City of Belmont

Attachments

Ordinary Council Meeting

Held

28 August 2018

BELMONT • CITY OF OPPORTUNITY

Ordinary Council Meeting 28/08/18

Item 12.1 refers

Attachment 1

Golden Gateway
Draft Local Structure Plan

Taylor Burrell Barnett

GOLDEN GATEWAY
STRUCTURE PLAN

Prepared for **City of Belmont**
Prepared by **Taylor Burrell Barnett**

July 2018

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DOCUMENT HISTORY AND STATUS

Golden Gateway
Structure Plan

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Revision	Reviewer	Date Issued
16/008-0	LB	Feb 2017
16/008-1	LB	Apr 2017
16/008-3	LB	21.05.18
16/008-4	LB	30.07.18

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ENDORSEMENT

This Structure Plan is prepared under the provision of the **City of Belmont Local Planning Scheme No. 15**

IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

…….. Date

Signed for and on behalf of the Western Australian Planning Commission

……

an officer of the Commission duly authorised by the Commission pursuant to section 16 of the Planning and Development Act 2005 for that purpose, in the presence of:

…… Witness

…….. Date

…….. Date of Expiry

TABLE OF AMENDMENTS

Amendment No.	Summary of the Amendment	Amendment Type	Date Approved by WAPC

EXECUTIVE SUMMARY

This Structure Plan is prepared to guide the subdivision and development of land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan map (hereafter referred to as 'Golden Gateway' or 'subject land').

The subject land is located:

- Within the municipality of the City of Belmont;
- Approximately 5 kilometres (km) north-east of the Perth Central Business District (CBD) 3km north of Belmont Forum and mixed business area and 5km north-east of Victoria Park entertainment precinct; and
- Approximately 2.5km east of Graham Farmer Freeway and 2km west of Tonkin Highway.

The subject land encompasses a mix of uses comprising mixed business, retail (food and beverage), public uses associated with the Western Australian Turf Club (WATC), Ascot Racecourse and Ascot Kilns, Belmont Trust Land and Swan River environs. The remainder of the subject land is largely undeveloped and devoid of vegetation.

The development of the Belmont Trust Land and Ascot Kilns sites are subject to separate planning processes.

The Ascot Kilns site is owned by the Western Australian Planning Commission (WAPC) and is the subject of a draft Local Development Plan (LDP) and draft Local Planning Policy (LPP) that was considered for final approval by Council at its meeting of 12 December 2017. The draft LDP and LPP details the intended future planning vision for this site with regards to proposed land uses, built form, development standards and the retention of the majority of the heritage listed kilns and chimney structures.

The Belmont Trust Land is owned by the City of Belmont and managed by the 'Belmont Trust'. This land is not subject to any formal statutory planning processes at this stage and nor is there a specific timeline for the future planning of this land. The future consideration for this land is dependent upon the 'Belmont Trust'.

The Structure Plan proposes development of land for:

- Commercial uses;
- Retail uses;
- Residential purposes comprising a mix of low, medium and high residential densities;
- Public Open Space (POS) including foreshore reserve; and
- Access streets.

Item	Data	Structure Plan Ref. (Section No.)
Total area covered by the Structure Plan	23.9871 ha	1.2.3
Area of each land use proposed: • Residential • Mixed Use	**Hectares** 3.6961 ha 9.4742 ha	3.3
Estimated No. of Dwellings	3,000	3.3.1.1
Estimated Residential Site Density	283 Dwellings per site/ha	4.1.2.1
Estimated Population	5,400 persons	3.3.1.1
No. of High Schools	N/A	3.6
No. of Primary Schools	N/A	3.6
Estimated Commercial Floor Space	5,920m^2 nett lettable area	3.3.2.1
Estimated Retail Floor Space	1,200m^2 nett lettable area	3.3.2.2
Estimated area and percentage of Public Open Space given over to: • Local Parks	3.47% 0.6974 ha 2 parks	3.3.7
Estimated area of natural area (existing Parks and Recreation Reservation)	4.5556 ha	3.3.7

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TECHNICAL APPENDICES

PART ONE
IMPLEMENTATION

1 STRUCTURE PLAN AREA

This Structure Plan shall apply to the Golden Gateway Precinct, being the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan map (**Plan 1**).

2 OPERATION

This Structure Plan commences operation on the date it is approved by the Western Australian Planning Commission (WAPC).

3 STAGING

The staging of subdivision and development will be influenced by the timing of major road realignments and upgrades, and land rationalisation. As most of the developable land is fragmented and privately owned, the actual timing and sequence of development will be subject to market demand and individual development intentions. Land within the northern section of the subject land is less constrained by land ownership, with the WA Turf Club (WATC) and WAPC owning the majority of this land and will be more conducive to early development.

Servicing infrastructure required to support future development of the subject land is either in place or can be relocated/provided to service the subject land and as such is not regarded as an impediment to staging.

Changes to the road network will be a key trigger to enable development throughout most of the precinct. In particular, works necessary prior to development commencement include modifications to Stoneham Street, Resolution Drive, Daly Street, Raconteur Drive and Matheson Road.

The delivery timeframe of the local centre will be largely determined by economic factors and the rate of population growth.

Table 1 below provides an outline of the key triggers for enabling development within various parts of the Structure Plan area.

TABLE 1: STAGING TRIGGERS

STAGING TRIGGERS	DEVELOPMENT AREAS	COMMENT
1. Planning Framework implementation - Scheme Rezoning, Structure Plan approval	• Kilns site and adjoining WATC Admin site • Great Eastern Highway land	No subdivision or development to be approved until the planning framework is in effect.
2. Modifications and upgrades of Grandstand Rd, Resolution Dve and Stoneham St and Stoneham St / Resolution Dve roundabout. Create linear POS reserve.	• All land referred to in 3 and 4 below	This work is necessary to establish new road alignments and rationalise cadastral boundaries, prior to development of any land requiring access from those roads either directly or indirectly, or impacted by land assembly requirements.
3. Extension of Matheson Rd to connect to Resolution Dve.	• Land north of Resolution Dve	
4. Realignment and upgrades of Hargreaves, Daly and Grandstand Rd. Landscape works in linear POS.	• Land fronting the stated roads	Development may be permitted to occur prior to upgrades subject to contribution towards upgrade works in cash or kind (where appropriate).

4 SUBDIVISION AND DEVELOPMENT REQUIREMENTS

This Structure Plan comprises the plans outlined below:

- **Plan 1 – Structure Plan Map**
  Outlines the zones, reserves and residential densities applicable within the Structure Plan area.

- **Plan 2 – Precinct Plan**
  Identifies development precincts within the Structure Plan area, for the purpose of defining specific development criteria.

- **Plan 3 – Building Height Plan**
  Depicts the intended building heights within the Structure Plan area. All development should demonstrate compliance with the Building Height Plan.

4.1 LAND USE ZONES/RESERVES

The Structure Plan Map (**Plan 1**) outlines the following zones and reserves applicable within the Structure Plan area:

- Mixed use.
- Residential.
- Local roads.
- Parks and Recreation.

Land use permissibility within the Structure Plan area shall accord with the land use permissibility of the corresponding zone/reserve listed above, as specified in Table 1 of the City of Belmont Local Planning Scheme No. 15 (LPS 15) to the extent that the zoning of the land under the Scheme permits. The Responsible Authority should also have due regard for the uses listed as "Unacceptable" under the following zoning statements.

4.1.1 MIXED USE (R-AC0)

The Mixed Use zone is intended to facilitate the development of a mix of varied, but compatible, land uses including residential, offices, retail, commercial, civic and entertainment uses, in a highly integrated built form environment.

The objectives of the Mixed Use area are to:

- Provide a diversity of land uses and housing types.

- Provide for development that contributes to the creation of a high quality public realm and creates a sense of identity and character.

- Provide local retail/commercial facilities to the Structure Plan Area as well as the broader locality.

With the exception of the Main Street Precinct, it is envisaged the Mixed Use zone will accommodate residential development consisting primarily of multiple dwellings. Non-residential development is encouraged at ground level, however the 'mixed use' designation provides the flexibility for land uses to change and evolve over time in response to market conditions.

In relation to Precinct 3 Main Street, as defined in Section 4.2, the primary objective is to promote development of a local centre, where retail and other local commercial services should dominate the ground level.

4.1.1.1 LAND USE PERMISSIBILITY

Land use permissibility shall generally be in accordance with the corresponding zone in the Zoning Table in LPS 15. However, having regard for the amenity for future residents the following uses are considered to be Unacceptable in the Structure Plan Area and should not be approved:

- Auction Mart
- Caretakers Dwelling
- Fast Food Outlet / Lunch Bar
- Home Store
- Garden Centre
- Industry - Light
- Motor Vehicle Repair
- Night Club
- Radio or TV Installation
- Restricted Premises
- Service Station
- Single House (with the exception of Precinct 7)
- Vet Hospital
- Warehouse

Retail floorspace shall be predominantly located within the Main Street Precinct as shown on the Precinct Plan (**Plan 2**). Retail uses may also be permitted along the Great Eastern Highway frontage.

Residential development within the Mixed Use zone shall be in accordance with the 'R-AC0' code and associated standards as set out in **Table 2**: Precinct Development Table for the relevant Precinct.

4.1.1.2 PLOT RATIO

There is no maximum plot ratio applicable within the Mixed Use zone.

4.1.2 RESIDENTIAL

The Residential zone is intended to encourage the delivery of a diverse range of living choices, while respecting the interface with various existing residential areas.

The objectives of the Residential zone are to:

a) Maximise the urban infill opportunity.

b) Ensure a high quality of urban amenity through high standards of design in both the public and private realms.

c) Seek to enhance the amenity of surrounding existing residential environments.

4.1.2.1 DWELLING TARGET

A variety of dwelling densities are proposed, depending on the characteristics of the location. Overall, the dwelling targets for the Residential zone is/are:

283 dwellings per gross ha.

4.1.2.2 DENSITY

Plan 1 (Structure Plan) defines the residential densities that apply to different areas within the Structure Plan.

4.1.3 PARKS AND RECREATION

The foreshore reserve and Belmont Trust Land are included in the Structure Plan Area for context only. No specific works or requirements are required under the Structure Plan for these areas. The Belmont Trust Land will be the subject of separate planning to be undertaken by the Belmont Trust.

Within the balance of the Structure Plan Area, Public Open Space (POS) is to be provided generally in accordance with **Plan 1** and should be vested in the Crown and managed by the Local Government. The development of land included within the Swan and Canning River Development Control Area will be subject to the approval of the Department of Biodiversity, Conservation and Attractions (DBCA).

The POS is to provide for both active and passive recreation uses. The POS areas may accommodate stormwater generated from the proposed development; however, this should be designed such that its function as local open space is not compromised.

4.1.4 LOCAL ROADS

4.1.4.1 EXISTING ROADS

Existing local roads are to be upgraded to reflect an inner urban street character, featuring on-street parking, high quality landscape and pedestrian facilities. The existing 20m reserve width shall be maintained to ensure that the street serves a high quality public realm function in addition to facilitating local traffic movement.

The introduction of additional roads within the Structure Plan Area may occur at the subdivision application stage and in accordance with Part 10 of the Planning & Development Act 2005. These roads are to be designed to a residential standard in accordance with the requirements of the Local Government. Road reserve widths shall be 20m, to reflect similar characteristics to the existing road system, unless an alternative design is supported by the Local Government and approved by the WAPC.

4.2 DEVELOPMENT REQUIREMENTS

4.2.1 PRECINCT DEVELOPMENT REQUIREMENTS

The following precincts have been established to ensure that the Structure Plan Area is developed in a comprehensive and integrated manner having regard to desired character, preferred land uses, residential density, built form and public realm design principles:

- Precinct 1: Great Eastern Highway
- Precinct 2: Stoneham Street
- Precinct 3: Main Street (Daly Street)
- Precinct 4: Resolution Drive
- Precinct 5: Ascot Kilns
- Precinct 6: Racecourse Interface
- Precinct 7: Hardey Road (East)

4.2.1.1 STATEMENTS OF INTENT

Precinct 1: Great Eastern Highway

The Great Eastern Highway Precinct will present itself as a strong, unified commercial and mixed-use edge.

Commercial uses are encouraged at ground level and above with residential development to occupy at upper storeys.

The visual prominence of the Great Eastern Highway frontage will require sensitive architectural treatment to ensure that the built form contributes positively to the aesthetic quality of the area.

Precinct 2: Stoneham Street

The precinct, whilst still remote from the river front, will be the primary interface between the Golden Gateway development and the river.

Understanding that planning for Belmont Trust Land is yet to be undertaken, it is recommended that any future planning should maintain strong physical links between the river and the future Golden Gateway population and workforce.

Development addressing Stoneham Street is to provide an appropriate interface to the Belmont Trust Land to ensure a high standard of visual amenity and surveillance within a mixed use environment. The aspect towards the river may be attractive for food and beverage uses, which should be accommodated.

A tree-lined promenade along Hargreaves Street will create a unique vista with the Belmont Trust Land and the Swan River.

Precinct 3: Main Street (Daly Street)

Daly Street will become the community nucleus for the development and the surrounding community. The precinct is intended to perform a Local Centre function, anchored by a small supermarket and supported with local specialty shops, and restaurant/cafes. Retail development must present a 'Main Street' character, with active edges to the street.

A leafy boulevard will provide a shared vehicle pedestrian space, providing a pleasant public realm against an active street frontage and a strong physical link for pedestrians between the Main Street and the river.

Precinct 4: Resolution Drive

This precinct will be characterised by medium-high density residential uses with the potential for commercial uses at ground level.

Buildings at the junctions of Stoneham Street and Resolution Drive should feature a distinctive and iconic built form which marks an 'arrival' point to Golden Gateway. The Stoneham Street junction is considered to present an opportunity for a high standard short stay/hotel development. Additional building height will be encouraged in these locations.

Ground level development on the south side may be residential or commercial but should be designed to accommodate non-residential use.

Trees will line either side of the southern portion of Grandstand Road (between Great Eastern Highway and Resolution Drive) to create an attractive pedestrian environment connecting with the central open space area.

Precinct 5: Ascot Kilns

This precinct is characterised by the historic kilns and landmark chimney stacks that are of considerable State heritage significance. Development will therefore have a strong heritage and landscape focus, using built form to celebrate and frame the historic structures, and to secure their ongoing preservation.

This precinct is the subject of separate Local Planning Policy (LPP) and Local Development Plan (LDP).

Precinct 6: Racecourse Interface

The Ascot Racecourse holds several large events during the year that have an impact on its surrounds in terms of traffic, parking and pedestrian movement. Proposed modifications to the road and movement systems are expected to improve amenity in the interface precinct and consequently open up this area for potential redevelopment.

Responding to this opportunity, the Racecourse Interface Precinct will be a transitional area comprising primarily 'townhouse style' and low-scale apartment development. The precinct will be designed to ensure an adequate interface from a higher density mixed use environment to the more moderately scaled existing residential development, having regard to its location adjacent to the Racecourse and Ascot Kilns.

Precinct 7: Hardey Road (East)

A distinctive low density residential precinct comprising predominately single residential development to act as a transitional area to low-scale existing residential development within the stables area.

4.2.1.2 PRECINCT STANDARDS AND REQUIREMENTS

Table 2: Precinct Development Table outlines the standards and requirements for subdivision and development in the corresponding precincts designated on **Plan 2** Precinct Plan. Building height requirements should be read in conjunction with **Plan 3** Building Height Plan.

In addition to the Precinct Development Table, Design Guidelines shall be adopted to provide further guidance for subdivision and development of the precinct pursuant to Section 5.1.

In relation to Precinct 5 Ascot Kilns, development standards and requirements in this Structure Plan should be read in conjunction with the Ascot Kilns Design Guidelines and LDP.

TABLE 2: PRECINCT DEVELOPMENT TABLE

Precinct		R-Code	Min. height	Max. height	Min. side setback	Min. front setback	Max. front setback
1	Great Eastern Highway	R-AC0	Podium: 2 storeys Tower: 7 storeys	Podium: 5 storeys Tower: 15 storeys	Podium: Nil Tower: as per Apartment Design Guidelines	Podium: Nil Tower: 3m	Podium: Nil Tower: N/A
2	Stoneham Street	R-AC0	Podium: 2 storeys Tower: 5 storeys	Podium: 3 storeys Tower: 10 storeys	Podium: Nil Tower: as per Apartment Design Guidelines	Podium: Nil Tower: 3m	Podium: Nil Tower: N/A
3	Main Street (Daly Street)	R-AC0	Podium: 2 storeys Tower: 5 storeys	Podium: 3 storeys Tower: 10 storeys	Podium: Nil Tower: as per Apartment Design Guidelines	Podium: Nil Tower: 3m	Podium: Nil Tower: N/A
4	Resolution Drive	R-AC0	Podium: 2 storeys Tower: 5 storeys	Podium: 3 storeys Tower: 10 storeys	Podium: Nil Tower: as per Apartment Design Guidelines	Podium: Nil Tower: 3m	Podium: Nil Tower: N/A
5	Ascot Kilns	R-AC0	Refer to Ascot Kilns Design Guidelines and Local Development Plan	Refer to Ascot Kilns Design Guidelines and Local Development Plan	Refer to Ascot Kilns Design Guidelines and Local Development Plan	Refer to Ascot Kilns Design Guidelines and Local Development Plan	Refer to Ascot Kilns Design Guidelines and Local Development Plan
6	Racecourse Interface	R40 & R100	2 storeys	6 storeys	As per Residential Design Codes	As per Residential Design Codes	N/A
7	Hardey Road (East)	R20	N/A	2 storeys	As per Residential Design Codes	As per Residential Design Codes	N/A

Notes:

1. *Minimum and maximum building heights specified for tower components are inclusive of podium levels.*
2. *Landmark sites - Tower elements shall be permitted up to 5 storeys above specified maximum height, subject to the criteria set out in Section 4.2.2. Podium heights are permitted to range between 3-5 storeys.*
3. *This table is to be read in conjunction with the more detailed provisions of the LPP.*
4. *In relation to Precinct 5 Ascot Kilns, this table is to be read in conjunction with the Ascot Kilns Design Guidelines and LDP.*

4.2.2 GENERAL DEVELOPMENT REQUIREMENTS

Development within the subject land shall be generally in accordance with the standards and requirements of LPS 15 and the relevant LPP, having due regard to the provisions contained within this LSP.

Proposed variations to the standards and requirements of LPS 15 or the provisions of this LSP are to be outlined within a development application and will be considered by the Responsible Authority with due regard to the intent and purpose of the standards.

4.2.2.1 PARKING

Car parking should be provided in accordance with LPS 15, subject to the following variations:

1. The Local Government wishes to encourage innovative approaches to car parking provision, such as reciprocity, car-pooling programs or other innovations, that may result in reduced parking provision where appropriate.

   The Responsible Authority will consider approving a reduced parking provision where it can be demonstrated that an alternative parking proposal is sound and will result in a reduction in parking demand. Any proposed variation should be supported by a parking demand assessment undertaken by a suitably qualified professional.

2. The following specific requirements apply:

   a) For Mixed Use development, all residential parking in excess of 1 bay per dwelling, and at least 50% of the minimum required parking for non-residential uses shall be made available for general use of either residential or non-residential uses (these bays represent unallocated communal parking bays).

   b) Mixed Use development that proposes parking as outlined in 2a) above should be required, as a condition of Development Approval, to prepare a Car Parking Strategy that addresses the management of the unallocated communal parking provision, including:

      i. The hours during which parking bays shall be made available for general public access.

      ii. Location, signage and monitoring of usage of the unallocated communal parking bays.

   c) For multiple dwelling residential development, parking requirements shall be as follows:

      i. Minimum parking: in accordance with **Table 3**.

      ii. Maximum parking: not to exceed double the minimums specified in **Table 3**.

TABLE 3: MULTIPLE DWELLING RESIDENTIAL PARKING

Parking Types	Location A	Location B
1 bedroom dwellings	0.75 bay per dwelling	1 bay per dwelling
2+ bedroom dwellings	1 bay per dwelling	1.25 bays per dwelling
Visitor Parking	1 bay per 4 dwellings up to 12 dwellings 1 bay per 8 dwellings for the 13th dwelling above	

Definitions:

Location A: *Within 250m of a high frequency bus route, measured in a straight line from along any part of the route to any part of the lot.*

Location B: *Not within Location A.*

   d) The provision of car parking that is in excess of the minimum required for the site will only be approved where it is designed to be adaptable for future conversion into habitable floor space, or other useable space for communal or private usage. In order for parking to be considered adaptable, it must be shown as located in a position that is suitable for an alternative use, not included in individual strata titles and constructed to comply with habitable floorspace standards.

   This requirement may be waived if it can be demonstrated that complying with the requirement would not be practical or would result in a less desirable outcome.

4.2.2.2 BUILDING HEIGHT

Minimum and maximum building heights within the Structure Plan Area are to be in accordance with the ranges identified in **Table 2** and on **Plan 3.**

Notwithstanding the provisions of **Table 2** and **Plan 3**, maximum building heights are subject to compliance with the Airports (Protection of Airspace) Regulations 1996.

Information on Obstacle Limitations Surfaces is available at https://www.perthairport.com.au/Home/corporate/planning-and-projects/airspace-protection.

4.2.2.3 LANDMARK SITES

Landmark site locations have been identified on **Plan 3.** These sites have been located in response to priority view lines and public vistas. They define local character and maximise legibility through high quality pedestrian scale experience and are generally expected to be of a greater building height (3-5 storeys for podium element and an additional 5 storeys above the specified maximum for tower element) than surrounding development.

The Responsible Authority will only approve the additional height potential for a landmark site if it is satisfied that the proposal demonstrates design excellence in the form of articulation of the building, proportion, quality, scale, massing and detailing as specified in the adopted LPP.

In some instances, the podium element may not be required, if it can be demonstrated that:

1. The landmark character of the site and/or building is more effectively achieved; and
2. The design will offer publicly accessible open space contiguous with adjacent public space (including street verge).

5 OTHER REQUIREMENTS

5.1 SCHEME AMENDMENT

The existing zoning arrangement within the Structure Plan Area does not currently reflect the proposed zoning as outlined within **Plan 1.** Consequently, a Scheme Amendment will be required to address this inconsistency during the implementation of the Structure Plan.

The Structure Plan Area should be rezoned to 'Special Development Precinct' to provide the appropriate base zoning to facilitate integrated development for the Precinct. In addition, in order to achieve the required planning framework for the Structure Plan Area, it will be necessary to designate a 'Development Area' over the subject land under Part 6 of LPS 15. In accordance with Clause 6.2.4 of LPS 15, the preparation and approval of a Structure Plan is required to guide subdivision and development. This process can occur concurrently with the rezoning of the Structure Plan Area to 'Special Development Precinct' as described above.

As a pre-requisite to the finalisation of this Scheme Amendment process, the City will require the preparation and adoption of a LPP.

5.2 LOCAL PLANNING POLICY

No development or subdivision should be approved within the Structure Plan Area, until a LPP is adopted by the Local Government containing design guidelines and development standards, unless otherwise agreed by the Local Government.

Upon adoption, the LPP will provide a comprehensive development framework for the Golden Gateway Precinct, with the exception of the Ascot Kilns Precinct which is proposed to be subject to a separate LDP and LPP. Accordingly, subject to the discretion of the City of Belmont and WAPC, additional LDPs may not be required.

All subdivision and development shall be generally in accordance with the LPP.

5.2.1 CONTENT OF LOCAL PLANNING POLICY

The purpose of the LPP is to guide development within the Golden Gateway Precinct, providing sufficient detail to ensure comprehensive control over development (via a performance-based approach) to achieve high quality built form outcomes.

The document will define the proposed character of the various streetscapes and open spaces and will illustrate how the interface between the built form and the street should be treated in order to create high quality public spaces.

The following matters should be considered in the preparation of the LPP:

- Land use
- Minimum number of dwellings and dwelling diversity
- Building height, form and typology
- Building envelopes
- Setbacks
- Activation
- Form and mass of buildings
- Relationship between buildings and the public realm
- Landmark buildings
- Public art
- Climate and wind
- Overshadowing, overlooking and privacy
- Vehicular access, parking and service areas

Development applications received, either as a singular land use or as a component of an integrated mixed use development, are to be assessed by the Responsible Authority against the provisions of this Structure Plan and LPP.

In relation to residential development, in the event of there being any variations or conflict between the provisions, standards or requirements of the R-Codes and the provisions, standards or requirements of this Structure Plan, then the provisions, standards or requirements of the R-Codes shall prevail, except where the provisions, standards or requirements are stated in the LPP.

5.3 INFRASTRUCTURE FUNDING STRATEGY

The Local Government will establish an appropriate funding strategy for the provision of infrastructure within the Structure Plan Area. The strategy may include the introduction of a Development Contribution Area (DCA) through LPS 15, under which a Development Contribution Plan (DCP) can be implemented to contribute to the funding of public infrastructure necessary to facilitate development in the Structure Plan Area.

Infrastructure items that would be eligible to be funded under a DCP should be in accordance with State Planning Policy 3.6 Development Contributions for Infrastructure (SPP 3.6)

5.4 BUSHFIRE MANAGEMENT

This Structure Plan is supported by a Bushfire Management Plan (BMP), which is contained at **Appendix A**.

Where appropriate, development will have regard to the Bushfire Attack Level (BAL) Assessment contained in this Report and be determined in accordance with Schedule 2, Part 10A of the Planning and Development (Local Planning Schemes) Regulations 2015 and section 6.3 of SPP 3.7 Planning in Bushfire Prone Areas (SPP 3.7).

An LDP is required to be prepared for all lots with a BAL of 12.5 or greater.

Where a subdivision application includes land with a BAL of 12.5 or greater, the Local Government shall recommend to the WAPC that a condition be imposed on the grant of subdivision approval for a notification to be placed on the Certificate of Title to suitably respond to the following:

> *"That a lot with a bushfire attack level BAL rating of 12.5 or higher is subject to a BMP."*

5.5 ABORIGINAL HERITAGE

A search of the Department of Planning, Lands & Heritage (DPLH) aboriginal heritage enquiry system identifies one site occurring within the northern/western portion of the subject land (Site ID 3753).

Should the aboriginal heritage site identified as meeting the requirements of section 5 of the Aboriginal Heritage Act 1972 (AHA) be proposed to be disturbed in any way, an application must first be made and consent granted under section 18 of the AHA.

Furthermore, where applicable, an Aboriginal Heritage Management Plan shall be prepared and implemented prior to subdivision of any land affecting the identified site.

5.6 NOISE ATTENUATION

For subdivision and development located adjacent to Great Eastern Highway, Resolution Drive and Grandstand Road, an acoustic assessment shall be undertaken and included as part of any application to demonstrate that the proposed design will meet the internal noise level requirements of State Planning Policy 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning (SPP 5.4).

In accordance with SPP 5.4 a notification shall be required to be placed on the Certificate of Title for lots where dwellings are exposed to traffic noise that exceeds the outdoor "Noise Target" as defined in the Policy.

6 ADDITIONAL INFORMATION

Table 4 below outlines additional information that will be required at future approval stages. Additional information requirements may not be limited to those listed; the City or WAPC may require other information in relation to particular proposals.

TABLE 4: MANAGEMENT PLANS, REPORTS AND STRATEGIES

Additional information	Approval stage	Approving Authority
Water Management		
Local Water Management Strategy (LWMS)	Documented in Structure Plan and to be considered as part of Structure Plan process. Implementation as part of UWMP	WAPC, City, DWER
Urban Water Management Plan (UWMP)	Condition of subdivision	WAPC, City, DWER
Environment		
Environmental Assessment Report	Documented in Structure Plan Implementation via Subdivision	WAPC, City, OEPA,
Fire Management Plan	Condition of subdivision	WAPC, City
Foreshore Management Plan	Condition of Subdivision	WAPC, City, DBCA
Landscape Management Plan	Condition of subdivision	City
Aboriginal Heritage Management Plan	Condition of subdivision	DPLH
Acoustic Report (Noise Attenuation)	Condition of planning approval	City
Acid Sulphate Soils	Condition of Subdivision	DWER
Investigation for soil and groundwater contamination	Condition of Subdivision	WAPC, City
Identification and protection of vegetation worthy of protection	Condition of Subdivision	WAPC, City
Erosion and Sediment Management Plan	Condition of Subdivision	WAPC, City
Engineering		
Servicing Report	Documented in Structure Plan Condition of Subdivision	City, Water Corp, Western Power, ATCO Gas
Geotechnical	Condition of Subdivision	City
Other		
Local Development Plan(s)	Condition of subdivision if deemed necessary by City	City

Plan 1- Structure Plan

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Plan 2 - Precinct Plan

Plan 3 - Building Height Plan

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PART TWO
EXPLANATORY INFORMATION

1 PLANNING BACKGROUND

1.1 INTRODUCTION AND PURPOSE

This report has been prepared to provide a technical explanation for the provisions contained in Part 1- Implementation of the Golden Gateway Structure Plan.

The Structure Plan outlines the development vision for the ultimate development of the Golden Gateway Precinct (the subject land) and establishes key requirements. The Structure Plan also includes information regarding the development of the public realm and assesses the proposed development in context with the surrounding physical and natural environment.

The Project Team, responsible for preparing the information contained within this report, (in consultation with the City of Belmont and relevant Service Authorities) include those detailed in **Table 1.**

TABLE 1: PROJECT TEAM RESPONSIBILITIES

Project Role	Consultant
Town Planning and Urban Design	Taylor Burrell Barnett
Architectural	Taylor Robinson
Civil Engineering	Cardno
Environment Management and Hydrology	Urbaqua
Traffic and Transport	Flyt
Landscape	EPCAD
Community Engagement	Place Match
Bush Fire Management	Urbaqua

1.2 LAND DESCRIPTION

1.2.1 LOCATION

The location and extent of the subject land is outlined in **Figure 1.** The subject land is located at the axis of the key movement corridors of Great Eastern Highway, Stoneham Street, Grandstand Road and Resolution Drive and includes key strategic sites such as Belmont Trust Land, Ascot Kilns and Western Australian Turf Club (WATC) headquarters and associated land.

Figure 2 shows the subject land's district context. The land is located approximately 5 kilometres (km) north-east of the Perth Central Business District (CBD), 3km north of Belmont Forum and mixed business area, and 5km north-east of Victoria Park entertainment precinct. Within its immediate context, the subject land is located adjacent the Swan River and Ascot Racecourse.

It is also well connected to regional movement networks such as the Graham Farmer Freeway and Tonkin Highway. The Garratt Road Bridge also provides a key connection to the north across the Swan River.

Within the local context, the subject land can be regarded as lacking in basic convenience shopping facilities. The BP Service Station located on the corner of Great Eastern Highway and Resolution Drive and delicatessen located at Epsom Avenue approximately 2km south-east of the subject land provide the nearest local conveniences. However, the nearest neighbourhood centres (supermarkets) are Eastgate Commercial Centre, Kooyong Road, approximately 2.5km to the south-west, or Belvidere Street approximately 2.5km to the south. Additional services are located approximately 3km to the north-west of the subject land at Maylands Shopping Centre (neighbourhood centre) or 3km to the south at Belmont Forum (Secondary Centre).

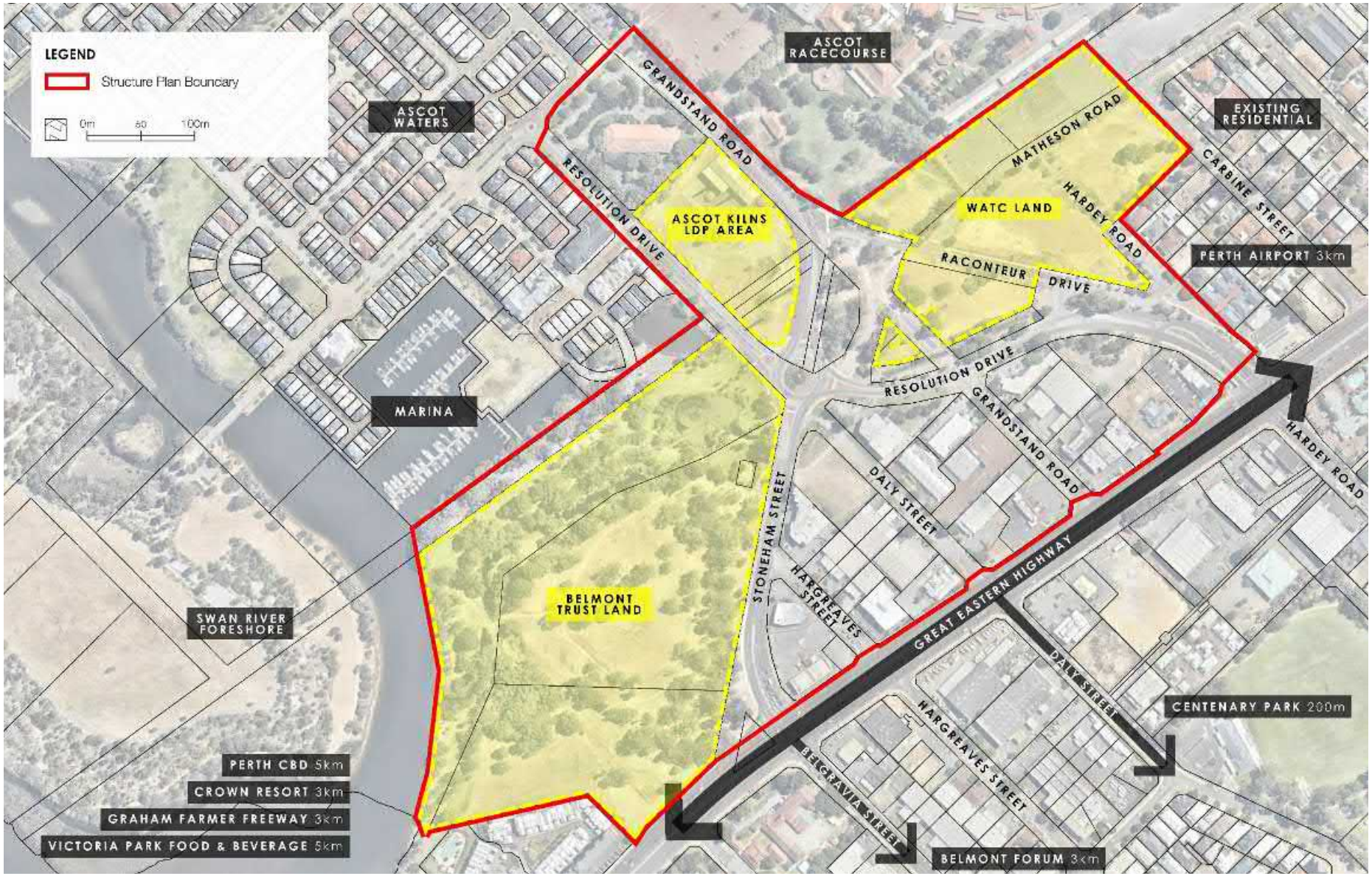

Figure 1 – Location Plan

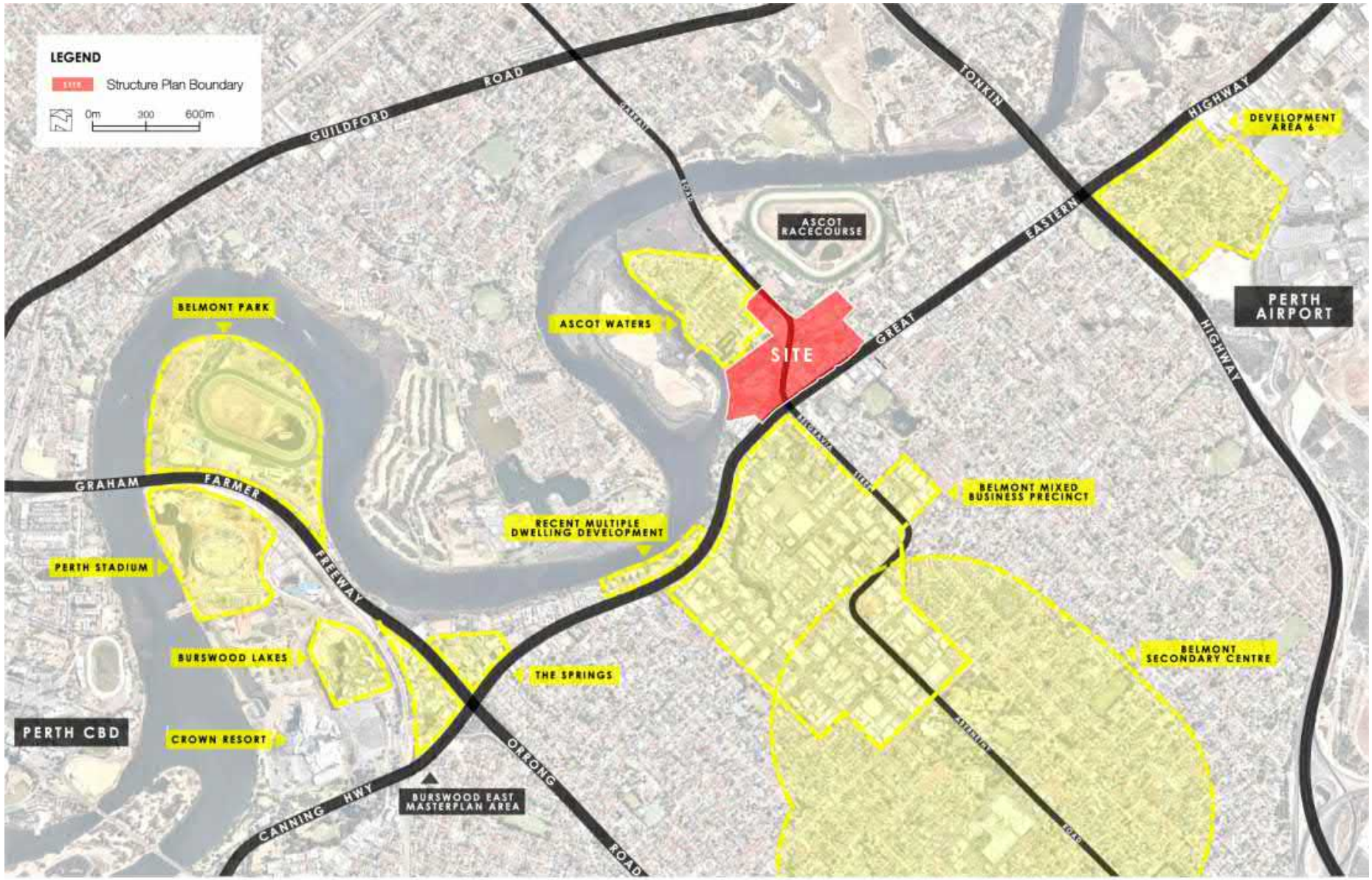

Figure 2 – District Context Plan

1.2.2 LAND USE

The subject land can be divided into four areas based on existing uses (refer **Figure 3**):

1. The area bounded by Great Eastern Highway, Stoneham Street and Resolution Drive is characterised by predominately mixed business development and small pockets of retail (food and beverage) uses along Great Eastern Highway;

2. The western portion of the subject land encompassing the Belmont Trust Land is largely cleared within the central portion with mature vegetation around the periphery. The site was historically used as a baseball field;

3. The northern portion of the subject land is partially developed with the WATC Headquarters and Ascot kilns and chimney stacks; and

4. The remainder of the subject land within the north-eastern corner is largely undeveloped and comprises a number of existing road reserves and WATC-owned land used for overflow parking on racing event days.

The development of the Belmont Trust Land and Ascot Kilns sites are subject to separate planning processes.

Figure 3 – Site Plan

1.2.3 LEGAL DESCRIPTION AND OWNERSHIP

The subject land is approximately 23.9871 hectares (ha) in area comprising the land identified in **Table 2** and **Figure 4**.

TABLE 2: LAND TENURE

Lot/Reserve	Landowner	Plan Number	Volume/Folio	Area (ha)
1 Resolution Drive	City of Belmont	P76257	2835/27	0.3642
5 Resolution Drive	City of Belmont	D64041	1776/785	4.1919
642 Great Eastern Highway	City of Belmont	P66341	2763/431	2.6481
950 Marina Drive / R52200	State of WA (City of Belmont)	P73752	LR3165/863	0.5843
512 Marina Drive / R51911	State of WA (City of Belmont)	P39786	LR3025/38	0.7749
513 The Boardwalk / R51911	State of WA (City of Belmont)	P32861	LR3025/39	0.2621
10417 Grandstand Road / R38783	State of WA (Water Corporation)	P185797	LR3048/920	0.1059
12645 Grandstand Road / R45069	Water Corporation	P15104	LR3064/783	0.2181
3 Grandstand Road	Edward Van Heemst The Chairman For The Time Being Of The Committee For The Time Being Of The WA Turf Club	D55346	1742/278	0.0351
13 Grandstand Road	WA Turf Club	D26760	1883/670	0.7316
51Raconteur Drive	Edward Van Heemst The Chairman For The Time Being Of The Committee For The Time Being Of The WA Turf Club	P15104	1883/668	0.6940
100 Raconteur Drive	Edward Van Heemst The Chairman For The Time Being Of The Committee For The Time Being Of The WA Turf Club	P60341	2723/304	2.5726
452 Grandstand Road	WA Turf Club	P60339	2723/355	1.1441
7705 Matheson Road	Chairman of the WA Turf Club & His Successors in Office	P209359	1789/567	
1 Grandstand Road	State Planning Commission	D55346	1742/276	0.2452
197 Grandstand Road	State Planning Commission	P2635	1754/354	0.3927
236 Grandstand Road	State Planning Commission	P2635	1754/354	0.8925
237 Grandstand Road	WA Planning Commission	P2635	2117/791	0.9796
713 Grandstand Road	WA Planning Commission	D93557	2117/790	1.2806
707 Great Eastern Highway	Pedersen, AG & Pedersen, NW	P67257	2750/217	0.4767
709 Great Eastern Highway	Australian Postal Commission	P67258	1122/816	0.0551
1 Stoneham Street	5 Stoneham Road Belmont (Strata Scheme)	D41222	SP20374	0.2373
43 Hargreaves Street	Tarfield Holdings Pty Ltd	P2294	1582/988	0.1012
44 Hargreaves Street	Tarfield Holdings Pty Ltd	P2294	1582/989	0.1012

Lot/Reserve	Landowner	Plan Number	Volume/Folio	Area (ha)
45 Hargreaves Street	Jones, ED & Moor, JR	P2294	1977/545	0.1012
1 Great Eastern Highway	Ascot Grove (Strata Scheme)	P72552	SP65435	0.1966
60 Daly Street	Qube Ascot Development Ltd	D73791	1801/608	0.3934
36 Daly Street	Motwil Pty Ltd	P2294	1582/987	0.1012
35 Daly Street	Motwil Pty Ltd	P2294	1582/986	0.1012
650 Daly Street	76, 78 Daly Street, Belmont (Strata Scheme)	D59457	SP10988	0.2024
714 Great Eastern Highway	TLC Carousel Holdings Pty Ltd	P67260	2753/447	0.2033
52 Daly Street	SMC Pneumatics Australia Pty Ltd	D68380	1839/787	0.3798
801 Daly Street	Capital Growth Holdings Pty Ltd	P403687	2907/899	0.2440
21 Daly Street	Ashguard Pty Ltd	D78708	1892/169	0.2332
22 Grandstand Road	Ashguard Pty Ltd	D78708	1892/170	0.2031
23 Grandstand Road	Starttime Pty Ltd	D78708	1892/171	0.3731
11 Grandstand Road	Command-a-com Pty Ltd	D17872	1182/103	0.1011
800 Great Eastern Highway	Selden Pty Ltd	P403687	2907/898	0.2833
100 Resolution Drive	Pindan Pty Ltd	D73202	1800/401	0.2071
101 Grandstand Road	127-129 Grandstand Street Belmont (Strata Scheme)	D73202	SP15951	0.3126
500 Grandstand Road	Kwik 'N' Kleen Pty Ltd	D90797	2076/935	0.3568
501 Great Eastern Highway	Sunlight Food Pty Ltd	D90797	2076/937	0.1063
502 Great Eastern Highway	Worldfirst Enterprises Pty Ltd	D90797	2076/938	0.1788
730 Great Eastern Highway	Novell Properties Pty Ltd	P67267	2753/474	0.3574
100 Great Eastern Highway	Selden Pty Ltd	P73087	2840/325	0.2622

Figure 4 - Land Tenure

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1.3 PLANNING FRAMEWORK

1.3.1 ZONING AND RESERVATIONS

1.3.1.1 METROPOLITAN REGION SCHEME

The subject land is predominately zoned 'Urban' under the Metropolitan Region Scheme (MRS) (refer **Figure 5)**.

Land abutting the Swan River within the subject land is reserved 'Parks and Recreation' and is situated within the 'Swan and Canning River Development Control Trust' area.

The south-eastern boundary abuts 'Primary Regional Roads' (PRR) reservation (Great Eastern Highway) directly to the south. This PRR reservation also extends north into the subject land at Stoneham Street and Grandstand Road.

The majority of the surrounding area is zoned 'Urban', whilst Ascot Racecourse is zoned 'Private Recreation'.

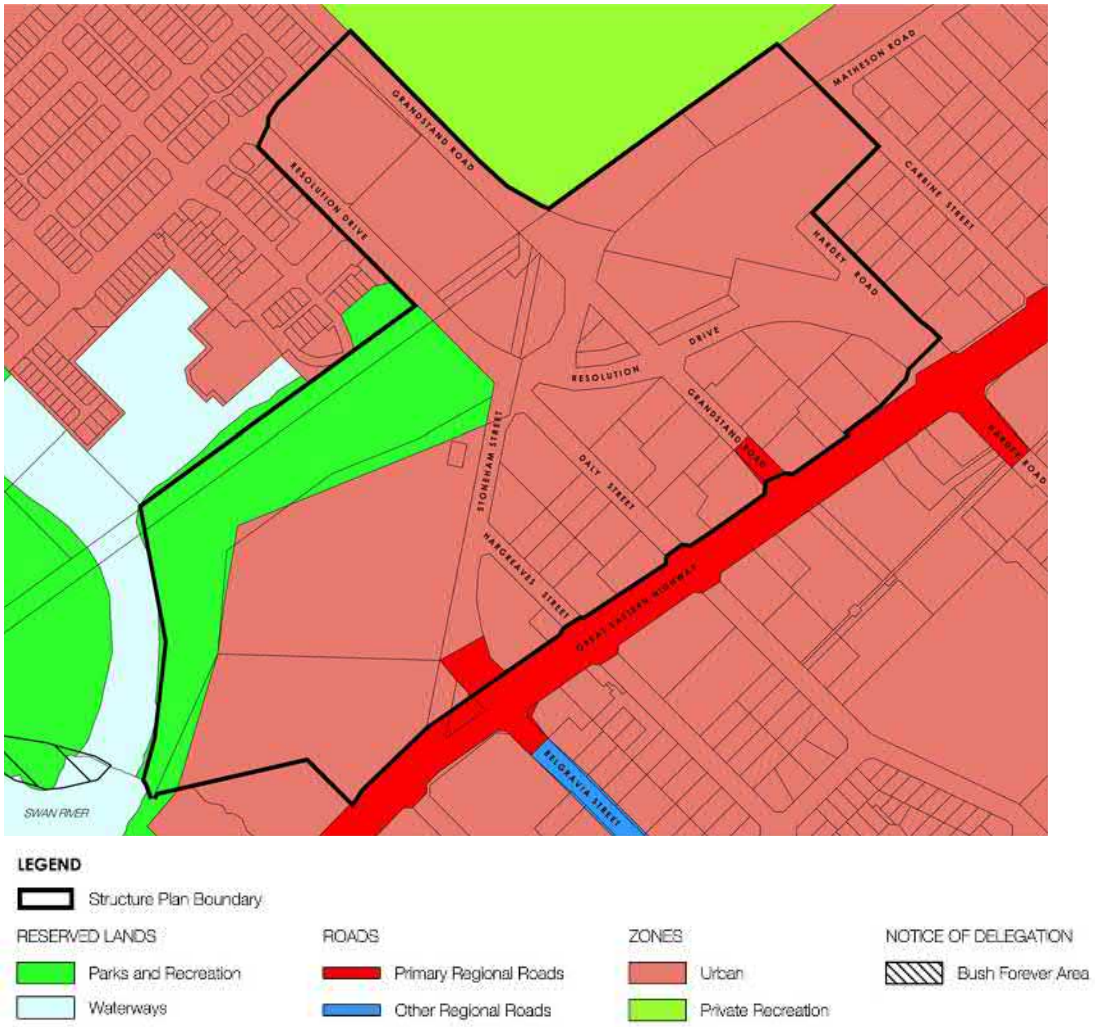

Figure 5 - MRS Zoning

1.3.1.2 CITY OF BELMONT LOCAL PLANNING SCHEME NO. 15

The subject land is predominantly zoned 'Mixed Use' under the City of Belmont's Local Planning Scheme No. 15 (LPS 15) (refer **Figure 6**).

Land within the north-eastern portion associated with Ascot Racecourse is zoned 'Place of Public Assembly – Racecourse' and identified with an 'Additional Use (A18)'. Land within the north-western portion of the subject land is also zoned 'Place of Public Assembly – Racecourse' associated with the WATC Headquarters (Lee-Steere House).

Consistent with the reservations under the MRS, the western portion of land abutting the Swan River is reserved 'Parks and Recreation' and Great Eastern Highway is reserved 'Primary Regional Roads' along with connecting sections of Stoneham Street and Hargreaves Street.

A stretch of land along Resolution Drive is reserved as Local Scheme Reserve - 'Parks and Recreation: Water supply sewerage and drainage'. This land contains a Water Corporation drain.

Land to the south of Great Eastern Highway, within proximity to Belgravia Street is predominantly zoned 'Mixed Business' with portions also zoned 'Mixed Use'.

Presently the underlying zonings under LPS 15, are inconsistent with proposed classifications in the Structure Plan, and a Scheme Amendment will be required to bring these areas into conformity. Development within the affected areas will not be permitted until such time as the land has been appropriately rezoned.

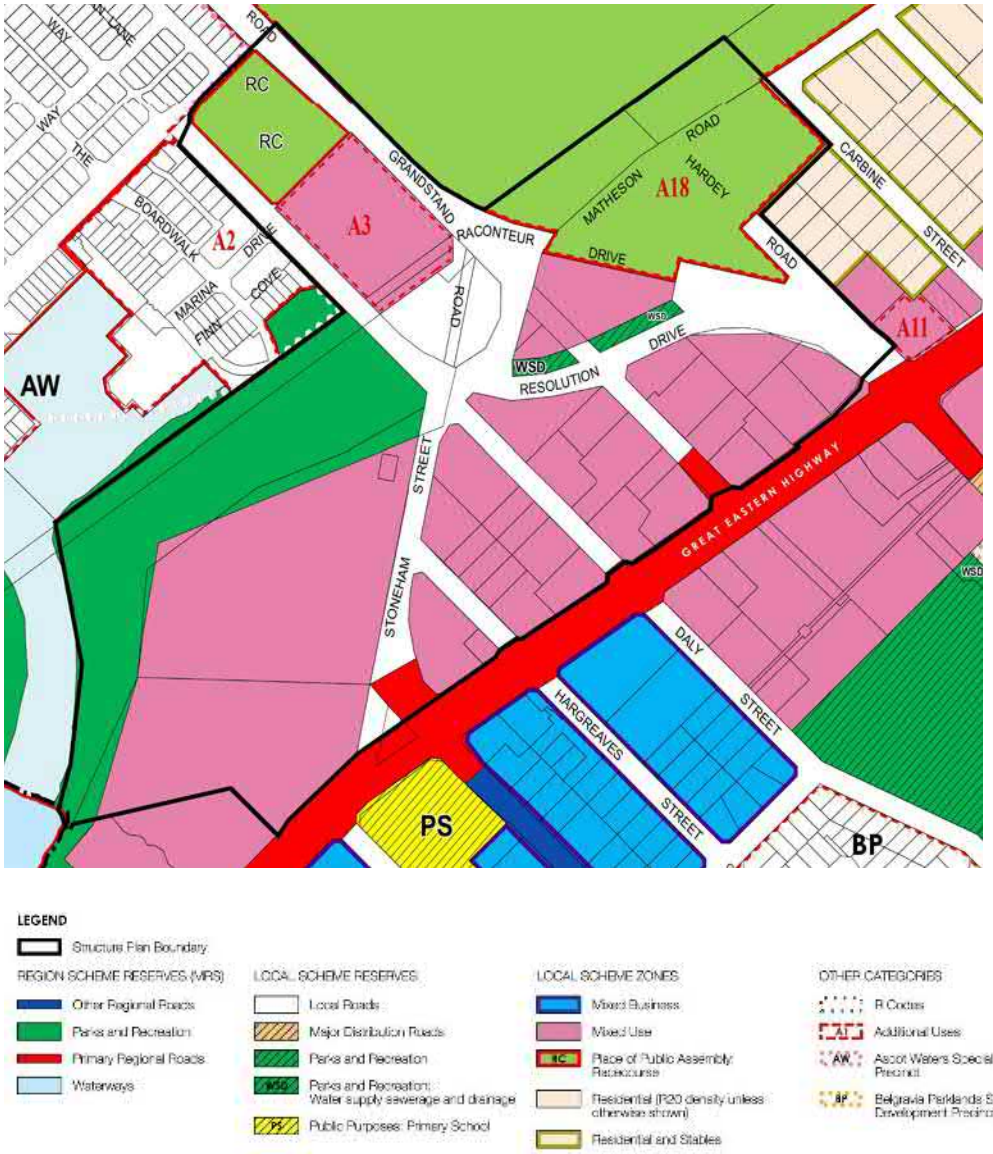

Figure 6 – LPS 15 Zoning

1.3.2 PLANNING STRATEGIES

1.3.2.1 PERTH AND PEEL@3.5MILLION

Perth and Peel@3.5million Planning Framework is a strategic suite of documents to guide future land uses through urban consolidation, integrated infrastructure and development, co-location of services and the strategic location of employment opportunities.

The subject land is located in the Central sub-region of the *Perth and Peel @3.5million Planning Framework* document.

The population in the Central sub-region is projected to grow by more than 468,000 people between 2011 and 2050 — from around 783,000 to nearly 1.2 million people. It is expected that more than 285,000 additional jobs will be accommodated in the Central subregion up to 2050.

The Central sub-region is expected to supply an additional 215,000 dwellings under the Framework, with 10,410 dwellings to be provided within the City of Belmont.

The Framework identifies Great Eastern Highway as an 'urban corridor' and Grandstand Road-Stoneham Street continuing into Hardey Road as a 'high frequency public transit' (refer **Figure 7**).

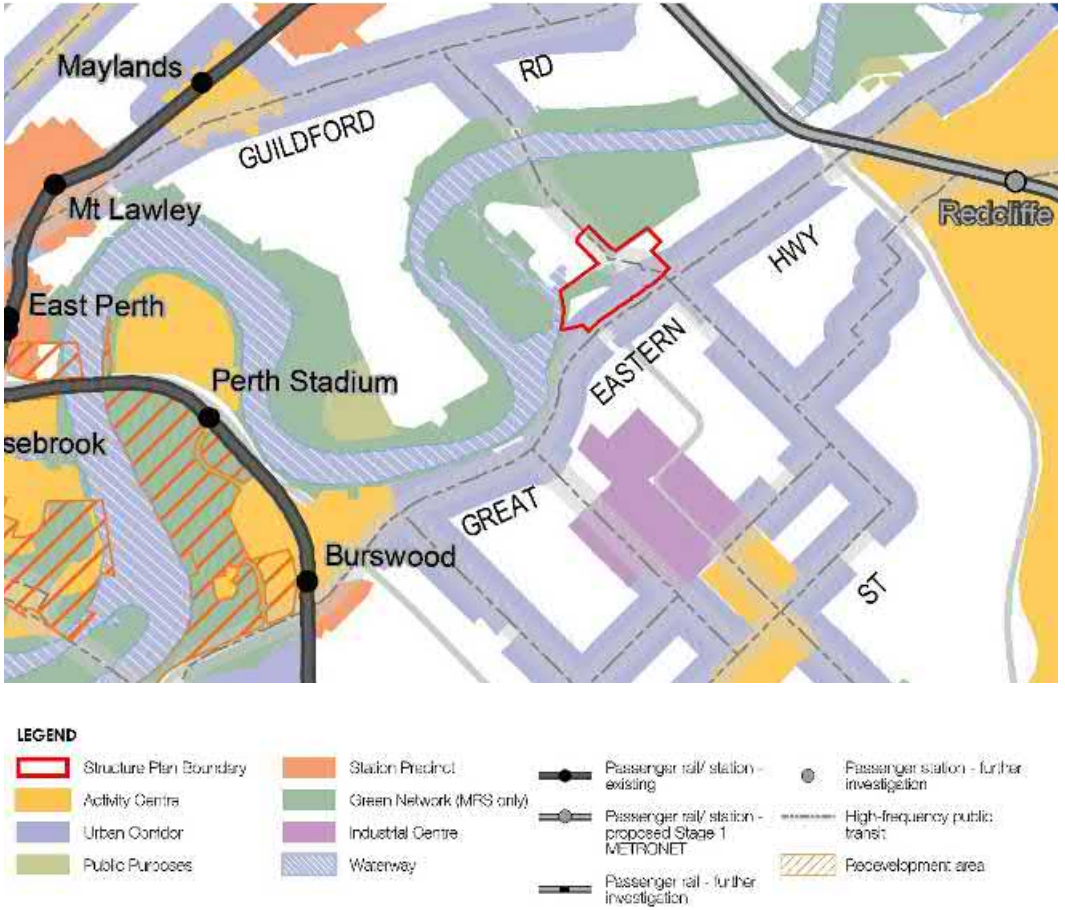

Figure 7 – Central Sub-regional Planning Framework

The Framework states that corridors should be the focus for investigating increased densities, with potential for mixed land uses where appropriate. The presence of existing or planned high-quality public transport is an important consideration in determining whether a corridor is suitable for a more-compact and diverse urban form.

1.3.3 PLANNING POLICIES

1.3.3.1 STATE PLANNING POLICIES

SPP 5.4 Road and Rail Transport Noise and Freight Considerations in Land Use Planning

State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning (SPP 5.4) seeks to minimise the adverse impact of transport noise, without placing unreasonable restrictions on noise-sensitive residential development. SPP 5.4 is applied where the proposal includes:

- A proposed new noise-sensitive development in the vicinity of an existing or future major road, rail or freight handling facility.
- A proposed new major road or rail infrastructure project in the vicinity of existing or future noise sensitive and uses.
- A proposed major redevelopment of existing major road or rail infrastructure in the vicinity of existing or future noise-sensitive land uses.
- A proposed new freight handling facility.

Great Eastern Highway is identified as a 'primary freight road' under SPP 5.4. Therefore, for any subdivision or development proposed adjacent to Great Eastern Highway, an acoustic assessment should be undertaken and included as part of any application to demonstrate that the proposed design will meet the internal noise level requirements of SPP 5.4.

At present, the other key roads – Resolution Drive, Grandstand Road and Stoneham Street – do not reach the traffic threshold of 20,000 vehicles per day (vpd) to warrant consideration under the Policy; however, it is anticipated that, with the proposed changes to the road network, and future development within the Golden Gateway precinct, traffic on Resolution Drive and Grandstand Road is likely to exceed that threshold in the future. Therefore, having regard for the expected traffic volumes and the amenity for future residents, it is proposed to apply the requirements of SPP 5.4 to development adjacent to those roads.

1.3.3.2 LOCAL PLANNING CONTEXT

Ascot Kilns Local Development Plan (Draft)

The draft Ascot Kilns Local Development Plan (LDP) and draft Local Planning Policy (LPP) was considered by Council for final approval at its Ordinary Council meeting of 12 December 2017.

The draft Ascot Kilns LDP and draft LPP proposes a vision to guide and coordinate future development across the 1.6ha former Bristile Kiln site. The draft LDP proposes the following outcomes:

- Creation of two development sites for residential apartments and some commercial uses within proposed building envelopes.
- Provision of an active edge component fronting onto the kilns cluster (promoting small-scale retail and hospitality).
- Development scale influenced by the surrounding lower scale residential context and the chimney stacks.
- Maintaining physical and visual access to the heritage structures from key aspects.
- Potential for integration of the heritage structures within future development sites to maximise opportunities for adaptive reuse and innovative design solutions.

Local Planning Policy 11 Public Art Contribution Policy

The City of Belmont's Local Planning Policy No. 11 (LPP 11) outlines the requirements for the provision of public art by the developer to protect and enhance the utility, amenity and identity of the public domain.

The City of Belmont requires all development proposals within the Policy Area of a value greater than $4.5 million to provide public art in accordance with the described method for determining public art contributions. The cost of any public art shall be no less than one percent of the value of the eligible proposal and provided in kind or alternatively, the Council may accept a cash-in-lieu payment.

A portion of the subject land falls within Precinct 4 – Great Eastern Highway Precinct of LPP 11 with the balance (excluding Ascot Kilns LDP area) situated within Precinct 8 – Ascot Racecourse and Ascot Waters Precinct of LPP 11.

1.3.4 PRE LODGEMENT CONSULTATION

A key component of the concept planning for the subject land has been stakeholder and community consultation and engagement. The Department of Planning, Lands & Heritage has also been a key stakeholder in the concept planning process given the presence of the Ascot Kilns site within the Golden Gateway Precinct. The WATC have also been consulted separately given its significant landholding within the precinct.

As part of the consultation and engagement strategy, three workshops were held during May 2016 and a fourth workshop in November 2016:

1. City of Belmont Council Staff Workshop (6 May 2016 – 22 participants)
2. Business and Landowners Workshop (26 May 2016 – 5 participants)
3. Community and Residents Workshop (31 May – 32 participants).
4. Combined Business/Landowners and Community/Residents Workshop (7 November 2016).

In addition to the above workshops, two online surveys were conducted by the City of Belmont (May and November 2016) to provide the community with the opportunity to provide additional comments. Feedback received was consistent with feedback provided at the various workshops as summarised below.

1.3.4.1 STAKEHOLDER WORKSHOPS

Overall, the overwhelming priority was the preservation and enhancement of POS both within Belmont Trust Land and throughout the remainder of the development. The emphasis was placed on the enhancement of active POS supported by recreational amenity and infrastructure.

Addressing the current disjointed existing road network and consequential urban form, whilst improving the experience for pedestrians and cyclists was a consistent discussion point. Great Eastern Highway poses an inevitable challenge for access, but also a major opportunity to create a sense of arrival and investment for the area. The proposed realignment of Resolution Drive and downgrading of Stoneham Street was acknowledged for its potential to improve connectivity and unlock segregated landholdings, however the traffic modelling later found that the impact of this modification on the level of traffic using the Resolution Drive-Hardey Road corridors was too significant.

Overall, residential development within the Golden Gateway Precinct was supported with varying degrees of density and height, however careful integration with existing residential (Stables area, Ascot Waters) is paramount.

Other priorities included the creation of a destination / attraction for the City of Belmont and identification of 'place' qualities that will need to be considered in subsequent planning stages.

2 SITE CONDITIONS AND CONSTRAINTS

An Environmental Assessment Report was prepared by Urbaqua to support the Structure Plan. This report is included as **Appendix B**.

2.1 ENVIRONMENTAL ASSETS AND CONSTRAINTS

2.1.1 VEGETATION

No vegetation of conservation significance is located within the subject land. Due to historic clearing, commercial and recreational activities, the vegetation within the subject land is largely degraded. The subject land does contain some mature trees and these will be retained where possible.

Bush Forever Area 313 (Swan River Salt Marshes) is located to the north and west of the subject land. Surrounding this area, the Department of Water and Environmental Regulation (DWER) has mapped an Environmentally Sensitive Area described as 'Temperate Saltmarsh' and listed as 'vulnerable' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This area is an important habitat for local and migratory bird species, however is largely disconnected from the subject land.

2.1.2 FLORA

A search of the EPBC Protected Matters Database was undertaken to identify flora species of conservation significance potentially occurring within a 2km radius of the subject land.

The search identified two 'endangered' species under the EPBC Act (*Caladenia huegelii* King Spider-orchid and *Lepidossperma rostratum* Beacked Lepidosperma) and one critically endangered species (*Darwinia foetida* Muchea Bell*)*.

2.1.3 FAUNA

A search of the EPBC Protected Matters Database was undertaken to identify fauna species of conservation significance potentially occurring within a 2km radius of the subject land.

The search identified three species of 'endangered' status under the EPBC Act and seven 'vulnerable' species.

As a result of existing uses, the subject land supports limited or no remnant vegetation with a lack of intact understorey vegetation. The subject land therefore provides little, to no, fauna habitat of significant value to native fauna. The vegetation within Belmont Trust Land may provide important habitat for local and migratory birds.

2.2 LANDFORM AND SOILS

2.2.1 LANDSCAPE AND TOPOGRAPHY

The subject land is generally flat and grades gently from 6 metres (m) Australian Height Datum (AHD) in the south-east to 3mAHD in the west. A few low points exist within the centre of the subject land at approximately 1-2mAHD.

The surface geology is described broadly as Guildford formation: Alluvial sand and clay with shallow-marine and estuarine lenses and local basal conglomerate. Two-thirds of the north-western portion of the subject land is classified as Ms2 – Sandy Silt, which has a low permeability, and eastern third as S8 – Sand.

2.2.2 ACID SULFATE SOILS

A review of DWER acid sulfate soils (ASS) risk mapping identifies approximately two-thirds of the subject land, predominantly the area coinciding with surface geology Ms2-Sandy Silt, as containing a Class I 'high to moderate' risk of ASS and the remainder, coinciding with S8-Sand, classified as Class II 'moderate to low' risk occurring within 3m of the natural soil surface.

Given the Class I classification, an ASS investigation will be carried out where works are proposed in these areas consistent with the DWER Guidelines. Should ASS be present within the subject land, all site works must be carried out in accordance with an ASS management plan approved by DWER.

2.2.3 CONTAMINATED SITES

A search of the DWER Contaminated Sites database found a portion of the subject land as 'Possibly Contaminated – Investigation Required'.

2.3 GROUNDWATER AND SURFACE WATER

2.3.1 GROUNDWATER

Based on the DWER Ground Water Atlas, maximum groundwater levels are within 3m of the natural surface through the northern and central portions of the subject land, with groundwater flowing in a north-westerly direction toward the Swan River.

2.3.2 SURFACE WATER

A Water Corporation open drain is located within the centre of the subject land. The open drain is approximately 150m in length and directs flows of runoff from the eastern urban and industrial areas to piped drainage under the Stoneham Street / Resolution Drive roundabout to a compensation basin to the west of the subject land before travelling through a further 350m of open drain to the Swan River.

The Swan River is located adjacent to the western portion of the subject land. The DWER Floodway mapping indicates that a large area in the northern portion of the subject land lies within the Swan River 100 year average reoccurrence interval (ARI) flood fringe. Protection of the Swan River's environmental attributes will require the provision of a 50m buffer to the banks of the River consistent with its designation as an environmentally protected area and conservation category wetland (CCW) is generally applied.

The subject land also abuts the Swan and Canning River Development Control Area.

2.4 BUSHFIRE HAZARD

A very small portion of the subject land is identified as being located within a 'Bush Fire Prone Area' adjacent the Swan River and as such, a BMP has been prepared by Urbaqua in support of the Structure Plan (refer **Appendix A**). The BMP is a strategic level plan which identifies the bushfire protection measures to be applied to development on the subject site to accommodate compliance with:

- SPP 3.7 Planning in Bushfire Prone Areas;
- Guidelines for Planning in Bushfire Prone Areas; and
- Australian Standard for the construction of buildings in bushfire-prone areas (AS3959-2009).

As part of the BMP, a Bushfire Attack Level (BAL) Contour Map has been prepared which identifies the worst case BAL in relation to the subject land. The BAL Contour Map identifies a BAL of 'Low' across the majority of the subject land and a small portion of BAL-12.5 within the Belmont Trust Land. Given the Structure Plan does not propose development within the foreshore area subject to BAL-12.5 (or wider Belmont Trust Land), it is anticipated that any bushfire hazards can be appropriately managed.

It is expected that bushfire hazard assessment will be further refined as part of future subdivision or development stages in order to accurately assess the bushfire risk posed by surrounding classified vegetation and determine specific radiant heat exposure levels (and associated BAL) for future lots created within the Structure Plan area.

2.5 HERITAGE

2.5.1 ABORIGINAL

A search of the Department of Planning, Lands & Heritage (DPLH) aboriginal heritage enquiry system identifies one site occurring within the northern/western portion of the subject land.

Site ID 3753 – Registered site, Name: Perth, Type: Historical, mythological, hunting place, named place, natural feature.

Prior to disturbance of the above site, an application is to be made for consent to use the land under section 18 of the AHA.

2.5.2 EUROPEAN

The Ascot Kilns and chimneys were included on the State Heritage List in 2003. The Kilns were first built in 1930, manufacturing terracotta, stoneware and steel products. The Ascot Kilns LDP celebrates and enhances the site's heritage significance and maintenance.

2.6 EXISTING MOVEMENT NETWORK

The subject land benefits from a surrounding movement network that features access to key regional road connections, a high frequency public transport corridor and high-quality shared path cycling links.

2.6.1 GREAT EASTERN HIGHWAY

The subject land is bounded by Great Eastern Highway to the south which provides access to the west towards the Perth CBD, Graham Farmer Freeway and onto South Perth, Melville and Fremantle via Canning Highway. To the east, Great Eastern Highway provides access to Perth Airport, Tonkin/Roe Highway and onto Guildford, Midland and the Swan Valley.

Great Eastern Highway is classified as a 'Primary Distributor' under the Main Roads WA (MRWA) Functional Road Hierarchy and is regarded as one of the State's principal transport corridors carrying over 65,000 vpd.

Great Eastern Highway (between Kooyong Road in Rivervale to Tonkin Highway in Redcliffe) was subject to significant upgrade works between June 2011 and February 2013. These works included:

- Widening Great Eastern Highway, from four to six lanes, between Kooyong Road (Rivervale) and Tonkin Highway (Redcliffe) – a distance of 4.2 km;
- Constructing a central median for the full length of the project;
- Upgrading all major intersections to include dedicated turning movements;
- Providing U-turn facilities at key locations in order to maintain access to businesses fronting the Highway;
- Incorporating bus priority lanes into key intersections;
- Providing dedicated on-road cycling facilities;
- Constructing footpaths for pedestrians; and
- Relocating, replacing and protecting service utilities such as telecommunications, water, power and gas.

2.6.2 INTERNAL ROADS

The localised road network includes a network of local distributor and access roads providing access to key regional and district roads such as Great Eastern Highway and the Garret Road bridge. Grandstand Road, Resolution Drive and Stoneham Street are classified as 'District Distributor A' roads under the MRWA Functional Road Hierarchy. These are generally described as follows:

- Grandstand Road (20m road reserve) – a four lane road with a central median, running north-south within the subject land, connecting the Garratt Road crossing of the Swan River with Great Eastern Highway via Stoneham Street or Resolution Drive;

- Stoneham Street (20-25m road reserve) – a four lane road without a central median, running north-south within the subject land, connecting Grandstand Road/Resolution Drive with Great Eastern Highway and Belgravia Street; and

- Resolution Drive (22-47m road reserve) – a four lane with a central median, running east-west within the subject land, connecting Grandstand Road/Stoneham Street with Great Eastern Highway and Hardey Road.

All of these roads are under the control of the City of Belmont. The following roads are classified as 'Local Roads' under the MRWA Functional Road Hierarchy and are also under the control of the City of Belmont.

- Hargreaves Street (20m road reserve) – a two lane road without a central median, running north-west to south-east within the subject land, providing a connection between Stoneham Street (no right turn out) and Great Eastern Highway (left in/left out only);

- Daly Street (20m road reserve) – a two lane road without a central median, running north-west to south-east within the subject land, providing a connection between Stoneham Street (left out only onto Stoneham Street) and Great Eastern Highway (left in/left out only);

- Grandstand Road (south) (20m road reserve) – a two lane road without a central median, running north-west to south-east within the subject land, providing a connection between Resolution Drive and Great Eastern Highway (left in/left out only); and

- Raconteur Drive (20m road reserve) – operates as a one-way road from Grandstand Road to Matheson Road and is currently closed at the Grandstand Road intersection outside of event periods at Ascot Racecourse. Two-way access between Resolution Drive and Matheson Road is possible via the eastern extent of Resolution Drive.

2.6.3 PEDESTRIAN NETWORK AND CYCLING

2.6.3.1 PEDESTRIAN NETWORK

The extent and quality of the existing pedestrian infrastructure within, and surrounding, the subject land (with the exception of Great Eastern Highway) is poor and of a standard commensurate with the nature of existing development across the subject land (i.e. primarily light industrial/commercial unit style development).

However, Great Eastern Highway bordering the subject land to the south features good quality footpaths on both sides of the corridor. Within the vicinity of the subject land, the safe crossing of Great Eastern Highway by pedestrians is facilitated via traffic signal-controlled intersections at both Stoneham Street/Belgravia Street and Resolution Drive/Hardey Road intersections with Great Eastern Highway.

Each of the major road corridors running through the subject land (Grandstand Road, Resolution Drive and Stoneham Street) include footpaths along one side of the street – Grandstand Road along the eastern side adjacent to the Ascot Racecourse, Raconteur Drive along the northern side to connect to Grandstand Road, Resolution Drive along the eastern side adjacent to the Ascot Waters development and Stoneham Street along the western side adjacent to the Belmont Trust Land.

Local access streets (Hargreaves Street, Daly Street and southern section of Grandstand Road) providing access in a northerly direction from Great Eastern Highway are car dominated with no existing footpaths present.

2.6.3.2 CYCLING

A number of existing shared paths and cycling connections are located within the subject land along primary routes, including Stoneham Street, Raconteur Drive and Grandstand Road. There is demand to upgrade facilities on Stoneham Street and Resolution Drive. Protected bicycle lanes and a shared path on Resolution Drive is essential, however the provision of 'on street' bicycle lanes on Stoneham Street will require further investigation dependent on the ultimate form of the road reserve.

A number of shared paths are also located within the Ascot Waters development directly to the north of the subject land. The Graham Farmer Freeway Principal Shared Path (PSP) is also located within close proximity to the subject land providing regional cycling connections and can be accessed via the shared path along the southern side of the Swan River.

The extent and quality of the existing cycling infrastructure within and surrounding the subject land is of a high standard, largely as a result of the Great Eastern Highway upgrades. Local connections are provided along Stoneham Street, Resolution Drive and Grandstand Road and further to the north within the Ascot Waters development. Regional connections are provided via high quality shared use paths along the Swan River Foreshore (via Belmont Trust Land towards the Graham Farmer Freeway PSP to access Perth CBD).

2.6.4 PUBLIC TRANSPORT

A number of existing bus routes operate within, or in close proximity to, the subject land. These include the Circle Route (998/999) via Raconteur Drive/Grandstand Road providing connections north to destinations including Bayswater Station, Morley Bus Station/Shopping Centre and south to destinations including Belmont Forum Shopping Centre, Oats Street Station and Curtin University.

In addition, existing bus routes (36, 40, 295, 296 and 299) operate along high frequency bus corridor of Great Eastern Highway, providing connections east to destinations including Perth Airport, Guildford, Midland and to the west to destinations including Victoria Park Transfer Station and Perth CBD.

Pedestrian access to existing public transport facilities is considered average with no bus stops currently located within the subject land. The closest bus stops are located on Grandstand Road immediately to the north of the subject land (close to the main pedestrian entry/exit to Ascot Racecourse). There are options to make improvements to public transport access if land uses within the subject land change over time to support additional public transport patronage.

2.7 ROAD TRAFFIC NOISE

As discussed in section 1.3.3.1, SPP 5.4 sets out specific requirements for addressing potential noise impacts from major transport arteries on adjacent noise-sensitive uses.

It has been identified that Great Eastern Highway, Resolution Drive and Grandstand Road are all likely to require consideration under SPP 5.4. In this respect any subdivision or development proposed adjacent to these roads will require an acoustic assessment to be undertaken and included as part of any application to demonstrate that the proposed design will meet the internal noise level requirements of SPP 5.4.

2.8 EXISTING INFRASTRUCTURE AND SERVICING

2.8.1 WATER SUPPLY

The Serpentine Trunk Main is located along Grandstand Road and Daly Street. A 915 steel distribution main is also located along Grandstand Road through the subject land. Existing development within the subject land is well serviced with a mixture of 100, 150 and 200 dia reticulation pipes made of asbestos cement, cast iron, PVC and steel.

2.8.2 WASTEWATER

Wastewater infrastructure general to the Ascot area is serviced by gravity style wastewater drainage infrastructure. A mixture of concrete and plastic arterial pipes on grade service all areas to local pump stations throughout the City of Belmont.

Lots within, and surrounding, the subject land are serviced by two main arterial sewer routes; a 225mm collector flowing north to south and a 225mm collector flowing east to west. Both collectors flow to the Redcliffe Pump Station 5 located on Stoneham Street. The Redcliffe Pump Station 5 collects all sewerage west of the Ascot Racecourse within the Ascot suburb and discharges it to the Redcliffe Pump Station 2 located on Abernethy Road.

2.8.3 POWER SUPPLY

Data obtained from the Western Power Network Mapping Tool indicates that the subject land is serviced by the Belmont Substation and the forecast network capacity for 2015 is >30MVA. There are High and Low Voltage power lines in the vicinity of the subject land.

2.8.4 GAS SUPPLY

Correspondence from ATCO Gas identifies Medium Low Pressure (MLP) gas mains (pressure indicated at 70kPa) along the majority of roads within the subject land.

2.8.5 TELECOMMUNICATIONS

The subject land is well serviced by telecommunications infrastructure with optical fibre running in or adjacent to the subject land. This infrastructure is owned by various telecommunications providers including Telstra, Optus and others. The National Broadband Network (NBN) has yet to be rolled out in the subject area. However, NBN Co has advised that fibre to the node (FTTN) technology rollout has been planned for October-December 2017.

3 STRUCTURE PLAN

3.1 VISION AND OBJECTIVES

3.1.1 VISION

The objectives and design principles underpinning the Golden Gateway Structure Plan have been formulated around the following vision:

"The development of the Golden Gateway will transform this degraded and fragmented area into a vibrant precinct of residential and mixed use development, with strengthened connections to the Swan River and Ascot Waters, that derive best value from these attributes while respecting the area's rich culture and heritage."

3.1.2 OBJECTIVES

The overarching objectives for the Golden Gateway Precinct as established by the project team and reinforced through stakeholder engagement are as follows:

1. Improve **self-containment of facilities** – reduce car dependence
2. Improve people's connection to the **Swan River**
3. Create accessible, quality **public realm** within the precinct
4. Ensure **heritage values** are retained
5. Identify **appropriate uses/densities** in conjunction with **infrastructure improvement**
6. Optimise value of strategic sites – **planning certainty**

3.2 DESIGN PREPARATION

The Structure Plan design has been informed by a thorough analysis of the existing site conditions and the potential opportunities and issues offered by the location. The key outcomes of this analysis are noted in **Figures 8 and 9** and described overleaf:

3.2.1 OPPORTUNITIES

Land use

1. Opportunity for residential development to be accommodated in the precinct given the accessibility to high amenity riverside amenity.
2. Opportunity for retail convenience and food and beverage land uses to be integrated into development outcomes.
3. Potential for higher density development given precinct location, proximity to high amenity open space destinations, Perth CBD, localised employment and high frequency public transport.
4. Existing primary school adjacent the precinct offers opportunity to attract a diverse demographic, including young families.
5. Consider mixed use development in core area to broaden activity opportunities and long term transition of the precinct, and to offer improved amenities for the existing Ascot community.

Built form

1. Opportunity for landmark building form and massing to inner core areas to perform key gateway functions.
2. Future building form to appropriately interface with adjacent public realm.
3. Local activity hub potential within the precinct providing local centre retail, cafe/mini main street offerings in a shared street atmosphere.
4. Existing street block depths south of Resolution Drive are well suited for typical multiple dwelling apartment development parcels.

Public realm

1. Existing character and destination status of adjacent Swan River open space provides significant public amenity and recreation opportunities for future residents.
2. Promote pedestrian and cycle network connectivity through the site to strengthen access to the Swan River for both the existing Ascot community as well as future residents in the Golden Gateway Precinct.
3. Significant tree canopies within the Belmont Trust Land and peripheral open space offer significant 'green horizon' views to the precinct.
4. Opportunity to provide strong open space 'cross-link' as a 'green ribbon' link to the Swan River.
5. Celebrate the heritage significance of the Ascot Kilns and the potential for integration of the heritage structures to maximise amenity for residents.

Movement

1. Utilise existing local street network of Hargreaves Street, Daly Street and Grandstand Road to deliver a robust structure for future development access and vehicle circulation.
2. Generous existing road reserve dimensions provide ability for reconfigured pedestrian friendly streetscapes offering shade trees, soft landscaping and convenient on-street parking embayments.
3. Potential for alteration to the priority road network of Stoneham Street and Resolution Drive for the benefits of precinct consolidation and integration, in particular, the potential to downgrade priority of Stoneham Street for benefits to foster a stronger relationship between the Ascot community and the Swan River.
4. Investigate alternative road alignments that celebrate key view lines of surrounding visual features and future gateway elements.

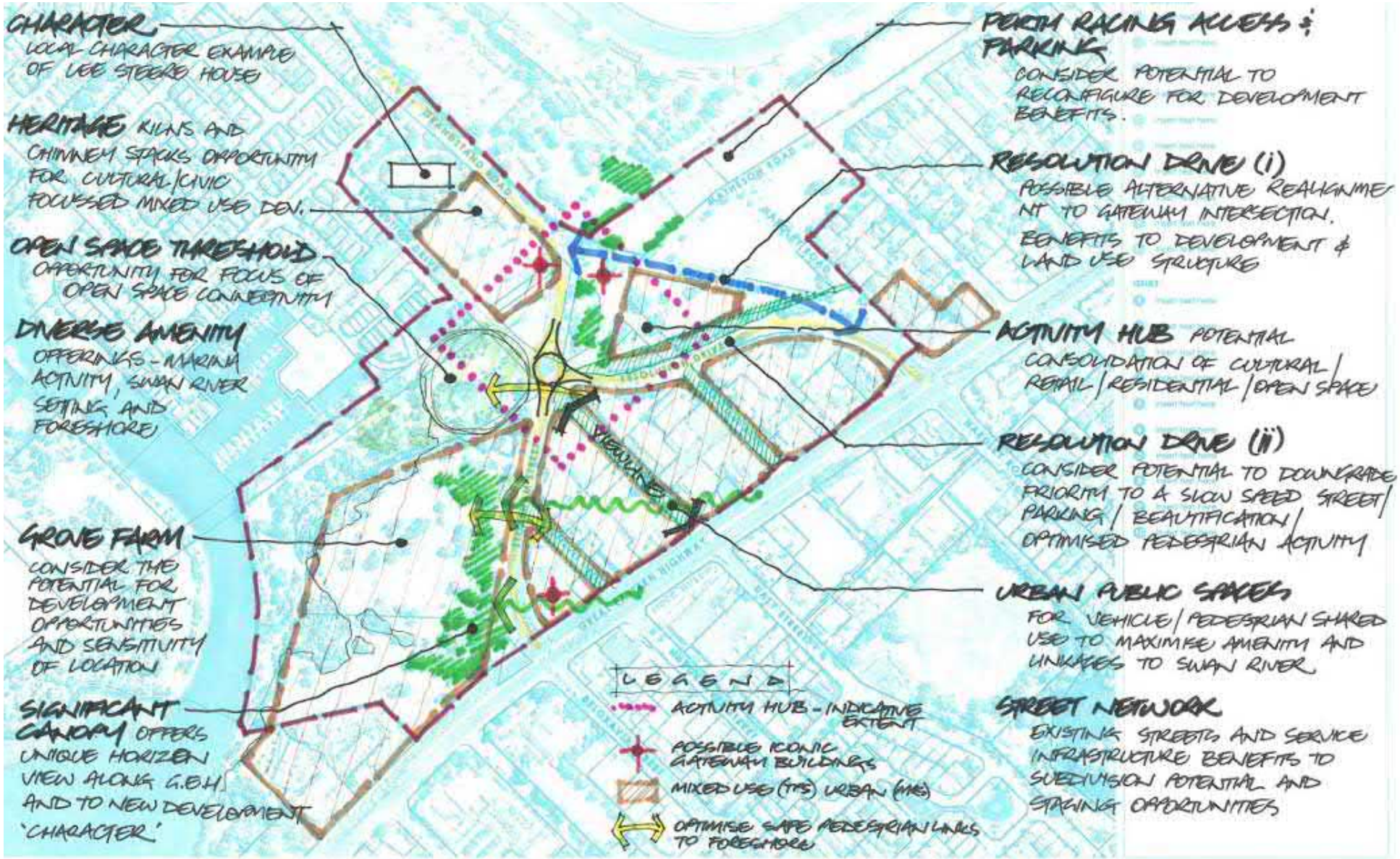

Figure 8 - Opportunities

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3.2.2 ISSUES AND CONSTRAINTS

Land use

1. Service corridor extends northwards through Grandstand Road alignment.
2. Overland stormwater drainage, controlled by Water Corporation, extends east-west through the subject land located immediately north of Resolution Drive.
3. Careful consideration of existing residential development on periphery of precinct area.
4. Development adjacent Great Eastern Highway may be subject to noise attenuation.

Built form

1. Proposed development of Kilns area, which is subject to a Local Development Plan, to be considered in surrounding built form design.
2. Perth Airport restrictions based on flight path contours will potentially limit maximum building height.
3. Existing development is largely commercial and is located on a fractured land tenure base of multiple cadastral parcels.
4. Some future development may require land assembly to maximise development potential and desirable outcomes, and to rationalise redundant public reserves.

Public realm

1. Chimney locations in the Ascot Kilns area to be considered, surrounding public spaces and view lines should respect and celebrate these historic features.
2. Existing significant trees to be considered for integration into public realm, where appropriate.
3. Informal open space node to Hardey Road (east) to be considered, recognising relative disconnection of this area from other POS to the south of Resolution Drive.
4. Limited or no availability of suitable quality water from the superficial aquifer for the purpose of irrigation within the Golden Gateway area.

Movement

1. Existing roundabout impinges on precinct assimilation for all adjoining land quadrants.
2. Limited connection opportunities available to residents north of Resolution Drive.
3. Stoneham Street and its multi-lane configuration acts as a pedestrian barrier for development to interact with the POS area.

