricultural sector and maximise opportunities for diversification of agriculture and downstream processing	Zone land identified as being of State, regional or local agricultural significance in endorsed local planning strategies as priority agriculture in local planning schemes	Short term (completed in some schemes)	LG
	Complete high quality agricultural land (HQAL) mapping for the region to identify priority agricultural areas	Short term	DAFWA DoW
	In local planning schemes, provide suitable permissibility of land uses to encourage agricultural activity and carefully manage potential conflicting uses within rural zones	Ongoing	LG DoP/WAPC
	Investigate potential for a future intensive agriculture/horticultural precinct(s) within the Lower Great Southern taking into account land capability, water supply, service and infrastructure availability, and potential impacts on the environment and existing land use	Medium term	DoW DAFWA DoP/WAPC LG
	Foster and support establishment of intensive livestock enterprises in appropriate locations within agricultural areas	Short term	DAFWA LG
	Maintain scope within planning strategies and schemes for the forestry and plantation industries to be supported in appropriate areas	Ongoing	LG DoP/WAPC
Manage the impact of salinity on agricultural land	Prepare guidelines for development of saline-affected land in areas subject to land use change in local planning strategies	Short term	DAFWA DoP/WAPC
	When preparing local planning schemes or amendments, local government to have regard to the extent of saline land when determining the appropriate use of the land	Ongoing	LG DoP/WAPC
	Promote appropriate land care initiatives to rehabilitate degraded agricultural land	Ongoing	DAFWA
Manage conflict between fishing operations and other land uses	Prepare and distribute informative and educational material regarding identified environmental impacts to all leaseholders	Ongoing	LG DoF
Provide for the expansion of aquaculture in appropriate areas	Assess the suitability of the sites determined in the Department of Fisheries study for aquaculture	Ongoing	DER
	Use the South Coast Management Group's draft guidelines for land-based aquaculture development in the South Coast region of WA when assessing aquaculture proposals	Ongoing	LG DoF

2.9 Mineral Resources and Basic Raw Materials

Sustainable extraction of mineral resources and basic raw materials for agricultural, construction and mining industries will contribute to the continued economic development of the Lower Great Southern. Limestone access is particularly important since agricultural limestone and lime sand are required to neutralise environmental impacts by minimising farm soil acidity.

Many mineral deposits in the region are small and occur in restricted areas. In addition to natural restrictions on their distribution, access to deposits and continued extraction can be constrained by other land uses, including:

- urban development which can prevent access to the extraction of rock or minerals from known deposits and influence the operation of existing quarries;
- environmental protection where environmental or conservation considerations may have a higher priority than resource extraction; and
- social issues such as perceived impacts of extraction leading to community concern in regard to resource development.

2.9.1 Identification and protection of areas of high prospective geology and existing operations

The Albany Regional Basic Raw Materials Study (1996) identified occurrences of basic raw materials in the region based on soil assessment. While the data in the study was adequate for use at a regional scale, there have been some deficiencies in its application at a local scale. An update of the study is recommended and should include the integration of available local geological data to allow for a more thorough assessment.

Land use planning plays an important role in protecting areas of high prospective geology and existing mining operations. Local planning strategies should identify known deposits and

retain an agriculture zone in local planning schemes to allow consideration of opportunities for exploration or extraction. In particular, these should include:

- the Southdown magnetite deposits at Wellstead;
- diatomite and/or spongolite deposits, which are extensive, but development scope for major expansion is uncertain; and
- silica sand deposits.

These areas are depicted in Figure 4. Existing hard rock quarries in the Lower Great Southern include the Hanson quarry (north of Mt Barker) and Ready-Mix quarry (north of Albany). Other deposits are shown, but many currently are uneconomic. Future exploration or changes in global market value may lead to mining near these sites or elsewhere in the Lower Great Southern.

2.9.2 Securing access to prospective mineral and basic raw material deposits

Limestone and lime sand are located along the coastal dunes, predominantly to the west of Albany, but access to extract from those areas is increasingly becoming constrained by other land uses. For example, extensions to the Ocean Beach limestone quarry at Denmark could provide long-term supplies of agricultural lime, but this is impeded by its location adjacent to a local government conservation reserve. Although there are other known deposits to the west, these are on private land and scope for mining is regarded as low by the Department of Mines and Petroleum.

Geological interpretation and exploration may locate further sites for agricultural lime extraction similar in geological setting to the Ocean Beach deposit. Given the need for agricultural lime in the agricultural industry, funding of a strategic assessment of the prospect under the auspices of the State lime supply strategy is warranted.

Access to gravel in western parts of the Lower Great Southern also may be affected by national parks and other Crown reserves. There is interest by Main Roads WA and local government to access gravel resources for roads both in park enclaves (e.g. South Coast Highway and Denmark-Mt Barker Road) and outside the parks. In addition, much of the gravel resource is beneath remnant vegetation or becomes unavailable through the establishment of plantations. It is recommended that a coordinated study be carried out (under the auspices of the State gravel supply strategy) to identify future gravel needs and potential strategic

gravel resource areas primarily from private property and Crown land. The need for ongoing access to gravel resources is required and strategic resource areas should be identified and protected.

Extraction of basic raw materials is important economically; however, this needs to be balanced by the potential impact of these activities on other land uses. It is recommended that existing and potential sites be identified in local planning strategies and protected in town planning schemes, including where necessary, the identification of an appropriate buffer.

Objectives and Actions for Mineral Resources and Basic Raw Materials			
Objective	Actions	Timeframe	Responsibility
Maximise opportunities to enable mineral exploration and extraction in accordance with acceptable environmental and amenity standards	Review and update the Albany Regional Basic Raw Materials Study (1996)	Medium term	DMP DoP/WAPC
	Ascertain the implications of the Walpole Wilderness Area for the future mining and extraction of gravel, under the auspices of the State gravel supply strategy	Medium term	DMP DPaW
	Fund a strategic assessment of the prospect for limestone in the Lower Great Southern, under the auspices of the State lime strategy	Medium term	DMP
	Identify existing and potential sites for basic raw material and agricultural mineral extraction in local planning strategies and protect them in local planning schemes, including consideration of neighbouring land uses, visual impact issues and appropriate buffer areas where necessary	Short term (completed or partially completed in some LGA's)	LG DMP DoP/WAPC
	Retain areas of high prospective geology as general rural zoning to allow for exploration or extraction	Ongoing	LG DoP/WAPC

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Figure 4

2.10 Water Supplies

In the Lower Great Southern, demand for water is expected to increase due to population growth and the development and diversification of industry (including agriculture). A drying climate is also increasing pressure on water resources. Identifying, securing access to and protecting future potable water resources and implementing water conservation strategies are priorities.

2.10.1 Existing and future supplies

The largest water supply scheme in the Great Southern region is the Lower Great Southern Towns Water Supply scheme (LGSTWS), operated by the Water Corporation. Many smaller towns have independent schemes, the majority of which are also operated by the Water Corporation.

The LGSTWS scheme supplies water to Albany, Mount Barker, Narrikup and Kendenup and may be extended to Cranbrook in 2017/18. Recent improvements in water efficiency, combined with an increase in the Water Corporation's licensed allocation from the Albany Groundwater Area will satisfy growth in these towns until approximately 2025. Identification of the next source must occur prior to 2025; however, this may be delayed through confirmation of additional water sources the subject of recent investigations in the Albany Groundwater Area.

Denmark's water supply is provided by tributaries of the Denmark River. The Quickup Dam supplies the vast majority of this water. The Water Corporation supplements this source from the nearby Denmark pipe head dam. Improvements to the operation and treatment of the Denmark pipe head dam along with a connection to the Quickup Dam are planned to occur over the next two years. This will improve supply reliability and delay the need for investment in a new fresh water source.

Smaller towns and villages such as Rocky Gully, Frankland River, Cranbrook, Manypeaks and Wellstead are not serviced by an integrated scheme and in some instances have experienced water shortages and quality issues. Expansion

of other settlements (such as Peaceful Bay, Bow Bridge and Nornalup as identified in Denmark's local planning strategy) will also require new sources of potable water to be identified. In the long term, the Water Corporation may consider a regional water supply scheme based around extending the existing LGSTWS to improve water provision security and create greater flexibility of supply across the region.

Given the scarcity of water in the Lower Great Southern, alternative methods for preserving this valuable resource should be explored. Water conservation measures such as sustainable water management, reduced consumption, water self-reliance (roof catchment and rain water tanks) and grey water re-use, are supported in appropriate instances.

2.10.2 Protecting water resource areas

A major threat to the quality of potable water is inappropriate land use in water supply catchments. Several of the present water supply areas for the LGSTWS scheme are contained in national parks or Crown land, and are unlikely to be subject to land use changes. The South Coast water reserve (from which groundwater is extracted), Limeburner's Creek, Angove River, Denmark River, Marbellup Brook and Quickup River Dam catchment areas are proclaimed under the Country Areas Water Supply

Act (1947). Protection plans have been developed for the South Coast water reserve and Limeburner's Creek, Marbellup Brook, Quickup Dam and Angove Creek.

Stream salinity in some rivers is an issue in the Lower Great Southern; however, ongoing work to address this matter has been successful. For example, catchment restoration measures under the State's salinity action plan have reversed salinity in the Denmark River to the point where this water resource is now considered suitable for potable use.

Objectives and Actions for Water Supplies			
Objective	Actions	Timeframe	Responsibility
Provide existing and future populations with adequate and sustainable water supplies	Ensure a whole-of-catchment approach to the integration of natural water resource use and land management	Ongoing	DoW LG DoP/WAPC
	Secure future potable water source areas	Ongoing	Water Corporation DoW
	Promote water conservation initiatives and reduced consumption in settlements	Ongoing	Water Corporation DoW LG
	Recognise public drinking water source areas in local planning strategies and protect them, where appropriate, in local planning schemes	Ongoing (completed for existing PDWSA's in Lower Great Southern)	DoW LG DoP/WAPC

2.11 Bushfire Risk

The Lower Great Southern region is at risk from bushfires due to a combination of factors including:

- presence of remnant vegetation in the region, often close to population centres, that is naturally susceptible to fire;
- a growing population, with a proportion of this population seeking lifestyle opportunities that involve living in or near areas of remnant vegetation;
- increasing fuel loads; and
- a drying and warming climate, with resulting increase in duration and intensity of the annual 'fire season'.

Historically the region has been bushfire prone. Bushfires have occurred relatively recently in areas of Albany, Cranbrook, Denmark and Plantagenet, and during the summer months extreme fire weather warnings are regularly issued. It is likely that the potential for bushfire occurrence in the region will increase in the future and as such, an increased focus on managing this risk will be necessary.

Planning has a role at both strategic and statutory levels in mitigating bushfire risk. In this regard the WAPC has drafted a new State Planning Policy 3.7 'Planning for Bushfire Risk Management' and associated guidelines to inform Statewide planning on this issue. Complementary to this are the draft *Planning and Development (Bushfire Risk Management) Regulations 2014* that will introduce provisions into local planning schemes to ensure bushfire risk is addressed in local planning and development decisions; and where development is able to be supported, for suitable construction of structures in bushfire prone areas.

Whilst these new planning measures will provide a greater level of guidance and clarity in planning decision making, there will be a similar need for the community and individuals to recognise risks and carry out appropriate management measures. Managing bushfire risk is a collective responsibility and will need to become increasingly cross-sectoral in order to build the necessary resilience to bushfires in the region.



Objectives and Actions for Bushfire Risk			
Objective	Actions	Timeframe	Responsibility
Through planning and management processes, build resilience to bushfire risk in the Lower Great Southern region	Ensure settlement and land use planning in strategies and schemes is in accordance with the principles, objectives and provisions of the WAPC's planning framework for bushfire risk management	Ongoing	LG DoP/WAPC
	Planning proposals including rezoning, structure planning, subdivision and development to incorporate bushfire assessment and management measures as required by WAPC's policy framework, as appropriate	Ongoing	LG DoP/WAPC Development industry
	Develop sufficient bushfire response plans and procedures in the context of likely increased occurrence of bushfires in the region	Ongoing	DFES LG DPaW
	Foster awareness of bushfire risk and the need for property owners to take responsibility for individual preparedness measures in at-risk areas of the region	Ongoing	DFES LG
	Continue implementation of fuel load reduction programs in parks and reserves, particularly where in proximity to established settlements	Ongoing	DPaW LG

2.12 Coastal Planning and Management

The south coast is significant for its environmental, visual landscape, heritage, tourism and recreational values. There is growing pressure on and demand for the attractions of the south coast particularly through tourism and population growth. There is a need to balance development, access and usage of the coast with retention of its natural beauty and values.

2.12.1 Coastal planning and development

There is a limited number of developed coastal sites in the Lower Great Southern, with much of the coast and associated marine environment not affected heavily by human usage. Some

existing settlements (including the regional centre of Albany) are situated on the coast and/or estuaries. Associated with this are potential impacts on private and public infrastructure from coastal processes; and potential impacts on the coastal environment from human use and development. Coastal development needs to be planned carefully and strategically to ensure beaches, dunes, estuaries and coastal wetlands are protected; and the impact of storm damage, sea level rise, inundation and shoreline erosion on private and public development and infrastructure are minimised.