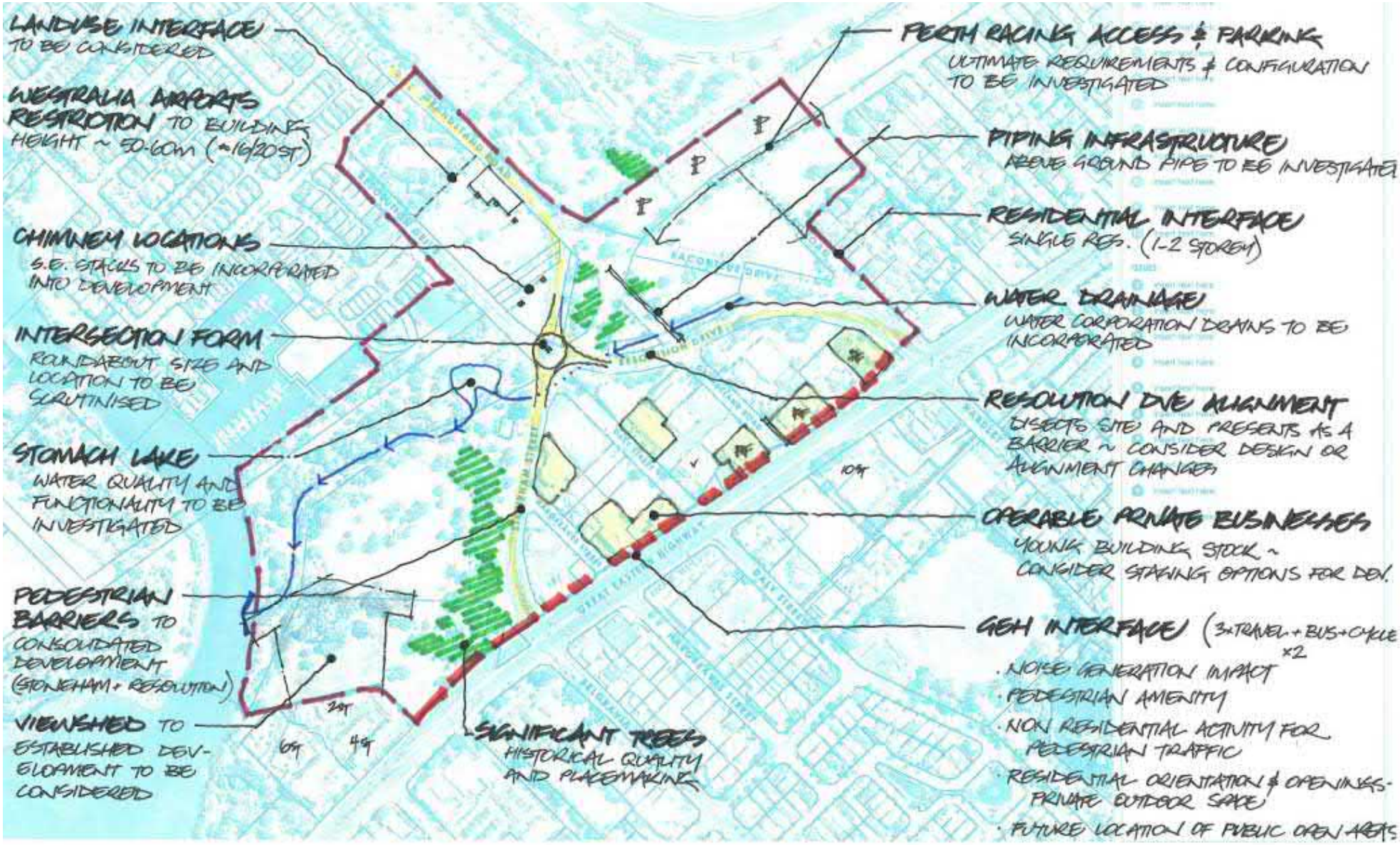

Figure 9 – Issues and Constraints

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3.2.2.1 CONCEPT PLAN DEVELOPMENT – SITE ANALYSIS

One of the main challenges in testing development scenarios was to address the significant disunification of the precinct created by the heavily engineered road system, and the impact this has on local connectivity between the Precinct and the areas main natural attribute – the Swan River

Figures 10 and **11 below** were produced to stimulate discussion, during the stakeholder engagement process, about ways in which the physical barrier to the Swan River could be removed, or at least, reduced. The stakeholder engagement process produced a number of specific considerations for the initial design phase to develop scenarios (refer **Figure 12**).

Figure 10 - Existing access and connectivity summary

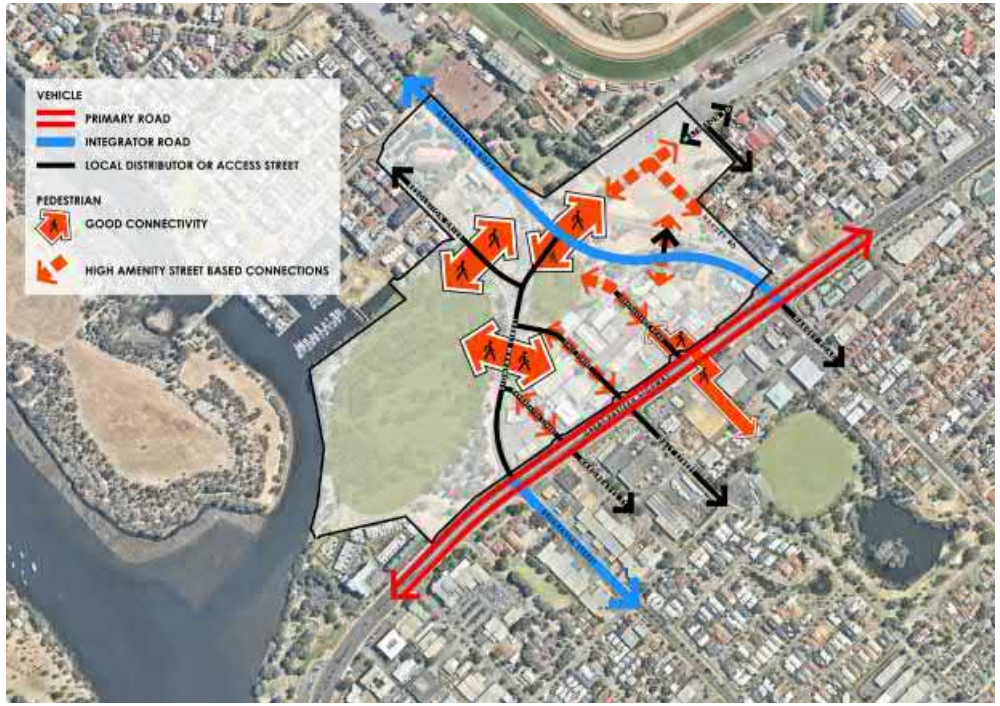

Figure 11 - Opportunity through altered vehicle priority for improved connectivity and access – to be considered further in design scenario testing

Figure 12 - Community engagement design feedback (summarised)

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3.2.3 CONCEPT SCENARIO FORMULATION

Analysis of the subject land and key design principles resulted in the preparation of three development scenarios for testing and stakeholder discussion (refer **Figure 13**). The initial phase of high level scenario testing involved the preparation of Framework Diagrams, exploring structural opportunities and benefits to the following:

- **Landuse** – preferred structure and location.
- **Circulation** – enhancing connections, preferred hierarchy with future flexibility & rigour.
- **Character** – celebrating local qualities for unique place setting and to enhance the existing amenity.

Preliminary sketches exploring alternative land use and movement structures

The Framework Diagrams were discussed and analysed with the community and Council technical officers as key elements for the next phase of scenario evaluation. Various scenarios achieved the project objectives better than others, particularly with regard to public amenity and community integration with the Swan River foreshore.

Preliminary sketches developing framework scenarios

The next phase of scenario refinement resulted in the examination of appropriate land uses, building forms and public realm to test the structural opportunities and benefits for each of the scenarios**.** These were then evaluated by the project team and the community via design workshops and web based consultation sessions.

Preliminary design scenarios

In summary, Scenario A evaluates the development opportunities for the precinct whilst maintaining the existing road network. This scenario highlights the limitations this has on development consolidation and for connectivity of future residents with the foreshore amenity.

Scenario B evaluates the development outcome where the existing road priorities of Stoneham Street and Resolution Drive are modified to improve integration of the precinct's residents with the adjacent public amenity.

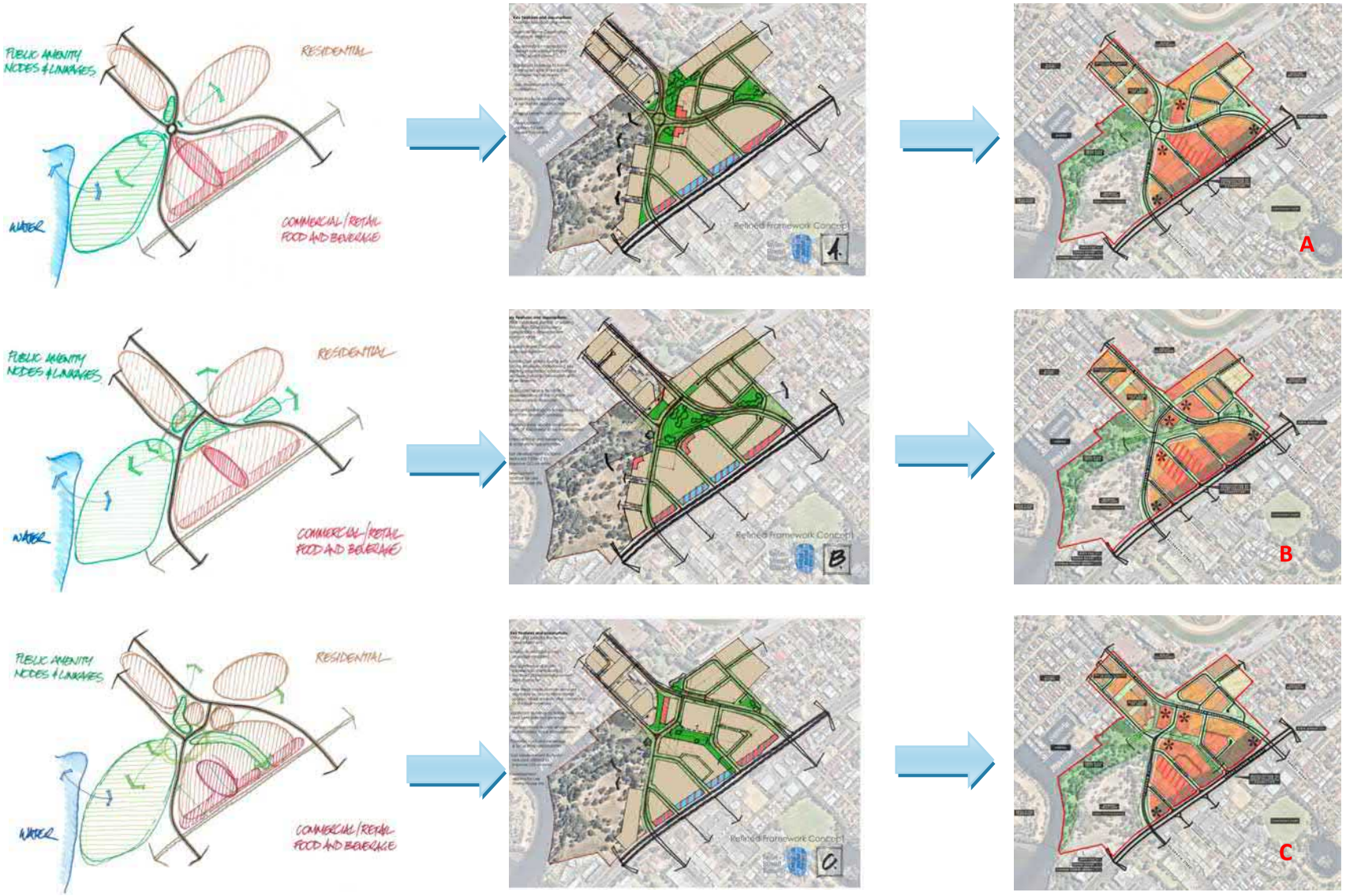
Scenario C evaluates an outcome where the original road alignment of Raconteur Drive is used to maximise future integration opportunities for development west of this road and consolidation of the precinct's future residents.

Scenario evaluation outcome

This scenario evaluation process led to the refined design outcome produced in the preferred scenario.

The preferred scenario was informed by detailed public response to the preliminary scenarios at the community workshops, and through other stakeholder contribution. That preferred scenario was further tested and developed into the preferred Golden Gateway concept, described in detail in section 3.2.4.

It should be noted that through the preparation of the Structure Plan, further assessment of the proposed movement network was undertaken in relation to the potential impacts on the Stoneham Street-Belgravia Street and Resolution Drive-Hardey Road corridors. Based on this assessment and in conjunction with MRWA, it was considered that any modifications to the redistribution of traffic flows (i.e. via Resolution Drive) would not be supported.



Preliminary sketches exploring alternative land use and movement structures

Preliminary sketches developing framework scenarios

Preliminary design scenarios

Figure 13 – Evolution of Design Scenarios

3.2.4 DEVELOPMENT CONCEPT PLAN

In addition to the formal Structure Plan figures included in Part 1 – Implementation, a Development Concept Plan has been prepared to provide an illustration of the development intent (**Figure 14**). This graphical representation is indicative only and reflects a long term, mature development scenario; however, it gives an indication of how the public spaces may be developed and the relationship of the public/private interface between the public spaces and new residential areas.

Key concept features

The key features of the Development Concept Plan are outlined as follows:

Access and connectivity

- Improve connections within the precinct, prioritising green links to the Swan River and Belmont Trust Land.
- Integrate Golden Gateway with the broader Belmont catchment.
- Minimise the barrier of Stoneham Street by formalising pedestrian movement opportunities.
- Enhance vehicle accessibility and excellent circulation benefits offered by the existing movement framework.
- Reconfigure road network for enhanced development consolidation and precinct character benefits.

Planning and land use

- Sensitively integrate residential development of increased density with the surrounding area.
- Convenience retail, shops, restaurants and cafes located 'parkside', and within a pedestrian friendly street environment, to take advantage of the unique amenity and population growth of the location.
- Moderate building height and density to the residential interfaces of the precinct, providing an appropriate transition to existing development.
- Respect identity of existing equestrian residential precinct.
- Provide flexibility for commercial mixed-use development along Great Eastern Highway.
- Contemplate development controls to foster appropriate multi-level development to support denser living options.
- Opportunity for diversification of uses – facilities, amenity, destination uses and attractions.

Built Form

- The height and scale of new buildings will form an appropriate relationship with their environment and context, including adjacent residents.
- Use building form to create a more comfortable and characterful environment, enhancing the gateway location, particularly adjacent the public realm.
- Consider suitable building form and locations to enhance the precinct's outcomes.
- Retail opportunities promoted for improved sustainability outcomes of the precinct and adjacent residents.

Public realm

- Enhancement of existing public streets, utilising the wide reserve widths to produce unique character and pedestrian comfort.
- A central high amenity open space spine, providing a principal access point to the foreshore park and future local scale recreation opportunities.
- Enhancement of pedestrian and cycle accessibility and amenity through green linkages.
- Prioritise the retention of established tree canopies where achievable.

Destination Planning

- Capitalise on the opportunity to leverage subject land's exceptional destination qualities.
- Creation of framework / strategies to support detailed place planning, investment attraction and place management.
- Creation of framework / strategies that will attract a diverse mix of uses, attracting visitors across different times of the day and week.

Figure 14 – Development Concept Plan

Above: Introduce transitional building height to development edges.

Above: Corner site development addressing both street frontages, with 3 storey podium height to building edges and mixed height elsewhere on site.

Above: Example of a 4 storey residential building detailing an appropriate level of articulation and surveillance through the use of balconies and architectural elements. Also illustrates an acceptable treatment to site retaining at lot edges.

Above: Example of 5 storey mixed use building featuring retail/food and beverage uses at the ground level and residential living above producing a sustainable and active development outcome. In addition, this illustrates the beneficial outcome for buildings to interact with key mature trees available within the proposed Golden Gateway public realm.

Images: Building Form Inspiration Images


Left: Example of 8 storey buildings with suitable levels of architectural detail, material and artwork to achieve an appropriate response for Golden Gateway.
Right: Example of 10 storey building illustrating an appropriate podium design detail and landscape amenity.


Above: Landmark buildings providing exceptional architectural gateways into the Golden Gateway precinct.


Left: A 15 storey buildings providing an outstanding response to its corner location.
Right: A 8 storey building examples incorporating desirable podium design and setback to tower element(s).

Above: Example of appropriate response to podium requirements to achieve active and enjoyable streetscapes with building mass setback into the site.

3.3 LAND USE

The Golden Gateway Precinct will provide for a diverse range of land uses. The primary land use within the Structure Plan Area is residential, supplemented by commercial uses and local open space. A summary of the land uses and areas is provided in **Table 3**.

TABLE 3: LAND USE

Zone / Reserve	Area (Ha)
Mixed Use	9.4742
Residential	3.6961
Parks and Recreation	4.5556
Water Supply Sewerage & Drainage	0.4409
Local Roads	6.3868

As outlined in Part 1 and **Plan 2**, the subject land has been divided into precincts to acknowledge their differing characteristics in terms of:

- Street character;
- Land use mix; and
- Development scale.

A statement of intent for each precinct is described in Part 1 together with development standards to ensure that the intent of the precinct is achieved.

3.3.1 RESIDENTIAL

The Structure Plan provides for a variety of housing choices through the designation of a range of medium to high density R-Codes (R20-R-AC0).

Higher density R100 and R-AC0 coding is located within the 'heart' of the development and within close proximity to high amenity areas such as POS and areas of activity such as Great Eastern Highway, Stoneham Street and Resolution Drive. Low to medium density is proposed for development on the periphery of the subject land to ensure an appropriate transition towards the existing residential areas surrounding.

The R-AC0 coding has been applied to all land within the Mixed Use zone. State Planning Policy 3.1 – Residential Design Codes (SPP 3.1) provides for development standards to be set out in LDPs. For the Golden Gateway Precinct, it is proposed that more detailed development standards pertaining to the Mixed Use zone will be specified in Design Guidelines to be adopted as a LPP by the City of Belmont in addition to the standards set out in Part 1 – Implementation.

Part 1 – Implementation stipulates that there is no maximum plot ratio applicable within the Mixed Use zone. Instead, matters such as bulk and scale will be influenced via other elements including setbacks, building envelope, streetscape interface, private open space and building height, which will be addressed in Design Guidelines where not outlined in Part 1 of this Structure Plan.

3.3.1.1 DWELLING PRODUCT TYPE, MIX AND YIELD

It is envisaged that the Golden Gateway Precinct will accommodate primarily multiple dwellings to contribute to the desired scale and density of the development. Opportunity to provide grouped and single dwelling development will also exist at the periphery, where the precinct adjoins existing low to medium density residential housing as reflected in the development intent of the precincts identified on **Plan 2**.

The estimated yield is indicative only, based on the build-out potential under the Structure Plan. With respect to multiple and grouped dwellings, the ultimate yield and product mix will be determined by the type of development pursued by proponents and will be subject to the market conditions at the time, although the Structure Plan does impose minimum development parameters (for setbacks and heights) as well as maximums. The ultimate yield and product mix will be determined during the construction and development phase.

The Development Concept Plan suggests a potential yield of at least 3,000 dwellings. This could accommodate a total population of up to 5,400 assuming an average household size of 1.8 people.

3.3.2 OTHER LAND USES

3.3.2.1 COMMERCIAL

Commercial development in the Golden Gateway Precinct will support the surrounding residential catchment and racing activities and optimise the value of the precinct's highly visible and connected location. The anticipated yield for the precinct estimates a total of 7,400m^2 commercial (non-retail) floorspace (GFA).

It is envisaged that commercial activity will be mostly focused within the Great Eastern Highway Precinct (Precinct 1) and will likely occupy the first 1-2 levels of buildings across the precinct.

Development of commercial space is only likely to proceed based on its commercial feasibility and the prevailing market conditions at the time of development.

In order to foster the progressive and timely development of the precinct, it is not intended that commercial uses will be mandated within the Mixed Use areas; however ground level design should be adaptable to enable land use to change over time. This requirement should be addressed in the Design Guidelines.

3.3.2.2 RETAIL

The existing residential areas of Ascot Waters and the stables area presently suffer a lack of local shopping facilities, with the BP Service Station on the corner of Resolution Drive and Great Eastern Highway providing the only nearby outlet for basic convenience items. Development of the Golden Gateway Precinct provides an opportunity to establish a local centre for the benefit of the precinct as well as the broader local catchment.

Daly Street has been identified as the 'Main Street' and retail precinct for the proposed development. Daly Street will be lined with retail and food and beverage opportunities to create a high level of activity. A mixture of land uses is encouraged to support the precinct including; residential, retail, food and beverage, entertainment and commercial. Food and beverage will also be encouraged along the linear open space, however the achievement of this will be subject to viability.

Located within proximity to Great Eastern Highway, the Ascot Kilns development, Ascot Waters and development south of Great Eastern Highway, the retail precinct will be an active and vibrant place which will attract local residents as well as passing trade from Great Eastern Highway. A Retail Needs Analysis was undertaken by Colliers in support of the Ascot Kilns LDP. This analysis suggests that each additional 250 apartments will equate to the ability to support approximately 80m^2 of additional retail floorspace. As such, in addition to what has been identified for the Ascot Kilns area, and based on the indicative yield analysis undertaken, it is envisaged that the Golden Gateway Precinct would support a local centre (including small supermarket) in the order of 1,500m^2 of retail floorspace (GFA).

Over and above this, it is anticipated that additional retail floorspace could be supported through passing trade from Great Eastern Highway, given the attractive position and good access.

The 'Main Street' precinct has been located to provide a high level of accessibility from the wider residential catchment, passing traffic along Great Eastern Highway and Stoneham Street and residents from within the Golden Gateway Precinct. The 'Main Street' (Daly Street) will be a wide, well landscaped, street providing a high level of amenity for users and is situated along a main pedestrian route between Great Eastern Highway to the core of the development precinct.

The Development Concept Plan envisages ground level retail / food and beverage uses to create an activated edge to the public realm. Above ground commercial and residential uses will also be encouraged.

3.3.3 UNACCEPTABLE LAND USES

Part 1 – Implementation of this Structure Plan refers to corresponding zones within the Zoning Table of LPS 15 to determine land use permissibility within the various precincts. It does, however, stipulate some exclusions (uses that are considered Unacceptable, notwithstanding that they are listed as a discretionary use in the Zoning Table). Having regard for the amenity of future residents the unacceptable uses include:

- Auction Mart
- Caretakers Dwelling
- Fast Food Outlet / Lunch Bar

- Home Store
- Garden Centre
- Industry - Light
- Motor Vehicle Repair
- Night Club
- Radio or TV Installation
- Restricted Premises
- Service Station
- Single House (with the exception of Precinct 7)
- Vet Hospital
- Warehouse

These uses have been excluded as they are considered to be inconsistent with the vision and objectives of the Structure Plan, and approval of such uses would compromise the urban fabric envisaged for the area.

3.3.4 BUILDING HEIGHT

Maximum building height limits apply to satisfy relevant protection of airspace, airport facilities and surfaces regulations due to the proximity of Perth Airport. Development must comply with maximum building height limitations as indicated on the Obstacle Limitations Surfaces (OLS) Ultimate Surfaces Map – maximum height of 61mAHD within the majority of the subject land, equating to approximately 19 storey buildings. The remainder of the subject land is located within the 'conical surface', being the 5% slope to 61mAHD.

A maximum building height of 15 storeys is encouraged along Great Eastern Highway given the prominence of this location and level of commercial activity envisaged for this precinct.

In order to ensure development is built to a sufficient scale to facilitate the density envisaged for the Golden Gateway Precinct, and to achieve the desired urban design outcomes, it is also considered appropriate to set minimum building heights. Priority should be given to the relationship of ground floor uses and building design with the public domain to ensure that considerations such as activation, passive surveillance and appropriate combination of uses are optimised.

Podium development is mandated at specific locations as identified on **Plan 3** (Part 1) to create an urban experience at the street level whilst optimising development opportunities. A maximum podium height of 3 storeys applies (no minimum) unless where associated with a landmark site, in which case a maximum podium height of 5 storeys applies. Podium elements are encouraged to relate to and activate the street, with the levels above the podium to be sufficiently setback.

Compatible building heights and scales have been provided along the interface between the existing Ascot Waters and 'Stables' residential areas and the subject land, with built form positioned to minimise overshadowing and amenity impacts on the adjacent existing residential development.

Minimum and maximum building heights for podium and tower elements across the subject land are shown on **Plan 3** (Part 1)

3.3.5 LANDMARK SITES

There are a number of key locations situated at the termination of key view lines and sites highly visible from outside of the Golden Gateway Precinct, thereby acting as landmarks for the development. These sites will also act as key nodes located along important pedestrian movement connections and will assist in linking these sites with the public realm, particularly the central POS area.

Landmark sites have been strategically distributed throughout the subject land as shown in **Plan 3** taking into consideration overshadowing impacts and amenity considerations. In this regard, higher buildings are located at key corners of Great Eastern Highway and Stoneham Street and Resolution Drive and sites at key locations along these streets internal to the precinct with an additional 5 storeys permitted.

Landmark sites should also be designed incorporating architectural or sculptural features with a point of difference. This will be a requirement of the future Design Guidelines.

Additional height (up to 5 storeys) may be permitted on landmark sites, subject to compliance with specific design criteria (refer Part 1 – Implementation, Section 5.1.1.3). Proposals involving additional height will also need to conform to the Perth Airport OLS requirements. It is possible to have some incursion of the OLS provided that approval is granted to operate with appropriate risk mitigations measures in place.

Further information is available from Perth Airport at: https://www.perthairport.com.au/Home/corporate/planning-and-projects/airspace-protection or the Department of Infrastructure and Regional Development at: https://infrastructure.gov.au/aviation/safety/protection/index.aspx

3.3.6 CAR PARKING

The City wishes to encourage innovative approaches to car parking provision, such as reciprocity, carpooling programs or other innovations, that may result in reduced parking provision where appropriate. In this respect, the Structure Plan provisions will enable the Responsible Authority to consider approving a reduced parking provision where it can be demonstrated that an alternative parking proposal is sound and will result in a reduction in parking demand. Any proposed variation should be supported by a parking demand assessment undertaken by a suitably qualified professional.

An integrated approach to parking provision will be encouraged within Mixed Use and Multi-unit development, in order to make the most efficient use of parking provision and to encourage use of alternative (public) transport modes where appropriate. In this respect special provisions are proposed to challenge the 'business-as-usual' approach to car parking design. In terms of transit-based parking provision, the proposed approach follows the recommended parking provision in the draft Design WA "Apartment Design" (Draft for public comment - WAPC, October 2016). The following specific requirements are to be applied:

-

a) For Mixed Use development, all residential parking in excess of 1 bay per dwelling, and at least 50% of the minimum required parking for non-residential uses shall be made available for general use of either residential or non-residential uses (these bays represent unallocated communal parking bays).

b) Mixed Use development that proposed parking as outlined in 2a) above should be required, as a condition of Development Approval, to prepare a Car Parking Strategy that addresses the management of the unallocated communal parking provision, including:

   I. The hours during which parking bays shall be made available for general public access; and

   II. Location, signage and monitoring of usage of the unallocated communal parking bays.

c) For multiple dwelling residential development, parking requirements shall be as follows:

   I. Minimum parking: in accordance with **Table 4**;

   II. Maximum parking: not to exceed double the minimums specified in **Table 4**.

TABLE 4: MULTIPLE DWELLING RESIDENTIAL PARKING

Parking Types	Location A	Location B
1 bedroom dwellings	0.75 bay per dwelling	1 bay per dwelling
2+ bedroom dwellings	1 bay per dwelling	1.25 bays per dwelling
Visitor Parking	1 bay per 4 dwellings up to 12 dwellings 1 bay per 8 dwellings for the 13th dwelling above	

Definitions:

- ***Location A**: Within 250m of a high frequency bus route, measured in a straight line from along any part of the route to any part of the lot.*
  ***Location B:** Not within Location A.*

d) The provision of car parking that is in excess of the minimum required for the site will only be approved where it is designed to be adaptable for future conversion into habitable floor space, or other useable space communal or private usage. In order for parking to be considered adaptable, it must be shown as located in a position that is suitable for an alternative use, not included in individual strata titles and constructed to comply with habitable floorspace standards.

   This requirement may be waived if it can be demonstrated that complying with the requirement would not be practical or would result in a less desirable outcome.

3.3.7 PUBLIC OPEN SPACE

The total POS provision is commensurate with the composition of land uses and having regard to the surrounding site context.

The central Linear Park POS area ('Green Link') will be the focal point of the proposed POS provision and forms an integral part of the pedestrian network and will act as a 'green corridor' and wayfinding link for the Precinct. This POS area will provide direct pedestrian connections between the Swan River / Belmont Trust Land, proposed local park along the northern boundary and other key locations within the Golden Gateway Precinct.

These POS areas are located within the walkable catchments of each residence; providing only a short walking distance for all residents to passive recreation areas. The POS will be linked by the permeable road, shared path and footpath networks and will provide attractive end views for the connecting streets.

It should also be noted that the subject land is well located within an existing urban context comprising of significant public parkland associated with the Swan River and portion of the Belmont Trust Land provided for public recreational value and the proposed POS areas will act as an extension of this existing amenity value.

A POS calculation has been prepared in accordance with Liveable Neighbourhoods (LN), as detailed in **Table 5**. A total of 0.6974ha of Open Space is provided on the Structure Plan of differing forms and functions as detailed on **Figure 15**.

In the case of mixed use development, there is no minimum requirement for the provision of POS under LN. LN states that the appropriate POS contribution for mixed use development will be determined by the WAPC on a case by case basis. A total POS provision of 3.47% is provided and will be refined at the subdivision stage. As the City is likely to manage the process of land assembly and subdivision it will be primarily responsible for defining the final area of POS, with the other relevant stakeholders (including WATC and Water Corporation).

This proposed provision is less than the standard POS requirement of 10% POS for residential development under LN, however the proposed provision is considered appropriate for a mixed-use precinct. The City's POS Strategy also sets out minimum standards of land area provision for POS based on current best practice and ease of accessibility to available open space for both residential and non-residential areas. The subject land falls within the Ascot study area of the Strategy which concludes that whilst active open space provision is considered low, the area is well equipped for passive recreational activities largely as a result of the Regional Open Space associated with the Swan River foreshore to service its local needs.

Consistent with the assessment provided in the City's POS Strategy, the subject land is well located within an existing urban context allowing the future residents to take advantage of a variety of established recreation and leisure opportunities associated with the nearby Swan River and environs. The extent of the POS provision in this instance is primarily an outcome of the concept to incorporate the existing Regional Parks and Recreation reservation (which is technically not included in the calculation of POS provision) into the design and augment its value by surrounding it with useable POS to create a central linear park at the heart of the development.

The POS to be provided in accordance with the Structure Plan and the POS Schedule and will be landscaped to a standard commensurate to, or above, LN requirements and to the satisfaction of the City of Belmont.

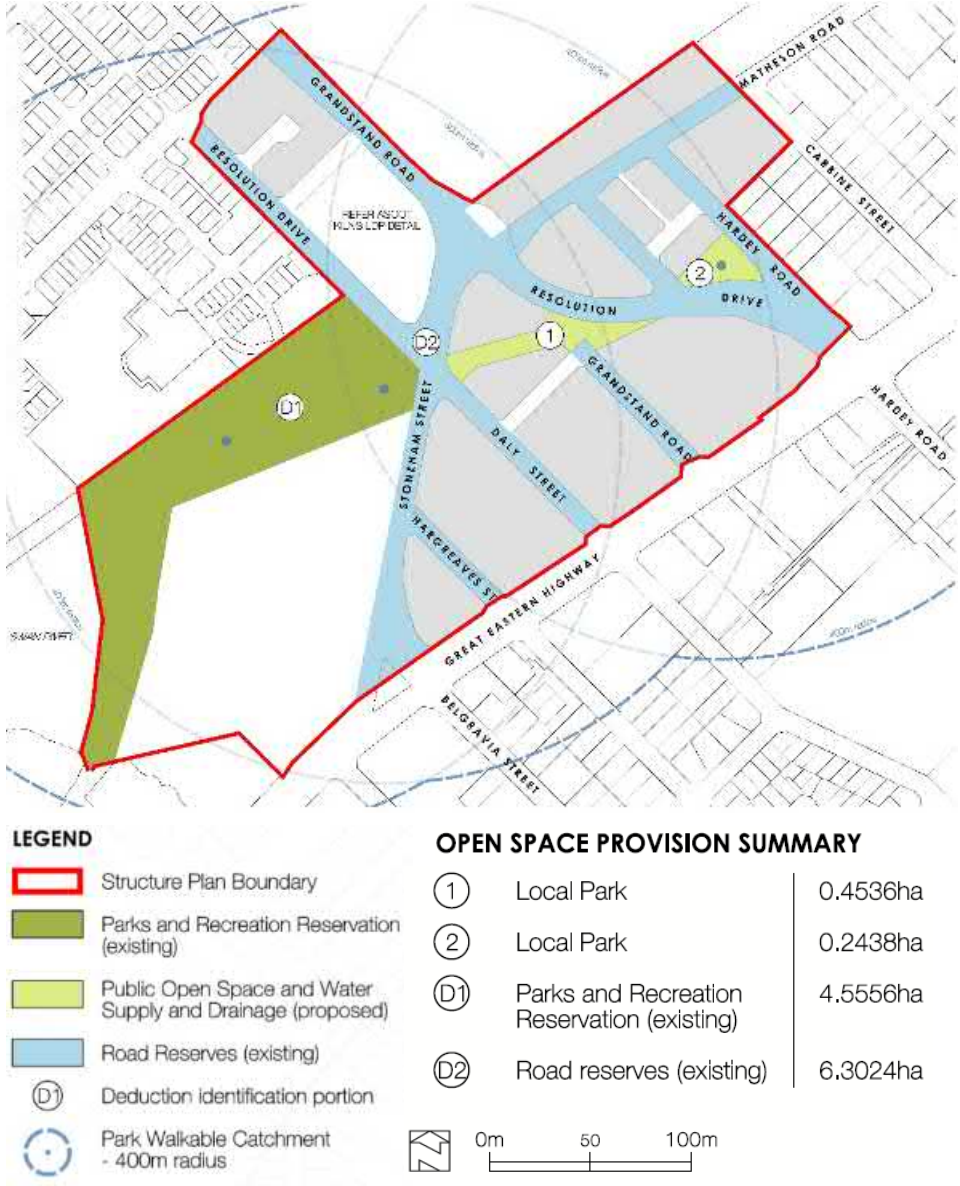


Figure 15 –Open Space Provision

TABLE 5: PUBLIC OPEN SPACE SCHEDULE

PUBLIC OPEN SPACE		
Gross Site Area		**30.9284**
DEDUCTIONS		
D1 Parks and Recreation Reservation (existing)	4.5556	
D2 Road reserves (existing)	6.3024	
Total Deductions		10.8580
Gross Subdivisible Area		20.0704
Creditable Public Open Space Required @ 10%		**2.0070**
PUBLIC OPEN SPACE PROVISION		
Unrestricted Public Open Space		
POS 1	0.4536	
POS 2	0.2438	
Total Unrestricted Public Open Space		**0.6974**
Restricted Public Open Space		Nil
TOTAL CREDITED PUBLIC OPEN SPACE		**0.6974**
PERCENTAGE OF PUBLIC OPEN SPACE PROVIDED		**3.47%**

3.3.8 PUBLIC REALM PROVISION

A Public Realm Strategy was prepared in support of the Structure Plan (refer **Appendix F**) to develop a clear vision, principles and objectives to inform development of the public realm. A landscape masterplan has also been developed as a component of this Strategy to provide an indicative graphical representation of how the key public space areas may be developed (refer **Figure 16**).

The subject land comprises a number of different public realm space types ranging from the strong east-west Linear Park ('Greenlink'), boulevard high-use roads to local streets as shown on **Figure 16**. A cohesive approach across the public realm will consist of an urban landscape that reinforces a fluid and flowing spatial arrangement extending from the river parklands and extending this character throughout the subject land. The creation of smaller pockets of activity and open space will be defined by street trees, tree groups and sinuous tree lines. Pedestrian spaces will be sheltered by a substantial tree canopy and vehicular routes flanked by boulevard plantings. A unified paving design and materials for pedestrian areas will extend throughout the subject land extending down streets and through the central Linear Park. This will both unify and delineate the different pedestrian and vehicular spaces.

To reduce maintenance and water consumption, where possible, consideration should be made as to the use of hard surfaces or low water alternatives instead of turf. Water harvesting of hard surfaces is also exploited where possible using swales, channels and ground amendments to reduce the need for overall water consumption.

The key public realm areas are set out in the following pages.

Examples of Public Art, Rain Gardens & Swale Designs in an Urban Context (Jolimont Parkside Walk)

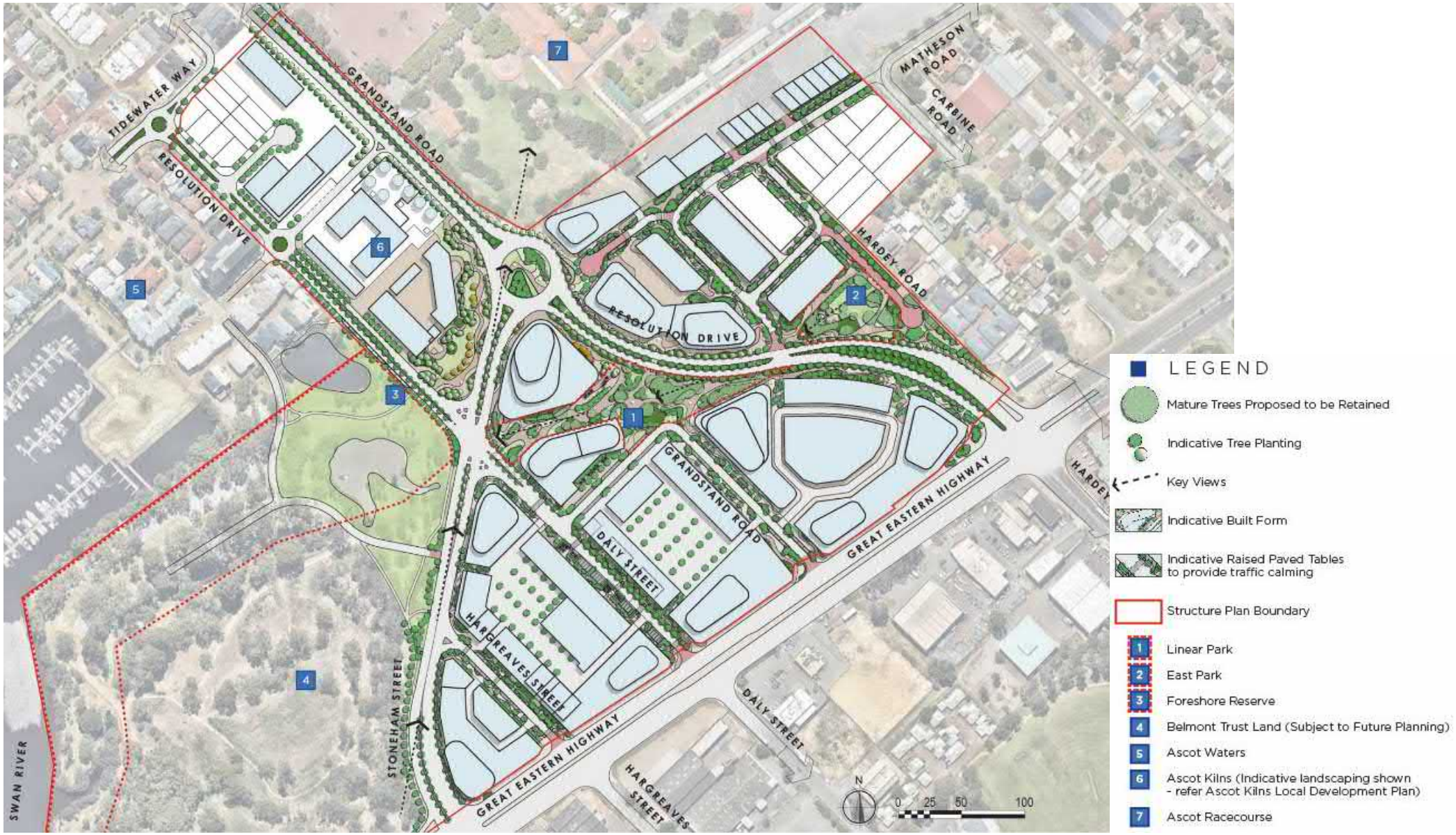


Figure 16 – Landscape Master Plan

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Linear Park 'Greenlink'

The Linear Park ('Greenlink') is a valuable community asset which has great potential to be the focus of community use, a meeting place and the primary pedestrian movement corridor linking the subject land with the Swan River and associated parklands to the west (refer **Figure 17**). The Linear Park is an urban park relying on tree canopies to provide shade and 'softness' to the urban space. The size of paved areas should be able to accommodate potentially large numbers of users including cyclists, skaters, and pedestrians all within a network of footpaths linking into the surrounding road network and building entrances. The space will create a seamless and comprehensive character that embraces built form and is unaffected by the rigidity of traditional street infrastructure.

The informality of parklands will envelope development forming a new dynamic setting that is capable of providing informal meeting spaces, alfresco spill-out, community meeting places and potentially facilities such as active recreational spaces, outdoor fitness trail equipment and interactive sculptural elements as public art. The space will facilitate clear passive surveillance from the lower levels of buildings and will be well lit at night. The open and broad nature of spaces providing safe pedestrian circulation and sight lines, lighting and activity will enable the space to accommodate the needs of a growing local population.

Importantly, this space and its robust form diminishes the role of vehicular traffic aesthetically creating a dominance of pedestrian orientated space.

Figure 17 - Linear Park Indicative Concept

Road and street treatments

Road hierarchies and overall legibility of the subject land will be reinforced by the type of tree planting associated with the scale of the road. The paving treatments within all streets and roads will be consistent with the material palette of the Linear Park, reinforcing a distinctive character of this place.

Resolution Drive

The landscape aesthetic of Resolution Drive will be dominated by tree planting of larger species, creating a canopy boulevard along its length (refer **Figure 18**). Verge and median planting will create a formalised sinuous corridor of canopy trees that are recognisably different to the scale and nature of other landscapes in the area. Like street trees will be planted to create a boulevard aesthetic the length of the street, aiding in wayfinding.

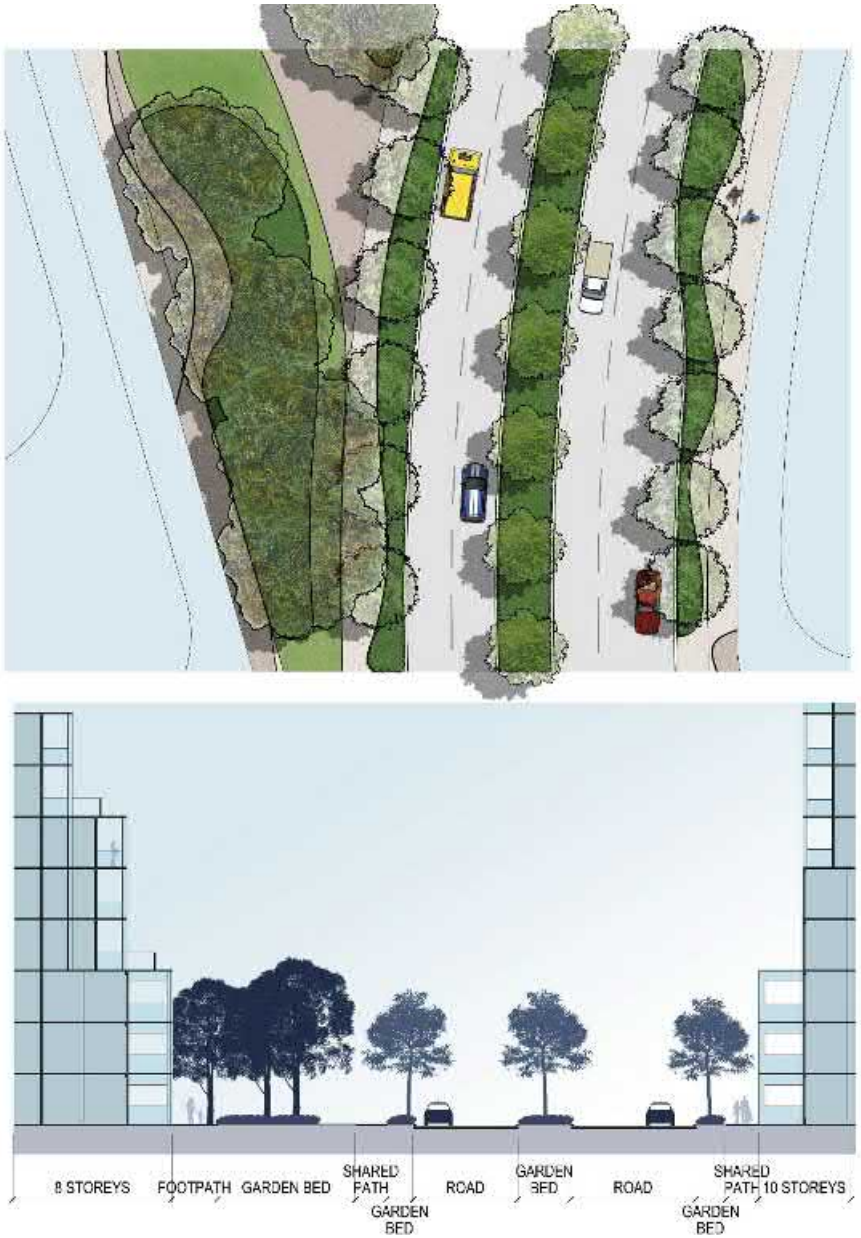

Figure 18 – Resolution Drive Plan Extract and Indicative Cross-Section

Stoneham Street

Stoneham Street will be identified by a boulevard of planting comprising species related to the adjoining Belmont Trust Land such as a mix of natives and introduced species emphasised at junctions and the key pedestrian crossing points (refer **Figure 19**). The boulevard will accommodate a key pedestrian connection that extends through to Matheson Road via the Linear Park.

Figure 19 - Stoneham Street Plan Extract and Indicative Cross-Section

Hargreaves Street and Grandstand Road

Hargreaves Street and Grandstand Road will comprise street tree planting that is not a monoculture but uses a mix of street trees (refer **Figure 20**) in varying combinations to provide a dynamic and varied street tree canopy. The mix will create a character that is related to, but distinguished from, Daly Street, emphasising the different nature of the space. These streets will extend the overall public realm character established within the Linear Park and central portion of the site but in a simpler manner. Street tree planting is proposed to create a canopied streetscape and to be positioned abutting the parallel parking embayments.

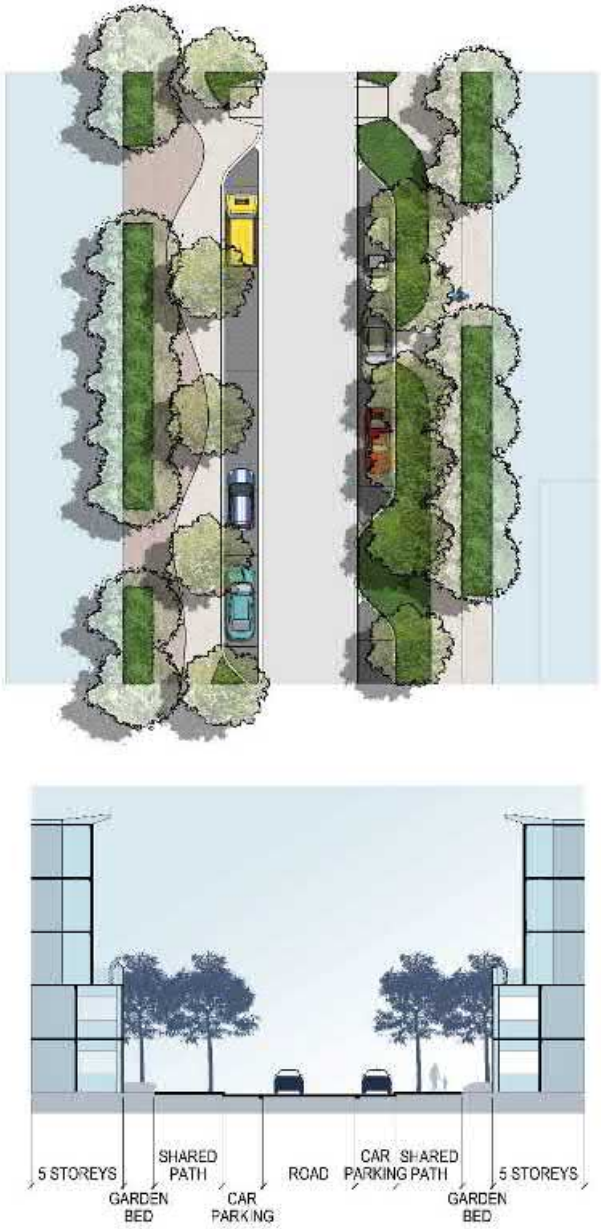

Figure 20 - Hargreaves Street Plan Extract and Indicative Cross-Section

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Daly Street

Daly Street is proposed to function as the 'main street' and as such, the public realm has been configured to respond to retail uses (refer **Figure 21**). The pedestrian pavement will be configured to minimise clutter and encourage possibilities for alfresco seating. Importantly the paving design character established within the linear park extends through the street extending to the Linear Park. Tree groups will be used and located to define potential smaller public realm areas such as alfresco seating and informal gathering spaces. Car parking is configured at right angles to optimise numbers in support of retail and food and beverage uses within the 'main street'.

Figure 21 - Daly Street Plan Extract and Indicative Cross-Section

Local Streets

The streetscapes of the areas to the north and east of Resolution Drive will have a character that is dominated by street tree planting creating a heavy canopy (refer **Figure 22**). Street tree planting will consist of a variety of species that attain modest height but develop a broad canopy.

Raised paved tables can be used to provide traffic calming and to add texture to the urban streetscape reinforcing a character that promotes pedestrian safety. The selected paving treatments of local streets will change the character of streets especially in locations where separated pedestrian access is limited. All paving detail at junctions and associated with pedestrian circulation should address both the need to reduce traffic speeds, manage drainage and create a distinctive character.

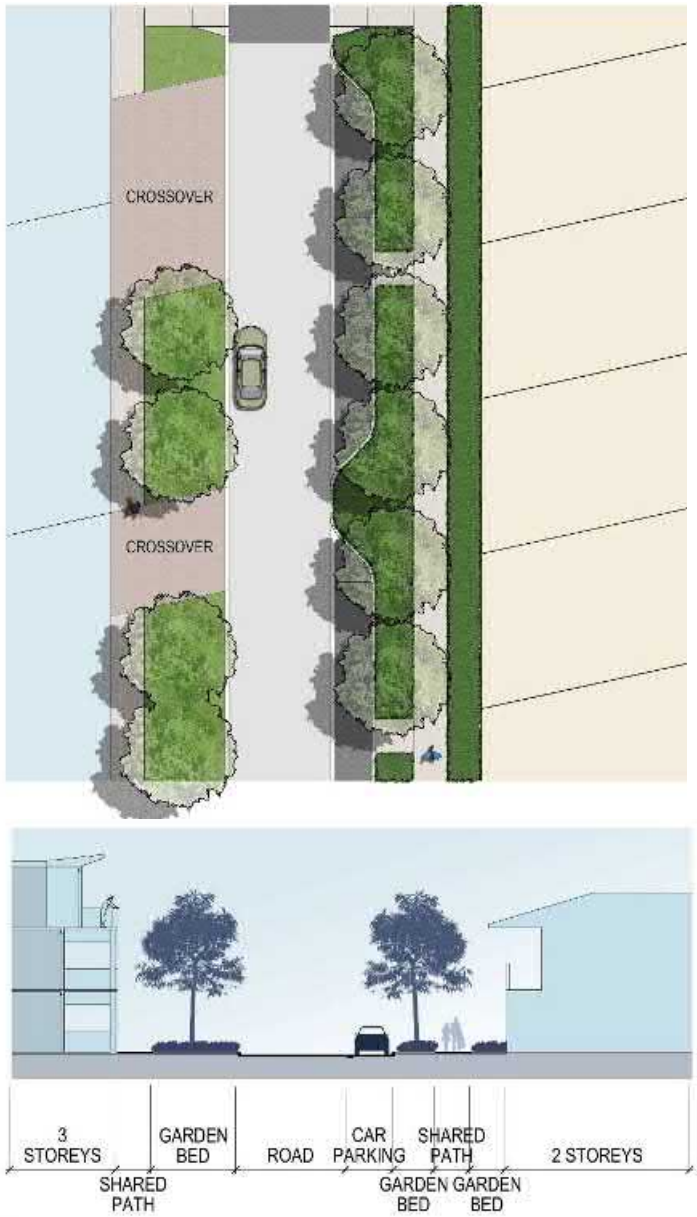

Figure 22 - Local Streets Plan Extract and Indicative Cross-Section

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3.3.9 LANDSCAPE DESIGN

3.3.9.1 DESIGN OBJECTIVES – AN URBAN LANDSCAPE

The public realm spaces made up of streets and the linear park combine to be a defining element of this location, that importantly the users, employees and residents experience and define the qualities of the public realm.

This location currently presents as a transient place that is passed through, however the design of the public realm will result in the creation of a cohesive network of spaces enabling the locality to be an identifiable place.

The overall landscape design objectives for the public spaces are set out below:

Identifiable character

- Create a contemporary urban environment that promotes safe and easy pedestrian experiences.
- Create new diverse urban landscapes that reflect the subject land's unique characteristics and close links to the river parklands.
- Create spaces that encourage and accommodate local community use and engagement.
- Establish an aesthetic that promotes positive development and investment in the location.
- Celebrate the heritage significance of the Ascot Kilns.
- Respect the social and recreational values of the Ascot Racecourse.
- Establish considered connections to the Ascot Kilns and the Ascot Racecourse in terms of tourism opportunities and amenity.

Valuable Landscapes

- Create a microclimate in public realm spaces and streets which encourages use and enjoyment.
- Provide visual connections to Belmont Trust Land through POS (as shown on **Figure 16**).
- Provide key views and relationships that assist in orientation and legibility.
- Create highly utilised and valued public realm streets and spaces.

Environmental/Sustainability

- Create a durable urban landscape.
- Reduce urban heat sink characteristics.
- Create urban tree canopy (in compliance with the City of Belmont's Urban Forest Strategy 2014).
- Retain vegetation wherever practical.
- Promote the use of low water demand plants.
- Pursue water harvesting, passive irrigation and integrated urban water management.

3.3.9.2 INTEGRATED DRAINAGE MANAGEMENT

The use and promotion of Water Sensitive Urban Design (WSUD) techniques and approaches are to be utilised wherever possible throughout the subject land. The space for nutrient stripping is limited. As the urban area is not producing a nutrient load, the focus is on slowing runoff and reducing hydrocarbons. The use of linear and incidental 'rain gardens' and 'nutrient sinks' can be implemented discretely within paving in streets and areas of open space. These devices should be fully integrated with the road drainage promoting passive irrigation of street tree vegetation and controlling hydrocarbon runoff.

Within the context of a dense inner urban area, the design of these WSUD devices need not be natural in appearance but can be incorporated within the urban public realm infrastructure as a contemporary feature.

It is intended that the east-west linear park, although containing broad pedestrian areas, will contain soft landscape areas that will accommodate local drainage that is managed through swale type structures that infiltrate water and passively irrigate trees and other vegetation used in the public realm. This will be subject to the Local Water Management Strategy (LWMS).

The use of permeable pavements and porous asphalt treatments in key locations is recommended, possibly associated with lower level threshold treatments of road junctions, should be incorporated as a component of the approach to integrated drainage management.

In order to deliver wider environmental sustainability objectives, as well as providing attractive places in which residents and visitors can enjoy, consideration should be given to the conservation of water resources and quality of groundwater. The use of water efficiency measures is encouraged and should promote the investigation of best management practices for irrigation of public open space.

The availability and quality of groundwater within the LSP area is limited at this stage. This will affect the ability of the City of Belmont to irrigate the proposed vegetation within the public realm areas. Therefore, due to the limitation of groundwater for irrigation purposes, the future irrigation of vegetation within the POS and public realm areas will need to be supplied by other sources. This may include scheme water, stormwater, irrigation (by agreement) from the Western Australian Turf Club's (now operating as Perth Racing) artesian groundwater licence, a new irrigation lake or other irrigation strategies will need to be investigated in the future. The City may encourage developers to consider the irrigation of abutting verge vegetation and street trees to ensure the high quality natural amenity of the public realm is maintained. Alternatively, non-irrigated (dry) landscape may need to be considered for the public realm areas.

3.4 MOVEMENT NETWORK

A Movement and Access Strategy was prepared by Flyt in support of the Structure Plan (refer **Appendix C**). This Strategy has been prepared using the requirements set out within the WAPC Transport Impact Assessment Guidelines (August 2016) Volume 2 – Planning Schemes, Structure Plans and Activity Centre Plans.

3.4.1 ROAD NETWORK AND TRAFFIC MANAGEMENT DEVICES

As outlined within this report, the Structure Plan design proposes to retain the broad framework of the existing road network and primary traffic flows in order to achieve the desired development outcome.

The proposed changes to the existing road network and associated road hierarchy as outlined in **Figure 23** include:

- **Resolution Drive:** This section of road will be removed and the connection will be formed by use of the historical Raconteur Drive alignment.
    - Resolution Drive will connect between the Great Eastern Highway/Hardey Road traffic signal controlled intersection and relocated Grandstand Road roundabout.
    - The Grandstand Road/Resolution Drive/Stoneham Street roundabout will be relocated approximately 125m to the north-east of its existing location, and will become a three arm roundabout.
    - The existing Grandstand Road configuration of a four lane divided road (2 lanes in each direction) will be continued along the Raconteur Drive section of the road. As such a continuous four lane divided road will operate between Great Eastern Highway and Guildford Road via the Garrett Road Bridge (additional turn pockets will be provided where required).
    - A single intersection is proposed on Resolution Drive between the relocated roundabout and Great Eastern Highway and this is expected to take the form of an all movements 'seagull' intersection with separate left turn/right turn lanes into Resolution Drive and a right turn auxiliary lane from Resolution Drive. This will provide vehicular access to and from the three precincts situated north of Resolution Drive.
- **Stoneham Street:** This section of road will be retained along its existing alignment providing a connection between Great Eastern Highway/Belgravia Street traffic signal controlled intersection and the relocated Grandstand Road/Resolution Drive roundabout – adjacent to the Ascot Kilns LDP area.
    - The section of Resolution Drive (north of Stoneham Street) will form a four-way intersection at Stoneham Street/Daly Street/Resolution Drive. It is expected that this intersection would be priority controlled with a signalised pedestrian crossing phase across all four approaches.
    - The existing lane arrangement along Stoneham Street will be retained, being a four lane undivided road (2 lanes in each direction). A median strip on approaches to main intersections is provided and a painted dividing line mid-block. On-street parking may be considered at detailed design stage to support non-residential uses.
    - The existing access arrangements from Stoneham Street to the car park within the Belmont Trust Land will remain unchanged.

- **Hargreaves Street, Daly Street and Grandstand Road (south):** It is proposed that Hargreaves Street and Daly Street will continue along their existing alignments and connect between Great Eastern Highway and Stoneham Street. Grandstand Road (south) will be realigned at the northern end to connect into Daly Street. It is proposed to realign the northern section of Daly Street to accommodate the four-way intersection at Stoneham Street/Daly Street/Resolution Drive.
    - All intersections with Great Eastern Highway will be retained as per the existing left-in/left-out arrangement.
    - The existing access arrangement (left-in/left-out only) at the Hargreaves Street and Stoneham Street intersection will be retained.
    - Grandstand Road (south) intersection with Daly Street would be priority controlled with Grandstand Road (south) being the minor leg of the intersection.
    - All roads would take the form of two lane roads (1 lane in each direction). On-street parking will be provided along each street where appropriate.
- **Matheson Road:** Matheson Road will continue to connect through to a realigned Resolution Drive via a modified road network, which will provide access to new development sites but not prioritise Matheson Road as a through route.
    - The form of intersection between Matheson Road and Resolution Drive will be subject to further detailed design. It is expected that this intersection would be priority controlled with Matheson Road being the minor leg of the intersection (in the form of a seagull intersection).
    - Matheson Road and internal roads would take the form of two lane roads (one lane in each direction). On-street parking will be provided where appropriate

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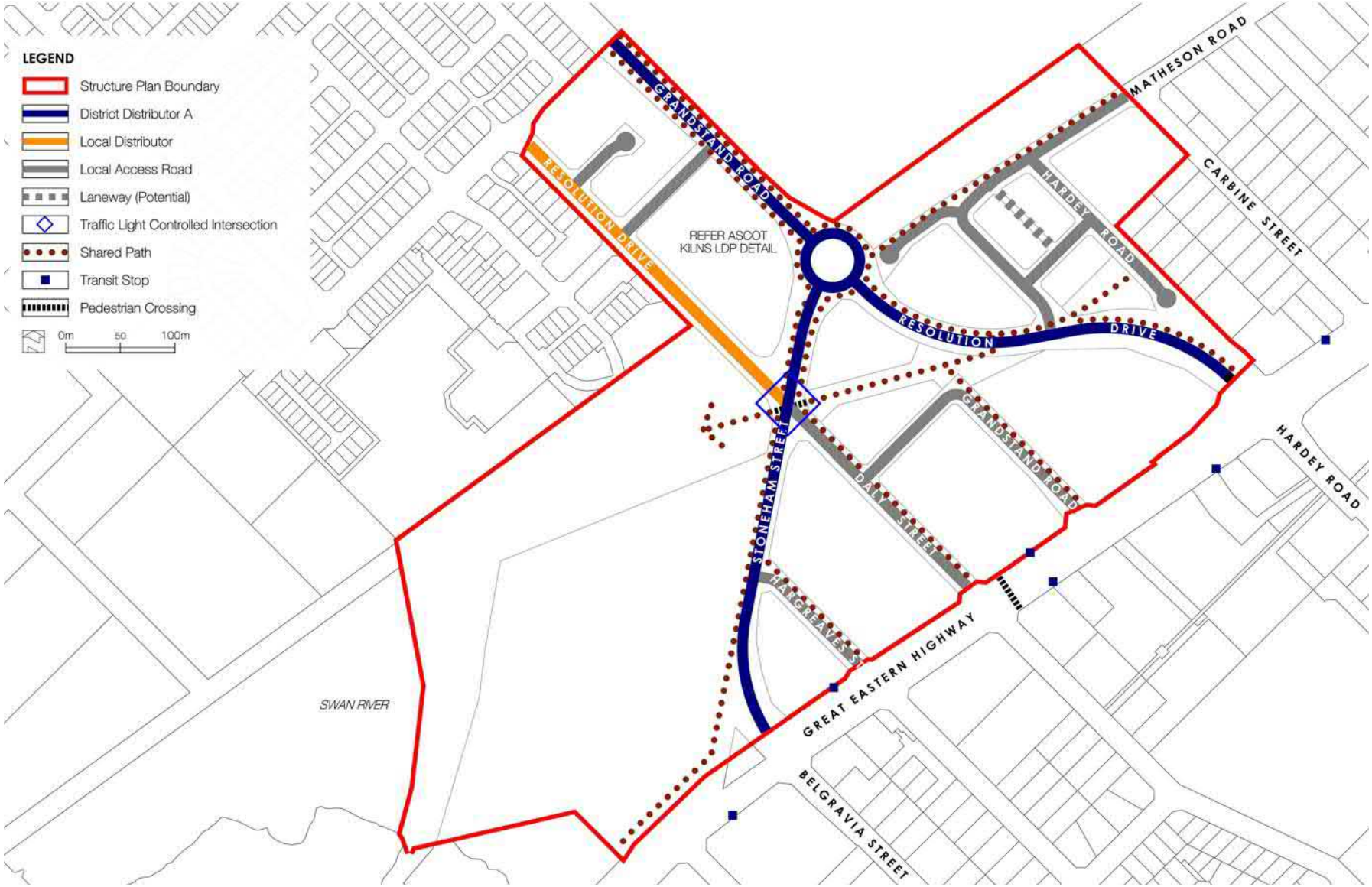

Figure 23 - Movement Network

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3.4.2 TRAFFIC FORECASTS

As outlined in the Movement and Access Strategy, the following new vehicle trips are anticipated to be generated by the proposed development:

- **Daily traffic:**
    - Inbound 2,600 vehicles
    - Outbound 2,600 vehicles
    - **TOTAL 5,200 vehicles**
- **AM peak hour traffic:**
    - Inbound 97 vehicles
    - Outbound 697 vehicles
    - **TOTAL 794 vehicles**
- **PM peak hour traffic:**
    - Inbound 605 vehicles
    - Outbound 189 vehicles
    - **TOTAL 794 vehicles**

In summary, based on the application of standard assessment techniques as outlined in the report, the proposed development results in a slight reduction in road network performance in 2031 in the PM peak period at the Resolution Drive - Great Eastern Highway intersection.

The Stoneham Street - Great Eastern Highway modelling shows that by 2031 under the base scenario (i.e. without Golden Gateway development), all approaches (other than Belgravia Street approach) would operate over capacity during the AM peak and during the PM peak at all approaches. Factoring in the proposed Golden Gateway development, the degree of saturation on the Stoneham Street and Great Eastern Highway approach increases, however the level of service remains unchanged.

The proposed road network within the subject land would significantly enhance the pedestrian and cycle connections throughout the development and also provide a catalyst for a gradual improvement in public transport service provision across the subject land/local area and improve connections across the subject land generally.

3.4.3 PEDESTRIAN AND CYCLING NETWORK

All existing shared paths surrounding and through the subject land will be maintained and many of these existing connections enhanced by additional shared path connectivity including:

- Retention of the shared path along the northern/western side of Stoneham Street.
- Improvement of shared path connections between the subject land and Ascot Waters development.
- The Stoneham Street shared path will be enhanced with a formalised connection through to Matheson Road. It is expected that the Stoneham Street/Daly Street/Resolution Drive signalised intersection will include a priority controlled pedestrian crossing phase across all four approaches.
- Shared path connections will be provided along Hargreaves Street, Daly Street and Grandstand Road (south).
- Controlled mid-block shared pedestrian/bike crossing via an at-grade signal controlled crossing at the Stoneham Street/Daly Street intersection and across Great Eastern Highway would be the preferred form of crossing.
- An at-grade signal-controlled crossing of Great Eastern Highway would require further investigation at the detailed design stage, but could take the form of the pedestrian crossing of Great Eastern Highway that is provided to the west of the subject land (location to be subject to further investigations/discussion).

3.4.4 PUBLIC TRANSPORT

High level discussions with the Public Transport Authority (PTA) has informed the proposed changes anticipated for the existing public transport network as discussed below. The introduction of the Forrestfield Airport Link (FAL) rail connection from central Perth to Perth Airport and onto a park 'n' ride station at Forrestfield, will see the removal of four of the five existing bus routes operating along the Great Eastern Highway corridor (bus routes 36, 295, 296 and 299) and a renumbering and change of route for the remaining bus route (bus route 40).

Subject to further consultation it is currently anticipated that the five existing bus routes will be rerouted as follows:

- Bus Route 36 – to be renumbered as Bus Route 303 and operate from Midland Station to the new Redcliffe Station.
- Bus Routes 295/296/299 – to feed into Forrestfield Station from Kalamunda and its surrounds.
- Bus Route 40 – to be renumbered Bus Route 940 Superbus (details below).

It is currently anticipated that the 940 Superbus would initially operate as a first stage from Belmont Station to Elizabeth Quay Station via Great Eastern Highway and Victoria Park Transfer Station and Adelaide Terrace/St Georges Terrace. In the longer term, it is anticipated that the Superbus would become a through routed service to Subiaco Station from Elizabeth Quay Bus Station via West Perth.

The Superbus route would operate as a high frequency service and as such it is considered unlikely that the PTA would re-route this service through the subject land and instead, the service would operate along the Great Eastern Highway corridor between Redcliffe Station and Victoria Park Transfer Station.

The PTA has indicated that, if sufficient public transport demand was generated by large scale development of the subject land, they would consider the option of operating a bus service which connected the subject land and Perth CBD with a bus service that utilised the internal road network. However this would be contingent upon the proposed development generating the requisite public transport demand to warrant the investment in such a service.

3.5 WATER MANAGEMENT

3.5.1 LOCAL WATER MANAGEMENT STRATEGY

A LWMS was prepared by Urbaqua in support of the Structure Plan (refer **Appendix D**). The LWMS was developed to establish the concepts and broad level design measures for flood mitigation and stormwater management for the subject land. The intention of the LWMS is to guide the general stormwater management principles and to guide the preparation of the Urban Water Management Plan (UWMP) that will be prepared at the subdivision stage.

3.5.2 STORMWATER MANAGEMENT

The key objectives for stormwater management are:

- Protection of wetlands and waterways (receiving environments) from the impacts of urban runoff.
- Protection of infrastructure and assets from flooding and inundation.

The following planning measures are adopted to achieve the above objectives:

- Residential, industrial or commercial premises in existing or proposed areas must maintain floor levels at 500 mm above the 100yr ARI in the Swan River and 300 mm above the 100yr ARI in the local drainage system.
- Runoff from events greater than the 1yr ARI interval event and up to the 5yr ARI event in residential areas and 10yr ARI event in commercial/industrial areas are to be managed in accordance with the serviceability requirements of Australian Rainfall and Runoff (Engineers Australia, 2001) minor/major system.
- Stormwater in excess of the capacity of on-site retention systems will be conveyed through the existing drainage system consisting of local road drainage, Central Belmont Main Drain Basin and compensating basin.
- Major flood runoff (1% AEP) will be conveyed via overland flow within the road reserve to the compensating basin and drain prior to discharging to the Swan River.
- The design of the redeveloped urban areas should incorporate current best practice in WSUD to mitigate the potential impacts on regional water quantity and quality from redevelopment and the legacy conditions within the catchment.

- Retrofitting of stormwater management systems to achieve improved water quality outcomes should be maximised through the installation of biofilters (raingardens), amended soils and the use of structural controls to address litter, sediment and vegetative materials at source.
- Modification of the existing Central Belmont Main Drain and local drainage systems to suit the urban form whilst maintaining drainage capacity and peak flow rates.
- WSUD and best management practices promoting on-site retention of the first 15mm of rainfall from the basis of the surface water quantity management strategy for minor events.

3.5.3 GROUNDWATER MANAGEMENT

The key objectives for groundwater management are:

- Protecting infrastructure and assets from flooding and inundation by high seasonal groundwater levels, perching and/or soil moisture.
- Protecting groundwater dependent ecosystems from the impacts of urban runoff.
- Managing and minimising changes in groundwater levels and groundwater quality following redevelopment.

The following planning measures are adopted to achieve the above objectives:

- Retain existing surface levels as a minimum to ensure adequate separation.
- Limit basements in areas of shallow groundwater.
- Use of subsoil drainage below bio-retention areas, raingardens and tree pits to minimise local groundwater rise.

Groundwater levels provide potential clearance for basements to be installed, with two storey basements possible closer to Great Eastern Highway. Detailed designs of any infrastructure below the existing surface level (such as basements) may include tanking or other forms of damp-proofing. Any temporary lowering groundwater for construction, either for basements or sewer, may require dewatering licences from DWER.

3.6 EDUCATION FACILITIES

Existing education facilitates located within close proximity to the subject land include the following:

- Belmont Primary School is located at the intersection of Great Eastern Highway and Belgravia Street.
- Redcliffe Primary School is located approximately 3km to the east.
- St Maria Goretti's Catholic School is located approximately 2.5km to the east.
- Maylands Peninsula Primary School is located approximately 2.5km to the north.
- Belmont City College is located approximately 3km to the south.

Given the nature of the development and anticipated demographic it is anticipated that there will be limited additional demand for education facilities generated in the precinct. The Golden Gateway Precinct is well located within an existing urban context allowing future residents to take advantage of existing education facilities.

3.7 EMPLOYMENT

Given the subject land's strategic location close to existing employment opportunities in the Belmont mixed business area, proximity to Perth CBD and commercial land uses along Great Eastern Highway, the area already enjoys a high rate of employment self-sufficiency, therefore additional employment generating land uses are not considered necessary to improve local employment opportunity. The non-residential uses anticipated for the Golden Gateway Precinct will generate a small amount of locally-based employment; however, the main purpose of these uses is to provide local services and to optimise the value of its highly visible and connected location.

3.8 INFRASTRUCTURE COORDINATION, SERVICING AND STAGING

An Infrastructure Assessment Report was prepared by Cardno in support of the Structure Plan (refer **Appendix E**).

3.8.1 WATER SUPPLY

Water Corporation does not foresee any issues with servicing the proposed scheme with potable water. Initial advice from the Water Corporation has confirmed the following with regards to required upgrades:

- Water Corporation will upgrade the headworks, pipe equal to or greater than 300mm diameter and pump stations, as and when required.

- Water Corporation recommends a consolidated approach to the requesting and programming of works to minimise disruptions and maximise cost efficiencies. Water Corporation recommends any reticulation reinforcement or new work should be managed by the City of Belmont due to the fractured land ownership within the area. It is recommended that a working group between the City of Belmont and Water Corporation is set up in order to help plan and coordinate precinct development and staging with any Water Corporation trunk infrastructure capital works.

3.8.2 WASTEWATER

The proposed development will have significant impacts to the current wastewater infrastructure. It is not envisaged the existing Redcliffe Pump Station 5 will have sufficient capacity with a shortfall of 9.09 L/s to service the proposed development and will require a significant upgrade. This would require the upgrade of the existing pumping station to a larger type 40. A type 40 pumping station is a station capable of a 40 L/s service consisting of two pump-sets located in a common wet-well constructed from 2500mm internal diameter precast concrete pipes. Redcliffe Pump Station 2 will likely have capacity, however further planning should be coordinated with the Water Corporation to ascertain other timing of other developments in the area.

3.8.3 POWER SUPPLY

The Belmont substation servicing the subject land falls under the Cannington load area. Western Power's Annual Planning Report 2015/16 states "no substation capacity shortfall is forecast in the Cannington load area over the next five years." This takes into account committed, and most likely to occur, network expansion plans for the area. The Western Power Network Mapping Tool indicates that there is >30MVA spare capacity in the network until at least 2036 based on current and forecast demand. The implementation of the LSP will aim to remove the existing overhead Low Voltage/High Voltage (LV/HV) power lines and replace with underground power and upgraded LED lighting.

3.8.4 GAS SUPPLY

Correspondence received from ATCO Gas advised that the existing infrastructure can support the proposed development.

3.8.5 TELECOMMUNICATIONS

The infrastructure within a development will be installed by the developer. Alternatively, Telstra can be engaged to install infrastructure within a development at the developer's expense.

Telstra's commercial pit and pipe service will generally not be offered in developments where NBN Co has confirmed agreement to install NBN Co fibre within a development stage.

3.8.6 WATER CORPORATION MAIN DRAIN

Stormwater in excess of the capacity of on-site retention systems will be conveyed through the existing drainage system consisting of local road drainage, Central Belmont Main Drain Basin and compensating basin.

The significant modification to the system will be the conversion of the open drain between Resolution Drive and Stoneham Street, as recommended in the Water Corporation (2009) review of the system. It was recommended that this drain is replaced with a 1500mm pipe for safety reasons. Replacing the drain with a pipe will also allow for realignment of the system consistent with other services and future POS alignments.

Any changes to the Water Corporation drainage system will need to be undertaken in consultation with the Water Corporation and will require further detailed design, justification and agreement. This includes consideration of the modifications outlined above to ensure that the capacity of the main drain is sufficient to meet the conditions of the Water Corporation's operating license.

Downstream of Stoneham Street, within the Swan and Canning River Development Control Area, the existing compensation basin and drain that discharges to the Swan River will not be modified.

3.9 IMPLEMENTATION

3.9.1 LOCAL PLANNING POLICY

The Structure Plan outlines that design guidelines and the development requirements should be prepared and adopted by the City as a LPP. Development or subdivision should not be approved within the Structure Plan Area until the LPP is adopted, unless otherwise agreed by the Local Government.

3.9.2 SCHEME AMENDMENT TO FACILITATE STRUCTURE PLAN

The existing zoning arrangement within the Structure Plan Area does not currently reflect the proposed zoning as outlined within **Plan 1**. Consequently, a Scheme Amendment will be required to address this inconsistency during the implementation of the Structure Plan.

The Structure Plan Area should be rezoned to 'Special Development Precinct' to provide the appropriate base zoning to facilitate integrated development for the Precinct. In addition, in order to achieve the required planning framework for the Structure Plan area, it will also be necessary to designate a 'Development Area' over the subject land under Part 6 of LPS 15. In accordance with Clause 6.2.4 of LPS 15, the preparation and approval of a Structure Plan is required to guide subdivision and development. This process can occur concurrently with the rezoning of the Structure Plan area to 'Special Development Precinct' as described above. As a pre-requisite to the finalisation of this Scheme Amendment process, the City will require the preparation and adoption of the design guidelines and the development requirements as a LPP.

3.9.3 SCHEME AMENDMENT TO 'NORMALISE' STRUCTURE PLAN

In the future, when the implementation of the Structure Plan is progressed and the proposed road realignments, land reassembly and cadastral boundary changes are finalised, it will then be appropriate to undertake a further Scheme Amendment. This Scheme Amendment will remove the 'Special Development Precinct' zone over the Structure Plan Area and incorporate the zonings as depicted within **Plan 1**.

Minor amendments to the MRS will also be required to rationalise the 'Primary Regional Roads' reservation associated with Great Eastern Highway. It is likely that this would occur through an omnibus amendment

3.9.4 INFRASTRUCTURE FUNDING ARRANGEMENTS

The City of Belmont will establish an appropriate funding strategy for the Structure Plan Area. As part of the strategy, a Development Contribution Area (DCA) within LPS 15, under which a Development Contribution Plan (DCP) may be implemented to contribute to the funding of the public infrastructure requirements to facilitate development in the Structure Plan Area will be considered.

Infrastructure items that would be eligible to be funded under a DCP should be in accordance with State Planning Policy 3.6 Development Contributions for Infrastructure (SPP 3.6) and may include:

- Construction/upgrades to roads, intersections and pathways, including the realignment of Resolution Drive, the relocation of the Stoneham Street roundabout and the light controlled intersection of Stoneham St, Daly St and Resolution Dve.
- Great Eastern Highway pedestrian crossing.
- Land for public open space and community facilities.
- Landscape treatment for all public realm areas, including local roads.

This Structure Plan will inform any future DCP, particularly in relation to the proposed upgrades to roads and intersection treatments as determined by the Movement and Access Strategy contained at **Appendix C** and the Public Realm Strategy contained at **Appendix F**.

3.9.5 LAND ASSEMBLY

There are various statutory processes required to deliver and facilitate development of the subject land, including amendments to LPS 15. Following adoption of the Structure Plan, subdivision and amalgamation applications can be lodged with the WAPC in the normal manner to assemble the land appropriately. Amalgamation is also likely to occur to enable land rationalisation. The subdivision/amalgamation process will be necessary to create some key elements of the project, such as the amalgamation of land parcels, realignment of existing roads and creation of the new subdivisional roads as shown on **Figure 24** below.

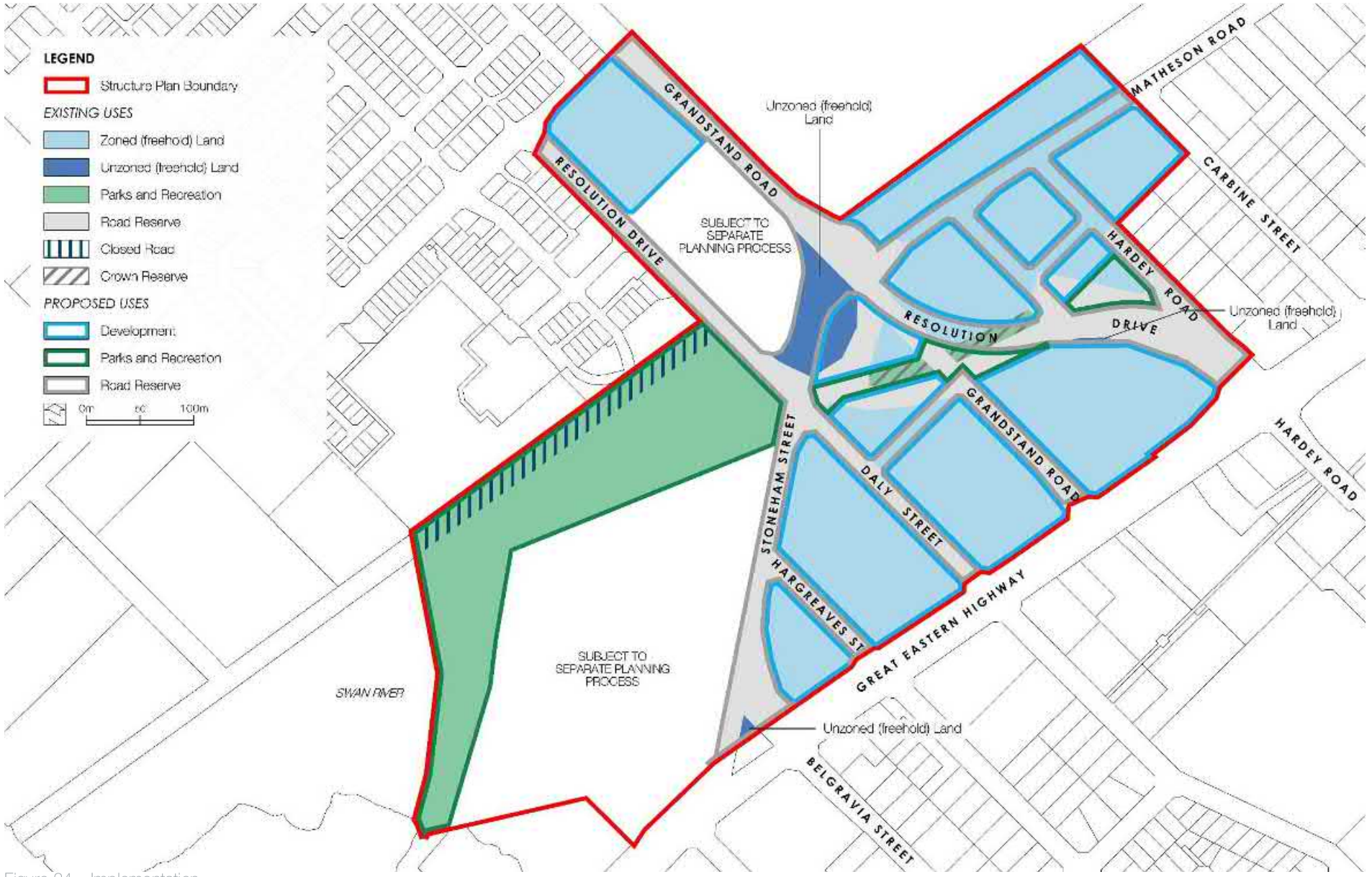

Figure 24 – Implementation

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APPENDIX A
BUSHFIRE MANAGEMENT PLAN

APPENDIX B
ENVIRONMENTAL ASSESSMENT REPORT

APPENDIX C
MOVEMENT AND ACCESS STRATEGY

APPENDIX D
LOCAL WATER MANAGEMENT STRATEGY

APPENDIX E
INFRASTRUCTURE ASSESSMENT REPORT

APPENDIX F
PUBLIC REALM STRATEGY

Ordinary Council Meeting 28/08/18

Item 12.1 refers

Attachment 2

Appendix A
Bushfire Management Plan

Golden Gateway Structure Plan

Bushfire Management Plan

Prepared for City of Belmont

By Urbaqua

June 2018

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Disclaimer and Limitation

This document is published in accordance with and subject to an agreement between Urbaqua and the Client, City of Belmont, for who it has been prepared for their exclusive use. It has been prepared using the standard of skill and care ordinarily exercised by environmental professionals in the preparation of such Documents.

This report is a qualitative assessment only, based on the scope of services defined by the Client, budgetary and time constraints imposed by the Client, the information supplied by the Client (and its agents), and the method consistent with the preceding. Urbaqua has not attempted to verify the accuracy or completeness of the information supplied.

This Bushfire Management Plan provides strategic assessment of the subject site only. A subsequent Bushfire Management Plan and/or Bushfire Attack Level (BAL) Assessment may be required to support future development applications. The recommendations contained in this report are considered to be prudent minimum standards only, based on the author's experience as well as standards prescribed by relevant authorities. It is expressly stated that Urbaqua and the author do not guarantee that if such standards are complied with or if a property owner exercises prudence, that a building or property will not be damaged or that lives will not be lost in a bush fire.

Fire is an extremely unpredictable force of nature. Changing climatic factors (whether predictable or otherwise) either before or at the time of a fire can also significantly affect the nature of a fire and in a bushfire prone area it is not possible to completely guard against bushfire.

Further, the growth, planting or removal of vegetation; poor maintenance of any fire prevention measures; addition of structures not included in this report; or other activity can and will change the bushfire threat to all properties detailed in the report. The achievement of the level of implementation of fire precautions will depend on the actions of the landowner or occupiers of the land, over which Urbaqua has no control. If the proponent becomes concerned about changing factors then a Bushfire Management Plan should be requested.

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EXECUTIVE SUMMARY

This bushfire management plan has been undertaken to support structure planning for the Golden Gateway Precinct in the City of Belmont (Figure 1).

A small portion of the subject land is identified as a bush fire prone area, designated by the Fire and Emergency Services (FES) Commissioner. This report has been prepared to meet the requirements of *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) (2015) and the *Guidelines for Planning in Bushfire Prone Areas*, Version 1.1 *(*WAPC, 2017).

This plan provides advice consistent with the nature of a strategic proposal. Details in this report are consistent with *State Planning Policy 3.7: Planning for Bushfire Prone Areas (*WAPC, 2015) and the *Guidelines for Planning in Bush Fire Prone Areas* and associated appendices (V1.3, WAPC, 2017).

A vegetation class assessment was conducted for the subject land and adjacent areas for a minimum of 150 metres. As the road and lot layout is known, a bushfire attack level (BAL) assessment was undertaken and a BAL contour plan has been developed to show the indicative future BALs. This information may be used to guide the future development of the site, consistent with *AS3959 Construction of buildings in Bushfire Prone Areas*.

Bushfire risk to the areas proposed for future development is BAL-LOW. There is insufficient risk to warrant specific construction requirements.

The bushfire mitigation and management strategies outlined in this management plan comply with the acceptable solutions of control for each of the Bushfire Protection Criteria detailed in *Guidelines for Planning in Bushfire Prone Areas* (2017).

It is therefore considered that this bushfire management plan demonstrates compliance with the objectives and provisions of *State Planning Policy 3.7: Planning in Bushfire Prone Areas*.

This bushfire management plan is to be endorsed by the City of Belmont and is required to be reviewed and updated where necessary.

CONTENTS

Figures

Tables

1 INTRODUCTION

The City of Belmont has engaged Urbaqua to prepare a Bushfire management plan to support preparation of a local structure plan for the Golden Gateway project area (Figure 1) in the City of Belmont (Figure 2).

A portion of the subject land is identified as a bush fire prone area, designated by the Fire and Emergency Services (FES) Commissioner (Figure 3). This report has been prepared to meet the requirements of *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) (2015) and the *Guidelines for Planning in Bushfire Prone Areas* (V1.3, WAPC, 2017).

Any identified bushfire risk will be addressed as part of the future development approvals process, consistent with the requirements of *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) (2015), the Building Code of Australia and *Australian Standards (AS3959-2009): Construction of buildings in bushfire prone area* where these apply.

1.1 Proposal details

The subject land consists of approximately 31.8 hectares of land in the vicinity of Great Eastern Hwy, Resolution Dr, Grandstand Rd and Stoneham St in Ascot.

The Golden Gateway Precinct includes a large portion of 'Mixed use' land, which encompasses the historical Ascot's Bristle beehive kilns and chimney stacks and portions of the Ascot Racecourse. The precinct also contains approximately 5.3 ha of Parks and Recreation reserve which covers Belmont Trust Land. There is also a small portion of Parks and Recreation: water supply sewerage and drainage reserve, which is under the control of the Water Corporation.

The Golden Gateway Precinct will provide for a diverse range of land uses. The primary land use within the Structure Plan area is residential, supplemented by commercial uses and local open space

1.1.1 Planning background

The majority of the study area is zoned 'Urban' under the Metropolitan Region Scheme, with a portion zoned for 'Mixed use' and reserved for 'Parks and Recreation' under City of Belmont Local Planning Scheme No. 15.

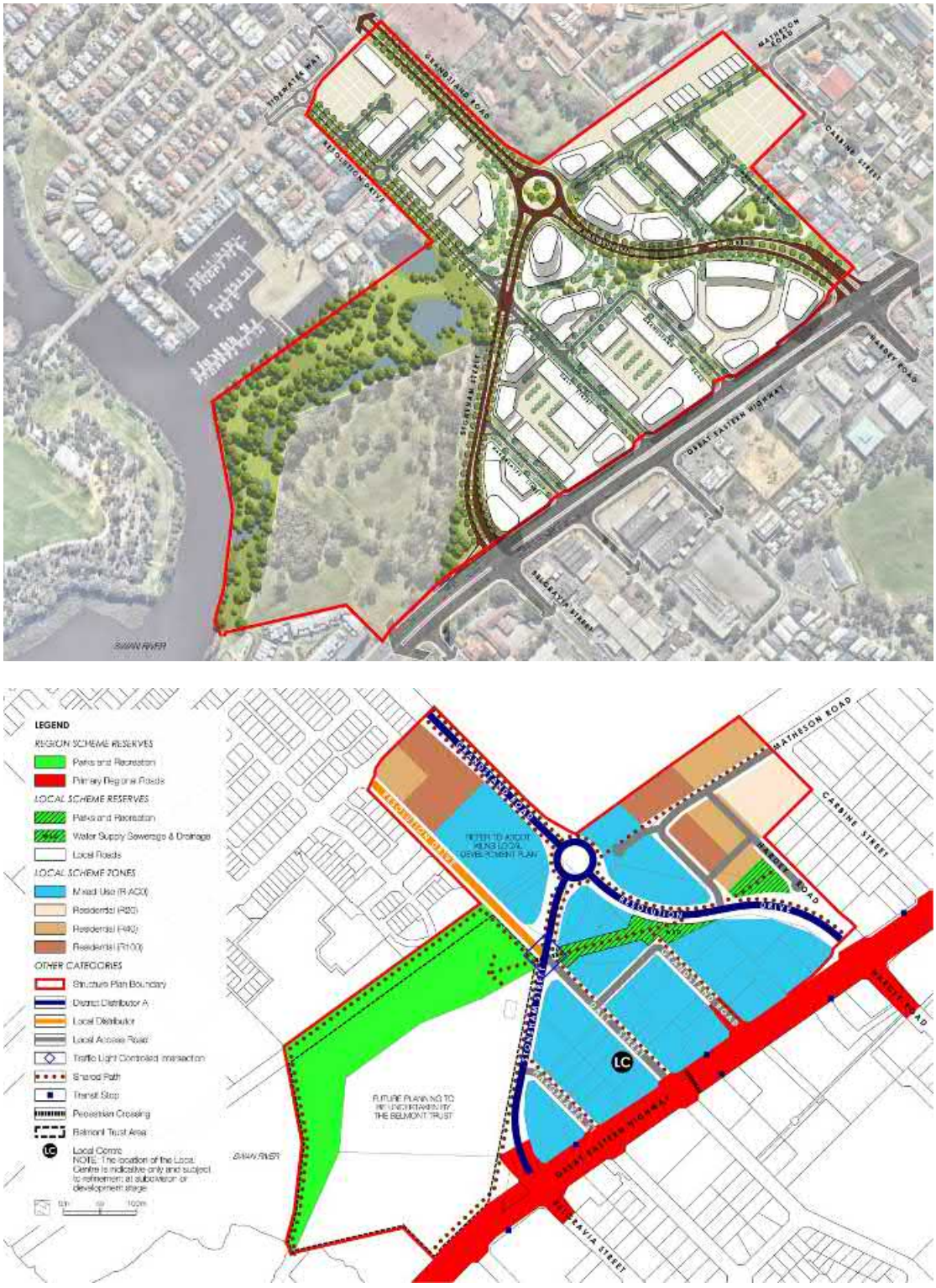
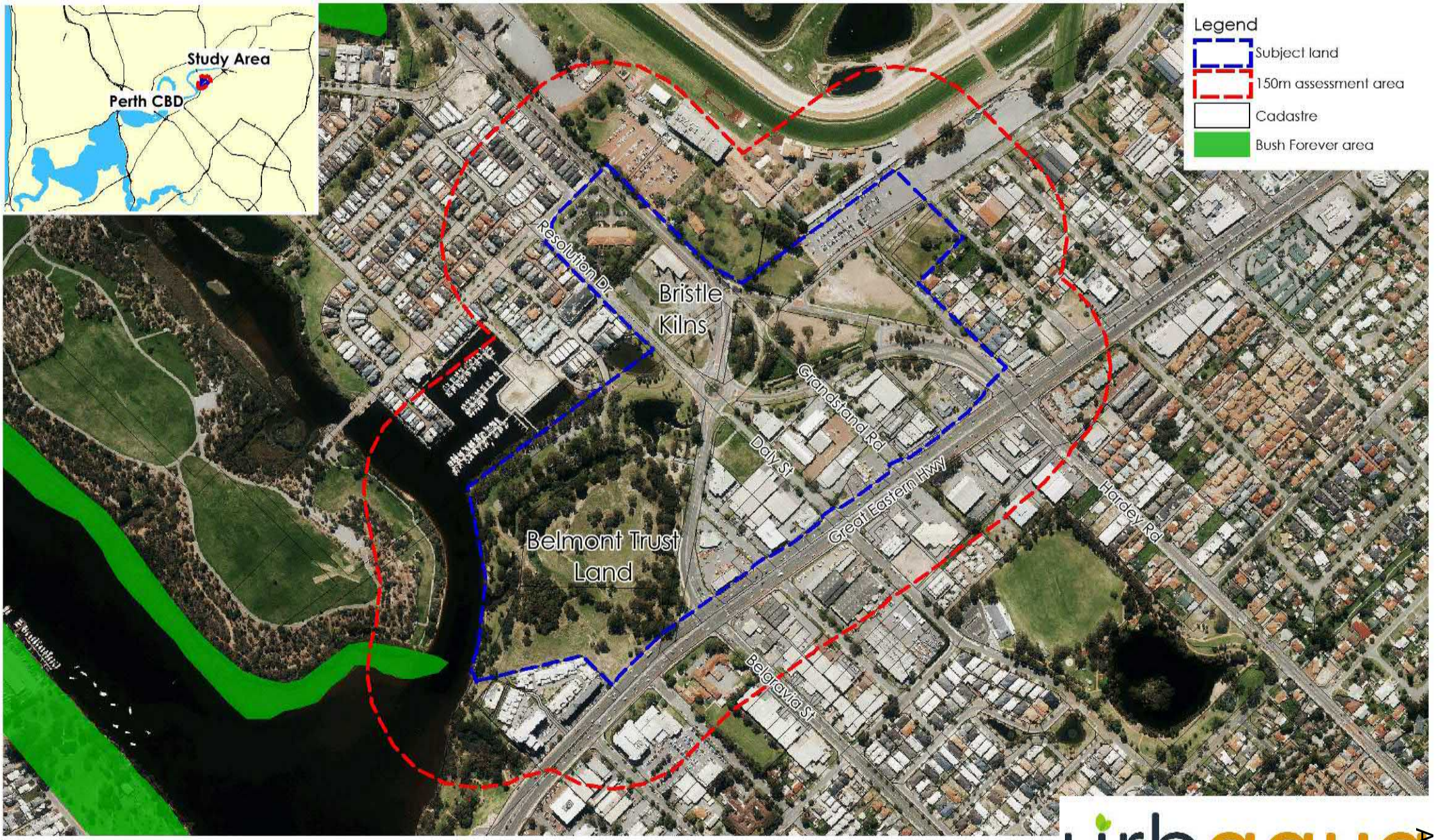


Figure 1: Development concept plan and proposed zoning (Source: TBB)

City of Belmont: Golden Gateway - Bushfire Management Plan

Figure 2: Subject land



Data source: CoB, Landgate. Created by: AT. Projection: MGA: zone 50.

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Figure 3: Map of Bushfire Prone Areas for the subject site (Source: DFES, 2018)

1.2 Bushfire management guidelines, specifications and minimum standards

Specifications or standards relevant to this bushfire management plan are derived from and consistent with:

- *Fire and Emergency Services Act 1998*
- *Bush Fires Act 1954*
- *Planning and Development (local planning Scheme amendment) Regulations 2015*
- State Planning Policy 3.7: Planning in Bushfire Prone Areas (WAPC, 2015);
- *Guidelines for Planning for Bushfire Prone Areas* and appendices, Version 1.3 (WAPC, 2017)
- Australian Standards (AS3959-2009): *Construction of buildings in bushfire prone areas*; and
- City of Belmont Fire Break Notice 2017-2018.

2 ENVIRONMENTAL CONSIDERATIONS

The subject land has been used predominantly for commercial purposes for over 50 years. The Golden Gateway Precinct includes the historical Ascot's Bristle beehive kilns and chimney stacks and portions of the Ascot Racecourse. The subject land also contains a large proportion of managed parkland which borders the Swan River. The Belmont Trust Land in the western portion of the study area was historically used for sporting purposes such baseball fields and is now maintained as parkland by the City. There are no significant environmental values located within the subject land.

Bush Forever site 313, Swan River Salt Marshes is located within the 150m assessment area. This area is separated from the subject land by the Swan River, which is approximately 70m wide at this point. The remaining areas within 150m of the subject land have no significant environmental values. They include Ascot Racecourse, Belmont Park Primary school, residential housing and commercial areas.

2.1 Native Vegetation – modification and clearing

The vegetation in the study area has been highly modified. Although mature trees remain in many parts of the subject land, the undergrowth has been cleared and is maintained in a modified landscaped, parkland state.

Although the grassland which covers the Belmont Trust land is managed and maintained by the City of Belmont, a small portion of regrowth exists where the tree trunks are too close together to permit mowing. This land is proposed to be developed in the future, although the development concept is not yet known. The City will continue to maintain the Belmont Trust Land in a low fire hazard state.

Some bushfire risk exists as a result of vegetation within and adjacent to Bush Forever Area 313 (Swan River Salt Marshes) located to the north west of the subject land. This vegetation is separated from the subject land; however, by a branch of the Swan River. It is also noted that the majority of vegetation on the island is maintained in a low fuel state. Where shrubs and trees exist, there is no understory and the fine fuel load is less than 2tonnes/ha.

Plate 1: Fine fuel load less than 2 tonnes/ha on the island adjacent the subject land

Vegetation also exists around a drain on the south-western side of the Ascot Quays Apartment Hotel. This vegetation is outside the subject land but within 150m of the structure plan area. The

vegetation is less than 20m in width on each side of the drain and the understory is managed (irrigated) grassland. This vegetation is not considered to represent a bushfire hazard.

2.2 Re-vegetation/Landscape Plans

No revegetation is proposed within the subject land.

Some landscaping of road reserves, open space and car parks is proposed. This will consist of individual trees without understory or managed parkland and as such is not considered to have the potential to create a fire hazard.

3 BUSHFIRE ASSESSMENT RESULTS

3.1 Assessment Inputs

In order to identify the potential bushfire risks, it is necessary to describe the bushfire problem associated with the subject land. The assessment takes into consideration the:

- the topography and slope of the subject land;
- type and classification of vegetation present on and adjacent to the subject land;
- distances between the classifiable vegetation; and
- current and proposed future land use.

3.1.1 Slope

The study area has generally flat topography and grades gently from 6mAHD in the south-east to 3mAHD in the west. The study area has a few low points of approximately 1-2mAHD through the centre of the study area, as shown in Figure 4.

The effective slope (that is the slope that will affect the behaviour of an approaching bushfire) underneath the vegetation across the River to the west is upslope.

Slope is therefore not considered to be a factor in terms of increasing bushfire hazard.

3.1.2 Current and future land use

The subject land comprises four key precincts:

- The area bounded by Great Eastern Highway, Stoneham Street and Resolution Drive is characterised by predominately mixed business development and small pockets of retail (food and beverage) uses along Great Eastern Highway;
- The western portion of the subject land encompassing the Belmont Trust Land (Grove Farm Reserve) is previously cleared with large mature trees sparsely located around the reserve. Grove Farm Reserve was historically used for recreation purposes, specifically a baseball field;
- The northern portion of the subject land is partially developed with the WA Turf Club Headquarters and Ascot kilns and chimney stacks; and
- The remainder of the subject land within the north-eastern corner is largely undeveloped and comprises a number of existing road reserves and WA Turf Club owned land used for overflow parking on racing event days.

The Golden Gateway Precinct will provide for a diverse range of land uses. The primary land use within the Structure Plan area is residential, supplemented by commercial uses and local open space.

3.1.3 Vegetation types

On the basis of a site visit on 13 March 2018, vegetation at the site and within 150m was assessed. Vegetation within 100m was classified according to the descriptions provided in AS 3959 – 2009, and includes the following three vegetation types:

- Class B Woodland – Low woodland (B7): Low trees and shrubs 2-10m high; foliage cover less than 10%. Dominated by eucalypts and Acacias. Often have a grassy understorey or low shrubs. Acacias and Casuarina woodlands grade to Atriplex shrublands in the arid and semi-arid zones.
- Low threat vegetation – AS3959 2.2.3.2(b) - Single area of vegetation less than 1ha and not within 100m of other areas of vegetation being classified.
- Low threat vegetation – AS3959 2.2.3.2(f) - grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks.

The vegetation within the subject land and 150m surrounding is shown in Table 1 and Figure 4.

Table 1: Vegetation classification

Photo point		Vegetation class	Vegetation type	Description
1 Plot 1		Low Threat Exclusion Clause 2.2.3.2 (f)	Ascot Racecourse	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
2 Plot 2		Low Threat Exclusion Clause 2.2.3.2 (f)	Ascot Racecourse	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
3 Plot 3		Low Threat Exclusion Clause 2.2.3.2 (f)	Managed parkland	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks

Photo point		Vegetation class	Vegetation type	Description
4 Plot 3		Low Threat Exclusion Clause 2.2.3.2 (f)	Managed parkland	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
5 Plot 3		Low Threat Exclusion Clause 2.2.3.2 (f)	Managed parkland	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
6 Plot 4		Low Threat Exclusion Clause 2.2.3.2 (f)	Public reserve maintained in low threat state	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
7 Plot 4		Low Threat Exclusion Clause 2.2.3.2 (f)		Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks

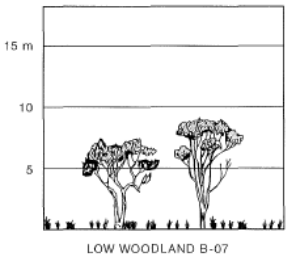
Photo point		Vegetation class	Vegetation type	Description
8 Plot 8		Low Threat Exclusion Clause 2.2.3.2(b)	Regrowth	Single area of vegetation less than 1ha and not within 100m of other areas of vegetation being classified
9 Plot 5		Class B: Woodland  LOW WOODLAND B-07	B07 - Low Woodland	Low trees and shrubs 2-10m high; foliage cover less than 10%. Dominated by eucalypts and Acacias. Often have a grassy understorey or low shrubs. Acacias and Casuarina woodlands grade to Atriplex shrublands in the arid and semi-arid zones.
10 Plot 6		Low Threat Exclusion Clause 2.2.3.2 (f)	Drain	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
11 Plot 6		Low Threat Exclusion Clause 2.2.3.2 (f)	Managed parkland	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks

Photo point		Vegetation class	Vegetation type	Description
12 Plot 7		Low Threat Exclusion Clause 2.2.3.2 (f)	Commercial office landscaping	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks
13 Plot 8		Low Threat Exclusion Clause 2.2.3.2 (f)	Primary school	Grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks

3.2 Assessment outputs

Consistent with Appendix Two of the *Guidelines for Planning in Bushfire Prone Areas* (V1.3, WAPC, 2017), as this bushfire management plan is to support an application where the indicative development footprint is known, a Bushfire Attack Level (BAL) assessment has been undertaken in accordance with Method 1 of AS3959: Construction of buildings in bushfire prone areas. Table 2 provides a summary of the assessment.

Table 2: BAL assessment summary

Plot	Vegetation Classification	Effective Slope	Separation Distance to the Classified Vegetation (m)	Hazard Level
6	Woodland (B)	Upslope	70m to the edge of the Parks and Recreation Reserve and 108m to the edge of the proposed development area (Belmont Trust Land)	BAL-LOW

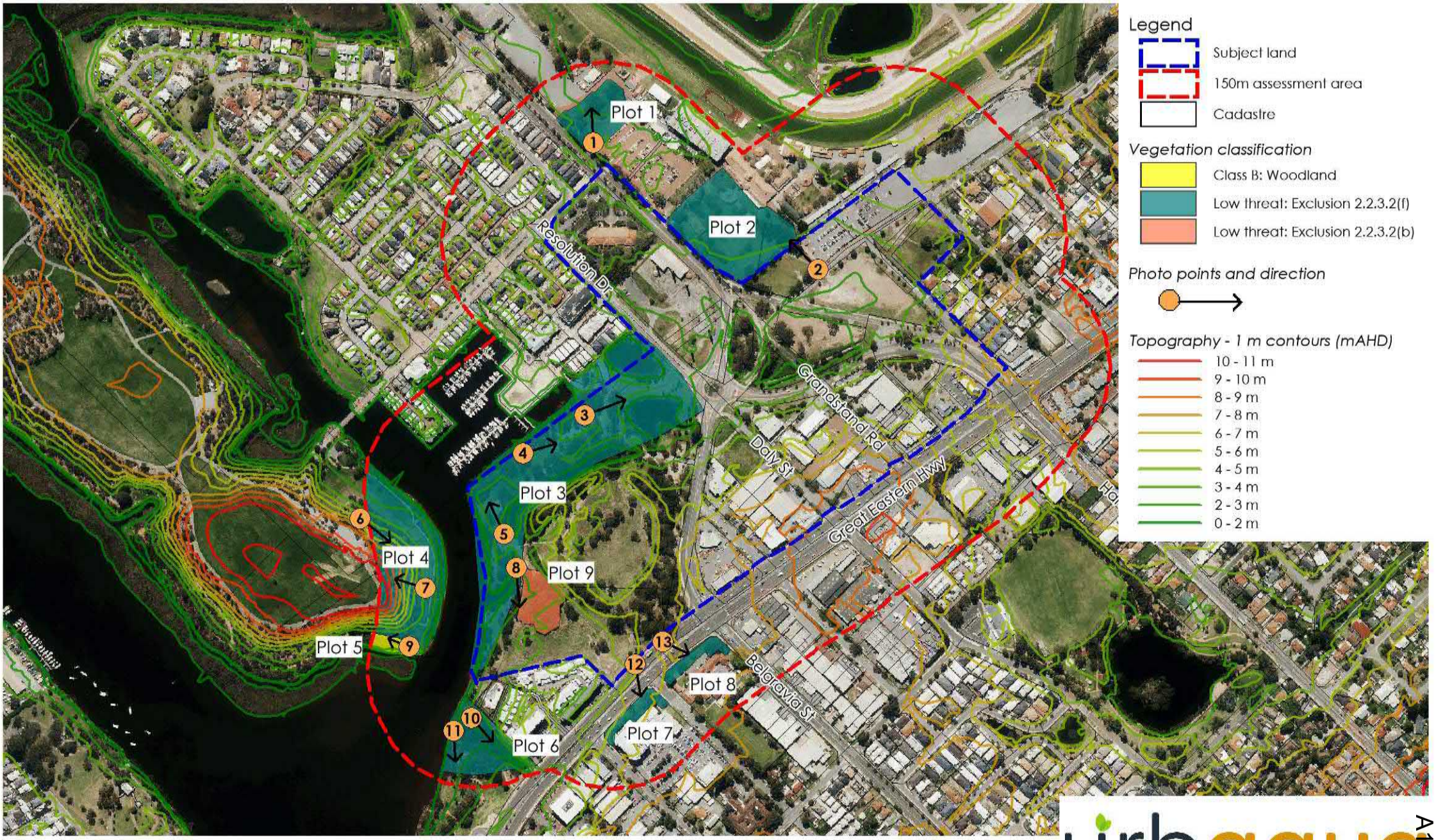
A BAL contour map has been created for the proposed development which shows indicative BAL ratings for the site (Figure 5) consistent with Appendix 3 of the *Guidelines for Planning in Bushfire Prone Areas* (V1.3, WAPC, 2017). The BAL contour map was prepared on the basis of FDI 80; the vegetation classification shown in Table 1; and slope shown on Figure 4. An excerpt from AS3959 is provided in Table 3.

Table 3: Excerpt from AS 3959, Table 2.4.3, Distance (m) of the site from the predominant vegetation class

FDI 80 (1090 K)	Vegetation classification and slope
Bushfire attack levels (BALs)	Class B: Woodland - Upslope and flat land
BAL-FZ	<10 m
BAL-40	10-<14
BAL-29	14-<20
BAL-19	20-<29
BAL-12.5	29-<100
BAL-LOW	Beyond 100m

City of Belmont: Golden Gateway - Bushfire Management Plan

Figure 4: Post-development vegetation classification



Data source: CoB, Landgate. Created by: AT. Projection: MGA: zone 50.

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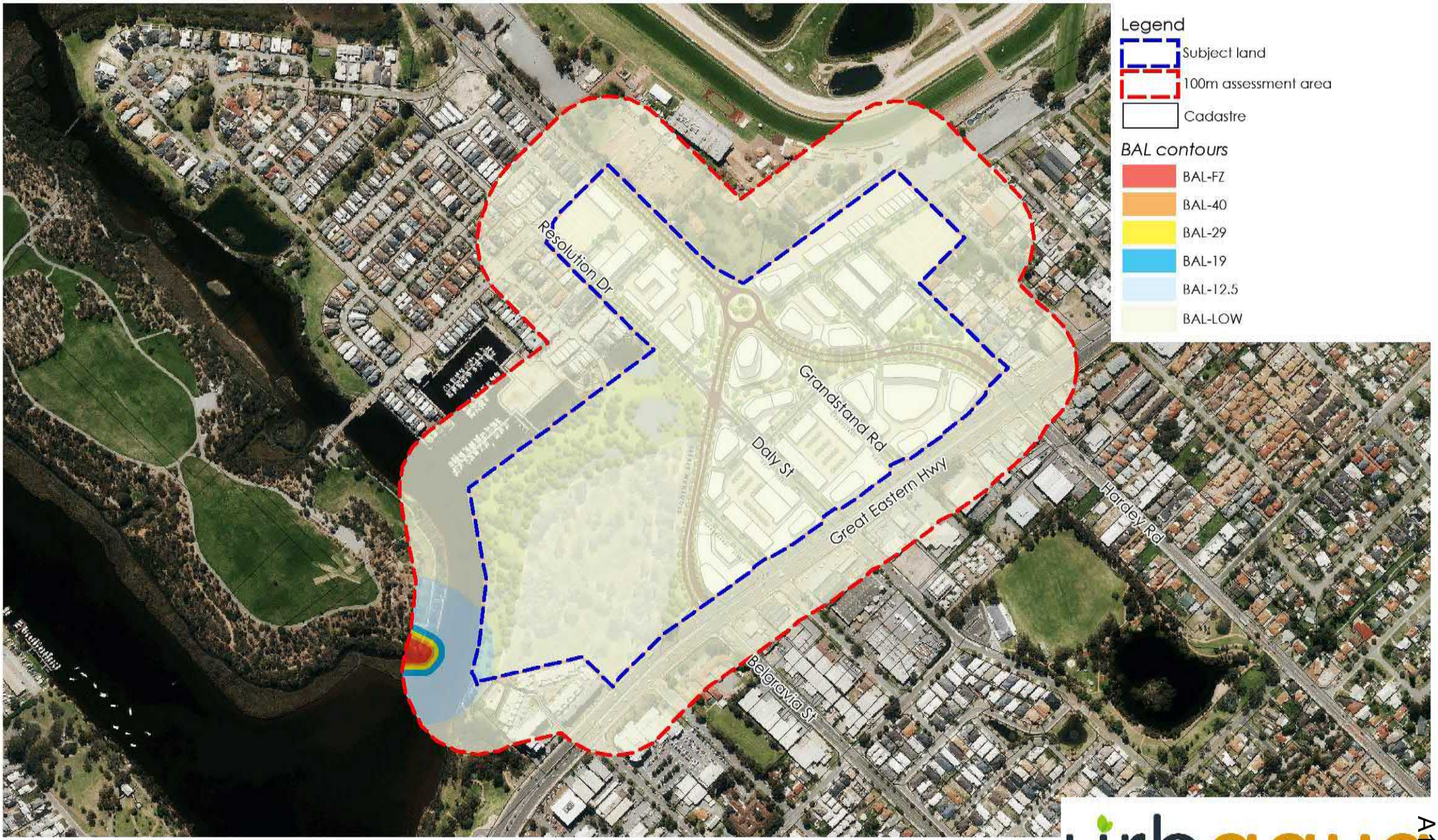
City of Belmont: Golden Gateway - Bushfire Management Plan

Figure 5: BAL contour map



Data source: CoB, Landgate, AS/NZS 3959-2009. Created by: AT. Projection: MGA: zone 50.

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4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

The subject land is adjacent to an area of vegetation which has the potential to create a bushfire risk.

It is considered that the bushfire risk to the proposed development can be adequately managed through appropriate location and siting and design of development, as well as necessary vehicular access and water supply which will be provided to the development.

Bushfire hazard to the proposed development is therefore considered to be low. This conclusion is substantiated further below.

4.1 Location

After development, the subject land will not contain any vegetation that is considered to be a bushfire hazard.

Although fire risk exists from vegetation adjacent to the subject land, the subject land is not subject to BAL-40 or BAL-FZ and therefore this proposal does not result in the intensification of any development in areas that are subject to extreme hazard.

4.2 Siting and design of development

Bushfire risk from vegetation outside the subject land is likely to remain as this vegetation is associated with significant environmental values (Bush Forever Site 313). It is noted that the Swan River establishes sufficient separation between the bushfire hazard and the edge of subject land to achieve BAL ratings of BAL-12.5 and less, consistent with Method 1 of AS3959. It is noted that the public open space reserve provides a further separation such that the land to be developed in the future (the Belmont Trust Land) is rated at BAL-LOW.

As no proposed areas of development will be subject to BAL-40 or BAL-FZ, it is considered that development has been sited to avoid areas of extreme bushfire risk. All habitable dwellings will be constructed to meet the requirements of *AS3959 Construction of buildings in Bushfire Prone Areas* where necessary.

4.3 Vehicular access

The subject site is afforded excellent access from an integrated regional (existing and future) road network. The subject land is bounded by Great Eastern Highway to the south which provides access to the west towards the Perth CBD, Graham Farmer Freeway and onto South Perth, Melville and Fremantle via Canning Highway. To the east, Great Eastern Highway provides access to Perth Airport, Tonkin/Roe Highway and onto Guildford, Midland and the Swan Valley. These networks provide excellent access to and egress from the subject land.

The proposed local road network provides for at least two different access and egress routes to the proposed residential and commercial areas. The localised road network includes a network of local distributor and access roads providing access to key regional and district roads such as Great Eastern Highway and the Garret Road bridge which include Grandstand Road, Resolution Drive and Stoneham Street.

All roads and transport infrastructure will be designed and constructed to meet the requirements of the *Guidelines for Planning in Bushfire Prone Areas* (Version 1.3 WAPC, 2017) Appendix Four, Table 4, as replicated in Table 4 below.

Table 4: Vehicular access technical requirements (WAPC, 2017)

Technical Requirement	Public road	Cul-de-sac	Private driveway	Emergency access way	Fire service access routes
Minimum trafficable surface (m)	6	6	4	6	6
Horizontal clearance (m)	6	6	6	6	6
Vertical clearance (m)	4	N/A	4.5	4.5	4.5
Maximum grade over <50m	1 in 10	1 in 10	1 in 10	1 in 10	1 in 10
Minimum weight capacity (t)	15	15	15	15	15
Maximum cross fall	1 in 33	1 in 33	1 in 33	1 in 33	1 in 33
Curves minimum inner radius (m)	8.5	8.5	8.5	8.5	8.5
Additional specialist requirements					

4.4 Water

The proposed development is currently serviced by a reticulated water supply, together with fire hydrants, in accordance with the specifications of the Water Corporation and Department of Fire and Emergency Services (DFES).

Contractors or others carrying out building or other works at the site must not cover hydrants and/or the markings indicating their location. In the event activities occur that do result in hydrants or markings being covered, damaged, or removed, it will be the responsibility of the relevant contractor to rectify the situation.

5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA

The subject land is adjacent to an area of bushfire risk. Bushfire risk mitigation and management measures have been identified to reduce bushfire risk to achieve the objectives of SPP3.7, as previously outlined in Section 3.

The bushfire risk mitigation strategies proposed comply with the acceptable solutions for each of the Bushfire Protection Criteria detailed in *Guidelines for Planning in Bushfire Prone Areas* (2017). They are summarised in Table 5.

5.1 Compliance Table

Table 5: Bushfire protection criteria assessment

Element	Acceptable solution	Compliance	
1. Location	A1.1 Development location	☑	No development is proposed in areas subject to BAL-40 or BAL-FZ.
2. Siting and design of development	A2.2 Asset Protection Zone	☑	No development will be subject to BAL-40 or BAL-FZ. Habitable buildings will be constructed in accordance with AS3959.
3. Vehicular Access	A3.1 Two access routes	☑	Short and long term public access is provided which ensures a minimum 2 access routes are provided at all times.
	A3.2 Public road	☑	All public roads meet the requirements of Table 4 of Appendix 4 of the Guidelines for Planning in Bushfire Prone Areas (WAPC, 2017)
	A3.3 Cul-de-sac	☑	N/A – no cul-de-sacs are proposed.
	A3.4 Battle-axe	☑	N/A - No battle-axe lots are proposed.
	A3.5 Private driveway longer than 50m	☑	N/A - No lots have driveways greater than 50m in length.
	A3.6 Emergency access way	☑	N/A – No emergency access ways are proposed
	A3.7 Fire service access routes	☑	The existing road network provides appropriate fire service access routes.
	A3.8 Firebreak widths	☑	N/A
4. Water	A4.1 Reticulated areas	☑	The development is currently serviced by reticulated water and fire hydrants which meet Water Corporation and DFES specifications
	A4.2 Non-reticulated areas	☑	N/A
	A4.3 Individual lots within non-reticulated areas	☑	N/A

5.2 Bushfire management strategies

As the area proposed for development is greater than 100m from any classifiable vegetation (due to the presence of the Parks and Recreation Reserve), no bushfire management strategies are considered necessary.

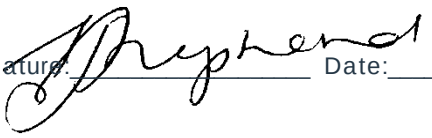
There is insufficient risk to warrant specific construction requirements.

It is noted that any new roads will be constructed to meet Main Roads and Local Government requirements and that water and hydrants are provided to DFES and Water Corporation standards.

5.3 Certification by Bushfire Consultant

I, Shelley Shepherd, certify that at the time of inspection, the BAL ratings contained within this BMP are correct.

The Bushfire Attack Level to the proposed development area is BAL-LOW. There is insufficient risk to warrant specific construction requirements and no specific management actions are required to mitigate bushfire risk to the proposed development area.

Signature:  Date: 2 May 2018

Client: City of Belmont

Report	Version	Prepared by	Reviewed by	Submitted to Client	
				Copies	Date
Draft report	V1	SSh	HBr	Electronic	2 May 2018
Final Report	V2	SSh	HBr	Electronic	21 June 2018

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Ordinary Council Meeting 28/08/18

Item 12.1 refers

Attachment 3

Appendix B
Environmental Assessment Report

Environmental Report: Golden Gateway

Prepared for City of Belmont

By Essential Environmental

June 2018

essential environmental

Disclaimer and Limitation

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EXECUTIVE SUMMARY

The City of Belmont has engaged Essential Environmental to prepare an environmental report to support structure planning vicinity of Great Eastern Hwy, Resolution Dr, Grandstand Rd and Stoneham St, Ascot, within the City of Belmont.

This report provides an analysis of the environmental constraints and considerations to development and proposes broad approaches to mitigate any impacts and/or constraints on the basis of future land use.

The majority of the site has been historically cleared, although a number of significant trees have been established predominantly along driveways and boundaries and within the Grove Farm Reserve. The study area abuts a small section of the Swan River, which is a Bush Forever site, a conservation category wetland, and an environmentally sensitive area. Development of the study area will require adequate management of bushfire risk (the subject of a separate management plan) and potential impacts on fauna species.

In addition, a range of management strategies have been proposed to effectively manage or mitigate potential environmental impacts caused as a result of the development. Proposed management actions are summarised in the table below. It is considered that urban development of the site is an acceptable land use given the current environmental condition and lack of significance of the site, and in consideration of the proposed management strategies outlined in this report.

Issue	Action	Frequency	Responsibility
Preconstruction phase			
Contamination	Complete preliminary site investigation for contamination in accordance with Contaminated Sites Act 2003 should areas of known contamination be disturbed.	Once	Developer
Acid sulfate soils	Complete self-assessment checklist and consider need for a preliminary site assessment.	Once	Developer Consistent with DPLH and DWER guidelines
Vegetation and flora	Clearly delineate POS areas and trees to be retained.	Once	Licensed Surveyor (Developer)
Fauna and habitat	All site staff to participate in Environment, Health and Safety inductions which provide requirements for management of significant fauna and reporting procedures for environmental incidents.	Once	Developer and Construction contractor

Issue	Action	Frequency	Responsibility
Water management	Refer the local structure plan to the Department of Biodiversity, Conservation and Attractions as it contains a portion of land within and abutting the Swan River Trust Development Control Area.	Once	Developer/City of Belmont
	A Local water management strategy will be completed and used as the basis for detailed design. Following approval of the LWMS, UWMP(s) will be prepared prior to subdivision for approval by City of Belmont.		Developer, in accordance with SPP 2.9: Water Resources
Bushfire	A Bushfire Management Plan will be prepared to support the LSP. The Bushfire Management Plan will be revised and implemented at subdivision.	Once	Developer, in accordance with SPP 3.7: Planning in Bushfire Prone Areas
Construction phase			
Soils and topography	Ground disturbing activities should be kept to a minimum and carried out 'as required' (in stages) immediately prior to lots being released for sale as part of a 'staged' development of the site.	Ongoing during construction phase.	Construction Contractor (Developer)
Contamination	Management of any identified contamination in accordance with the Contaminated Sites Act 2003.	Ongoing during construction phase.	Construction Contractor (Developer)
Acid sulfate soils	Management of any identified ASS consistent with DPLH and DWER guidelines.	Ongoing during construction phase.	Construction Contractor (Developer)
Vegetation and flora	Maintain markings and fencing around vegetation and trees to be retained. Cleared vegetation to be mulched and stored on site.	Ongoing during construction phase.	Construction Contractor (Developer)
Fauna and habitat	Undertake clearing in the direction of the river to allow fauna to escape.	Ongoing during construction phase.	Construction Contractor (Developer)
Water management	Manage sediment transport to waterways and drainage systems consistent with the LWMS.	Ongoing during construction phase.	Construction Contractor (Developer)

Issue	Action	Frequency	Responsibility
Aboriginal heritage	In the event a site is discovered, all work in the area will cease and the Department of Planning, Lands and Heritage will be contacted.	Ongoing during construction phase.	Construction Contractor (Developer)
Construction impacts	Ensure dust and sediment runoff is adequately managed. Ensure appropriate waste disposal of building materials.	Ongoing during construction phase.	Construction Contractor (Developer)
Post construction phase			
Soils and topography	Landscape or stabilise cleared areas immediately.	Once	Construction Contractor (Developer)
Vegetation and flora	Inspect fencing (if applicable) and replace if required. Ensure ongoing maintenance of retained vegetation and any revegetation areas / native landscaping prior to handover.	6 months Ongoing until handover.	Developer until hand over to City of Belmont

CONTENTS

Tables

Figures

1 INTRODUCTION

The City of Belmont has engaged Essential Environmental to prepare an environmental report to support structure planning in the vicinity of Great Eastern Hwy, Resolution Dr, Grandstand Rd and Stoneham St, Ascot, within the City of Belmont.

This report provides an analysis of the environmental constraints and considerations to development and proposes broad approaches to mitigate any impacts and/or constraints on the basis of likely future commercial, mixed use and residential land use.

1.1 Study area

The study area consists of approximately 31.8 hectares of land in the vicinity of Great Eastern Hwy, Resolution Dr, Grandstand Rd and Stoneham St in Ascot. The study area currently comprises of a mixture of commercial lots, the heritage listed Ascot Brick Works and public open space (Figure 1).

The study area has 4 distinct regions: (i) the south-eastern commercial area, bound by Great Eastern Hwy, Resolution Dr and Stoneham St; (ii) west where Grove Farm Reserve is bound by Great Eastern Hwy and public open space adjacent to the Swan River; (iii) largely undeveloped land, with exception of local distributor roads, through the centre of the study area; and (iv) most northern portion within which is located the Perth Racing Administration Office.

1.2 Methodology

This report considers the following environmental aspects of the study area to inform preparation of a local structure plan and the future development of the area:

- Topography, soils (including acid sulfate soils), contamination;
- Vegetation, flora and fauna and bushfire risk;
- Water resources; and
- Heritage.

The following information has been provided on the basis of a desktop investigation only, using data and information that is publically available. No attempt has been made to ground-truth the information at this stage.

1.3 Previous environmental assessments and key requirements

Limited environmental assessment has been undertaken for the site to date.

The following City of Belmont strategic and planning documents are considered relevant to this environmental report:

- City of Belmont Environmental Plan 2010-2016;
- City of Belmont Local Planning Scheme No. 15 scheme report supporting document: Environment;
- City of Belmont Local Planning Scheme No. 15 scheme report supporting document: Heritage.

- City of Belmont Local Planning Scheme No. 15 scheme report supporting document: Public Open Space.
- Belmont Foreshore Precinct Plan
- City of Belmont Street Trees Plan 2013.

There are a number of pieces of legislation, which govern management of the environment and have been considered as part of this assessment. These are listed in Table 1.

Table 1: Relevant environmental legislation

Legislation	Summary of relevant intent
Aboriginal Heritage Act 1972	Protects significant Aboriginal heritage, registered or unregistered.
Biosecurity and Agriculture Management Act 2007	Provides for the management of declared pests.
Contaminated Sites Act 2003	Requires the reporting of potential contaminated sites to the Department of Water and Environment Regulation.
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act)	Provides protection for Matters of National Environmental Significance (MNES).
Environmental Protection Act 1986	Provides protection for the environment as well as the licencing of prescribed premises and regulation of the clearing of remnant vegetation.
Fire and Emergency Services Act 1998	Provides for the management of bushfire risk.
Heritage of Western Australia Act 1990	Protection of places listed by the Heritage Council of WA.
Swan and Canning Rivers Management Act 2006	Establishes the Swan Canning River park and provides for the assessment of planning proposals within this area by the Swan River Trust Board.
Wildlife Conservation Act 1950 (WC Act)	Protects species of flora & fauna and communities that are listed.

The following environmental policies are also considered relevant to the management of potential environmental impacts on the site:

- EPA Guidance Statement No. 33 – Environmental Guidance for Land Development (EPA, 2008);
- Better Urban Water Management (WAPC, 2008); and
- Liveable Neighbourhoods (WAPC, 2011).

City of Belmont: Golden Gateway - Desktop environmental report
Figure 1: Study area location

Data source: DoP, CoB, Landgate. Created by: RM. Projection: MGA: zone 50.

Scale 1: 9,000 @ A4

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2 PROPOSED DEVELOPMENT

2.1 Planning context

The majority of the study area is zoned 'Urban' under the Metropolitan Region Scheme, with a portion zoned for 'Mixed use' and reserved for 'Parks and Recreation' under the City of Belmont Local Planning Scheme No. 15 (Figure **2**).

The City of Belmont Local Planning Scheme No. 15, adopted in December 2011, provides a district level framework to guide more detailed planning for the City. It requires local structure plans to be prepared to provide the level of detailed planning required to facilitate subdivision and development within the scheme area. The Western Australian Planning Commission and the City of Belmont are preparing a local structure plan to guide land use and development outcomes for the Golden Gateway precinct, the subject land.

The Golden Gateway Precinct includes a large portion of 'Mixed use' land, which encompasses the historical Ascot's Bristle beehive kilns and chimney stacks and portions of the Ascot Racecourse. The precinct also contains approximately 5.3 ha of Parks and Recreation reserve which covers the Belmont Trust Land. There is also a small portion of Parks and Recreation: water supply sewerage and drainage reserve, which is under the control of the Water Corporation.

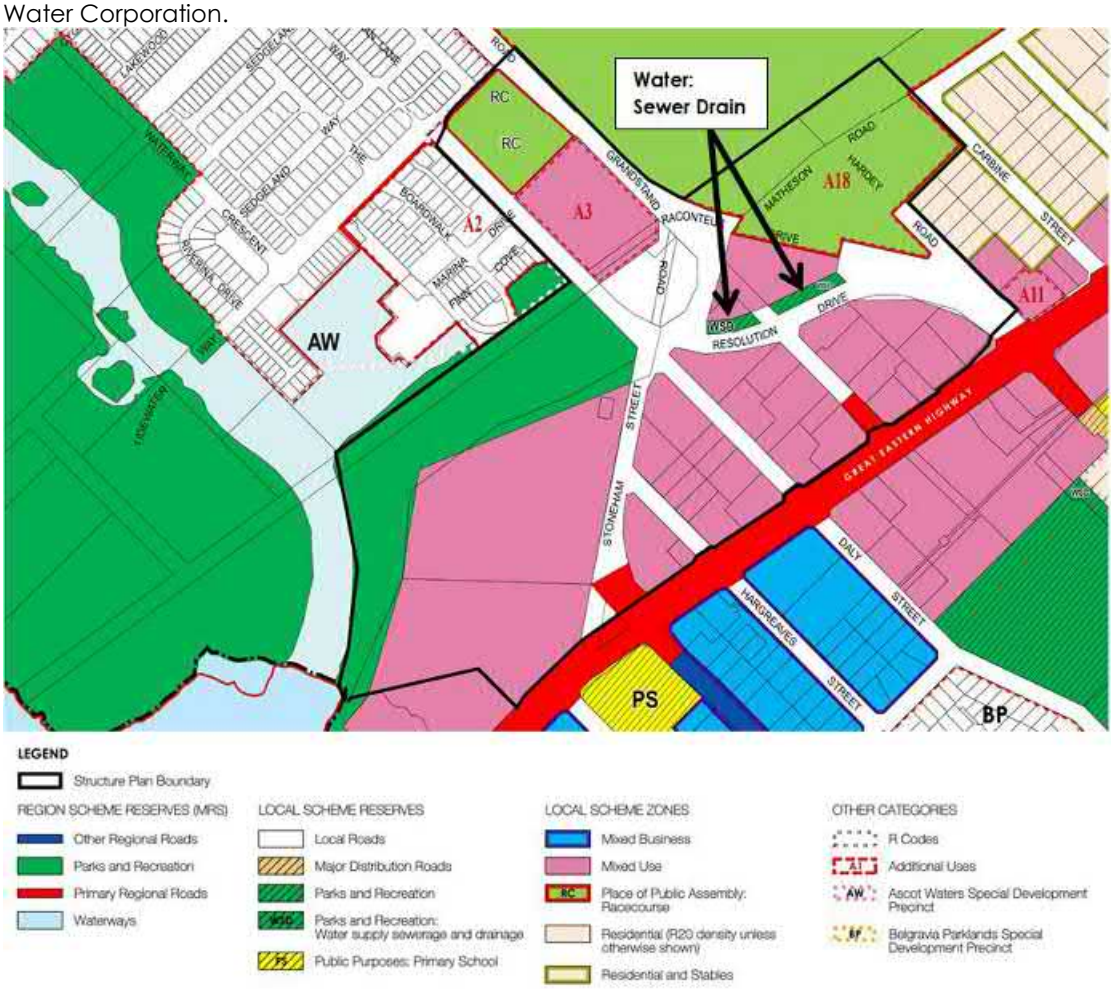


Figure 2**: Local Planning Scheme**

3 EXISTING ENVIRONMENT

A desktop environmental investigation of the study area has been undertaken, the findings of which are presented below.

3.1 Land use context

3.1.1 Historical land use

Historical aerial photography from Landgate suggests the land has been used for commercial purposes for over 50 years, with the majority of lots being approximately 1/3 hectare, accommodating warehouse facilities and such, predominantly adjacent to Great Eastern Hwy. The northern portion of the study area contains the Bristle kilns and Brick Works, which were established in 1929 and ceased operation in 1982 (Heritage Council, WA). The western portion of the study area, over the Belmont Trust Land, was historically used for sporting purposes such baseball fields (Clark, 1952), and more recently as a temporary worksite for development in the area, such as the widening of the Great Eastern Hwy.

3.1.2 Current land use

Commercial property still exists adjacent to Great Eastern Hwy south of Resolution Dr and Stoneham St. East of Stoneham St, the Belmont Trust Land is largely cleared and vacant with large mature trees sparsely located though the middle of the reserve. The perimeter of the reserve is lined with small to large mature trees such as *Brachychiton acerifolius* (Illawarra Flame Tree) and *Eucalyptus grandis* (Flooded Gum).

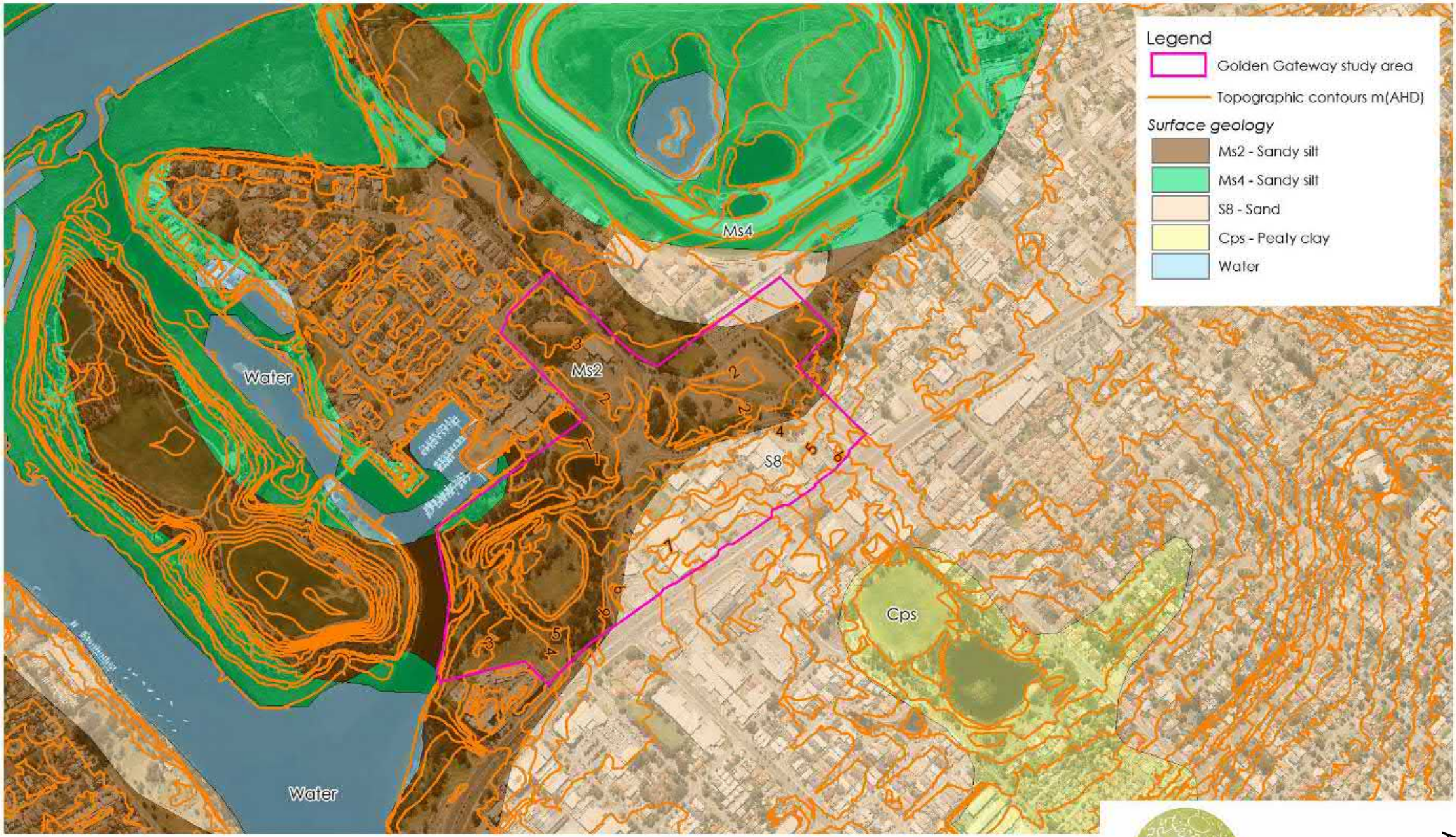
The north and east of Resolution Dr contains a parcel of land approximately 5 hectares in size that is largely vacant, with the exception of a few mature trees, used as overflow parking servicing the Ascot Racecourse. This portion of land, as shown in Figure **2**, also accommodates a 150 m Water Corporation open channel drain, which discharges via piped drainage under the Stoneham St/Resolution Drive roundabout into the Ascot Waters compensation basin on the north-western boundary of the study area. North of the Ascot Waters Compensation Basin is a second compensation basin servicing the Ascot Waters development. This compensation basin is herein referred to as 'Northern Drainage Lake'. The northern portion of the site contains the Perth Racing Administration Offices.

The Belmont Foreshore Precinct Plan (City of Belmont, 2014) was prepared to guide development and landuse within the river setting and ensure that the landscape values of the river system are conserved or enhanced. The study area, particularly Belmont Trust Land and public open space contains areas identified as parkland within the precinct plan, characterised by open lawns surrounding large individual trees. The precinct plan outlines strategic recommendations that will need to be incorporated into future planning of the Belmont Trust Land.

3.2 Topography, geology and soils

The study area has generally flat topography and grades gently from 6mAHD in the south-east to 3mAHD in the west. The study area has a few low points of approximately 1-2mAHD through the centre of the study area, as shown in Figure 3.

City of Belmont: Golden Gateway - Desktop environmental report
Figure 3: Topography and surface geology



Data source: DMP, Landgate. Created by: RM. Projection: MGA: zone 50.

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3.2.1 Geology

The surface geology is described broadly as Guildford formation: Alluvial sand and clay with shallow-marine and estuarine lenses and local basal conglomerate (WA surface geology 1:250,000 scale geological maps, Geological Survey of WA, and Geoscience Australia).

As shown in Figure 3, two-thirds of the north-western portion of the study area is classified as Ms2 – Sandy Silt, and the eastern third is classified as S8 – Sand, with a small portion of peaty clay adjacent to the Ascot Waters marina, described as follows:

- Ms2 – Sandy Silt: strong brown to mild grey, mottled, blocky, disseminated fine sand, hard when dry, variable clay content. This soil type is historically resourced for clay bricks and tile manufacture. It has a low permeability and low potential for erosion. Sandy Silt has a low shrink swell potential, however is prone to flooding.
- S8 – Sand: very light grey at surface, yellow at depth, fine to medium grained, sub rounded quartz, moderately well sorted. Sand of eolian origin is used for construction purposes with a high permeability and low erosion potential. Well drained given a low water table.
- Cps – Peaty Clay: dark grey and black with variable sand content of lacustrine origin. This soil has low permeability, high erosion potential, and is prone to flooding.

3.2.2 Acid sulfate soils

A review of Department of Water and Environmental Regulation acid sulfate soils (ASS) risk mapping identifies two-thirds of the study area, predominantly the area coinciding with surface geology Ms2-Sandy Silt (see 3.2.1), as containing a Class I 'high to moderate' risk of ASS and the remainder, coinciding with S8-Sand, classified as Class II 'moderate to low' risk occurring within 3 m of the natural soil surface (Figure 3).

In 2009, Douglas Partners undertook an Acid Sulfate Soil investigation and Waste Classification investigation to assess the soil conditions of the Ascot Water Compensation Basin because the City intended to increase the size of the basin. The results of the investigation indicate the basin contains ASS, which are generally located at and below the groundwater table (approximately 1.5 m below ground level) (Douglas Partners, 2009). Should the soil below the groundwater table be exposed or groundwater be lowered for future development, further investigation of ASS is likely to be required.

Consistent with Department of Water and Environmental Regulation guidelines, sites should be investigated for ASS if any of the following works are proposed:

- ASS disturbing subdivision or development that is subject to conditional approval requiring the investigation and management of ASS;
- soil or sediment disturbance of 100 m^3 or more in an area depicted on an ASS risk map as Class I 'high to moderate risk of ASS occurring within 3 m of natural soil surface' (e.g. construction of roads, foundations, installation of underground infrastructure, drainage works, land forming works, dams and aquaculture ponds or sand or gravel extraction);
- soil or sediment disturbance of 100 m^3 or more with excavation from below the natural watertable in an area depicted on an ASS risk map as Class II 'moderate to low risk of ASS occurring within 3 m of natural soil surface but high to moderate risk of ASS beyond 3 m of natural soil surface';
- lowering of the watertable, whether temporary or permanent (e.g. for groundwater abstraction, dewatering, installation of new drainage, modification to existing drainage), in areas depicted in an ASS risk map as Class I 'high to moderate risk of

actual acid sulfate soils (AASS) or potential acid sulfate soils (PASS) occurrence' or Class II 'moderate to low risk of AASS or PASS occurrence within 3 m of natural soil surface';
- any dredging operations;
- extractive industry works (e.g. mineral sand mining) in any of the areas listed in Table 1 of the guidelines; and
- flood mitigation works, including construction of levees and flood gates in any of the areas listed in Table 1 of the guideline.

Given the Class I classification for ASS, it is recommended that a self-assessment checklist is completed for the study area. Some investigation for ASS will be required if any of the above works are proposed in Class 1 areas. Investigations should be undertaken consistent with Department of Water and Environmental Regulation guidelines: *Identification and investigation of acid sulfate soils and acidic landscapes* (DER, 2015).

If ASS is found to be present at the site, all site works must be carried out in accordance with a Department of Water and Environmental Regulation-approved ASS management plan.

3.2.3 *Contaminated sites*

DWER Contaminated sites database

A search of the Department of Water and Environmental Regulation Contaminated Sites database found no contaminated sites within the study area. Lot 5 Resolution Drive (160 Stoneham Street) is listed as "Possibly Contaminated, Investigation Required".

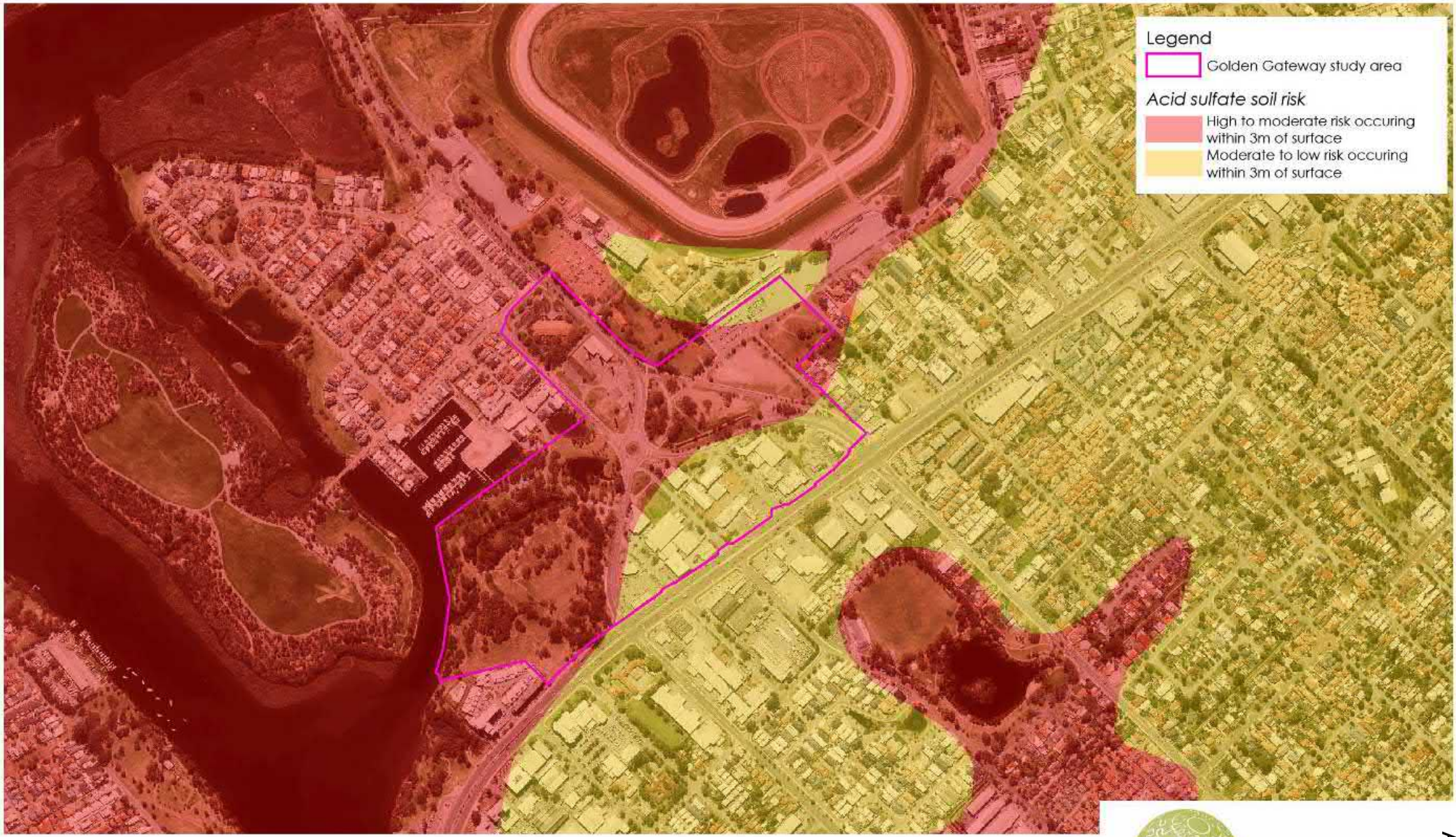
Ascot Water compensation basin

In 2009, Douglas Partners undertook a waste classification assessment at Lot 5 Stoneham St, corner of Resolution Dr and Stoneham St to assess the occurrence of acid sulphate soils; assess the nature and suitability of the soil for re-use; and assess the waste classification of the soil to be excavated, as the City of Belmont intended to increase the size of the current Ascot Waters Basin by approximately 4000 m^2.

A Preliminary and Detailed Site Investigation (PSI/DSI) was also undertaken in 2012 (GHD, 2013), and a subsequent Site Management Plan was developed. Soil and groundwater contamination were investigated to assess risk to ecological and human receptors in accordance with the Department of Water and Environment Regulation. A summary of the contamination issues identified through these investigations are as follows:

- Soil - Inorganic
    - Samples were tested for metals (As, Ca, Mn, Hg, Ni, Pb, Zn, Al, Fe). Exceedances of Ecological Investigation Levels (EIL, as per DER guidelines) were minimal, so metals were considered to be low risk to ecological receptors in the basin's current state. Metals were also below Health Investigation Levels (HIL-E), with the exception of lead. Further sampling indicated this was a localised test result.
    - Douglas Partners reported Asbestos Containing Materials (ACM) at several bores from 0 to 2 m below ground level (BGL). ACM was also found in samples collected at greater than 0.5 m BGL. However, no samples were taken near the surface profile (less than 0.3 m BGL) and the exposure pathway for the community or workers is considered incomplete. Overall, asbestos is considered low risk in its current state, however, further investigation needs to be undertaken.

City of Belmont: Golden Gateway - Desktop environmental report
Figure 4: Acid sulfate soil risk



Data source: DEC, Landgate. Created by: RM. Projection: MGA: zone 50.

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  - Organic
    - Both Douglas Partners and GHD reports indicate that encountered hydrocarbons were localised in nature and not considered to pose a risk to ecological or human receptors. However, works such as excavation would increase risk, and appropriate precautions should be taken.
- Groundwater
  - Inorganic
    - Three groundwater bores were sampled to test for Fe, Zn, Ni, NH_3, NO_2, Total Nitrogen and Total Phosphorous. Concentrations of Zn, NH_3, and Ni were reported marginally above ANZECC guidelines in all bores, and Fe concentrations were recorded 20 times above ANZECC guidelines. The exceedances are considered characteristic of winter conditions in the Swan River and natural soils in the locality (e.g. iron). Therefore, these results are not considered to reflect any potential risk to ecological or human receptors.
  - Organic
    - All samples were analysed for BTEX, Total Recoverable Hydrocarbons (TRH) and Polycyclic Aromatic Hydrocarbons (PAH). These were all reported below the DER Domestic Non-potable water criteria (GHD, 2013).

Based on these results, it is understood that the basin in its current state does not propose a risk to ecological or human receptors. Management guidelines provided in the Site Management Plan are effectively for the management of the basin expansion works and the City of Belmont have not proceeded with increasing the basin size.

3.3 Flora, fauna and vegetation

3.3.1 Conservation areas

There are no Bush Forever sites within the study area.

Bush Forever site 313, Swan River Salt Marshes, exists to the north and west of the study area, as shown on Figure 5. The closest proximity of the Bush Forever site to the study area is adjacent to the Belmont Trust Land at the south-western boundary. Apart from this point, the study area is largely disconnected from the Bush Forever site.

An environmentally sensitive area, as mapped by the Department of Water and Environmental Regulation surrounds the Bush Forever site as described above. This area is described as 'Temperate Saltmarsh' and listed as 'vulnerable' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Temperate salt marshes are an important habitat for local and migratory bird species (Department of Environment, 2015).

3.3.2 Flora

Searches of the EPBC Protected Matters Search Tool and the former Department of Parks and Wildlife (now Department of Biodiversity, Conservation and Attractions) NatureMap database were undertaken to identify flora species of conservation significance potentially occurring within a 2 km buffer of the study area. Results are outlined in Table 2.

Table 2: Conservation significant flora likely to occur in the study area

Taxa	Common name	Conservation status	
		WC Act	EPBC Act
Dillwynia dillwynioides	-	Priority 3	
Johnsonia sericea	Waldjumi	Priority 4	
Caladenia huegelii	King Spider-orchid		Endangered
Darwinia foetida	Muchea Bell		Critically endangered
Lepidossperma rostratum	Beaked Lepidosperma		Endangered

3.3.3 Fauna

Searches of the EPBC Protected Matters Search Tool and the Department of Biodiversity, Conservation and Attractions NatureMap database were undertaken to identify fauna species of conservation significance potentially occurring within a 2 km buffer of the study area. Results are outlined in Table 3.

Table 3: Conservation significant fauna known or likely to occur in the study area

Taxa	Common name	Conservation status	
		WC Act	EPBC Act
Calyptorhynchus latirostris	Carnaby's Balck Cockatoo	Rare or likely to become extinct	Endangered
Calidris ferruginea	Curlew Sandpiper	Rare or likely to become extinct	-
Caretta caretta	Loggerhead Turtle	-	Endangered
Chelonia mydas	Green Turtle	-	Vunerable
Dermochelys coriacea	Leatherback Turtle	-	Endangered
Natator depressus	Flatback Turtle	-	Vunerable
Diomedea epomophora epomophora	Southern Royal Albatross	-	Vunerable
Dioedea exulans (sensu lato)	Wandering Albatross	-	Vunerable
Pachyptila turtur subantarctia	Fairy Prion	-	Vunerable
Thalassarche cauta steadi	White-capped Albatross	-	Vunerable
Dasyurus geoggroii	Chuditch	-	Vunerable
Actitis hypoleucos	Common Sandpiper	Protected under international agreement	-
Ardea modesta	Eastern Great Egret	Protected under international agreement	-
Merops ornatus	Rainbow Bee-eater	Protected under international agreement	-
Tringa nebularia	Common Greenshank	Protected under international agreement	-
Falco peregrinus	Peregrine Falcon	Specially protected fauna	-
Oxyura australis	Blue-billed Duck	Priority 4	

WC=Wildlife Conservation Act 1950
EPBC=Environmental Protection and Biodiversity Conservation 1999

City of Belmont: Golden Gateway - Desktop environmental report
Figure 5: Vegetation

Data source: CoB, DPaW, DEC, Landgate. Created by: RM. Projection: MGA: zone 50.

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3.3.4 Bushfire risk

A portion of the study area along the banks of the Swan River is identified as a Bush Fire Prone Area (Figure 5), as designated by the Fire and Emergency Services (FES) Commissioner. Accordingly, any planning and development in the area must consider bushfire risk and the requirements of *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) (2015).

The *Guidelines for Planning in Bushfire Prone Areas* (WAPC, 2015) refer to the need for a Bushfire Hazard Level assessment and Bushfire Attack Level Contour Map where possible to support strategic planning proposals in Bushfire Prone Areas. It is understood that this is being addressed separately from this report for the structure plan area.

3.4 Water resources

3.4.1 Public Drinking Water Source Area

There are no Public Drinking Water Source Areas within the study area.

3.4.2 Surface water resources

The Swan River is adjacent to the western portion of the study area (Belmont Trust Land). The Swan River holds significant ecological value because it provides habitat for local and migratory birds and other fauna, with the majority of the River being identified as a conservation category wetland and environmentally protected area. Furthermore, the Swan River provides important social value for visual amenity, and recreation on the river and its reserves. The Swan River also holds significant Aboriginal and European heritage values.

The Department of Water and Environmental Regulation Floodway mapping indicates that a large area in the northern portion of the study area lies within the Swan River 100 year average reoccurrence interval (ARI) flood fringe (Figure 6).

A Water Corporation open drain exists at the centre of the study area. The open drain is approximately 150 m in length and directs runoff flows from the eastern urban and industrial areas to piped drainage under the Stoneham St/Resolution Drive roundabout to the Ascot Waters compensation basin (Figure 6). The compensation basin allows for dissipation of energy, mixing of water for oxygenation and sediment control before flowing through a further 350 m of open drain to the Swan River. A contaminated sites investigation was conducted by GHD and a Site Management Plan was subsequently developed in 2013 for the expansion of the compensation basin. The investigation identified issues of leachable metals, PAH and TPH fractions, and asbestos (see section 3.2.4).

North of the Ascot Waters Compensation Basin is a second compensation basin servicing the Ascot Water development, the Northern Drainage Lake. The Northern Drainage Lake has experienced water quality issues in the past with two fish kill incidents occurring during July and September 2012. The first incident involved approximately 300 fish deaths and the latter 100-150 fish deaths. No incidents have occurred since 2012. No water quality monitoring was undertaken by the City (pers, comm. Nicole Davey – City of Belmont coordinator-environment, 1 August 2016). However, investigations were undertaken by the Swan River Trust in 2012 in response to the fish kills. Water quality testing indicated low concentrations of algae, and higher concentrations of organic matter resulting in oxygen-depleted water. In addition, it was identified that fish often become trapped in backwaters such as this lake. It was concluded

that a combination of the above factors resulted in the fish kill incidents (pers. comms. Swan River Trust: Rivers Systems Branch, 23 August 2016).

A portion of the site is located within the Swan River Trust Development Control area (Figure 6). Land use planning and development within the Development Control Area is subject to approval of the Department of Biodiversity, Conservation and Attractions under Part 5 of the *Swan and Canning Rivers Management Act 2006* and the *Swan and Canning Rivers Management Regulations 2007*. This area includes the waterways of the Swan and Canning rivers and the adjoining parks and recreation reserves.

All development plans and applications for this area should be referred to Parks and Wildlife for advice in accordance with Clause 30A of the Metropolitan Region Scheme.

3.4.3 Groundwater resources

The study area is within the Perth groundwater area and City of Belmont sub-area. The Department of Water and Environmental Regulation's Water Register shows no available allocation within the study area, as shown in Table 4.

Table 4: Groundwater resource allocation and availability (as of January 2016)

Management Area	Management Sub Area	Resource	Allocation Limit	Allocated Volume	Remaining Volume
Perth	City of Belmont	Perth - Superficial Swan	1,497,000	2,243,830	-746,830

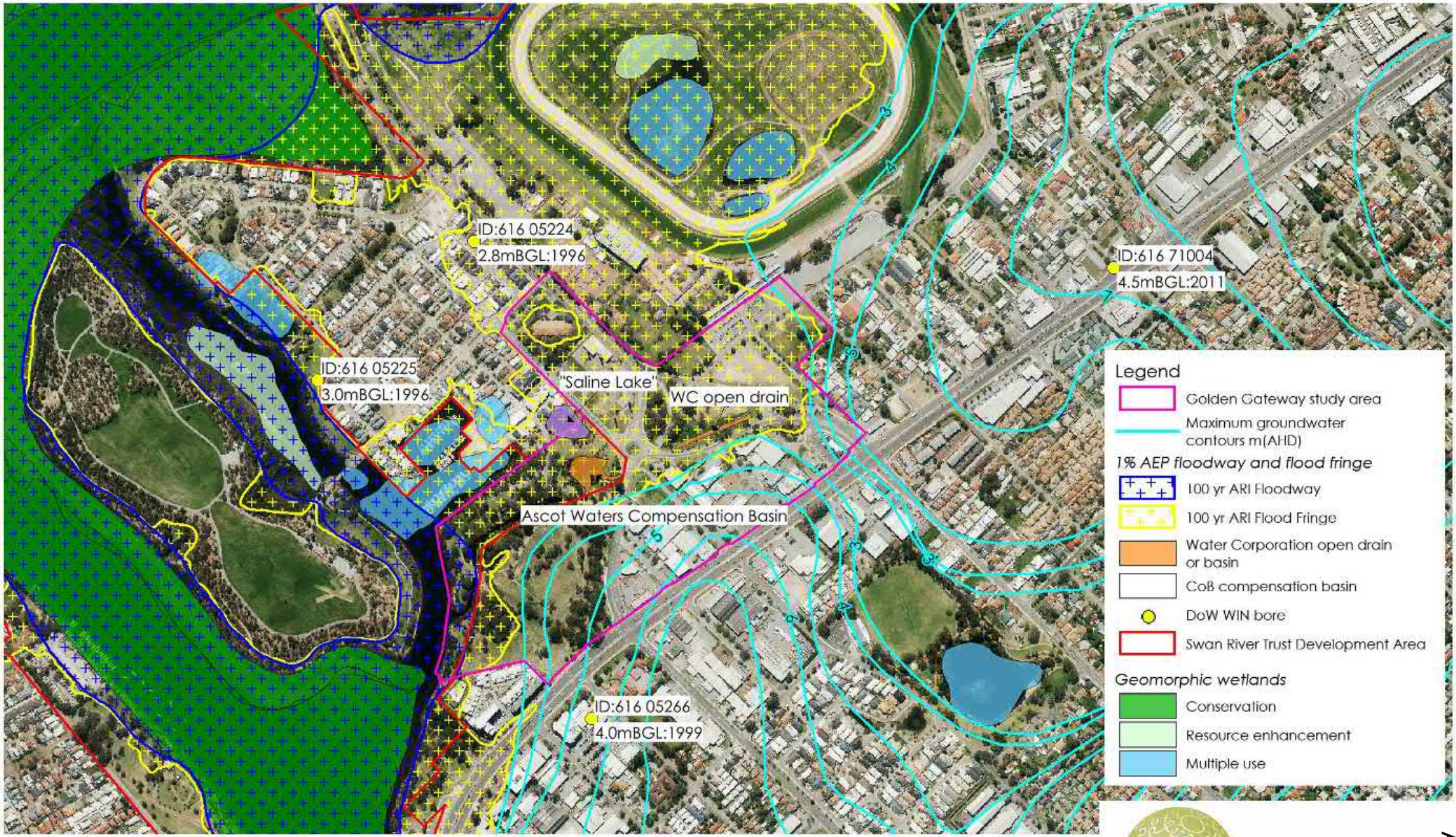
The City of Belmont currently has a groundwater licence allocation of 1,171,200 kL (licence no. 157042) located south-west of the study area along the Swan River.

It can be inferred from the groundwater levels in the Department of Water and Environmental Regulation's Perth Ground Water Atlas that maximum groundwater levels are within 3 m of the natural surface through the northern and central portions of the study area, with groundwater flowing in a north-westerly direction toward the Swan River.

A search of the Department of Water and Environmental Regulation Water Information Network (WIN) bores showed a few bores located within the vicinity of the study area; however, none of the bores have current monitoring data. The most recently sampled bore was in 2011(ID: 616 71004) situated 500 m east and hydrologically upstream of the study area showing a groundwater level 4.5 m below ground level (BGL). Consideration of this information together with that of another bore closer to the study area (ID: 616 05266), which has last recorded data from 1999 of 4 m BGL, indicates that the groundwater level may be lower than the mapped groundwater atlas level. Two other bores located north of the study area (ID: 616 05225 and ID: 616 05224), which have data from 1996 record groundwater at approximately 3 m BGL. These bores are part of the Ascot Waters development, which topographically sits approximately 2 m higher than the northern section of the study area and has been built-up for the purposes of the development. Therefore, it is reasonable to conclude that the groundwater level of these bores is less likely to be representative of the groundwater level within the study area than the surrounding locations.

It is noted that water resources and urban water management will be specifically addressed by the local water management strategy, which is being prepared to support the structure plan.

City of Belmont: Golden Gateway - Desktop environmental report
Figure 6: Water resources



Data source: CoB, DEC, DPaW, Landgate. Created by: RM. Projection: MGA: zone 50.

Scale 1: 9,000 @ A4

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3.5 Heritage

3.5.1 Aboriginal heritage

A search of the Department of Planning, Lands and Heritage aboriginal heritage enquiry system showed one site overlaying the study area (Figure 7):

- Site ID 3753 – Registered site, Name: Perth, Type: Historical, mythological, hunting place, named place, natural feature.

One other site is adjacent to the study area, however not within the boundary, site ID 3536 - Registered site, Name: Swan River, Type: mythological.

3.5.2 European heritage

The Bristle Kilns are beehive and tunnel kilns, with associated chimney and floor ducts, located at 197 Grandstand Rd Ascot. The Kilns were first built in 1930, manufacturing terracotta, stoneware and steel products. Production ceased in 1982 (Heritage Council, 2012). The Kilns and chimneys remain and were placed on the State Heritage List in 2003. The Bristle Kilns are a visually striking feature of the area and are viewed as an asset for restoration by the community (Strutt, 2015).

City of Belmont: Golden Gateway - Desktop environmental report
Figure 7: Heritage

Data source: DAA, Heritage Council, Landgate. Created by: RM. Projection: MGA: zone 50.

Scale 1: 9,000
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4 FINDINGS AND RECOMMENDATIONS

The following section presents findings of the desktop environmental assessment of the study area. It highlights a number of environmental issues, which should be considered as part of the preparation of the local structure plan and future development of the site. These relate primarily to:

- A portion of the site being within the Swan River Trust Development Control Area;
- Proximity to the Swan River and potential for offsite impacts on values;
- Bushfire risk;
- Contamination and water quality management in the compensating basins; and
- Soils and acid sulfate soils.

Key recommendations to address these issues are provided below.

4.1 Soils and topography

The north-western portion, approximately two-thirds of the largely undeveloped area, is classified as Sandy Silt (Ms2), which has a low permeability and will need to be considered with regards to runoff and stormwater disposal.

In order to reduce the potential for erosion and sediment transport to drains and the River, ground disturbing activities should be kept to a minimum and carried out 'as required' (in stages) immediately prior to lots being released for sale as part of a 'staged' development of the site. Where land is cleared, the area should be stabilised (e.g. through landscaping/ stabilising materials/dust suppression) as soon as possible.

4.2 Acid Sulfate Soils

Approximately two-thirds of the study area is mapped as being High to Moderate ASS Risk (<3 m from the surface). The WAPC *Acid Sulfate Soils Planning Guidelines* (WAPC, 2008) indicates that "acid sulphate soils are technically manageable in the majority of cases".

It is recommended that a self-assessment checklist is completed for the study area. ASS Investigation and, if required, Management Plans should be prepared at subdivision stage once the detailed design of the site is finalised. This should be undertaken in accordance with the Acid Sulphate Soils Guideline Series: *Identification and Investigation of Acid Sulphate Soils and Acidic Landscapes* (DER, 2015a) and *Treatment and Management of Soils and Water in Acid Sulphate Soil Landscapes* (DER, 2015b).

4.3 Surrounding land use and buffer requirements

The Swan River is the most important environmental attribute in proximity to the study area. Protection of the environmental values associated with the River requires consideration of compatible adjacent land uses that limit impacts. The provision of a 50 m buffer to the banks of the Swan River consistent with its designation as an environmentally protected area and conservation category wetland is generally applied.

Any proposal within the Swan River Trust Development Control Area that is likely to impact on the water quality and/or values of the Swan River should be referred to the Department of Biodiversity, Conservation and Attractions. It is recommended that consultation occur with the

Department of Biodiversity, Conservation and Attractions, Rivers and Estuaries Branch as part of the preparation of the local structure plan.

4.4 Vegetation and flora

The vegetation on the site is degraded and the site does not contain any areas with an intact understorey. No Declared Rare Flora are likely to be on the site and no priority species are likely to be present. It is recommended that no further vegetation assessment of the site is required and therefore, protected flora is not an impediment to the development of the area.

It is recommended that, as part of the detailed design process, any trees that can be retained in street verges, landscaped areas, parking areas and in road/entry areas should be identified and included in the detailed design plans for the area. Mature trees to be retained must be identified and clearly marked prior to commencement of any pre-construction activities.

4.5 Fauna and habitat

Due to historic clearing, urbanisation activities, and lack of native remnant vegetation across the majority of the study area, particularly the understorey, any fauna habitat is considered of low value to native fauna. This is with the exception of the portion of the study area that abuts the Swan River, where the foreshore area may provide important habitat for local and migratory birds.

To minimise impacts to fauna resulting from any clearing activities, the following management strategies are proposed:

- During construction, the extent of authorised clearing will be clearly defined and demarcated to avoid accidental clearing;
- Loud noises (e.g. air horns) will be made just prior to commencement of clearing;
- Clearing works will occur in the direction of a conservation area where possible, to allow animals time to escape;
- If any injured or distressed fauna are encountered during site works the Site Supervisor will be instructed to immediately call the Department of Biodiversity, Conservation and Attractions' Wildcare Hotline (08) 9474 9055, to allow for the closest appropriate registered wildlife rehabilitator to attend the site; and
- Where possible, local native species will be planted along road verges and median strips in and near conservation areas and strategic ecological linkages to enhance the value of the linkage to fauna.

4.6 Flood protection, groundwater and water quality management

As the development is partly within the Swan River Trust Development Control Area, planning and development should consider Department of Biodiversity, Conservation and Attractions' *Corporate policy statement no. 42: Planning for land use, development and permitting affecting the Swan Canning Development Control Area* (June 2016) and other relevant policies. Development may be subject to a Part 5; Clause 30A(2)a or Clause 30A(2)b application process.

A portion of the study area is also within the 100 year ARI flood fringe. Any development in the flood fringe should not impact on the risk of upstream flooding.

Limited assessment of groundwater levels has been undertaken at this stage. As shown on Figure 6, the maximum groundwater contours from the Department of Water and Environmental Regulation's Perth Groundwater Atlas (2004) only extends to the southern portion of the study area and local groundwater bores have limited information. It is recommended to further investigate groundwater levels.

Surface water and groundwater management will be described in the Local Water Management Strategy and any future Urban Water Management Plans that will be prepared for each stage of development. Therefore, potential impacts on surface water and groundwater can be mitigated and managed in order to achieve the objectives of *State Planning Policy 2.9: Water Resources* (WAPC, 2006).

A Local Water Management Strategy is being prepared in accordance with *Better Urban Water Management* (WAPC, 2008) to address the following:

- Identification of the site's current hydrological regime and existing environment;
- Identification of the constraints within the development area which may affect the design of the development with respect to urban stormwater drainage and management of groundwater;
- A description of the stormwater management strategy for minor and major events, including details on the proposed management practices to be employed;
- Identification and description of mechanisms to protect the water regime, including water quality and water levels. This will include a discussion of the overarching engineering principles that will be employed to mitigate any impact from run-off, groundwater and water quality issues, and ensure that the environment and the development will not be adversely impacted upon;
- Identification of the proposed water supply (including irrigation requirements) and wastewater disposal;
- Identification of monitoring requirements and derivation of agreed performance criteria for the urban water management system; and
- Identification of contingency measures to be implemented in the event that the system is not achieving agreed performance targets.

4.7 Heritage

A buffer area of a site of Aboriginal heritage has been identified to cross the boundary of the study area. All contractors working on the development will need to be made aware of their responsibilities under the *Aboriginal Heritage Act 1972* with regard to finding potential archaeological sites. In the event that a site is discovered, all work in the area will cease and the Department of Planning, Lands and Heritage will be contacted.

The Bristle Kilns are on the State Heritage list and future land use planning will need to take this into consideration.

4.8 Construction impacts

Construction activities need to be managed to minimise the impact to nearby Swan River, surrounding residents and the retained vegetation on-site. Impacts can include:

- Nuisance dust generation during bulk earthworks;
- Disturbance of ASS during earthworks and/or installation of services;

- Silt and sediment runoff to waterways and drains from uncontrolled runoff during site works;
- Inadvertent damage to trees and other vegetation earmarked for retention;
- Impacts to new stormwater drainage systems and existing environmentally sensitive areas from wind- and water-borne sediment during construction; and
- Inappropriate disposal of waste building material and poor housekeeping on building sites leading to wind-blown litter.

All of these potential impacts are manageable through appropriate engineering design and/or good site management practices.

4.9 Conclusion, constraints and opportunities

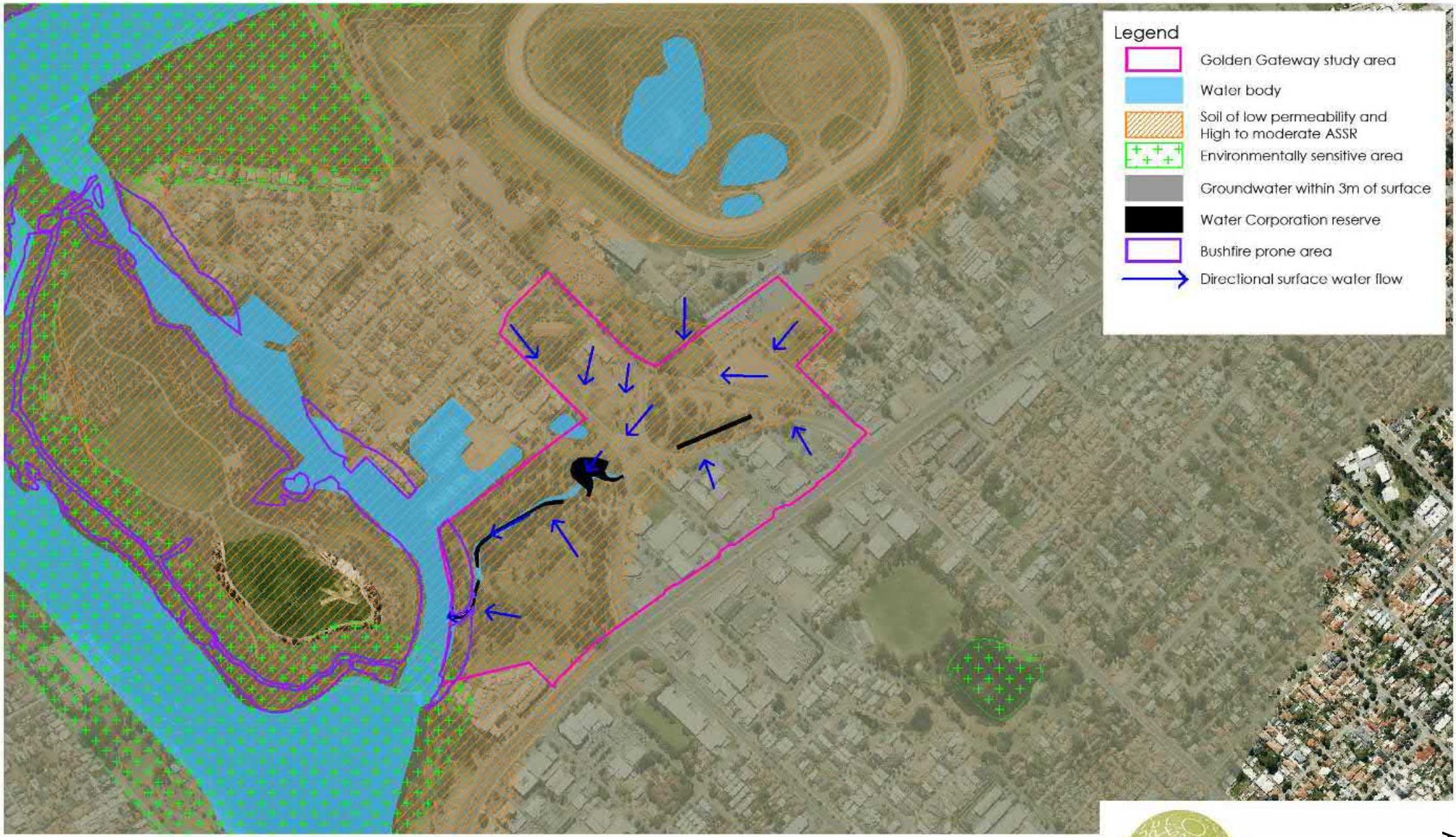
Several significant environmental constraints to the proposed development have been identified as follows:

- risks associated with urban stormwater runoff to the Swan River (sections 3 and 4);
- contamination risks associated with Ascot Water Compensation Basin, which will need to be considered if future work on the basin is to be undertaken (section 3.2.4);
- contamination risks associated with the Northern Drainage Lake, which may need to be considered because of previous fish kills in the lake (section 3.4.2); and
- the associated bushfire risk of the north-western portion of the study area, which will need to consider the requirements of *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) (2015) (section 3).