Strategic and statutory planning proposals in the region's coastal areas are to be consistent with WAPC's State Coastal Planning Policy 2.6 (2013) (SPP 2.6). SPP 2.6 and its associated guidelines advocate a risk management approach to deal

with potential adverse impacts of coastal hazards. In accordance with SPP 2.6, an appropriate level of coastal hazard risk management and adaptation planning (CHRMAP) should also be carried out at all relevant stages of the planning process where development in coastal or estuarine areas is proposed.

2.12.2 Management of foreshores and land use conflicts

In the Lower Great Southern a large proportion of land abutting the ocean is accessible to the public. There is conflict along some sections of the coast between different user groups who often visit and use the same areas.

There is inherent tension between the need to protect coastal areas from uncontrolled access (motorised and pedestrian) and the desire of people to access secluded and unspoilt areas. Uncontrolled access to the coast, particularly by four-wheel-drives and all-terrain vehicles, pedestrians and horse riders can lead to significant erosion in sensitive coastal environments. Left unmanaged, this can reduce the amenity value of these areas.

Public expectation of access around coastal embayments and estuaries is high and supported by SPP 2.6 through the objective to provide for public foreshore areas and access to these on the coast. To enable public access, it is recommended that foreshore reserves continue to be established around estuaries, particularly around the Albany harbours where private ownership currently extends down to the high water mark in some instances. Continued private ownership of these foreshore areas prevents strategic public access and the development of recreation areas for the wider public.

Use of coastal sites by commercial fishers who have seasonal fishing leases raises issues regarding the level of development and environmental management of each site. Issues regarding the impact of seasonal commercial fishing on surrounding dunes, blowouts,

trampling and the maintenance of tracks and conflicts with other beach users also need to be considered. Appropriate setback distances from the foredune and provision of public access should be considered when assessing applications for commercial fishing leases. A joint approach to the development and policing of more stringent lease conditions on land leases, and policing to ensure compliance with the conditions when up for renewal, should be pursued by the relevant agencies.

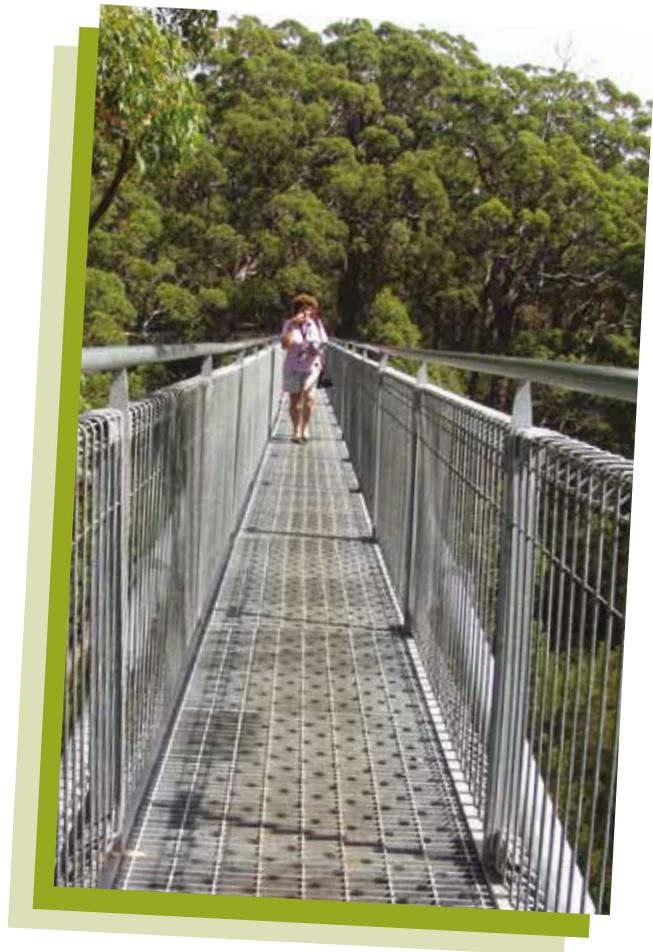


Photo courtesy: Colin Richardson

Commercial and recreational pressures and user conflicts should be addressed through the preparation of foreshore management plans to guide the provision and management of facilities on the coast and appropriate vesting of foreshore areas. Plans should identify coastal recreation nodes and these should be located appropriately to reduce the likelihood of facilities being damaged by coastal processes. Vesting

of foreshore reserves needs to be consistent with ecological and amenity values. Presently, vesting of reserves is mixed and there is often uncertainty over agency responsibility with regard to the management of inter-tidal areas, estuaries and their sandbars. Unless a foreshore area has significant conservation value, vesting should generally be with the relevant local government.

Objectives and Actions for Coastal Planning and Management			
Objective	Actions	Timeframe	Responsibility
Minimise potential environmental impacts from coastal development proposals through effective management and recognition of coastal processes including sea level rise, and appropriate setbacks	Carry out studies to broadly identify vulnerable coastal areas and provide guidance for more detailed risk assessments and management responses	Short term	DoP/WAPC LG DoT
	Prepare coastal and foreshore management plans in parks and reserves where there are likely to be conflicts between different user groups	Ongoing	LG DPaW
	Include requirements for the preparation of foreshore management plans as a condition of subdivision and development likely to have impacts on coastal and estuarine foreshore areas	Ongoing	DoP/WAPC LG DoW
Provide and maintain public access to coastal and estuarine foreshores	Identify land appropriate for protection and enhancement of the coastal vegetation corridor, in order to protect biodiversity and cater for public access, and for possible regional open space	Ongoing	DoP/WAPC LG
	Identify priority sites around the coast and estuaries required for public access in local planning strategies and protect them through appropriate mechanisms in local planning schemes	Ongoing	LG DoP/WAPC DoW DPaW

2.13 Tourism

The future of tourism in the region relies on sustainable development and promotion of iconic experiences, development of tourism infrastructure and product that meets visitors' needs and the management of competing land uses to ensure that the tourism appeal of the region is safeguarded.

The Lower Great Southern is likely to see continuing development along the coast as well as specific nodes inland in areas that can offer experiences with nature, wine and food, art and craft and culture. Existing small scale tourism enterprises in towns, villages and regional areas are important collectively from an economic and community perspective.

Many of the natural attractions in the Lower Great Southern are also located in national parks. The ongoing management and development of national parks in the region depends on proper resourcing to meet these growing demands.

Incremental subdivision of high value tourism sites for residential development, particularly along the coast, has historically occurred to the detriment of tourism values and is not generally supported. Local planning strategies should identify strategic tourism sites that are linked to iconic experiences and attractions and zone them solely for tourism development to ensure the continued use of that site for tourism pursuits. A limited amount of residential land use may be appropriate at some tourism sites. This should be assessed through local planning strategies and be in accordance with guidance provided by WAPC policy, in particular SPP 3 Urban Growth and Settlement and Planning Bulletin 83 Planning for Tourism.

Objectives and Actions for Tourism			
Objective	Actions	Timeframe	Responsibility
Maximise opportunities for the development and growth of a sustainable tourism industry	Update tourism components of local planning strategies as necessary to respond to changing needs of the tourism sector and take advantage of emerging markets	Ongoing	LG TWA DoP/WAPC
	Zone identified strategic tourism sites in endorsed local planning strategies solely for tourism development in local planning schemes, to protect them for that purpose	Short term (partially completed in some schemes)	LG TWA DoP/WAPC
	Maintain and improve, where necessary, existing linkages to major tourism attractions and develop additional tourism routes in the Lower Great Southern	Ongoing	LG MRWA
	Provide adequate and consistent signage to tourism destinations	Ongoing	LG MRWA

2.14 Environment

The Lower Great Southern has many unique and valuable natural environmental features with aesthetic, conservation and recreation value. They also are an important contributor to the growing nature-based tourism industry and the appeal of the area to visitors and tourists.

Protecting biodiversity is a priority at a national, State and local level. The role of land use planning in protecting biodiversity values in the region is to identify areas before degradation occurs and recommend or identify methods to establish effective protection mechanisms. Identifying areas and mechanisms early will enable government agencies to coordinate efforts to protect these significant areas. Land use planning also can assist in the creation of functional landscapes through remnant vegetation linkages.

2.14.1 Vegetation and biodiversity conservation

Conservation of biodiversity requires the protection and management of species, their habitats and the ecological processes that support them. There are a number of threats to biodiversity, including:

- habitat reduction and fragmentation from clearing of remnant vegetation for development;
- salinity and altered hydrological regimes leading to destruction of plant communities;
- plant diseases;
- introduced species;
- invasive species/weeds;
- inappropriate fire regimes; and
- climate change and sea level rise.

Conservation reserve system

In Western Australia the Department of Parks and Wildlife (DPaW) is responsible for the management of a Statewide conservation reserve system. It is also responsible for nature conservation management of unvested and unallocated Crown lands outside townsites across Western Australia. Many areas of unvested and unallocated Crown land proposed as additions to the conservation estate, where possible, are being managed as 'de facto' conservation reserves.

National parks are an important asset to the region, performing not only a biodiversity conservation role but also having cultural, heritage, tourism and landscape character values. The Stirling Range, Porongurup and numerous coastal national parks within the Lower Great Southern are recognised nationally and globally, and significant opportunities exist for these values to be enhanced and capitalised on for the benefit of the region.

There are, however, ongoing management issues with national parks that need to be recognised and addressed in a coordinated manner. These include fire, access, pest and weed species, and dieback; and managing the interface between parks and surrounding sensitive land uses, particularly those on private land.

The existing and proposed conservation reserve system, including Crown land managed for conservation outside the conservation estate, is shown in Figure 5. It is anticipated that DPaW, in association with other State agencies and local government will continue to identify and add land to the reserve system as opportunities arise, in order to maintain the area's biodiversity.

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Figure 5

Threatened ecological communities

An ecological community is a naturally occurring group of plants, animals and other organisms interacting in a unique habitat. The complex interactions between species provide an important level of biological diversity in addition to genetics and species. An ecological community may be recognised as threatened if the community is presumed to be totally destroyed or at risk of becoming totally destroyed. A number of threatened ecological communities are present in the Lower Great Southern.

No State legislation currently covers the conservation of threatened ecological communities; however, some Western Australian threatened ecological communities are protected under the Environment Protection and Biodiversity Conservation Act 1999. To protect these communities the development and implementation of recovery plans for all critically endangered, endangered and vulnerable flora, fauna and priority ecological communities is recommended.

Remnant vegetation and linkages

Some of the Lower Great Southern's vegetation systems have been identified as having less than 10 to 30 per cent of their original (pre-European) extent remaining. In general, these remaining areas are conservation priorities.

The Albany regional vegetation survey (2010) (ARVS) is a more detailed study carried out in Albany and surrounds, which identifies at a detailed scale the type, extent and status of vegetation present; and priority areas for protection. EPA Bulletin 13 requires that the findings of ARVS are taken into account in land use planning decision making within the survey area. The second phase of the ARVS project is underway and involves closer examination of the findings to identify priority areas for conservation of vegetation; inform priority areas for fauna

conservation; and identify critical areas requiring restoration. Once finalised, the information will be utilised to inform strategic and statutory planning decisions in the survey area.

Remnant vegetation is of particular conservation importance given its limited availability and environmental and social value. This strategy generally does not support further designation of land for residential forms of development that would result in clearing of vegetation. In addition a more flexible approach to planning where environmental benefits such as enhancement and revegetation are obtained should be encouraged through positive planning measures and incentives at rezoning, subdivision and development stages. Conservation strategies to encourage the management and protection of remnant vegetation on private land should also be developed.

Fragmentation and isolation of habitat are regarded widely as key factors contributing to biodiversity decline. In the Lower Great Southern, large areas of native vegetation have been historically removed for agriculture. The remaining habitat for wildlife is contained mainly in national parks and nature reserves. As reserves are less able to retain their values as isolated 'islands' in a cleared or urbanised landscape, a vegetation linkage or macro corridor approach, which links conservation reserves with other remnant native vegetation on private land is an important initiative in abating the loss of biodiversity. Keys to maintaining and enhancing macro corridors include:

- conservation of remnant vegetation (either on private land or in government reserves);
- revegetation using a diversity of local native species from all strata of the natural vegetation community for that site (groundcovers, understorey plants and mid and upper-storey plants); and
- if direct vegetation connectivity is not achievable, maintaining existing remnant vegetation areas in proximity to other remnants to provide for some level of native species migration to occur.

This strategy supports the creation of remnant vegetation linkages identified in the then Department of Conservation and Land Management's South Coast Macro Corridor Network strategy (2006).

Conservation of remnant vegetation on private land

Off-reserve mechanisms increasingly are becoming recognised as valuable ways of protecting biodiversity values outside conservation estates or as an alternative to conservation reserves. Such mechanisms involve attributing responsibility to private landowners or users, government agencies, and community and agency conservation groups. Initiatives include:

- conservation covenants on private land;
- Land for Wildlife voluntary agreements;
- trade options; and
- raising public awareness about biodiversity values.

Relevant agencies, including DPaW and local government, can assist in the consolidation of remnant vegetation linkages (macro corridors) and the protection of highly valued remnant vegetation outside the conservation estate by facilitating some of these mechanisms. Measures are needed to provide positive encouragement for landowners to pursue conservation measures on identified private land.



Objectives and Actions for Vegetation and Biodiversity Conservation			
Objective	Actions	Timeframe	Responsibility
Protect threatened flora, fauna and ecological communities	Identify and acquire land to add to the formal conservation reserve system	Ongoing	DPaW
	Develop conservation strategies to encourage the management and protection of highly valued remnant vegetation on both public and private land	Ongoing	DPaW LG
	Develop additional incentives for the protection of remnant vegetation on private land	Ongoing	DPaW DoP/WAPC LG
	Develop and implement recovery plans for all critically endangered, endangered and vulnerable flora, fauna and ecological communities	Ongoing	DPaW
	Finalise Albany Regional Vegetation Survey (ARVS) phase 2	Short term	DoP/WAPC
	Carry out vegetation surveys based on ARVS methodology in other suitable areas of the region	Medium term	DPaW DoP/WAPC LG
Maintain and improve coverage of native vegetation from existing levels	Protect and manage remnant native vegetation or revegetate using various local native species in remnant vegetation linkages and river and wetland catchments	Ongoing	DPaW NRM Groups
	Support initiatives that aim to increase native vegetation and/or perennial cover throughout the landscape, to reduce salinity and improve land and water quality	Ongoing	DPaW NRM Groups
Utilise land use planning processes where appropriate to assist in establishing and protecting identified macro corridors	Identify remnant vegetation linkages (macro corridors) at a localised scale, in local planning strategies	Ongoing	LG DPaW
	In local planning strategies ensure urban growth takes into account the need to identify and protect remnant vegetation and other high conservation value vegetation	Ongoing	DoP/WAPC LG DPaW
	Promote opportunities for conservation lots in appropriate locations that provide a net benefit to biodiversity and meet planning and environmental objectives	Ongoing	DPaW DoP/WAPC LG

Objectives and Actions for Vegetation and Biodiversity Conservation (cont.)			
Objective	Actions	Timeframe	Responsibility
	Investigate use of region-specific planning guidelines to facilitate creation and protection of macro corridors	Short term	DoP/WAPC
	Incorporate recommendations of ARVS phase 2 and any further vegetation surveys into local planning strategies, schemes and structure plans	Short term	DoP/WAPC LG

2.14.2 Rivers, estuaries and wetlands

The rivers and estuaries of the Lower Great Southern have a range of economic, social and environmental values that are held by the community, including:

- commercial and recreational fishing;
- port and boating facilities;
- tourism and recreation use;
- biodiversity;
- drinking water supply;
- scenic beauty and ecological and conservation values;
- cultural importance and heritage; and
- drainage.

There are a number of threats to rivers, estuaries and wetlands in the Lower Great Southern due largely to land use changes in catchments, which result in increases in salinity, changes in river hydrology and sedimentation. Other threats are the loss of riparian vegetation, eutrophication, pollution, abstraction for water supply and agriculture, impacts of climate change (reduced rainfall and runoff) and physical development. Integrated management of both land and water resources will be required to effectively maintain and/or enhance the function and quality of catchments, rivers, estuaries and wetlands in the Lower Great Southern.

Maintaining remnant vegetation in catchments can assist in the protection of rivers and wetlands. This can be achieved by providing incentives and assistance to landowners to maintain remnant vegetation or where necessary appropriately zoning significant areas of vegetation for protection. Promoting revegetation or forestry in the cleared catchments of rivers and wetlands suffering from increased salinity and water levels can also assist in reducing these impacts.

Changed hydrology and salinity

Changed river hydrology due to clearing of native vegetation in catchments has led to increased stream salinity in most of the rivers in the Lower Great Southern. The upper reaches of the Kent, Frankland, Denmark, Kalgan and Pallinup Rivers have experienced increased salinity levels due to land clearing.

Catchment clearing for agriculture or urban development and drainage into wetlands can result in excess surface and groundwater that may inundate and drown wetland vegetation or cause increased salinity or pollution. Problems also can arise from wetlands drying due to water abstraction. Consideration must be given to any possible downstream impacts of projects aimed at addressing salinity at a farm level.

Elevated nutrient levels, pollution and eutrophication

In their natural state, Australian rivers have low nutrient levels, a result of ancient landforms and nutrient-poor soils. The application of fertilisers, modern agricultural practices, increased run-off, loss of riparian vegetation and resulting increased transportation of sediment and organic matter have increased nutrient levels in rivers and wetlands.

Siltation and nutrient enrichment cause decline in water quality, loss of diversity and increased risk of algal blooms and nuisance insects. Toxic blue-green algal blooms have occurred in Lake Powell, Torbay, upper Kalgan River, the Albany drainage district, Taylor Inlet and Wilson Inlet. New land uses likely to export significant nutrients should be assessed based on their potential impact on rivers and wetlands, and should be subject to setbacks and requirements for nutrient management plans.

Pollution of the Lower Great Southern's rivers may occur from agricultural practices, industry, sewage and urban stormwater. Studies indicate some hydrocarbon contamination in Yakamia Creek in Albany.

Direct discharge of wastewater into a river system from new development is not supported. Similarly, direct discharge of stormwater into rivers is to be avoided, and stormwater management plans should be developed at appropriate development stages as set out in Better Urban Water Management.

The causes of eutrophication are varied; while clearing of land and application of fertilisers are key causes, other significant causes include man-made drainage practices to reduce the level of flooding, agricultural point sources of nutrients, urban stormwater, cultivation of estuarine fringes, and sewage disposal.

Substantial planning and resulting work on the Albany harbours have helped to reduce eutrophication and pollution. The following can assist with managing the causes of eutrophication, including pollution from industry discharge and improving the water quality of estuaries and rivers:

- locating industry where sewerage systems are available;
- ensuring potentially polluting uses are not located close to water bodies or inlet tributaries;
- extending reticulated sewerage to high-priority areas adjacent to waterways and estuaries;
- appropriately locating wastewater treatment facilities to avoid impacts on waterways;
- developing water management strategies and plans at structure plan, rezoning, subdivision and development stages; and
- nutrient and irrigation management plans, nutrient stripping basins or other techniques also can be implemented.

Managing stormwater discharge through infiltration devices, the licensing of industry, land use controls and policies, and fencing and rehabilitation of riparian vegetation have been very effective in reducing pollution and eutrophication of the region's rivers and estuaries.

Acid sulphate soils

Acid sulphate soils (ASS) are present in the Lower Great Southern, particularly in some low-lying coastal, estuarine and wetland areas of Albany and Denmark. Whilst the Department of Environment Regulation (DER) currently has an established and robust framework to assist in managing impacts from ASS, ongoing recognition of the need to manage ASS is required in order to minimise potential for environmental harm.

Development on floodplains

Development on estuarine and river floodplains may influence downstream flood levels and water quality. Presently there is a lack of information available on flood levels in the Lower Great Southern, with mapping undertaken only for the Cranbrook townsite, lower Denmark River, Willyung Creek and the main channel of Yakamia Creek. The land use planning system can play a role in the protection of floodplain areas.

Developments in floodplains should have regard to their impacts on the ecological and hydrological functions of the river, including exacerbating the effects of flooding, and avoid the risk of nutrient or other pollutant release. Stormwater detention basins, effluent disposal systems and residential areas are examples of developments that are not suited for location in floodplains. The use of development setbacks from creeks and rivers is essential to protect waterways.

Clearing of remnant vegetation in river catchments causes changes to river hydrology. Increased river volumes and quicker rates of discharge lead to erosion through gullying, as river channels try to accommodate higher flows and depositions of this material in the lower reaches of rivers. Rivers such as the Kalgan and Hay are experiencing erosion in the upper catchment and sedimentation in the lower catchment.

Removal of riparian vegetation results in the destabilisation of river banks and erosion in times of flooding. Most of the river foreshores in the Lower Great Southern are heavily disturbed through clearing of vegetation, livestock intrusion, weeds and development.

Public ownership is one means of protecting river foreshores in targeted areas, particularly where public access and use are desirable. These areas need to be identified in local planning strategies, structure plans and local planning schemes.

Rivers

Rivers and their foreshores provide a range of habitats. For example, coastal freshwater creeks have populations of endangered native fish and vegetation along rivers can provide a valuable function as a wildlife corridor through the landscape. It is therefore important to protect and manage these areas. The lower reaches of the Hay and Sleeman rivers provide examples of substantial vegetated corridors.



Photo courtesy: Colin Richardson

Estuaries

The social and economic value of estuaries is evident in the concentration of residential, tourism and other commercial activities adjacent to them. However, development needs to be planned carefully to ensure it does not impact on the environmental values of estuarine areas.

Adjacent development, roads and other infrastructure have altered estuaries. Other modifications include cultivation on the fringes of estuaries that were at one time part of the floodplain. Land clearing, drainage practices and the loss of riparian vegetation also have rapidly accelerated the process of sedimentation in estuaries. Future development and/or subdivision should be undertaken where demonstrated that it is unlikely to impact upon estuaries and opportunities to address existing problems should be pursued.

Fringing vegetation, particularly the salt marsh and sedges and rushes around estuaries, provide valuable habitats of regional importance. Many inter-tidal areas and wetland habitats are not protected through public ownership or land use planning controls and are in danger of physical modification, including infilling or clearing. The extensive wetland areas on the Lower King River, the floodplain of Wilson Inlet, Oyster Harbour on its north and east side, and along the southern fringes of Princess Royal Harbour are examples of unprotected areas having a high conservation value. Protection of these areas is required through appropriate mechanisms, which may include public ownership, development restrictions and creation of foreshore reserves.

Wetlands

Wetlands are among the most diverse and complex ecosystems in the world. They also are among the most threatened, with increasing pressure from urban and agricultural areas to develop and use the wetland and the important fringe areas that provide a buffer. Wetland vegetation may be lost or degraded through grazing of fringing vegetation by livestock. Impacts of feral animals, weeds and frequent burning may also lead to loss or degradation of vegetation.

Wetlands in the region with nationally recognised values are:

- Lake Pleasant View system near Manypeaks;
- Oyster Harbour;
- Balicup Lake System (Cranbrook);
- Mount Soho Swamps (Denmark);
- Moates Lake system near Two Peoples Bay; and
- Owingup Swamp near Bow Bridge.

The Department of Water has carried out studies to determine the conservation status of wetlands in some areas of the Lower Great Southern. The Albany regional vegetation survey also identified wetland vegetation assemblages within its study area that are a target for conservation. Where land use proposals have the potential to impact wetland areas the findings of these studies should be used to inform decision making.

Objectives and Actions for Rivers, Estuaries and Wetlands			
Objective	Actions	Timeframe	Responsibility
Identify and map the extent of important riparian, estuarine and wetland areas	Undertake estuarine and river floodplain mapping for high risk flooding areas	Medium term (some mapping completed)	DoW
	Identify regionally important river and estuarine foreshores and fringing habitats with high conservation value; and other priority sites requiring public ownership and protect them through appropriate mechanisms in local planning schemes	Ongoing	LG DoP/WAPC DoW
Maintain the environmental and water quality of rivers and wetlands through effective catchment management practices	Maintain revegetation in the upper Denmark catchment in order to maintain reduced stream salinity	Ongoing	DoW DER LG Plantation companies
	Consider downstream impacts when assessing clearing applications in the upper catchments of river systems	Ongoing	DER
	Support established programs that aim to increase the level of perennial vegetation cover, including native vegetation and perennial crops	Ongoing	DPaW LG NRM Groups DoW
Conserve and maintain the conservation and biodiversity values of riparian, estuarine and wetland environments	Encourage fencing and revegetation of rivers, floodplains and estuaries to reduce sediment and nutrient transportation	Ongoing	DoW DPaW LG NRM Groups
	Ensure potential nutrient point sources are developed only where compatible with codes of practice, and particularly outside estuarine and river floodplains	Ongoing	DER DAFWA LG
	Ensure no direct discharge occurs to rivers and estuaries from stormwater and industrial wastewater	Ongoing	LG DoW DER

2.14.3 Landscape

As the Lower Great Southern develops, it will be increasingly important to ensure that landscapes valued by the community are protected. To do this, it is necessary to identify the landscape types and geological features requiring special attention; and to develop appropriate management and planning policies that can contribute positively to their maintenance and enhancement.

It is recognised that landscapes change in response to demands for primary products, recreation and tourism as well as for rural living. The values communities attach to landscapes also change over time and strategies devised to manage the impact of development on landscapes should be robust to deal with change in community perception.