Two figures have been developed to show the environmental constraints (Figure 8) and environmental opportunities (Figure 9). As summarised above, the environmental constraints include soil of low permeability and ASS risk to the majority of the study area. Further to this, the geology of the site may have created a perched groundwater table, and in conjunction with the close proximity of the study area to the receiving water body, groundwater levels are inferred to be close to the surface. The topography of the study area generally directs surface water flows toward the centre and south-westerly toward the Swan River, an environmentally sensitive area and conservation category wetland.

Although the Swan River is identified as an environmental constraint due to its protection requirements, the opportunities the River provides to the study area are of exceptional significance. The Swan River has long been valued for its social, recreational and visual amenity and would provide a substantial opportunity for increased land value. This can also be said for the mature trees within the study area, which provide visual amenity and urban heat island mitigation. Furthermore, deep rooted trees help maintain hydraulic control of the groundwater table by reducing recharge and using groundwater via transpiration, and promote soil stability and erosion control, especially at the river banks and at any other points where a water body receives inundation. The compensation basins identified in Figure 9 are also an opportunity for rehabilitation for improved visual amenity, flora and fauna habitat and upstream pre-treatment of surface and/or groundwater before discharge to the Swan River.

City of Belmont: Golden Gateway - Desktop environmental report
Figure 8: Environmental constraints



Data source: CoB, Landgate. Created by: RM. Projection: MGA; zone 50.

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City of Belmont: Golden Gateway - Desktop environmental report
Figure 9: Environmental opportunities

Data source: CoB, Landgate. Created by: RM. Projection: MGA; zone 50.

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5 IMPLEMENTATION STRATEGY

Table 5 provides a preliminary schedule of activities, which should be undertaken at Preconstruction, Construction and Post-construction phases of the project to mitigate and manage potential impacts to the environment. This advice is based on the current predominantly desktop assessment contained within this report. More detailed management measures should be determined as part of more detailed investigation and planning as the proposed development progresses.

Table 5: Implementation strategy

Issue	Action	Frequency	Responsibility
Preconstruction phase			
Contamination	Complete preliminary site investigation for contamination in accordance with Contaminated Sites Act 2003 should areas of known contamination be disturbed.	Once	Developer
Acid sulfate soils	Complete self-assessment checklist and consider need for a preliminary site assessment.	Once	Developer - Consistent with DPLH and DWER guidelines
Vegetation and flora	Clearly delineate POS areas and trees to be retained.	Once	Licensed Surveyor (Developer)
Fauna and habitat	All site staff to participate in Environment, Health and Safety inductions, which provide requirements for management of significant fauna and reporting procedures for environmental incidents.	Once	Developer and Construction contractor
Water management	Refer the local structure plan to the Department of Biodiversity, Conservation and Attractions as it contains a portion of land within and abutting the Swan River Trust Development Control Area. A Local water management strategy will be completed and used as the basis for detailed design. Following approval of the LWMS, UWMP(s) will be prepared prior to subdivision for approval by City of Belmont.	Once	Developer/City of Belmont Developer, in accordance with SPP 2.9: Water Resources
Bushfire	A Bushfire Management Plan will be prepared to support the LSP. The Bushfire Management Plan will be revised and implemented at subdivision.	Once	Developer, in accordance with SPP 3.7: Planning in Bushfire Prone Areas

Issue	Action	Frequency	Responsibility
Construction phase			
Soils and topography	Ground disturbing activities should be kept to a minimum and carried out 'as required' (in stages) immediately prior to lots being released for sale as part of a 'staged' development of the site.	Ongoing during construction phase.	Construction Contractor (Developer)
Contamination	Management of any identified contamination in accordance with the Contaminated Sites Act 2003.	Ongoing during construction phase.	Construction Contractor (Developer)
Acid sulfate soils	Management of any identified ASS consistent with DPLH and DWER guidelines.	Ongoing during construction phase.	Construction Contractor (Developer)
Vegetation and flora	Maintain markings and fencing around vegetation and trees to be retained. Cleared vegetation to be mulched and stored on site.	Ongoing during construction phase.	Construction Contractor (Developer)
Fauna and habitat	Undertake clearing in the direction of the river to allow fauna to escape.	Ongoing during construction phase.	Construction Contractor (Developer)
Water management	Manage sediment transport to waterways and drainage systems consistent with the LWMS.	Ongoing during construction phase.	Construction Contractor (Developer)
Aboriginal heritage	In the event a site is discovered, all work in the area will cease and the Department of Planning, Lands and Heritage will be contacted.	Ongoing during construction phase.	Construction Contractor (Developer)
Construction impacts	Ensure dust and sediment runoff is adequately managed. Ensure appropriate waste disposal of building materials.	Ongoing during construction phase.	Construction Contractor (Developer)
Post construction phase			
Soils and topography	Landscape or stabilise cleared areas immediately.	Once	Construction Contractor (Developer)
Vegetation and flora	Inspect fencing (if applicable) and replace if required. Ensure ongoing maintenance of retained vegetation and any revegetation areas / native landscaping prior to handover.	6 months Ongoing until handover.	Developer until hand over to City of Belmont

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Client: City of Belmont

Report	Version	Prepared by	Reviewed by	Submitted to Client	
				Copies	Date
Draft report	V1	RM	SSh	Electronic	2 March 2016
Draft – amendments to study area	V2	RM	SSh	Electronic	31 August 2016
Final	V3	SSh	HBr	Electronic	3 May 2018
Amended Final	V4	SSh	HBr	Electronic	21 May 2018
Final Amendments	V5	SSh	HBr	Electronic	25 June 2018

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www.essentialenvironmental.com.au

Ordinary Council Meeting 28/08/18

Item 12.1 refers

Attachment 4

Appendix C
Movement and Access Strategy

flyt

Golden Gateway

LOCAL STRUCTURE PLAN
MOVEMENT AND ACCESS STRATEGY

email: info@flyt.com.au twitter.com/flytplan web: www.flyt.com.au

PROJECT	Golden Gateway Local Structure Plan Movement and Access Strategy 81113-160			
Revision	Description	Originator	Review	Date
0	Issued for Review	MDR	CAS	07/12/16
1	Draft Report for Review	MDR	CAS	08/03/17
2	Revised Draft Report for Review	MDR	CAS	17/03/17
3	Final Draft Report for Review	MDR	CAS	26/03/17
4	Updated Final Draft Report for Review	MDR	CAS	07/04/17
5	Updated Final Report with Revised Road Network Structure	MDR	CAS	04/05/18
6	Updated Final Report with Revised LSP Images	MDR	CAS	17/06/18

Contents

1. INTRODUCTION

1.1 Movement and Access Strategy

This Movement and Access Strategy has been prepared by Flyt in support of the Local Structure Plan (LSP) which applies to the Golden Gateway Precinct in the City of Belmont. This Strategy has been prepared for the City of Belmont and Department of Planning (DoP) using the requirements set out within the Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines (August 2016) Volume 2 – Planning Schemes, Structure Plans and Activity Centre Plans.

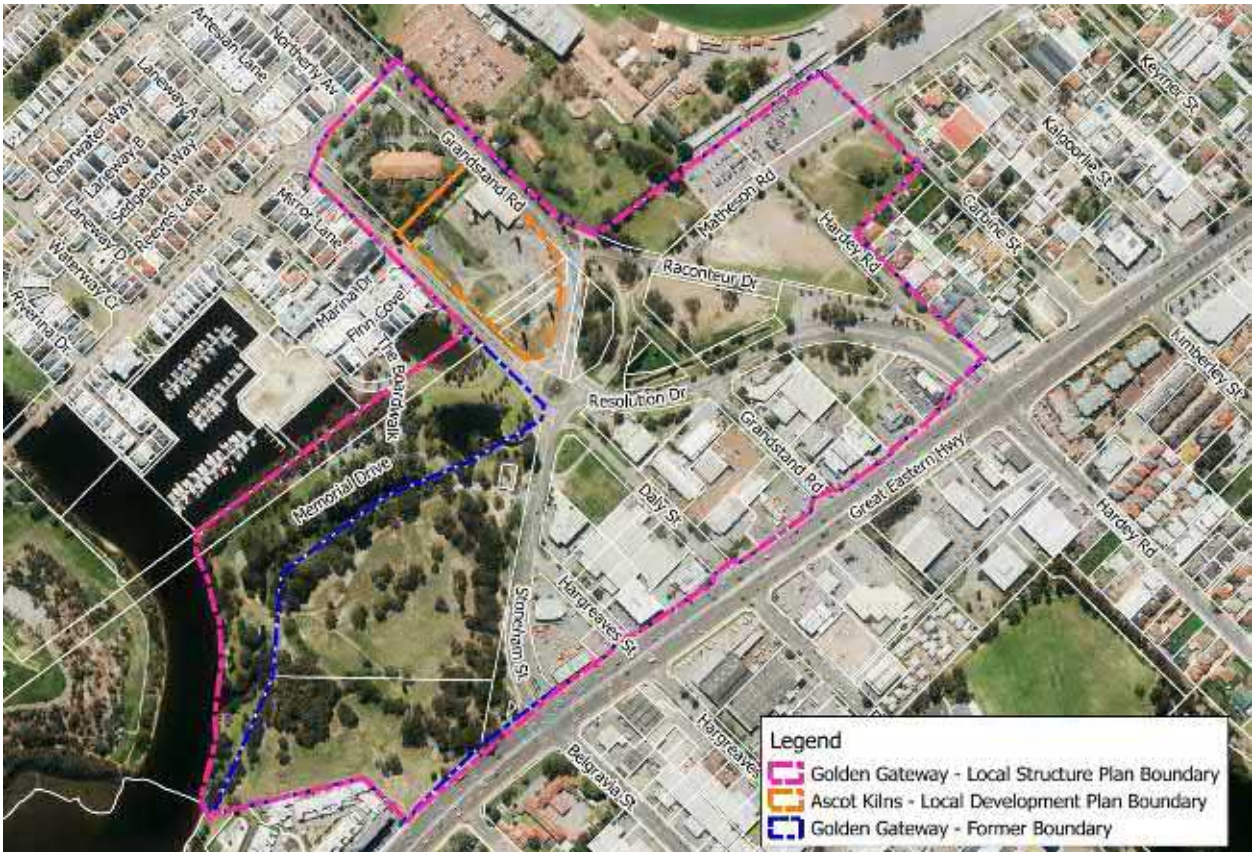
This form of guidance is the basis from which the WAPC and DoP assesses Structure Plans and therefore it should form the basis of this assessment which will result in the Movement and Access Strategy.

1.2 Structure Plan

The Golden Gateway Precinct is located within the City of Belmont and the LSP area is bounded by Ascot Racecourse to the north/northeast, Hardey Road to the east, Great Eastern Highway to the south, Swan River to the west and Ascot Waters to the west/northwest.

Figure 1 shows the Golden Gateway LSP boundary, as well as the former LSP boundary which was realigned in March 2016 to take into consideration the adjacent Metropolitan Regional Scheme (MRS) Reserve which contains water bodies associated with the Golden Gateway Precinct. In addition, Figure 1 shows the boundary of the Ascot Kilns Local Development Plan (LDP) area – traffic generated from the proposed Ascot Kilns LDP area has been considered within this assessment, however the form and function of vehicular access to this area was subject to consideration in the Ascot Kilns LDP reporting and not assessed within this report.

Figure 1 – Golden Gateway LSP Area (source: City of Belmont)



The Golden Gateway LSP has been developed by Taylor Burrell Barnett. As set out within the Structure Plan Report:

> *"The subject land encompasses a mix of uses comprising mixed business, retail (food and beverage), public uses associated with the Western Australian Turf Club, Ascot Racecourse and Ascot Kilns, Ascot Grove Farm Reserve and Swan River environs. The remainder of the subject land is largely undeveloped and devoid of vegetation".*

The details of the land uses proposed are set out in Table 1 with the Structure Plan shown in Figure 2.

Table 1 – Proposed Structure Plan Land Uses

Item	Data
Estimated Number of Dwellings	3,000 dwellings
Estimated Dwelling Type - multiple dwelling (75 m^2 apartment size) - single dwelling	 2,950 dwellings 50 dwellings
Commercial space	7,400 m^2 GFA
Retail space	1,500 m^2 GFA

1.3 Key Issues

The issues examined within this Movement and Access Strategy are:

- The impact of the Structure Plan on the local transport network based on the requirements set out in the Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines (August 2016) Volume 2 – Planning Schemes, Structure Plans and Activity Centre Plans;
- Addressing issues set out within the Structure Plan report and the form of development of the site; and
- Consideration of impact of development based on existing and future transport networks in the Golden Gateway locality.

1.4 Background Information

This Movement and Access Strategy has been structured to conform to the requirements of the WAPC Transport Impact Assessment (TIA) Guidelines, and has been completed using information from a range of sources which are quoted throughout this report. Specific to the completion of the TIA, the background information for the form and structure of the proposed development has been extracted from the Golden Gateway Structure Plan Report (April 2018) produced by Taylor Burrell Barnett.

Figure 2 – Golden Gateway Structure Plan (source: Taylor Burrell Barnett)

1.5 Report Structure

This Movement and Access Strategy has been structured to conform to the requirements of the WAPC Transport Impact Assessment Guidelines for the assessment of Structure Plan proposals. This introduction section forms the first of nine sections in this Movement and Access Strategy. The remaining sections cover:

- Structure plan outline;
- Existing situation;
- Internal transport networks;
- External transport networks;
- Integration with surrounding area;
- Analysis of internal transport networks;
- Analysis of external transport networks;
- Safer routes to schools analysis; and
- Conclusions.

Where referred to in the Movement and Access Strategy, appendices are provided as attachments.

2. STRUCTURE PLAN OUTLINE

2.1 Regional Context

The Golden Gateway LSP site is located in the City of Belmont and is bounded by Ascot Racecourse to the north/northeast, Hardey Road to the east, Great Eastern Highway to the south, Swan River to the west and Ascot Waters to the west/northwest. The LSP site includes the Belmont Trust Land (formerly Ascot Grove Farm Reserve), which currently consists of open parkland with a foreshore along the Swan River. Figure 3 shows the location of the site.

The site is located to the east of Perth City, along the southern foreshore of the Swan River. The site is located approximately 8km from Perth City, 4km from Perth Airport Domestic Terminal (Qantas), 9km from Perth International/Domestic Terminals and 3.5km from Belmont Forum Shopping Centre.

The site benefits from a surrounding movement network that features access to key regional road connections, a high frequency public transport corridor and high quality shared path pedestrian and cycling links.

The site benefits from good access to the regional road network, with Great Eastern Highway along the southern boundary of the site providing access west towards Perth City and onto South Perth, Melville and Fremantle via Canning Highway. To the east Great Eastern Highway provides access to Perth Airport and onto Guildford, Midland and the Swan Valley.

In addition, the site benefits from close proximity to the Garratt Road bridge crossing of the Swan River (approximately 1km north of the site), which provides access to Bayswater, Maylands, Mount Lawley and suburbs north of Perth City.

Ascot Racecourse is located immediately to the north/northeast of the site. The racecourse is regarded as Perth's premier racecourse and holds a number of featured Group Race meetings annually. These meetings attract crowds of varying sizes and on particular key race days (New Year's Day, Super Saturday in November etc.), vehicle access to the racecourse for spectators causes local parking issues and congestion.

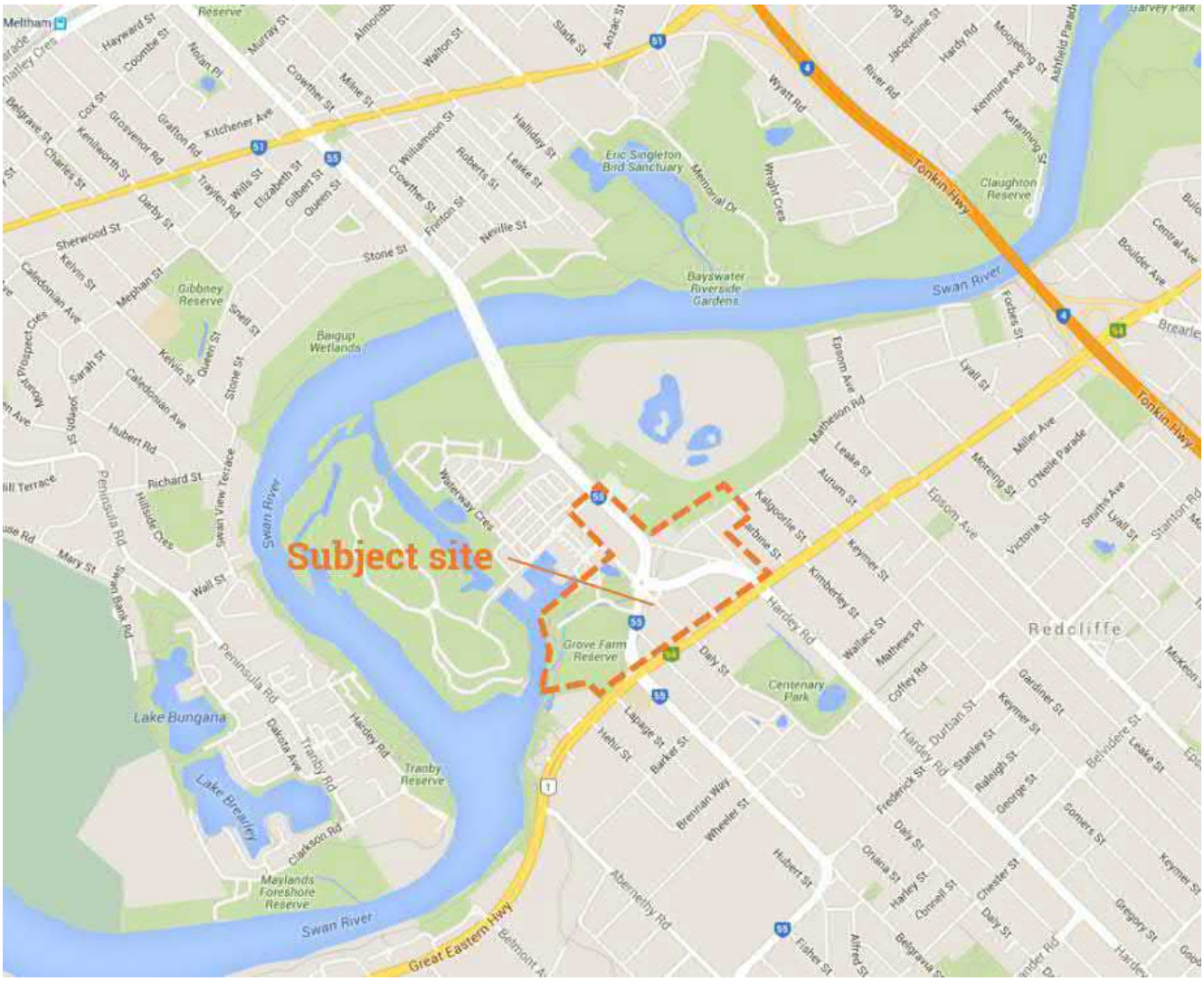
A number of existing shared path cycling connections run through the LSP site alongside Stoneham Street, Raconteur Drive and Grandstand Road. Both shared paths and local bicycle friendly routes run through the Ascot Waters development to the north of the LSP site. The site is located close to regional cycling connections with the Graham Farmer Freeway Principal Shared Path (PSP) easily accessed via the shared path along the southern side of the Swan River.

A number of existing bus routes operate close to or through the LSP site. These include the Circle Route via Raconteur Drive/Grandstand Road providing connections north to destinations including Bayswater Station, Morley Bus Station/Shopping Centre and south to destinations including Belmont Forum Shopping Centre, Oats Street Station, Curtin University.

In addition, existing bus routes operate along Great Eastern Highway providing connections east to destinations including Perth Airport, Guildford, Midland and to the west to destinations including Victoria Park Transfer Station and Perth City.

Additional information on the road network surrounding the site are discussed in more detail in Section 3.5, additional information on cycling connections in proximity to the site are discussed in more detail in Section 3.3, and additional information on public transport connections in proximity to the site are discussed in more detail in Section 3.4.

Figure 3 – Golden Gateway LSP Area Regional Context (source: nearmap.com)



2.2 Proposed Land Uses

The Golden Gateway LSP is comprised of three main land uses, residential dwellings, commercial space and retail space. It is proposed that the three land uses will primarily be provided in mixed-use development sites across the Golden Gateway LSP area. The split of the three land uses is shown in Table 2.

Table 2 - Proposed Structure Plan Land Uses

Item	Data
Estimated Number of Dwellings	3,000 dwellings
Estimated Dwelling Type - multiple dwelling (75 m^2 apartment size) - single dwelling	 2,950 dwellings 50 dwellings
Commercial space	7,400 m^2 GFA
Retail space	1,500 m^2 GFA

As noted in the Structure Plan Report, the LSP has been formulated around the following vision:

> *"The development of the Golden Gateway will transform this degraded and fragmented area into a vibrant precinct of residential and mixed use development, with strengthened connections to the Swan River and*

Ascot Waters, with uses, density and built form that derive best value from these attributes while respecting the area's rich culture and heritage."

The overarching objectives for the Golden Gateway Precinct as established by the project team and reinforced through stakeholder engagement include:

- Improve self-containment of facilities – reduce car dependence;
- Improve peoples connection to the Swan River;
- Create accessible, quality public realm within the precinct; and
- Identify appropriate uses/densities in conjunction with infrastructure improvements.

In order to achieve the above objectives, the project team identified a number of opportunities that the Golden Gateway site presents, they include:

- Land use:
  - Opportunity for residential development to be accommodated in the precinct given the accessibility to high quality riverside amenity;
  - Opportunity for retail convenience and food and beverage land uses to be integrated into development outcomes;
  - Potential for higher density development given precinct location, proximity to high amenity open space destinations, Perth central business district, localised employment and high frequency public transport;
  - An existing primary school adjacent the precinct offers opportunity for family friendly dwelling diversity; and
  - Opportunities to consider mixed use land use for development in core area to broaden activity opportunities and long term transition of the precinct.
- Movement:
  - Opportunity to utilise existing local street network of Hargreaves Street, Daly Street and Grandstand Road (south) to deliver a robust structure for future development access and vehicle circulation;
  - Generous existing road reserve dimensions provide ability for reconfigured pedestrian friendly streetscapes offering shade trees, soft landscaping and convenient on-street parking embayments;
  - Potential to consider alteration to the priority road network of Stoneham Street and Resolution Drive for the benefits of precinct consolidation and integration;
  - Opportunities to investigate alternative road alignments that celebrate key view lines of surrounding site characteristics and future gateway elements; and
  - Opportunities to investigate potential to downgrade priority of Stoneham Street for benefits to consolidation of development areas with existing foreshore open space.

3. EXISTING SITUATION

3.1 Existing Land Uses

The site is bounded by Ascot Racecourse to the north/northeast, Hardey Road to the east, Great Eastern Highway to the south, Swan River to the west and Ascot Waters to the west/northwest, as shown in Figure 4.

The developed section of the LSP site, between Great Eastern Highway, Stoneham Street and Resolution Drive, consists of a range of light industrial/commercial units and various fast-food outlets fronting Great Eastern Highway. Other areas of the LSP site generally consists of undeveloped land.

As discussed in Section 1.2, the Ascot Kilns LDP area between Resolution Drive and Grandstand Road is subject to a separate LDP process, however traffic generated from the proposed Ascot Kilns LDP area has been considered within this assessment.

Immediately to the north of the Ascot Kilns site is the Perth Racing Headquarters building, which does form part of this assessment.

Figure 4 – Golden Gateway LSP Area in Context to Surrounding Development (source: Taylor Burrell Barnett)

3.2 Pedestrian Network

The extent and quality of the existing pedestrian infrastructure within and surrounding the Golden Gateway site is of a standard commensurate with the extent of existing development and form of land uses across the site, i.e. there are a number of existing undeveloped Lots and those that are developed primarily accommodate light industrial/ commercial unit style development. The existing local pedestrian infrastructure can be summarised as follows for the major road network and minor road network.

3.2.1 Pedestrian Infrastructure along Major Road Corridors

Great Eastern Highway runs along the southern boundary of the LSP area and is a significant regional road connection within the Perth metropolitan road network. The road corridor features three general traffic lanes, a bus lane and an on-street bike lane in either direction, as well as wide, good quality footpaths on both sides of the corridor. Within the vicinity of the LSP site, crossing of Great Eastern Highway by pedestrians is facilitated via traffic signal controlled intersections at both Stoneham Street/Belgravia Street and Resolution Drive/Hardey Road intersections with Great Eastern Highway.

Each of the four major road corridors running through the Golden Gateway site (Grandstand Road, Raconteur Drive, Resolution Drive and Stoneham Street) all have footpaths along one side of the street – Grandstand Road along the eastern side of the street adjacent to the Ascot Racecourse, Raconteur Drive along the northern side of the street to connect to Grandstand Road, Resolution Drive along the eastern side of the street adjacent to the Ascot Waters development and Stoneham Street along the western side of the street adjacent to the Belmont Trust Land.

3.2.2 Pedestrian Infrastructure along Minor Road Corridors

The minor roads within the LSP site are located between Great Eastern Highway and Resolution Drive/Stoneham Street, the three streets (Hargreaves Street, Daly Street and Grandstand Road - south section) provide access to the light industrial/commercial units in this area of the LSP.

None of these three streets have footpaths, which reinforces the fact that access to these land uses are primarily designed to be by private vehicle rather than on foot.

3.2.3 Pedestrian Accessibility

Walkscore is a commercial product that provides a geographical based rating score of a location based on availability of services within a walking catchment.

The Walkscore rating for a location central within the Golden Gateway LSP site is 43 out of 100 (the address used for the purposes of this analysis was 63 Daly Street). Walkscore measures the walkability of a location based on the distance to nearby places and pedestrian facilities, the overall scoring is ranked as follows:

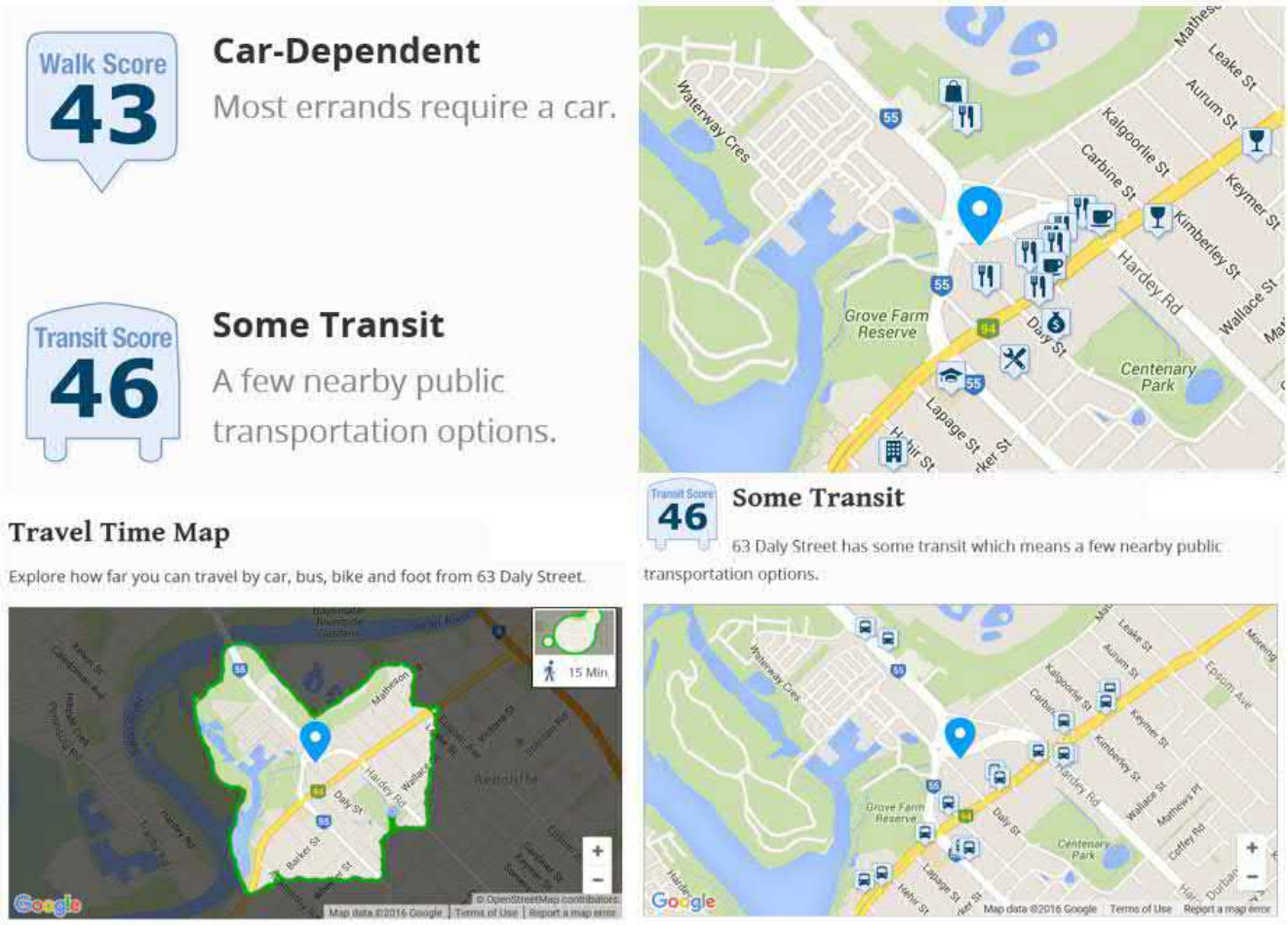
- 90–100 Walker's Paradise: Daily errands do not require a car
- 70–89 Very Walkable: Most errands can be accomplished on foot
- 50–69 Somewhat Walkable: Some errands can be accomplished on foot
- 25–49 Car-Dependent: Most errands require a car
- 0–24 Car-Dependent: Almost all errands require a car

As such the centre of the LSP site is considered on the Walkscore ranking system to be 'Car-Dependent – most errands require a car'. Whilst the site benefits from potentially good access to primary school education, parks/reserves and some food and beverage outlets, the site is less well situated to access groceries and retail outlets on foot.

The LSP site also scores an average 46 out of 100 in terms of access to transit services (public transport services). The bus network is focused on serving the Great Eastern Highway corridor, which provides access to the employment centres of Perth City and Perth Airport, in addition the Resolution Drive corridor which provides access to Bayswater Station and the retail hub of Belmont Forum Shopping Centre.

The Walkscore ratings for a central location within the LSP site are summarised in Figure 5.

Figure 5 - Walkscore Rating for Golden Gateway LSP Site (source: walkscore.com)



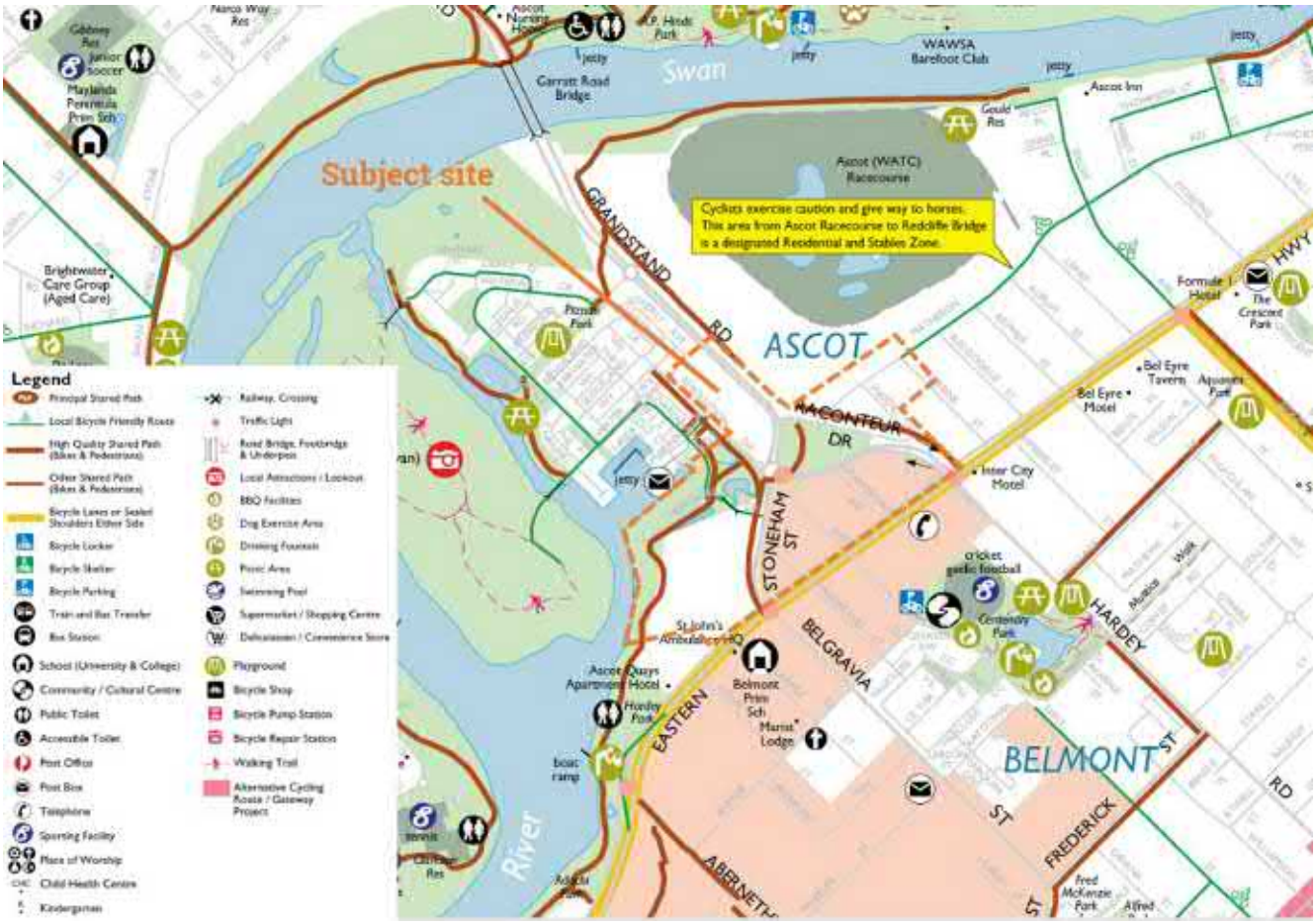
3.3 Cycling Network

The extent and quality of the existing cycling infrastructure within and surrounding the Golden Gateway LSP site is of a high standard with local and regional links. The local and regional cycling network is shown in Figure 6.

Good on road cycling routes for experienced/confident cyclists have recently been provided adjacent to the Golden Gateway LSP site as part of the Great Eastern Highway upgrades. A number of high quality shared use paths providing connections within the LSP site along Stoneham Street, Raconteur Drive and Grandstand Road are provided.

In addition, high quality shared use paths from the LSP site are provided along the Swan River Foreshore (via Belmont Trust Land towards the Graham Farmer Freeway PSP to access Perth City), and along the shoreline within the Ascot Water development. Also streets within the Ascot Waters development are identified as local cycle friendly routes.

Figure 6 – Existing Cycling Network in Relation to the Golden Gateway LSP Site (source: DoT / City of Belmont)



3.4 Public Transport

Access to existing public transport facilities from the site is considered to be average at present, however there are options to make improvements to public transport access if land uses within the Golden Gateway site change over time to support additional public transport service provision.

As shown in Figure 7 the only bus routes that pass through the site are the recently re-numbered Circle Route bus service (98/99 became 998/999). The Circle Route buses operate through the LSP site along Grandstand Road and Resolution Drive. However, no bus stops for these services currently exist within the LSP site, the closest bus stops are located on Grandstand Road immediately to the north of the LSP area (close to the main pedestrian entry/exit to Ascot Racecourse).

Circle Route services provide a high frequency orbital public transport connection around Perth, linking inner suburbs, major activity centres, key land uses and public transport hubs including; Belmont Forum, Oats Street Station, Curtin University, Murdoch Activity Centre, Fremantle, Cottesloe, Claremont, UWA, QEII Medical Centre, Stirling Station and Morley Galleria.

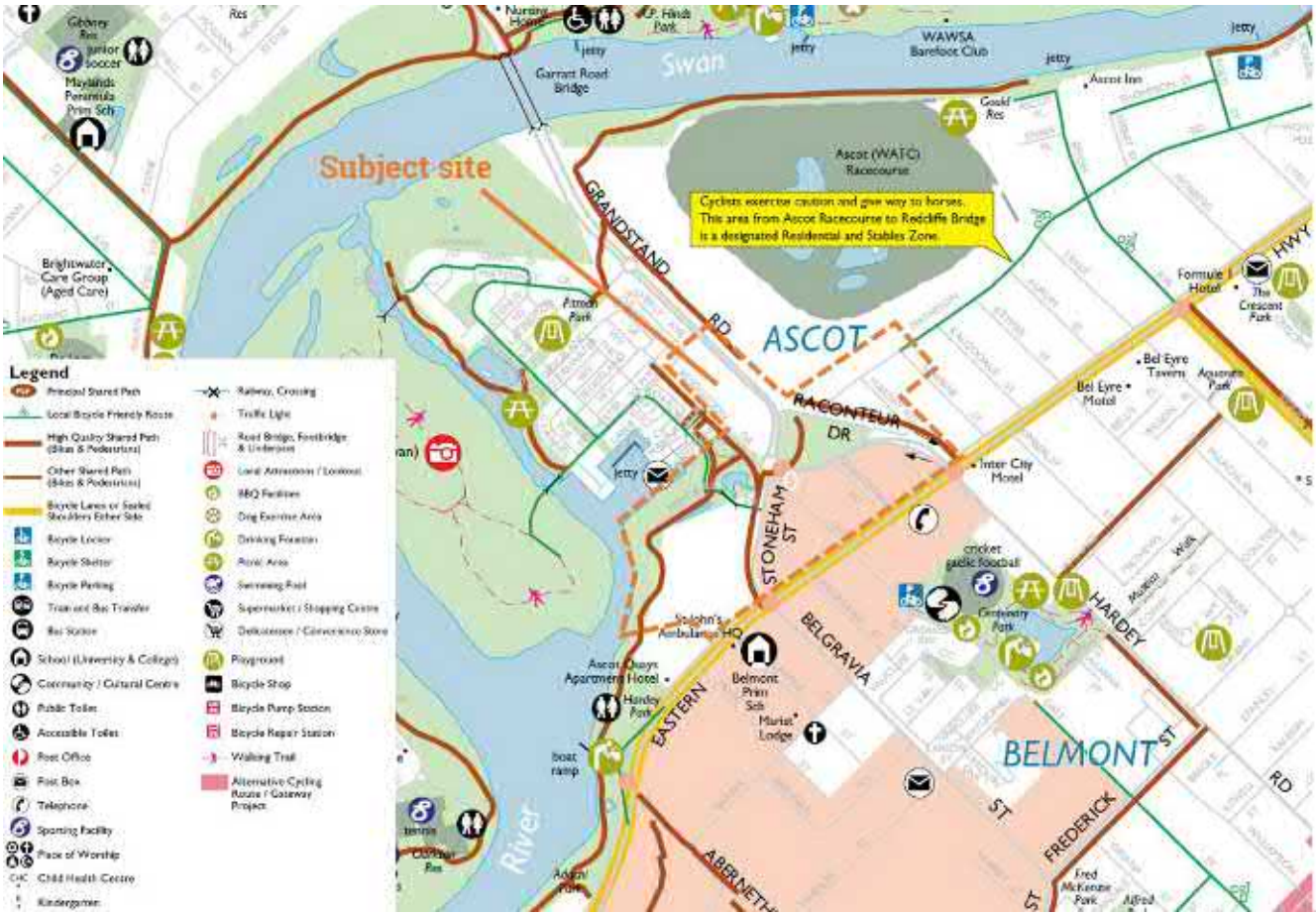
The Circle Route operates on weekdays between 7am-9pm, with a weekday frequency of 10 minutes during the peak periods/daytime and 15 minutes outside of those time. The Circle Route also operates on weekends between 7am-7pm, with a 30 minute frequency. In total 131 weekday bus services operate on the Circle Route through the site – 64 weekday bus services towards Bayswater Train Station and 67 weekday bus services towards Belmont Forum.
In addition, bus routes 36, 40, 295, 296 and 299 operate along Great Eastern Highway along the southern boundary of the site. All five of the bus routes serve Elizabeth Quay Bus Station, St Georges/Adelaide Terrace, Victoria Park

Transfer Station and Great Eastern Highway adjacent to the Golden Gateway LSP site. Additional details for each of the routes is provided below.

- Bus Route 36 – continues along Great Eastern Highway and serves Guildford and Midland (terminating at Midland Station). Weekdays buses operate every 30 mins during the day and hourly at other times.
- Bus Route 40 – continues along Great Eastern Highway and serves Perth Domestic Airport (Terminals 3 & 4) via Fauntleroy Avenue. Weekdays buses operate every 30 minutes.
- Bus Route 295, 296 and 299 – continues along Great Eastern Highway, Great Eastern Highway Bypass, Kalamunda Road or Gooseberry Hill Road, Canning Road to Kalamunda (terminating at Kalamunda Bus Depot). Weekdays buses operate hourly.

In total 205 weekday bus services operate along Great Eastern Highway past the Golden Gateway site – 99 weekday bus services from Elizabeth Quay Bus Station to the bus stop adjacent to the site (and onto destinations to the east of the site), and 106 weekday bus services from the bus stop adjacent to the site towards Elizabeth Quay Bus Station via St Georges/Adelaide Terrace.

Figure 7 – Existing Public Transport Network in Relation to the Golden Gateway LSP Site (source: Transperth / City of Belmont)



3.5 Road Network

The localised road network surrounding the Golden Gateway LSP site includes major regional through routes (Great Eastern Highway to Canning Highway) coupled with a network of local distributor and access roads on either side of the Great Eastern Highway corridor.

Great Eastern Highway is classified as a Primary Distributor under the MRWA Functional Road Hierarchy, the details of which are set out in Table 3. Grandstand Road, Resolution Drive and Stoneham Street are classified District Distributor A roads and all other roads are classified as Access Roads. The overall local road hierarchy is shown in Figure 8.

The posted speed limit for Great Eastern Highway, Grandstand Road, Resolution Drive, Stoneham Street and Raconteur Drive is 60km/h, with all other roads in the immediate area of the Golden Gateway LSP site having a posted speed limit of 50km/h.

In addition, a 40km/h School Zone speed limit is in force to the south of Great Eastern Highway on Belgravia Street and Lapage Street, which run either side of Belmont Primary School. The posted speed limits extracted from the MRWA Road Information Mapping System is shown in Figure 9.

Table 3 - MRWA Road Hierarchy Criteria (source: MRWA)

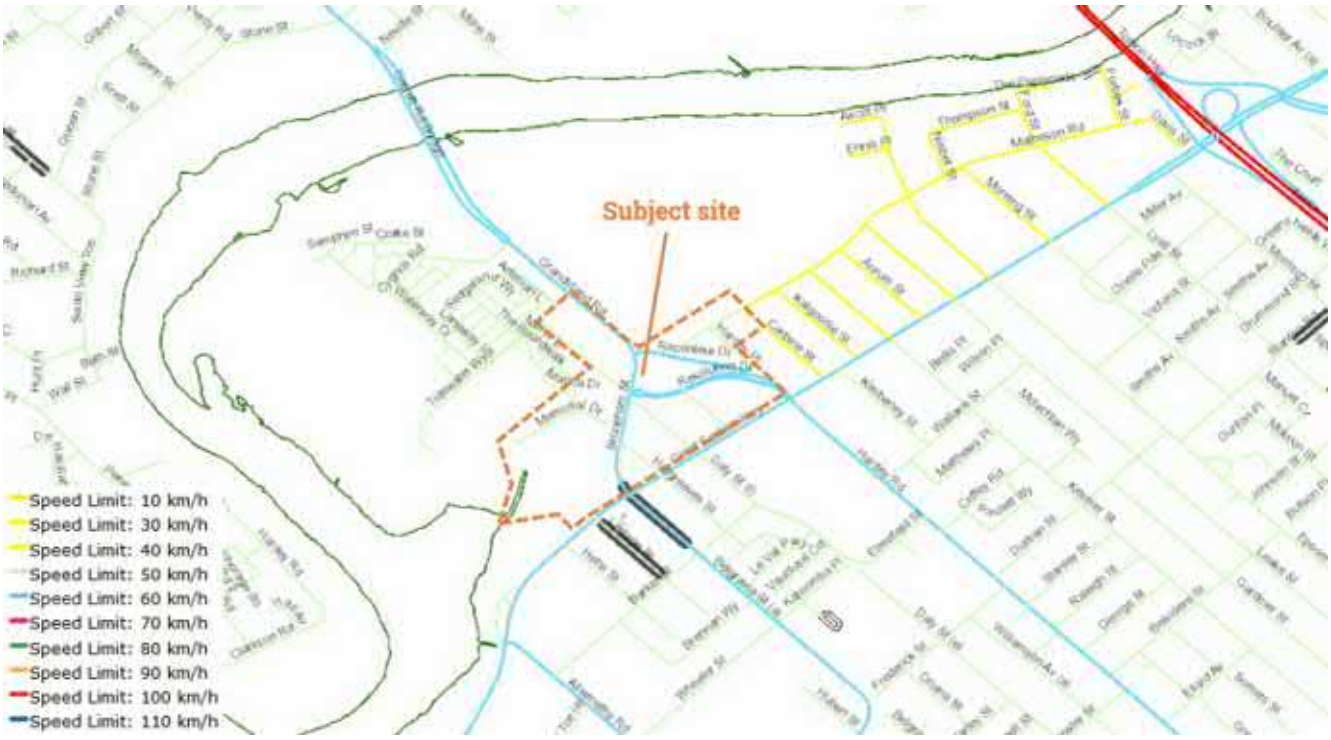
METROPOLITAN ROAD HIERARCHY
ROAD TYPES AND CRITERIA

		ROAD TYPES				
	CRITERIA AND ACTIVITY	PRIMARY DISTRIBUTOR	DISTRICT DISTRIBUTOR CATEGORY "A"	DISTRICT DISTRIBUTOR CATEGORY "B"	LOCAL DISTRIBUTOR/ INDUSTRIAL ROAD	ACCESS ROAD
1	Predominant Activity	Major networks e.g. freeways	Important network	Less important network	Minor network	Limited access to traffic. Forms part of local distribution network
2	Intersections	Controlled with appropriate measures e.g. grade separation, high speed traffic management measures	Controlled with appropriate measures E.g. traffic signals	Controlled with appropriate Local Area Traffic Management	Controlled with minor Local Area Traffic Management	Self controlling with minor measures
3	Indicative Traffic Volume (except semi-rural areas)	Above 15 000 vehicles per day	Above 8000 vehicles per day	Above 6000 vehicles per day	Maximum desirable volume: 6000 vehicles per day	Maximum desirable volume: 3000 vehicles per day
4	Frontage Access Allowed	None on Controlled Access Hwys Limited on other routes	Prefer not to have residential access and limited commercial access, generally via service roads	Residential and commercial access due to its historic status Prefer to limit when and where possible	Yes, except at intersections where side entry is preferred and traffic signals are involved	Yes
5	Pedestrians Allowed	Preferably none at grade. Crossing should be controlled	With positive measures for control and safety e.g. pedestrian signals	With appropriate measures for control and safety e.g. median/islands refuges	With minor safety measures	Yes
6	Recommended Operating Speed	60 – 110 km/h (depending on design characteristics)	60 – 80 km/h	60 – 70 km/h	50 - 60 km/h	50 km/h (desired speed)
7	Buses Allowed	Yes	Yes	Yes	Yes	If required
8	Parking Allowed	No	Generally no. Clearways where necessary	Not preferred. Clearways where necessary	Yes	Yes
9	Truck Routes	Yes	Yes	Yes	Only to service properties	Only to service properties
10	Responsibility	Main Roads Western Australia	Local Government	Local Government	Local Government	Local Government

Ideally, every road should meet all the criteria of one RH type.
However, many roads meet some of the criteria appropriate to different road types and are difficult to define.
Where precise definition of the road type is difficult, comparison with roads of similar role in other local government areas may assist.

Figure 8 - Local Road Hierarchy in Relation to the Golden Gateway LSP Site (source: MRWA)

Figure 9 - Speed Limits in Relation to the Golden Gateway LSP Site (source: MRWA)



3.5.1 Regional Roads

The Golden Gateway site has Great Eastern Highway running along its southern boundary. Great Eastern Highway is one of the State's principal transport corridors carrying over 65,000 vehicles per day and is designated as a Primary Distributor under the control of MRWA.

Great Eastern Highway connects Perth Airport, and suburbs to the east of the airport, to central Perth. Between June 2011 and February 2013 Great Eastern Highway, from Kooyong Road in Rivervale to Tonkin Highway in Redcliffe, was subject to significant upgrade works. These works included:

- Widening Great Eastern Highway, from four to six lanes, between Kooyong Road (Rivervale) and Tonkin Highway (Redcliffe) – a distance of 4.2km;
- Constructing a central median for the full length of the project;
- Upgrading all major intersections to include dedicated turning movements;
- Providing U-turn facilities at key locations in order to maintain access to businesses fronting Great Eastern Highway;
- Incorporating bus priority lanes into key intersections;
- Providing dedicated on-road cycling facilities;
- Constructing footpaths for pedestrians; and
- Relocating, replacing and protecting service utilities such as telecommunications, water, power and gas.

Figure 10 shows the upgrade works completed by Main Roads WA (MRWA) in 2013. Figure 11 shows the Great Eastern Highway corridor adjacent to the Golden Gateway site before and after the works.

Figure 10 - Great Eastern Highway Upgrades – June 2011 to February 2013 (source: MRWA)

Figure 11 - Great Eastern Highway corridor adjacent to Golden Gateway Site – 2009 and 2015 view eastbound prior to Daly Street intersection (source: Google Streetview)

3.5.2 District and Local Roads

The Golden Gateway site has a number of key district road connections running through the site, these include:

- Grandstand Road – a four lane road with a central median, running north-south within the site, connecting the Garratt Road crossing of the Swan River with Great Eastern Highway via Stoneham Street or Resolution Drive – see Figure 12;
- Stoneham Street – a four lane road without a central median, running north-south within the site, connecting Grandstand Road/Resolution Drive with Great Eastern Highway and Belgravia Street – see Figure 12; and
- Resolution Drive – a four lane with a central median, running east-west within the site, connecting Grandstand Road/Stoneham Street with Great Eastern Highway and Hardey Road – see Figure 12.

Grandstand Road, Stoneham Street, Resolution Drive and Belgravia Street are classified as District Distributor A roads, while Hardey Road is classified as a District Distributor B road. All of these roads are under the control of the City of Belmont.

Figure 12 - Typical Layout of District Roads within the Golden Gateway Site (source: Google Streetview)

The Golden Gateway site has a number of local road connections running through the site:

- Hargreaves Street – a two lane road without a central median, running northwest-southeast within the site, providing a connection between Stoneham Street (no right turn out) and Great Eastern Highway (left in/left out only) – see Figure 13;
- Daly Street – a two lane road without a central median, running northwest-southeast within the site, providing a connection between Stoneham Street (left out only onto Stoneham Street) and Great Eastern Highway (left in/left out only) – see Figure 13;
- Grandstand Road (south) – a two lane road without a central median, running northwest-southeast within the site, providing a connection between Resolution Drive and Great Eastern Highway (left in/left out only) – see Figure 13;
- Raconteur Drive – operates as a one-way road from Grandstand Road to Matheson Road and is currently closed at the Grandstand Road intersection outside of event periods at Ascot Racecourse. Two-way access between Resolution Drive and Matheson Road is possible via the eastern extent of Resolution Drive.

All of these roads are classified as Access Roads in Table 3 and are under the control of the City of Belmont.

Figure 13 - Typical Layout of District Roads within the Golden Gateway Site (source: Google Streetview)

3.6 Existing Traffic Volumes

A range of sources for traffic data have been examined in relation to the road network surrounding the Golden Gateway site, these were:

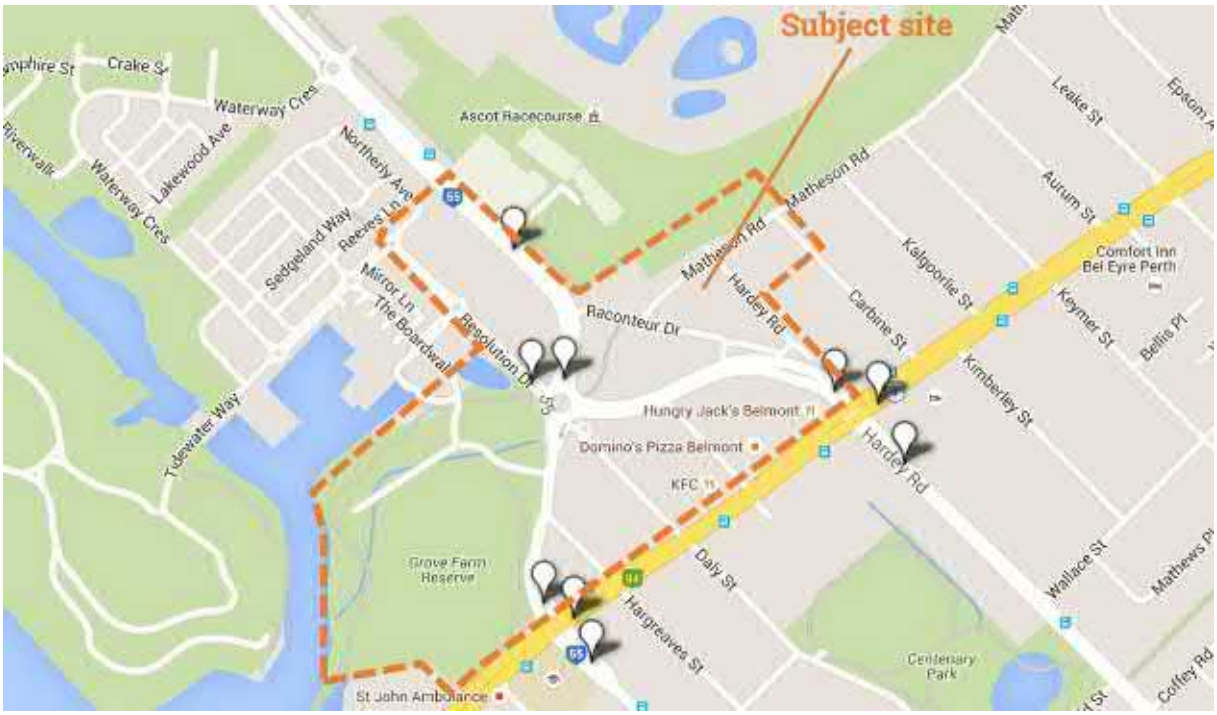
- MRWA online traffic counts map.
- MRWA online request for updated traffic digest information.
- MRWA online request for SCATS count data from the nearest traffic signal controlled intersections:
  - Great Eastern Highway/Stoneham Street/Belgravia Street Intersection; and
  - Great Eastern Highway/Resolution Drive/Hardey Road Intersection.
- City of Belmont traffic volume counts for the Golden Gateway local road network:
  - Hargreaves Street (north and south);
  - Daly Street (north and south); and
  - Grandstand Road (north and south).
- City of Belmont peak hour turning volume count for the following intersection:
  - Grandstand Road/Resolution Drive/Stoneham Street roundabout.

3.6.1 MRWA Traffic Counts Map

The MRWA online counts map was sourced through the MRWA Reporting Centre. Figure 14 sets out the count locations over the past decade where classified or volume counts have been collected by MRWA or others. The most recent two-way daily vehicle count volumes (vpd) for each count location within the Golden Gateway LSP site are provided below:

Garratt Road Bridge	2007/08	14,990 vpd
Grandstand Road (north of Raconteur Dr)	2008/09	8,670 vpd
Resolution Drive (north of Great Eastern Hwy)	2008/09	9,070 vpd
Stoneham Street (north of Great Eastern Hwy)	2004/05	12,850 vpd
Great Eastern Highway (east of Belgravia St)	2008/09	48,870 vpd
Great Eastern Highway (east of Hardey Rd)	2008/09	50,530 vpd

Figure 14 - MRWA Online Counts Map (source: MRWA)



3.6.2 MRWA Traffic Digest Information

Details from the MRWA online traffic digest were also reviewed to examine if any recent counts had been undertaken.

More recent counts than those displayed on the MRWA Online Counts Map are contained within the Traffic Digest Report for Resolution Drive, Stoneham Street and Great Eastern Highway (adjacent to the LSP site). The count details are displayed below:

- Resolution Drive (north of Great Eastern Hwy) 2013/14 9,020 vpd
- Stoneham Street (north of Great Eastern Hwy) 2013/14 15,170 vpd
- Great Eastern Highway (west of Grandstand Rd) 2014/15 64,860 vpd
- Great Eastern Highway (east of Hardey Rd) 2014/15 66,520 vpd

SCATS count data was also obtained from MRWA in order to verify the traffic volumes contained within the Traffic Digest Report (above). SCATS data is described in the following section.

3.6.3 SCATS Traffic Count Data

An online request for SCATS data was submitted to MRWA for recent volume count information for the traffic signals at the intersections of:

- Great Eastern Highway/Stoneham Street/Belgravia Street; and
- Great Eastern Highway/Resolution Drive/Hardey Road.

Week day data was provided by MRWA for an average November 2015 period (16.11.15-20.11.15) and March 2016 period (08.03.16-11.03.16 and 14.03.16). These data collection periods were outside of school holidays and no major works or disruptions to the local or regional road network were noted.

SCATS data provides hourly volume of vehicles using each traffic lane through the intersection. Vehicle turning movements at an intersection can be determined based on the allocation of a movement from each traffic lane. Whilst this approach is accurate if only a single turning movement is permitted from a traffic lane, however if a traffic lane permits shared turning movements then on-site observations are required to determine an accurate split between the permitted turning movements.

On-site observations were completed on Wednesday 27 April 2016 and Thursday 28 April 2016. The on-site data collection was used to determine the split in turning movements from shared lanes and general operation of the two traffic signal controlled intersections and the approaches to these intersections.

Table 4 and Table 5 shows the peak hour turning volumes and percentages at the Great Eastern Highway/Stoneham Street/Belgravia Street intersection and Table 6 and Table 7 shows the peak hour turning volumes and percentages at the Great Eastern Highway/Resolution Drive/Hardey Road intersection.

Turning volumes show that in total between 5,150-5,750 vehicles travel through the Great Eastern Highway/Stoneham Street/Belgravia Street intersection during the peak hours and between 4,650-5,050 vehicles travel through the Great Eastern Highway/Resolution Drive/Hardey Street intersection during peak hours.

Table 4 - Great Eastern Highway / Stoneham Street / Belgravia Street Intersection – 2016 Turning Volumes (source: MRWA SCATS Data)

Time Period	Stoneham Street				Great Eastern Highway (east)				Belgravia Street				Great Eastern Highway (west)				TOTAL
	Left	Ahead	Right	Total	Left	Ahead	Right	Total	Left	Ahead	Right	Total	Left	Ahead	Right	Total	
0800-0859	7	248	457	**712**	191	2,313	29	**2,532**	111	105	126	**341**	165	1,308	101	**1,574**	**5,159**
1600-1659	9	170	269	**448**	77	1,636	35	**1,747**	64	428	217	**710**	537	2,227	70	**2,834**	**5,739**

Table 5 - Great Eastern Highway / Stoneham Street / Belgravia Street Intersection – 2016 Turning Percentages (source: MRWA SCATS Data)

Time Period	Stoneham Street				Great Eastern Highway (east)				Belgravia Street				Great Eastern Highway (west)			
	Left	Ahead	Right	Total	Left	Ahead	Right	Total	Left	Ahead	Right	Total	Left	Ahead	Right	Total
0800-0859	1%	35%	64%	**100%**	8%	91%	1%	**100%**	33%	30%	37%	**100%**	10%	83%	7%	**100%**
1600-1659	2%	38%	60%	**100%**	4%	94%	2%	**100%**	9%	60%	31%	**100%**	19%	79%	2%	**100%**

Table 6 - Great Eastern Highway / Resolution Drive / Hardey Street Intersection – 2016 Turning Volumes (source: MRWA SCATS Data)

Time Period	Resolution Drive				Great Eastern Highway (east)				Hardey Street				Great Eastern Highway (west)				TOTAL
	Left	Ahead	Right	Total	Left	Ahead	Right	Total	Left	Ahead	Right	Total	Left	Ahead	Right	Total	
0800-0859	137	131	61	**329**	106	2,425	132	**2,663**	88	138	89	**315**	22	1,271	66	**1,359**	**4,666**
1600-1659	127	125	29	**280**	139	1,650	163	**1,951**	53	141	144	**338**	37	2,289	143	**2,469**	**5,038**

Table 7 - Great Eastern Highway / Resolution Drive / Hardey Street Intersection – 2016 Turning Percentages (source: MRWA SCATS Data)

Time Period	Resolution Drive				Great Eastern Highway (east)				Hardey Street				Great Eastern Highway (west)			
	Left	Ahead	Right	Total	Left	Ahead	Right	Total	Left	Ahead	Right	Total	Left	Ahead	Right	Total
0800-0859	42%	40%	18%	**100%**	4%	91%	5%	**100%**	28%	44%	28%	**100%**	2%	93%	5%	**100%**
1600-1659	45%	45%	10%	**100%**	7%	85%	8%	**100%**	16%	42%	42%	**100%**	1%	93%	6%	**100%**

3.6.4 City of Belmont Local Road Traffic Count Data

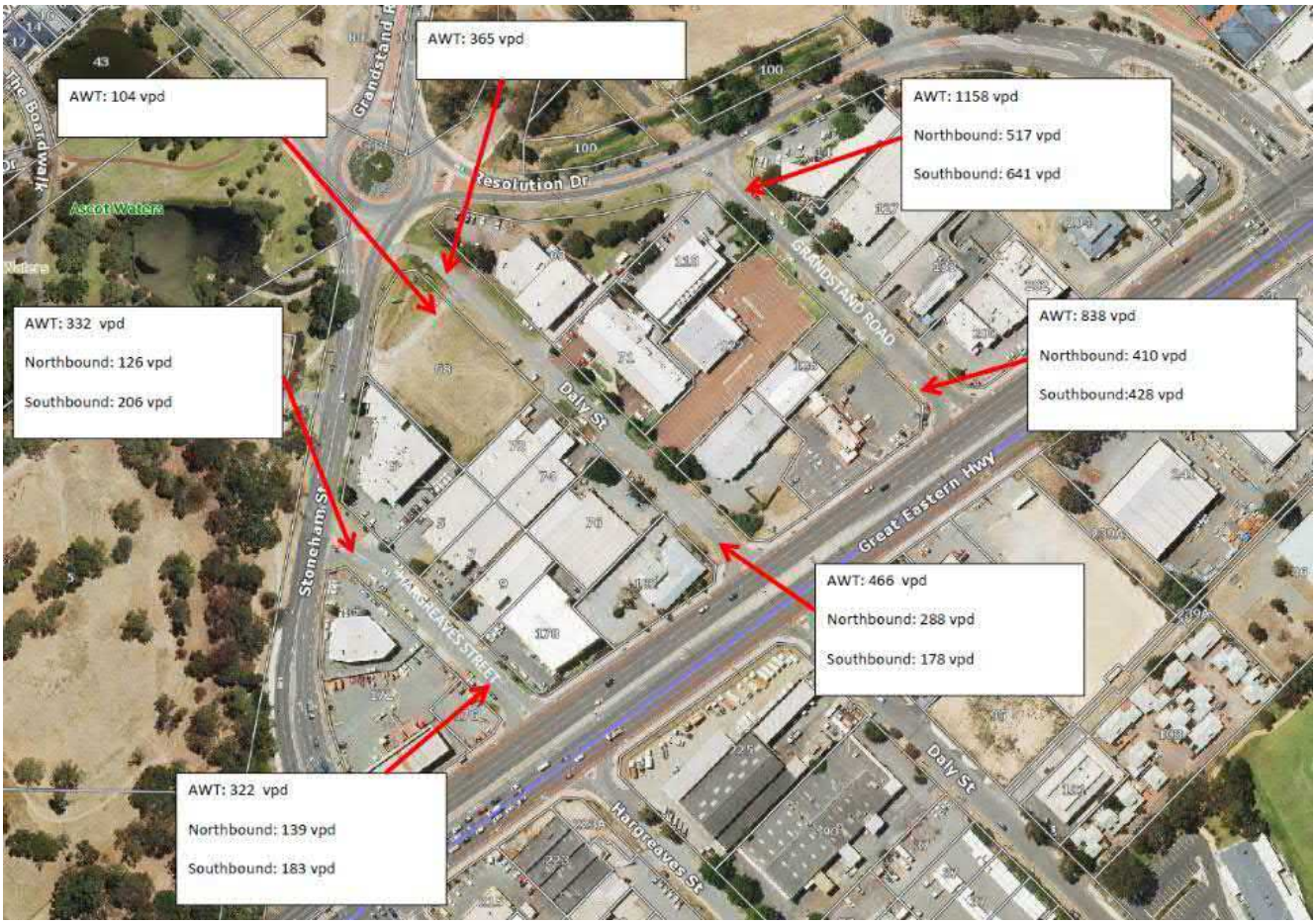
In order to gain a clear understanding of the level of traffic generated by existing land uses within the developed area of the Golden Gateway site, the City of Belmont collected traffic data for local roads during August 2016.

The City of Belmont utilised four traffic counters to collect volumetric traffic count data for six locations across two separate weeks. The following data was collected:

- Week 1: Daly Street and Grandstand Road
  - Traffic counters installed at the northern and southern entry/exit to the local roads
  - Traffic volume data collected for 3 weekdays: Tuesday 16 to Thursday 18 August 2016
- Week 2: Hargreaves Street
  - Traffic counters installed at the northern and southern entry/exit to the local road
  - Traffic volume data collected for 3 weekdays: Tuesday 23 to Thursday 25 August 2016

Figure 15 shows the location of the traffic counters, as well as showing the average weekday traffic volumes at each of the count locations - Table 8, Table 9, Table 10 and Table 11 also present the traffic count data collected. Traffic data for Daly Street and Grandstand Road were collected simultaneously to ensure that any traffic moving between the two streets was collected as both an inbound and outbound movement into and out of the Golden Gateway site.

Figure 15 - Local Road Network Traffic Count Locations and August 2016 Average Weekday Traffic Volumes (map source: City of Belmont)



Note: AWT = Annual Weekday Traffic / VPD = Vehicles Per Day

*Table 8 - **Hargreaves Street Traffic** – August Weekday Traffic Volumes (source: City of Belmont Traffic)*

Movement	Great Eastern Hwy	Stoneham St	TOTAL
IN	139	206	345
OUT	183	126	309
TOTAL	322	332	654

*Table 9 – **Daly Street Traffic** – August Weekday Traffic Volumes (source: City of Belmont Traffic)*

Movement	Great Eastern Hwy	Stoneham St	TOTAL
IN	288	104	392
OUT	178	365	543
TOTAL	466	469	935

*Table 10 – **Grandstand Road Traffic** – August Weekday Traffic Volumes (source: City of Belmont Traffic)*

Movement	Great Eastern Hwy	Resolution Dr	TOTAL
IN	410	641	1,051
OUT	428	517	945
TOTAL	838	1,158	1,996

Traffic data shows that Grandstand Road has approximately 2,000 daily traffic movements, this is double the number of daily traffic movements along Daly Street (approx. 950vpd) and three times more than the number of daily traffic movements along Hargreaves Street (approx. 650vpd).

The higher traffic volumes along Grandstand Road are primarily a result of the land uses at the southern end of Grandstand Road (fronting Great Eastern Highway), which are predominantly fast food outlets which generate a high volume of vehicle movements, particularly around lunch time and afternoon peak periods.

Hargreaves Street, Daly Street and Grandstand Road all have access to/from Great Eastern Highway to the south. To the north, Hargreaves Street and Daly Street have access to/from Stoneham Street and Grandstand Road has access to/from Resolution Drive. Table 10 shows that approx. 1,150 daily traffic movements access Grandstand Road to/from Resolution Drive, whilst Table 11 shows that approx. 800 daily traffic movements access Hargreaves Street and/or Daly Street to/from Stoneham Street.

This data shows that Grandstand Road carries higher volumes of traffic than Hargreaves Street and Daly Street combined. This is also true with total traffic to/from these local roads with Great Eastern Highway – Grandstand Road carries approx. 850vpd, whilst Hargreaves Street and Daly Street combined carry approx. 800vpd.

*Table 11 – **Traffic to/from Stoneham Street from Hargreaves St and Daly St** – August Weekday Traffic Volumes (source: City of Belmont Traffic)*

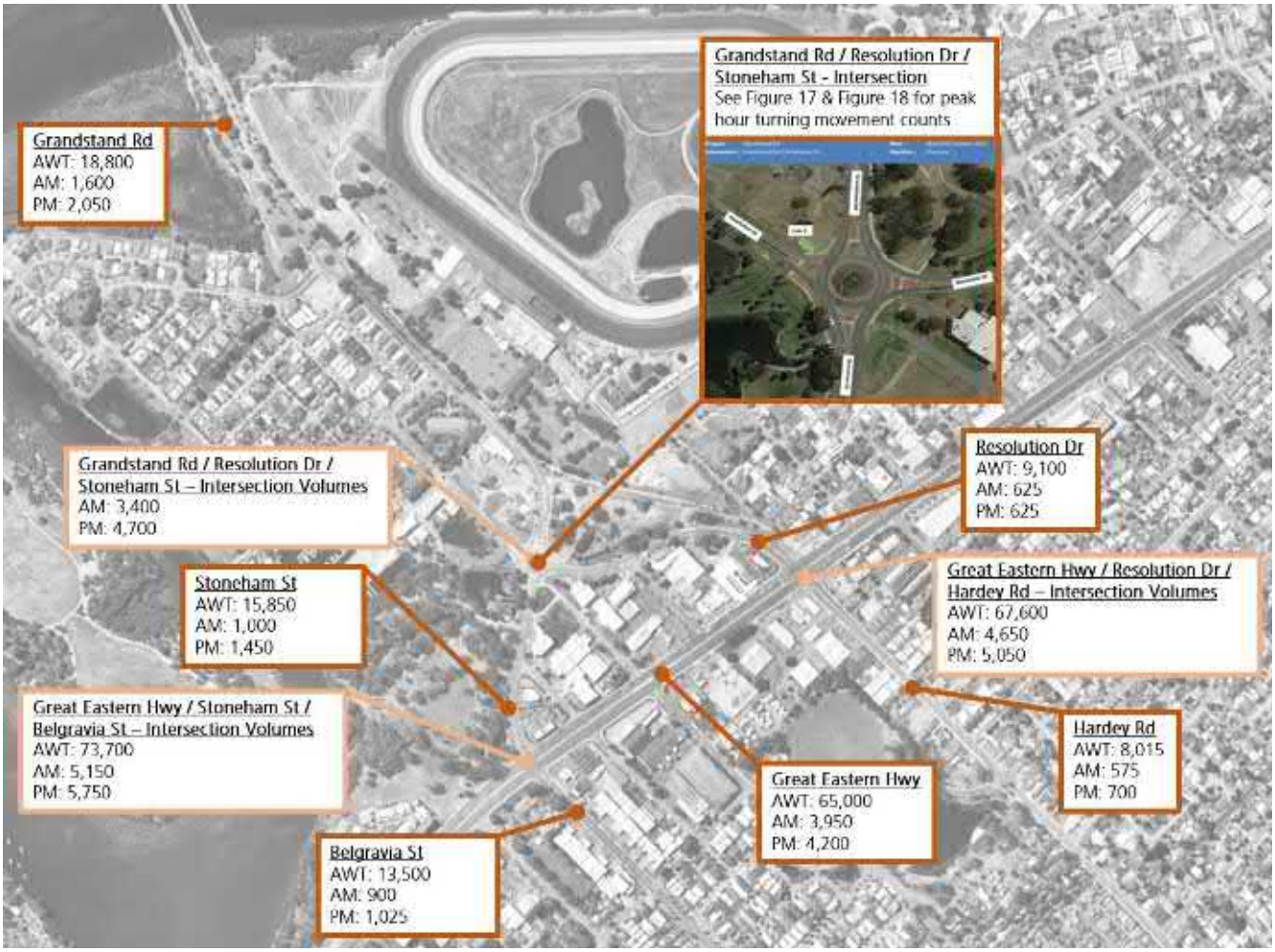
Movement	Great Eastern Hwy	Stoneham St	TOTAL
IN	427	310	737
OUT	361	491	852
TOTAL	788	801	1,589

3.6.5 Collated Link Count Data

Figure 16 shows the collated link flow volumes around the Golden Gateway Precinct, in each instance the figure shows the most recent link flow volume, which are all from 2017. The data has been collated from two sources; recent count data provided by the City of Belmont and count data from the online MRWA traffic counts map.

The existing traffic count data shows two-way link volume data for average weekday traffic (AWT), for the AM peak hour of 0800-0900 (AM) and the PM peak hour of 1600-1700 (PM).

Figure 16 - Two-way Link Volume Traffic Count Data (sources: City of Belmont and Main Roads WA)



3.6.6 City of Belmont Peak Hour Turning Movement Data

In order to assist with gaining an accurate understanding of the operation of the Grandstand Road/Resolution Drive/Stoneham Street roundabout, a peak period turning movement survey was also undertaken.

The turning movement survey was completed using a video camera erected on a mask located between the Grandstand Road (northern leg of the intersection) and Resolution Drive (western leg of the intersection) – on the edge of the Ascot Kilns site.

The peak period turning movement survey collected full turning movement data at the roundabout (including u-turns), with the data collected for light and heavy vehicles in 15 minute time periods.

The turning movement data was collected on Wednesday 25 October 2017 during the following peak periods:

- AM peak – 0745-0915; and
- PM peak – 1545-1715.

Figure 17 shows the turning movement data for the AM peak hour of 0800-0900, and Figure 18 shows the turning movement data for the PM peak hour of 1600-1700.

Figure 17 - Existing 2017 AM Peak Hour (0800-0900) Turning Volumes at Grandstand Road/Resolution Drive/Stoneham Street Intersection

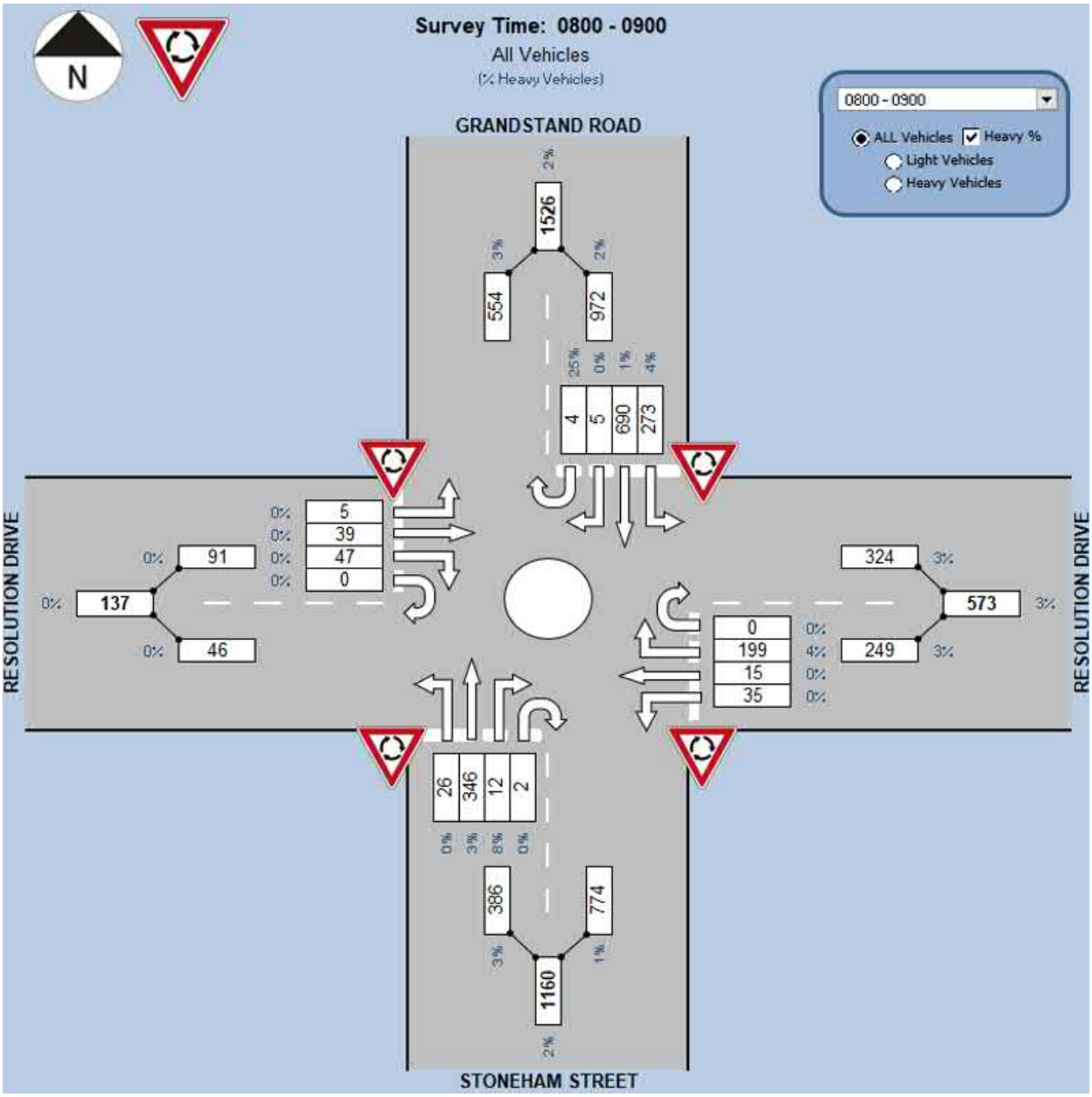
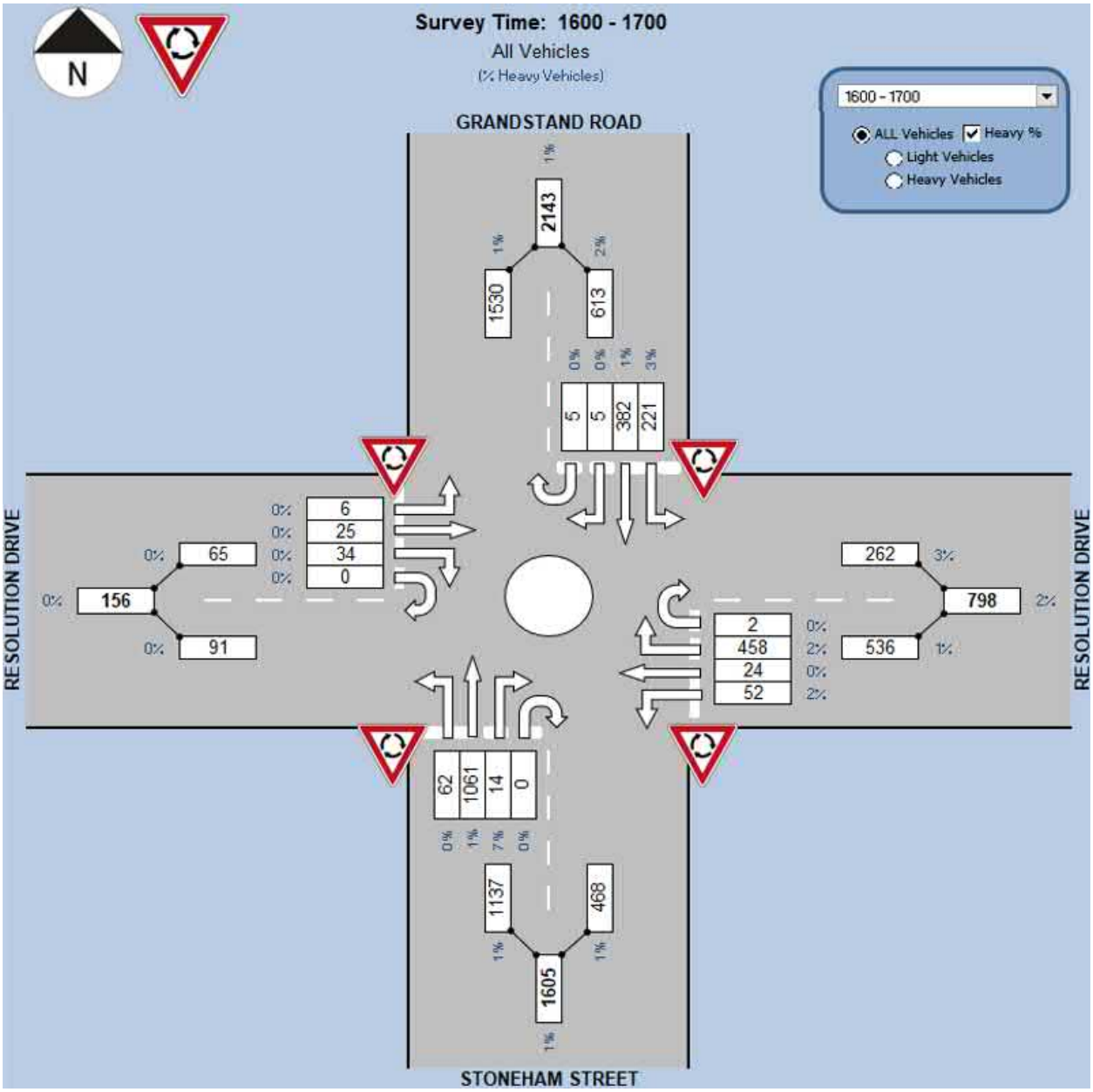


Figure 18 - Existing 2017 PM Peak Hour (1600-1700) Turning Volumes at Grandstand Road/Resolution Drive/Stoneham Street Intersection



A review of the video footage for the AM and PM peak hours shows that there was very limited queuing during these periods on the day of the survey.

Figure 19 shows a still image from the AM peak hour which shows two vehicles queuing on the Resolution Drive west arm (Ascot Waters access). During the AM peak hour on this approach to the intersection the queue did not exceed two vehicles and the maximum delay experienced was 20 seconds. The Resolution Drive east arm had a queue of 6 vehicles on two occasions in the peak hour and both times the queue cleared with a 15 second delay. At all other times the intersection operated with free flow conditions during the AM peak hour.

Figure 20 shows a still image from the PM peak hour which shows vehicles queuing on the Resolution Drive west arm (ascot Waters access). During a short 3 minute period within the peak hour this approach had a queue length of 6 vehicles with an average delay of 90 seconds. However, for the remaining 57 minutes of

the peak hour no queue exceeded 3 vehicles with maximum delays of 20 seconds. On occasions the Resolution Drive east arm and Stoneham Street south arm had queues of 6 vehicles (in the case of the Stoneham Street approach this was 6 vehicles in each of the two approach lanes), which cleared with a 15-20 second delay. At all other times the intersection operated with free flow conditions during the PM peak hour.

It should be noted that due to the viewing angle of the survey video camera, it is not possible to see the Grandstand Road approach to the intersection, and therefore it is not possible to comment on queueing on that approach to the roundabout.

Figure 19 - AM Peak Hour (0800-0900) Video Survey Image from 08:12

Figure 20 - PM Peak Hour (1600-1700) Video Survey Image from 16:51

4. INTERNAL TRANSPORT NETWORKS

4.1 Changes to Existing Road Network

As set out in the Structure Plan Report, the movement network proposals include retention of the broad framework of the existing road network and primacy of existing major traffic movements. Within this movement network the Golden Gateway Precinct will be developed as a livable mixed use area with high levels of amenity, access to local retail, food and beverage outlets, public open space and the Swan River foreshore.