Certain land uses that may impact the landscape character of the Lower Great Southern include:

- plantations;
- rural-residential subdivision;
- wind turbines;
- soil salinity;
- urbanisation and industrialisation of town fringes;
- inappropriate signage and advertising on tourist routes; and
- mining and extractive industries.

Protection of important landscape features from the impacts of potentially detrimental land uses is encouraged. This can be achieved through the identification of landscape management objectives and areas in local planning strategies, or using statutory provisions in local planning schemes.

Objectives and Actions for Landscape			
Objective	Actions	Timeframe	Responsibility
Identify and protect valued landscape features and viewsheds	Incorporate appropriate provisions in local planning schemes to guide development in landscape priority areas that have been identified in endorsed local planning strategies	Short term	LG DoP/WAPC
	Ensure that new development takes into consideration existing natural, rural and urban landscape values	Ongoing	LG

2.15 Cultural Heritage

Indigenous and European heritage is an intrinsic element of the Lower Great Southern at both the regional and local scales. Aboriginal heritage in the region dates back at least 45,000 years and Albany was the first permanent European settlement in the State in 1826.

Estuaries and embayments have long served as major meeting places and sources of food for Aboriginal and European people. Remnants and artefacts of camps and other significant sites exist around each of the main estuaries, and the Stirling Range is also an area of great cultural significance to Noongar people. The quarantine and hospital quarters on Point Possession, and Limeburner's buildings at Big Grove, both adjacent to Princess Royal Harbour, are examples of historic buildings in need of protection. Remains of sealers' ovens exist at Waychinicup Inlet. Numerous shipwrecks are also present, particularly in the Albany harbours.

The Department of Aboriginal Affairs has legislative responsibility for the administration of the Aboriginal Heritage Act 1972, which details specific responsibilities related to the management and protection of heritage sites. The rights and interests of Aboriginal people in their heritage arise from

their spirituality, customary law, languages, original ownership, custodianship, developing traditions and recent history. The effective protection and conservation of this heritage is important in maintaining their identity, health and wellbeing.

With respect to European heritage, the Heritage Council of Western Australia has procedures for the protection of places of heritage and cultural significance. Most towns have significant heritage places. Sites of State significance are listed on the register of heritage places. These sites are afforded the protection of the Heritage of Western Australia Act 1990, which has implications for planning and development. Urban heritage values, as outlined in municipal heritage inventories, are to be protected through local planning strategies and schemes and government policies.

Heritage places, significant landforms and landscapes, historical sites and Aboriginal culture are an attraction in the region and there is significant potential for tourism in the future. To realise the potential of cultural tourism and ecotourism, informative, attractive, site-specific interpretive material needs to be developed and the value of both region scale and local scale heritage aspects need to be recognised.

Objectives and Actions for Cultural Heritage			
Objective	Actions	Timeframe	Responsibility
Ensure consideration of cultural heritage takes place in planning for the Lower Great Southern	Incorporate consideration of important cultural heritage sites and related matters into strategic and statutory planning	Ongoing	DAA LG DoP/WAPC
	Promote cultural tourism through the use of informative interpretive material at cultural heritage sites	Ongoing	TWA GSDC

2.16 Regionally Significant Natural Areas

The geography of the Lower Great Southern, its history of development, location of urban growth areas, features of natural importance and coastal attractiveness give rise to the need for considerable areas of open space to be set aside for public use. In addition to the existing national parks within the region, there is a need to examine options to identify, protect and manage a reserve network that caters for the protection of the coast, estuaries, rivers and wetlands, important native vegetation in urban expansion areas, and provision of public access.

Areas of regional significance such as the coast, estuary and river foreshores, wetlands, important landscape features, remnant vegetation linkages, recreational areas and trails require identification, protection, acquisition, appropriate reservation and management for the following reasons:

- conservation, recreation and landscape values;
- public access and enjoyment;
- cultural significance;
- under-represented vegetation complexes/ habitats;
- risk of degradation or loss due to pressure for use of areas for other purposes;
- resource protection; and
- community values.

Preliminary areas considered a priority to be secured in accordance with these criteria are listed in Table 3. Thorough consultation with the community, landowners and other stakeholders and a consideration of other options are necessary to confirm whether public ownership is required in each instance.



Photo courtesy: Colin Richardson

Table 3: Priority areas of regional significance

Existing & proposed conservation reserves including coastal unallocated Crown land & unvested reserves	Estuaries	Rivers	Wetlands
Two Peoples Bay Cape Riche Coastal macro corridor	Irwin Inlet Wilson Inlet Torbay Inlet (Manarup and Lake Powell) Princess Royal Harbour Oyster Harbour Cheynes Inlet Parry Inlet	Denmark River Hay River Yakamia Creek Willyung River/ Parker Brook King River Kalgan River Pallinup River Frankland River	Mirambeen Lake (Wellstead) Two Peoples Bay Moates Lake System (Albany) Lake Seppings (City of Albany) Owingup Swamp (Denmark) Lake Matilda (Plantagenet) Lake Kalmerndyip (north Porongurup) Stirling Range south lakes (Plantagenet) Balicup west, Poorrarecup Lake (Cranbrook) Byenup Lagoon System (Cranbrook)

Objectives and Actions for Regionally Significant Natural Areas			
Objective	Actions	Timeframe	Responsibility
Establish a network of regional open space in the Lower Great Southern	Undertake detailed investigation of the extent of the areas in Table 3 to be secured for regional open space	Long term	DoP/WAPC DPaW DoW LG
	Investigate appropriate protection mechanisms for regionally significant areas	Medium term	DoP/WAPC LG DPaW

2.17 Regional Land Use Plan

The regional land use plan (Figure 6) builds on the strategic policy framework of the strategy by identifying the preferred land uses for specific locations in the Lower Great Southern. The strategy recognises that land uses will, in reality, be more complex than these categories suggest. The aim is to guide broad land use over the life of this strategy.

The regional land use plan is divided broadly into the following land use categories:

- settlement hierarchy: regional centre, sub-regional centres, towns and villages;
- existing and proposed conservation reserves;
- macro corridors;

- priority agricultural land;
- general agricultural land;
- existing and potential water supply areas;
- existing and potential strategic industrial sites;
- regional infrastructure;
- regionally significant natural areas; and
- mineral or construction material occurrences or extraction sites.



Photo: Hoy Mercer

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Figure 6

Part 3 – Implementation

Implementation of the Lower Great Southern strategy is proposed to be achieved predominantly through existing WAPC and local government planning frameworks and processes: namely strategic and statutory planning and decision making; and preparation and/or review of planning documents including local strategies and schemes. A monitoring process will also be implemented to track progress of the actions.

3.1 Role of the WAPC and Department of Planning

The WAPC and Department of Planning will facilitate achieving the aims and objectives of this strategy through:

- ensuring that implementation aligns with relevant State and regional planning policies and strategies, including the State Planning Strategy 2050, Great Southern Regional Planning and Infrastructure Framework and State Planning Policies;
- progressing strategic planning projects within the Lower Great Southern that are consistent with the objectives and actions of the strategy, subject to normal budgetary processes;
- implementing region-specific planning guidelines, where appropriate and necessary to provide finer guidance to particular regional planning matters;
- having regard to the aims, objectives and actions of the strategy in decision making on local strategic and statutory planning matters, where relevant; and
- working collaboratively with other State agencies and local governments to deliver outcomes, particularly where these are of a cross-agency nature.

3.2 Local Planning Strategies and Schemes

Local planning strategies provide the strategic direction for local planning schemes and enable clear expression of the strategic vision, policies and proposals of the local government. Actions and recommendations in this strategy where local government has responsibility should be implemented where possible through local planning strategies and schemes.

Given the 20-year time frame of the strategy, it is acknowledged that in the short term not all recommendations can be practically implemented through existing local planning strategies and schemes. The process of reviewing strategies and schemes can be used to achieve implementation over the longer term.

3.3 Monitoring and Review

The WAPC will be responsible for monitoring the implementation of this strategy and determining the scope and nature of any reviews. The strategy was most recently reviewed in 2014-2015 and will be subject to further reviews as required. Audits of the strategy actions will be conducted on a bi-annual basis using suitable indicators to gauge progress.

Acronyms

PoA	Port of Albany
ARVS	Albany Regional Vegetation Survey
CBD	Central Business District
CENRM	Centre of Excellence in Natural Resource Management
CHRMAP	Coastal Hazard Risk Management and Adaptation Planning
DAA	Department of Aboriginal Affairs
DAFWA	Department of Agriculture and Food WA
DEEWR	Department of Education, Employment and Workplace Relations
DER	Department of Environment Regulation
DET	Department of Education and Training
DFES	Department of Fire and Emergency Services
DMP	Department of Mines and Petroleum
DoF	Department of Fisheries
DoH	Department of Health
DoP	Department of Planning
DoT	Department of Transport
DoW	Department of Water
DPaW	Department of Parks and Wildlife
DRD	Department of Regional Development
DSD	Department of State Development
DSR	Department of Sport and Recreation
DTWD	Department of Training and Workforce Development
EPA	Environmental Protection Authority
GSDC	Great Southern Development Commission
GSIT	Great Southern Institute of Technology
GSRPIF	Great Southern Regional Planning and Infrastructure Framework
IOCI	Indian Ocean Climate Initiative

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LG	Local Government
LGA	Local Government Area
LGSS	Lower Great Southern Strategy
LGSTWS	Lower Great Southern Towns Water Supply Scheme
LPG	Liquefied Petroleum Gas
MRWA	Main Roads WA
PDWSA	Public Drinking Water Source Area
PTA	Public Transport Authority
R4R	Royalties For Regions
RFA	Regional Forestry Agreement
RFDS	Royal Flying Doctors Service
SPP	State Planning Policy
SPS	State Planning Strategy 2050
TIRES	Timber Industry Road Evaluation Strategy
TWA	Tourism Western Australia
UWA	University of Western Australia
WA	Western Australia
WAPC	Western Australian Planning Commission
WWTP	Wastewater Treatment Plant

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Public submission form

The Western Australian Planning Commission (WAPC) is seeking public comment on the draft Lower Great Southern Strategy.

All comments received will be considered by the WAPC before the final Strategy is released.

When making a submission make sure you:

- clearly state your opinion and the reasons for your opinion;
- if possible, outline possible alternatives or solutions to your area of interest;
- if possible, outline the section or page number which relates to your area of interest; and
- provide any additional information to support your comments.

A public submission form is included overleaf. If you prefer to make a comment in an alternative format, please remember to include relevant details as outlined on the submission form.

The closing date for submissions is XXXXXXX, X XXXXX 2015.

For more information please contact:

Senior Planning Officer
Lower Great Southern Strategy
Department of Planning
(08) 9892 7306
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Please send your submission via post or email to:

Senior Planning Officer
Lower Great Southern Strategy
Department of Planning
PO Box 1108
Albany WA 6331
albanypso@planning.wa.gov.au

We look forward to receiving your submission.

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Name:

.....

Organisation (if relevant):

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Address:

.....

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Interest (eg local resident, landowner, business operator, visitor to the area):

.....

I/we would like to make the following comments on the draft Lower Great Southern Strategy and would like them to be considered in the preparation of the final document.

Comments:

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Western Australian Planning Commission



draft lower **Great Southern** 2015 Strategy appendices



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Appendix A – Planning process and context

1.1 Planning Process

Preparation of the original 2007 Lower Great Southern Strategy (LGSS) was guided by a steering committee that reported to the WAPC and consisted of local government representatives and the Great Southern Development Commission. A technical advisory group consisting of local and State government officers supported the committee.

Community input was provided throughout the process via a community advisory group and a community consultation program. Background papers were produced on the following major issues:

- community stakeholders consultation;
- environment and coastal planning;
- water resources;
- settlements;
- transport;
- landscape;
- geological and mineral resources;
- agriculture;
- population and economic growth; and
- infrastructure.

These background papers and a community consultation program assisted in issue identification, the formulation of strategies and actions for the strategy.

A review of the 2007 LGSS took place in 2014/15 following identification of this as a priority task during formulation of the Great Southern Regional Planning and Infrastructure Framework

(GSRPIF). The 2014/15 LGSS review involved an audit of actions, revision of implementation mechanisms, updating of background and contextual information, and changes to reflect the contemporary planning framework; in particular the State Planning Strategy 2050, the GSRPIF and endorsed local planning strategies.

Review of the LGSS in 2014/15 was guided by a working group consisting of agency and local government representatives; a technical officers consultation group; and community consultation via public advertising.

The LGSS identifies regional land use and infrastructure issues and determines actions needed to accomplish various objectives, in accordance with regional planning principles set out in the GSRPIF. In particular, the strategy provides:

- an executive summary;
- a vision and strategic directions for the Lower Great Southern;
- a sub-regional land use plan; and
- an implementation strategy.

1.2 Planning Context

The Lower Great Southern Strategy is a sub-regional strategy that sits within a wider framework of State, regional and local planning policies and strategies as detailed below.

1.2.1 State Planning Strategy 2050 (2014)

The Lower Great Southern Strategy is guided by the vision, principles, strategic goals and directions of the State Planning Strategy 2050 (SPS). The Lower Great Southern is situated within the wider South West sector, which the SPS identifies as the primary population centre of the State with a diverse economic base, unique environment and lifestyle opportunities.

1.2.2 Great Southern Regional Planning and Infrastructure Framework (GSRPIF) (2015)

The GSRPIF defines a strategic direction for the future development of the Great Southern region over the next 20 years. It addresses the scale and distribution of population growth, opportunities for economic development and associated planning initiatives in the region; and aims to ensure that social, economic and environmental change will benefit residents and enhance the region's character and natural resources.

The Framework also addresses land use planning responses to future growth and development pressures in the Great Southern and outlines infrastructure needs to guide future government investment decisions.

The GSRPIF confirms the need to maintain the currency and relevance of the LGSS. The Lower Great Southern will be a focus for population growth, economic development and infrastructure investment within the region and given their spatial proximity, more coordinated planning for the City and shires within the sub-region is necessary.

1.2.3 Great Southern Regional Blueprint (2015)

The Great Southern Development Commission (GSDC) and Regional Development Australia have prepared a draft Regional Blueprint for the Great Southern from a State and Federal perspective. This Blueprint is intended to provide the public and private sectors, businesses and the community with an aspirational strategic economic direction for the region; and identifies transformational opportunities to further develop the region and provide mechanisms for the implementation of priority projects. The Blueprint was prepared concurrently with the GSRPIF and the documents are complementary in their content in order for the proposed planning outcomes through infrastructure provision to be achieved.

1.2.4 Other Regional Strategies

Other important regional strategies relevant to the Lower Great Southern include the:

- Great Southern Regional Water Supply Strategy (Department of Water), which forecasts demand for water resources in the Great Southern region over the next 30 years and outlines supply options and actions to meet water demand for towns and regional development into the future;
- Great Southern Workforce Development Plan (Department of Training and Workforce Development), prepared in partnership with the GSDC to identify and plan for future employment needs in the Great Southern region; and
- Southern Prospects 2011-2016, which was released by South Coast Natural Resource Management (Inc.) to guide natural resource management on the South Coast of Western Australia. This strategy was developed with significant input from the community and benefited from a high degree of volunteerism. It builds on several previous regional planning

processes and identifies regional priorities for natural resource management under five key themes of land, biodiversity, water, coastal-marine and cultural heritage.

1.2.5 State Planning Policies

State planning policies are prepared by the WAPC under Section 26 of the Planning and Development Act 2005. They address particular issues across the State and guide the preparation of planning instruments and planning decision-making. Planning instruments include local and regional planning strategies, structure plans, town planning schemes, and policies. State Planning Policies that are particularly relevant to the Lower Great Southern are outlined as follows:

- State Planning Policy 1: State Planning Framework
- State Planning Policy 2: Environment and Natural Resources
- State Planning Policy 2.4: Basic Raw Materials
- State Planning Policy 2.5: Land Use Planning in Rural Areas
- State Planning Policy 2.6: State Coastal Planning Policy
- State Planning Policy 2.7: Public Drinking Water Source Policy
- State Planning Policy 2.9: Water Resources
- State Planning Policy 3: Urban Growth and Settlement
- State Planning Policy 3.4: Natural Hazards and Disasters
- State Planning Policy 3.5: Historic Heritage Conservation
- State Planning Policy 3.7 (draft): Planning for Bushfire Risk Management

1.2.6 Local Planning Strategies

When the LGSS was first released in 2007 the Shire of Cranbrook had an endorsed planning strategy in place, whilst Albany, Denmark and Plantagenet had strategies under preparation. All local governments in the Lower Great Southern now have endorsed local planning strategies in place, with Albany and Cranbrook undertaking strategy reviews and/or preparing new strategies in 2014/2015.

Many of the objectives and actions in the 2007 LGSS are underway or have been achieved through the progress made by local government in providing strategic guidance at a local level. The 2015 LGSS seeks to provide support to endorsed local planning strategies; and guidance to local government when carrying out strategy reviews or preparing new strategies and schemes.

Appendix B – Sub-regional profile

1.1 Economy

The Lower Great Southern is the economic centre of the Great Southern. Its growth and development often has been influenced by the health of agriculture, particularly grain and timber, and the population that lives in the area. Agriculture, forestry, fishing and aquaculture, and tourism provide the basis for much of the economy. In the Lower Great Southern these industries are a major employer.

Downstream processing of agricultural products for both the domestic and international markets is an important source of income and local employment. The economy has diversified to include horticulture and viticulture, and the region is gaining a reputation for the production of premium wines.

These core industries have downstream benefits, which accrue in the tertiary and services sector and the building and construction industries. They also are the main drivers of population growth. Significant opportunities for diversification exist in traditional farming enterprises, which will make significant contributions to the region's economy. Industrial ecology mapping programs being undertaken by local governments in the region may identify additional target industries and projects that would capitalise on the region's strengths and provide economic benefits over the long term.

Other developments that are occurring will improve the attractiveness of investment in the region. Developments such as the Albany Waterfront have provided land for commercial buildings, tourist accommodation, a protected harbour and entertainment facilities. Longer term potential projects in the region such as the Grange Southdown magnetite project would provide

significant employment opportunities. Increasing numbers of fly-in fly-out workers based in the region will also support additional services and infrastructure, particularly in Albany and Denmark.

1.1.1 Agriculture

Agriculture in the Lower Great Southern has always been diverse, with a strong emphasis on innovation and market development. High and moderately high rainfall areas along the coast provide favourable climatic conditions, suitable soil, and tourism potential for intensive agricultural pursuits. Major agricultural pursuits in the Lower Great Southern include:

- crops and pasture;
- meat production and processing (abattoirs);
- intensive free range poultry and piggeries;
- wool;
- dairy;
- fruit and vegetables;
- viticulture; and
- flowers and essential oil crops.

With international agricultural markets expected to be favourable in the long term, including those for meat products from abattoirs, the agricultural sector of the Lower Great Southern will continue to grow in value. Recent trends in the region include a developing intensive livestock industry and land use change from commercial forestry back to mainstream agricultural practices. Recently established regional saleyards in Mount Barker will further support growth in this sector.

While grain volumes are subject to seasonal variation, grain exports from across the Great Southern are expected to increase. The wine industry is also anticipated to grow which will

have flow-on effects for the tourism industry as the Lower Great Southern becomes more recognised as a wine-growing region. There are also opportunities for secondary processing, value adding, branding and niche marketing and further diversification of agricultural products.

1.1.2 Forestry

The Lower Great Southern has historically had a timber industry, built initially on the logging of old growth forests. More recently up to the mid-2000s there was significant growth in the plantation timber industry. This industry subsequently declined, with evidence indicating that many existing plantations in the region are coming out of production and returning to practices such as grazing (pasture) and cropping. In some instances this has resulted in high quality agricultural land becoming more available for food production.

However, it is also noted that the forestry industry has recently undergone a period of rationalisation and begun to re-establish. About 93 per cent of the plantation estate is in the local government areas (LGAs) of Albany, Cranbrook and Plantagenet.

Key species logged from native forests are jarrah, karri and marri. The sustainable harvest of native forests is determined through the South West Western Australian Regional Forestry Agreement (RFA) and the Forest Management Plan 2014.

1.1.3 Fishing and Aquaculture

The fishing sector is currently a minor contributor to the gross value of regional production in the Lower Great Southern. Finfish (pilchard, salmon and shark) comprise about 90 per cent of the region's live catch with the rest being crabs, rock lobsters and molluscs.

Aquaculture remains a small industry, but is considered to have growth potential. Abalone, marron, yabbies, mussels and oysters are the main species grown. Aquaculture occurs mainly in the Albany Harbours, King George Sound, Wilson Inlet and Irwin Inlet.

The Lower Great Southern's potential as a possible location for greater investment in the aquaculture sector has been recognised. In 2002, six sites in the region were identified by the Department of Fisheries as having potential for future aquaculture development in the short to medium term. The identified sites are generally characterised by favourable physical and biological features, particularly in respect to site evaluation and water quality, along with their proximity to main regional centres and infrastructure.

Two sites were selected for further development work; Boat Harbour (located mid-way between Walpole and Denmark); and Two Peoples Bay (about 30km east of Albany).

1.1.4 Retail and Manufacturing

Retail activity contributes more than 20 per cent to the gross value of regional production in the Lower Great Southern and this continues to increase. The regional centre of Albany makes the greatest contribution to the gross value of retail trade in the region. The retail sector is expected to grow commensurate with population growth and settlement in the region.

The manufacturing sector makes a valuable contribution to the region's economy with the majority of business establishments based in Albany. Manufacturing activity is based largely on the supply of equipment and machinery to the agricultural sectors, processing of agricultural commodities such as meat, and metal and wood fabrication. This sector may benefit from the growth of mining in the region.

1.1.5 Tourism

Tourist and visitor attractions in the Lower Great Southern are diverse. The region is known for its natural features, mild climate, premium food products and wineries. It has a strong heritage and history given that Albany was the first settlement in WA and the main port until the opening of Fremantle Port in 1900.

Tourism is an important regional economic driver. The sector currently contributes about 8 per cent to the gross value of regional production and the perception is that flow-on effects (the supply of goods and services produced by non-tourism industries to satisfy the demand of industries directly supplying tourism demand) are notable.

The most visited attractions are the Valley of the Giants Tree Top Walk, Discovery Bay (Whale World) and the many wineries. Conservation areas that have high levels of visitation include the Stirling Range, Mt Frankland, Mt Lindesay, William Bay, West Cape Howe, Porongurup, Torndirrup, and Waychinicup National Parks and Two Peoples Bay nature reserve. Globally renowned walking, riding and driving trails throughout the region add to the diversity of visitor attractions.

The main destinations for visitors are the LGAs of Albany, Denmark and Plantagenet. Approximately 48 per cent of all visitors to the Great Southern overnight in the LGA of Albany and 18 per cent in Denmark (Table 1).

1.1.6 Mining and basic raw materials

The region currently has a relatively small mining sector, with a total production value representing less than 0.2 per cent of the gross value of regional production. Minerals produced include silica sand from Mindijup (about 40km north east of Albany) and lime sand from small operations within the LGAs of Albany and Denmark.

There are a number of undeveloped mineral deposits in the Great Southern including heavy mineral sands, gold, iron ore, silica sand and spongolite. These deposits may become economic in the future depending on market conditions. The value of mining to the region will increase significantly if the proposed Southdown magnetite project proceeds.

Basic raw materials (BRM) are a key resource present in the Lower Great Southern. Some deposits are utilised and others are yet to be accessed. In some cases there are issues surrounding security of access to BRM in the region, balancing access and extraction with environmental objectives, and managing impacts on nearby sensitive land uses.

1.1.7 Labour force

The labour force of the wider Great Southern region increased by 20 per cent over the decade to 2009/10. Just over 60 per cent of the labour force is situated in the LGA of Albany, with a further 8.8 per cent in Plantagenet and 8.5 per cent in Denmark. Over the last two decades the region's workforce has diversified from being almost totally dependent on agriculture and associated industries, although this sector continues to provide most jobs in the Great Southern. The largest individual employer is the WA Country Health Service followed by the Department of Education. The largest non-government employer, Fletchers International Abattoir at Narrikup (Shire of Plantagenet) is the third largest employer in the region.

Table 1: Annual average holiday/leisure overnight visitors 2001-2008

Local Government	Intrastate	Interstate	International	Total
Albany	118 900	48 900	42 000	209 800
Denmark	57 900	10 600	9 500	78 000
Plantagenet	12 900	2 100	1 600	16 600

Source: Tourism WA, Tourism Development Priorities 2010-2015

The unemployment rate for the region has traditionally been higher than the State average. The unemployment rate declined for the period 2003 to 2009, but for the period 2009/10 to 2010/11 rose in the LGAs of Albany, Plantagenet, and Cranbrook (Table 2).

1.2 Population and Settlements

1.2.1 Population

WA Tomorrow (WAPC, 2015) provides a median forecast for the population of the wider Great Southern region to grow from approximately 57,000 persons (2010) to 66,340 persons (2026). The Lower Great Southern region will support the majority of this growth within the City of Albany and the towns of Denmark and Mount Barker.

The population demographic in the region is changing, with increases in high dependent ageing population, first home owners and single person households. While these are common to most other major settlement areas in the

State (with notable exceptions being the mining regions), the ageing population is potentially more pronounced.

In the City of Albany growth in the number of people in the 35-44, and the over 55 age categories is the most distinct and is forecast to continue. This is indicative of employment opportunities to some extent and an ageing population. Other local governments experiencing growth such as Denmark and Plantagenet are forecast to grow in the over 60 age categories.