Figure 21 shows the Golden Gateway Structure Plan and the following changes to the existing road network are evident:

- Resolution Drive: Resolution Drive currently connects between the Great Eastern Highway/Hardey Road traffic signal controlled intersection and the Grandstand Road/Resolution Drive/Stoneham Street roundabout. This section of Resolution Drive will be realigned via the historical Raconteur Drive alignment.
    - Resolution Drive will connect between the Great Eastern Highway/Hardey Road traffic signal controlled intersection and a relocated Grandstand Road/Resolution Drive/Stoneham Street roundabout – adjacent to the Ascot Kilns LDP area.
    - The Grandstand Road/Resolution Drive/Stoneham Street roundabout will be relocated approximately 125m to the northeast of its existing location, and will become a three arm roundabout.
    - The existing lane arrangements along the Grandstand Road and Resolution Drive corridors will be retained. As such, the Grandstand Road configuration of a four lane divided road (2 lanes in each direction) will be retained and the Resolution Drive two lane divided road (1 lane in each direction) will be retained – with additional lanes on the approach and exit from the Great Eastern Highway intersection, as per existing lane arrangement.
    - There will be a single intersection on the north side of Resolution Drive between Great Eastern Highway and the Grandstand Road/Resolution Drive/Stoneham Street roundabout. The intersection will be at a midway point along Resolution Drive and provide access to the northern area of the Golden Gateway Precinct and the Matheson Road corridor. Consequently, direct vehicle access onto Resolution Drive from future lots that abut the north side of Resolution Drive will not be permitted. The new intersection is expected to take the form of an all movements 'seagull' intersection with separate left turn/right turn lanes from the Golden Gateway Precinct and a right turn auxiliary lane from Resolution Drive into the Golden Gateway Precinct.
    - Any limitation on direct vehicle access onto Resolution Drive, between Great Eastern Highway and the Grandstand Road/Resolution Drive/Stoneham Street roundabout, from the existing lots that abut the south side of Resolution Drive, will be subject to further consideration and any changes to the land assembly.

- Stoneham Street: Stoneham Street currently connects between the Great Eastern Highway/Belgravia Street traffic signal controlled intersection and the Grandstand Road/Resolution Drive/Stoneham Street roundabout. This section of road will be retained along its existing alignment, in addition Stoneham Street will be continued through to the new location of the roundabout 125m to the northeast of its existing location.

- Stoneham Street will connect between Great Eastern Highway/Belgravia Street traffic signal controlled intersection and Grandstand Road/Resolution Drive/Stoneham Street roundabout – adjacent to the Ascot Kilns LDP area.
- The Grandstand Road/Resolution Drive/Stoneham Street roundabout will be relocated approximately 125m to the northeast of its existing location, and will become a three arm roundabout.
- The section of Resolution Drive that provides access to the Ascot Waters development and currently creates a four arm roundabout with Grandstand Road and Stoneham Street, will now form a four-way traffic signal controlled intersection with Stoneham Street. The northern section of Daly Street within the Golden Gateway Precinct will be realigned to create the four arm intersection.
- The existing lane arrangement along Stoneham Street will be retained. As such, the Stoneham Street configuration of a four lane undivided road (2 lanes in each direction) will be retained either side of the proposed four way traffic signal controlled intersection with Resolution Drive (Ascot Waters access road) and Daly Street.
- The existing lane arrangements along Resolution Drive (Ascot Waters access road) and Daly Street will be retained. As such, these two roads will remain as two lane divided roads (1 lane in each direction), with a short (15m) left turn slip lane at the traffic signal controlled intersection (with the left turn slip operating under give-way control).
- The traffic signal controlled intersection of Stoneham Street/Resolution Drive (Ascot Waters access road)/Daly Street, would feature signal controlled pedestrian crossing facilities across all four approaches at the intersection. This will provide safe pedestrian crossing facilities to connect the Golden Gateway Precinct with Ascot Waters and the amenity provided by the Swan River foreshore.
- The existing access arrangement at the Hargreaves Street and Stoneham Street intersection will be retained, as such this intersection will remain left-in/left-out only.
- The existing access arrangements from Stoneham Street to access the riverside car park within the Belmont Trust land will remain unchanged. As such the existing all movements access arrangements will remain and the access road to the riverside car park with remain unchanged as a single lane access road in each direction.

- Hargreaves Street, Daly Street and Grandstand Road (south): the minor roads of Hargreaves Street and Daly Street currently connect between Great Eastern Highway and Stoneham Street, whilst Grandstand Road (south) connects between Great Eastern Highway and Resolution Drive. It is proposed that Hargreaves Street and Daly Street will continue along their existing alignments and connect between Great Eastern Highway and Stoneham Street. Grandstand Road (south) will be realigned at a midway point to connect into Daly Street.
  - Hargreaves Street, Daly Street and Grandstand Road (south) intersections with Great Eastern Highway will be retained as per the existing left-in/left-out arrangement.
  - The existing access arrangement at the Hargreaves Street and Stoneham Street intersection will be retained, as such this intersection will remain left-in/left-out only.
  - Daly Street will form a four-way traffic signal controlled intersection with Stoneham Street and Resolution Drive (Ascot Waters). The northern section of Daly Street within the Golden Gateway Precinct will be realigned to create the four arm intersection.
  - The traffic signal controlled intersection of Stoneham Street/Resolution Drive (Ascot Waters access road)/Daly Street, would feature signal controlled pedestrian crossing facilities across all four approaches at the intersection. This will provide safe pedestrian crossing facilities to connect the Golden Gateway Precinct with Ascot Waters and the amenity provided by the Swan River foreshore.

- Grandstand Road (south) intersection with Daly Street would be priority controlled with Grandstand Road (south) being the minor leg of the intersection.
- Hargreaves Street, Daly Street and Grandstand Road (south) would take the form of two lane roads (1 lane in each direction). On-street parking will be provided along each street where appropriate.

- Matheson Road: Matheson Road provides access to residential/stable land holdings located between Ascot Racecourse and Great Eastern Highway. A connection between Matheson Road and Great Eastern Highway is made via a number of north-south connecting streets, and connection from Matheson Road to Resolution Drive is via a modified road connection.
  - Matheson Road will continue to connect through to a realigned Resolution Drive via a modified road network, which will provide access to new development Lots but not prioritise Matheson Road as a through route.
  - The form of intersection between Matheson Road and Resolution Drive will be subject to further detailed design. It is expected that this intersection would be priority controlled with Matheson Road being the minor leg of the intersection (in the form of a seagull intersection). This will ensure the Grandstand Road/Resolution Drive corridor is the primary route through the Golden Gateway Precinct.
  - Matheson Road and internal development roads would take the form of two lane roads (one lane in each direction). On-street parking will be provided along streets where appropriate.

Figure 21 – Golden Gateway Structure Plan Road Network and Built Form (source: Taylor Burrell Barnett)

4.2 Role and Function of Key Roads

4.2.1 Great Eastern Highway

The Great Eastern Highway corridor will present itself as a strong, unified commercial and mixed-use edge to the Golden Gateway development.

Commercial uses will be encouraged at ground-level and above with residential development to occupy upper storeys.

Building(s) at the junctions of Stoneham Street and Resolution Drive will feature a distinctive and iconic built form which mark an 'arrival' point to the Golden Gateway.

Great Eastern Highway will remain in its current form and no changes are proposed to the existing road connections with Great Eastern Highway nor the form of intersections between Great Eastern Highway and connecting roads.

4.2.2 Stoneham Street

Stoneham Street will be the primary interface between the Golden Gateway development and the Swan River. It is proposed that future planning for the Belmont Trust Land, located to the west of Stoneham Street, should ensure strong physical links are maintained between the Swan River and future Golden Gateway population and workforce.

Stoneham Street will continue to be a major district road corridor and provide for high capacity traffic movements. The form of Stoneham Street will be retained as a four lane divided road (two lanes in each direction) with a median strips on approaches to main intersections and a painted dividing line mid-block. Indented on-street parking may be considered adjacent to the Golden Gateway development at detailed design stage to support local ground floor commercial activities along the corridor.

The intersection of Stoneham Street/Resolution Drive (Ascot Waters access road)/Daly Street will operate as a traffic signal controlled intersection. The intersection would feature signal controlled pedestrian crossing facilities across all four approaches. This will provide safe pedestrian crossing facilities to connect the Golden Gateway Precinct with Ascot Waters and the amenity provided by the Swan River foreshore.

Development addressing Stoneham Street is to provide an appropriate interface to the Belmont Trust Land to ensure a high standard of visual amenity and surveillance within a mixed-use environment.

4.2.3 Resolution Drive

Resolution Drive is intended to accommodate primarily residential uses with the potential commercial uses at ground level. Ground level development on the south side may be residential or commercial but will be designed to accommodate non-residential use.

Resolution Drive will be realigned along the Raconteur Drive alignment and the existing Grandstand Road/Resolution Drive/Stoneham Street roundabout will be relocated approximately 125m to the northeast of its existing location, and will become a three arm roundabout.

The existing lane arrangements of Grandstand Road and Resolution Drive will remain unchanged with the same configuration of lanes on approach and exit to the relocated Grandstand Road/Resolution Drive/Stoneham Street roundabout.

Direct vehicle access onto Resolution Drive will not be permitted for future lots which abut the north side of Resolution Drive. However, any vehicle access restrictions for existing lots on the south side of Resolution Drive will be subject to further consideration and any changes to the land assembly.

Trees will line either side of Resolution Drive to create an attractive pedestrian environment connecting with the central open space area.

4.2.4 Daly Street (Main Street)

It is proposed that Daly Street will become the community centre for the development. The precinct is intended to perform a local centre function, anchored by a small supermarket and supported with local specialty shops, and restaurant/cafes. Retail development must present a 'Main Street' character, with active edges to the street.

It is proposed that a leafy boulevard will provide a shared vehicle pedestrian space, providing a pleasant public realm against an active street frontage.

Daly Street will take the form of two lane roads (one lane in each direction). On-street parking will be provided along each street within the Golden Gateway Precinct where appropriate.

4.3 Road Hierarchy

Figure 22 shows the proposed road hierarchy. This is also explained in more detail below.

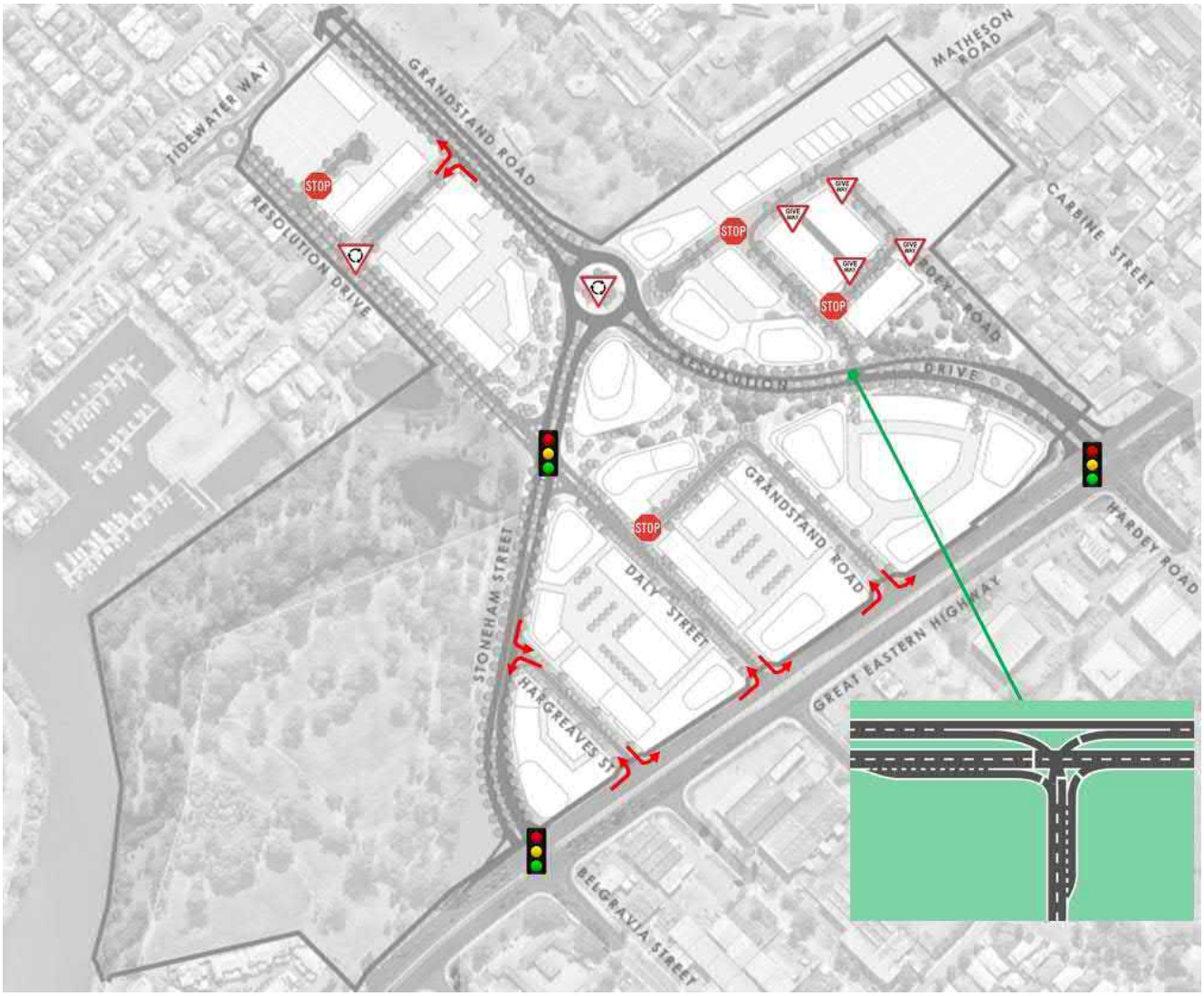
- Primary Distributor:
  - Great Eastern Highway would be retained as a Primary Distributor road
- Distributor A:
  - Stoneham Street would be retained as a Distributor A road
  - Resolution Drive/Grandstand Road would be retained as a Distributor A road
  - Belgravia Street would be retained as a Distributor A road
- Distributor B:
  - Hardey Road would be retained as a Distributor B road
- Local Distributor:
  - Resolution Drive (Ascot Waters access road) between Stoneham Street and Tidewater Way would be retained as a Local Distributor road
- Access Roads:
  - Hargreaves Street would be retained as an Access Road
  - Daly Street would be retained as an Access Road
  - Grandstand Road (south) would be retained as an Access Road
  - Matheson Road would be retained as an Access Road

Figure 22 – Golden Gateway Structure Plan Road Hierarchy (source: Taylor Burrell Barnett)

4.4 Intersection Controls

The forms of proposed intersection controls detailed in Section 4.1 are shown Figure 23.

Figure 23 - Proposed Intersection Controls for Golden Gateway Development



4.5 Pedestrian/Cycle Network and Crossing Facilities

4.5.1 Existing Pedestrian/Cycle Facilities

The extent and quality of the existing pedestrian infrastructure within and surrounding the Golden Gateway site is of a standard commensurate with the extent of existing development and form of land uses across the site, i.e. there are a number of existing undeveloped Lots and those that are developed primarily accommodate light industrial/commercial unit style development. The existing local pedestrian infrastructure is summarised as follows for the major road network and minor road network.

- Major Road Corridors:
  - Great Eastern Highway – within the vicinity of the LSP site, the crossing of Great Eastern Highway by pedestrians is facilitated via traffic signal controlled intersections at both

Stoneham Street/Belgravia Street and Resolution Drive/Hardey Road intersections with Great Eastern Highway.

- Grandstand Road, Raconteur Drive, Resolution Drive and Stoneham Street – all have footpaths along one side of the street – Grandstand Road along the eastern side of the street adjacent to the Ascot Racecourse, Raconteur Drive along the northern side of the street to connect to Grandstand Road, Resolution Drive along the eastern side of the street adjacent to the Ascot Waters development and Stoneham Street along the western side of the street adjacent to the Belmont Trust Land.

- Minor Road Corridors:
  - Hargreaves Street, Daly Street and Grandstand Road (south) – provide access to the light industrial/commercial units in this area of the site. None of these three street have footpath, which reinforces the fact that access to these land uses are primarily designed to be by private vehicle rather than on foot.

The extents of the existing cycle network are set out in Section 3.3. The extent and quality of the existing cycling infrastructure within and surrounding the Golden Gateway LSP site is of a high standard with local and regional links provided to the site. The local and regional cycling network is shown in Figure 6.

Good on road cycling routes for experienced/confident cyclists have recently been provided adjacent to the Golden Gateway LSP site as part of the Great Eastern Highway upgrades. A number of high quality shared use paths providing connections within the LSP site along Stoneham Street, Raconteur Drive and Grandstand Road are provided.

In addition, high quality shared use paths from the LSP site are provided along the Swan River Foreshore (via Belmont Trust Land towards the Graham Farmer Freeway PSP to access Perth City), and along the shoreline within the Ascot Water development. Also, streets within the Ascot Waters development are identified as local cycle friendly routes.

4.5.2 Proposed Pedestrian/Cycle Facilities

Figure 24 shows the proposed shared path connections through the Golden Gateway development. It should be noted that all existing shared paths surrounding and through the site will be maintained and many of these existing connections enhanced by additional shared path connectivity including:

- Retention of the shared path along the northern/western side of Stoneham Street.
- The Stoneham Street shared path will be enhanced with a formalised connection through to Matheson Road (Matheson Road is currently identified as a good road riding environment) – the form of crossing of Resolution Drive will be subject to further detailed design.
- Shared path connections will be provided along Hargreaves Street, Daly Street and Grandstand Road (south). These will provide connectivity between the Great Eastern Highway on-road bike lanes and the shared path network along Stoneham Street and through the public open space corridor running east-west through the Golden Gateway site.
- In addition to the existing pedestrian crossing facilities at the Great Eastern Highway intersections with Stoneham Street and Resolution Drive, it is proposed that a controlled mid-block shared pedestrian/bike crossing is provided. An at-grade signal controlled crossing would be the preferred form of crossing and provide connectivity between the Golden Gateway development and land uses and community facilities located to the south of Great Eastern Highway.
- An at-grade signal controlled crossing of Great Eastern Highway would require further investigation at the detailed design stage, but could take the form of the pedestrian crossing of Great Eastern Highway that is provided to the west of the Golden Gateway site.

Figure 24 – Golden Gateway Structure Plan Pedestrian and Cycle Facilities (source: Taylor Burrell Barnett)

The indicative cross sections shown in Figure 25, Figure 26 and Figure 27 show the internal road network within the Golden Gateway development and enhanced pedestrian and cycling environment, including opportunities to safely cross internal streets.

Figure 25 – Indicative Hargreaves Street Cross Section (source: EPCAD)

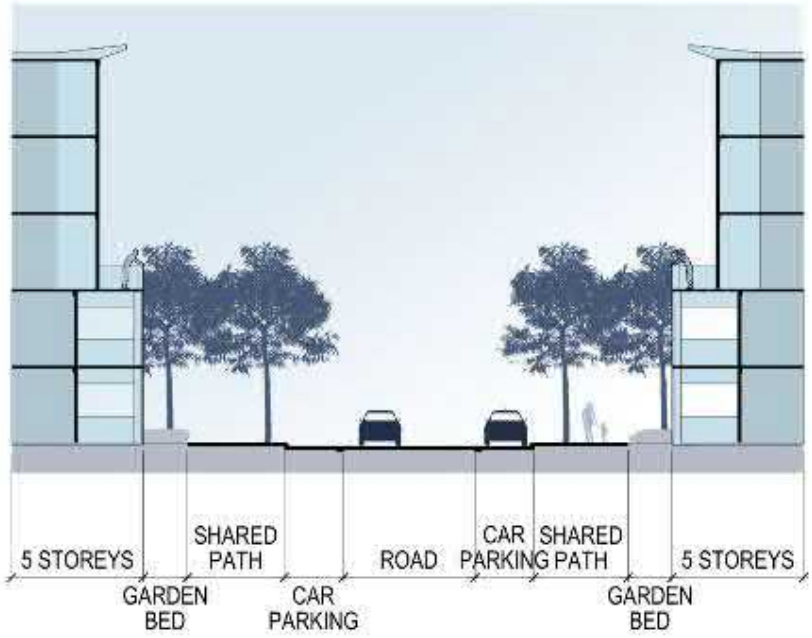


Figure 26 – Indicative Daly Street (Main Street) Cross Section (source: EPCAD)

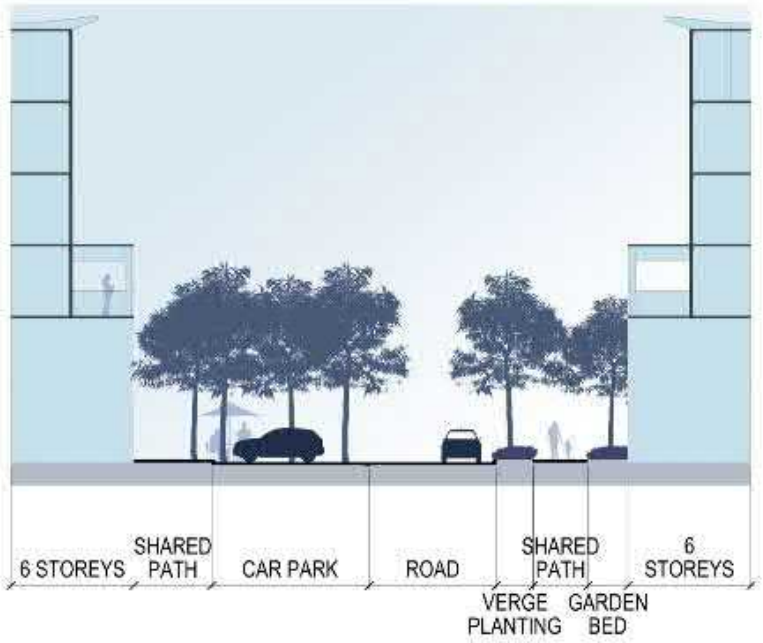
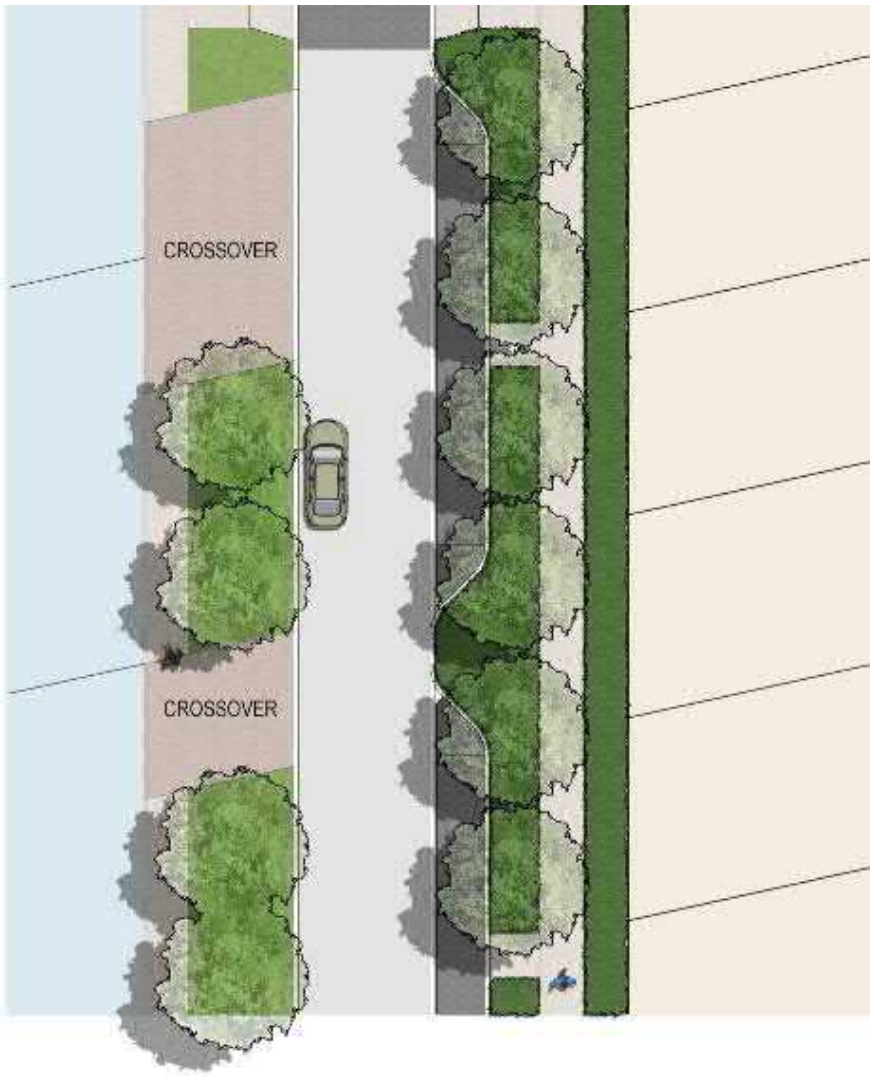
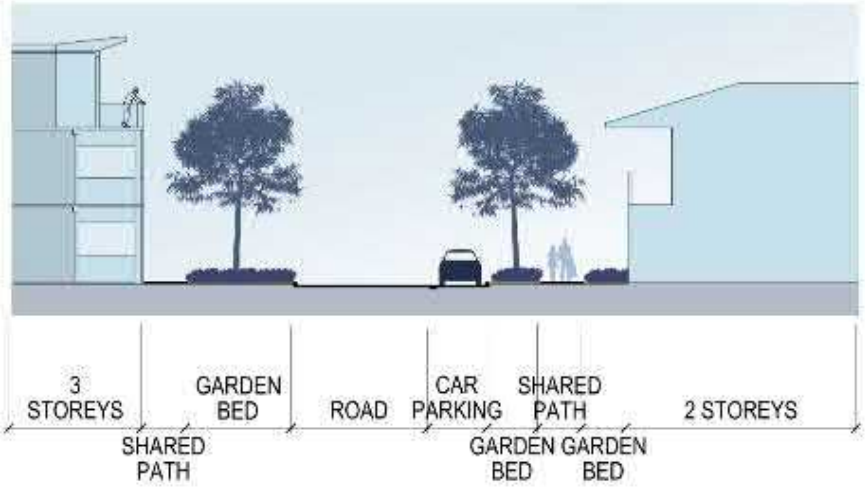


Figure 27 – Indicative Cross Section for Residential Area to the North East of Resolution Drive (source: EPCAD)





4.6 Public Transport Routes

4.6.1 Existing Public Transport

Access to existing public transport facilities from the Golden Gateway site is considered to be 'average' at present, however there are options to make improvements to public transport access if land uses within the Golden Gateway site change over time to support additional public transport service provision.

The Circle Route buses operate through the LSP site along Grandstand Road and Resolution Drive. However, no bus stops for these services currently exist within the LSP site, the closest bus stops are located on Grandstand Road immediately to the north of the LSP area (close to the main pedestrian entry/exit to Ascot Racecourse).

The Circle Route services provide a high frequency orbital public transport connection around Perth, linking inner suburbs, major activity centres, key land uses and public transport hubs including; Belmont Forum, Oats Street Station, Curtin University, Murdoch Activity Centre, Fremantle, Cottesloe, Claremont, UWA, QEII Medical Centre, Stirling Station and Morley Galleria.

In addition, bus routes 36, 40, 295, 296 and 299 operate along Great Eastern Highway along the southern boundary of the site. All five of the bus routes serve Elizabeth Quay Bus Station, St Georges/Adelaide Terrace, Victoria Park Transfer Station and Great Eastern Highway adjacent to the Golden Gateway LSP site.

4.6.2 Possible Future Public Transport

In order to facilitate higher density development in the Golden Gateway precinct, a step change in public transport provision and public transport use will be required to ensure residents, employees and visitors have the potential to travel to/from Golden Gateway by a sustainable form of transport and take up that opportunity.

High level discussions with the Public Transport Authority (PTA) Transperth Service Development Team has informed the information provided below.

It is currently anticipated by the PTA that the introduction of the Forrestfield Airport Link (FAL) rail connection from central Perth to Perth Airport and onto a park 'n' ride station at Forrestfield, will see the removal of four of the five existing bus routes operating along the Great Eastern Highway corridor (bus routes 36, 295, 296 and 299) and a renumbering and change of route for the remaining bus route (bus route 40).

Subject to consultation it is currently anticipated that the five existing bus routes will be rerouted as follows:

- Bus Route 36 – to be renumbered as Bus Route 303 and operate from Midland Station to the new Redcliffe Station;
- Bus Routes 295/296/299 – to feed into Forrestfield Station from Kalamunda and its surrounds; and
- Bus Route 40 – to be renumbered Bus Route 940 Superbus (details below).

It is currently anticipated that the 940 Superbus would initially operate as a first stage from Redcliffe Station to Elizabeth Quay Station via Great Eastern Highway (past the Golden Gateway development) and Victoria Park Transfer Station and Adelaide Terrace/St Georges Terrace.

It is anticipated that the first stage of the 940 Superbus route is funded as part of the FAL project.

In the longer term, it is anticipated that the Superbus would become a through routed service to Subiaco Station from Elizabeth Quay Bus Station via West Perth. This would be subject to funding, as well as the longer term infrastructure requirements from the PTA being in place, including bus lanes along Adelaide Terrace/St Georges Terrace and bus layover capacity at Subiaco Station.

The Superbus route would operate as a high frequency service and as such it is considered unlikely that the PTA would re-route this service through the Golden Gateway site and instead the service would operate along the Great Eastern Highway corridor between Redcliffe Station and Victoria Park Transfer Station.

The PTA has indicated that, if sufficient public transport demand was generated by large scale development of the Golden Gateway site, they would consider the option of operating a bus service which connected the Golden Gateway site and central Perth with a bus service that terminated/turned back from the Golden Gateway site – utilising the internal road network within the Golden Gateway site. However this would be contingent upon the Golden Gateway site generating the requisite public transport demand to warrant the investment in such a service.

5. EXTERNAL TRANSPORT NETWORKS

5.1 Changes to External Networks

Aside from the intersection controls proposed in section 4.4, there are no planned alterations to the external transport network.

The existing cycling, pedestrian and public transport networks are all within proximity of the site and there are no known major changes proposed that would impact the site. Where future improvements are being considered adjacent to the Structure Plan area, the City of Belmont should prioritise safe pedestrian and cyclist movements to tie-in with the proposed Golden Gateway networks.

6. INTEGRATION WITH SURROUNDING AREA

6.1 Major Attractors and Generators

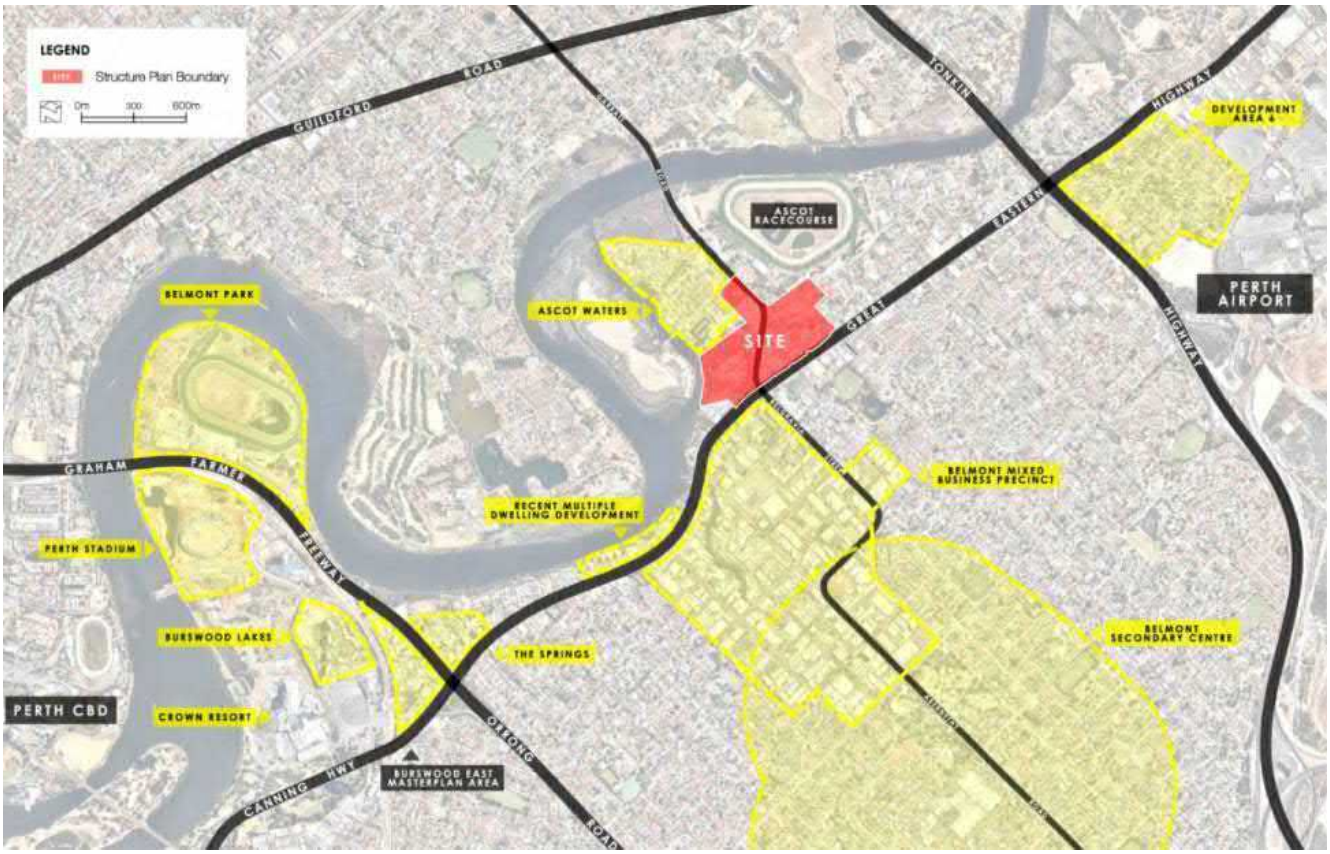
The Golden Gateway site is located at the axis of the key movement corridors of Great Eastern Highway, Stoneham Street, Grandstand Road and Resolution Drive and includes key strategic sites such as the Belmont Trust Land, Ascot Kilns and Western Australian Turf Club headquarters and associated land.

Figure 28 shows the location of the Golden Gateway site within a district context. The land is located approximately 5km south-east of the Perth central business district, 3km north of Belmont Forum Shopping Centre and mixed business area, and 5km northeast of Victoria Park entertainment precinct. Within its immediate context, the subject land is located adjacent the Swan River and Ascot Racecourse.

It is also well connected to regional movement networks such as the Graham Farmer Freeway, Orrong Road, Canning Highway and Tonkin Highway. The Garratt Road Bridge also provides a key connection to the north across the Swan River.

Within the local context, the subject land can be regarded as lacking in basic convenience shopping facilities. The BP Service Station located on the corner of Great Eastern Highway and Resolution Drive and deli located at Epsom Avenue approximately 2km south of the subject land provide local conveniences. However, the nearest supermarket (IGA) is located approximately 2.5km to the west of the subject land at Eastgate Commercial Centre, Kooyong Road (neighbourhood centre) or Belvidere Street (neighbourhood centre) approximately 2.5km to the south. Additional services are located approximately 3km to the north-west of the subject land at Maylands Shopping Centre (neighbourhood centre) or 3km to the south at Belmont Forum (secondary centre).

Figure 28 – Golden Gateway Site – District Context Plan (source: Taylor Burrell Barnett)



The City of Belmont is located in the inner middle ring of localities around Central Perth. It is bordered by Perth Airport, the Swan River, City of Canning to the south and Town of Victoria Park to the west. It is a major employment zone and has a residential population above 40,000.

The population of the City of Belmont was recorded as 30,333 in 2006, 35,209 in 2011 and 41,344 (estimate) in 2015. The population of the City of Belmont is getting younger, reflecting a move towards smaller household sizes, more medium and higher density development and attraction of the area to younger people working and choosing to live closer to central Perth.

The age profile of the City of Belmont point to this trend with key indicators being:

- The highest age grouping population increases were experienced in the 20-34 age bracket;
- There was also a significant increase in the number of babies in the City of Belmont which would also correlate with the number of young families choosing to move into the City of Belmont between the 2006 and 2011 Census periods; and
- There is a higher proportion of these age groups in the City of Belmont than Greater Perth indicating that the area is becoming more attractive for young families and professionals.

The majority of employed people in the City of Belmont travel to jobs outside of the Council boundaries. The 2011 Census statistics show that 22% of people recorded live and work in the City of Belmont.

Although the majority of employed people within the City of Belmont in 2011 travelled outside of the Council boundaries to reach jobs, the dispersal of people was relatively widespread. Jobs within the City of Belmont was the highest recorded number with the Perth Inner and Outer central business district locations being the next highest.

Employment in adjoining Town of Victoria Park and City of Canning were high, potentially reflecting the areas of Welshpool and Kewdale located within these authorities and significant amount of higher order commercial and retail centres.

At the 2011 Census, there were nearly 47,000 jobs located within the City of Belmont and this number has continued to rise with the expansion of development in the Kewdale/Welshpool area, increased development around Perth Domestic Airport and job growth in service, retail and commercial sectors. Within Belmont, there are more employees than residents with the majority of those employees coming from outside of the City to access jobs – less than 4,000 local residents lived and worked in the City of Belmont in 2011.

6.2 Strategic Deficiencies

As set out in this report, the Golden Gateway site has excellent access to the existing local and regional transport networks. Critically for this site, the future networks surrounding the site should cater for local trips via better cycling and pedestrian access so as to reduce the potential for vehicle trips to be generated by the development.

This could be accommodated by:

- A high quality pedestrian connection to cross Great Eastern Highway at a mid-point between the Stoneham Street and Resolution Drive intersections, in order to access Perth bound public transport services, as well as retail, commercial and recreational land uses to the south of Great Eastern Highway;
- Ensuring the interface between existing cycling infrastructure surrounding the site and new cycling infrastructure provided within the Golden Gateway development is well planned and designed to provide a seamless and safe transition between the two; and

- If sufficient public transport demand was generated by large scale development of the Golden Gateway site, which facilitated a bus service which connected the Golden Gateway site and central Perth with a bus service that terminated/turned back from the Golden Gateway site – the transition of buses into and out from the site as well as route through the site should be designed to ensure the highest number of residents and employees within the Golden Gateway site are within a 200m-400m walk distance of a bus stop to make the public transport services accessible and attractive to users.

7. ANALYSIS OF INTERNAL TRANSPORT NETWORKS

7.1 Form of Assessment

In order to ensure that there is relevant information assessed within this TIA, the assessment has been as comprehensive as possible in the use of data collected and observations and details relevant to the Golden Gateway site.

The traffic assessment has been undertaken using focused SIDRA assessment of the key intersections to understand the immediate and future impacts. The following intersections have been assessed:

- Stoneham Street, Great Eastern Highway and Belgravia Street traffic signal controlled intersection (existing year and future year operation);
- Resolution Drive, Great Eastern Highway and Hardey Road Street traffic signal controlled intersection (existing year and future year operation);
- Grandstand Road, Resolution Drive and Stoneham Street roundabout (existing year and future year operation); and
- Stoneham Street, Resolution Drive and Daly Street traffic signal controlled intersection (future year operation).

7.2 Assessment Years and Background Traffic

The assessment years for the Golden Gateway development have been for the base year (2016) and for the forecast year (2031), which represents a notional date by which full site buildout is delivered.

In order to determine forecast year traffic and understand the potential background growth, Main Roads WA provided strategic model outputs for the use in this study, to inform the Project Teams understanding of forecast traffic growth on the road network surrounding the Golden Gateway site.

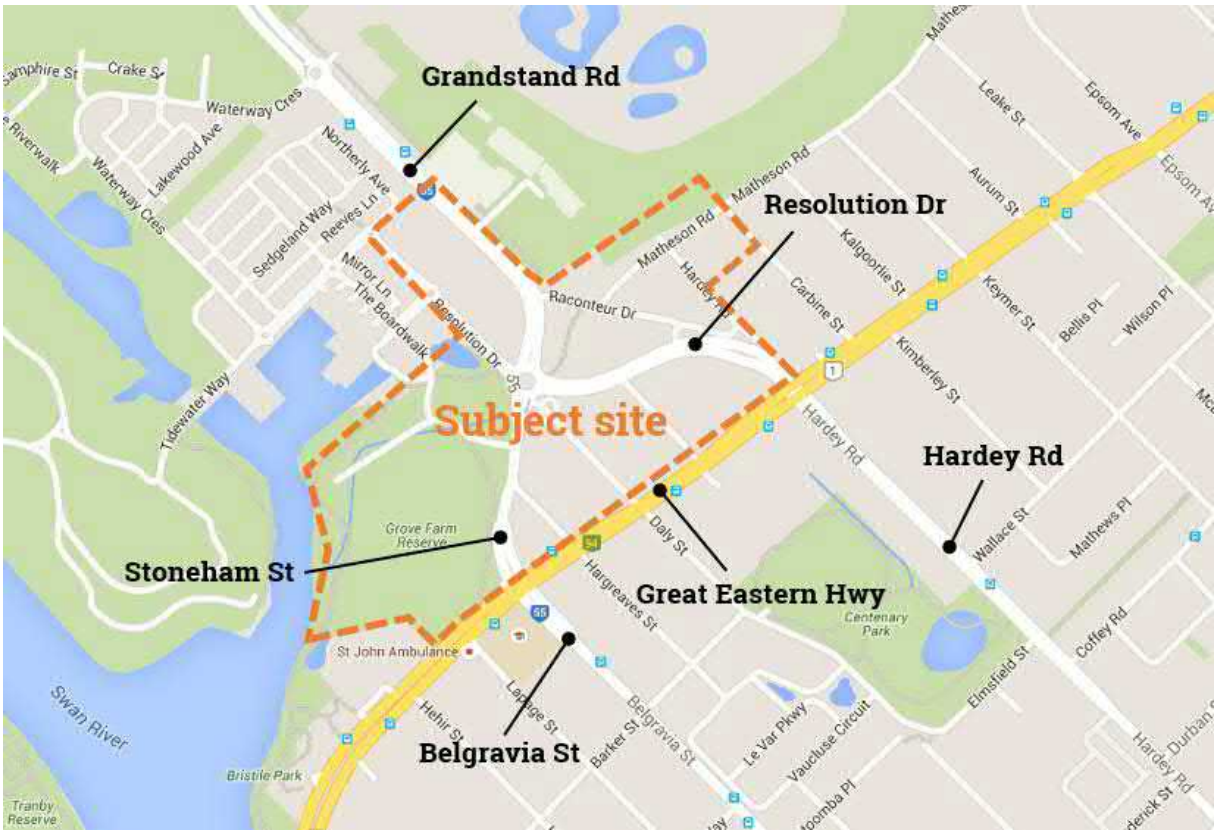
Main Roads WA strategic Regional Operations Model (ROM) encompasses metropolitan Perth and surrounds. Main Roads WA's current strategic model is called ROM24, which provides 24 hour time of day traffic assignment.

In order to assist with forecast traffic growth analysis for this study, Main Roads WA provided link volume plots (showing traffic volumes on each road) from the following ROM24 models:

- 2016 – all day model / AM peak (7am-9am) model / PM peak (4pm-6pm) model; and
- 2031 – all day model / AM peak (7am-9am) model / PM peak (4pm-6pm) model.

It has been found through previous experience working with ROM24 model outputs, that 2016 ROM24 traffic volumes are typically higher than recent observed traffic volumes (note: the source of data referred to in this report as 'recent observed traffic volumes' is the Main Roads WA Traffic Map: https://trafficmap.mainroads.wa.gov.au/). Figure 29 shows the data collection location for the recent observed traffic volumes data.

Figure 29 – Data Collection Locations for Recent Observed Traffic Volumes (map source: Google Maps)



The difference between 2016 ROM24 traffic volumes and recent observed traffic volumes varies from location to location across the geographical area of the ROM24 model, but it is typical that 2016 ROM24 traffic volumes are between 5%-25% higher than recent observed traffic volumes.

Table 12 shows the difference between the 2016 ROM24 traffic volumes and recent observed traffic volumes. The data shows that whilst volumes on Great Eastern Highway (GEH) are similar (2% difference), those on the surrounding roads vary considerably (20%-35% difference) and the flow on Grandstand Road has a 63% difference.

Table 12 – Recent Observed Traffic Volumes and 2016 ROM24 Traffic Volumes (All Day Two-Way Traffic)

Road	Section	Recent Observed	2016 ROM24	Difference (%)
Grandstand Rd	Waterway Cres-Raconteur Dr	18,400 (2014)	30,000	+63%
Resolution Dr	Grandstand Rd-GEH	9,100 (2014)	11,600	+27%
Hardey Rd	GEH-Wallace St	8,800 (2013)	11,100	+26%
Stoneham St	Grandstand Rd-GEH	15,200 (2014)	20,600	+35%
Belgravia St	GEH-Barker St	14,600 (2011)	17,600	+20%
GEH	Belgravia St-Hardey Rd	64,800 (2014)	66,100	+2%

Typically to address the issue of the 2016 ROM24 traffic volumes being higher than the observed traffic volumes, the 2016 ROM24 model data would be scaled back to the observed data to reflect a recast 2016 traffic volume. Then in each case the same level of annual growth between the 2016 ROM24 and 2031 ROM24 data, would be applied to the observed data to take the 2011, 2013 or 2014 observed data up to a recast 2031 traffic volume. The recast traffic volumes generated through this approach are shown in Table 13.

Table 13 – Recast 2016 and 2031 Traffic Volumes (All Day Two-Way Traffic)

Road	Section	Recast 2016	Recast 2031	Total Growth (Annual Growth)
Grandstand Rd	Waterway Cres-Raconteur Dr	19,300	26,500	37% (2.5%)
Resolution Dr	Grandstand Rd-GEH	9,500	12,500	32% (2.1%)
Hardey Rd	GEH-Wallace St	10,000	16,500	65% (4.3%)
Stoneham St	Grandstand Rd-GEH	16,200	23,800	47% (3.1%)
Belgravia St	GEH-Barker St	16,300	22,200	36% (2.4%)
GEH	Belgravia St-Hardey Rd	66,500	79,300	19% (1.3%)

However, whilst the recast ROM24 outputs would suggest that roads around the Golden Gateway site will experience significant growth in traffic volumes, between 1.3%-4.3% per annum between 2016 and 2031, a review of recent traffic growth trends presents no clear picture in relation to historic background traffic growth, as illustrated below:

- Great Eastern Highway – count sites adjacent to the Golden Gateway site show no growth or a slight decrease in traffic volumes until 2012/13. After this date, there has been significant growth in traffic volumes, but that would be a direct result of the widening of Great Eastern Highway after 2012/13;
- Stoneham Street – a count site adjacent to the Golden Gateway site shows a 20% decrease in traffic volumes between 2010/11 and 2013/14;
- Resolution Drive – a count site adjacent to the Golden Gateway site shows a 49% increase in traffic volumes between 2010/11 and 2013/14; and
- Grandstand Road (at the Garratt Road Bridge) – a count site adjacent at the Garratt Road Bridge shows a 6% increase in traffic volumes between 2012/13 and 2013/14.

The available historic traffic count data on the road network surrounding the Golden Gateway site suggests that the road network has been subject to significant fluctuations in traffic volumes as works have been completed in the local area – most notably the Great Eastern Highway upgrades.

Based on the fluctuations in historic traffic count data and therefore the limited reliability of this data to accurately reflect recent historic trends from which to base background traffic growth in the future, and the recast ROM24 outputs suggesting that there is to be significant year on year growth around the Golden Gateway site, far in excess of levels of annual growth that would be expected to be sustained and accommodated on the surrounding road network.

As such, for the purposes of this structure planning assessment we have applied 15% growth (1% growth per annum) for the Great Eastern Highway corridor and 25% growth (1.7% growth per annum) for all other road corridors around the Golden Gateway site.

7.3 Modelled Transport Networks and Land Use Data

The ROM24 model outputs provided by Main Roads for use in this study are from the 2016 Base Model and 2031 Base Model. Both models have consistent road network capacity within the vicinity of the Golden Gateway site. The capacity of the key links in relation to this study are:

- Grandstand Road = 2 lanes in each direction;
- Resolution Drive = 1 lane in each direction;
- Hardey Road = 1 lane in each direction;
- Stoneham Street = 2 lanes in each direction;
- Belgravia Street = 2 lanes in each direction; and
- Great Eastern Highway = 3 lanes in each direction.

Whilst the road network capacity within the vicinity of the Golden Gateway site is clearly understood and consistent across the 2016 ROM24 Base Model and 2031 ROM24 Base Model, the land use data within each of the models has not been made available to the Project Team.

Main Road WA's Traffic Modelling Team were contacted with a request to provide information relating to any significant land use change between the 2016 and 2031 ROM24 models in relation to the following most significant sites/locations:

- The Springs development;
- Golden Gateway structure plan area (including the Kilns site);
- DA6/Redcliffe Station area;
- Domestic Terminal area;
- Belmont Forum Shopping Centre area;
- Belmont Mixed Business Precinct; and
- Any other location of significance in the area that is likely to impact upon traffic volumes on the road network surrounding the Golden Gateway site.

The Project Team's land use data enquiry was passed onto the DoP by Main Roads WA. The following broad advice was provided by the DoP:

- *"The Metropolitan Land Use Forecasting System (MLUFS) is prepared by the Department and acts as an input into the Main Roads transport model.*
- *MLUFS is a small area forecasting model used to estimate the number and distribution of dwellings, population, employment and workforce within the Perth and Peel metropolitan area.*
- *For dwelling and population estimates, ABS data and WA Tomorrow population forecasts are used to determine underlying demand for dwellings across the Perth and Peel region. The distribution and development staging of these dwellings (and associated population growth) is then forecast based on growth trends, the capacity of sites available for development and other indicator data.*
- *The MLUFS process draws on data from a number of sources including: WA Tomorrow population forecasts; Australian Bureau of Statistics; Stock of undeveloped Region scheme and local planning scheme land; Development applications and subdivision activity; Developers' intentions; Availability of vacant lots; Capacity within developed areas for intensification of development; Proposed developments identified through other means; and Economic drivers.*
- *All zoning and associated amendments up to the period at which the forecast is produced are included as model inputs. Interventions that are identified after the preparation of the forecasts (such as Redcliffe Station) aren't explicitly reflected in the numbers.*
- *Preliminary outputs for MLUFS and WA Tomorrow are cross-referenced with Urban Land Development Outlook analysis to ensure alignment between outputs. The Urban Land Development Outlook identifies land in the Perth and Peel metropolitan area expected to be developed over the next 20 plus years.*
- *Forecasts are modelled based on the best available information at the time and it is expected that they will fall within an acceptable margin of error of actual growth."*

As such the information provided by DoP does not provide any clarity as to any specific land use changes between 2016 and 2031 within the vicinity of the Golden Gateway site.

7.4 Time Periods for Assessment

The time period for the modelling assessment was the AM peak hour (0800-0859) and PM peak hour (1600-1659) during an average weekday. As set out in Section 3.6, this is the period of time where there is most traffic on the surrounding road network and interaction between vehicles, cyclists and pedestrians.

7.5 Trip Generation Assumptions

The Golden Gateway LSP is comprised of three main land uses, residential dwellings, commercial space and retail space. It is proposed that the three land uses will primarily be provided in mixed-use development sites across the Golden Gateway LSP area. The split of the three land uses is shown in Table 14.

Table 14 - Proposed Structure Plan Land Uses

Item	Data
Estimated Number of Dwellings	3,000 dwellings
Estimated Dwelling Type - multiple dwelling (75 m^2 apartment size) - single dwelling	 2,950 dwellings 50 dwellings
Commercial space	7,400 m^2 GFA (5,920 m^2 NLA)
Retail space	1,500 m^2 GFA (1,200 m^2 NLA)

It should be noted that this assessment also includes the traffic generated by the 200 dwellings on the Ascot Kilns site, which are subject to assessment as part of the Ascot Kilns Local Development Plan (LDP).

7.5.1 Residential Trip Generation

The assessment is based upon use of the New South Wales Roads and Traffic Authority (RTA) Guide to Traffic Generating Development (October 2002).

The RTA guide provides the following trip rates for 'medium density' residential development with average public transport accessibility (which is deemed to be representative of the future Golden Gateway development):

- Smaller units and flats (up to two bedrooms):
  - Daily vehicle trips 3.50 per dwelling
  - Weekday peak hour vehicle trips 0.35 per dwelling
- Larger units and town houses (three or more bedrooms):
  - Daily vehicle trips 4.00 per dwelling
  - Weekday peak hour vehicle trips 0.40 per dwelling

The traffic distribution was based on an industry accepted split between inbound and outbound vehicle trips as follows:

- Daily traffic distribution:
  - Inbound 50%
  - Outbound 50%
- AM peak hour traffic distribution:
  - Inbound 10%
  - Outbound 90%
- PM peak hour traffic distribution:
  - Inbound 80%
  - Outbound 20%

In addition to the above is was assumed that the proposed density of development across the Golden Gateway site would result in a step change in public transport service provision across the site/local area. It was assumed that there would be an uplift in public transport service provision as per Section 4.6.2. As a result of this, it was assumed that enhance public transport service provision would lead to increased public

transport use to/from the Golden Gateway site and this would result in a 20% reduction in residential vehicle trips to/from the site.

7.5.2 Commercial Trip Generation

The assessment was based upon a ratio of 30m^2 per employee, therefore 198 employees in 5,920m^2 (NLA) of commercial space.

Existing City of Belmont Town Planning Scheme allows for 1 car parking bay per employee. The assessment was based upon all 198 employees having access to a car parking bay within the Golden Gateway development (either in commercial car parks or in reciprocal access arrangement with residential car parking).

The traffic distribution was based on the following peak hour split between inbound and outbound vehicle trips as follows:

- AM peak hour traffic distribution:
  - Inbound 80% of daily commercial trips
  - Outbound 0% of daily commercial trips
- PM peak hour traffic distribution:
  - Inbound 0% of daily commercial trips
  - Outbound 80% of daily commercial trips

In addition to the above it was assumed that 10% of employees would live within the Golden Gateway development and as such total commercial vehicle trips were reduced by 10% (20 employees in total) to reflect an internal walk trip rather than an external vehicle trip.

7.5.3 Retail Trip Generation

The assessment is based on the assumption that all retail vehicle trips are existing vehicle trips on the network and no new vehicle trips would be generated by the retail land uses. As such it is assumed that retail vehicle trips would be a linked-trips as part of an existing journey through the network. Therefore, no new vehicle trips to the retail land uses were considered as part of the assessment.

7.6 Existing Golden Gateway Traffic Generation

Based on the City of Belmont loop counts of existing vehicle activity in to and out from the Golden Triangle site (as documented in Section 3.6.4), the following vehicle trips are generated by the existing land uses:

- Daily traffic:
  - Inbound 1,800 vehicles
  - Outbound 1,800 vehicles
  - TOTAL 3,600 vehicles
- AM peak hour traffic:
  - Inbound 140 vehicles
  - Outbound 140 vehicles
  - TOTAL 280 vehicles
- PM peak hour traffic:
  - Inbound 140 vehicles
  - Outbound 140 vehicles
  - TOTAL 280 vehicles

The assessment is based on the above existing traffic volumes being removed from the network to reflect the removal of the existing land uses on the site prior to redevelopment of the Golden Gateway site.

7.7 Future Golden Gateway Traffic Generation

Based on the assumptions set out in Section 7.2, Section 7.3, Section 7.4, Section 7.5 and Section 7.6, the following new vehicle trips would be generated by the future Golden Gateway development:

- Daily traffic:
  - Inbound 2,600 vehicles
  - Outbound 2,600 vehicles
  - TOTAL 5,200 vehicles
- AM peak hour traffic:
  - Inbound 97 vehicles
  - Outbound 697 vehicles
  - TOTAL 794 vehicles
- PM peak hour traffic:
  - Inbound 605 vehicles
  - Outbound 189 vehicles
  - TOTAL 794 vehicles

The intersection assessment is based on the above future traffic volumes being generated by the Golden Gateway development.

7.8 Future Golden Gateway Traffic Distribution

The generation of vehicle trips from the Golden Gateway site is split across five development precincts shown in Figure 30, Figure 31, Figure 32 and Figure 33. The distribution of vehicle trip generation across the five development precincts is based upon the overall split of development per precinct area, and is reflective of ultimate development buildout and may alter based on land release, availability to market and types of development progressed in the future.

The overall distribution of vehicles trips into and out from the Golden Gateway site onto the surrounding road network was based on a combination of MRWA traffic count data, MRWA SCATS data and City of Belmont traffic count data.

Figure 30 and Figure 31 show the indicative peak hour distribution of vehicle trips into and out from the Golden Gateway site. This reflects an even distribution of outbound trips during the AM peak between Great Eastern Highway east (towards Tonkin Highway), west (towards Perth city) and Grandstand Road north (towards Maylands). With a greater dominance during the PM peak of inbound trips from Great Eastern Highway west (from Perth city).

Figure 32 and Figure 33 show the indicative peak hour turning movements on the surround road network for the Golden Gateway development traffic only.

Figure 30 – Indicative AM Peak Hour Vehicle Trip Distribution for Golden Gateway Development Traffic

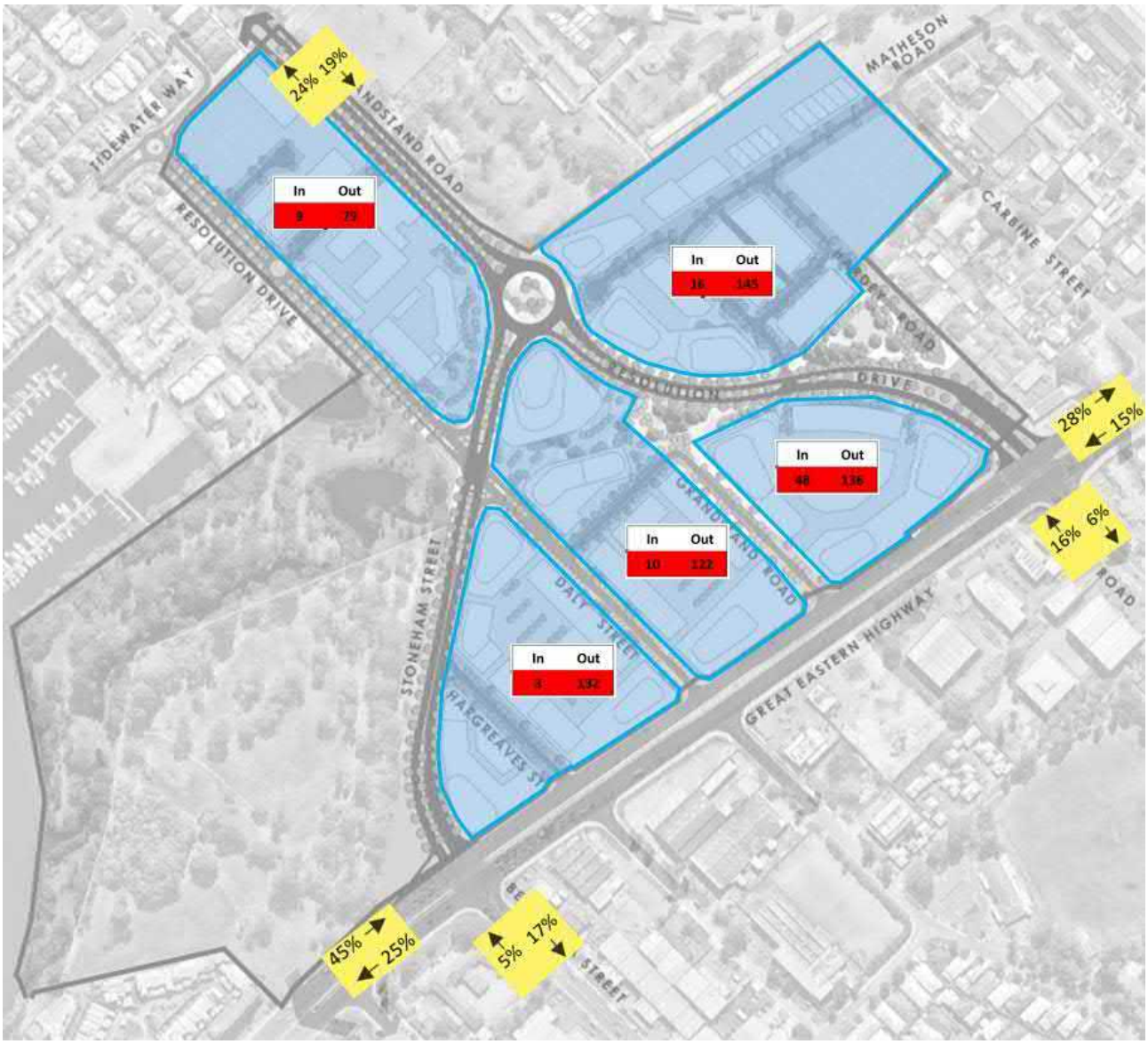


Figure 31 – Indicative PM Peak Hour Vehicle Trip Distribution for Golden Gateway Development Traffic

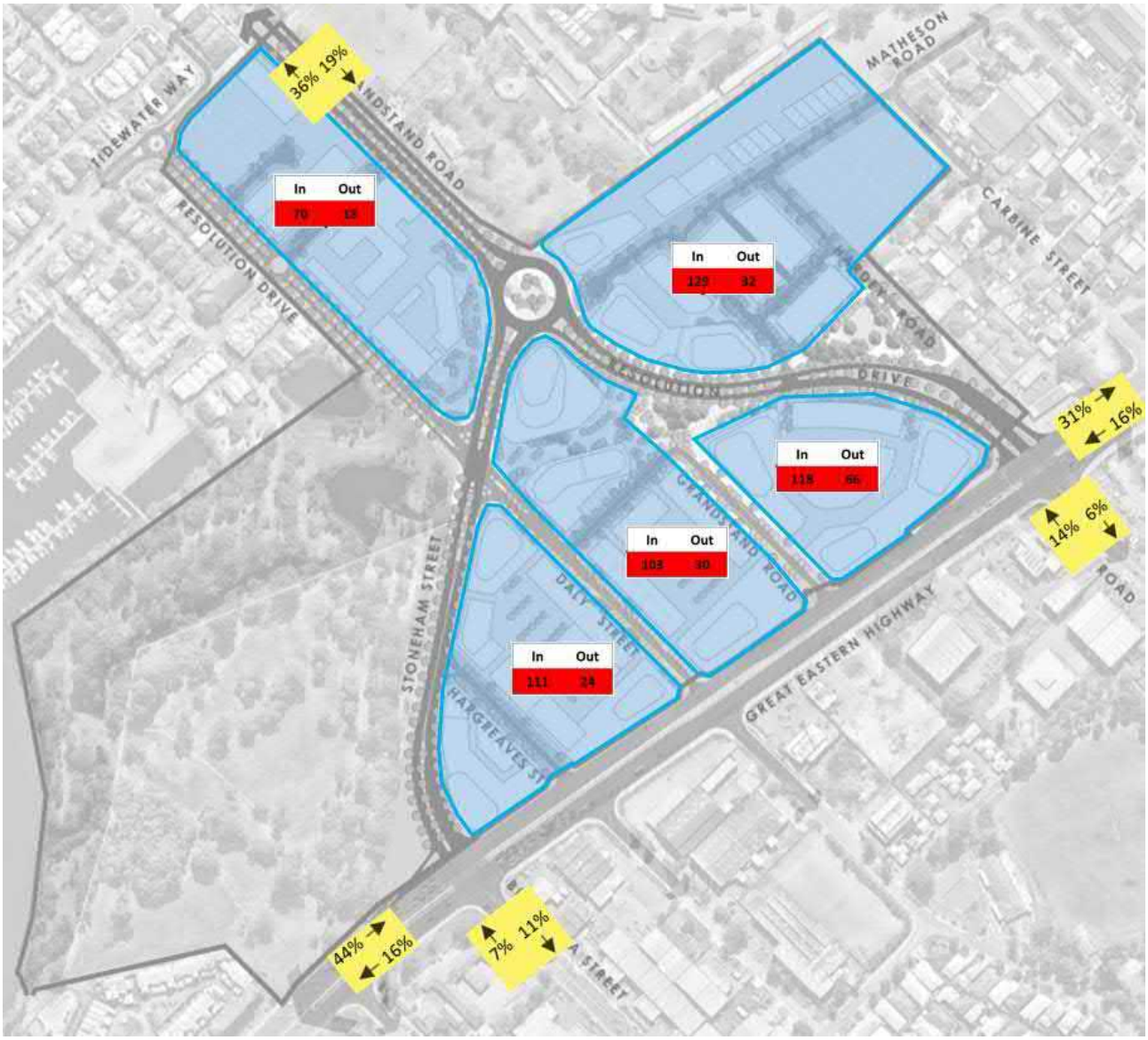


Figure 32 – Indicative AM Peak Hour Turning Movements for Golden Gateway Development Traffic

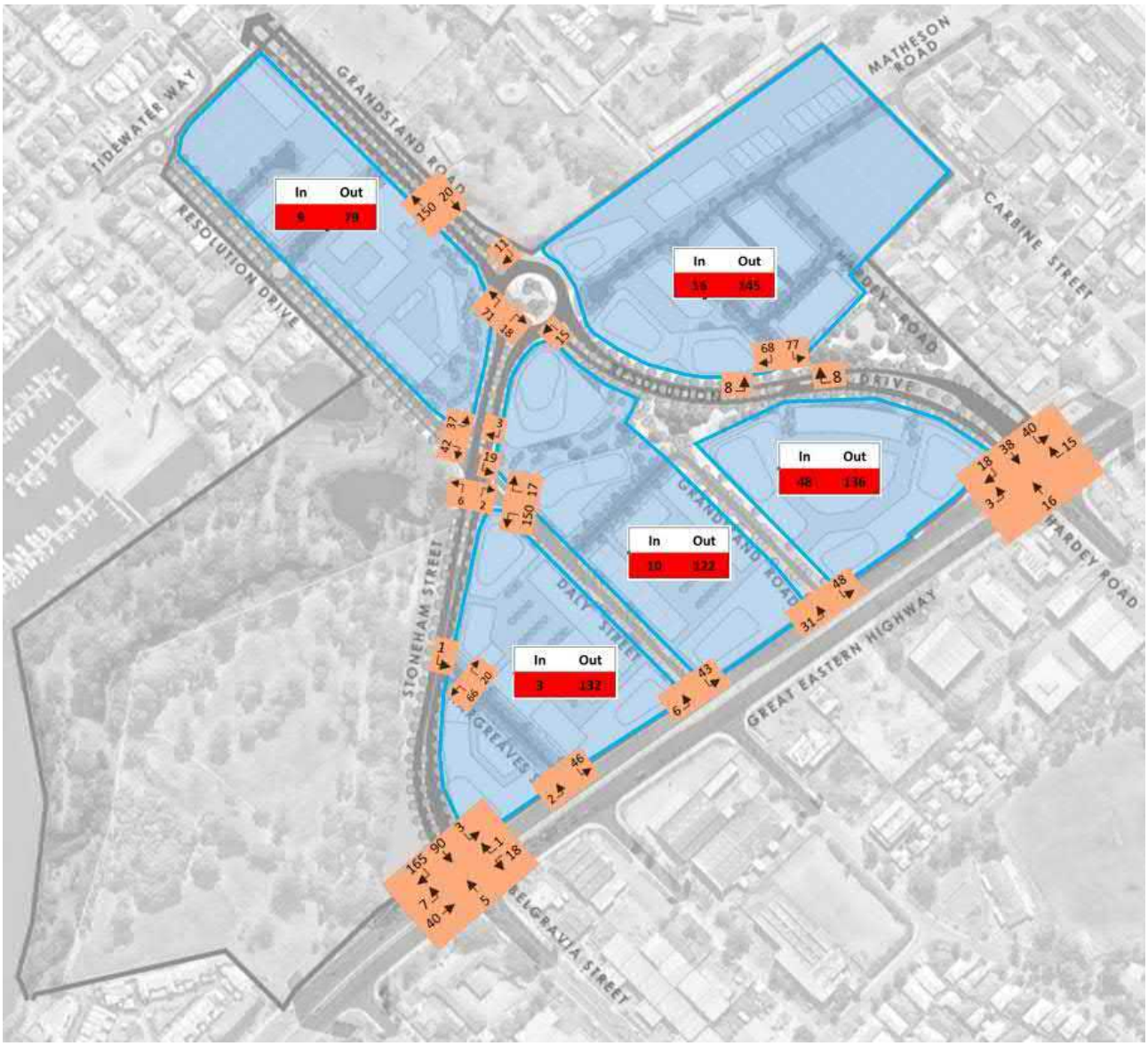
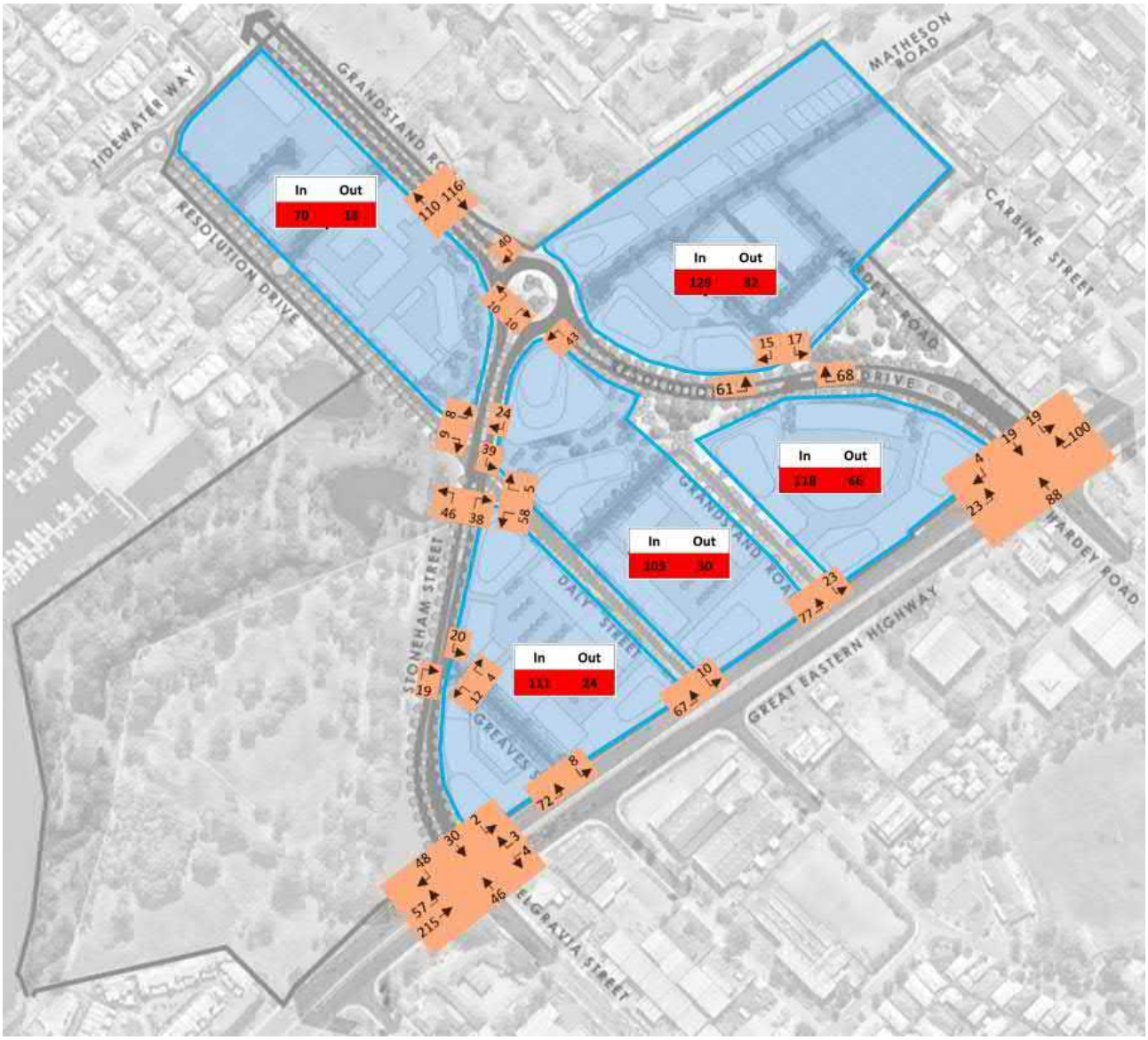


Figure 33 – Indicative PM Peak Hour Turning Movements for Golden Gateway Development Traffic



7.9 Intersection Assessment

The following intersections have been subject to SIDRA assessment:

- Stoneham Street/Great Eastern Highway intersection – 2016, 2031 and 2031 with development;
- Resolution Drive/Great Eastern Highway intersection – 2016, 2031 and 2031 with development;
- Grandstand Road/Resolution Drive/Stoneham Street intersection – 2031 and 2031 with development; and
- Stoneham Street/Daly Street/Resolution Drive intersection – 2031 and 2031 with development.

7.9.1 Stoneham Street-Great Eastern Highway Intersection

Headline SIDRA movement summaries for the Stoneham Street/Great Eastern Highway Intersection are presented in Table 15 (AM Peak hour) and Table 16 (PM peak hour). The SIDRA intersection geometry is shown in Figure 34. The full SIDRA movement summaries are presented in Figure 35, Figure 36 and Figure 37 (AM peak hour) as well as Figure 38, Figure 39 and Figure 40 (PM peak hour).

Overall the Stoneham Street/Great Eastern Highway Intersection SIDRA modelling results show that by 2031 under the base scenario that background growth would see the intersection operating during the AM peak with all approaches over capacity (other than Belgravia Street approach) and during the PM peak with all approaches with a degree of saturation greater than 0.95 (other than Great Eastern Highway (east)).

When Golden Gateway related development traffic is included in the SIDRA modelling results for the 2031 with development scenario, there is an increase in the degree of saturation on the Stoneham Street and Great Eastern Highway approaches leading to increases in average delay and LOS.

The AM peak hour modelling results show that the existing base year (2016) Stoneham Street/Great Eastern Highway Intersection performs with an overall intersection LOS D, with the Stoneham Street approach performing with a LOS F with an average delay of 87 seconds and the Belgravia Street approach performs with a LOS E with an average delay of 75 seconds.

The AM peak hour modelling results show the future base year 2031 scenario Stoneham Street/Great Eastern Highway Intersection performs with an overall LOS F, which is the same overall LOS as the 2031 plus Golden Gateway development scenario. However, the additional AM peak hour traffic generated by the Golden Gateway site that is predicted to use the Stoneham Street corridor, would place additional pressure on the Stoneham Street approach to the Great Eastern Highway intersection and there would be a significant increase in delay from 152 seconds (2031 base scenario) to 270 seconds (2031 with development scenario).

The PM peak hour modelling results show that the existing base year (2016) Stoneham Street/Great Eastern Highway Intersection performs with an overall intersection LOS C, with the Stoneham Street approach performing with a LOS E with an average delay of 70 seconds. The Belgravia Street approach performs with a LOS E with an average delay of 61 seconds.

The PM peak hour modelling results show the future base year 2031 scenario Stoneham Street/Great Eastern Highway Intersection performs with an overall LOS E and the 2031 plus Golden Gateway development scenario performs with an overall LOS F. The additional PM peak hour traffic generated by the Golden Gateway site that is predicted to use the Great Eastern Highway (west) and Stoneham Street approaches to the intersection would place additional pressure on the operation of the intersection and would see significant increases in intersection delay – Great Eastern Highway approach would increase in delay from 69 seconds (2031 base scenario) to 157 seconds (2031 with development scenario) and the Stoneham Street approach would increase in delay from 108 seconds (2031 base scenario) to 182 seconds (2031 with development scenario).

Table 15 – AM Peak Hour (0800-0859) Stoneham Street/Great Eastern Highway Intersection Assessment

Year	Stoneham St (north)			GEH (east)			Belgravia St (south)			GEH (west)			All Vehicles		
	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS
2016	0.87	87	F	0.85	38	D	0.50	75	E	0.83	31	C	0.87	45	D
2031	1.03	152	F	1.04	155	F	0.66	82	F	1.02	40	D	1.04	115	F
2031 + dev	1.15	270	F	1.14	303	F	0.65	84	F	1.15	59	E	1.15	211	F

Table 16 – PM Peak Hour (1600-1659) Stoneham Street/Great Eastern Highway Intersection Assessment

Year	Stoneham St (north)			GEH (east)			Belgravia St (south)			GEH (west)			All Vehicles		
	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS
2016	0.82	70	E	0.57	24	C	0.81	61	E	0.82	26	C	0.82	33	C
2031	0.96	108	F	0.64	30	C	0.96	99	F	0.99	69	E	0.99	64	E
2031 + dev	1.03	182	F	0.64	31	C	1.05	172	F	1.06	157	F	1.06	126	F

Figure 34 – Stoneham Street/Great Eastern Highway Intersection – SIDRA geometry

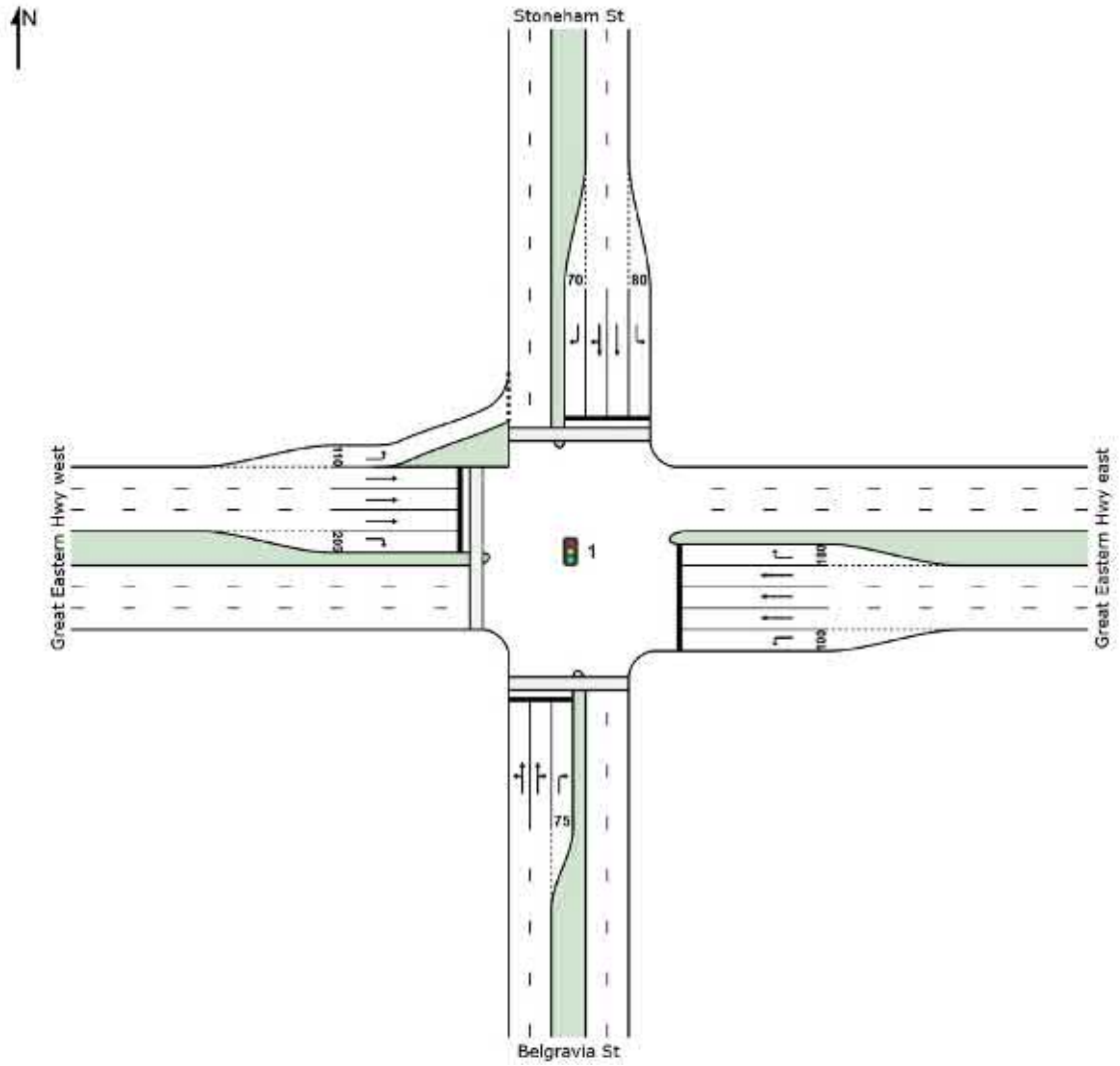


*Figure 35 – 2016 **AM Peak** Stoneham Street/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Belgravia St											
1	L2	111	3.0	0.438	76.4	LOS E	8.3	59.5	0.96	0.79	26.3
2	T1	105	3.0	0.394	70.2	LOS E	7.8	55.7	0.96	0.76	28.1
3	R2	126	3.0	0.497	77.2	LOS E	9.5	68.2	0.97	0.80	26.4
Approach		342	3.0	0.497	74.8	LOS E	9.5	68.2	0.96	0.78	26.9
East: Great Eastern Hwy east											
4	L2	191	3.0	0.211	30.1	LOS C	8.4	60.5	0.60	0.74	39.4
5	T1	2313	3.0	0.851	37.9	LOS D	55.7	400.2	0.92	0.85	37.1
6	R2	29	3.0	0.239	86.9	LOS F	2.3	16.4	0.98	0.72	24.7
Approach		2533	3.0	0.851	37.9	LOS D	55.7	400.2	0.89	0.84	37.0
North: Stoneham St											
7	L2	7	3.0	0.025	69.0	LOS E	0.5	3.4	0.88	0.67	27.7
8	T1	248	3.0	0.856	82.0	LOS F	21.2	152.0	1.00	0.97	25.8
9	R2	457	3.0	0.869	89.6	LOS F	19.8	142.1	1.00	0.95	24.3
Approach		712	3.0	0.869	86.8	LOS F	21.2	152.0	1.00	0.95	24.8
West: Great Eastern Hwy west											
10	L2	165	3.0	0.107	6.7	LOS A	1.4	10.1	0.16	0.59	53.3
11	T1	1308	3.0	0.459	28.5	LOS C	22.4	160.5	0.70	0.62	41.0
12	R2	101	3.0	0.833	96.6	LOS F	8.8	63.1	1.00	0.91	23.1
Approach		1574	3.0	0.833	30.5	LOS C	22.4	160.5	0.66	0.64	40.0
All Vehicles		5161	3.0	0.869	44.8	LOS D	55.7	400.2	0.84	0.79	34.6

*Figure 36 – **2031 AM Peak** Stoneham Street/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Belgravia St											
1	L2	139	3.0	0.582	83.5	LOS F	11.3	81.2	0.99	0.81	25.0
2	T1	131	3.0	0.521	77.1	LOS E	10.5	75.7	0.98	0.79	26.7
3	R2	157	3.0	0.657	84.6	LOS F	12.9	92.9	1.00	0.82	25.1
Approach		427	3.0	0.657	81.9	LOS F	12.9	92.9	0.99	0.81	25.5
East: Great Eastern Hwy east											
4	L2	219	3.0	0.254	34.4	LOS C	10.9	78.3	0.64	0.75	37.6
5	T1	2660	3.0	1.036	165.6	LOS F	136.5	979.8	1.00	1.46	16.1
6	R2	33	3.0	0.289	92.8	LOS F	2.8	20.0	0.99	0.73	23.7
Approach		2912	3.0	1.036	154.9	LOS F	136.5	979.8	0.97	1.40	16.9
North: Stoneham St											
7	L2	9	3.0	0.025	65.9	LOS E	0.6	4.4	0.84	0.67	28.4
8	T1	310	3.0	0.840	79.1	LOS E	27.0	194.0	1.00	0.95	26.3
9	R2	571	3.0	1.031	192.7	LOS F	40.7	292.6	1.00	1.27	14.3
Approach		890	3.0	1.031	151.8	LOS F	40.7	292.6	1.00	1.15	17.1
West: Great Eastern Hwy west											
10	L2	189	3.0	0.124	7.1	LOS A	2.0	14.6	0.18	0.60	53.0
11	T1	1505	3.0	0.560	34.5	LOS C	30.4	218.2	0.77	0.69	38.4
12	R2	116	3.0	1.015	168.8	LOS F	14.5	104.2	1.00	1.22	15.8
Approach		1810	3.0	1.015	40.3	LOS D	30.4	218.2	0.72	0.71	36.1
All Vehicles		6039	3.0	1.036	114.9	LOS F	136.5	979.8	0.90	1.12	20.7

*Figure 37 – **2031 AM Peak with Golden Gateway development** Stoneham Street/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Belgravia St											
1	L2	139	3.0	0.573	85.3	LOS F	11.6	83.2	0.99	0.81	24.7
2	T1	136	3.0	0.533	79.0	LOS E	11.2	80.7	0.98	0.79	26.3
3	R2	157	3.0	0.648	86.3	LOS F	13.2	95.1	1.00	0.82	24.8
Approach		432	3.0	0.648	83.7	LOS F	13.2	95.1	0.99	0.81	25.2
East: Great Eastern Hwy east											
4	L2	237	3.0	0.301	40.5	LOS D	13.3	95.2	0.70	0.77	35.4
5	T1	2660	3.0	1.136	329.1	LOS F	194.8	1398.9	1.00	2.03	9.3
6	R2	34	3.0	0.337	97.2	LOS F	3.0	21.5	1.00	0.73	23.1
Approach		2931	3.0	1.136	303.1	LOS F	194.8	1398.9	0.98	1.92	9.9
North: Stoneham St											
7	L2	12	3.0	0.027	60.0	LOS E	0.8	5.6	0.79	0.68	29.8
8	T1	400	3.0	0.867	77.7	LOS E	36.1	259.0	1.00	0.97	26.6
9	R2	736	3.0	1.151	377.6	LOS F	79.3	569.1	1.00	1.63	8.2
Approach		**1148**	**3.0**	**1.151**	**269.8**	**LOS F**	**79.3**	**569.1**	**1.00**	**1.39**	**10.9**
West: Great Eastern Hwy west											
10	L2	196	3.0	0.128	7.2	LOS A	2.2	15.8	0.18	0.60	52.9
11	T1	1545	3.0	0.638	41.7	LOS D	35.6	255.7	0.84	0.75	35.7
12	R2	116	3.0	1.148	372.5	LOS F	23.9	171.4	1.00	1.57	8.2
Approach		1857	3.0	1.148	58.8	LOS E	35.6	255.7	0.78	0.79	30.4
All Vehicles		6368	3.0	1.151	210.9	LOS F	194.8	1398.9	0.92	1.42	13.3

*Figure 38 – **2016 PM Peak** Stoneham Street/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Belgravia St											
1	L2	64	3.0	0.809	65.7	LOS E	15.5	111.6	1.00	0.94	29.6
2	T1	428	3.0	0.809	60.0	LOS E	15.7	113.0	1.00	0.94	30.3
3	R2	217	3.0	0.746	62.8	LOS E	13.3	95.4	1.00	0.87	29.5
Approach		709	3.0	0.809	61.4	LOS E	15.7	113.0	1.00	0.92	29.9
East: Great Eastern Hwy east											
4	L2	77	3.0	0.084	22.5	LOS C	2.4	17.1	0.55	0.70	42.9
5	T1	1636	3.0	0.566	22.8	LOS C	22.7	163.3	0.75	0.67	43.7
6	R2	35	3.0	0.401	72.3	LOS E	2.2	16.0	1.00	0.73	27.4
Approach		1748	3.0	0.566	23.8	LOS C	22.7	163.3	0.74	0.67	43.2
North: Stoneham St											
7	L2	9	3.0	0.052	61.8	LOS E	0.5	3.6	0.93	0.67	29.4
8	T1	170	3.0	0.822	66.9	LOS E	9.9	71.3	1.00	0.94	28.7
9	R2	269	3.0	0.822	72.8	LOS E	9.5	68.5	1.00	0.93	27.4
Approach		448	3.0	0.822	70.4	LOS E	9.9	71.3	1.00	0.93	27.9
West: Great Eastern Hwy west											
10	L2	537	3.0	0.388	9.2	LOS A	8.7	62.8	0.36	0.67	51.4
11	T1	2227	3.0	0.818	28.2	LOS C	40.6	291.8	0.88	0.82	41.1
12	R2	70	3.0	0.802	77.4	LOS E	4.7	33.9	1.00	0.89	26.3
Approach		2834	3.0	0.818	25.8	LOS C	40.6	291.8	0.79	0.79	42.1
All Vehicles		5739	3.0	0.822	33.1	LOS C	40.6	291.8	0.82	0.78	38.9

*Figure 39 – **2031 PM Peak** Stoneham Street/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Belgravia St											
1	L2	80	3.0	0.960	108.9	LOS F	32.1	230.2	1.00	1.21	22.0
2	T1	536	3.0	0.960	103.6	LOS F	32.1	230.2	1.00	1.21	22.3
3	R2	271	3.0	0.895	86.7	LOS F	22.8	163.7	1.00	0.98	24.7
Approach		887	3.0	0.960	98.9	LOS F	32.1	230.2	1.00	1.14	23.0
East: Great Eastern Hwy east											
4	L2	88	3.0	0.094	25.5	LOS C	3.3	23.6	0.54	0.70	41.4
5	T1	1881	3.0	0.643	28.5	LOS C	34.1	245.0	0.78	0.71	41.0
6	R2	40	3.0	0.487	88.4	LOS F	3.1	22.6	1.00	0.73	24.4
Approach		2009	3.0	0.643	29.5	LOS C	34.1	245.0	0.77	0.71	40.5
North: Stoneham St											
7	L2	12	3.0	0.064	73.7	LOS E	0.8	5.9	0.93	0.69	26.8
8	T1	213	3.0	0.956	105.2	LOS F	17.9	128.5	1.00	1.17	22.1
9	R2	336	3.0	0.956	111.6	LOS F	17.2	123.5	1.00	1.12	21.3
Approach		561	3.0	0.956	108.3	LOS F	17.9	128.5	1.00	1.13	21.7
West: Great Eastern Hwy west											
10	L2	617	3.0	0.451	11.0	LOS B	14.5	104.1	0.40	0.68	50.1
11	T1	2561	3.0	0.971	80.7	LOS F	95.5	685.9	0.95	1.13	25.9
12	R2	81	3.0	0.986	128.9	LOS F	8.2	58.6	1.00	1.15	19.2
Approach		3259	3.0	0.986	68.7	LOS E	95.5	685.9	0.85	1.05	28.3
All Vehicles		6716	3.0	0.986	64.3	LOS E	95.5	685.9	0.86	0.96	29.3

*Figure 40 – **2031 PM Peak with Golden Gateway development** Stoneham Street/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Belgravia St											
1	L2	80	3.0	1.045	200.6	LOS F	51.0	366.2	1.00	1.56	14.1
2	T1	582	3.0	1.045	196.8	LOS F	51.0	366.2	1.00	1.56	14.1
3	R2	271	3.0	0.950	109.8	LOS F	27.0	193.9	1.00	1.07	21.4
Approach		933	3.0	1.045	171.9	LOS F	51.0	366.2	1.00	1.42	15.7
East: Great Eastern Hwy east											
4	L2	92	3.0	0.097	26.4	LOS C	3.6	26.0	0.53	0.70	41.0
5	T1	1881	3.0	0.639	29.6	LOS C	36.0	258.5	0.77	0.70	40.5
6	R2	43	3.0	0.557	94.6	LOS F	3.6	26.0	1.00	0.75	23.5
Approach		2016	3.0	0.639	30.9	LOS C	36.0	258.5	0.77	0.70	39.9
North: Stoneham St											
7	L2	14	3.0	0.071	76.9	LOS E	1.0	7.3	0.93	0.69	26.2
8	T1	243	3.0	1.034	180.5	LOS F	28.5	204.6	1.00	1.42	15.1
9	R2	384	3.0	1.034	187.0	LOS F	27.4	196.4	1.00	1.33	14.7
Approach		641	3.0	1.034	182.2	LOS F	28.5	204.6	1.00	1.35	15.0
West: Great Eastern Hwy west											
10	L2	674	3.0	0.510	13.8	LOS B	20.6	148.0	0.47	0.71	48.3
11	T1	2776	3.0	1.056	190.9	LOS F	160.5	1152.3	1.00	1.62	14.5
12	R2	81	3.0	1.050	207.4	LOS F	11.2	80.1	1.00	1.28	13.4
Approach		3531	3.0	1.056	157.4	LOS F	160.5	1152.3	0.90	1.44	16.7
All Vehicles		7121	3.0	1.056	125.7	LOS F	160.5	1152.3	0.88	1.22	19.5

7.9.2 Resolution Drive/Great Eastern Highway Intersection

Headline SIDRA movement summaries for the Resolution Drive/Great Eastern Highway Intersection are presented in Table 17 (AM Peak hour) and Table 18 (PM peak hour). The SIDRA intersection geometry is shown in Figure 41. The full SIDRA movement summaries are presented in Figure 42, Figure 43 and Figure 44 (AM peak hour) as well as Figure 45, Figure 46 and Figure 47 (PM peak hour).