The proportion of people 15-24 years is approximately 12 per cent in the region which is lower than the State percentage of approximately 14.3 per cent. It appears that the 15-24 age groups of youth and young adults are choosing to leave the region for opportunities in Perth and other regions of the State that offer greater education and employment options. This is having an impact on population distribution creating a more isolated rural population.

Table 2: Number of unemployed and unemployment rates in the Lower Great Southern

Statistical Local Areas (SLAs)	Unemployment Rate (%) June 2010	Unemployment June 2010	Unemployment Rate (%) June 2011	Unemployment June 2011	Labour Force June 2011
Albany – Central	4.4	406	5.3	489	9,312
Albany – Balance	4.3	428	5.0	511	10,130
Cranbrook	2.4	19	3.9	31	785
Denmark	5.4	145	5.2	142	2,719
Plantagenet	5.6	157	6.0	170	2,826
Balance of WA (non-metro)	5.1	15 900	4.6	15 000	322 600
WA	5.0	62 200	4.4	55 900	1 283 100

Source: Adapted from DEEWR, June Quarter 2011 (Smoothed Series)

Although population is increasing, the distribution of population growth is occurring unevenly throughout the region. The Lower Great Southern's coastal population is predicted to continue to experience the strongest growth, whilst inland agricultural areas will experience population stability or contraction. Table 3 indicates population forecasts for the region and its LGAs in five year increments from 2006 to 2026. In particular, steady growth is anticipated in Albany over the next 20 years with the City expected to reach a population of 41270 by 2026. Denmark is also expected to experience strong growth reaching a population of almost 7000 by 2026.

Taking into account the above projections, the City of Albany will require housing for an additional 6400 persons from 2011 to 2026. Assuming that household occupancy rates remain constant at 2.5 persons per dwelling, this represents an additional 2560 dwellings or 170 new dwellings per year.

1.2.2 Settlements

The regional centre of Albany and the country towns in its hinterland are interdependent. Albany provides a major stabilising force for the Lower Great Southern. Soon it will gain necessary concentration of capital, population mass, and economies of scale to provide the essential development functions, health care services, manufacturing and employment opportunities and cultural assets to service the large and remote rural hinterland.

Albany

Albany is the oldest settlement in the State, situated on Princess Royal Harbour and King George Sound. It is the regional centre and major economic focus of the Great Southern region. It also is a major port on the south coast of Australia; from here much of the agricultural production, such as grain and woodchips, is exported. A wide range of business activities are undertaken, including retail and wholesale trade, banking and financial services, local government, industrial

Table 3: Population forecasts by Band C (Median Value), 2006 to 2026 for Great Southern LGAs

Region/LGA 2006-2026	2006	2011	2016	2021	2026
Great Southern	55,900	57,240	60,240	63,110	66,340
Albany (C)	33,400	34,870	37,310	39,410	41,270
Cranbrook (S)	1,100	1,110	1,020	980	910
Denmark (S)	4,800	5,370	5,880	6,400	6,910
Plantagenet (S)	4,700	5,030	5,220	5,340	5,410

Source: WA Tomorrow 2015

building and home maintenance supplies, real estate, hospitality and accommodation services. Albany also is a regional administrative centre for many State and Commonwealth agencies.

The City of Albany also contains the Great Southern region's major airport, communication, education and health services. It attracts a large number of tourists due to its historic buildings and scenic natural environment such as Torndirrup and West Cape Howe national parks and the nearby Two Peoples Bay nature reserve.

Denmark

Denmark is the main settlement in the Shire of Denmark. Located on the picturesque south coast, the shire is one of the fastest-growing regional local government areas in Western Australia. It is a very popular centre for people choosing to leave the Perth metropolitan area or other country centres for lifestyle or career change. The high rainfall, pristine environment, and karri and tingle forests are important environmental characteristics attracting people to the town. Denmark provides a high level of community services, including a district hospital, pre-school care, senior high school and an agricultural college.

Mount Barker

Mount Barker is the main commercial, cultural, recreational, educational and administrative centre of the Shire of Plantagenet. The town has a central location in the shire and is strategically located at the intersection of Albany Highway and Muir Highway. The main Perth-Albany railway also runs through the townsite. The town services a wide agricultural region, including the villages of Kendenup, Narrikup, Porongurup and Rocky Gully. Mount Barker offers a high level of community services such as a district hospital, primary and senior high school, Sounness Park recreation complex and Frost Park equestrian facility.

Cranbrook

Cranbrook is the administrative centre of the Shire of Cranbrook. Cranbrook is also known as the Gateway to the Stirlings, enabling tourists to enter the Stirling Range National Park.

Frankland River

Frankland River is the second major settlement in the Shire of Cranbrook and is located en route from the South West region to the Great Southern region. Since the 1970s, the name Frankland River increasingly has been associated with premium wine production. Plantation timber and olives are also key industries. There is potential for additional tourism development due to the town's close proximity to the Walpole wilderness area. A large community resource centre has been operating in the town since late 2006.

Villages

There are numerous villages scattered throughout the Lower Great Southern. These settlements developed historically in areas where farmland was released in the 1960s, as sidings to railway lines, through government war services land settlement schemes and trading posts. The villages range in size from small clusters of rural lifestyle lots (with perhaps a general store) to larger villages with community services and facilities such as a primary school, library and waste disposal site. Each village is unique in character and offers rural lifestyle opportunities.

1.3 Infrastructure and Services

1.3.1 Port of Albany

The Great Southern has one major port located at Albany, managed by the Southern Ports Authority. The Port of Albany is a significant import/export gateway for the Great Southern and WA. The port is a four berth facility with road and rail access. The port is essentially an agricultural port and is highly sensitive to seasonal variations that impact on grain production and woodchip demand. Export of woodchips and grain comprises more than 90 per cent of total trade at the port.

Freight transport to and from the port is expected to increase. Planning for road and rail access to the port through Albany's urban and central areas is therefore important. The Albany Ring Road (of which the first of four stages is constructed) is a medium-to-long-term response to this concern. Recent new infrastructure at the Port of Albany includes work on a \$3.5m, seven- year project to restore Berths 1 and 2 to original operating capacities. This will also extend the lifespan of the berths until 2035 and significantly raise the port's efficiency.

Should the Grange Resources Southdown magnetite project progress to construction and operation, the export of magnetite ore from the mine will triple the trade of the Port of Albany to over 15 million tonnes per annum and have a significant impact on the economy of the region. Major works at the port would be associated with this including construction of a new berth; reclamation of land; and widening, deepening and extension of the existing shipping channel.

1.3.2 Rail

Rail access to Albany is provided by the Great Southern line to Perth via Northam. There are several branch lines outside the Lower Great Southern for the haulage of grain to Albany connecting to the Great Southern line, including lines to Newdegate and Hyden, Nyabing and Gnowangerup. In Albany, the Great Southern line converges with the key access road into the port. The line runs parallel to Princess Royal Drive adjacent to the south side of the Albany CBD.

Rail is effective in hauling large quantities of single, particularly bulk commodities over medium to long distances. In the Lower Great Southern, the commodity accounting for the major volumes hauled by rail is grain. Woodchips also are a significant commodity using the rail network.

The State Government announced in 2011, a \$178.8 million rail upgrade package which would result in significant improvements to the Great Southern Railway line. The re-sleepering of nearly 400km of rail lines in the Albany Zone has expanded options in reference to the grain freight task and will have flow on benefits to the load currently being borne by regional roads. However, continued maintenance of the rail system and the expansion of this infrastructure at the port are required to improve safety and efficiency.

1.3.3 Roads

The Lower Great Southern is well serviced by regional and local roads. The road network consists of both sealed and unsealed roads that provide for the movement of freight, people and services throughout the region. It provides for the agricultural industry, freight, industrial, commercial and retail activity in the region. Table 4 contains a summarised description of key roads in the region.

Table 4: Key roads in the Lower Great Southern and their function

State roads	
Albany Highway	Main link to Perth for Albany, Denmark and Mt Barker; carries general freight as well as commuter and tourism traffic
South Coast Highway (west of Albany)	Connects the South-West and Great Southern regions and provides access to towns such as Denmark and Walpole; important link to tourism and recreation sites
South Coast Highway (east of Albany)	Major east-west connector between Great Southern and Goldfields-Esperance regions and a major tourist route. Due to a grain receival bin located near Gairdner River the highway is also a major grain haulage route
Chester Pass Road	Important route for grain haulage from off-rail grain receival bins in the eastern part of the Great Southern region; important tourism route accessing the Stirling Range National Park
Muir Highway	Connects the South-West and Great Southern regions and is likely to become a major freight and commuter link to Albany Highway at Mt Barker
Great Southern Highway	Serves as a feeder route on to Albany Highway for towns such as Woodanilling, Katanning, Broomehill, Tambellup and Cranbrook; provides inter-town access for these population centres; important tourist route
Denmark-Mt Barker Road	Provides the most direct route between Denmark and Perth and is the principal supply route for Denmark and also used for timber and livestock haulage; important commuter and tourism route providing inter-town access between Denmark and Mt Barker
Menang Drive (Ring Road Stage One)	Connects Albany Highway and Chester Pass Road north of Albany's urban area, allowing reduction in heavy haulage truck movements through residential areas and main roundabout en route to Port of Albany
Local roads	
Wingebellup Road	Alternative to Muir Highway as a connection to South-West region via Boyup Brook; potential future timber cartage route and tourism route to the region; part of wine/tourism link to Manjimup area; connects with Frankland-Cranbrook Road, an alternative Albany-Bunbury route
Frankland-Cranbrook Road/Stockyard/Martagallup Road	Connects the Frankland River wine and timber plantation areas to Albany Highway and Cranbrook; an important freight route for the plantation industry; importance as tourism route will increase
Woogenellup Road	Connects Albany Highway and Chester Pass Road; provides east-west freight connectivity between the South-West region and Esperance via Muir Hwy, also provides direct connection between Mt Barker and agricultural areas to the east
Beverley Road	Connects Albany Highway to Kendenup townsite
Porongurup Road	Part of important alternative tourism route from Mt Barker to Albany via the Porongurup National Park and wine-producing area
Salt River Road	Important tourism route from Cranbrook to the Stirling Range
Settlement/Jackson Road	Provides connection to abattoir located on Settlement Road; future timber route to woodchip mill

Local roads (cont.)	
Chillinup/Kojoneerup West Road	Provides connection from the eastern agricultural areas to Mt Barker and the abattoir on Settlement Road
Spencer Road	Connects timber plantations in the Denmark and Mt Barker areas to Albany Highway; growing importance as a road to service the wine industry and associated tourism trade; important link to Mt Barker saleyard
Lower Denmark Road	Important tourism road; alternative Albany-Denmark route
Down Road	Freight route servicing woodchip mill and Mirambeena Industrial Estate
Cheyne's Beach Road	Important tourism road; access to Cheynes Beach and Waychinicup National Park
Happy Valley Road/ Churchill Road/Mount Lindesay Road	Part of important tourism route north west of Denmark
Dempster Road	Links South Coast Highway and Nannarup Road; important access route for agricultural surrounds and for tourists
Nunijup Road	Part of road network providing a link from Frankland River and surrounding areas across to Albany Highway
Homestead Road	Important local road providing access from plantation areas to South Coast Highway
Redmond West Road	Important local road providing access to Redmond townsite from rural hinterland
Pfeiffer Road	Important local road providing connection between South Coast Highway and South Stirling
Millbrook Road	Serves as a link between Albany Highway and South Coast Highway/Chester Pass Road
Narrakup-Chorkerup Road	Provides connection between Redmond and Narrakup; alternative route to Albany Highway
Redmond-Hay River Road	Important local road providing connection from Albany Highway to Redmond townsite
Nornalup-Tindale Road	Important route providing direct connection between Muir Highway near Rocky Gully and South Coast Highway near Bow Bridge. Important for tourism and local agricultural traffic
Shamrock Road	Alternative route from Frankland River north to Kojonup; also acts as a connector road between Frankland-Cranbrook Road and Albany Highway
Two Peoples Bay Road	Important tourism road; access to Two Peoples Bay beach and Nature Reserve
Hazelvale Road	Part of important tourism route north west of Denmark
Princess Road and Sand Patch Road	Important road for tourism purposes; accesses Albany Wind Farm, coastal cliffs and beach at Sand Patch

1.3.4 Airports

Albany regional airport is the major airport in the Lower Great Southern. Albany is well located to capitalise on commercial opportunities to service freight and passenger movements to the Antarctic region. With minor modifications to available infrastructure, the airport is capable of handling such activity. The proposed 300 metre extension to the north-south runway (to accommodate Boeing 737s) articulated in the Albany Airport 2001 Master Plan would provide opportunities for larger aircraft to land at Albany.

Apart from the Albany regional airport, there are a number of smaller airstrips that provide emergency access for the Royal Flying Doctor Service and landing areas for small aircraft servicing the tourism and commuter industries. Airstrips are located in Denmark, which operates tourism and charter services; and in Cranbrook and Frankland Valley vineyard, which are suitable and safe airstrips for access for the Royal Flying Doctor Service in emergency situations.

1.3.5 Utility services

Potable water

Coastal groundwater reserves and surface water supplies provide most of the region's public water supply. Table 5 gives specific townsite water supplies in the region.

Several of the present water supply areas for the Lower Great Southern towns water supply scheme (LGSTWS) are contained in national parks or Crown land and are unlikely to be subject to land use changes. These areas include the Limeburner's Creek catchment area in Torndirrup National Park and Bolganup Dam in Porongurup National Park. Angove River catchment, in the Two Peoples Bay reserve, is dedicated to water protection, although the upper reaches of this creek extend beyond the reserve and may be influenced by future land use changes. Portions of the Quickup and Denmark water catchments are also contained in national parks. Infrastructure upgrades to service Mount Barker occurred in 2014 and will be sufficient to accommodate envisaged growth of the town.

Current Water Corporation plans to secure drinking water supplies in the region include:

- investigating connecting some of the towns that have standalone water sources to the Lower Great Southern Towns Water Supply Scheme;
- developing new bore water sources to meet the needs of Albany;
- considering possible sites around Albany for a desalination plant to augment the Lower Great Southern Towns Water Supply Scheme; and
- upgrading local groundwater bores and dam sources for Denmark.

Table 5: Townsite water supplies in the Lower Great Southern

Settlement	Water Supply Source
Albany, Mount Barker, Kendenup, Narrikup	Lower Great Southern towns water supply scheme
Denmark	Quickup River dam, Denmark pipe head dam
Frankland River, Cranbrook, Wellstead, Rocky Gully	Sealed surface catchments maintained by Water Corporation
Peaceful Bay, Bow Bridge, Manypeaks, Nornalup, Kalgan, Porongurup	Currently no reticulated water supplies; rely on private supplies such as rainwater tanks or bores

Wastewater

The Water Corporation owns and operates wastewater treatment and disposal infrastructure located in Albany, Mt Barker, Denmark and Cranbrook. In other smaller settlements, privately owned, on-site wastewater treatment and disposal systems are used. Denmark's wastewater treatment plant (WWTP) is currently being upgraded to increase its treatment capacity.

Energy

Electricity and liquefied petroleum gas (LPG) are used to satisfy residential and industrial demand for energy in the study area.

Electricity is accessed from Western Power through the South West interconnected system. Western Power also buys electricity from facilities in which it has some interest and on a power purchase agreement basis.

Eighty per cent of Albany's electricity needs are provided by the Albany wind farm, which was extended in 2011 and now produces approximately 36 megawatts (MW). Denmark community wind farm has been in operation since 2013 and supplies approximately 30 per cent of electricity demand for the town. A three-turbine, 2.4MW wind farm also operates approximately 4km north of Mount Barker. All of the wind farms are connected to the South West interconnected system. Besides the inherent environmental advantages, distributed electricity generation through wind farms provides benefits in terms of improved electricity network efficiency through reduced transmission and distribution losses, which is an issue for the region.

ATCO currently supplies LPG via a reticulated system for domestic use in the Albany townsite only. The reticulated system will be extended as demand justifies, but major industrial customers cannot be supplied due to limited capacity of the LPG plant. An extension of the Dampier-

Bunbury gas pipeline from Bunbury to Albany is proposed, with the preferred alignment for the pipeline selected in 2013. Bottled gas is also readily available throughout the Lower Great Southern.

Telecommunications

Mobile telephone coverage is available in most parts of the region; however, it can be patchy. While main population centres have good mobile coverage, there are long stretches of main roads with no services and many remote towns have limited or no access to mobile services. Satellite phone coverage extends over the whole region and 200 nautical miles out to sea.

In 2012 Telstra was selected to implement the Regional Mobile Communications Project, partially funded through Royalties for Regions (R4R). It builds on funding already invested through the Community Safety Network. Under the project, Telstra will deliver about \$106 million to deploy new mobile communications infrastructure at 113 sites along major roads and highways across the State and in several regional communities, increasing mobile coverage by up to 22 per cent in WA. It will benefit individuals and businesses and have an impact on the delivery of emergency services to communities.

2.3.6 Social infrastructure

Forecast demographic trends provide a broad indication of future demand for health, education and community services that will be required over the short, medium and longer term. Albany is generally well supplied with social and community infrastructure while the surrounding areas need to access these services in Albany or sub-regional centres.

Well established recreation, entertainment and cultural facilities are considered important in the liveability of a place and are a significant factor in a town's amenity, thus acting as a driver in the attraction and retention of skilled labour and their families.

Health

Public hospitals are provided through the WA Country Health Service in Albany, Denmark and Mount Barker. Albany's hospital was redeveloped in 2013 into the Albany Health Campus using funds from the State Government's Royalties for Regions funding.

Mental health services are located in Albany. Other government provided health services based in Albany include the Great Southern Aboriginal Health Service, Great Southern Aged Care Unit and the Great Southern Population Health Unit. The Disability Services Commission also has offices in Albany. Other health services that operate in the Lower Great Southern include the Royal Flying Doctor Service and St John Ambulance.

Private health professionals working in the region include general practitioners, dentists, orthodontists, clinical psychologists, psychologists, social workers, occupational therapists, speech pathologists, physiotherapists, chiropractors, podiatrists, counsellors, and services provided by natural health clinics.

Consideration of future planning requirements for primary health care services in the Lower Great Southern will need to include key health issues including an ageing population, an increased demand for mental health services and health services for Aboriginal people and migrants.

Education

The Lower Great Southern is serviced by educational facilities ranging from preschool, primary and secondary school (both private and public), to vocational education and a university centre. Vocational education and training providers include the Great Southern Institute of Technology (GSIT), with campuses in Albany, Denmark, and Mt Barker. GSIT also provides facilities at training centres in Cranbrook, and courses can be accessed from the Community Resource Centre in Frankland. The Institute offers Nationally Accredited Vocational Certificates, from Certificate 1 to Advanced Diploma.

The University of Western Australia (UWA) Albany centre offers Bachelors of Arts and Science, and houses the Centre of Excellence in Natural Resource Management (CENRM). The UWA Albany centre also administers the Rural Clinical School of WA, a Commonwealth funded program intended to increase the number of medical graduates interested in rural careers. Students' clinical placements occur in general practices, local hospitals, community and remote clinics, Aboriginal medical services and other health facilities.

Curtin University does not have a campus, but offers a Bachelor of Education degree in Primary or Early Childhood Teaching in association with UWA and degree qualifications in nursing in association with GSIT.

Registered Training Organisations that operate within the Lower Great Southern include:

- Albany Worklink;
- Regional Training Services – Albany;
- WA College of Agriculture – Denmark;
- Mount Barker Community College;
- Green Skills;
- Albany Business Centre; and
- Forest Training Centre.

Emergency services

The Department of Fire and Emergency Services (DFES) provides 24-hour emergency services to the region from the Country Fire and Rescue Service Station based in Albany. The State Emergency Service is also located in Albany. Volunteer fire and emergency services, including sea rescue groups at Albany and Denmark, are located across the region and are activated in the event of an emergency.

Medical transport is provided by St John Ambulance with its base in Albany as well as a volunteer service network of sub-centres and sub-branches in regional towns throughout the Lower Great Southern.

The Lower Great Southern’s law enforcement services are managed from the Albany Justice and Great Southern District Police Complex located in Albany. The facility was completed in 2005 and provides for 24-hour police presence, judicial courthouse activities and incorporates a forensics laboratory. Police stations are also located in Cranbrook, Denmark and Mount Barker.

Recreation facilities

Local Governments within the region are recognised as the main providers of sport and recreation infrastructure. Infrastructure provision ranges from large multifunctional indoor recreation centres, public pools, playing fields for organised team sports, passive parks, and skate parks to a diverse range of recreation trails.

The sport and recreation infrastructure facilities outlined in Table 6 are considered major amenities for the region.

Culture and entertainment facilities

Cultural and entertainment facilities in the Lower Great Southern are fairly limited with the focus of activity primarily centred on Albany. The 2011 completion of the Albany Entertainment Centre as the premier entertainment venue in the Great Southern, has contributed significantly to the region’s opportunities to enjoy high quality performances by visiting performers. The venue is used by the many performance and music groups in Albany. Art-based initiatives that are well received in the region include the annual Bendigo Bank Southern Art and Craft Trail presented by ArtSouthWA, and the annual Great Southern program of the Perth International Arts Festival. The WA Museum also has a regional site in Albany.

Table 6: Major recreational facilities in the Lower Great Southern

LGA	Recreation Facility
Albany	Albany Leisure and Aquatic Centre Indoor heated free-form beach entry pool with 25m lap pool, seven indoor courts, crèche and gymnasium.
Denmark	Denmark Recreation Centre Two court indoor stadium, crèche and gymnasium. Currently reviewing a feasibility study for provision of an indoor heated public swimming pool.
Plantagenet	Mt Barker Recreation Centre Joint provision/shared use facility with the Education Department – two-court indoor stadium, squash courts and gymnasium. Mt Barker Public Swimming Pool Outdoor seasonal use 50m lap pool. Frost Park Equestrian Facility Sounness Park Recreation Complex Football, cricket, soccer, hockey and tennis facilities

1.4 Environment, Culture and Heritage

The natural environment, culture and heritage of the Lower Great Southern is a key attractor for many residents and visitors. The region contains many significant natural assets and resources that require careful consideration in planning for future land use and development.

1.4.1 Environment

Climate

The coastal area of the Lower Great Southern is characterised by a Mediterranean climate with generally warm summers and cool, wet winters. The cooler, wetter climate of the southern, western and coastal parts of the region, compared to Perth and many parts of WA, is a factor in its liveability and attraction. Winter rainfall is relatively high and reliable compared with many parts of WA. Rainfall gradually decreases with increasing distance from the coast. In inland areas, particularly in the north and east of the region, rainfall is less reliable and evaporation rates are substantially higher than coastal areas. The climate of the south west of WA has changed in relatively recent times, with an increase in average temperature by 0.8 °C since 1910 and a decrease in rainfall by 15 per cent since 1975.

Biodiversity

The South-West botanical province of Western Australia is a global 'hot spot' of biodiversity. This biodiversity is concentrated in conservation reserves, such as national parks and nature reserves, and remnant native vegetation on private land. The long-term viability of these areas is reliant on the retention of biodiversity in the wider landscape, and particularly connectivity between them.

The biodiversity of the Lower Great Southern is one of its most important assets. It supports an abundance of taxa, habitats and ecosystems recognised internationally for their significance.

It is home to numerous endemic plants, rare and endangered flora and fauna and threatened ecological communities, including Australia's most threatened mammal, Gilbert's Potoroo. It contains part of one of the South-West province's four recognised centres of plant endemism, the Stirling Range, which has much higher numbers of endemic plants compared with surrounding areas. Mapping of plant species diversity shows several areas in or adjacent to the Lower Great Southern with relatively high numbers of plant species. Key threats to biodiversity include habitat clearing and fragmentation, Phytophthora dieback, invasive species, salinity, altered hydrology, inappropriate fire regimes, and climate change.

Generally, larger reserves are more valuable for conservation. A larger area-to-perimeter ratio means central parts of a reserve are less influenced by edge effects and disturbance. Nevertheless, small reserves often are the only means of protecting small populations of rare species or communities and can contain unusually high concentrations of threatened species. Two Peoples Bay nature reserve for instance, despite being only about 5000ha, contains a similar number of threatened species as the very much larger Fitzgerald River National Park.

There are currently 10 major national parks in the Lower Great Southern, with a total area of approximately 130,000ha. Of these, five are coastal areas, which provide an almost continuous length of coast that is managed for conservation. They are the Waychinicup, Torndirrup, West Cape Howe, William Bay and Walpole-Nornalup national parks.

Inland national parks include Porongurup, Stirling Range and the Mt Roe, Mt Frankland (north and south) and Mt Lindesay parks; and others created or extended as part of the establishment of the Walpole Wilderness Area. The Department of Parks and Wildlife is responsible for the management of the State's conservation reserve system. There are more than 90 nature reserves in the Lower Great Southern, and more than 100,000ha of State forest. The bulk of this is a large section of Denmark Catchment State Forest 64 (about 64,000ha) and most of Frankland State Forest 43 (19,478ha).

Rivers and wetlands

Rivers in the region tend to flow in a southerly direction entering permanently open or seasonally opening coastal estuaries. Flow is related directly to rainfall and catchment size, with rainfall decreasing to the east and inland. Major rivers include the Frankland, Bow, Kent, Styx, Denmark, Quickup, Mitchell, Hay, King, Kalgan, and Pallinup rivers. They have significant conservation, social and economic value. There also are a number of coastal creeks that are important in providing freshwater habitats and in the case of Limeburner's Creek, Marbellup Brook and Angove River, potable water sources for the region.