Overall the Resolution Drive/Great Eastern Highway Intersection SIDRA modelling results show that by 2031 base scenario that background growth would have marginally reduced the level of service of the intersection compared to the 2016 existing base year scenario. The intersection AM peak hour overall performance would have gone from LOS C with an average delay of 32 seconds in 2016 to a LOS D with an average delay of 40 seconds in 2031 base scenario. The intersection PM peak hour overall performance would have gone from LOS C with an average delay of 34 seconds in 2016 to a LOS D with an average delay of 41 seconds in 2031 base scenario.

The AM peak hour modelling results show that the existing base year (2016) Resolution Drive/Great Eastern Highway Intersection performs with an overall intersection LOS C, with the Resolution Drive approach performing with a LOS D with an average delay of 54 seconds and the Hardey Road approach performing with a LOS E with an average delay of 61 seconds.

The AM peak hour modelling results show the future base year 2031 scenario Resolution Drive/Great Eastern Highway Intersection performs with an overall LOS D, which is the same overall LOS as the 2031 plus Golden Gateway development scenario. The modelling results show that the additional AM peak hour traffic generated by the Golden Gateway site has a limited impact upon the operation of the Resolution Drive/Great Eastern Highway intersection – the average delay experienced on each approach to the intersection is predicted to increase marginally within the inclusion of the development related traffic, with the LOS to remain unchanged.

The PM peak hour modelling results show that the existing base year (2016) Resolution Drive/Great Eastern Highway Intersection performs with an overall intersection LOS C, with the Resolution Drive approach performing with a LOS D and an average delay of 50 seconds and the Hardey Road approach performing with a LOS D with an average delay of 54 seconds.

The PM peak hour modelling results show the future base year 2031 scenario Resolution Drive/Great Eastern Highway Intersection performs with an overall LOS D. The modelling results show that the additional PM peak hour traffic generated by the Golden Gateway site has a marginal impact upon the operation of the Resolution Drive/Great Eastern Highway intersection – the average delay experienced on each approach to the intersection is predicted to increase marginally within the inclusion of the development related traffic, however the Great Eastern Highway (west) is predicted to experience a more significant increase in average delay from 38 seconds (2031 base scenario) and 68 seconds (2031 with development scenario).

Table 17 – AM Peak Hour (0800-0859) Resolution Drive/Great Eastern Highway Intersection Assessment

Year	Resolution Dr (north)			GEH (east)			Hardey Rd (south)			GEH (west)			All Vehicles		
	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS
2016	0.83	54	D	0.83	30	C	0.36	61	E	0.41	24	C	0.83	32	C
2031	0.86	66	E	0.90	38	D	0.52	80	F	0.44	26	C	0.90	40	D
2031 + dev	0.95	75	E	0.92	46	D	0.55	80	F	0.50	27	C	0.95	46	D

Table 18 – PM Peak Hour (1600-1659) Resolution Drive/Great Eastern Highway Intersection Assessment

Year	Resolution Dr (north)			GEH (east)			Hardey Rd (south)			GEH (west)			All Vehicles		
	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS
2016	0.71	50	D	0.83	29	C	0.45	54	D	0.83	34	C	0.83	34	C
2031	0.90	75	E	0.86	32	C	0.66	78	E	0.87	38	D	0.90	41	D
2031 + dev	0.92	80	E	0.95	43	D	0.69	82	F	0.95	68	E	0.95	60	E

Figure 41 – Resolution Drive/Great Eastern Highway Intersection – SIDRA geometry

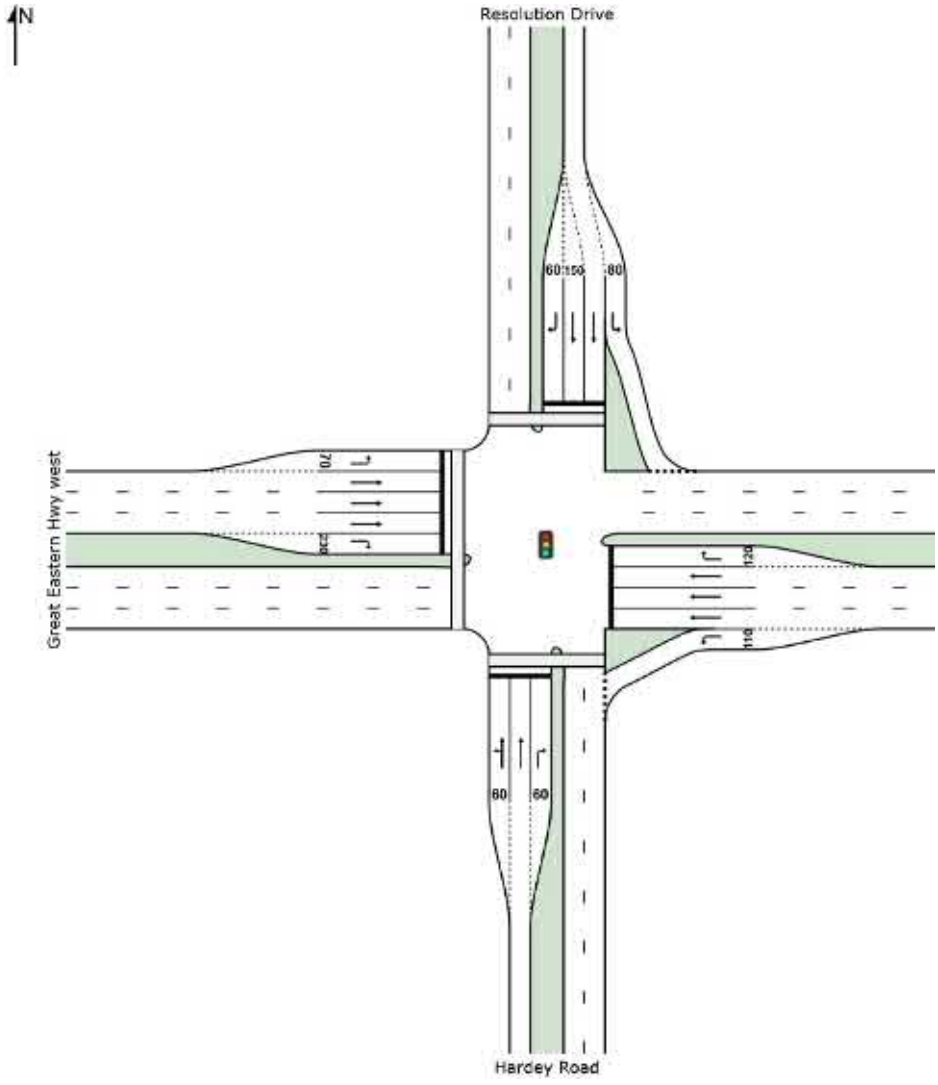


*Figure 42 – **2016 AM Peak** Resolution Drive/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hardey Road											
1	L2	88	3.0	0.364	63.9	LOS E	7.0	50.4	0.93	0.78	29.2
2	T1	138	3.0	0.364	58.3	LOS E	7.3	52.4	0.93	0.75	30.7
3	R2	89	3.0	0.296	63.2	LOS E	5.6	40.0	0.92	0.77	29.4
Approach		315	3.0	0.364	61.3	LOS E	7.3	52.4	0.93	0.76	29.9
East: Great Eastern Hwy east											
4	L2	106	3.0	0.069	6.7	LOS A	0.9	6.1	0.16	0.59	53.3
5	T1	2425	3.0	0.827	28.4	LOS C	49.2	353.3	0.87	0.80	41.0
6	R2	132	3.0	0.810	82.5	LOS F	10.0	71.5	1.00	0.90	25.4
Approach		2663	3.0	0.827	30.2	LOS C	49.2	353.3	0.85	0.80	40.2
North: Resolution Drive											
7	L2	137	3.0	0.183	10.1	LOS B	2.5	18.2	0.33	0.65	50.8
8	T1	131	3.0	0.828	83.8	LOS F	5.1	36.7	1.00	0.90	25.5
9	R2	61	3.0	0.811	89.2	LOS F	4.8	34.2	1.00	0.88	24.3
Approach		329	3.0	0.828	54.1	LOS D	5.1	36.7	0.72	0.79	31.8
West: Great Eastern Hwy west											
10	L2	22	3.0	0.022	21.9	LOS C	0.7	5.1	0.49	0.66	43.2
11	T1	1271	3.0	0.412	20.9	LOS C	17.4	125.1	0.64	0.57	44.7
12	R2	66	3.0	0.405	75.0	LOS E	4.6	32.7	0.99	0.76	26.7
Approach		1359	3.0	0.412	23.6	LOS C	17.4	125.1	0.65	0.58	43.3
All Vehicles		4666	3.0	0.828	32.1	LOS C	49.2	353.3	0.79	0.73	39.3

*Figure 43 – **2031 AM Peak** Resolution Drive/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hardey Road											
1	L2	110	3.0	0.521	82.9	LOS F	11.3	81.2	0.98	0.80	25.3
2	T1	172	3.0	0.521	77.2	LOS E	11.8	84.5	0.98	0.79	26.5
3	R2	112	3.0	0.426	81.7	LOS F	9.0	64.8	0.96	0.79	25.6
Approach		394	3.0	0.521	80.0	LOS F	11.8	84.5	0.97	0.80	25.9
East: Great Eastern Hwy east											
4	L2	122	3.0	0.079	7.1	LOS A	1.3	9.4	0.16	0.59	53.0
5	T1	2789	3.0	0.897	35.9	LOS D	75.3	540.8	0.90	0.85	37.9
6	R2	151	3.0	0.879	104.7	LOS F	14.5	104.3	1.00	0.95	22.0
Approach		3062	3.0	0.897	38.1	LOS D	75.3	540.8	0.88	0.85	37.0
North: Resolution Drive											
7	L2	171	3.0	0.260	13.2	LOS B	4.9	35.4	0.39	0.68	48.7
8	T1	164	3.0	0.857	102.3	LOS F	7.9	56.4	1.00	0.93	22.6
9	R2	76	3.0	0.836	107.0	LOS F	7.2	52.0	1.00	0.91	21.8
Approach		411	3.0	0.857	66.1	LOS E	7.9	56.4	0.75	0.82	28.8
West: Great Eastern Hwy west											
10	L2	25	3.0	0.024	22.4	LOS C	0.9	6.5	0.45	0.65	42.9
11	T1	1461	3.0	0.443	22.5	LOS C	23.7	170.4	0.61	0.55	43.9
12	R2	76	3.0	0.443	90.3	LOS F	6.4	46.3	0.99	0.77	24.0
Approach		1562	3.0	0.443	25.8	LOS C	23.7	170.4	0.63	0.56	42.2
All Vehicles		5429	3.0	0.897	39.7	LOS D	75.3	540.8	0.80	0.76	36.4

*Figure 44 – **2031 AM Peak with Golden Gateway development** Resolution Drive/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hardey Road											
1	L2	110	3.0	0.550	83.2	LOS F	12.0	86.3	0.98	0.81	25.3
2	T1	188	3.0	0.550	77.6	LOS E	12.5	89.6	0.98	0.80	26.4
3	R2	112	3.0	0.426	81.7	LOS F	9.0	64.8	0.96	0.79	25.6
Approach		410	3.0	0.550	80.2	LOS F	12.5	89.6	0.97	0.80	25.9
East: Great Eastern Hwy east											
4	L2	122	3.0	0.080	7.3	LOS A	1.4	10.4	0.18	0.59	52.8
5	T1	2789	3.0	0.918	43.8	LOS D	82.6	593.4	0.92	0.91	35.0
6	R2	166	3.0	0.913	110.0	LOS F	16.6	119.0	1.00	1.00	21.4
Approach		3077	3.0	0.918	45.9	LOS D	82.6	593.4	0.90	0.90	34.3
North: Resolution Drive											
7	L2	211	3.0	0.324	15.8	LOS B	7.5	53.8	0.47	0.71	47.1
8	T1	202	3.0	0.950	117.6	LOS F	10.6	75.9	1.00	1.08	20.7
9	R2	94	3.0	0.931	117.9	LOS F	9.6	68.8	1.00	1.04	20.5
Approach		507	3.0	0.950	75.3	LOS E	10.6	75.9	0.78	0.92	26.9
West: Great Eastern Hwy west											
10	L2	28	3.0	0.027	23.4	LOS C	1.0	7.5	0.46	0.66	42.4
11	T1	1598	3.0	0.495	24.5	LOS C	27.6	198.3	0.65	0.59	42.9
12	R2	76	3.0	0.418	89.1	LOS F	6.4	45.9	0.98	0.77	24.2
Approach		1702	3.0	0.495	27.4	LOS C	27.6	198.3	0.66	0.60	41.4
All Vehicles		5696	3.0	0.950	45.5	LOS D	82.6	593.4	0.82	0.80	34.4

*Figure 45 – **2016 PM Peak** Resolution Drive/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hardey Road											
1	L2	53	3.0	0.291	56.0	LOS E	5.3	38.1	0.91	0.75	31.5
2	T1	141	3.0	0.291	50.4	LOS D	5.5	39.2	0.91	0.73	32.7
3	R2	144	3.0	0.448	57.8	LOS E	8.3	59.4	0.94	0.80	30.7
Approach		338	3.0	0.448	54.4	LOS D	8.3	59.4	0.92	0.76	31.7
East: Great Eastern Hwy east											
4	L2	139	3.0	0.095	7.7	LOS A	1.5	10.9	0.23	0.61	52.6
5	T1	1650	3.0	0.593	25.7	LOS C	24.9	178.6	0.78	0.70	42.3
6	R2	163	3.0	0.832	74.8	LOS E	11.2	80.3	1.00	0.93	26.9
Approach		1952	3.0	0.832	28.5	LOS C	24.9	178.6	0.76	0.71	40.9
North: Resolution Drive											
7	L2	127	3.0	0.197	23.4	LOS C	4.4	31.5	0.62	0.72	42.9
8	T1	125	3.0	0.708	72.1	LOS E	4.3	30.6	1.00	0.82	27.7
9	R2	29	3.0	0.346	74.9	LOS E	1.9	13.7	1.00	0.72	26.9
Approach		281	3.0	0.708	50.4	LOS D	4.4	31.5	0.83	0.77	32.8
West: Great Eastern Hwy west											
10	L2	37	3.0	0.042	24.0	LOS C	1.2	8.6	0.55	0.68	42.1
11	T1	2289	3.0	0.831	32.4	LOS C	42.9	307.8	0.93	0.87	39.3
12	R2	143	3.0	0.730	70.1	LOS E	9.3	66.9	1.00	0.85	27.7
Approach		2469	3.0	0.831	34.4	LOS C	42.9	307.8	0.93	0.86	38.4
All Vehicles		5040	3.0	0.832	34.4	LOS C	42.9	307.8	0.86	0.79	38.4

*Figure 46 – **2031 PM Peak** Resolution Drive/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hardey Road											
1	L2	110	3.0	0.521	82.9	LOS F	11.3	81.2	0.98	0.80	25.3
2	T1	172	3.0	0.521	77.2	LOS E	11.8	84.5	0.98	0.79	26.5
3	R2	112	3.0	0.426	81.7	LOS F	9.0	64.8	0.96	0.79	25.6
Approach		394	3.0	0.521	80.0	LOS F	11.8	84.5	0.97	0.80	25.9
East: Great Eastern Hwy east											
4	L2	122	3.0	0.079	7.1	LOS A	1.3	9.4	0.16	0.59	53.0
5	T1	2789	3.0	0.897	35.9	LOS D	75.3	540.8	0.90	0.85	37.9
6	R2	151	3.0	0.879	104.7	LOS F	14.5	104.3	1.00	0.95	22.0
Approach		3062	3.0	0.897	38.1	LOS D	75.3	540.8	0.88	0.85	37.0
North: Resolution Drive											
7	L2	171	3.0	0.260	13.2	LOS B	4.9	35.4	0.39	0.68	48.7
8	T1	164	3.0	0.857	102.3	LOS F	7.9	56.4	1.00	0.93	22.6
9	R2	76	3.0	0.836	107.0	LOS F	7.2	52.0	1.00	0.91	21.8
Approach		411	3.0	0.857	66.1	LOS E	7.9	56.4	0.75	0.82	28.8
West: Great Eastern Hwy west											
10	L2	25	3.0	0.024	22.4	LOS C	0.9	6.5	0.45	0.65	42.9
11	T1	1461	3.0	0.443	22.5	LOS C	23.7	170.4	0.61	0.55	43.9
12	R2	76	3.0	0.443	90.3	LOS F	6.4	46.3	0.99	0.77	24.0
Approach		1562	3.0	0.443	25.8	LOS C	23.7	170.4	0.63	0.56	42.2
All Vehicles		5429	3.0	0.897	39.7	LOS D	75.3	540.8	0.80	0.76	36.4

*Figure 47 – **2031 PM Peak with Golden Gateway development** Resolution Drive/Great Eastern Highway Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hardey Road											
1	L2	110	3.0	0.550	83.2	LOS F	12.0	86.3	0.98	0.81	25.3
2	T1	188	3.0	0.550	77.6	LOS E	12.5	89.6	0.98	0.80	26.4
3	R2	112	3.0	0.426	81.7	LOS F	9.0	64.8	0.96	0.79	25.6
Approach		410	3.0	0.550	80.2	LOS F	12.5	89.6	0.97	0.80	25.9
East: Great Eastern Hwy east											
4	L2	122	3.0	0.080	7.3	LOS A	1.4	10.4	0.18	0.59	52.8
5	T1	2789	3.0	0.918	43.8	LOS D	82.6	593.4	0.92	0.91	35.0
6	R2	166	3.0	0.913	110.0	LOS F	16.6	119.0	1.00	1.00	21.4
Approach		3077	3.0	0.918	45.9	LOS D	82.6	593.4	0.90	0.90	34.3
North: Resolution Drive											
7	L2	211	3.0	0.324	15.8	LOS B	7.5	53.8	0.47	0.71	47.1
8	T1	202	3.0	0.950	117.6	LOS F	10.6	75.9	1.00	1.08	20.7
9	R2	94	3.0	0.931	117.9	LOS F	9.6	68.8	1.00	1.04	20.5
Approach		507	3.0	0.950	75.3	LOS E	10.6	75.9	0.78	0.92	26.9
West: Great Eastern Hwy west											
10	L2	28	3.0	0.027	23.4	LOS C	1.0	7.5	0.46	0.66	42.4
11	T1	1598	3.0	0.495	24.5	LOS C	27.6	198.3	0.65	0.59	42.9
12	R2	76	3.0	0.418	89.1	LOS F	6.4	45.9	0.98	0.77	24.2
Approach		1702	3.0	0.495	27.4	LOS C	27.6	198.3	0.66	0.60	41.4
All Vehicles		5696	3.0	0.950	45.5	LOS D	82.6	593.4	0.82	0.80	34.4

7.9.3 Grandstand Road/Resolution Drive/Stoneham Street Intersection

Headline SIDRA movement summaries for the Grandstand Road/Resolution Drive/Stoneham Street Intersection are presented in Table 19 (AM Peak hour) and Table 20 (PM peak hour). The SIDRA intersection geometry is shown in Figure 48. The full SIDRA movement summaries are presented in Figure 49 and Figure 50 (AM peak hour) as well as Figure 51 and Figure 52 (PM peak hour).

Overall the Grandstand Road/Resolution Drive/Stoneham Street Intersection SIDRA modelling results show that this intersection would perform with LOS A across all approaches to the intersection during the AM peak, both in the 2031 base scenario and 2031 with Golden Gateway development scenario.

Overall the Grandstand Road/Resolution Drive/Stoneham Street Intersection SIDRA modelling results show that this intersection would perform with LOS A or B across all approaches to the intersection during the PM peak, both in the 2031 base scenario and 2031 with Golden Gateway development scenario.

Table 19 – AM Peak Hour (0800-0859) Grandstand Road/Resolution Drive/Stoneham Street Intersection Assessment

Year	Grandstand Rd (north)			Resolution Dr (south)			Stoneham St (west)			All Vehicles		
	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS
2031	0.39	7.0	A	0.38	7.9	A	0.20	5.5	A	0.39	6.8	A
2031 + dev	0.41	7.1	A	0.49	8.9	A	0.25	5.9	A	0.49	7.1	A

Table 20 – PM Peak Hour (1600-1659) Grandstand Road/Resolution Drive/Stoneham Street Intersection Assessment

Year	Grandstand Rd (north)			Resolution Dr (south)			Stoneham St (west)			All Vehicles		
	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS
2031	0.24	6.6	A	0.67	8.8	A	0.72	10.9	B	0.72	9.3	A
2031 + dev	0.29	6.5	A	0.79	11.8	B	0.80	14.4	B	0.80	11.5	B

Figure 48 – Grandstand Road/Resolution Drive/Stoneham Street Intersection – SIDRA geometry

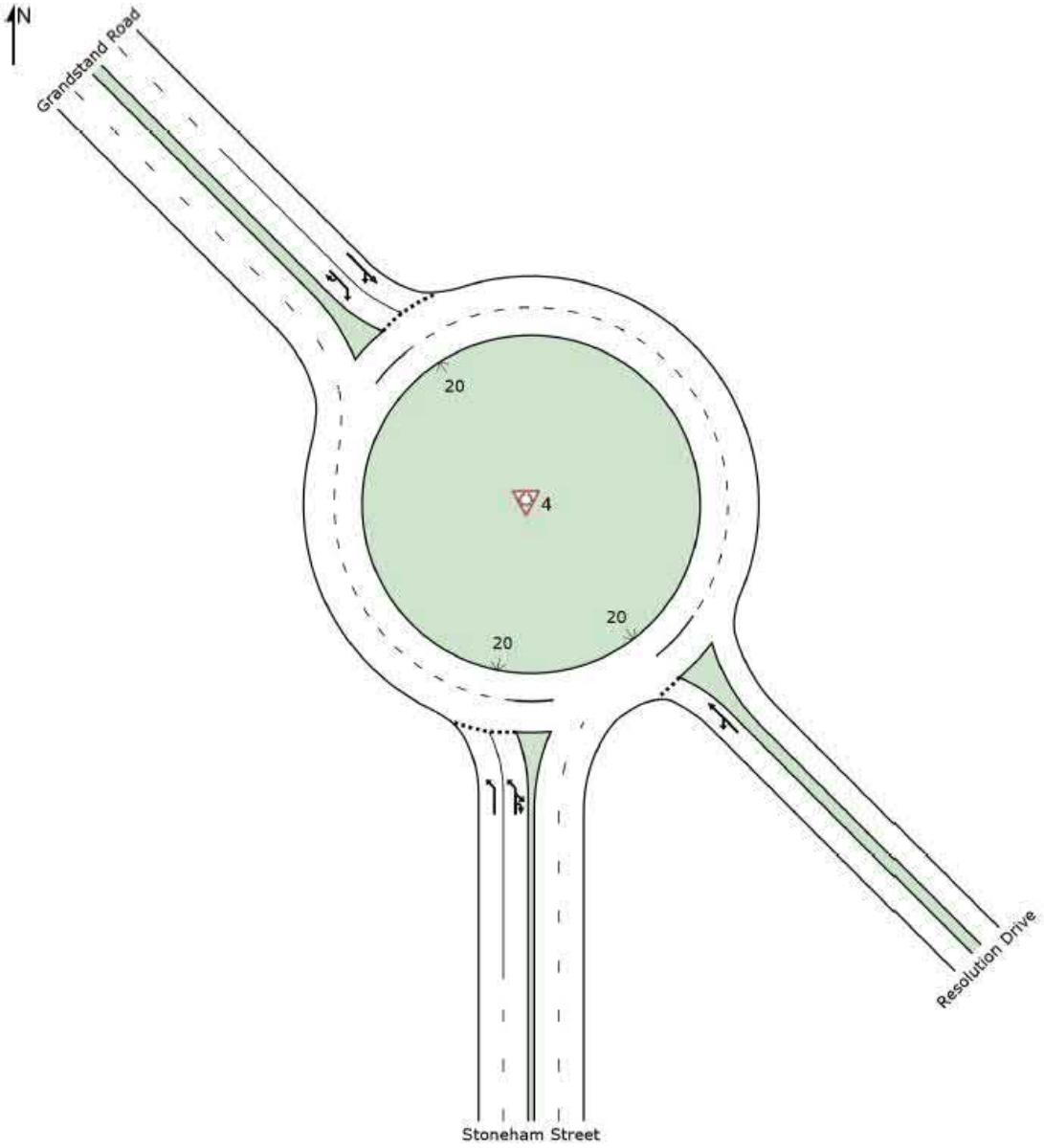


*Figure 49 – **2031 AM Peak** Grandstand Road/Resolution Drive/Stoneham Street Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Stoneham Street											
1a	L1	404	3.0	0.201	4.7	LOS A	1.1	7.7	0.41	0.53	54.6
3b	R3	59	3.0	0.201	10.9	LOS B	1.1	7.6	0.41	0.57	54.9
Approach		463	3.0	0.201	5.5	LOS A	1.1	7.7	0.41	0.54	54.6
SouthEast: Resolution Drive											
21b	L3	58	3.0	0.376	7.7	LOS A	1.8	12.9	0.64	0.80	52.0
22	T1	229	3.0	0.376	7.9	LOS A	1.8	12.9	0.64	0.80	53.9
Approach		287	3.0	0.376	7.9	LOS A	1.8	12.9	0.64	0.80	53.5
NorthWest: Grandstand Road											
28	T1	314	3.0	0.388	4.4	LOS A	2.4	17.6	0.22	0.51	54.8
29a	R1	799	3.0	0.388	8.0	LOS A	2.4	17.6	0.23	0.56	53.2
Approach		1113	3.0	0.388	7.0	LOS A	2.4	17.6	0.22	0.54	53.6
All Vehicles		1863	3.0	0.388	6.8	LOS A	2.4	17.6	0.33	0.58	53.9

*Figure 50 – **2031 AM Peak with Golden Gateway development** Grandstand Road/Resolution Drive/Stoneham Street Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Stoneham Street											
1a	L1	475	3.0	0.253	5.0	LOS A	1.4	10.3	0.48	0.57	54.3
3b	R3	77	3.0	0.253	11.2	LOS B	1.4	10.1	0.49	0.61	54.5
Approach		552	3.0	0.253	5.9	LOS A	1.4	10.3	0.48	0.58	54.3
SouthEast: Resolution Drive											
21b	L3	73	3.0	0.487	8.7	LOS A	2.8	19.8	0.70	0.88	51.4
22	T1	293	3.0	0.487	8.9	LOS A	2.8	19.8	0.70	0.88	53.2
Approach		366	3.0	0.487	8.9	LOS A	2.8	19.8	0.70	0.88	52.8
NorthWest: Grandstand Road											
28	T1	323	3.0	0.405	4.5	LOS A	2.7	19.1	0.27	0.51	54.6
29a	R1	810	3.0	0.405	8.1	LOS A	2.7	19.1	0.27	0.56	53.0
Approach		1133	3.0	0.405	7.1	LOS A	2.7	19.1	0.27	0.55	53.5
All Vehicles		2051	3.0	0.487	7.1	LOS A	2.8	19.8	0.40	0.61	53.6

*Figure 51 – **2031 PM Peak** Grandstand Road/Resolution Drive/Stoneham Street Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Stoneham Street											
1a	L1	1227	3.0	0.719	10.7	LOS B	8.4	60.4	0.90	1.00	51.3
3b	R3	45	3.0	0.719	17.2	LOS B	8.1	58.2	0.91	1.02	51.6
Approach		1272	3.0	0.719	10.9	LOS B	8.4	60.4	0.90	1.00	51.3
SouthEast: Resolution Drive											
21b	L3	87	3.0	0.667	8.7	LOS A	5.5	39.4	0.71	0.87	51.4
22	T1	527	3.0	0.667	8.9	LOS A	5.5	39.4	0.71	0.87	53.2
Approach		614	3.0	0.667	8.8	LOS A	5.5	39.4	0.71	0.87	53.0
NorthWest: Grandstand Road											
28	T1	254	3.0	0.245	4.3	LOS A	1.5	11.1	0.19	0.47	55.3
29a	R1	445	3.0	0.245	7.9	LOS A	1.5	11.1	0.20	0.55	53.3
Approach		699	3.0	0.245	6.6	LOS A	1.5	11.1	0.19	0.52	54.0
All Vehicles		2585	3.0	0.719	9.3	LOS A	8.4	60.4	0.67	0.84	52.4

*Figure 52 – **2031 PM Peak with Golden Gateway development** Grandstand Road/Resolution Drive/Stoneham Street Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Stoneham Street											
1a	L1	1237	3.0	0.796	14.2	LOS B	11.3	81.1	1.00	1.16	48.9
3b	R3	55	3.0	0.796	20.8	LOS C	10.8	77.2	1.00	1.18	49.1
Approach		1292	3.0	0.796	14.4	LOS B	11.3	81.1	1.00	1.16	48.9
SouthEast: Resolution Drive											
21b	L3	130	3.0	0.794	11.7	LOS B	9.1	65.2	0.85	1.05	49.4
22	T1	584	3.0	0.794	11.9	LOS B	9.1	65.2	0.85	1.05	51.0
Approach		714	3.0	0.794	11.8	LOS B	9.1	65.2	0.85	1.05	50.7
NorthWest: Grandstand Road											
28	T1	330	3.0	0.289	4.4	LOS A	2.0	14.1	0.23	0.45	55.3
29a	R1	485	3.0	0.289	8.0	LOS A	2.0	14.1	0.23	0.55	53.1
Approach		815	3.0	0.289	6.5	LOS A	2.0	14.1	0.23	0.51	54.0
All Vehicles		2821	3.0	0.796	11.5	LOS B	11.3	81.1	0.74	0.95	50.8

7.9.4 Stoneham Street/Daly Street/Resolution Drive Intersection

Headline SIDRA movement summaries for the Stoneham Street/Daly Street/Resolution Drive Intersection are presented in Table 21 (AM Peak hour) and Table 22 (PM peak hour). The SIDRA intersection geometry is shown in Figure 53. The full SIDRA movement summaries are presented in Figure 54 and Figure 55 (AM peak hour) as well as Figure 56 and Figure 57 (PM peak hour).

Overall the Stoneham Street/Daly Street/Resolution Drive Intersection SIDRA modelling results show that this intersection would perform with LOS B or C across all approaches to the intersection during the AM peak, both in the 2031 base scenario and 2031 with Golden Gateway development scenario.

Overall the Stoneham Street/Daly Street/Resolution Drive Intersection SIDRA modelling results show that this intersection would perform with LOS B or C across all approaches to the intersection during the PM peak, both in the 2031 base scenario and 2031 with Golden Gateway development scenario.

Table 21 – AM Peak Hour (0800-0859) Stoneham Street/Daly Street/Resolution Drive Intersection Assessment

Year	Stoneham St (north)			Daly St (east)			Stoneham St (south)			Resolution Dr (west)			All Vehicles		
	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS
2031	0.62	13.3	B	0.05	22.7	C	0.24	11.6	B	0.26	21.2	C	0.63	13.6	B
2031 + dev	0.65	14.0	B	0.19	15.1	B	0.89	23.1	C	0.45	21.8	C	0.89	17.4	C

Table 22 – PM Peak Hour (1600-1659) Stoneham Street/Daly Street/Resolutions Drive Intersection Assessment

Year	Stoneham St (north)			Daly St (east)			Stoneham St (south)			Resolution Dr (west)			All Vehicles		
	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS	Deg. Sat	Av. Del	LOS
2031	0.49	15.8	B	0.05	26.9	C	0.69	15.2	B	0.17	26.5	C	0.59	16.0	B
2031 + dev	0.73	18.9	B	0.09	19.4	B	0.87	29.2	C	0.22	23.8	C	0.89	25.2	C

Figure 53 – Stoneham Street/Daly Street/Resolution Drive Intersection – SIDRA geometry

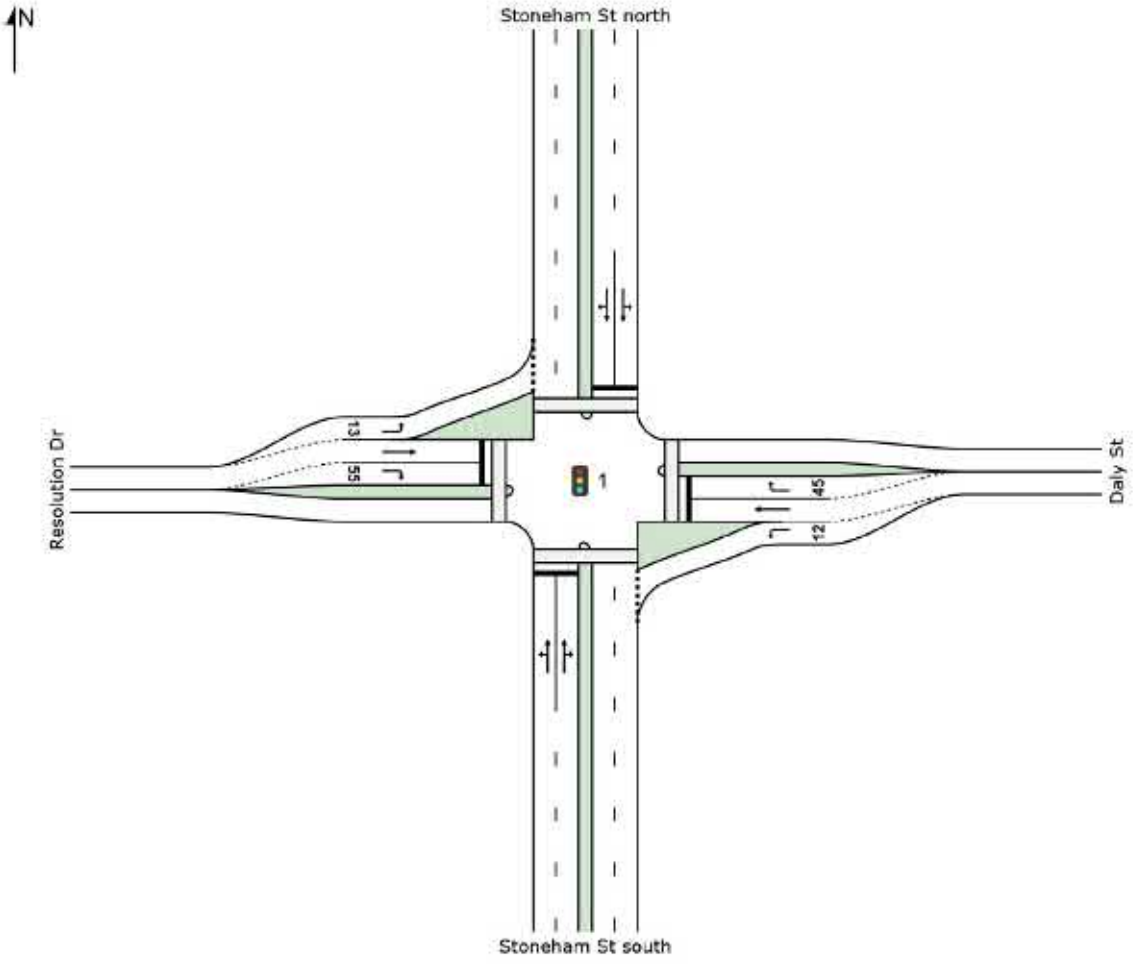


*Figure 54 – **2031 AM Peak** Stoneham Street/Daly Street/Resolution Drive Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Stoneham St south											
1	L2	32	3.0	0.244	16.0	LOS B	3.8	27.5	0.64	0.56	49.4
2	T1	363	3.0	0.244	11.1	LOS B	3.8	27.5	0.65	0.56	50.4
3	R2	9	3.0	0.244	17.3	LOS B	3.5	25.3	0.67	0.56	49.1
Approach		404	3.0	0.244	11.6	LOS B	3.8	27.5	0.65	0.56	50.3
East: Daly St											
4	L2	10	3.0	0.012	9.6	LOS A	0.1	0.7	0.45	0.61	51.1
5	T1	10	3.0	0.045	26.4	LOS C	0.3	1.9	0.87	0.59	41.9
6	R2	10	3.0	0.047	32.1	LOS C	0.3	2.0	0.91	0.67	38.4
Approach		30	3.0	0.047	22.7	LOS C	0.3	2.0	0.75	0.62	43.2
North: Stoneham St north											
7	L2	5	3.0	0.625	18.7	LOS B	12.5	89.5	0.81	0.71	48.1
8	T1	1049	3.0	0.625	13.2	LOS B	12.5	89.5	0.81	0.71	49.2
9	R2	28	3.0	0.625	18.8	LOS B	11.8	84.4	0.81	0.72	48.1
Approach		1082	3.0	0.625	13.3	LOS B	12.5	89.5	0.81	0.71	49.2
West: Resolution Dr											
10	L2	51	3.0	0.049	7.1	LOS A	0.3	2.0	0.31	0.62	52.9
11	T1	12	3.0	0.054	26.5	LOS C	0.3	2.2	0.88	0.60	41.8
12	R2	54	3.0	0.255	33.3	LOS C	1.5	11.0	0.95	0.74	37.9
Approach		117	3.0	0.255	21.2	LOS C	1.5	11.0	0.66	0.67	43.8
All Vehicles		1633	3.0	0.625	13.6	LOS B	12.5	89.5	0.76	0.67	48.9

*Figure 55 – **2031 AM Peak with Golden Gateway development** Stoneham Street/Daly Street/Resolution Drive Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Stoneham St south											
1	L2	38	3.0	0.457	17.4	LOS B	8.2	58.5	0.72	0.64	48.7
2	T1	368	3.0	0.457	11.8	LOS B	8.2	58.5	0.72	0.64	49.9
3	R2	174	3.0	0.887	48.4	LOS D	7.2	51.7	1.00	1.17	33.0
Approach		580	3.0	0.887	23.1	LOS C	8.2	58.5	0.81	0.80	43.2
East: Daly St											
4	L2	150	3.0	0.192	11.0	LOS B	1.9	13.3	0.55	0.70	50.1
5	T1	12	3.0	0.054	26.5	LOS C	0.3	2.2	0.88	0.60	41.8
6	R2	27	3.0	0.127	32.6	LOS C	0.8	5.4	0.93	0.71	38.2
Approach		189	3.0	0.192	15.1	LOS B	1.9	13.3	0.62	0.69	47.4
North: Stoneham St north											
7	L2	24	3.0	0.649	18.9	LOS B	13.1	94.3	0.82	0.73	47.9
8	T1	1053	3.0	0.649	13.7	LOS B	13.1	94.3	0.83	0.73	48.8
9	R2	31	3.0	0.649	19.7	LOS B	12.3	88.1	0.83	0.74	47.6
Approach		1108	3.0	0.649	14.0	LOS B	13.1	94.3	0.83	0.73	48.8
West: Resolution Dr											
10	L2	88	3.0	0.088	7.6	LOS A	0.6	4.3	0.35	0.63	52.5
11	T1	12	3.0	0.054	26.5	LOS C	0.3	2.2	0.88	0.60	41.8
12	R2	96	3.0	0.453	34.2	LOS C	2.8	20.3	0.97	0.77	37.6
Approach		196	3.0	0.453	21.8	LOS C	2.8	20.3	0.69	0.70	43.4
All Vehicles		2073	3.0	0.887	17.4	LOS B	13.1	94.3	0.79	0.75	46.4

*Figure 56 – **2031 PM Peak** Stoneham Street/Daly Street/Resolution Drive Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Stoneham St south											
1	L2	68	3.0	0.689	20.1	LOS C	18.7	134.5	0.81	0.74	46.9
2	T1	1262	3.0	0.689	14.9	LOS B	18.7	134.5	0.81	0.73	48.1
3	R2	9	3.0	0.689	20.8	LOS C	18.3	131.4	0.82	0.73	47.0
Approach		1339	3.0	0.689	15.2	LOS B	18.7	134.5	0.81	0.73	48.0
East: Daly St											
4	L2	10	3.0	0.012	10.4	LOS B	0.1	0.9	0.43	0.61	50.6
5	T1	10	3.0	0.044	32.4	LOS C	0.3	2.3	0.87	0.59	39.2
6	R2	10	3.0	0.046	38.0	LOS D	0.3	2.4	0.91	0.67	36.1
Approach		30	3.0	0.046	26.9	LOS C	0.3	2.4	0.74	0.62	41.1
North: Stoneham St north											
7	L2	19	3.0	0.493	18.1	LOS B	11.6	83.0	0.69	0.62	48.4
8	T1	653	3.0	0.493	15.0	LOS B	11.6	83.0	0.73	0.65	47.9
9	R2	45	3.0	0.493	27.0	LOS C	6.8	48.5	0.84	0.73	43.0
Approach		717	3.0	0.493	15.8	LOS B	11.6	83.0	0.74	0.65	47.5
West: Resolution Dr											
10	L2	34	3.0	0.054	11.1	LOS B	0.5	3.3	0.46	0.65	50.1
11	T1	11	3.0	0.048	32.4	LOS C	0.4	2.5	0.87	0.59	39.2
12	R2	37	3.0	0.170	39.0	LOS D	1.3	9.1	0.93	0.72	35.8
Approach		82	3.0	0.170	26.5	LOS C	1.3	9.1	0.73	0.68	41.2
All Vehicles		2168	3.0	0.689	16.0	LOS B	18.7	134.5	0.78	0.70	47.4

*Figure 57 – **2031 PM Peak with Golden Gateway development** Stoneham Street/Daly Street/Resolution Drive Intersection*

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Stoneham St south											
1	L2	108	3.0	0.886	33.1	LOS C	28.1	201.4	0.98	1.11	40.2
2	T1	1300	3.0	0.886	28.8	LOS C	28.1	201.4	0.99	1.12	40.5
3	R2	27	3.0	0.886	35.8	LOS D	23.7	169.9	1.00	1.13	39.4
Approach		1435	3.0	0.886	29.2	LOS C	28.1	201.4	0.99	1.12	40.5
East: Daly St											
4	L2	58	3.0	0.083	13.5	LOS B	0.8	6.0	0.61	0.68	48.5
5	T1	20	3.0	0.090	26.8	LOS C	0.5	3.8	0.88	0.62	41.7
6	R2	15	3.0	0.071	32.3	LOS C	0.4	3.0	0.92	0.68	38.3
Approach		93	3.0	0.090	19.4	LOS B	0.8	6.0	0.72	0.67	45.0
North: Stoneham St north											
7	L2	58	3.0	0.731	20.7	LOS C	16.2	116.4	0.87	0.81	46.6
8	T1	673	3.0	0.731	17.0	LOS B	16.2	116.4	0.89	0.82	46.5
9	R2	69	3.0	0.731	36.3	LOS D	4.8	34.7	1.00	0.91	38.2
Approach		800	3.0	0.731	18.9	LOS B	16.2	116.4	0.89	0.83	45.6
West: Resolution Dr											
10	L2	42	3.0	0.068	13.0	LOS B	0.6	4.2	0.59	0.67	48.8
11	T1	11	3.0	0.049	26.5	LOS C	0.3	2.1	0.88	0.59	41.8
12	R2	46	3.0	0.217	33.1	LOS C	1.3	9.3	0.94	0.73	38.0
Approach		99	3.0	0.217	23.8	LOS C	1.3	9.3	0.79	0.69	42.4
All Vehicles		2427	3.0	0.886	25.2	LOS C	28.1	201.4	0.94	0.99	42.3

8. ANALYSIS OF EXTERNAL TRANSPORT NETWORKS

Impacts along Great Eastern Highway, Belgravia Street and Hardey Road are addressed in Section 7.

9. SAFE ROUTES TO SCHOOL

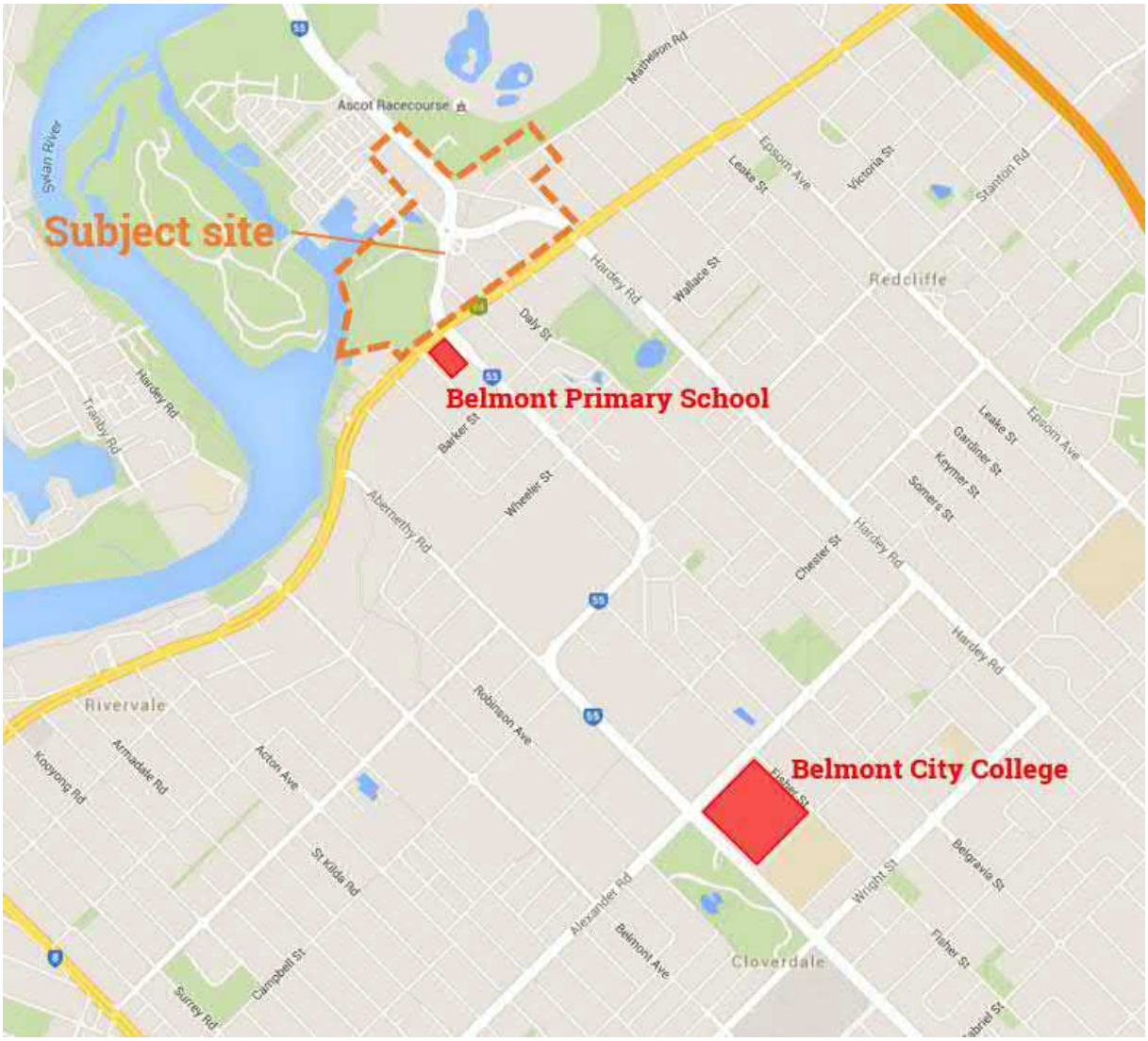
9.1 Schools Catchments

The Golden Gateway site is located within the following school catchments:

- Belmont Primary School (state primary school approx. 400m from the site); and
- Belmont City College (independent secondary school approx. 2.5km from the site).

Figure 58 shows the location of the above two schools in relation to the Golden Gateway site.

Figure 58 – Location of Schools in Relation to the Golden Gateway Site (source: Google Maps)



9.2 Walk and Cycle Routes to Schools

Belmont Primary School is located on the southwest corner of the traffic signal controlled intersection of Great Eastern Highway and Belgravia Street. The primary school is located approximately 400m from the centre of the Golden Gateway site, but a close as 50m-100m from the Belmont Trust Land portion of the site. The close proximity of Belmont Primary School to the site provides future residents with the ability to access a primary education facility via a short walk or cycle.

Belmont City College is located on Fisher Street, immediately to the south of Alexander Road and to the east of Abernethy Road (opposite Belmont Oasis Leisure Centre). The independent secondary school is located approximately 2.5km from the centre of the Golden Gateway site. The distance from the site to the secondary school means that walking and cycling trips will only be made by parents and students who are comfortable walking or cycling those distances along heavily trafficked routes.

Further details on the walk and cycle routes to Belmont Primary School and Belmont City College are provided below.

9.2.1 Belmont Primary School

The most direct pedestrian access route from the Golden Gateway LSP site to Belmont Primary School is via the pedestrian crossing across the western leg of the traffic signal controlled intersection of Great Eastern Highway and Belgravia Street.

Having crossed Great Eastern Highway, parents and students can walk along the footpath alongside the schools frontage with Great Eastern Highway to Lapage Street, where the pedestrian entry to the primary school is located.

It should be noted that prior to April 2016 legally in WA children aged 12 years old and under are able to ride on the footpath, in addition adults are legally able to ride on a footpath when accompanying a child under 12 years old. Since April 2016 it is now legal for anyone to ride on the footpath as long as they do so paying due care and attention to others users of the path.

As such the above pedestrian route can be legally used by parents and students to access the school. The direct pedestrian and cycle route from the LSP site to Belmont Primary School is shown in Figure 59.

Figure 59 - Walk to School Route – Belmont Primary School (source: Nearmap)

9.2.2 Belmont City College

The most direct pedestrian access route from the Golden Gateway LSP site to Belmont City College is via the pedestrian crossing across the western leg of the traffic signal controlled intersection of Great Eastern Highway, and then via Belgravia Street to Alexander Road, and along Alexander Road to Belmont City College located on Fisher Street.

The most direct pedestrian route between the LSP site and Belmont City College, requires crossing Great Eastern Highway via the signalised intersection with Belgravia Street, then walking along the footpath on the western side of Belgravia Street to Fairbrother Street, and then crossing Fairbrother Street to continue along the western side of Belgravia Street to Alexander Road. At Alexander Road you can walk along the footpath on the northern side of the street until you are opposite Belmont City College and then cross via the median island uncontrolled crossing to access the College site.

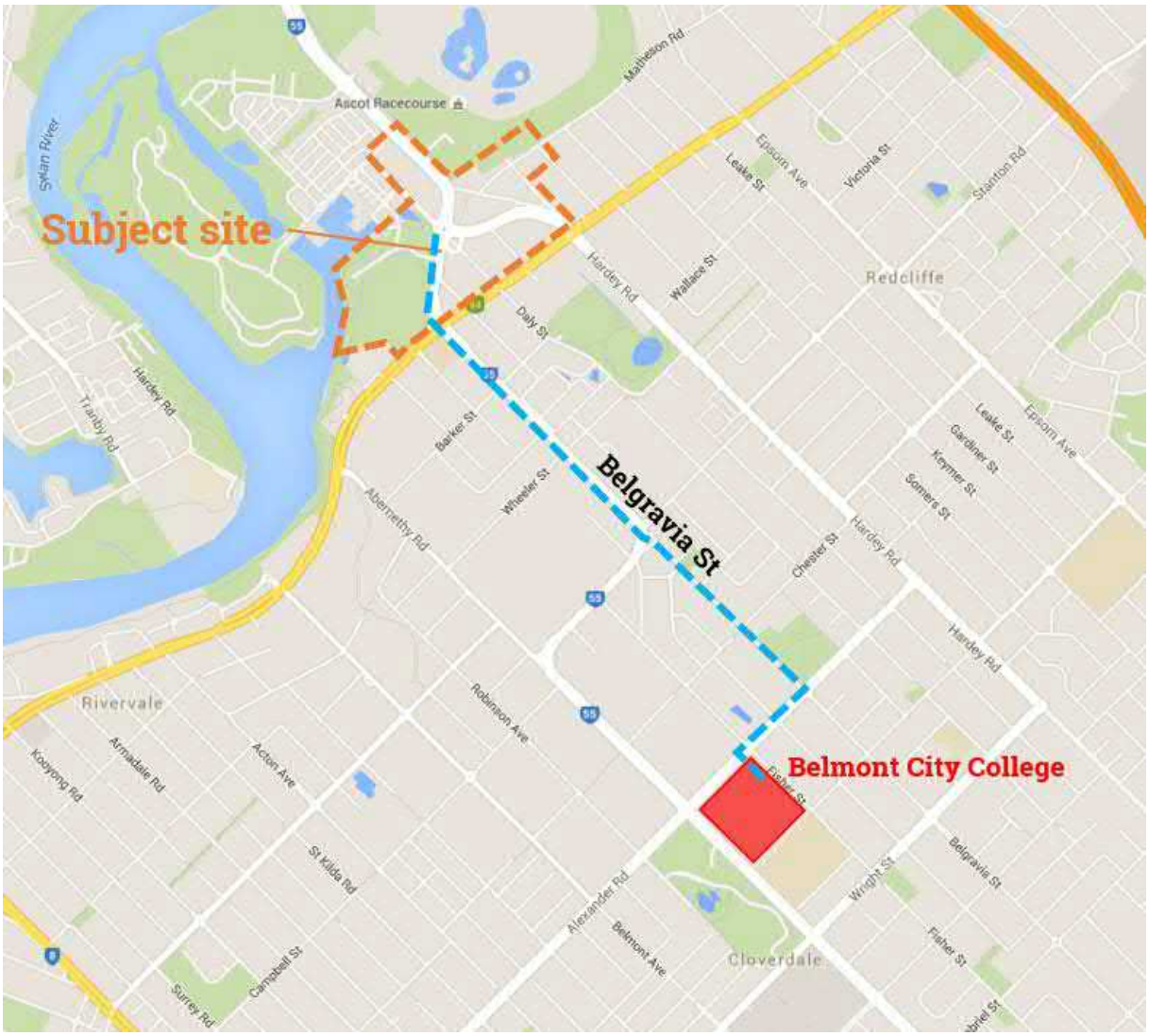
Similar to Belmont Primary School, students riding to Belmont City College can utilise the footpaths as it is now legal to do so. Older students that wish to ride on a shared path or on-road, could utilise the following route to access Belmont College from the LSP site; due to the dual traffic lanes in each direction along

Belgravia Street between Great Eastern Highway and Fairbrother Street, the on-road cycling environment through that corridor is very hostile for inexperienced or younger cyclists.

As such it is more likely that students would cross Great Eastern Highway at the Hardey Road signalised intersection and cycle along Hardey Road to Alexander Road (note: Alexander Road has on-street bike lanes to the west of Belgravia Street intersection).

Alternatively, cyclists may use the lower traffic volume corridor of Daly Street between Great Eastern Highway and Alexander Road. The direct pedestrian and cycle route from the LSP site to Belmont Primary School is shown in Figure 60.

Figure 60 - Walk to School Route – Belmont City College (source: Nearmap)



10. CONCLUSIONS

10.1 Golden Gateway Local Structure Plan Context

The Golden Gateway Precinct is located within the City of Belmont and the LSP area is bounded by Ascot Racecourse to the north/northeast, Hardey Road to the east, Great Eastern Highway to the south, Swan River to the west and Ascot Waters to the west/northwest.

The Golden Gateway LSP is comprised of three main land uses, residential dwellings (approximately 3,000 dwellings), commercial space (approximately 5,900m^2 NLA) and retail space (approximately 1,200m^2 NLA). It is proposed that the three land uses will primarily be provided in mixed-use development sites across the Golden Gateway LSP area.

As noted in the Structure Plan Report, the LSP has been formulated around the following vision:

> *"The development of the Golden Gateway will transform this degraded and fragmented area into a vibrant precinct of residential and mixed use development, with strengthened connections to the Swan River and Ascot Waters, with uses, density and built form that derive best value from these attributes while respecting the area's rich culture and heritage."*

The overarching objectives for the Golden Gateway Precinct as established by the project team and reinforced through stakeholder engagement include:

- Improve self-containment of facilities – reduce car dependence;
- Improve peoples connection to the Swan River;
- Create accessible, quality public realm within the precinct; and
- Identify appropriate uses/densities in conjunction with infrastructure improvements.

10.2 Conclusions

10.2.1 Background Growth in Traffic

The available historic traffic count data on the road network surrounding the Golden Gateway site suggests that the road network has been subject to significant fluctuations in traffic volumes as works have been completed in the local area – most notably the Great Eastern Highway upgrades.

Based on the fluctuations in historic traffic count data and therefore the limited reliability of this data to accurately reflect recent historic trends from which to base background traffic growth in the future, and the recast ROM24 outputs suggesting that there is to be significant year on year growth around the Golden Gateway site, far in excess of levels of annual growth that would be expected to be sustained and accommodated on the surrounding road network – for the purposes of this assessment we have applied 15% growth (1% growth per annum) for the Great Eastern Highway corridor and 25% growth (1.7% growth per annum) for all other road corridors around the Golden Gateway site.

10.2.2 Intersection Performance

Stoneham Street/Great Eastern Highway Intersection

The modelling results show that for the AM peak hour in the future base year 2031 scenario and 2031 with Golden Gateway development scenario, both have overall intersection LOS F. However, the modelling suggests that the additional AM peak hour traffic generated by the Golden Gateway site, that is predicted to use the Stoneham Street corridor, would place additional pressure on the Stoneham Street approach to the

Great Eastern Highway intersection and there would be a significant increase in delay from 152 seconds (2031 base scenario) to 270 seconds (2031 with development scenario).

The modelling results show that for the PM peak hour in the future base year 2031 scenario the Stoneham Street/Great Eastern Highway Intersection performs with an overall LOS E and in the 2031 plus Golden Gateway development scenario the intersection performs with an overall LOS F. The additional PM peak hour traffic generated by the Golden Gateway site, that is predicted to use the Great Eastern Highway (west) and Stoneham Street approaches to the intersection, would place additional pressure on the operation of the intersection and would see significant increases in intersection delay – Great Eastern Highway approach would increase in delay from 69 seconds (2031 base scenario) to 157 seconds (2031 with development scenario) and the Stoneham Street approach would increase in delay from 108 seconds (2031 base scenario) to 182 seconds (2031 with development scenario).

Resolution Drive/Great Eastern Highway Intersection

The modelling results show that for the AM peak hour in the future base year 2031 scenario and 2031 with Golden Gateway development scenario, both have an overall LOS D. The modelling results show that the additional AM peak hour traffic generated by the Golden Gateway site has a limited impact upon the operation of the Resolution Drive/Great Eastern Highway intersection.

The modelling results show that the PM peak hour in the future base year 2031 scenario the Resolution Drive/Great Eastern Highway Intersection performs with an overall LOS D. The modelling results show that the additional PM peak hour traffic generated by the Golden Gateway site has a marginal impact upon the operation of the Resolution Drive/Great Eastern Highway intersection – the average delay on each approach to the intersection is predicted to increase marginally within the inclusion of the development related traffic, however the Great Eastern Highway (west) is predicted to experience a more significant increase in average delay from 38 seconds (2031 base scenario) and 68 seconds (2031 with development scenario).

Grandstand Road/Resolution Drive/Stoneham Street Intersection

Overall the Grandstand Road/Resolution Drive/Stoneham Street Intersection modelling results show that this intersection would perform with LOS A across all approaches to the intersection during the AM peak, both in the 2031 base scenario and 2031 with Golden Gateway development scenario.

Overall the Grandstand Road/Resolution Drive/Stoneham Street Intersection modelling results show that this intersection would perform with LOS A or B across all approaches to the intersection during the PM peak, both in the 2031 base scenario and 2031 with Golden Gateway development scenario.

Stoneham Street/Daly Street/Resolution Drive Intersection

Overall the Stoneham Street/Daly Street/Resolution Drive Intersection modelling results show that this intersection would perform with LOS B or C across all approaches to the intersection during the AM peak, both in the 2031 base scenario and 2031 with Golden Gateway development scenario.

Overall the Stoneham Street/Daly Street/Resolution Drive Intersection modelling results show that this intersection would perform with LOS B or C across all approaches to the intersection during the PM peak, both in the 2031 base scenario and 2031 with Golden Gateway development scenario.

10.2.3 Pedestrian, Cycle and Public Transport Networks

The future development of the Golden Gateway Structure Plan would not only transform the pedestrian and cycle connections throughout the development site, but also provide a resident population that could be the catalyst in a step change in public transport service provision across the site/local area. It is anticipated that

there would be an uplift in public transport service and possible bus service operating through the development site.

APPENDIX 1 - TRANSPORT IMPACT ASSESSMENT CHECKLIST

Item	Status	Comments/Proposals
Introduction/Background	✓	Section 1
Development proposal		
regional context	✓	Section 2
proposed land uses	✓	Section 2
table of land uses and quantities	✓	Section 2
major attractors/generators	✓	Section 2
Existing situation		
existing land uses within structure plan	✓	Section 3
existing land uses within 800 metres of structure plan area	✓	Section 3
existing road network within structure plan area	✓	Section 3
existing pedestrian / cycle networks within structure plan area	✓	Section 3
existing public transport services within structure plan area	✓	Section 3
existing road network within 2 (or 5) km of structure plan area	✓	Section 3
traffic flows on roads within structure plan area (PM and/or AM peak hours)	✓	Section 3
Traffic flows on roads within 2 (or 5) km of structure plan area	✓	Section 3
existing pedestrian/cycle networks within 800m of structure plan area	✓	Section 3
existing public transport networks within 800m of structure plan area	✓	Section 3
Proposed internal transport networks		
changes/additions to existing road network or proposed new road network.	✓	Section 4
road reservation widths	✓	Section 4
road cross sections & speed limits	✓	Section 4
intersection controls	✓	Section 4
pedestrian /cycle networks and crossing facilities	✓	Section 4

Item	Status	Comments/Proposals
public transport routes	✓	Section 4
Changes to external road networks		
road network	✓	Section 5
intersection controls	✓	Section 5
pedestrian/cycle networks and crossing facilities	✓	Section 5
public transport facilities	✓	Section 5
Integration with surrounding area		
trip attractors/generators within 800m	✓	Section 6
proposed changes to land uses within 800m	✓	Section 6
travel desire lines from structure plan to these attractors/generators	✓	Section 6
adequacy of external transport networks	✓	Section 6
deficiencies in external transport networks	✓	Section 6
remedial measures to address deficiencies	✓	Section 6
Analysis of internal transport networks		
assessment years and time period	✓	Section 7
structure plan generated traffic	✓	Section 7
extraneous (through) traffic	✓	Section 7
design traffic flows (i.e. total traffic)	✓	Section 7
road cross sections	✓	Section 7
intersection controls	✓	Section 7
access strategy	✓	All sections
pedestrian/cycle networks	✓	Section 7
safe routes to schools	✓	Section 9
pedestrian permeability & efficiency	✓	Section 7
access to public transport	✓	Section 7
Analysis of external transport networks		Combined within Section 7 of the TIA
extent of analysis	✓	Section 7
Base flows for assessment years	✓	Section 7
Total traffic flows	✓	Section 7

Item	Status	Comments/Proposals
Road cross sections	✓	Section 7
Intersection layouts and controls	✓	Section 7
Pedestrian/cycle networks	✓	Wider area connections discussed in Section 9 Safe Routes to School
Conclusions	✓	Section 10

Transport Assessors Name: Matthew Root

Company: Flyt Pty Ltd Date 17 June 2018

Ordinary Council Meeting 28/08/18

Item 12.1 refers

Attachment 5

Appendix D
Local Water Management Strategy

Golden Gateway

Local Water Management Strategy

Prepared for City of Belmont

By Essential Environmental

June 2018

essential environmental

Disclaimer and Limitation

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FIGURES

1 INTRODUCTION

Essential Environmental has been commissioned by the City of Belmont to prepare this Local Water Management Strategy (LWMS) in support of a Local Structure Plan for the Golden Gateway Precinct located in Ascot. The study area is approximately 32 hectares in size and is located in the vicinity of Great Eastern Highway, Resolution Drive, Grandstand Road and Stoneham Street.

The site currently comprises of a mixture of commercial lots, the heritage listed Ascot Brick Works, places of public assembly (racecourse), public open space (including the Trust Land), and areas set aside for water supply, sewerage and drainage. The City of Belmont recognises the site as a promising opportunity for development due to its proximity to the Swan River and existing public open space. The proposed development will optimise the potential of the Golden Gateway Precinct by introducing high density commercial and residential areas, while maintaining the social and heritage values of the public open space and the Ascot Brick Works.

1.1 Principles and design objectives

Consistent with *State Planning Policy 2.9: Water Resources* (WAPC, 2006) and *Better urban water management* (WAPC, 2008a), a local water management strategy is required to be submitted to support any rezoning of land in a Local Planning Scheme or adoption of a Local Structure Plan to ensure that appropriate water management strategies are identified.

The position of this strategy within the state government planning framework is defined in *Better urban water management* (WAPC, 2008a) and *Planning bulletin no. 92, urban water management* (WAPC, 2008b) and is outlined in Figure 1.

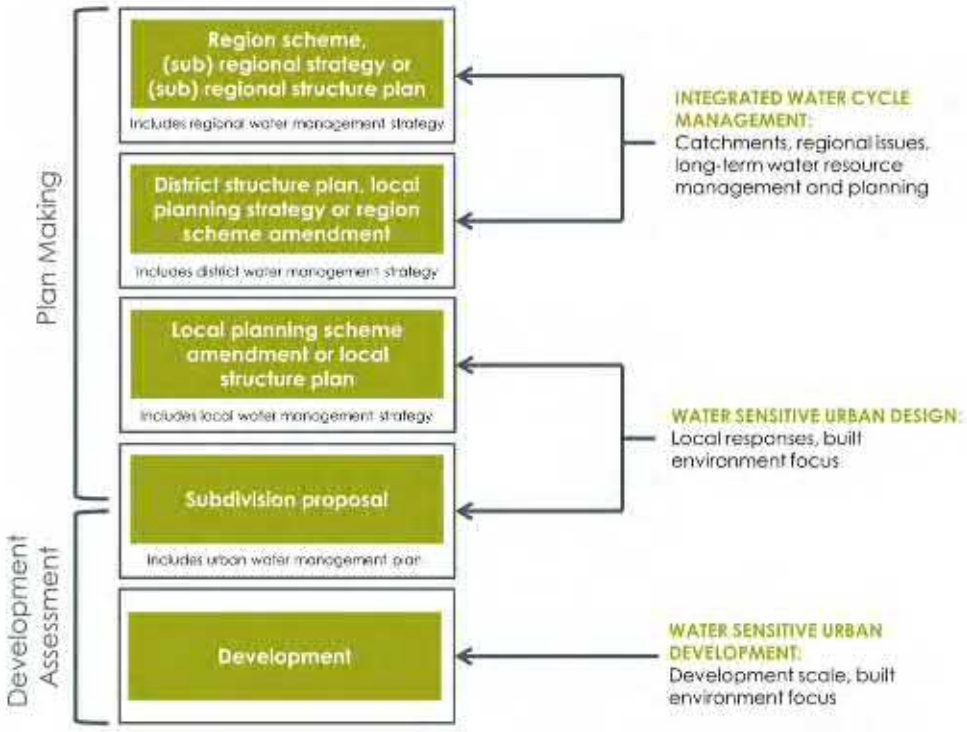

Figure 1: Integrating drainage planning with the land planning process (WAPC, 2008a)

In accordance with *Better urban water management* (WAPC, 2008a) preparation of a local structure plan is to be supported by a local water management strategy (LWMS) prepared in accordance with the Department of Water and Environmental Regulation's (DWER) *Interim: Developing a local water management strategy* (DoW, 2008a). The LWMS should demonstrate to the satisfaction of the WAPC in accordance with this plan and any approved DWMS:

- how the key principles and strategies of this plan have been addressed;
- how the urban structure will address water use and management;
- existing and required water management infrastructure; and
- detailed land requirements for water management.

The principles and strategies contained within section 4 of this *Local water management strategy* will be implemented as part of detailed land use planning and development requirements and are consistent with the framework and requirements in *Better urban water management* (WAPC, 2008a).

1.2 Planning background

The majority of the study area is zoned 'Urban' under the Metropolitan Region Scheme, with a small portion zoned 'Parks & recreation' and 'Mixed use' & 'Place of Public Assembly' under the City of Belmont Local Planning Scheme No. 15.

The City of Belmont Local Planning Scheme No. 15, adopted in December 2011, provides a district level framework to guide more detailed planning for the City. It requires local structure plans to be prepared to provide the level of detailed planning required to facilitate subdivision and development within the scheme area. The Western Australian Planning Commission and the City of Belmont are preparing a local structure plan to guide land use and development outcomes for the broader Golden Gateway precinct.

Figure 2 shows the Golden Gateway Precinct. A large portion of the Precinct is zoned 'Mixed use' in the Local Planning Scheme (LPS). The historical Ascot's beehive kilns and chimney stacks are located within this zone. A portion of the Precinct is zoned 'Place of Public Assembly (Racecourse)' accounting for portions of the Ascot Racecourse carpark and facilities. A small section of the precinct, approximately 6370 m^2, is zoned 'Parks and Recreation' under the Metropolitan Region Scheme. The waterway area in the Precinct is zoned 'water supply, sewerage and drainage' in the LPS. Water Corp owns the Lots in this zone and maintains the existing channels and piped drainage network system.

1.3 Previous studies

A number of previous studies have been undertaken that are relevant to this strategy area. In addition to *State Planning Policy* 2.9, these documents inform the strategies and management principles contained within this Local Water Management Strategy:

- City of Belmont Policy Manual (CoB, 2015);
- Developing a Local Water Management Strategy (DoW, 2008a);
- Stormwater Management Manual for Western Australia (DoW, 2004-07);
- Better Urban Water Management (WAPC, 2008a); and
- Decision Process for Stormwater Management in Western Australia (DWER, 2017a).

City of Belmont: Golden Gateway - Local Water Management Strategy
Figure 2: Study area location

Data source: DoP, CoB, Landgate. Created by: AT. Projection: MGA: zone 50.

Scale 1: 9,000 @ A4

0 180 m

N

essential environmental

A241

2 PROPOSED DEVELOPMENT

A brief summary of the current land use and proposed layout of the structure plan are provided below.

2.1 Key elements of the structure plan

The local structure plan will guide the subdivision and development of approximately 32 hectares in the Golden Gateway Precinct. The structure plan (Figure 3) contains:

- Predominantly a mixture of medium to high density residential areas with development between 2 and 15 storeys;
- Non-residential development at ground level in Mixed Use zones;
- Realignment of Stoneham Street, Resolution Drive and Grandstand Road;
- Upgrade of existing local roads to reflect an inner urban street character;
- Implementation of an east to west green spine replicating existing drainage; and,
- Retention of foreshore reserve Public Open Space (POS) surrounding the Swan River.

During the preparation of this report, the design of the local structure plan has been modified to incorporate water quality treatment and flood detention areas into the plan, based on the natural hydrology of the study area in order to minimise any potential environmental impacts resulting from redevelopment. Importantly, the existing drainage corridors are to be largely retained, rehabilitated and incorporated into a feature of the public open space.

Planning for the Belmont Trust land (Figure 3) will be undertaken separate to this Structure Plan. This area has been considered in this Local Water Management Strategy to facilitate future planning and ensure links between that land, the Golden Gateway area and the river are maintained.

2.2 Current land use

Commercial properties are dominant along Great Eastern Highway south of Resolution Drive and Stoneham Street. The north and east of Resolution Dr contains a parcel of land approximately 5 hectares in size that is largely vacant, with the exception of a few mature trees, used as overflow parking servicing the Ascot Racecourse. This portion of land, as shown in Figure 3, also accommodates a 150 m Central Belmont Main Drain, which discharges via piped drainage under the Stoneham Street / Resolution Drive roundabout into the Ascot Waters compensation basin on the north-western boundary of the study area. North of the Ascot Waters Compensation Basin is a second compensation basin that services the Ascot Waters development. This compensation basin is herein referred to as 'Northern Drainage Lake'. The northern portion of the site contains the Perth Racing Administration Offices.

Historical aerial photography from Landgate suggests the land has been used for commercial purposes for over 50 years, with the majority of lots being approximately 1/3 hectare, accommodating warehouse facilities and such, predominantly adjacent to Great Eastern Hwy. The northern portion of the study area contains the Bristle kilns and Brick Works, which were established in 1929 and ceased operation in 1982 (Heritage Council, WA). The western portion of the study area, over the now Belmont Trust Land, was historically used for sporting purposes such baseball fields (Clark, 1952), and more recently as a temporary worksite for development in the area, such as the widening of the Great Eastern Hwy.

City of Belmont: Golden Gateway - Local Water Management Strategy
Figure 3: Proposed structure plan

Data source: TBB, DoP, CoB, Landgate. Created by: AT. Projection: MGA: zone 50.

Scale 1: 5,500 @ A4

0 110 m

essential environmental

City of Belmont: Golden Gateway - Local Water Management Strategy
Figure 4: Historical land use

Data source: CoB, Landgate. Created by: AT. Projection: MGA: zone 50.

Scale 1: 10,000
@ A4

0 200 m

N

essential environmental

3 DESIGN CRITERIA

Any development within the Golden Gateway Precinct in Ascot should aim to meet the following specified design criteria using appropriate best management practices. Additional design criteria may need to be met, particularly where they are specific to particular precincts. These will be outlined in the relevant Detailed Area Plan or associated development guidelines.

3.1 Surface water management system

- The first 15mm of rainfall is to be retained within all lots through a combination of raingardens, water tanks and soakwell systems.
- Raingardens and tree-pits are to be installed in all new or upgraded streets to provide infiltration of the first 15mm of rainfall.
- Minor event runoff from events larger than 15mm total depth are to be managed in accordance with serviceability requirements of the City of Belmont.
- Roads and public open spaces are to be designed to cater for the surface overflow for more severe storm events with habitable floors at least 0.3 m above the 1% AEP flood or storage level at any location.
- Habitable floors are to be constructed at least 0.5m above the 1% AEP flood level in the Swan River adjacent to the development area.
- Water quality treatment systems and stormwater management structures should be designed in accordance with the *Stormwater Management Manual for Western Australia* (DoW, 2004-07) and *Australian Runoff Quality: A guide to water sensitive urban design* (Engineers Australia, 2006).

3.2 Groundwater management system

- Groundwater management systems are to be designed as free-discharging under normal operating conditions.
- Flows from groundwater management systems are to be treated prior to discharge.

4 EXISTING SITE CHARACTERISTICS

A summary of the existing environmental conditions in the study area are provided in this section, including determination of the opportunities and constraints for water management. The information presented incorporates data from the following reports:

- Lot 5, Resolution Drive Ascot Site Management Plan (GHD, 2013);
- Belmont Foreshore Precinct Plan (City of Belmont, 2014);
- Environmental Report: Golden Gateway (Essential Environmental, 2018a); and
- Central Belmont Main Drain Stage 2 – Upgrade Review (Water Corporation, 2009).

4.1 Location and climate

The climate for Golden Gateway study area is typically Mediterranean having hot summers and mild winters with low annual rainfall. Average annual rainfall recorded at the nearest Bureau of Meteorology (BOM) weather station (Perth Airport (no. 9021) approximately 4 km east of the site) since 1944 is 768 mm but has declined in recent years to an average of 670 mm since 2002. The minimum recorded annual rainfall was in 2006 at just 480 mm and the maximum recorded was in 1955 at 1,165 mm.

The majority of rainfall is experienced in the winter between May and September with the driest months being December to February (Figure 5).

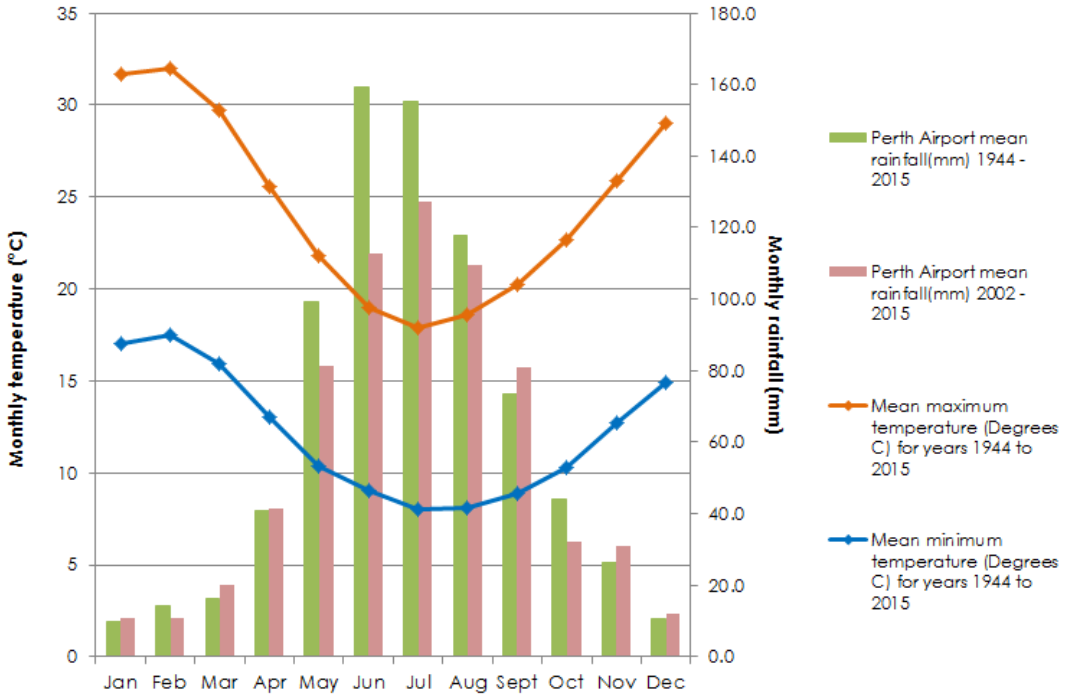

Figure 5: Climate summary data (Perth Airport, BoM, 2016)

Temperature recorded at the Airport (BOM station 9021) shows that the average maximum temperatures range between 17.9°C in July and 32°C in February, while average minimum temperatures range between 8°C in July and 17.5°C in February.

4.2 Topography

The study area grades down from Great Eastern Highway (between 6 – 8 m AHD) towards the Swan River or the Water Corporation drain and basin (approximately 1 m AHD), located along the north-western boundary. There are a few local depressions located adjacent to the Ascot Racecourse. The topography of the study area is shown in Figure 6.

4.3 Geology and Soils

The soils of the study area influence the ability to retain and infiltrate stormwater.

4.3.1 Surface geology and soils

The surface geology is described broadly as Guildford formation: Alluvial sand and clay with shallow-marine and estuarine lenses and local basal conglomerate (WA surface geology 1:250,000 scale geological maps, Geological Survey of WA, and Geoscience Australia).

As shown in Figure 6, two-thirds of the north-western portion of the study area is classified as Ms2 – Sandy Silt, and the eastern third as S8 – Sand, described as follows:

- Ms2 – Sandy Silt: strong brown to mild grey, mottled, blocky, disseminated fine sand, hard when dry, variable clay content. This soil type is historically resourced for clay bricks and tile manufacture. It has a low permeability and low potential for erosion. Sandy Silt has a low shrink swell potential, however is prone to flooding.
- S8 – Sand: very light grey at surface, yellow at depth, fine to medium grained, sub rounded quartz, moderately well sorted. Sand of aeolian origin is used for construction purposes with a high permeability and low erosion potential. Well drained given a low water table.

Geotechnical investigations will need to be undertaken to provide site specific information to inform the redevelopment of individual sites within the structure plan area.

4.3.2 Acid sulfate soils

A review of Department of Water and Environment Regulation acid sulfate soils (ASS) risk mapping (DWER, 2017e) identifies two-thirds of the study area, predominantly coinciding with surface geology Ms2-Sandy Silt as containing a Class I 'high to moderate' risk of ASS and the remainder, coinciding with S8-Sand, classified as Class II 'moderate to low' risk occurring within 3 m of the natural soil surface. The ASS mapping is provided in Figure 7.

4.4 Groundwater Resources

Determining the groundwater depth and quality are crucial for forming total cycle water management strategies. These components are outlined below.

4.4.1 Public Drinking Water Source Area

There are no Public Drinking Water Source Areas within the study area.

City of Belmont: Golden Gateway - Local Water Management Strategy
Figure 6: Topography and surface geology

Data source: DMP, Landgate. Created by: AT. Projection: MGA: zone 50.

Scale 1: 5,500
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City of Belmont: Golden Gateway - Local Water Management Strategy
Figure 7: Acid sulfate soil risk

Data source: DEC, Landgate. Created by: RM. Projection: MGA: zone 50.

Scale 1: 5,500
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4.4.2 Allocation Information

The Study area is located within the Perth Groundwater Area and City of Belmont Subarea. The Department of Water and Environmental Regulation's Water Register (2017b) shows no further allocation available within the study area, as shown in Table 1.

Table 1: Groundwater resource allocation and availability (as of February 2017)

Management Area	Management Sub Area	Resource	Allocation Limit	Allocated Volume	Remaining Volume
Perth	City of Belmont	Perth – Superficial Swan	1,497,000	1,836,634	-339,634
Perth	Perth South Confined	Perth – Leederville	4,500,000	5,860,333	-1,409,233
Perth	Perth South Confined	Perth – Yarragadee North	400,000	800,000	-400,000

There are no current groundwater licences within the study area. The City of Belmont currently has a groundwater licence allocation of 1,171,200 kL (licence no. 157042) with a draw point located along the Swan River just south-west of the study area for POS irrigation throughout the City. Within the study area, irrigation of POS is provided from the Ascot Water Compensating Basin, which is unmetered, but estimated to be approximately 56,000 kL/yr. It is understood from the City of Belmont that local groundwater conditions are saline and future abstraction of groundwater from the superficial aquifer for irrigation will not be possible.

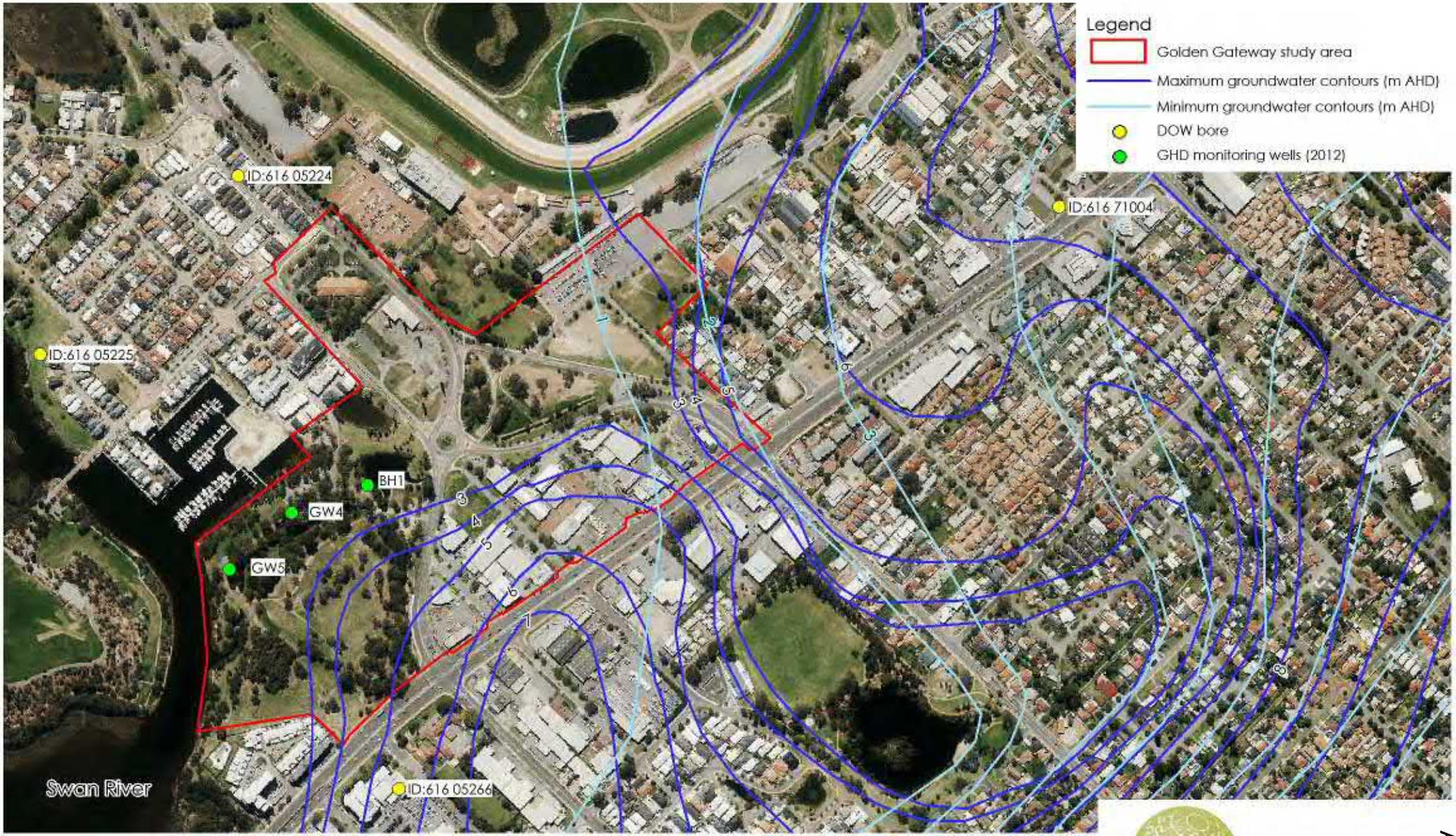
4.4.3 Groundwater Levels

The Department of Water and Environmental Regulation's Perth Groundwater Atlas (DWER, 2017c) provides groundwater level contours across the study area based on maximum level data from 1996, as shown in Figure 8. Maximum groundwater level contours generally follow the topography contours, with levels ranging from 6 m AHD near Great Eastern Highway to 1 m AHD in the northwest corner of the Site. These contours indicate a minimum depth of approximately 1-2 m across the Site in the existing commercial areas, and potentially shallower groundwater west of Stoneham Street. Minimum groundwater levels from the Perth Groundwater Atlas (DWER, 2017c) are also presented in Figure 8 and are based on summer groundwater levels from 2003. These contours demonstrate that the groundwater flow direction is general west towards the Swan River.

These contours are extrapolated from the DWER network of bores as provided in the DoW Water Information Network (2017d). No long term DWER monitoring bores are located within the study area however several other bores are located within the vicinity, though they have not been subject to ongoing monitoring. These bores provide a snapshot of groundwater levels that are neither maximum nor minimum levels but would be expected to be within the natural seasonal variation. The most recently sampled bore was in 2011 (ID: 61671004) situated 500 m east and hydrologically upstream of the study area showing a groundwater level 4.5 m below ground level (BGL). Considering this information together with another bore close to the study area (ID: 61605266) which last recorded data from 1999 of 4 m BGL, which indicates that the groundwater level may be lower than the mapped minimum groundwater atlas levels.

Groundwater levels from two bores located north of the study area (ID: 61605225 and ID: 61605224) were measured in 1996 at approximately 3 m BGL. These bores are part of the Ascot Water development, which topographically sits approximately 2 m higher than the northern section of the study area and has been built-up for the purposes of the development. Therefore it is reasonable to conclude that the groundwater level of these bores is less likely to be representative of levels within the study area than the surrounding locations.

City of Belmont: Golden Gateway - Local Water Management Strategy
Figure 8: Groundwater levels



Data source: WC, DEC, Landgate. Created by: AT. Projection: MGA: zone 50.

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As part of a contamination investigation of Lot 5 Resolution Drive, adjacent to the Water Corporation drain in the west of the study area, water levels in groundwater monitoring bores were measured. Groundwater was identified as between 1.56 m BGL (BH1) and 1.76 m BGL (GW5), which is consistent with mapping from the Perth Groundwater Atlas (DWER, 2017c).

4.4.4 Groundwater Quality

There have been limited assessments of groundwater quality within the study area. As part of the contamination investigations of Lot 5 Resolution Drive (GHD, 2013) (outlined in Section 4.6.4) three groundwater monitoring bores (Figure 8) were sampled for water quality. Results from this sampling indicated the following exceedances of Australian and New Zealand Environment and Conservation Council (ANZECC) guideline values:

- Concentrations of iron (3.9, 20 and 1.5 mg/L) were above ANZECC Fresh Water (0.3 mg/L) and Marine Water (1.0 mg/L) criteria;
- Concentrations of zinc (0.026, 0.009 and 0.017 mg/L) and were above ANZECC Fresh Water (0.008 mg/L) criteria in all bores and Marine Water (0.015 mg/L) criteria in bores GW4 and BH1;
- Concentrations of ammonia were above ANZECC Fresh Water (0.9 mg/L) and Marine Water (0.91 mg/L) criteria in GW4 (3.8 mg/L) and GW5 (4.9 mg/L);
- Concentrations of nitrate were above ANZECC Marine Water (0.005 mg/L) criteria in all bores and above Fresh Water (0.01 mg/L) criteria in GW4 (0.019 mg/L) and GW5 (0.019 mg/L); and
- Concentrations of total nitrogen exceeded ANZECC Fresh Water (2 mg/L) criteria in GW4 (5 mg/L) and GW5 (5.9 mg/L).

These exceedances were considered by GHD to be characteristic of the winter conditions in the Swan River and natural soils in the area rather than impact associated with fill material on this site. Note that the site management plan was not implemented.

The City of Belmont has identified that groundwater in the area is saline and therefore not suitable for irrigation of landscaped areas.

4.5 Surface Water Resource

Existing surface water features within the study area may require protection from development or provide opportunities for modification to deliver the community an asset with social and ecological benefits. The surface water resources are outlined in below.

4.5.1 Natural Water Resources

The Swan River is adjacent to the western portion of the study area. The Swan River holds significant ecological value because it provides habitat for local and migratory birds and other fauna, with the majority of the River being identified as a conservation category wetland and environmentally protected area. Furthermore, the Swan River provides important social value for visual amenity, recreation on the river and its reserves. The Swan River also holds Aboriginal and European heritage significant values. The Department of Water and Environmental Regulation Floodway mapping indicates that a large area in the northern portion of the study area lies within the Swan River 100 year average reoccurrence interval (ARI) flood fringe (Figure 9).

A portion of the site is located within the Swan River Trust Development Control area (Figure 9). Land use planning and development within the Development Control Area is subject to

approval of the Department of Biodiversity, Conservation and Attractions under Part 5 of the *Swan and Canning Rivers Management Act 2006* and the *Swan and Canning Rivers Management Regulations 2007*. This area includes the waterways of the Swan and Canning rivers and the adjoining parks and recreation reserves.

Water management strategies for the study area will need to ensure protection of the Swan River, particularly with regards to water quality improvement. The catchments of the Swan Canning River system are the subject of the *Swan Canning Water Quality Improvement Plan* (SRT, 2008) which contains catchment management measures and control actions. It was developed as a part of the Coastal Catchments Initiative, with the following aim of reducing nitrogen and phosphorus inputs to the Swan-Canning river system.

The Belmont Foreshore Precinct Plan (City of Belmont, 2014) was prepared to guide development and landuse within the river setting and ensure that the landscape values of the river system are conserved or enhanced. The study area, particularly Trust Land and POS contains areas identified as parkland within the precinct plan, characterised by open lawns surrounding large individual trees. The precinct plan outlines strategic recommendations that will need to be incorporated into future planning of the Trust Land.

On the basis of predictive modelling, the *Swan Canning Water Quality Improvement Plan* reports the maximum acceptable load to the Swan and Canning rivers per year as 130 tonnes of total nitrogen (TN) and 14 tonnes of total phosphorus (TP). To meet these objectives the *Swan Canning water quality improvement plan* aims to:

- reduce the nitrogen load by 120 tonnes per year (49%); and
- reduce the phosphorus load by 12 tonnes per year (46%).

4.5.2 Drainage

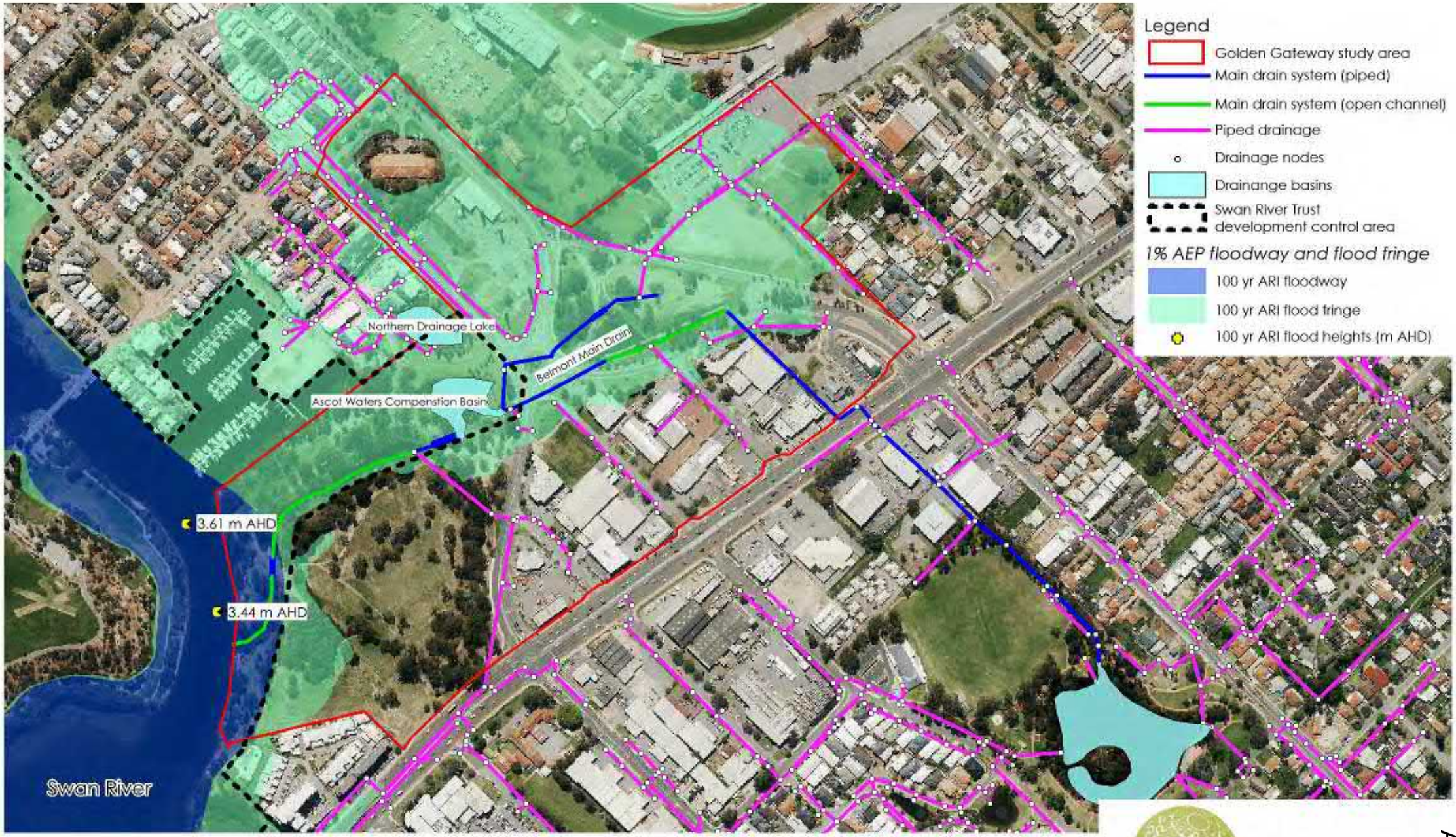
Drainage throughout the study area is part of the Water Corporation's Central Belmont Main Drain system and consists of a combination of piped drainage, open channels and constructed compensation basins. The study area is at the downstream end of a larger catchment within the City of Belmont that extends south and east covering are area of approximately 350 ha. This wider catchment includes the Centenary Park compensation basin.

The Belmont Main Drain system enters the study area under Great Eastern Highway through a 1500 mm pipe that flows from Centenary Park to north of Resolution Drive. This pipe discharges to an open drain that flows approximately 150 m to the west. This drain has a trapezoidal shape and straight alignment that was modified most recently in the 1980s (Figure 9).

It is understood that the Water Corporation planning for the system includes a number of capital works to modify the system upstream of the study area (Water Corporation, 2009). Within the study area, the open section of Belmont Main Drain between Stoneham Street and Resolution Drive is recommended to be piped for safety reasons. No other modifications to the Main Drain were recommended by the Water Corporation (Water Corporation, 2009) since it was found to operate satisfactorily in accordance with its design requirements.

Belmont Main Drain discharges under the Stoneham Street / Resolution Drive roundabout to the Ascot Waters Compensation Basin before extending another 350 m in an open drain towards the Swan River (Figure 9). The Ascot Water Compensation Basin controls flow rates and allows sediment settlement prior to entering the Swan River. A contaminated sites investigation was conducted by GHD and a Site Management Plan was subsequently developed in 2013 for the expansion of this compensation basin, though it was not implemented. The investigation identified issues of leachable metals, PAH and TPH fractions and asbestos (see section 4.6.4).

City of Belmont: Golden Gateway - Local Water Management Strategy
Figure 9: Surface water resources



Data source: WC, DEC, Landgate. Created by: AT. Projection: MGA: zone 50.

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The remainder of the drainage, as shown in Figure 9, consists of traditional side entry pits and piped drainage along existing roadways. Inflows into the Ascot Waters Compensation Basin have been monitored by the City of Belmont with data available publically on the Water Information Reporting (WIR) Database. The data indicated that mean values of Total Nitrogen (0.96 mg/L) were below ANZECC guidelines values (1.2 mg/L), whilst Total Phosphorus (0.11 mg/L) was above (0.07 mg/L).

North of the Ascot Waters Compensation Basin and outside the study area is a second compensation basin servicing the Ascot Water development, the Northern Drainage Lake. The Northern Drainage Lake has experienced water quality issues in the past with two fish kill incidents occurring during July and September 2012. The first incident involved approximately 300 fish deaths and the latter 100-150 fish deaths. No incidents have occurred since 2012. Investigations were undertaken by the Swan River Trust in 2012 in response to the fish kills. Water quality testing indicated low concentrations of algae, and higher concentrations of organic matter resulting in oxygen-depleted water. In addition, it was identified that fish often become trapped in backwaters such as this lake.

4.5.4 Wetlands

Geomorphic wetland mapping (DCBA, 2017) demonstrates that there are no wetlands within the study area (Figure 10). The nearest significant mapped wetland is the Swan River to the west and downstream of the study area which is identified as a conservation category wetland.

4.6 Environmental and social

Several environmental and social factors are either influence or are dependent on management of the water cycle with the study area. A summary of these factors are provided below.

4.6.1 Conservation Area

An environmentally sensitive area, as mapped by the Department of Water and Environment Regulation surrounds the Bush Forever site as described above. This area is described as 'Temperate Saltmarsh' and listed as 'vulnerable' under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Temperate salt marshes are an important habitat for local and migratory bird species (Department of Environment, 2015).

4.6.2 Vegetation

There are no Bush Forever sites within the study area, reflecting the existing commercial land use through the study area. Notably there is no significant vegetation along the Belmont Main Drain upstream of the Stoneham Street / Resolution Drive roundabout.

Bush Forever site 313, Swan River Salt Marshes, exists to the north and west of the study area, as shown on Figure 10. The closest proximity of the Bush Forever site to the study area is adjacent to Trust Land at the south-western boundary. Apart from this point, the study area is largely disconnected from the Bush Forever site.

A portion of the vegetation along the banks of the Swan River has been identified as a Bush Fire Prone Area. A Bushfire Management Plan (Essential Environmental, 2018b) has been prepared for management of these areas.

City of Belmont: Golden Gateway - Local Water Management Strategy
Figure 10: Environmental and heritage features

Data source: DEC, DiA, Landgate. Created by: RM. Projection: MGA: zone 50.

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4.6.3 Heritage

A search of the Department of Planning, Lands and Heritage aboriginal heritage enquiry system showed one site overlaying the study area (Figure 10):

- Site ID 3753 – Registered site, Name: Perth, Type: Historical, mythological, hunting place, named place, natural feature.

One other site is adjacent to the study area, however not within the boundary, site ID 3536 - Registered site, Name: Swan River, Type: mythological.

The significant European Heritage feature of the study area is the Bristle Kilns; beehive and tunnel kilns, with associated chimney and floor ducts, located at 197 Grandstand Rd Ascot. The Kilns were first built in 1930, manufacturing terracotta, stoneware and steel products. Production ceased in 1982 (Heritage Council, 2012). The Kilns and chimneys remain and were placed on the State Heritage List in 2003.

4.6.4 Contamination

A search of the Department of Water and Environmental Regulation Contaminated Sites database found no contaminated sites within the study area. Lot 5 Resolution Drive (160 Stoneham Street) is listed as "Possibly Contaminated, Investigation Required".

The Ascot Waters Compensation Basin was assessed by Douglas Partners (2009) to determine the occurrence of acid sulphate soils and waste classification in support of expanding the basin. A Preliminary and Detailed Site Investigation was developed by GHD along with a Site Management Plan for this area (GHD, 2013). A summary of the contamination issues identified through these investigations include:

- Soil (Inorganic): Exceedances of metals (As, Ca, Mn, Hg, Ni, Pb, Zn, Al, Fe) above Ecological Investigation Levels and Health Investigation Levels were minimal and asbestos was considered to be low risk (though further investigations are required);
- Soil (Organic): Hydrocarbons were localised and not considered to pose a risk to ecological or human receptors;
- Groundwater (Inorganic): Three groundwater bores were sampled to test for Fe, Zn, Ni, NO_3, NO_2, Total Nitrogen and Total Phosphorus with results generally consistent with winter conditions in the Swan River and natural soils in the area; and,
- Groundwater (Organic): Samples were analysed for BTEX, Total Recoverable Hydrocarbons (TRH) and Polycyclic Aromatic Hydrocarbons (PAH) with all reported below the DER Domestic Non-Potable Water Criteria (GHD, 2013).

Further details are provided in the Golden Gateway Local Structure Plan Environmental Report (Essential Environmental, 2018a).

4.7 Summary

Based on the review of the geological, hydrological and environmental information for the study area, the key considerations for water management are as follows:

- No additional groundwater allocation (beyond existing licences) available for irrigation of public open space;
- Saline groundwater conditions unsuitable for irrigation;

- Groundwater is generally shallow across the study area, approximately 1-2m below the surface in some areas;
- Potentially high risk of acid sulfate soils present in parts of the site with sandy silt soils;
- Former land uses may have contributed to legacy nutrients within groundwater;
- Limited water sensitive urban design features throughout the existing development areas;
- Water Corporation planning includes replacing the open Central Belmont Main Drain between Resolution River and Stoneham Street with a piped system for safety concerns; and,
- The Swan River which presents a number of considerations including the 100yr ARI flood fringe, conservation category wetland mapping and the Swan River Trust Development Control Area in the west of the study area.

5 WATER MANAGEMENT STRATEGY

Water management strategies for the study area have been prepared in accordance with the guiding documents, policies and strategies (Section1), the intended redevelopment (Section 2) and the site considerations (Section 4). Strategies for water sustainability, stormwater, groundwater, and water quality improvement are outlined in this Section.

5.1 Water sustainability initiatives

- Ensure the efficient use of all water resources in the redeveloped urban form and aim to achieve highest value use of fit-for-purpose water;
- maintain opportunities for future generations by using water more efficiently.

A broad scale water demand model has been developed, using Essential Environmental's Water Balance Tool, to identify the various post-development water demands from residential and non-residential areas. Summary results of this water balance modelling are presented in Table 2 and details are provided in Appendix 2. The modelling is based on yield estimates for the Golden Gateway area, excluding the Belmont Trust land. A separate demand model will be required for that area as planning progresses.

The analysis is based on the development comprising 46 townhouses and 3,412 apartments, with an approximate population of 6,250 residents. Analysis assumes the use of standard water efficiency measures within households and irrigation of up-to 25% of townhouse lot areas and 5% of apartment lot areas consistent with current State Government policies (watering for 2 days per week through summer). These demands are consistent with a target of less than 100 kilolitres per person per year.

The most significant public non-drinking water demand for the redevelopment will be public open space irrigation. As discussed in Section 4.4.4, the saline groundwater conditions prevent the local abstraction of groundwater for irrigation and therefore an alternative source is required. The City may consider stormwater capture, reuse and harvesting options during further detailed design of the redevelopment and public spaces, for example using paving design to collect local runoff. To further reduce demand, landscaping within the redevelopment will use hydrozoning and smart meters.

Other non-drinking water demands include toilets and washing machines in homes and garden irrigation. Although there is no proposal to provide for these demands through a non-drinking water scheme there remains potential for significant reductions in scheme water use to be achieved through water efficiency measures within individual apartment buildings potentially including stormwater harvesting and or greywater reuse.

Table 2: Annual summary water demands

Scenario	Drinking	Non-drinking	Total
Residential (kL)	213,707	176,314	390,021
Commercial (kL)	900	600	1,500
Public Open Space (kL)	-	10,058	10,058
Total (kL)	**214,607**	**186,972**	**401,579**
Estimated Household Consumption (kL/person/year)	34	28	62

5.2 Water servicing

The strategy area is located in an area served by the Water Corporation's integrated water supply scheme. All dwellings will be connected reticulated drinking water distribution network. Similarly, the strategy area is located in an area served by the Water Corporation's integrated sewerage scheme and will be connected to a reticulated sewerage network.

5.3 Stormwater management

The key objectives for surface water management are:

- Protection of wetlands and waterways (receiving environments) from the impacts of urban runoff; and,
- Protection of infrastructure and assets from flooding and inundation;

The following planning measures are adopted to achieve the above objectives:

- Residential, industrial or commercial premises in existing or proposed areas must have their floor levels elevated 500 mm above the 1% AEP flood level (100yr ARI) in the Swan River and 300 mm above the 1% AEP flood level in the local drainage system;
- Runoff from events greater than the 100% AEP (1yr ARI) interval event and up to the 20% AEP (5yr ARI) event in residential areas and 10% AEP (10yr ARI) event in commercial/industrial areas are to be managed in accordance with the serviceability requirements of *Australian Rainfall and Runoff* (Engineers Australia, 2001) minor/major system;
- The design of the redeveloped urban areas should incorporate current best practice in water-sensitive urban design to mitigate the potential impacts on regional water quantity and quality from redevelopment and the legacy conditions within the catchment;
- Retrofitting of stormwater management systems to achieve improved water quality outcomes should be maximised through the installation of biofilters (raingardens), amended soils and the use of structural controls to address litter, sediment and vegetative materials at source;
- Modification of the existing Central Belmont Main Drain and local drainage systems to suit the urban form whilst maintaining drainage capacity and peak flow rates; and,
- Water-sensitive urban design and best management practices promoting on-site retention of the first 15 mm of rainfall form the basis of the surface water quantity management strategy for minor events.

5.3.1 Small event management

The development will retain no less than the first 15 mm of rainfall on-site within lots and streets. It is understood that Water Corporation system has sufficient capacity for redevelopment of the study area, however retention of the 15mm event will allow water quality objectives to be achieved (Section 5.5).

Retention of runoff within lots (multi-story mixed use development) will be achieved through a combination of raingardens, water tanks and soakwell systems. Rainfall captured from roof areas is suitable for non-potable reuse in-house (toilets, laundry) and ex-house (garden areas), and will assist in achieving the water sustainability objectives outlined in Section 5.1. The suitability of a roof runoff capture and reuse system will be determined during detailed design of each building. Where these systems are not viable, roof runoff will be captured and infiltrated in underground infiltration systems within the lot boundaries. Developments will be

required to provide on-site retention within raingardens for runoff from other impervious areas on lots (pavement, carparks).

Upgrading of local roads to deliver an inner urban street character will provide the opportunity to incorporate water sensitive urban designs. Raingardens and tree-pits (e.g. see Figure 11) with the streetscape will be installed to provide infiltration of the first 15mm of rainfall. Similarly, the realignment and upgrade of the distributor roads (Resolution Drive, Grandstand Road and Stoneham Street) to four lane roads with a central median will require retention and infiltration of the first 15mm. This will be achieved through the installation of bio-retention swales within the median.

Raingardens, swales and tree-pits will be connected to the downstream environment via subsoil drainage discharging to the road drainage system to prevent local groundwater levels from rising and becoming a nuisance to the future community.

Within the Belmont Trust land, the retention and treatment of the first 15mm of rainfall will occur outside of the Swan River Trust Development Control Area. Vegetated buffer zones/verges should be installed in POS between waterways and turf area to help prevent herbicides, fertilisers and grass clippings entering waterways where practical.

Typical volumes required for retention and infiltration of the first 15mm of rainfall within lots and road reserves are provided in Table 3.

Table 3: Typical on-site retention volumes

Area type	System type (assumed)	Volume to be provided
Road reserve	Raingardens or tree-pits	0.9 m^3 per 100 m^2
Single residential lot	Soakwells	0.5 m^3 per 100 m^2
Multi-residential lots	Underground infiltration system	9.4 m^3 per 1000 m^2 lot
Apartment building	Underground infiltration system	9.5 m^3 per 1000 m^2 lot
Mixed use building	Underground infiltration system	9.5 m^3 per 1000 m^2 lot

5.3.2 Minor event management

Stormwater in excess of the capacity of on-site retention systems will be conveyed through the existing drainage system consisting of local road drainage, Central Belmont Main Drain Basin and compensating basin. Owing to the current commercial land use within the study area, redevelopment to mixed Commercial/Residential towers will have minimal impact on the impervious areas and runoff characteristics within the catchment. Therefore the existing system is considered sufficient for future land uses.

The significant modification to the system will be the conversion of the open drain between Resolution Drive and Stoneham Street, as recommended in the Water Corporation (2009) review of the system. It was recommended that this drain is replaced with a 1500mm pipe for safety reasons. Replacing the drain with a pipe will also allow for realignment of the system consistent with other services and future POS alignments.

Any changes to the Water Corporation drainage system will need to be undertaken in consultation with the Water Corporation and will require further detailed design, justification and agreement. This includes consideration of the modifications outlined above to ensure that

the capacity of the main drain is sufficient to meet the conditions of the Water Corporation's operating license.

Downstream of Stoneham Road, within the Swan River Trust Development Control Area, the existing compensation basin and drain that discharges to the Swan River will not be modified.

Potential raingarden and median swale locations are provided in Figure 12 and an example of a median swale or biofilter is provided in Figure 13.

5.3.3 Floodplain (major event) management

Major flood runoff (1% AEP) will be conveyed via overland flow within the road reserve to the compensating basin and drain prior to discharging to the Swan River.

To ensure there is adequate protection from major flood events in the Swan River, the habitable flood level of any buildings within the study area will be a minimum of 500mm above the 1% AEP (100yr ARI) flood levels as shown in Figure 9. This is most relevant for the northern portions of the study area that are located within the Swan River flood fringe. The nearest 1% AEP flood level for the study area, located at the outlet of the Central Belmont Main Drain system is 3.44 m AHD and therefore the minimum habitable floor level throughout the study area would be 3.94 m AHD.

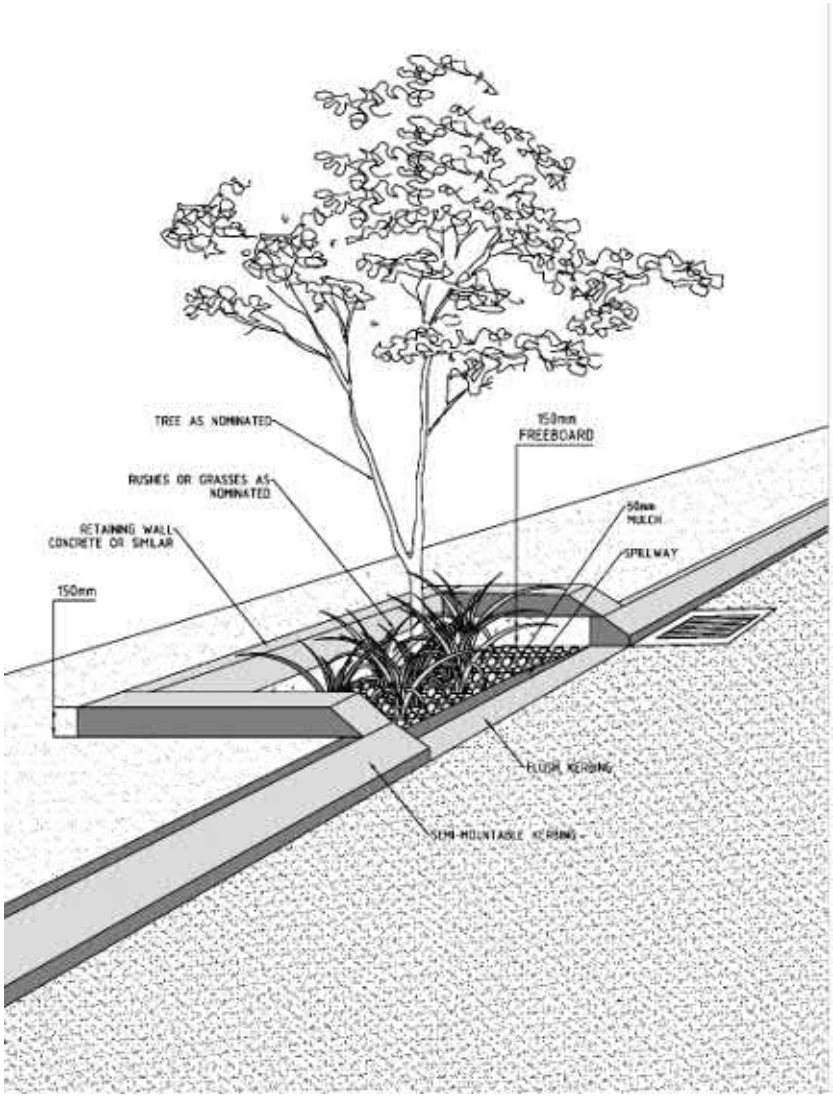
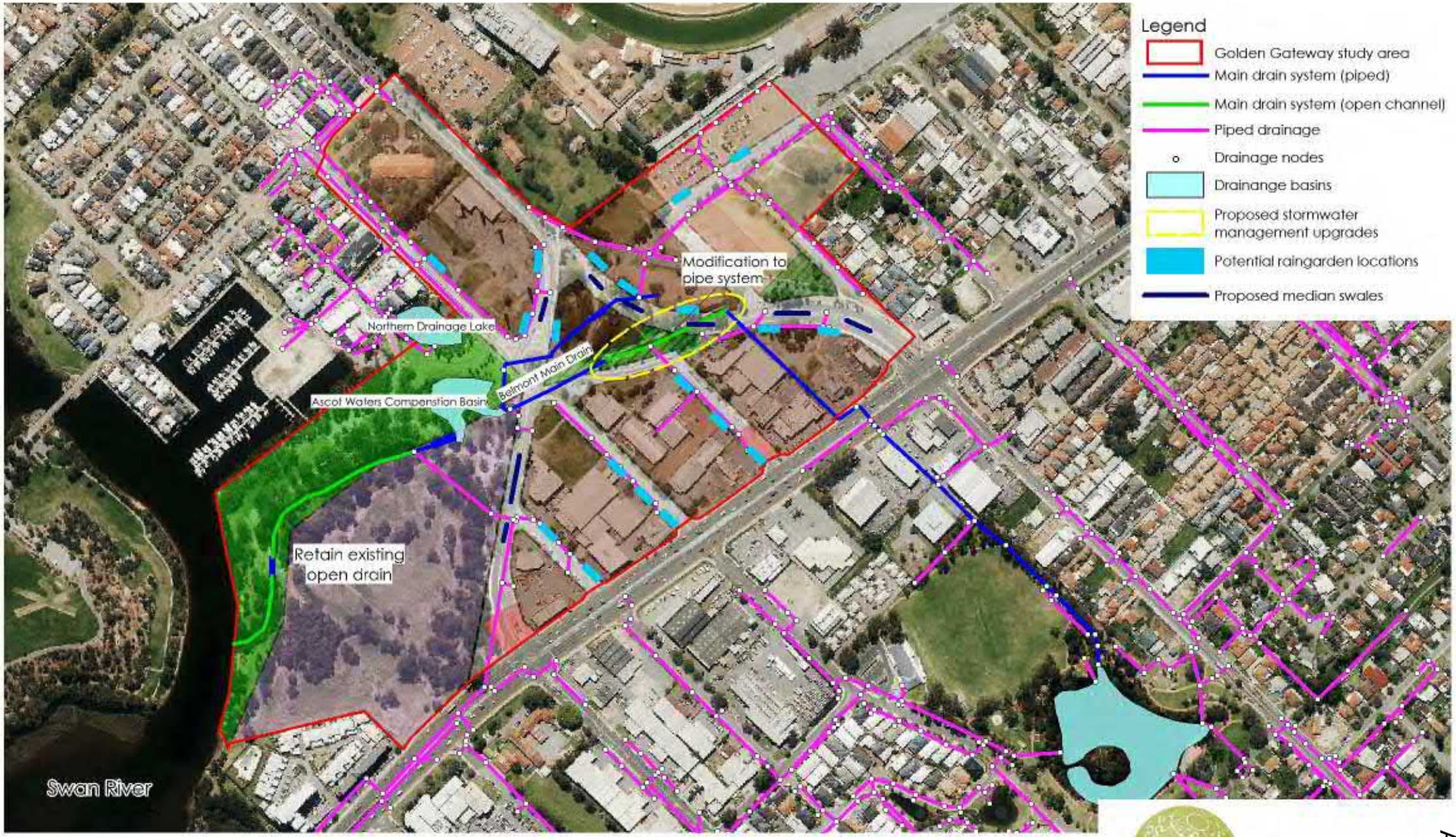


Figure 11: Typical roadside tree pit or raingarden

City of Belmont: Golden Gateway - Local Water Management Strategy
Figure 12: Stormwater management system



Data source: WC, DEC, Landgate. Created by: AT. Projection: MGA: zone 50.

Scale 1: 5,500 @ A4

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Figure 13: Typical median swale or biofilter

5.4 Groundwater management

The key objectives for groundwater management are:

- Protecting infrastructure and assets from flooding and inundation by high seasonal groundwater levels, perching and/or soil moisture;
- Protecting groundwater dependent ecosystems from the impacts of urban runoff; and,
- Managing and minimising changes in groundwater levels and groundwater quality following redevelopment.

The following planning measures are adopted to achieve the above objectives:

- Retain existing surface levels as a minimum to ensure adequate separation;
- Limit basements in areas of shallow groundwater; and,
- Use of subsoil drainage below bio-retention areas, raingardens and tree pits to minimise local groundwater rise.

Groundwater levels throughout the study area have been derived from regional contouring information and snapshot measurements. The results indicated that there is potential clearance for basements to be installed, with two storey basements possible closer to Great Eastern Highway. Detailed designs of any infrastructure below the existing surface level (such as basements) will require further onsite monitoring to determine local groundwater levels and separation. Where levels are shallow, design will need to account for these conditions and may include tanking or other forms of damp-proofing.

Any temporary lowering groundwater for construction, either for basements or sewer, may require dewatering licences from the Department of Water and Environmental Regulation (discussed further in Section 6.3.1) and ASS Management Plans.

5.5 Water quality management

Site specific targets have been proposed for estuarine catchments of the Swan Coastal Plain as a part of background work undertaken by the Department of Water and Environmental Regulation during the development of the UNDO water quality modelling tool. The targets were developed based on consideration of the sensitivity of the receiving water body and the proximity of the development site. Applying this approach, the study area would lie within the suggested 'proximity zones' of the estuarine portion (<1000 m) owing to the proximity to the Swan River. This would indicate that the following targets could be applied:

- 2.7 kg/ha/yr of Nitrogen
- 0.15 kg/ha/yr of Phosphorous

UNDO (Urban Nutrient Decision Outcomes) is a simple empirical decision support model with a flexible framework that evaluates nutrient reduction decisions for new urban developments on the Swan Coastal Plain. It has been developed by the Department of Water and Environmental Regulation to provide urban development proponents with an easy to use tool for assessment by local and state government authorities.

An UNDO model has been developed for the site with two sub-regions identified (1: Area outside of the Swan River Trust Development Control Area and 2: within the Swan River Trust Development Control Area). These sub-regions have been defined as recommended by the type of drainage strategy proposed for each. The model was run for existing conditions and the proposed redevelopment scenarios. For both scenarios, the area outside of the Swan River

Trust Development Control Area is assumed to be served by piped drainage, while the smaller area within the Control Area features open drains.

Results of UNDO modelling, in the form of a report which is generated by the software containing details of all assumptions and inputs, are provided in Appendix 3 (Proposed Redevelopment) and Appendix 4 (Existing Conditions).

The outcomes of UNDO modelling indicate that on-site retention of the first 15 mm of rainfall within soakwells and bio-retention systems on lots and raingardens in streets will provide discharge loads of:

- 0.39 kg/year/hectare of total nitrogen
- 0.01 kg/year/hectare of total phosphorous

These loads are well within the recommended targets for developments within estuarine catchments of the Swan Coastal Plain that have been developed for a discussion paper as a part of supporting information for the UNDO modelling tool by the Department of Water and Environmental Regulation.

For comparison, the existing conditions scenario returned discharge loads of:

- 0.80 kg/year/hectare of total nitrogen
- 0.10 kg/year/hectare of total phosphorous

The existing loads are within targets, but they demonstrate that improvement that can be achieved through redevelopment of the study area and implementation of water sensitive urban design.

5.6 Management of disease vectors and nuisance insects

The presence of permanent or seasonal water bodies close to residential areas provides the potential for Mosquitos and Chironomid Midges to become a nuisance to the resident population. This strategy does not propose to construct any new permanent or semi-permanent water bodies. However, the construction of above ground water quality treatment systems is proposed. These systems will need to be designed to minimise detention times throughout the year.

Additionally, there are constructed and natural water courses and water bodies in surrounding land where there is potential for mosquitoes and midges to breed. This strategy cannot influence the design or management of water systems in surrounding land areas but is required to recognise their presence and propose strategies that can assist with managing their potential impacts on the developing land and future community.

Physical, chemical and biological control methods can be used to manage mosquito populations. Methods which are likely to be employed (and their order of priority) include:

- Engineering and Landscape design and construction will aim not to create any new permanent or semi-permanent water bodies;
- Improved water quality, minimising nutrient loads and thereby reducing potential for algal blooms and fish kills; and,
- Should Mosquitos and Chironomid Midges become a nuisance, pesticides (larvicides and/or adulticides) will be used as required to kill mosquito larvae in breeding sites.

6 IMPLEMENTATION

The success of the water management strategies outlined in this document is dependent on their implementation through further planning, detailed design, construction and maintenance.

6.1 Urban Water Management Plans

Urban Water Management Plans (UWMPs) are the final water management documents within the state government planning framework outlined in Section 1.1. These documents are prepared as a condition of subdivision (in support of local development plans) to demonstrate that designs achieve the objectives, strategies and design criteria outlined in this LWMS. Where subdivision is proposed in an area that is not covered by a local development plan, the City of Belmont and/or the Department of Water and Environmental Regulation may request preparation of a UWMP if additional information is required to demonstrate compliance with this strategy.

Urban water management plans should be prepared in consultation with the City of Belmont and the Department of Water and Environmental Regulation and be based on local site investigations appropriate to the proposal and level of risk to water resources. The UWMPs should be consistent with the requirements of the Department of Water and Environmental Regulation's *Urban water management plans: Guidelines for preparing plans and for complying with subdivision conditions* (DoW, 2008b), recognising that the area is a redevelopment area rather than a greenfield site. Specifically, these documents should include detailed engineering and landscaping designs, design of bio-retention systems and measures to manage impacts from construction.

Where an urban water management plan is not requested by the City of Belmont and/or the Department of Water and Environmental Regulation, development should be undertaken consistent with the objectives, strategies and design criteria in this local water management strategy.

6.2 Pre-development monitoring

The requirement for any further groundwater monitoring is dependent on proposed building designs and any proposals for lowering of the existing surface. This is particularly relevant for any proposed basements. Onsite monitoring should be undertaken, preferably over winter months, to determine groundwater levels. These levels should then be correlated with long term Department of Water and Environmental Regulation groundwater data to calculate maximum groundwater levels and any design considerations for the site.

Results of this groundwater monitoring should be presented in the corresponding urban water management plan for assessment by the City of Belmont and Department of Water and Environmental Regulation.

6.3 Construction

Construction activities have the potential to directly and indirectly impact local water resources and water management measures are required.

6.3.1 Licencing

Water will be required for construction activities such as dust suppression. Although the superficial aquifer is fully allocated, as discussed in Section 4.4.2, temporary groundwater abstraction licences should be sought for construction activities to reduce the demand on potable resources.

Where dewatering will be undertaken for construction, for example with basements and sewer installation, a dewatering licence should be submitted to the Department of Water and Environmental Regulation. Furthermore, where there is a risk of ASS, the licence application should be supported by an ASS and Dewater Management Plan to ensure risks are mitigated.

The Department of Water and Environmental Regulation issues licences to take water from water sources under section 5C of the Rights in Water and Irrigation Act 1914. Such licences may be granted for dewatering activities for construction purposes. The DWER does not issue licences or approvals for the disposal of dewatering effluent. It is the licensee's responsibility to ensure that it obtains all necessary approvals for the disposal of dewatering effluent from relevant authorities and that the dewatering effluent does not cause injury or damage to any persons or property. Relevant approval authorities include the City of Belmont and the Department of Biodiversity, Conservation and Attractions.

6.3.2 Construction Management

To ensure downstream waterways are protected, developers, builders and landscapers must implement best management practices to control erosion and sedimentation. Contractors and staff should be notified of specific construction management requirements including appropriate disposal of waste material, erosion control and dust suppression.

6.4 Roles and Responsibilities

Key tasks, roles and responsibilities relating to delivery of urban water management objectives are outlined in Table 4.

All development is to be in accordance with the objectives, strategies and design criteria in this Local Water Management Strategy. Additional design criteria may need to be met, particularly where they are specific to particular precincts. These will be outlined in the relevant Local development plan, urban water management plan or associated development guideline.

Engineering and building drawings submitted to Council for development approval are to be supported by clear and auditable documentation, providing details outlining the water management requirements including any proposed staging, and demonstrating compliance with design criteria.

Where required, the City of Belmont may seek the advice of the Department of Water and Environmental Regulation regarding water management measures outlined in any development application.

Table 4: Summary of roles and responsibilities

Planning action	Water planning requirement	Timing and responsibility	Additional comments
Golden Gateway Structure Plan	Supported by LWMS which includes objectives, strategies and criteria to be met as part of planning and development	LWMS accompanies the structure plan City of Belmont	LWMS may be revised as detailed planning progresses or information comes to light
Local Development Plan (LDP)	Supported by an urban water management plan (UWMP) which demonstrates how the proposed development meets the objectives, strategies and criteria in the LWMS.	Required prior to any subdivision or development occurring Proponent	Where development is proposed to include amendments to Water Corporation drainage infrastructure the UWMP will need to include detailed designs for the modified drainage infrastructure agreed by the Water Corporation. Any proposed excavation will need to be supported by groundwater level monitoring and appropriate licence applications.
Subdivision	Must meet the requirements of the relevant UWMP (and LWMS)	Should not occur until LDP and UWMP completed Proponent	Unlikely that a UWMP will be required due to the small scale nature of likely subdivision
Development	Must meet the requirements of the relevant UWMP (and LWMS)	Should not occur until LDP and LWMS completed Proponent	Should be consistent with relevant design guidelines

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APPENDIX 1 – LWMS CHECKLIST

Local water management strategy Item	Deliverable	☑	Comments
Executive summary			
Summary of the development design strategy, outlining how the design objectives are proposed to be met	Table 1: Design elements & requirements for BMPs and critical control points	☑	
Introduction			
Total water cycle management – principles & objectives Planning background Previous studies		☑	
Proposed development			
Structure plan, zoning and land use. Key landscape features Previous land use	Site context plan Structure plan	☑ ☑	
Landscape – proposed POS areas, POS credits, water source, bore(s), lake details (if applicable)	Landscape Plan	☑	
Design criteria			
Agreed design objectives		☑	
Pre-development environment			
Existing information and more detailed assessments (monitoring). How do the site characteristics affect the design?		☑	
Site Conditions – existing topography/ contours, aerial photo underlay, major physical features	Site condition plan	☑	
Geotechnical – topography, soils including acid sulphate soils and infiltration capacity, test pit locations	Geotechnical plan	☑	
Environmental – areas of significant vegetation, wetlands and buffers, waterways and buffers, contaminated sites	Environmental Plan plus supporting data where appropriate	☑	
Surface Water – topography, 100 year floodways and flood fringe areas, water quality of flows entering and leaving (if applicable)	Surface Water Plan	☑	
Groundwater – topography, pre development groundwater levels and water quality, test bore locations	Groundwater Plan plus details of groundwater monitoring and testing	☑	
Water sustainability initiatives			
Water supply & efficiency measures – private and public open spaces		☑	
Fit-for-purpose strategy and agreed actions. If non-potable supply, support with water balance		☑	
Wastewater management		☑	
Stormwater management strategy			
Flood protection – peak flow rates, volumes and top water levels at control points,100 year flow paths and100 year detentions storage areas	major event Plan Long section of critical points	☑ ☑	
Manage serviceability – storage and retention required for the critical 5 year ARI storm events Minor roads should be passable in the 5 year ARI event	minor event Plan	☑	

Local water management strategy Item	Deliverable	☑	Comments
Protect ecology – detention areas for the 1 yr 1 hr ARI event, areas for water quality treatment and types of (including indicative locations for) agreed structural and non-structural best management practices and treatment trains. Protection of waterways, wetlands (and their buffers), remnant vegetation and ecological linkages	small event Plan Typical cross sections	☑ ☑	
Groundwater management strategy			
Post development groundwater levels and fill requirements (including existing and likely final surface levels), outlet controls, and any subsoils	Groundwater/subsoil Plan	☑	
Actions to address acid sulfate soils or contamination		☑	
The next stage – subdivision and urban water management plans			
Content and coverage of future urban water management plans to be completed at subdivision. Include areas where further investigations are required prior to detailed design.		☑	
Monitoring			
Recommended future monitoring plan including timing, frequency, locations and parameters, together with arrangements for ongoing actions		☑	
Implementation			
Developer commitments		☑	
Roles, responsibilities, funding for implementation		☑	
Review		☑	

APPENDIX 2 – WATER BALANCE MODELLING

Site Water Balance
City of Belmont: Golden Gateway
Sheet 1: Water Demands and Waste Generation

Domestic Uses

Dwelling Type		Lifestyle			Traditional			Cottage			Terrace			Apartment			Other		
No. households		0			0			0			46			3412			0		
Population / household		2.736			2.736			1.814			2.4			1.8			1.552		
Occupancy %		100			100			100			100			100			100		
Effective Population	0	0			0			0			110.4			6141.6			0		
Use	Base Rate	Rate	Source	Waste	Rate	Source	Waste	Rate	Source	Waste	Rate	Source	Waste	Rate	Source	Waste	Rate	Source	Waste
Domestic Individual Usage	kL/pp/day																		
Shower	0.05	0.05	DW	GW1	0.05	DW	GW1	0.05	DW	GW1	0.05	DW	GW1	0.05	DW	GW1	0.05	DW	GW1
Kitchen sink	0.008	0.008	DW	GW2	0.008	DW	GW2	0.008	DW	GW2	0.008	DW	GW2	0.008	DW	GW2	0.008	DW	GW2
Bathroom basin	0.006	0.006	DW	GW1	0.006	DW	GW1	0.006	DW	GW1	0.006	DW	GW1	0.006	DW	GW1	0.006	DW	GW1
Dishwasher	0.003	0.003	DW	GW2	0.003	DW	GW2	0.003	DW	GW2	0.003	DW	GW2	0.003	DW	GW2	0.003	DW	GW2
Bath	0.001	0.001	DW	GW1	0.001	DW	GW1	0.001	DW	GW1	0.001	DW	GW1	0.001	DW	GW1	0.001	DW	GW1
Laundry trough	0.004	0.004	DW	GW2	0.004	DW	GW2	0.004	DW	GW2	0.004	DW	GW2	0.004	DW	GW2	0.004	DW	GW2
Toilet	0.033	0.033	NDW	BW	0.033	RW	BW	0.033	RW	BW	0.033	NDW	BW	0.033	NDW	BW	0.033	DW	BW
Washing machine	0.042	0.042	NDW	GW2	0.042	RW	GW2	0.042	RW	GW2	0.042	NDW	GW2	0.042	NDW	GW2	0.042	NDW	GW2
Household Usage	kL/household/day																		
Leaks	0.029	0.029	DW	N/A	0.029	DW	N/A	0.029	DW	N/A	0.029	DW	N/A	0.029	DW	N/A	0.029	DW	N/A
Car washing	0.002	0.002	DW	N/A	0.002	DW	N/A	0.002	DW	N/A	0.002	DW	N/A	0	DW	N/A	0.002	DW	N/A
Evaporative cooling	0.006	0.006	DW	N/A	0.006	DW	N/A	0.006	DW	N/A	0.006	DW	N/A	0.006	DW	N/A	0.006	DW	N/A
Other	0.004	0.004	DW	N/A	0.004	DW	N/A	0.004	DW	N/A	0.004	DW	N/A	0.004	DW	N/A	0.004	DW	N/A
Other	kL/each/year																		
Household / Communal Pools	90	0	DW	N/A	0	DW	N/A	0	DW	N/A	0	DW	N/A	0	DW	N/A	0	DW	N/A

Domestic Irrigation						
Number Lots		0	0	0	46	12	0
Average Lot Area	m2	1500	386	245	393.2	6228.6	100
Irrigated area	%	12	25	25	25	5	50
Irrigation event depth	mm	10	10	10	10	5	10
Frequency (days/week)	days	2	2	2	2	2	2
Season length	months	9	9	9	9	9	9
Source		GNDW	NDW	NDW	NDW	NDW	GNDW
No. Irrigation Events		79.0	79.0	79.0	79.0	79.0	79.0
Irrigation Demand	kL/year	0.0	0.0	0.0	3572.2	1476.2	0.0
Domestic Waste Streams	kL/year						
Greywater Type 1 (GW1)		0	0	0	2298	127864	0
Greywater Type 2 (GW2)		0	0	0	2298	127864	0
Black Water (BW)		0	0	0	1331	74026	0
Lost (N/A)		0	0	0	689	48603	0
Irrigation (IRR)		0	0	0	3572	1476	0
Overall Domestic Demand							
Drinking Water (DW)	kL/year	0	0	0	3592	210115	0
Non-Drinking Water (NDW)		0	0	0	6596	169718	0
Rain Water (RW)		0	0	0	0	0	0
Groundwater (GND)		0	0	0	0	0	0
Total Demand		0	0	0	10189	379833	0
Total per capita demand	kL/pp/yr	#DIV/0!	#DIV/0!	#DIV/0!	92	62	#DIV/0!
Per capita DW demand		#DIV/0!	#DIV/0!	#DIV/0!	33	34	#DIV/0!

Public Irrigation

		Passive POS	Active POS	Verge / Garden Beds	School	Other
Total Area	m2	49014	0	8458	0	0
Irrigated area	%	25	75	25	50	25
Irrigation event depth	mm	10	16	10	12	10
Frequency (days/week)	days	2	2	2	2	2
Season length	months	8	10	8	10	8
Source		NDW	GNDW	NDW	GNDW	GNDW
No. Irrigation Events		70.0	87.0	70.0	87.0	70.0
Irrigation Demand	kL/year	8577.5	0.0	1480.2	0.0	0.0

Commercial Uses

	Base rate kL/year	Qty	Rate kL/year	Source	Waste	Total kL/year	Comment
Shopping centre DW	0.6	1500	1	DW	BW	900	WC assumption
shopping centre NDW	0.4	1500	0	NDW	BW	600	WC assumption

Site Water Balance
City of Belmont: Golden Gateway
Sheet 1: Water Demands and Waste Generation

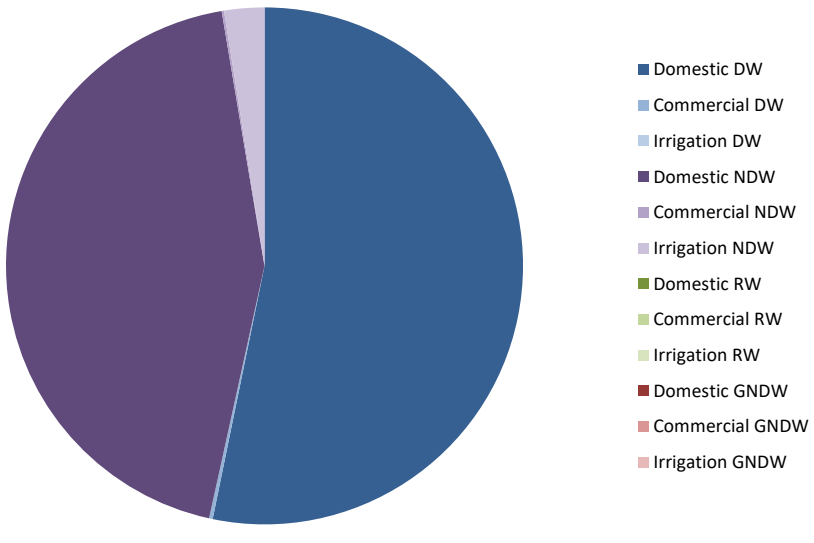
Demand Based Water Balance (kL/year)

	Domestic kL / year	Commercial kL / year	Public Irr' kL / year	Total kL / year	%
Total Water Use	390021	1500	10058	401579	100.0%
Source Demand					
Drinking Water (DW)	213707	900	0	214607	53.4%
Non-Drinking Water (NDW)	176314	600	10058	186972	46.6%
Rain Water (RW)	0	0	0	0	0.0%
Groundwater (GND)	0	0	0	0	0.0%
					100.0%
Waste					
Greywater Type 1 (GW1)	130162	0		130162	32.4%
Greywater Type 2 (GW2)	130162	0		130162	32.4%
Black Water (BW)	75357	1500		76857	19.1%
Lost (N/A)	49292	0		49292	12.3%
Irrigation (IRR)	5048	0	10058	15106	3.8%
					100.0%

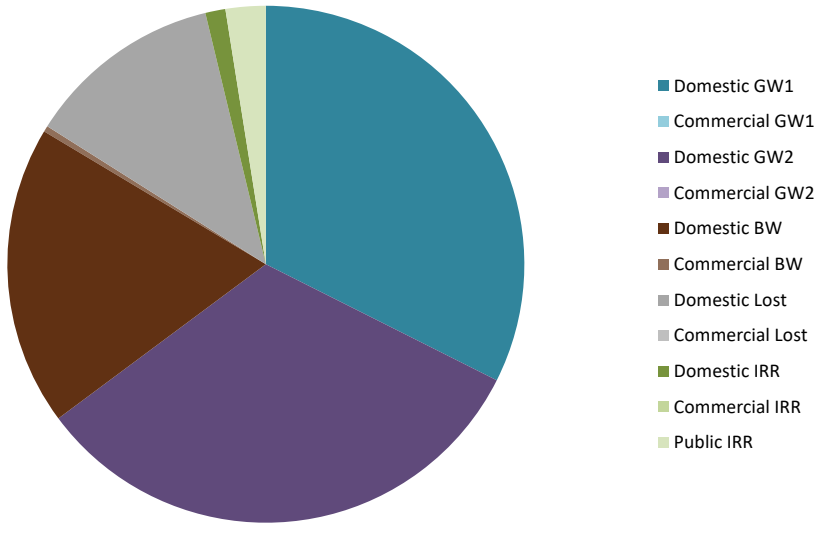
Performance

Population	6252	people
POS Area	5	ha
Total Public Space Area	6	ha
Per Capita Domestic Total Water	62	kL/person/year
Per Capita Domestic Drinking Water	34	kL/person/year
POS Irrigation Rate	0.18	kL/m2/year
Total Public Space Irrigation Rate	0.18	kL/m2/year

Sources Demand



Waste Streams



APPENDIX 3 – UNDO MODELLING (PROPOSED REDEVELOPMENT)

Government of Western Australia
Department of Water

Project: Golden Gateway

Date: 02-Mar-17

Version: Version 1.1.0.16333

Subregion name: Outside POS

Landuse	Percent (%)	Area (ha)	Input load Nitrogen (kg)	Input load Phosphorus (kg)
Residential	74	20.13	29.18	2.05
Industrial, commercial & schools	0	0.00	0.00	0.00
Rural living	0	0.00	0.00	0.00
Public open space	3	0.82	0.00	0.00
Road reserve	23	6.26	0.00	0.00

Total area (ha)	Total percent (%)
27.20	87

Nitrogen input (kg/ha/yr)	Phosphorus input (kg/ha/yr)
6.30	0.23

Nitrogen export (kg/ha/yr)	Phosphorus (kg/ha/yr)
0.41	0.01

Residential

Size (m²)	Percent (%)	Area (ha)	Input load Nitrogen (kg)	Input load Phosphorus (kg)
<400	0	0.00	0.00	0.00
400-500 m²	0	0.00	0.00	0.00
501-600 m²	0	0.00	0.00	0.00
601-730 m²	0	0.00	0.00	0.00
>730 m²	0	0.00	0.00	0.00
Multiple dwellings	100	20.13	29.18	2.05

Total area (ha)	Total percent (%)
20.125188	74

Nitrogen input (kg)	Phosphorus input (kg)
29.18	2.05

Public Open Space (POS)

Landuse	Percent (%)	Area (ha)
Native gardens	0	0.00
Non-native gardens	0	0.00
Not fertilised	100	0.82
Nature	0	0.00
Sport	0	0.00
Recreation	0	0.00
Golf course	0	0.00
Bowling green	0	0.00
Impervious	0	0.00
Water body	0	0.00

Total area (ha)	Total percent (%)
0.82	3

Nitrogen input (kg)	Phosphorus input (kg)
0.00	0.00

Road reserve

Landuse	Percent (%)	Area (ha)
Roads	80	5.00
Road reserve - impervious	0	0.00
Road reserve - native garden	0	0.00
Road reserve - non-native garden	0	0.00
Road reserve - turf	0	0.00
Road reserve - not fertilised	20	1.25

Total area (ha)	Total percent (%)
6.255126	23

Nitrogen input (kg)	Phosphorus input (kg)
0.00	0.00

Soil and drainage information

Type of drainage	**Piped drainage**	**Does it contain imported fill?**	**Yes**
Soil type	**Bassendean**	Type of fill imported	**Yellow sand (Spearwood)**
Depth to groundwater (m)	**2**	Fill depth (m)	**0.3**
Groundwater slope (%)	**1**	Approximate PRI of imported fill	**11**
Soil PRI	**5.9**	**Does subregion contain onsite sewage diposal system?**	**No**

Note: Please attach the results of soil tests to this report when submitting.

Subregion name: SRT DC Area

Landuse	Percent (%)	Area (ha)	Input load Nitrogen (kg)	Input load Phosphorus (kg)
Residential	0	0.00	0.00	0.00
Industrial, commercial & schools	0	0.00	0.00	0.00
Rural living	0	0.00	0.00	0.00
Public open space	100	4.06	0.00	0.00
Road reserve	0	0.00	0.00	0.00

Total area (ha)	Total percent (%)
4.06	13

Nitrogen input (kg/ha/yr)	Phosphorus input (kg/ha/yr)
5.23	0.15

Nitrogen export (kg/ha/yr)	Phosphorus (kg/ha/yr)
0.32	0.01

Public Open Space (POS)

Landuse	Percent (%)	Area (ha)
Native gardens	0	0.00
Non-native gardens	0	0.00
Not fertilised	100	4.06
Nature	0	0.00
Sport	0	0.00
Recreation	0	0.00
Golf course	0	0.00
Bowling green	0	0.00
Impervious	0	0.00
Water body	0	0.00

Total area (ha)	Total percent (%)
4.06	100

Nitrogen input (kg)	Phosphorus input (kg)
0.00	0.00

Soil and drainage information

Type of drainage	**Open channel drains**	**Does it contain imported fill?**	**No**
Soil type	**Bassendean**	**Does subregion contain onsite sewage diposal system?**	**N**
Depth to groundwater (m)	**1**		
Groundwater slope (%)	**1**		
Soil PRI	**5.0**		

Note: Please attach the results of soil tests to this report when submitting.

Summary: Nutrient stripping devices

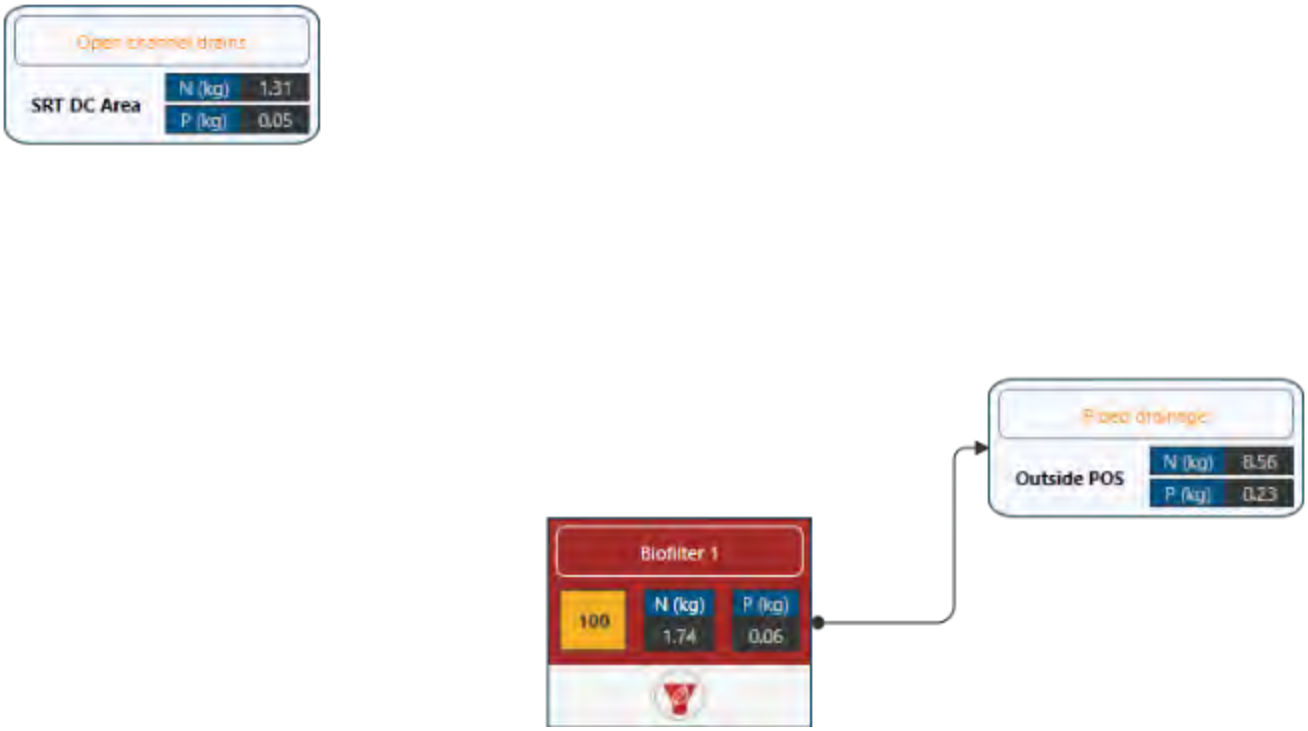
Treatment	Name	Size (m²)	Treated area (ha)	Treating	N removed (kg/ha/yr)	P removed (kg/ha/yr)
Biofilter	Biofilter 1	16.00	0.27	Sandy soils – Runoff only (infiltration on lots)	0.07	0.00
Load removed					**0.06**	**0.00**
Net export					**0.33**	**0.01**

Summary: Nutrient load exports

Region	Area (ha)	P export (kg/ha/yr)	N export (kg/ha/yr)
Outside POS	27.20	0.01	0.41
SRT DC Area	4.06	0.01	0.32

PRE-TREATMENT LOAD (kg/ha/yr)		LOAD REMOVED (kg/ha/yr)		NET LOAD EXPORT (kg/ha/yr)	
NITROGEN	PHOSPHORUS	NITROGEN	PHOSPHORUS	NITROGEN	PHOSPHORUS
0.39	**0.01**	**0.06**	**0.00**	**0.33**	**0.01**

Treatment diagram



APPENDIX 4 – UNDO MODELLING (EXISTING CONDITIONS)

Government of Western Australia
Department of Water

Project: Golden Gateway Existing Revised

Date: 02-Mar-17

Version: Version 1.1.0.16333

Subregion name: Outside POS

Landuse	Percent (%)	Area (ha)	Input load Nitrogen (kg)	Input load Phosphorus (kg)
Residential	0	0.00	0.00	0.00
Industrial, commercial & schools	35	9.44	226.36	53.81
Rural living	0	0.00	0.00	0.00
Public open space	45	12.14	0.00	0.00
Road reserve	20	5.39	0.00	0.00

Total area (ha)	Total percent (%)
26.97	87

Nitrogen input (kg/ha/yr)	Phosphorus input (kg/ha/yr)
13.62	2.15

Nitrogen export (kg/ha/yr)	Phosphorus (kg/ha/yr)
0.88	0.11

Commercial, Industry and Schools

Landuse	Percent (%)	Area (ha)
Light industrial	20	1.89
Heavy industrial	0	0.00
Commercial / Offices	80	7.55
Schools	0	0.00
Public buildings	0	0.00

Total area (ha)	Total percent (%)
9.44	35

Nitrogen input (kg)	Phosphorus input (kg)
226.36	53.81

Public Open Space (POS)

Landuse	Percent (%)	Area (ha)
Native gardens	0	0.00
Non-native gardens	0	0.00
Not fertilised	100	12.14
Nature	0	0.00
Sport	0	0.00
Recreation	0	0.00
Golf course	0	0.00
Bowling green	0	0.00
Impervious	0	0.00
Water body	0	0.00

Total area (ha)	Total percent (%)
12.14	45

Nitrogen input (kg)	Phosphorus input (kg)
0.00	0.00

Road reserve

Landuse	Percent (%)	Area (ha)
Roads	80	4.32
Road reserve - impervious	0	0.00
Road reserve - native garden	0	0.00
Road reserve - non-native garden	0	0.00
Road reserve - turf	0	0.00
Road reserve - not fertilised	20	1.08

Total area (ha)	Total percent (%)
5.394	20

Nitrogen input (kg)	Phosphorus input (kg)
0.00	0.00

Soil and drainage information

Type of drainage	**Piped drainage**	**Does it contain imported fill?**	**No**
Soil type	**Bassendean**	**Does subregion contain onsite sewage diposal system?**	**No**
Depth to groundwater (m)	**2**		
Groundwater slope (%)	**1**		
Soil PRI	**5.0**		

Note: Please attach the results of soil tests to this report when submitting.

Subregion name: SRT DC Area

Landuse	Percent (%)	Area (ha)	Input load Nitrogen (kg)	Input load Phosphorus (kg)
Residential	0	0.00	0.00	0.00
Industrial, commercial & schools	0	0.00	0.00	0.00
Rural living	0	0.00	0.00	0.00
Public open space	100	4.03	0.00	0.00
Road reserve	0	0.00	0.00	0.00

Total area (ha)	Total percent (%)
4.03	13

Nitrogen input (kg/ha/yr)	Phosphorus input (kg/ha/yr)
5.23	0.15

Nitrogen export (kg/ha/yr)	Phosphorus (kg/ha/yr)
0.32	0.01

Public Open Space (POS)

Landuse	Percent (%)	Area (ha)
Native gardens	0	0.00
Non-native gardens	0	0.00
Not fertilised	100	4.03
Nature	0	0.00
Sport	0	0.00
Recreation	0	0.00
Golf course	0	0.00
Bowling green	0	0.00
Impervious	0	0.00
Water body	0	0.00

Total area (ha)	Total percent (%)
4.03	100

Nitrogen input (kg)	Phosphorus input (kg)
0.00	0.00

Soil and drainage information

Type of drainage	**Open channel drains**	**Does it contain imported fill?**	**No**
Soil type	**Bassendean**	**Does subregion contain onsite sewage diposal system?**	**N**
Depth to groundwater (m)	**1**		
Groundwater slope (%)	**1**		
Soil PRI	**5.0**		

Note: Please attach the results of soil tests to this report when submitting.

Summary: Nutrient stripping devices

Treatment Name	Size (m²)	Treated area (ha)	Treating	N removed (kg/ha/yr)	P removed (kg/ha/yr)
Load removed				**0.00**	**0.00**
Net export				**0.80**	**0.10**

Summary: Nutrient load exports

Region	Area (ha)	P export (kg/ha/yr)	N export (kg/ha/yr)
Outside POS	26.97	0.11	0.88
SRT DC Area	4.03	0.01	0.32

PRE-TREATMENT LOAD (kg/ha/yr)		LOAD REMOVED (kg/ha/yr)		NET LOAD EXPORT (kg/ha/yr)	
NITROGEN	PHOSPHORUS	NITROGEN	PHOSPHORUS	NITROGEN	PHOSPHORUS
0.80	**0.10**	**0.00**	**0.00**	**0.80**	**0.10**

Client: City of Belmont

Report	Version	Prepared by	Reviewed by	Submitted to Client	
				Copies	Date
Draft	V1	RP	HB	Electronic	March 2017
Report for Submission	V2	RP	HB	Electronic	March 2017
Resubmission	V3	RP	HB	Electronic	April 2018
Revision	V4	RP	HB	Electronic	June 2018

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Ordinary Council Meeting 28/08/18

Item 12.1 refers

Attachment 6

Appendix E
Infrastructure Assessment Report

A290

Infrastructure Assessment Report

Golden GatewayPrecinct

Prepared for
City of Belmont

5 May 2017

Cardno
Shaping the Future

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Approved By:

Peter Royle
Senior Civil Engineer

Document History

Revision	Date	Description of Revision	Prepared by:	Reviewed by:
A	10/4/2017	DRAFT Issued for Review	S Hecker	P Royle
B	05/5/2017	Issued as Final	S Hecker	P Royle

Executive Summary

The Golden Gateway Structure Plan provides a framework for the redevelopment of the Golden Gateway Precinct area into a “major growth area by 2031”.

Through close liaison with the relevant service providers, Cardno has researched and reported on the current capacity of the infrastructure and services within the Golden Gateway area. Cardno has also provided detailed findings and recommendations regarding the future infrastructure and servicing requirements that are needed to accommodate the redevelopment of the area as proposed by the Structure Plan.

In summary, Cardno’s assessment of the Golden Gateway Precinct in terms of required infrastructure for the Golden Gateway Structure Plan area is as follows:

- The Golden Gateway Precinct area faces a shortage in wastewater infrastructure to service the proposed increase in residential and commercial activity.
- There is currently capacity in the existing HV feeders to supply the proposed development with power. However, Western Power advise power capacity cannot be reserved, and that subject to other developments in the area, a new HV feeder may be required to fully support the development.
- Upgrades other than the required major infrastructure upgrades as outlined in this report infrastructure will be rolled out in response to new development within the subject area.
- It is recommended that a working group between the City of Belmont and Water Corporation is set up in order to help plan and coordinate precinct development and staging with any Water Corporation trunk infrastructure capital works.
- National Broadband Network (NBN) Co. has not yet rolled their infrastructure across the Golden Gateway Precinct. It is recommended that the City of Belmont liaise with NBN Co. as per the *Best practice guide for Councils when initially dealing with NBN Co* document.

In conclusion, based on advice received by Cardno from the relevant service authorities, there should be no reason from a servicing point of view that the Golden Gateway Precinct Structure Plan could not be implemented with the proposed infrastructure upgrades outlined in this report.

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Appendices

Tables

Figures

1 Background

1.1 Introduction

Cardno was engaged to assist the City of Belmont, in conjunction with the Department of Planning to undertake an infrastructure and services strategy for the Golden Gateway precinct, Ascot. The strategy will help guide the preparation of a Local Structure Plan over the area.

The scope of works includes:

- Review of planned growth area;
- Provide analysis of existing services infrastructure, including;
  - Water;
  - Sewer;
  - Power;
  - Gas; and
  - Telecommunications
- Identification of future service demands;
- Liaison and engagement of services providers; and
- Development of reports.

Cardno assessed the infrastructure to inform the City on decisions around the long-term provision of electrical energy, natural gas, potable water, wastewater disposal, along with high speed data /telecommunications for the growth areas.

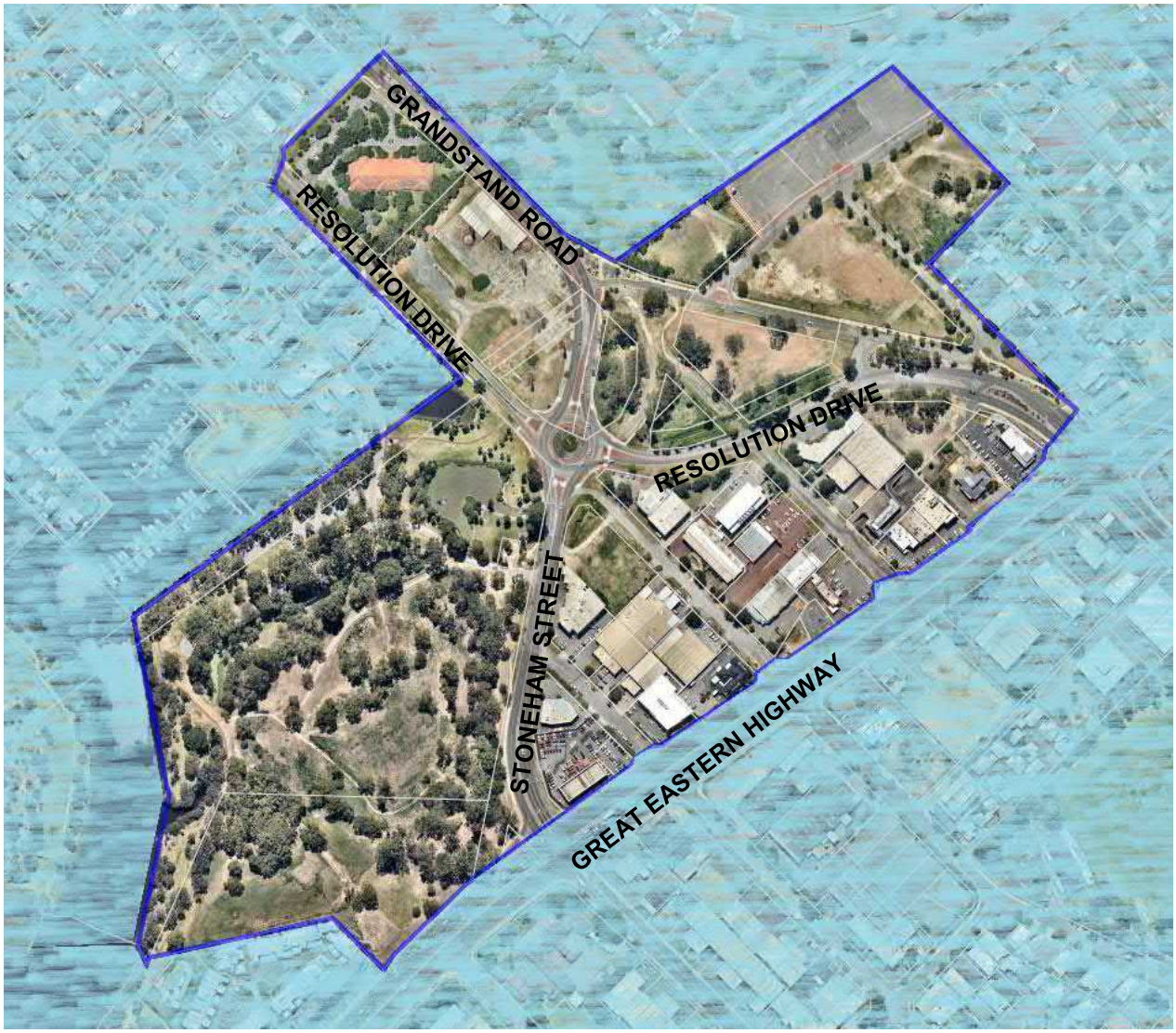
The findings and advice presented in this report is based on Cardno's observations, experience from similar projects and responses from various service providers and stakeholders.

The investigations and preparation of this report have largely been based on preliminary advice from the various Service Authorities. The information is current as of April 2017 and is subject to change as development proceeds.

1.2 Location

The subject area is located in Ascot, and is generally bounded by Great Eastern Highway, Stoneham Street, Grandstand Road and Resolution Drive. It includes the Belmont Trust Land, a portion of the Ascot Racecourse site as well as the Western Australian Turf Club headquarters and Ascot Kilns. The extent of the subject area is shown in **Figure 1-1**.

Figure 1-1 Golden Gateway Subject Area



2 Water

Water Corporation Western Australia is the state authority regulating the distribution infrastructure for water reticulation in the area.

2.1 Existing Infrastructure

The Serpentine Trunk Main runs along Grandstand Road and Daly Street. There is also a 915 steel distribution main running along Grandstand Road through the subject area. The existing lots are well serviced with a mixture of 100, 150 and 200 dia reticulation pipes made of asbestos cement, cast iron, PVC and steel.

Cardno Drawing *CW942300-CI-SK2* in **Appendix A** shows the location of the existing power infrastructure within and adjacent to the subject area.

2.2 Required Infrastructure

The Golden Gateway Precinct is located in the Supply Scheme area. It is difficult to ascertain exactly what capacity the current infrastructure network has without full water network modelling carried out by Water Corporation. However, Water Corporation does not foresee any issues with servicing the proposed scheme with potable water at the time of this report.

Exact water infrastructure upgrades will be determined when Water Corporation carries out full water network modelling. Water Corporation has advised that water reticulation planning and modelling will be done after Structure Plan and rezoning is confirmed, effectively at development application phase. The Water Corporation provided initial advice to Cardno and in their advice; they offered the following key points.

- Water Corporation will upgrade the headwork's, pipe equal to or greater than 300mm diameter and pump stations, as and when required. However, headwork's charges will be charged to the developer. Minor reticulation works, typically pipework less than 300mm diameter, are to be funded directly by the developer.
- All temporary works associated with any development within the Golden Gateway Precinct is to be funded directly by the developer.
- Redevelopment areas within the Golden Gateway Precinct need to integrate water efficiency technology and design approaches into the area and buildings in line with Water Corporation's 'Water Forever 2009" document. This will require a local water management strategy that includes local scale water balancing and identifying water efficiency measures such as; rainwater reuse, appropriate fittings, irrigation smart systems, planting and soil types and drainage collection and reuse.
- Water Corporation advises that a Development Area Plan be commissioned to support development in the Golden Gateway Precinct and submitted to Water Corporation once the Structure Plan has been finalised. This should include a plan identifying the proposed development, densities and likely staging and timeframe. Accompanying this should be a water management strategy outlining how water efficiencies are to be met along with engineering plans detailing proposed works and estimates. The water efficiency targets are to be determined by the City of Belmont in consultation with Water Corporation. Water Corporation runs a Waterwise Development Program that enables developments that have applied water efficient principles to be recognised and endorsed by Water Corporation.
- Water Corp recommends a consolidated approach to the requesting and programming of works to minimise disruptions and maximise cost efficiencies. Water Corporation recommends any reticulation reinforcement or new work should be managed by the City of Belmont due to the fractured land ownership within the area. It is recommended that a working group between the City of Belmont and Water Corporation is set up in order to help plan and coordinate precinct development and staging with any Water Corporation trunk infrastructure capital works.

Identification of required infrastructure upgrades requires detailed water modelling and more specific demand inputs. Water reticulation planning will be done after Structure Plan and rezoning is confirmed.

3 Wastewater

The Water Corporation (WC) of Western Australia is the main service provider regulating the distribution, storage and disposal infrastructure for wastewater in the Ascot area.

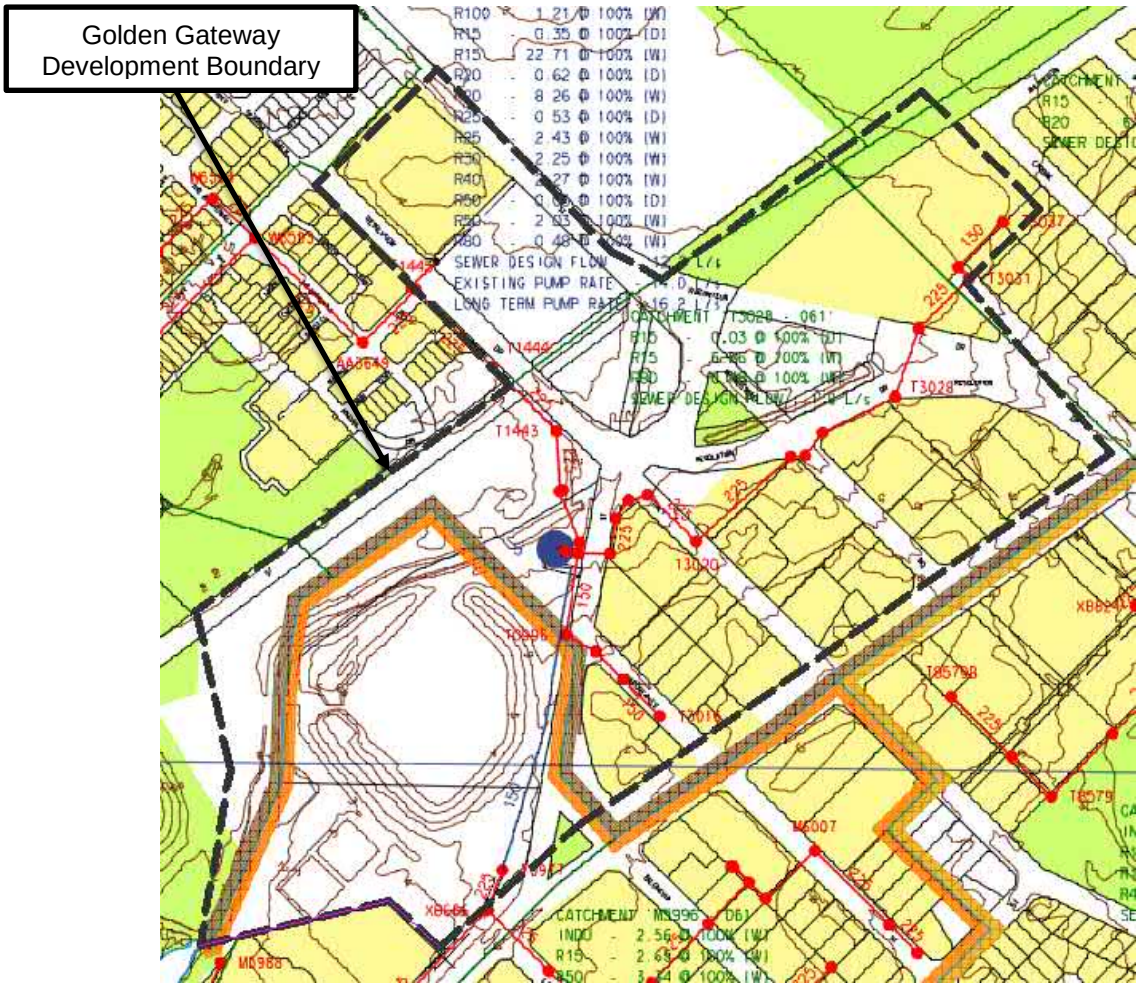
Wastewater infrastructure general to Ascot area is serviced by gravity style wastewater drainage infrastructure. A mixture of concrete and plastic arterial pipes on grade service all areas to local pump stations throughout the City of Belmont.