Between Albany and Denmark is the Albany drainage district, a series of drainage systems managed by the Water Corporation that is draining low lying land. The management of these drains influences the condition of estuaries that receive the drain's discharge and is an important issue for landowners in the area. The sand bars at Torbay and Wilson Inlets are also opened as a part of managing the drainage district.

There is significant wetland diversity throughout the Lower Great Southern. The region exhibits many conservation category and nationally significant wetland areas.

Coastal

The coastline of the Lower Great Southern is spectacular and diverse, including sandy beaches, granite headlands, limestone cliffs, vegetated coastal dunes, inlets and offshore islands. Thousands of people visit the region's coastal national parks and conservation reserves each year, contributing to the region's economy through overnight stays and retail expenditure. The coastal settlements of Albany and Denmark also support the majority of the region's population.

The inherent value of estuaries and embayments along the coast lies in their ecological importance; spectacular scenery; provision of important habitats to a wide variety of bird and marine

life; and functional value of acting as a gateway between the sea and the region's agricultural hinterland.

Embayments are sheltered sections of coastline, permanently open to the Southern Ocean. Princess Royal Harbour is the most significant embayment in the Lower Great Southern. The only other embayment is Waychinicup Inlet. Oyster Harbour and Nornalup Inlet are the only estuaries in the area permanently open to the Southern Ocean. Nornalup Inlet is 13km² and surrounded by national park, while Oyster Harbour is 16km². Oyster Harbour has a channel that offers easy boating access to King George Sound and the Southern Ocean, making it a unique estuary in this regard.

Seasonally opening estuaries include the Irwin, Parry, Wilson, Torbay, Taylor, Normans, Cordinup, Cheynes, and Beaufort inlets. In terms of conservation value, Wilson Inlet is of particular significance. It also supports the largest recreational and commercial estuarine fishery on the south coast of Western Australia and the size, extent and diversity of its associated wetlands suggest that it contributes significantly to the ecology of the local area. Nornalup Inlet is the only estuary on the South Coast with a catchment that is almost entirely composed of forested national park and has invertebrate fauna second only in diversity to Oyster Harbour. It was gazetted as a marine conservation reserve in 2009.

Landscape

The Lower Great Southern exhibits great landscape variety, with its diverse combination of natural and agricultural landscapes. Large tracts of coastal areas, mountain ranges and forest remain in a natural state. Agricultural landscapes are becoming more diverse with new land uses, such as plantations and vineyards, being added to cleared pasture and cropland. Developed landscapes vary from the urban character of Albany to smaller rural settlements, tourism and service nodes.

Local residents and tourists experience the landscape by travelling through it or observing it from recreation sites. These locations receive more public scrutiny than others warranting particular care in land planning and management. The area also has a number of designated scenic drives.

1.4.2 Culture and Heritage

The Lower Great Southern is rich in culture and heritage and this is a major factor in the region's identity. European settlement history is reasonably well documented and specific sites are identified where, for example, historic events occurred. Some Aboriginal sites and routes are known about, although the dwindling number of Aboriginal elders is threatening the ability to capture this information. Less well recognised is the wider landscape context of these cultural sites.

The region's Aboriginal history stretches back some 40,000 years. The Great Southern is Noongar country and the cultural connections which the Noongar people of the Great Southern have to this region date back thousands of years. Aboriginal relationship to land and seasons carries with it an abundance of heritage sites and knowledge of plants and animals.

Sensitive places and sites on country include those of mythological or ritual significance, those that have the potential to trace the impact of settlement on Noongar life, sites of pre-contact habitation and usage, burial sites, battle sites and camping/hunting/fishing sites. The region contains numerous artefact scatters, evidence of old camp sites, water sources and food gathering places. The region's important identified heritage sites include the 19,000 year-old camp and artefact site at the Kalgan Hall; stone fish traps in Albany's Oyster Harbour; and the Stirling Range National Park, which is rich in Aboriginal cultural heritage.

European heritage dates from the founding of the King George Sound settlement in 1826, three years before settlement at the Swan River. European heritage value is derived from early settlement sites at Albany, Denmark and smaller rural villages in agricultural areas, engineering works such as

railways, water supply and broad-scale landscape changes due to forest clearance for timber, farming and agriculture, all of which have contributed to the distinct and varied character of the landscape. Albany has a rich maritime history, having served the whaling and sealing industry for more than 100 years (until the late 1970s), steamships, coal and the gold rush. Albany is a major tourist attraction due to its long history and scenic setting, and Denmark is attracting visitors for cultural lifestyle and arts, and proximity to wineries and natural heritage such as the Valley of the Giants Tree Top Walk in the tingle forest and the Walpole Wilderness Area.

Appendix C – preliminary areas for consideration as regional open space

Note: This table identifies potential future public areas and does not include existing National Parks

Feature	Issues	Justification for protection
Coastal Reserves		
Note: Survey of coastal public land would be required to determine exact locations. Width of coastal reserve is inadequate in places, and several areas have no coastal reserve, segmenting an otherwise continuous area of coastal reserve.		
Two Peoples Bay	Macro-corridor potential, linkage of two significant wetland reserves. Very narrow coastal reserve does not accommodate long term public access.	Priority B <ul style="list-style-type: none"> • major conservation values and potential recreational benefits; • conservation values threatened by agricultural practices; and • scheme amendment and subdivision not appropriate means of acquiring reservation as development potential limited.
Cape Riche	Existing Crown Reserve, but surrounded by private land. Breakage in coastal reserve and corridor. Access not catered for.	Priority A/B <ul style="list-style-type: none"> • high conservation values; • medium existing recreational values (high potential); and • scheme amendment and/or subdivision not likely means of acquiring reserve.
Estuaries		
Irwin Inlet	Conservation values. Narrow foreshore reserve links existing reserves.	Priority B <ul style="list-style-type: none"> • high conservation values; • threats from existing agricultural practices in north eastern section of Inlet; and • acquisition not expected as condition of scheme amendment and/or subdivision.

Feature	Issues	Justification for protection
Estuaries (cont.)		
Wilson Inlet	Need to complete public ownership around inlet, so establishing wildlife corridors and public access. Need to protect floodplain from inappropriate uses (existing).	<p>Priority A</p> <ul style="list-style-type: none"> • high conservation values and threats from existing agricultural practices; • acquisition not expected as condition of scheme amendment/ subdivision; and • potential for public access around Wilson Inlet.
Torbay Inlet; Manarup and Lake Powell	<p>Narrow reserve does not address public access.</p> <p>Protection of conservation values and to enable public access.</p>	<p>Priority B</p> <ul style="list-style-type: none"> • medium conservation values; • medium recreational values; and • threats from agricultural activities.
Princess Royal Harbour	<p>Foreshore reserve width inadequate in places to cater for high recreational pressure and conservation values.</p> <p>Protection of harbour. Wildlife corridor.</p>	<p>Priority A</p> <ul style="list-style-type: none"> • several private lots extend to the high water mark, which prevents public access in some places. Acquisition will provide strategic recreational link around harbour; • high conservation values; • high development pressures; and • will complement conditions of subdivision and/or scheme amendment, which are appropriate means of acquiring foreshore reserves in most areas.
Oyster Harbour	To widen existing reserves in key areas, and acquire reserve in 2-3 areas (Lower King – Lower Kalgan).	<p>Priority A</p> <ul style="list-style-type: none"> • high conservation values; • high recreational access values; • high development pressures; and • pre-existing subdivision and lot sizes make acquisition by scheme amendment and/or subdivision unlikely in key areas.
Cheynes Inlet	Inadequate reserve on south side of inlet. Additional public land would provide continuous buffer around whole inlet.	<p>Priority B</p> <ul style="list-style-type: none"> • high conservation value; • medium recreational value; and • medium development pressure and agricultural pressure.

Feature	Issues	Justification for protection
Wetlands		
Mirambeen Lake (Wellstead)	Unprotected shoreline and riparian vegetation in north eastern corner of wetland, providing breakage in wildlife corridor.	Priority B <ul style="list-style-type: none"> • high conservation values; • moderate pressure from agricultural practices; and • subdivision and scheme amendment not able to provide reservation.
Two Peoples Bay Wetlands – Angove Lake	Southern end of wetland in private ownership. Will provide wildlife corridor between Angove Lake and Gardner Lake, with continuous wildlife corridor.	Priority A <ul style="list-style-type: none"> • high conservation value; • moderate agricultural pressure; • recreational potential; and • significant regional wildlife linkage.
Lake Seppings (City of Albany)	Development encroaches into wetland, with private land in seasonally inundated area of lake. Inadequate buffer for conservation category wetland, particularly in south west corner, and in overflow to Oyster Harbour.	Priority A <ul style="list-style-type: none"> • high conservation values; • high development pressures; and • subdivision and scheme amendments will not be able to secure wetland buffer given pre-existing lot sizes.
Owingup Swamp (Denmark)	Northern boundary inadequate to contain buffer. Marginal changes required.	Priority B/C <ul style="list-style-type: none"> • high conservation value; • limited development or land use pressure; and • subdivision/scheme amendment unlikely means of securing buffer.
Lake Matilda (Plantagenet)	To provide continuous public ownership around lake that has recreational and conservation values and to protect from agricultural impacts.	Priority C <ul style="list-style-type: none"> • medium conservation value; • medium to low risk; and • low development pressure.
Lake Kalmerndyip (North Porongurup)	Widen existing reserve and create wider corridor and/or buffer. To provide continuous wide foreshore around conservation category wetland.	Priority B <ul style="list-style-type: none"> • high conservation area; • wildlife linkage; and • subdivision and/or scheme amendment unlikely means of acquiring increase buffer.
Stirling Range South Lakes (Plantagenet)	South east corner in public ownership – national park boundary is along water's edge and contains no buffer and/or riparian vegetation. To provide continuous buffer and foreshore around whole wetland.	Priority B <ul style="list-style-type: none"> • high conservation value; • agricultural use of wetland fringe; and • subdivision and/or scheme amendment unlikely means of securing protection.

Feature	Issues	Justification for protection
Wetlands (cont.)		
Balicup West (Cranbrook)	Need to provide continuous foreshore reserve around wetland.	Priority B <ul style="list-style-type: none"> • high conservation value; • agricultural use of wetland; and • subdivision and/or scheme amendment unlikely means of acquiring foreshore reserve.
Poorrarecup Lake (Cranbrook)	Uncertain – inadequate public foreshore reserve, but well vegetated private buffer. To provide security on vegetation protection.	Priority C <ul style="list-style-type: none"> • high conservation values; and • low agricultural threats.
Rivers		
Denmark River	To provide for recreational link in urban area, to contain river floodplain, to provide continuous foreshore reserve.	Priority A <ul style="list-style-type: none"> • high conservation value; • high development threats; and • recreational potential.
Hay River	Inadequate foreshore reserve width. To provide wildlife corridor, long continuous foreshore reserve, recreational link.	Priority B/C <ul style="list-style-type: none"> • high conservation value; • low/medium agricultural threats (mixed); and • low recreational value.
Yakamia Creek	Urban recreational link between urban area and coast, drainage management, vegetation protection, open space in urban front.	Priority A <ul style="list-style-type: none"> • high conservation value (in parts only); • high recreational values; • drainage function; and • high development pressure with small lots.
Willyung River/ Parker Brook	Provision of recreation and wildlife corridor running from urban centre to King River foreshore. Stormwater management. Urban expansion area.	Priority B <ul style="list-style-type: none"> • medium conservation values; • medium recreational values; and • medium development pressure.
King River	Need to link existing reserves, and include extensive tidal floodplains. Would provide recreational corridor and wildlife corridor on edge of urban area. Small sized lots do not enable conditions of subdivision/scheme amendments to provide sufficient foreshore reserves.	Oyster Harbour-Chester Pass road priority A. Chester Pass to Hawley Road Priority B/C. <ul style="list-style-type: none"> • high conservation values; • high recreational values; • high development pressures and agricultural pressures; and • intertidal floodplain not protected.

Feature	Issues	Justification for protection
Rivers (cont.)		
Kalgan River	Recreational corridor – extensively used already between Upper and Lower Kalgan bridges (developed footpath on east bank). High conservation values. Public ownership of west bank could create circular route. Option for long distance trail to Stirling Ranges is long term option.	<p>Kalgan Upper Bridge to Oyster Harbour. Priority A</p> <ul style="list-style-type: none"> • high conservation value; • high recreational value; and • limited scope for subdivision. <p>North of Upper Kalgan Bridge Priority C</p> <ul style="list-style-type: none"> • medium conservation values; and • medium recreational values.
Pallinup River	Lower reaches of Pallinup in significant reserve system, apart from approximately three kilometre reach downstream of Pallinup Bridge. Very narrow foreshore reserve in this area, which does not include riparian vegetation.	<p>Priority B</p> <ul style="list-style-type: none"> • high conservation value; • medium recreational value; • agricultural land use pressures; and • subdivision and/or scheme amendment not likely to acquire reserve.