3.1 Existing Infrastructure

Lots within and surrounding the proposed Golden Gateway Structure plan are serviced by two main arterial sewer routes; a 225mm collector flowing north to south and a 225mm collector flowing east to west. Both collectors flow to the Redcliffe Pump Station 5 located on Stoneham Street. The Redcliffe P.S 5 collects all sewerage west of the Ascot raceway within the Ascot Suburb and discharges it to the Redcliffe Pump Station 2 located on Abernethy Road.

Refer to Cardno Drawing *CW942300-CI-SK1* in **Appendix A** for further details and drawings for the wastewater infrastructure in this area.

Figure 3-1 Existing Sewer Infrastructure



3.2 Future Demand

Table 3-1 identifies the additional sewer demand estimated for the proposed Golden Gateway re-zoning structure plan.

Table 3-1 Local Scheme Zone Sewer Demand

Local Scheme Zones	Area (ha)	Additional Dwellings (No.)*	Additional Sewer Demand (L/s)**
Mixed-Use (R-AC0)	10.3	1648	9.15
Residential (R20)	0.88	18	0.19
Residential (R40)	1.73	70	0.61
Residential (R100)	1.57	157	1.34
Total		**1893**	**11.29**

* Refer Table 4.4 of DS 50 for Design & Construction Requirements for Gravity Sewers DN150 to DN600

**Capacity based on Water Corporation DS50 Table 4.1.

3.2.2 Service Capacity

Service Capacity has been analysed for Redcliffe P.S 5 and Redcliffe P.S 2 to determine if the stations have adequate capacity to service the proposed Golden Gateway development

Table 3-2 Pump Station Service Capacity

Pumping Station	Additional Flow (L/s)	P.S Existing Sewer Flow (L/s)	Long Term P.S. Capacity (L/s)	Future Capacity / [Shortfall] (L/s)
Redcliffe PS 5	11.29	14.0	16.2	[9.09 L/s]
Redcliffe PS 2	11.29	20.1	37.0	5.61 L/s

As per **Table 3-2** the proposed development will have significant impacts to the current wastewater infrastructure. It is not envisaged the existing Redcliffe PS5 will have sufficient capacity with a shortfall of 9.09 L/s to service the proposed development and will require a significant upgrade. Redcliffe PS 2 will likely have capacity however further planning should be co-ordinated with the Water Corporation to ascertain other timing of other developments in the area.

3.3 Required Infrastructure

As highlighted in the previous section the Redcliffe Pumping Station 5 has a shortfall of 9.09 litres per second in the case of the planned development. This will require the upgrade of the existing pumping station to a larger type 40. A type 40 pumping station is a station capable of a 40 L/s service consisting of two pump-sets located in a common wet-well constructed from 2500mm internal diameter precast concrete pipes.

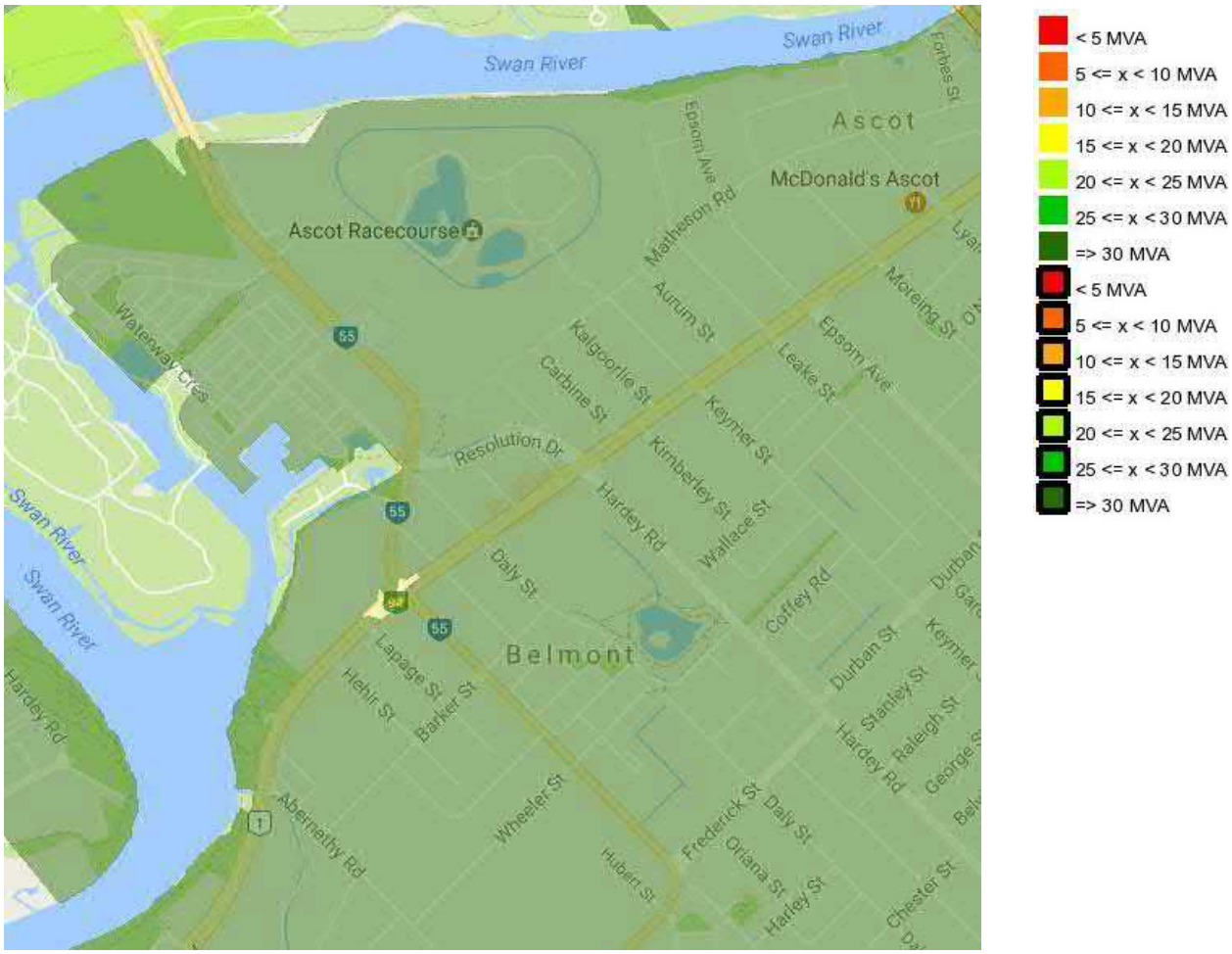
Based on the above requirements Cardno engaged the Water Corporation to request further advice on the required upgrade, with no further feedback received at time of writing this report.

4 Power Supply

4.1 Existing Infrastructure

Power distribution and production is managed by Western Power. Data obtained from the Western Power *Network Mapping Tool* indicates that the area is serviced by the Belmont Substation and the forecast network capacity for 2015 is >30MVA, as shown in **Figure 4-1**. There are High and Low Voltage power lines in the vicinity of the site.

Figure 4-1 Existing Power Network Capacity
(Source: http://ncmt.westernpower.com.au/index.cfm)



Cardno Drawing *CW942300-CI-SK6* in **Appendix A** shows the location of the existing power infrastructure within and adjacent to the subject area.

4.2 Required Infrastructure

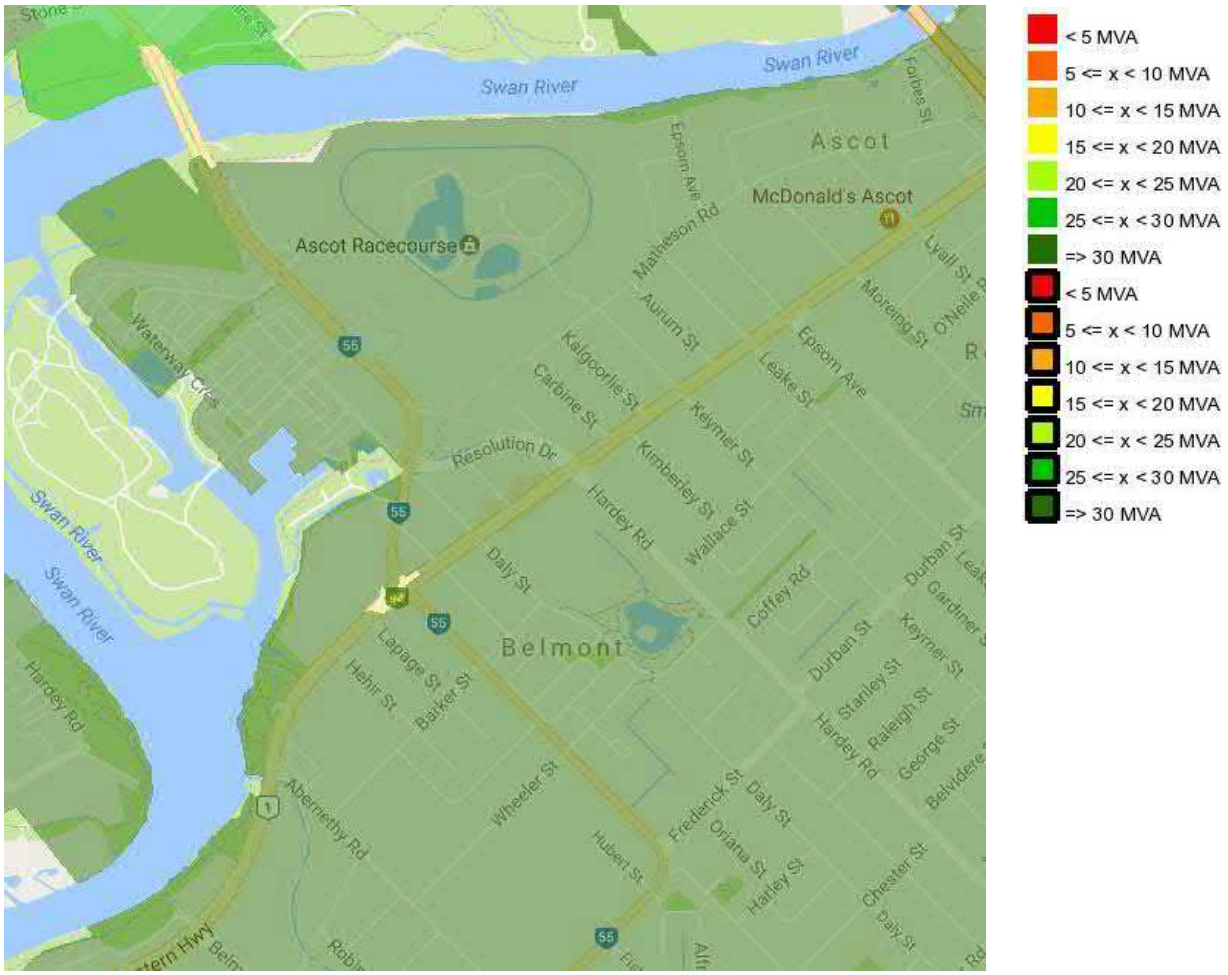
Maximum power requirement for the development has been calculated using Western Power's online Design Maximum Demand calculator. The estimated demand for the development is shown in **Table 4-1** below.

Table 4-1 Estimated Maximum Power Demand

Proposed Lot Use	Number of Units/Dwellings	Max. Demand/Unit (kVA)	Approx. Estimated Demand (kVA)
Single Dwelling Units	18	4.7	84.6
Grouped Residential (5-10 Units)	70	3.5	245
Grouped Residential (Over 10 Units)	1805	3.1	5,596
Mixed Use Commercial	1	2,400kVA	2,400
Total Development			**8,325.6**

Belmont substation falls under the Cannington load area. Western Power's *Annual Planning Report 2015/16* states "no substation capacity shortfall is forecast in the Cannington load area over the next five years." This takes into account committed and most likely to occur network expansion plans for the area. The Western Power *Network Mapping Tool* indicates that there is >30MVA spare capacity in the network until at least 2036 based on current and forecast demand (see **Figure 4-2**).

Figure 4-2 Forecast Power Network Capacity 2036
(Source: http://ncmt.westernpower.com.au/index.cfm)

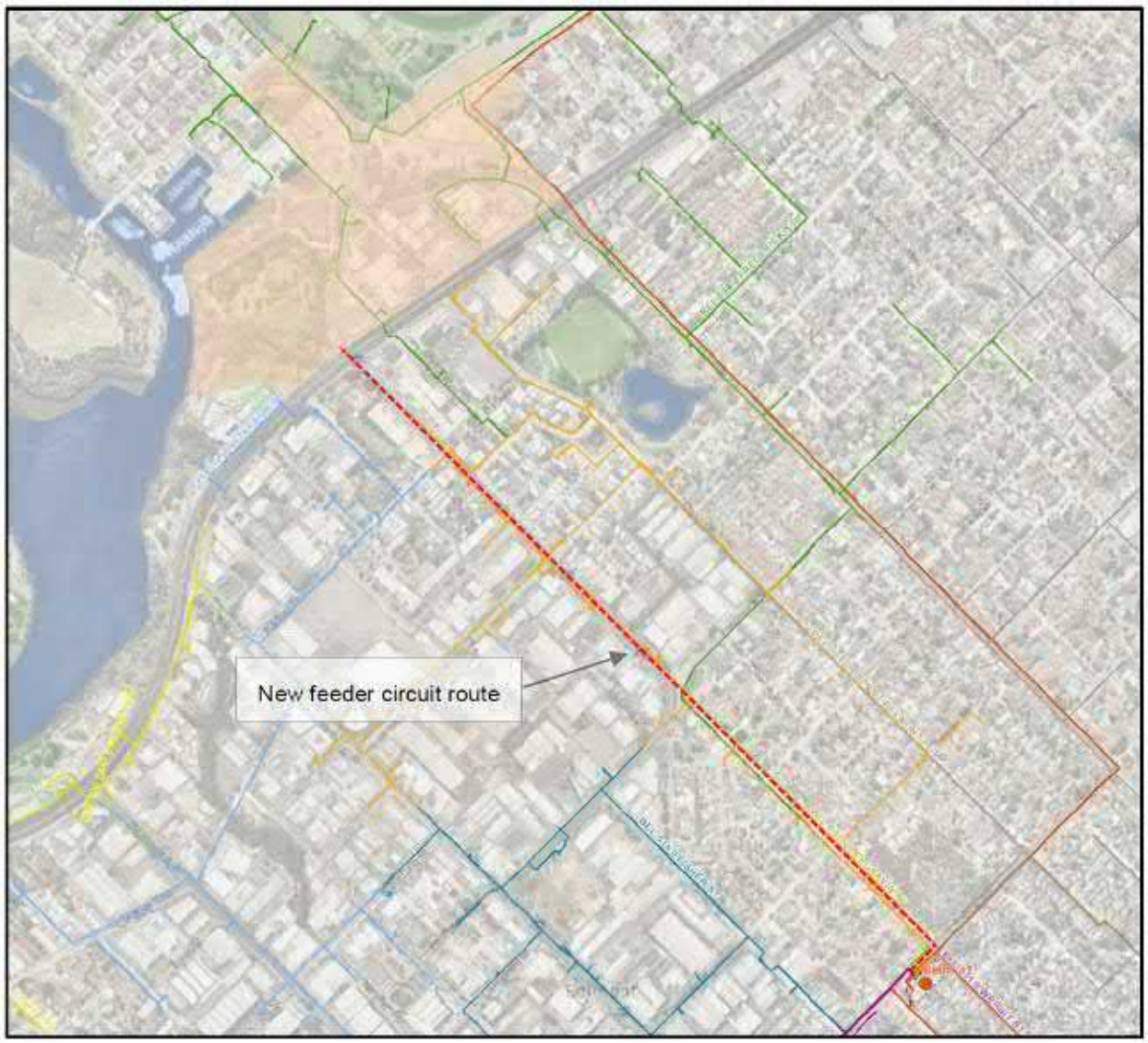


Western Power has completed a feasibility report for the proposed development, which is attached in Appendix B. Western Power has advised the following:

"Network analysis has identified that there sufficient capacity on the present configured network, and new feeder circuit would not be required as there are adequate spare capacity available on the BEL508 and surrounding feeders (BEL502 & RVE526) to fully accommodate the 8.325MVA total load. However, as the load growth to the redevelopment area is not expected till 2031, it is deemed reasonable that the provision to install a new 2km long feeder from BEL to entirely supply the 8.325MVA load may be required."

The proposed route of a new feeder from the Belmont Substation is shown in **Figure 4-3**.

Figure 4-3 Proposed Western Power Feeder Route
(Source: Western Power Feasibility Report – MF010862 – Golden Gateway Precinct, May 2017)



5 Gas

5.1 Existing Infrastructure

Gas infrastructure and distribution in Western Australia is managed by ATCO Gas Australia.

Correspondence from Atco Gas identifies Medium Low Pressure (MLP) gas mains (pressure indicated at 70kPa) along most roads within the subject site.

Cardno Drawing *CW942300-CI- SK4* in **Appendix A** contains information on gas infrastructure in the vicinity of the area.

5.2 Required Infrastructure

Correspondence received from Atco Gas advised that the existing infrastructure can support the proposed development as outlined in the Structure Plan.

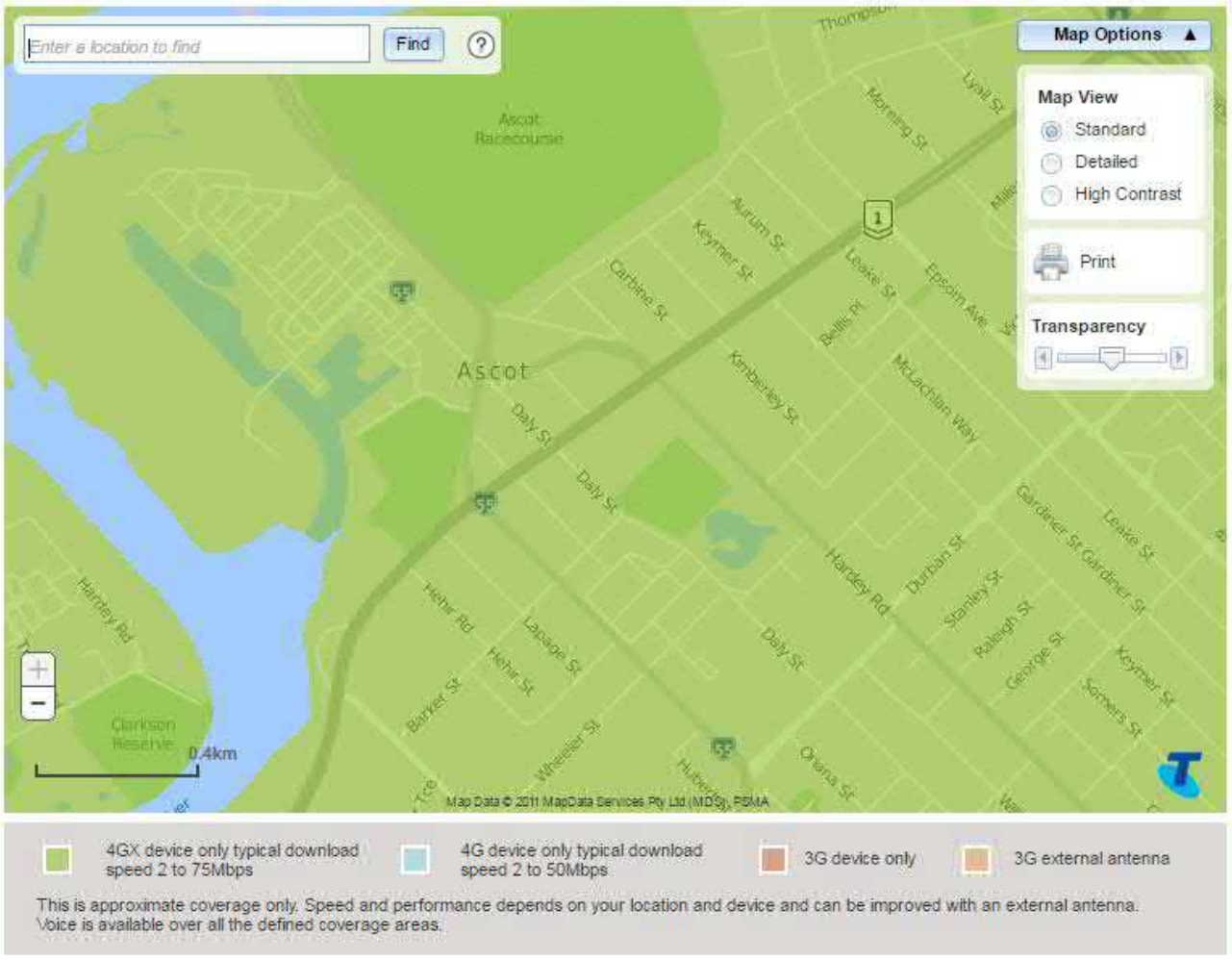
6 Communications

6.1 Existing Infrastructure

The subject area is well serviced by telecommunications infrastructure with optical fibre running in or adjacent to all precincts. This infrastructure is owned by various telecommunications providers including Telstra, Optus and others.

Refer to Cardno Drawing *CW942300-CI-SK5* in **Appendix A** for a detailed plan of the fibre optic cable locations.

Figure 6-1 Telstra Mobile Network Coverage
(Source: www.telstra.com.au/coverage-networks/our-coverage)



Mobile network coverage in the area is well serviced with 4G covering the entire subject area under the Telstra network (as shown in **Figure 6-1**); other network providers may vary.

The National Broadband Network (NBN) has yet to be rolled out in the subject area. However, NBN Co have advised that fibre to the node (FTTN) technology rollout has been planned for October-December 2017.

6.2 Required Infrastructure

6.2.1 Telstra

Should a developer wish to register a development with Telstra smart communities; this must be done twelve weeks prior to construction.

The infrastructure within a development will be installed by the developer. Alternatively, Telstra can be engaged to install infrastructure within a development at the developer's expense.

Telstra's commercial pit and pipe service will generally not be offered in developments where NBN Co has confirmed agreement to install NBN Co fibre within a development stage.

6.2.2 NBN

As NBN is still in the planning phase, it is recommended that the City of Belmont liaise with NBN Co as per the *Best practice guide for Councils when initially dealing with NBN Co* document published by the Australian Local Government Association and NBN Co.

In line with the new *Telecommunications Infrastructure in New Developments* policy, NBN is required to recover part of the cost of deploying network infrastructure by applying a deployment contribution charge. These deployment charges only apply to developers and builders.

- A charge of $400 per premises in multi dwelling units (MDUs).
- A charge of $600 per premises within a single dwelling unit (SDU).

A backhaul contribution charge may also apply to the development, NBN will clarify this requirement when the developer submits his application.

APPENDIX

A

EXISTING INFRASTRUCTURE

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LEGEND

- SITE BOUNDARY
- EXISTING SEWER
- EXISTING SEWERAGE PRESSURE MAIN
- EXISTING SEWERAGE PUMPING STATION
- EXISTING SEWER - NOT IN USE

SERVICES NOTES:

1. SERVICE LINES ARE APPROXIMATE ONLY AND ARE SHOWN DIAGRAMMATICALLY. CONTACT THE RELEVANT AUTHORITY OR DIAL 1100.
2. REFERENCE IS TO BE MADE TO TELSTRA DUTY OF CARE STATEMENT WHICH IS PROVIDED WITH DB4YD TELSTRA PLAN ENQUIRIES.
3. REFERENCE IS TO MADE TO WESTERN POWER SAFETY GUIDELINES AND INFORMATION PROVIDED WITH DB4YD PLAN ENQUIRIES.
4. REFERENCE IS TO BE MADE TO ATCO GAS DUTY OF CARE STATEMENT WHICH IS PROVIDED WITH DB4YD ATCO GAS PLAN ENQUIRIES.

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Rev	Date	Description	Drawn	Appr
A	15.04.2016	INITIAL ISSUE	JYY	PR

NORTH

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Drawn	JYY	15.04.2016
Designed		
Checked		
Reviewed		
Approved	PR	15.04.2016

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150mm ON A1 ORIGINAL

Client: CITY OF BELMONT
Project: GOLDEN GATEWAY PRECINCT
Title: EXISTING SEWER SERVICE PLAN

Status: NOT FOR CONSTRUCTION

Date	Datum	Scale	Size
15.04.2016	A.H.D	1:1500	A1

Drawing Number: CW942300-CI-SK1
Revision: A

A307

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LEGEND

- SITE BOUNDARY
- EXISTING WATER RETIC
- EXISTING WATER MAIN
- EXISTING WATER - NOT IN USE

SERVICES NOTES:

1. SERVICE LINES ARE APPROXIMATE ONLY AND ARE SHOWN DIAGRAMMATICALLY. CONTACT THE RELEVANT AUTHORITY OR DIAL 1100.
2. REFERENCE IS TO BE MADE TO TELSTRA DUTY OF CARE STATEMENT WHICH IS PROVIDED WITH DB4YD TELSTRA PLAN ENQUIRIES.
3. REFERENCE IS TO MADE TO WESTERN POWER SAFETY GUIDELINES AND INFORMATION PROVIDED WITH DB4YD PLAN ENQUIRIES.
4. REFERENCE IS TO BE MADE TO ATCO GAS DUTY OF CARE STATEMENT WHICH IS PROVIDED WITH DB4YD ATCO GAS PLAN ENQUIRIES.

1:1500 0 10m 20 30 40 50 60 70 80 90 100 110 120 130 140 150

915S-10

1065S SERPENTINE TRUCK MAIN

NORTHERLY AVE
TIDEWATER WAY
THE BOARD WALK
RESOLUTION DR
MARINA DR
NORTHEY ST
MARINA DR
RACONTEUR
GRANDSTAND
MATHESON RD
RESOLUTION DR
HARDEY RD
CARBINE ST
STONEHAM
HARGREAVES ST
DALY ST
RESOLUTION RD
GREAT EASTERN HWY
LAPAGE ST
BELGRAVIA ST

Rev	Date	Description	Drawn	Appr
A	15.04.2016	INITIAL ISSUE	JYY	PR

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		Date
Drawn	JYY	15.04.2016
Designed		Date
Checked		Date
Reviewed		Date
Approved	PR	15.04.2016

Client: CITY OF BELMONT
Project: GOLDEN GATEWAY PRECINCT
Title: EXISTING WATER SERVICE PLAN
Status: NOT FOR CONSTRUCTION
Date: 15.04.2016 | Datum: A.H.D | Scale: 1:1500 | Size: A1
Drawing Number: CW942300-CI-SK2
Revision: A

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A308

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LEGEND

- SITE BOUNDARY
- G — EXISTING GAS - MEDIUM PRESSURE
- G — EXISTING GAS - NOT IN USE

SERVICES NOTES:

1. SERVICE LINES ARE APPROXIMATE ONLY AND ARE SHOWN DIAGRAMMATICALLY. CONTACT THE RELEVANT AUTHORITY OR DIAL 1100.
2. REFERENCE IS TO BE MADE TO TELSTRA DUTY OF CARE STATEMENT WHICH IS PROVIDED WITH DB4YD TELSTRA PLAN ENQUIRIES.
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1:1500 0 10m 20 30 40 50 60 70 80 90 100 110 120 130 140 150

NORTHERLY AVE
TIDEWATER WAY
THE BOARD WALK
RESOLUTION
MARINA DR
YARIMA DR
NORTHEY ST
DR
MATHESON RD
RACONTEUR
GRANDSTAND
CARBINE
HARDEY RD
ST
RESOLUTION
DR
STONEHAM
HARGREAVES ST
DALY ST
RD
GREAT EASTERN HWY
LAPAGE ST
BELGRAVIA ST

DATE PLOTTED: 15 April, 2016 - 2:17pm

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Rev	Date	Description	Drawn	Appr
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Drawn	JYY	Date 15.04.2016
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Client: CITY OF BELMONT
Project: GOLDEN GATEWAY PRECINCT
Title: EXISTING GAS SERVICE PLAN
Status: NOT FOR CONSTRUCTION
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- HV — EXISTING POWER UNDERGROUND – HIGH VOL
- LV — EXISTING POWER UNDERGROUND – LOW VOL

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Client: CITY OF BELMONT
Project: GOLDEN GATEWAY PRECINCT
Title: EXISTING POWER SERVICE PLAN

Status: NOT FOR CONSTRUCTION

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APPENDIX

B

WESTERN POWER FEASIBILITY STUDY

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Feasibility Report

MF010862 – Golden Gateway Precinct

Large Mixed-Use Development – 8.325MVA Supply Options

5/05/2017

Document release information

Client	Cardno (WA)
Project name	MF010862
Document number	DM#42663988
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Document prepared by:

Western Power
ABN 18540492861

85 Prinsep Rd, Jandakot 6164

Prepared by:

Aden Hoddy

Distribution Network Design Officer

Table of contents

1 Introduction

1.1 Background

Cardno has submitted a feasibility study on behalf of the City of Belmont, in conjunction with the Department of Planning to undertake an infrastructure and services strategy for the Golden Gateway Precinct in Ascot. The strategy will help guide the preparation for the Local Structure Plan over the area. Cardno is seeking information on the available network capacity to supply the Golden Gateway Precinct.

1.2 Purpose

The proposed outcomes from the feasibility study are;

- Desktop network assessment on the nearby distribution HV networks to determine the available capacity from these networks.
- Network planning capacity assessment (Distribution & Transmission) to determine available capacity from zone substations within proximity to the development.
- High level scope of works for the transmission and distribution works required to provide up to 8.325MVA of capacity (if reinforcement or extension is required).

1.3 Scope of Study

The activities that will be undertaken to achieve the specified outcomes are;

1. Network Configuration Assessment
2. Network Impact Assessment
3. Western Power Scope of Works

2 Study Activities

2.1 Activity 1 – Network Configuration Assessment

The proposed development are is set amongst the BEL508 22kV feeder network emanating from the Belmont zone substation (BEL) located approximately 2.0km south. The BEL508 22kV feeder along with three other HV feeder networks (BEL502, RVE511 & RVE526) are the only networks within close proximity to the redevelopment (figure 1).

Figure 1 - Existing Distribution HV Network

2.2 Activity 2 – Network Impact Assessment

2.2.1 Transmission

Network analysis was carried out on the closet zone substation to the redevelopment area. It has been identified that there is sufficient spare NCR capacity available from BEL to cater for this 8.325MVA undiversified load. The load forecast chart for BEL is provided in figure 2.

Currently, BEL is supplied from the Cannington Terminal via BEL-KDL 81 line and BEL-RVE/WE 81 line (with the pre-contingency being BEL-NT/EP 81 line open). In connecting this load, it is not expected for the affected 132 kV transmission lines to experience the issue relating to the thermal over-loading or under-voltage, during the N-1 contingency. As well, connection of this customer load is not expected to trigger any voltage instability issues in the load area, hence this load is cleared to connect to the Western Power BEL network.

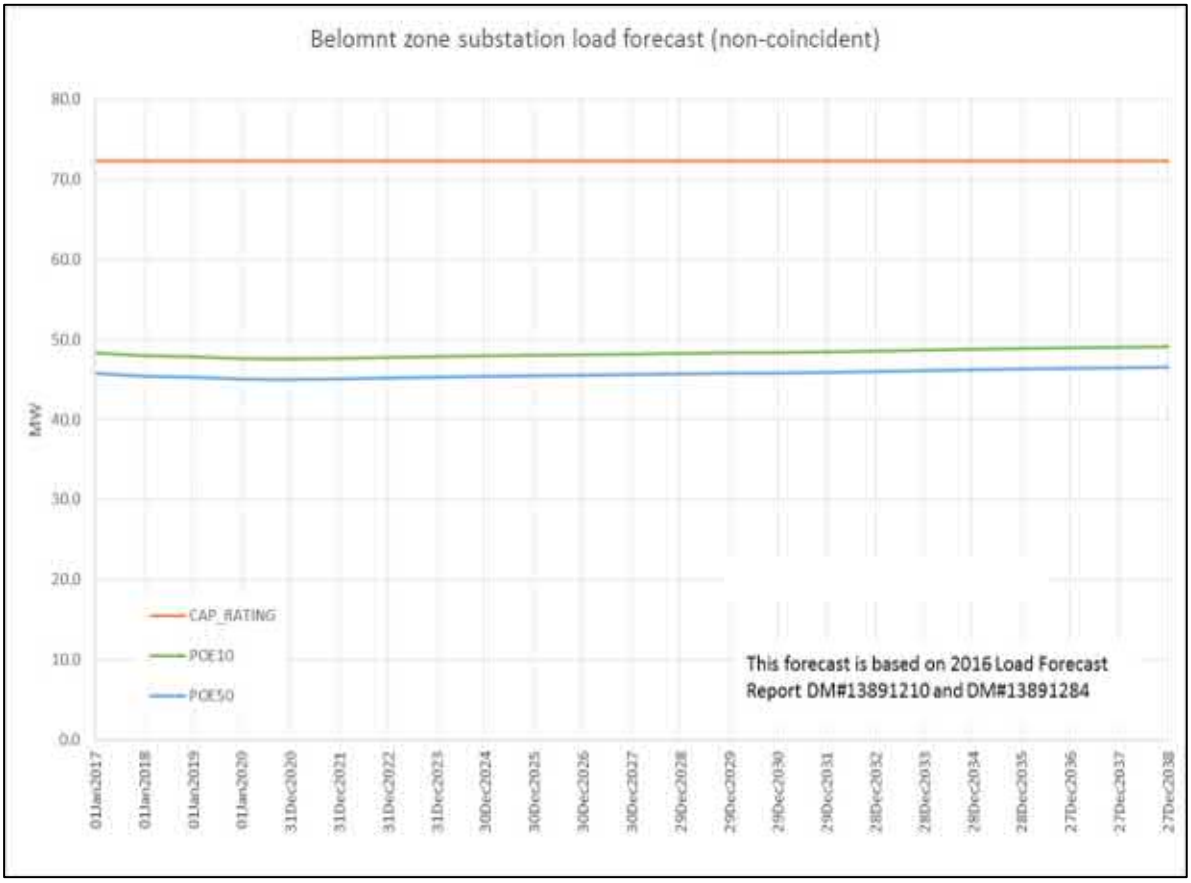

Figure 2 - BEL Zone Substation Forecast

2.2.2 Distribution

The entire redevelopment area is currently supplied by the BEL508 Frederick St feeder, including three other feeder networks (BEL502, RVE511 and RVE526) within close proximity. Based on the BEL508 feeder load readings (figure 3), there is approx. 3MVA of spare capacity available at this point of time that can be directly connected into. Additional network capacity can also be made available by network reconfiguration or extension, provided that there are significant spare capacity available on the nearby feeders at the time of connection. Hence, it is likely that the first few stages of development area can via supplied without any major network extension or reconfiguration.

Due to the expected timing of the power uptake, there is no certainty what spare capacity will still be available on the BEL508 feeder and other feeders around the proposed redevelopment area. Hence, it is not feasible to estimate what network extension will be required to create sufficient network capacity to supply the 8.325MVA load. An alternative option is to install of a new feeder from BEL to the proposed development boundary, near the intersection between Great Eastern Hwy and Stoneham St, to supply the entire 8.325MVA load. The new feeder circuit is likely to be installed along Belgravia St which will require approximately 2km of 400mm2 Al XLPE 22kV cable. Although there is no spare feeder circuits available at BEL, arrangement can be made (such as double feeders termination) to allow new feeder connections to the BEL.

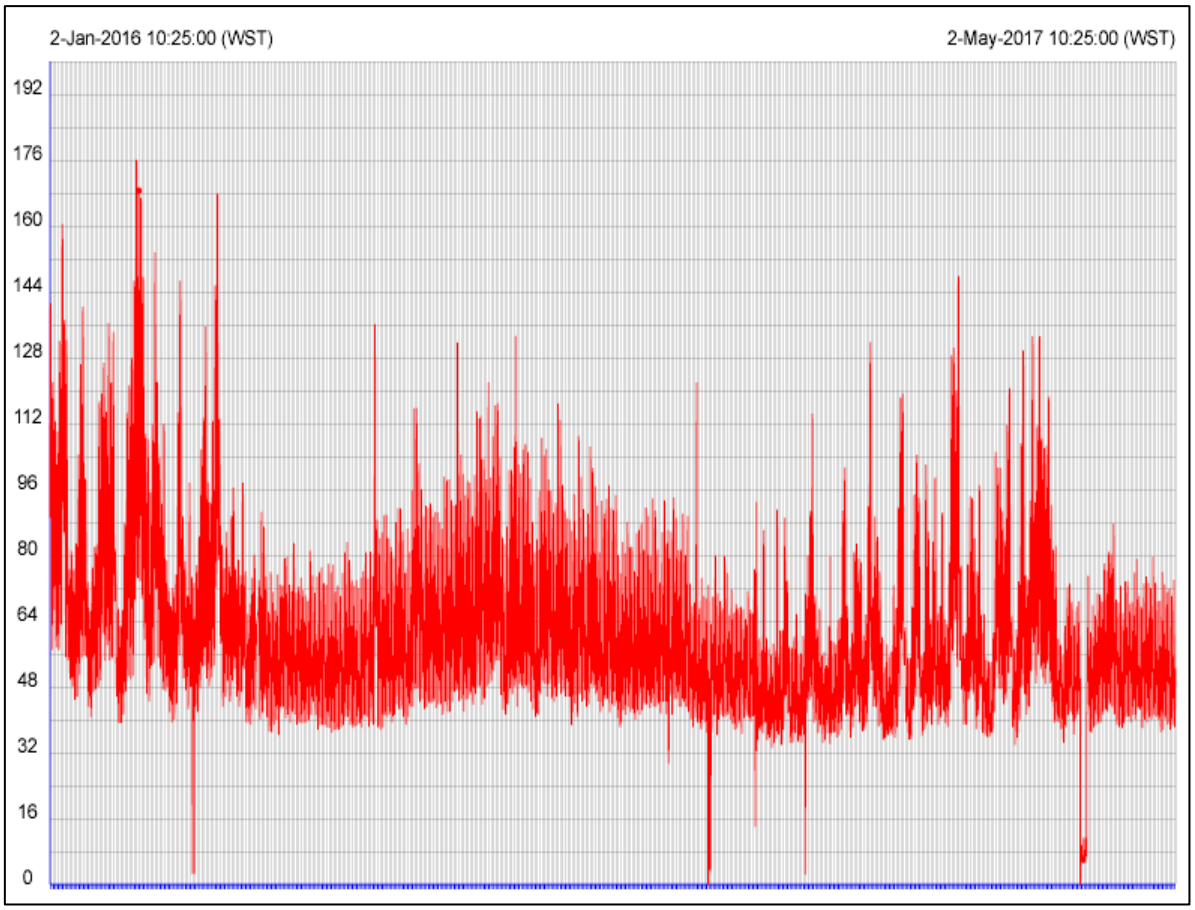

Figure 3 - BEL508 Feeder Utilisation

3 Technical Evaluation

3.1 Supply Options

3.1.1 Overview

As stated in section 2.2.2 of this report, there is approximately 3MVA of spare capacity available on the BEL508 Frederick St feeder with the opportunity to utilise the surrounding feeders (BEL502 & RVE526) to fully accommodate the total 8.325MVA load until either exhausted by the customer's development or other competing applications. A new feeder circuit can be provided for further capacity beyond the existing HV networks capacity limitations.

Considering the above information, there are two design options which have been identified to meet the customers' requirements;

1. Utilise the remaining capacity available on the BEL508 feeder and other nearby HV networks until exhausted. The scope of works for this option cannot be defined due to the unknown load uptake and location of connections to the redevelopment area.

2. Once depleted, install approximately 2.0km of new underground cable from the BEL to the redevelopment area expected along Belgravia St.

3.1.2 Site Map

Figure 4 - Proposed Western Power Scope of Works

3.1.3 Western Power Scope of Works

With reference to the site map in section 3.1.2 of the document, the Western Power scope of works for the new feeder extension is as follows;

- The connection of the new circuit into the BEL zone substation.
- Cable installation by a combination of open trenching and directional drilling from the BEL to the corner of Great Eastern Hwy and Stoneham St.
- Cable jointing, including testing and commissioning.

3.1.4 Third Party Approvals

If any of the surrounding HV feeders are to be extended or a new feeder circuit is installed from BEL then it is likely that the proposed cable route will need to cross under the Great Eastern Fwy. This instalment of new cable will require the approval from Main Roads. The underground cable route will be determined when a formal application has been received and detailed planning studies have been conducted.

3.1.5 Assumptions

The customer contribution and scope of works are dependent on the following assumptions;

- No other connection requests and changes to network conditions prior to the formal application for this connection.
- The proposed design solution, estimated cost (non-binding) is based on the desktop information only & is subject to detailed design investigation.
- All new underground cables are assumed to be installed in at the Western Power standard depth (i.e. 850mm deep from finished level) and in the Western Power standard alignment (0-500m from property boundaries) apart from road crossings.
- Drilling depth of electrical cables under roadways must be between 1000 and 1500mm of ground level.
- Allowance of polypipe included for the proposed cable route where cable is crossing under roadway or deemed rock ground conditions.
- Main Roads approval is granted for works associated on Great Eastern Hwy
- The proposed works receive no objection from all involved parties (which may include local authorities, private land owners and/or other utilities).
- The interconnection works required within the development site boundary are not considered in the study.
- The load assessment on the submission of the formal application will support the customers load request.
- Environmental studies have not been undertaken for the purpose of this report.
- Detailed Load Flow and Power Quality studies have not been undertaken for this study.

4 Conclusions and Recommendations

Network analysis has identified that there sufficient capacity on the present configured network, and new feeder circuit would not be required as there are adequate spare capacity available on the BEL508 and surrounding feeders (BEL502 & RVE526) to fully accommodate the 8.325MVA total load. However, as the load growth to the redevelopment area is not expected till 2031, it is deemed reasonable that the provision to install a new 2km long feeder from BEL to entirely supply the 8.325MVA load may be required.

Applicants need to be aware that the information herein is provided in good faith and is accurate at the time of issue. Power systems are dynamic in nature, due to the connection of new users and changes in consumer behaviour. As such, Western Power's distribution electricity networks will change over time - this may have a bearing on the amount of reinforcement required to accommodate new developments.

As capacity cannot be reserved, it is possible that requirements will also be altered resulting in a variation in power infrastructure requirements. There may be other competing applications for new loads or upgrades which may use the available spare capacity.

Please be aware that Western Power's response may become out-of-date, resulting in a significant variation in power infrastructure requirements. To provide a firm connection proposal and cost, a formal application to Western Power will need to be made, in accordance with current connection policies.

About Cardno

Cardno is a professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

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Ordinary Council Meeting 28/08/18

Item 12.1 refers

Attachment 7

Appendix F
Public Realm Strategy

Golden Gateway

PUBLIC REALM STRATEGY

June 2018

A325

DOCUMENT HISTORY AND STATUS

Golden Gateway
Public Realm Strategy

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In association with
EPCAD

Revision	Reviewer	Date Issued
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15/100-1	LB	04.05.18
15/100-2	ST	24.05.18
15/100-3	LB	02.07.18

EXECUTIVE SUMMARY

This Public Realm Strategy has been prepared as part of the suite of detailed strategies and studies supporting the Local Structure Plan (LSP) for the Golden Gateway precinct in Belmont.

The purpose of this Strategy is to develop a clear vision, principles and objectives to inform development of the public realm. The design intent and functional requirements for elements of the public realm as articulated in this overarching framework will inform further detailed planning, design and management. A landscape masterplan has also been developed as a component of this Strategy to outline the underlying public realm design objectives and guide the design and development of an integrated and functional high quality public realm. The graphical representation is indicative only and demonstrates how the three key public space areas may be developed.

The strategy creates an approach to the public realm that will create one very distinctive urban character. The public realm will accommodate pedestrians and vehicles in a safe uncluttered manner and the streets and spaces will be shaded by trees that will form a strong visual landscape framework.

Existing local streetscapes are predominantly reflective of the commercial environment, particularly within the commercial 'triangle'. The standard of verge maintenance ranges from good quality reticulated lawns through to poorly maintained verges damaged by random, uncontrolled, overflow parking.

The extent and quality of the existing pedestrian infrastructure within, and surrounding, the site is of a standard commensurate with the nature of existing development across the subject land (i.e. primarily light industrial/commercial unit style development). Each of the major road corridors running through the precinct (Grandstand Road, Resolution Drive and Stoneham Street) include footpaths along one side of the street. The extent and quality of the existing cycling infrastructure within and surrounding the site is of a high standard, partly as a result of the Great Eastern Highway upgrades.

The Strategy sets out to provide a high quality urban framework that promotes pedestrian circulation, accommodates vehicles in a safe and logical manner and is an environment that presents a desirable destination to live, work and recreate. Placemaking should inform the detailed design of spaces throughout the precinct. The spaces need to be able to facilitate and accommodate diverse uses that may emerge from community social investment.

Places across the site will achieve a successful balance between physical attributes, the vehicle circulation and dynamic social, cultural and economic vitality. Its inherent qualities are strongly related to its proximity to the Swan River and its heritage related to the Ascot Kilns.

It is the intention that distinctive physical spaces will be encouraged to evolve, responding to community, social and commercial opportunities. Spaces will consolidate a strong identity and character that is easily recognised by local users and visitors. In accordance with best practice, the public realm should be designed to maximise universal access for all members of the community. Designs will need to comply with prevailing legislation but should also strive to safely accommodate ease of safe use encouraging full accessibility through all areas.

The strategy for the site comprises a number of different public realm space types ranging from the strong east-west Linear Park ("Greenlink"), boulevard high-use roads to small streets. A cohesive approach across the public realm will consist of an urban landscape that reinforces a fluid and flowing spatial arrangement starting from the river parklands and extending this character throughout the subject land.

The creation of a strong east west aligned central space that links to the Swan River parklands and creates an open space core to the Golden Gateway precinct, is the primary structuring component of this area. The design of this space establishes the urban character that is then extended through the locality by complementary paving designs and tree canopies. Daly Street is structured to encourage and accommodate street commercial opportunities as buildings have trading frontages. This street becomes the "high street".

In terms of implementation, under normal circumstances, the development of the public realm is typically undertaken by a private developer/s as part of their private land subdivision process; however, given that several areas of the public realm already exist in the form of Crown Reserves (e.g. existing road reserves) and the private land is under fragmented ownership, the City of Belmont will need to assume responsibility for implementing the Public Realm Strategy. The cost of this work and any mechanism to recover cost from private landowners through a Developer Contribution Plan or alternative funding mechanism to be determined by the City will require further consideration.

It is not anticipated that the entire landscape masterplan be implemented at once, rather it should be progressively rolled out commensurately with the delivery of other key infrastructure, particularly the various road realignments and subdivision works that are required to create the environment for private redevelopment. Priority should be given to establishing the road network and lots that frame the POS spine and the primary focus should then be the implementation of this public infrastructure to set the stage for the precinct's credentials as a high quality development opportunity.

TABLE OF CONTENTS

1. INTRODUCTION

1.1 PURPOSE

This Public Realm Strategy has been prepared as part of the suite of detailed strategies and studies supporting the Local Structure Plan (LSP) for the Golden Gateway precinct in Belmont (refer **Figure 1**).

The creation of a high quality and functional public realm, in the streets and open spaces, is a pivotal element in planning for a more intensified urban environment to create a liveable and well connected community.

The Public Realm Strategy has been developed in conjunction with the Golden Gateway Development Concept Plan that ultimately formed the cornerstone of the Golden Gateway LSP. This has meant that the resultant urban form envisaged in the landscape masterplan has been developed around a thoroughly considered framework of public spaces.

This document summarises the main issues/opportunities and design outcomes for the creation of a public realm, similar to the concept of an urban village. The purpose of this report is to inform the LSP and the further design (Design Guidelines) of this area through the planning process. This report is a companion document to the LSP and should be read in conjunction with it.

Figure 1 - Local Structure Plan (Plan 1)

1.2 SITE CONTEXT

The subject land is located approximately 5 kilometres (km) north east of the Perth Central Business District (CBD), 3 km north of Belmont Forum and 5 km north east of Victoria Park entertainment precinct (refer **Figure 2**). It is close to the Swan River and Ascot Racecourse and forms a triangular land parcel that is well connected to the regional roads. Further details on the planning context and background can be found in the LSP Part Two, Section 1 Planning Background.

Figure 2 - Site Context Plan

2. SITE ANALYSIS

2.1 URBAN FORM

The existing urban form of the site is very much influenced by its strategic location at the axis of a number of key movement corridors, dominated by Great Eastern Highway, Stoneham Street and Resolution Drive. The 'triangle' of land bounded by these roads contains a mix of office and commercial uses, including some more intensive retail/food and beverage outlets towards the eastern edge at Resolution Drive and Great Eastern Highway.

Outside of the 'triangle', the remainder of the LSP area consists of a number of different sub-precincts with very diverse functions and characteristics. These include a mix of land uses, including the administration headquarters of the WA Turf Club (WATC), the Ascot Kilns, overflow parking for the Ascot Racecourse, a substantial riverfront area held by the Belmont Trust, and a patchwork of residual government landholdings created by the past realignment of Resolution Drive and Stoneham Street.

While the existing urban form is largely unremarkable, the key features that are notable, in terms of future planning, include:

1. The Ascot Kilns, in particular the chimneys, which present an important visual and historical reference point in the precinct (refer **Figure 3**); and

2. The Belmont Trust land, which presents an opportunity for a strong public link to the Swan River, albeit presently isolated by Stoneham Street (refer **Figure 4**).

2.2 STREETSCAPE

Existing local streetscapes are predominantly reflective of the commercial environment, particularly within the commercial 'triangle' (refer **Figure 5**). The existing road reserves are typically 20m wide with wide carriageways to accommodate commercial vehicle movement as well as on-street parking. The standard of verge maintenance ranges from good quality reticulated lawns through to poorly maintained verges damaged by random, uncontrolled, overflow parking.

Figure 3 - The Ascot Kilns Chimneys

Figure 4 - Belmont Trust Land

Figure 5 - Typical 'Commercial' Streetscape

Great Eastern Highway, the most exposed edge of the precinct, has recently been widened/upgraded to improve regional traffic movement. The result is a heavily engineered, highly efficient arterial road, with four lanes of through-traffic, increasing to 6-7 lanes in places where there are long turning pockets and bus/cycle lanes at the intersections.

The footpath is approximately 3m wide and occupies the whole verge from kerb to boundary, with no street trees or other landscaping, as illustrated in **Figure 6**. This combined with the significant traffic activity immediately adjacent, presents an unappealing environment for pedestrians.

Resolution Drive and Stoneham Street are also heavily engineered arterial roads that offer little attraction to the pedestrian, although the Stoneham Street environment is somewhat softened by its interface with heavy vegetation along the periphery of the Belmont Trust land and the landscaped drainage area to the north.

Figure 6 - Great Eastern Highway

2.3 MOVEMENT AND ACCESS

2.3.1 VEHICLE MOVEMENT

The LSP report provides a detailed analysis of the existing and proposed vehicle movement network. From a public realm perspective the key factors are as follows:

- The regional road system, comprising Great Eastern Highway, Stoneham Street, Resolution Drive and Grandstand Road, offer excellent connections in all directions; however, they also serve to segregate parts of the precinct, and isolate the site from the most attractive existing public realm asset, being the Swan River foreshore.
- The local road system, particularly through the commercial 'triangle', provide a high level of access and permeability for both vehicles and pedestrians, and offers an effective framework for future development of the site; and
- The local road system features wide (20m) road reserves, which, if retained, offer opportunities to design high standard streetscapes, with generous space available to devote to landscaping, pedestrians, street parking etc.
- Local access streets (Hargreaves Street, Daly Street and Grandstand Road (southern section) providing access in a northerly direction from Great Eastern Highway with poor pedestrian amenity and no existing footpaths present.

2.3.2 PEDESTRIAN NETWORK

The extent and quality of the existing pedestrian infrastructure within, and surrounding, the site (with the exception of Great Eastern Highway) is poor and of a standard commensurate with the nature of existing development across the subject land (i.e. primarily light industrial/commercial unit style development).

However, Great Eastern Highway bordering the site to the south features good quality footpaths on both sides of the corridor, although as previously mentioned, it is not a particularly appealing environment for pedestrians.

Within the vicinity of the site, the safe crossing of Great Eastern Highway by pedestrians is facilitated via traffic signal controlled intersections at both Stoneham Street/Belgravia Street and Resolution Drive/Hardey Road intersections with Great Eastern Highway.

Each of the major road corridors running through the precinct (Grandstand Road, Resolution Drive and Stoneham Street) include footpaths along one side of the street – Grandstand Road along the eastern side adjacent to the Ascot Racecourse, Raconteur Drive along the northern side to connect to Grandstand Road, Resolution Drive along the eastern side adjacent to the Ascot Waters development and Stoneham Street along the western side adjacent to the Belmont Trust land.

2.3.3 CYCLING

The extent and quality of the existing cycling infrastructure within and surrounding the site is of a high standard, partly as a result of the Great Eastern Highway upgrades.

A number of existing shared paths and cycling connections are located along primary routes, including Stoneham Street, Raconteur Drive and Grandstand Road providing local connections. There is demand to upgrade facilities on Stoneham Street and Resolution Drive. Protected bicycle lanes and a shared path on Resolution Drive is essential.

A number of shared paths are also located within the Ascot Waters development directly to the north-west of the site. The Graham Farmer Freeway Principal Shared Path (PSP) provides regional cycling connections and can be accessed via the shared path along the southern side of the Swan River.

3. DESIGN OBJECTIVES

3.1 AN URBAN LANDSCAPE

The site forms an important gateway announcing the City of Belmont when approached from the south-west and north-east. The site is traversed with major roads and as discussed, its triangular form presents challenges in vehicular circulation and pedestrian accessibility. This location currently presents as a transient place that is passed through, however the design of the public realm will result in the creation of a cohesive network of spaces enabling the locality to be an identifiable place.

As a busy location, the public realm offers the opportunity to be transformative, linking uses and people to the nearby valued Swan River, its parklands and the heritage and interest of the Ascot Kilns.

The public realm spaces made up of streets and a linear park, combine to be a defining element of this location, that importantly the users, employees and residents will experience and define the qualities of the public realm.

The overall landscape design objectives for the public spaces are set out below:

3.2 IDENTIFIABLE CHARACTER

- Create a contemporary urban environment that promotes safe and easy pedestrian experiences.
- Create new diverse urban landscapes that reflect the subject land's unique characteristics and close links to the river parklands.
- Create spaces that encourage and accommodate local community use and engagement.
- Establish an aesthetic that promotes positive development and investment in the location.
- Celebrate the heritage significance of the Ascot Kilns.
- Respect the social and recreational values of the Ascot Racecourse.
- Establish considered connections to the Ascot Kilns and the Ascot Racecourse in terms of tourism opportunities and amenity.

3.3 VALUABLE LANDSCAPES

- Create a microclimate in public realm spaces and streets which encourages use and enjoyment.
- Provide visual connections to the river park through public open spaces (as shown on **Figure 7**).
- Provide key views and relationships that assist in orientation and legibility.
- Create highly utilised and valued public realm streets and spaces.

3.4 ENVIRONMENTAL/SUSTAINABILITY

- Create a durable urban landscape.
- Reduce urban heat sink characteristics.
- Create urban tree canopy (in compliance with The City of Belmont's Urban Forest Strategy 2014).
- Retain vegetation wherever practical.
- Promote the use of low water demand plants.
- Pursue water harvesting, passive irrigation and integrated urban water management.

Figure 7 - Landscape Masterplan

4. PUBLIC REALM OVERALL APPROACH

The site comprises a number of different public realm space types ranging from the strong east-west linear park ("Greenlink"), boulevard high-use roads to local streets as detailed on the landscape masterplan (refer **Figure 7**).

A cohesive approach across the public realm will consist of an urban landscape that reinforces a fluid and flowing spatial arrangement starting from the river parklands and extending this character throughout the subject land. The creation of smaller pockets of activity and open space will be defined by street trees, tree groups and sinuous tree lines. Pedestrian spaces will be sheltered by a substantial tree canopy and vehicular routes flanked by boulevard plantings. A unified paving design and materials for pedestrian areas will extend throughout the subject land extending down streets and through the central Linear Park. This will both unify and delineate the different pedestrian and vehicular spaces.

Placemaking should inform the detailed design of spaces throughout the precinct. The spaces need to be able to facilitate and accommodate diverse activities that may emerge from community social investment. The location and development of the public spaces will be achieved through the successful balance between physical attributes, the vehicle circulation and dynamic social, cultural and economic vitality. The site's inherent qualities are strongly related to its proximity to the Swan River and its heritage related to the Ascot Kilns. It is the intention that distinctive physical spaces will be encouraged to evolve beyond the design, responding to the growing community and social and commercial opportunities. Spaces will consolidate a strong identity and character that is easily recognised by local users and visitors.

In accordance with best practice, the public realm should be designed to maximise universal access for all members of the community. Designs will need to comply with prevailing legislation but should also strive to safely accommodate ease of safe use encouraging full accessibility through all areas.

To reduce maintenance and water consumption, where possible, consideration should be made as to the use of hard surfaces or low water alternatives instead of turf. Water harvesting of hard surfaces is also exploited where possible using swales, channels and ground amendments to reduce the need for overall water consumption.

5. PARKS

Public Open Space (POS) is to be provided generally in accordance with **Figure 8** and should be vested in the Crown and managed by the local government. The development of land included within the Swan River Trust Development Control Area will be subject to the approval of the Department of Biodiversity, Conservation and Attractions (DBCA). The POS is to provide for both informal active and passive recreation uses. These uses will not utilise large spaces for sports but provide activities for the community that may include, children's play areas, health and fitness trails, small scale ball kick-a-bout areas and one-on-one basketball spaces. The POS areas may accommodate stormwater generated from the proposed development of the site and this will be designed in such a manner that its function as local open space is not compromised.

Figure 8 - Public Open Space Provision

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5.1 FORESHORE RESERVE

The 'Foreshore Reserve' creates a valued open space adjacent to the Swan River. The nature of the space, its future and development, is controlled largely by the Belmont Trust and is not the subject of this Public Realm Strategy but will be addressed by a separate study.

5.2 LINEAR PARK "GREENLINK"

The Linear Park ("Greenlink") is a valuable community asset which has great potential to be the focus of community use, a meeting place and the primary pedestrian movement corridor linking the subject land with the Swan River and associate parklands to the west (refer **Figure 9**). The linear park is an urban park relying on tree canopies to provide shade and "softness" to the urban space. The size of paved areas should be able to accommodate potentially large numbers of users including cyclists, skaters, and pedestrians all within a network of footpaths linking into the surrounding road network and building entrances. The space will create a seamless and comprehensive character that embraces built form and is unaffected by the rigidity of traditional street infrastructure.

The informality of parklands will envelope development forming a new dynamic setting that is capable of providing informal meeting spaces, alfresco spill-out, community meeting places and potentially facilities such as active recreational spaces, outdoor fitness trail equipment and interactive sculptural elements as public art. The space will facilitate clear passive surveillance from the lower levels of buildings and will be well lit at night. The open and broad nature of spaces providing safe pedestrian circulation and sight lines, lighting and activity will enable the space to accommodate the needs of a growing local population.

Importantly, this space and its robust form diminishes the role of vehicular traffic aesthetically creating a dominance of pedestrian orientated space.

The design of this central linear park will create the setting or venue for community use. The emerging community values and enjoyment of a place for its special social and physical attributes is enhanced when the community can contribute to, and influence, decision-making about that space. Ongoing public and stakeholder engagement in regards to the use of spaces, their evolution and resultant design detail should therefore be an integral part of spatial management and design delivery. As the community grows and matures, places can respond to changing needs and opportunities. Management of this place therefore needs to include stakeholder engagement as well as consider the pragmatics of maintenance. The place may accommodate community or food gardens, established as an urban element within the overall design character. This can provide for activities that may not be possible within multiple dwelling and grouped developments, however such proposals should be derived from further consideration of the evolving community's needs and desires.

Figure 9 - Linear Park Green Link

5.3 EAST PARK

At the eastern-most extent of the POS network, a large simple space of grass is located (refer **Figure 10**). This forms a transitional space between mixed-use and multiple dwelling development and the lower density existing residential and stables area that is located to the east of the site. The park creates a soft, semi-active open space suitable for informal ball games and passive pursuits.

Figure 10 - East Park

6. ROADS AND STREET TREATMENTS

6.1 GENERAL

Road hierarchies and overall legibility of the subject land will be reinforced by the type of tree planting associated with the scale of the road. The paving treatments within all streets and roads will be consistent with the material palette of the Linear Park, reinforcing a distinctive character of this place.

The scale and robust nature of proposed street tree species relate to the potential scale and height of built form. Street trees have an important role in the urban environment, improving microclimate and urban heat sink characteristics, reducing storm runoff rates and contributing to the character and qualities of neighbourhoods. The detailed design of roads will need to ensure the provision of adequate soil volumes within road reserves to ensure sufficient root development for street trees.

6.2 ROAD TREATMENTS

Road hierarchies and overall legibility of the precinct can be enhanced with the use of varied road and footpath paving treatments, in keeping with the material palette of the Linear Park. Consideration should be given to the use of block pavers at road junctions or to create varying precincts within the development. For example, emphasising Daly Street and the extension of Grandstand Road where it forms the edge to the Linear Park.

The selected paving treatments of local streets should emphasise the overall precinct character. All paving detailing at junctions and associated with pedestrian circulation should address both the need to reduce traffic speeds, manage drainage and create a distinctive character. Raised tables can be used to provide traffic calming and to add texture to the urban streetscape reinforcing a character that promotes pedestrian safety.

Cycle lanes throughout the site will be red asphalt except where they are incorporated into areas of feature pedestrian paving where colour differentials will relate to paving patterns, and if necessary, lanes defined by studs. Paving material changes will be used to accentuate areas such as major pedestrian road crossings, civic areas and hazards. Parking bays should be differentiated from the road reserve through the use of alternative paving treatments as shown in **Figure 11**.

The materials used for road pavement can assist with drainage management within the area. This may include the use of permeable paving and/or porous brick paving and/or porous asphalt. These materials can play a significant role in managing drainage in a water sensitive manner and where 'soft' open space is not an extensive feature of this location.

Figure 11 - Material Palette (illustration of indicative paving material palette, colour, type)

6.3 RESOLUTION DRIVE

Whilst Resolution Drive will be largely vehicle dominated, the landscape aesthetic will be dominated by tree planting of larger species, creating a canopy boulevard along its length. Verge and median planting will create a formalised sinuous corridor of canopy trees that are recognisably different to the scale and nature of other landscapes in the area (refer **Figure 12**). Like street trees will be planted to create a boulevard aesthetic the length of the street, aiding in wayfinding (refer to section 10.2 for proposed tree species).

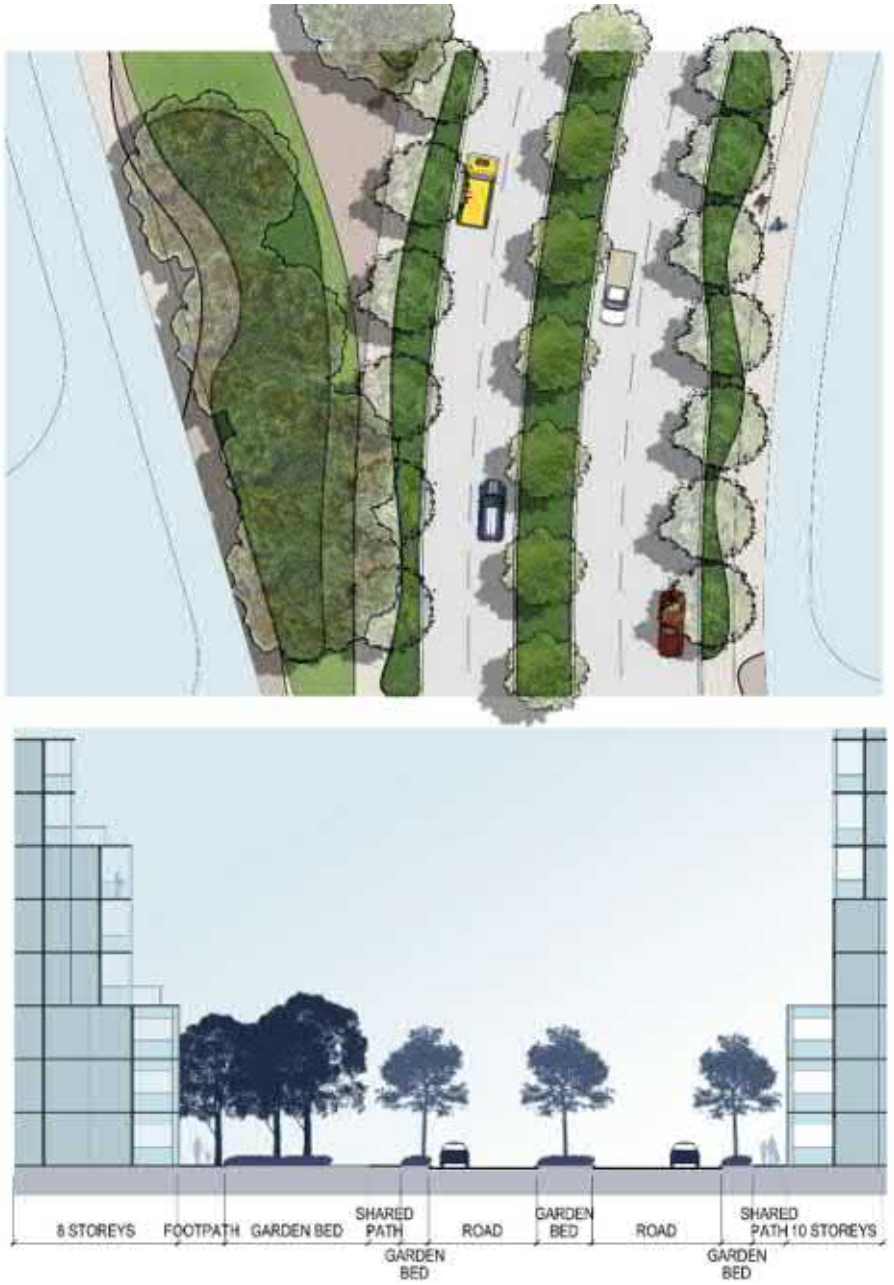

Figure 12 - Resolution Drive (Plan Extract and Indicative Section)

6.4 STONEHAM STREET

Stoneham Street will be identified by a boulevard of planting comprising species related to the adjoining Belmont Trust land such as a mix of natives and introduced species emphasised at junctions and the key pedestrian crossing points (refer **Figure 13**). The boulevard will accommodate a key pedestrian connection that extends through to Matheson Road via the Linear Park. Street trees will be selected to form a large canopied street, adding to the boulevard aesthetic. (Refer to section 10.2 for proposed tree species).

Figure 13 - Stoneham Street (Plan Extract and Indicative Section)

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6.5 DALY STREET

Daly Street is proposed to function as the 'main street' and as such, the public realm has been configured to respond to retail uses (refer **Figure 14**). The pedestrian pavement will be configured to minimise clutter and encourage possibilities for alfresco seating. Importantly the paving design character established within the linear park extends through the street extending to the Linear Park. Tree groups will be used and located to define potential smaller public realm areas such as alfresco seating and informal gathering spaces (refer to section 10.3 for proposed tree species). Car parking is configured at right angles to optimise numbers in support of retail and food and beverage uses within the 'main street'.

Figure 14 - Daly Street (Plan Extract and Indicative Section)

6.6 CENTRAL STREETS

Hargreaves Street and Grandstand Road will comprise street tree planting that is not a monoculture but uses a mix of street trees (refer **Figure 15**) in varying combinations, to provide a dynamic and varied street tree canopy (refer to section 10.4 for proposed tree species). The mix will create a character that is related to, but distinguished from, Daly Street, emphasising the different nature of the space (refer to section 10.4 for proposed tree species). These streets will extend the overall public realm character established within the Linear Park and central portion of the site but in a simpler manner. Street tree planting is proposed to create a canopied streetscape and to be positioned abutting the parallel parking embayments.

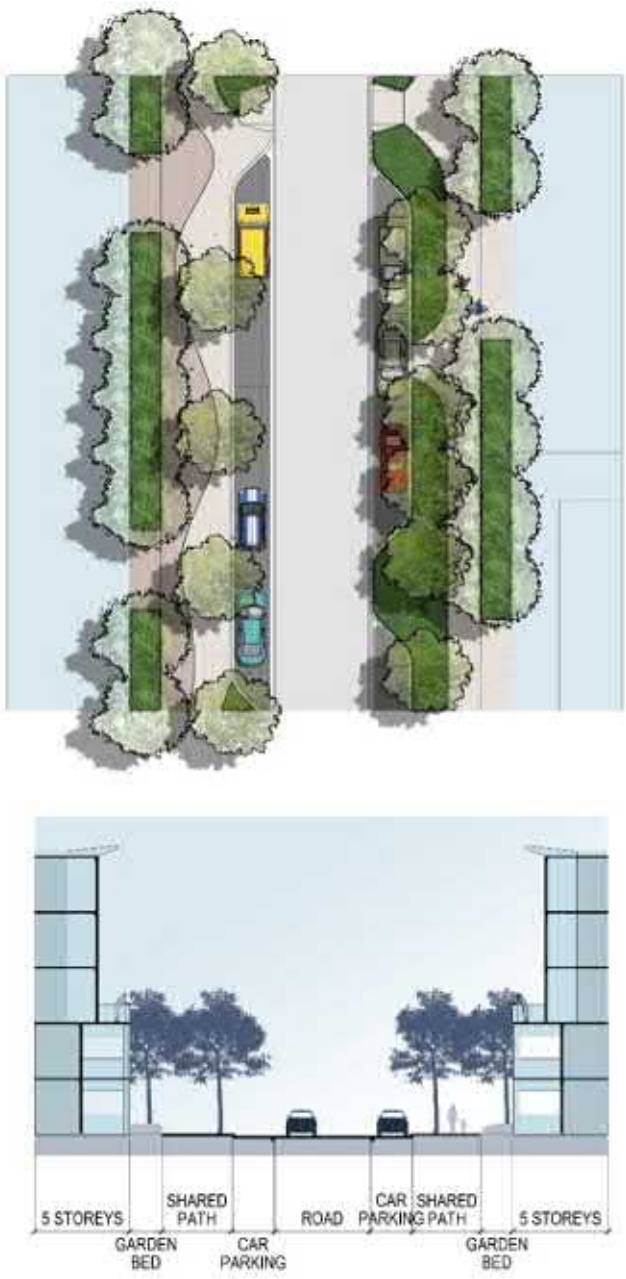

Figure 15 - Central Streets (Plan Extract and Indicative Section)

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6.7 LOCAL STREETS PRECINCT (NORTH-EAST)

The streetscapes of the areas to the north and east of Resolution Drive will have a character that is dominated by street tree planting creating a heavy canopy. Street tree planting will consist of a variety of species that attain modest height but develop a broad canopy (refer **Figure 16**).

Raised paved tables can be used to provide traffic calming and to add texture to the urban streetscape reinforcing a character that promotes pedestrian safety. The selected paving treatments of local streets will change the character of streets especially in locations where separated pedestrian access is limited. All paving detail at junctions and associated with pedestrian circulation should address both the need to reduce traffic speeds, manage drainage and create a distinctive character.

6.8 GATEWAYS

In key locations within the streetscape and public realm, highlight tree species will be used to create a visual accent. This can aid in creating distinctive spaces, and provide physical cues within a legible street network. These highlight species will be used to create gateways, focal points or to emphasise uses. Refer to section 10.6 for proposed tree species.

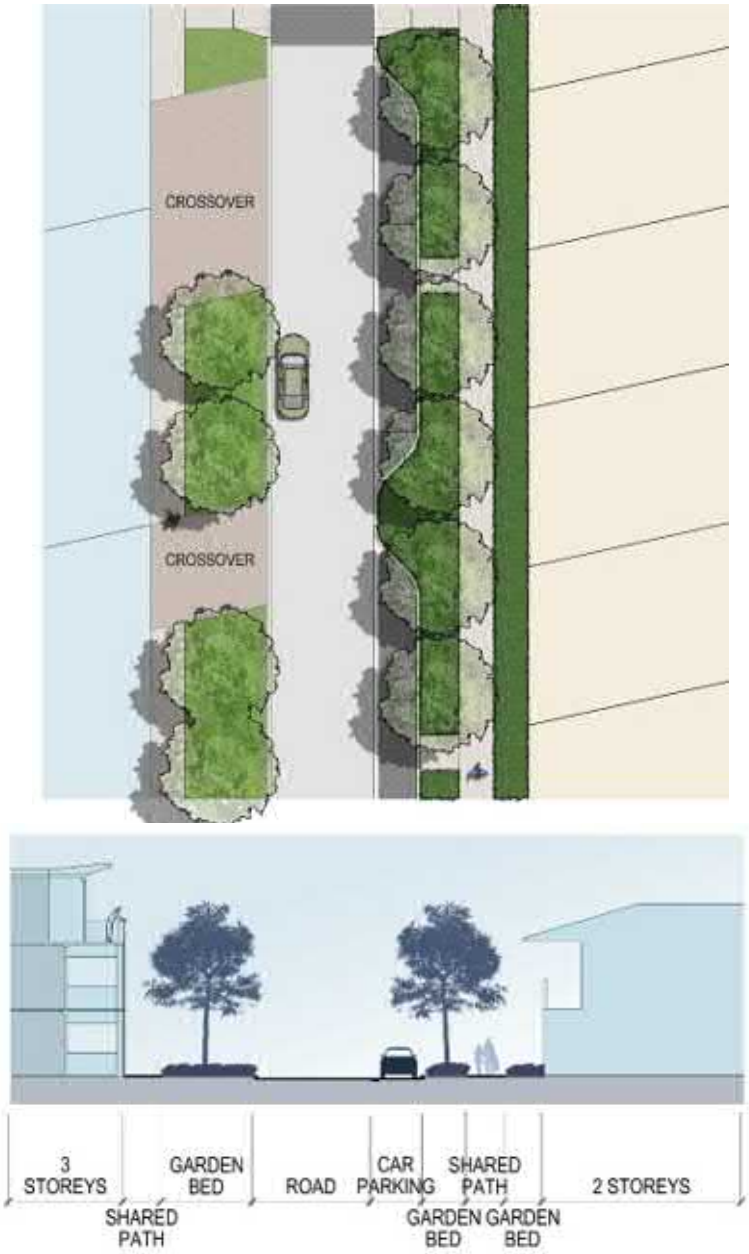

Figure 16 - Local Street (Plan Extract and Indicative Section)

7. INTEGRATED DRAINAGE MANAGEMENT

The use and promotion of Water Sensitive Urban Design (WSUD) techniques and approaches are to be utilised wherever possible throughout the site. The space for nutrient stripping is limited. As the urban area is not producing a nutrient load, the focus is on slowing runoff and reducing hydrocarbons. The use of linear and incidental 'rain gardens' and 'nutrient sinks' as demonstrated below and overleaf can be implemented discretely within paving in streets and areas of open space. These devices should be fully integrated with the road drainage promoting passive irrigation of street tree vegetation and controlling hydrocarbon runoff.

Within the context of a dense inner urban area, the design of these WSUD devices need not be natural in appearance but can be incorporated within the urban public realm infrastructure as a contemporary feature as demonstrated below and overleaf.

It is intended that the east-west linear park, although containing broad pedestrian areas, will contain soft landscape areas that will accommodate local drainage that is managed through swale type structures that infiltrate water and passively irrigate trees and other vegetation used in the public realm. This will be subject to the future Local Water Management Strategy.

The use of permeable pavements and porous asphalt treatments in key locations is recommended, possibly associated with lower level threshold treatments of road junctions, should be incorporated as a component of the approach to integrated drainage management.

Examples of Rain Gardens & Swale Designs in an Urban Context (Jolimont Parkside Walk)

Source: https://watersensitivecities.org.au/content/evolving-concept-wsud-statutory-land-planning/

Source: http://www.water.wa.gov.au/urban-water/urban-development/urban-water-design

Source: http://tclf.org/sites/default/files/microsites/landscape-patronage/riverbank-park.html

Source: https://landscapeperformance.org/case-study-briefs/randall-childrens-hospital

Source: http://www.landezine.com/index.php/2012/10/edinburgh-gardens-raingarden-by-ghd-pty-ltd/edinburgh-gardens-raingarden-by-ghd-pty-ltd-01/

Source: http://www.sfestuary.org/projects/detail.php?projectID=41

Examples of Rain Gardens and Swale Designs in an Urban Context

8. STREET FURNISHING

Street furniture should be a selected single suite of items that are consistent across the site. The furniture should be reflective of the heritage and character of the area and located where it can function as more than a single use. For example, seats and benches should be located in a manner to restrict undesired errant access to protect and guide pedestrians as well as performing their obvious use. All furnishing will be from the same suite so that bicycle storage, seats and bollards are seen as one cohesive design style.

9. PUBLIC ART

Public art enhances spaces, makes places, adds to the community enjoyment of space and has a significant role to play within the Precinct. Public art can be of a scale that in itself is a focal point of interest, defining character and being a reason for space. Public art can also be an intimate smaller installation that relates to people when using areas of rest and repose, such as seating areas. The creation of 'place' can be enhanced through a sense of identity provided by the artworks. The creation of identifiable landmarks that can be observed and experienced as both a pedestrian and vehicle user can aid in legibility of the development. Importantly, in this location, creative installations could interpret the cultural and historic narrative of the area and enable strong connections with its context.

Source: EPCAD image library – Jolimont Parkside Walk

10. GOLDEN GATEWAY TREE SPECIES

10.1 PARK AND CIVIC SPACE SPECIES

Corymbia calophylla: Marri (large fruiting nuts) 30m+H	
Eucalyptus sideroxylon "Rosea" : Red Ironbark 15 -25m H	
Pheonix canariensis: Canary Palm 15m+	
Platanus x acerifolia: Spanish or London Plane 20 – 30m	
Tipuana tipu: South American Rosewood 7m	

10.2 STONEHAM STREET AND RESOLUTION DRIVE

Angophora costata: Smooth barked apple 15 – 25m high	
Eucalyptus sideroxylon "Rosea" : Red Ironbark 15 - 25m H	
Corymbia calophylla: Marri (large fruiting nuts) 30m+H	

10.3 DALY STREET

American Sweetgum or Liquidambar 12 – 18m high	
Eucalyptus torquate:	
Corymbia ficifolia: Red flowering Gum 8-15m	

10.4 CENTRAL STREETS

Corymbia ficifolia: Red flowering Gum 8-15m	
Eucalyptus caesia	
Eucalyptus torquate	
Jacaranda mimosaefolia: Jacaranda	
Lophostemon confertus: Queensland Box	

10.5 LOCAL STREETS PRECINCT

Angophora costata: Smooth barked apple 15 – 25m high	
Corymbia ficifolia: Red flowering Gum 8-15m	
Eucalyptus torquate	
Jacaranda mimosaefolia: Jacaranda	
Lophostemon confertus: Queensland Box	

10.6 HIGHLIGHT SPECIES (GATEWAYS)

Pheonix canariensis: Canary Palm 15m+	
Platanus x acerifolia: Spanish or London Plane 20 – 30m	
Tipuana tipu: South American Rosewood 7m	

11. IMPLEMENTATION

11.1 LANDSCAPE CONSTRUCTION AND MANAGEMENT

The public realm areas in the Golden Gateway area, will primarily be in government ownership; consequently, the City of Belmont will need to assume responsibility for implementing the Public Realm Strategy. However, given the significant potential for private redevelopment that is to be generated through the Golden Gateway LSP, it would be possible to recover some or all of the implementation cost from private development through development contributions or other funding mechanisms.

The LSP recommends that the City of Belmont establish an appropriate funding strategy for the LSP Area. As part of the strategy, a Development Contribution Area (DCA) within LPS 15, under which a Development Contribution Plan (DCP) may be implemented to contribute to the funding of the public infrastructure requirements to facilitate development in the LSP Area would be considered.

Infrastructure items that would be eligible to be funded under a DCP should be in accordance with State Planning Policy 3.6 Development Contributions for Infrastructure (SPP 3.6) and may include:

- Land for public open space and community facilities; and
- Landscape treatment for all public realm areas, including local roads.

Furthermore, detailed design of spaces throughout the precinct is encouraged through placemaking opportunities that emerge from community social investment.

11.2 WATER MANAGEMENT

Further to the recommendations of Section 7, in order to deliver wider environmental sustainability objectives, as well as providing attractive places in which residents and visitors can enjoy, consideration should be given to the conservation of water resources and quality of groundwater. The use of water efficiency measures is encouraged and should promote the investigation of best management practices for irrigation of public open space.

The availability and quality of groundwater within the LSP area is limited at this stage. This will affect the ability of the City of Belmont to irrigate the proposed vegetation within the public realm areas. Therefore, due to the limitation of groundwater for irrigation purposes, the future irrigation of vegetation within the POS and public realm areas will need to be supplied by other sources. This may include scheme water, stormwater, irrigation (by agreement) from the Western Australian Turf Club's (now operating as Perth Racing) artesian groundwater licence, a new irrigation lake or other irrigation strategies will need to be investigated in the future. The City may encourage developers to consider the irrigation of abutting verge vegetation and street trees to ensure the high quality natural amenity of the public realm is maintained. Alternatively, non-irrigated (dry) landscape may need to be considered for the public realm areas.

11.3 STAGING

It is not anticipated that the entire landscape masterplan be implemented at once. It is anticipated that the work will be undertaken in stages and progressively rolled out commensurately with the delivery of other key infrastructure, particularly the various road realignments and subdivision works that are required to create the environment for private redevelopment.

These works would create the framework enabling the public realm works to be implemented. Priority should be given to establishing the road network and lots that frame the POS spine and the primary focus should then be the implementation of this public infrastructure to set the stage for the precincts credentials as a high quality development opportunity.

Table 1 outlines the staging triggers proposed in the Golden Gateway LSP. The public realm delivery should work in parallel with this program.

Table 1 Golden Gateway LSP Indicative Staging Strategy

STAGING TRIGGERS	DEVELOPMENT AREAS	COMMENT
1. Planning Framework implementation - Scheme Rezoning, Structure Plan approval, Development Contribution Plan	• Kilns site and adjoining WATC Admin site • Great Eastern Highway land	No subdivision or development to be approved until the planning framework is in effect.
2. Realignment and upgrades of Grandstand Rd, Resolution Dve and Stoneham St. Create linear POS reserve.	• All land referred to in 3 and 4 below	This work is necessary to establish new road alignments and rationalise cadastral boundaries, prior to development of any land requiring access from those roads either directly or indirectly, or impacted by land assembly requirements.
3. Extension of Matheson Rd to connect to Resolution Dve.	• Land north of Resolution Dve	
4. Upgrades of Hargreaves, Daly and Grandstand Rd. Landscape works in linear POS.	• Land fronting the stated roads	Development may be permitted to occur prior to upgrades subject to contribution towards upgrade works in cash or kind (where appropriate).

A Landscape Management Plan will be prepared at each stage of the infrastructure works. Each Landscape Management Plan will address the landscape design, implementation and ongoing maintenance of landscape elements within the site, and should reflect the public realm principles contained in this Strategy.

Ordinary Council Meeting 28/08/18

Item 12.2 refers

Attachment 8

Planning Reform Green Paper

GOVERNMENT OF
WESTERN AUSTRALIA

Modernising Western Australia's Planning System

Green paper concepts for a strategically-led system

Discussion paper for planning reform

May 2018







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Contents

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Minister's Foreword

In late 2017, I commissioned an independent review of the planning system. The purpose of the review was to identify ways to make the system more efficient as well as making it more open and understandable to everyone.

The review process involved consultation with a broad range of stakeholders along with consideration of the merits and challenges of planning systems in other jurisdictions. The Green Paper summarises the review findings. It outlines the challenges in the planning system and proposes five key reform areas.

The Green Paper is an independent discussion paper and does not represent Government policy. I encourage you to provide your feedback on the ideas and proposals in the Green Paper.

Your feedback on the Green Paper will inform Government's response and the development of a White Paper that will set out the Government's reform agenda for a modern planning system to enable the State's continued prosperity and liveability.

Hon Rita Saffioti, MLA
Minister for Transport; Planning; Lands

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Abbreviations:

DAP	– Development Assessment Panel
DAP Regulations	– Planning and Development (Development Assessment Panel) Regulations 2011
DPLH	– Department of Planning, Lands and Heritage
LPS Regulations	– Planning and Development (Local Planning Schemes) Regulations 2015
MRA	– Metropolitan Redevelopment Authority
MRS	– Metropolitan Region Scheme
PD Regulations	– Planning and Development Regulations 2009
PD Act	– *Planning and Development Act 2005*
RAR	– Responsible Authority Report
R-Codes	– *State Planning Policy 3.1 - Residential Design Codes*
SAT	– State Administrative Tribunal
WAPC	– Western Australian Planning Commission

Have your say

The Green Paper is advertised for comment until 20th July 2018

Submissions and feedback are encouraged.

Visit www.planning.wa.gov.au/planningreform

Email planningreform@dplh.wa.gov.au

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1. Overview

The State Government is committed to creating a **strategic** and **streamlined** planning system that is more **open** and **understandable** to everyone.

The planning system has become complex and focusses heavily on process and not on the outcomes that users of the system are seeking to achieve. Planning efforts need to shift from development-led to a strategically-led system in which strategic planning is the centrepiece. As housing demand is turning inwards, the planning system also needs to establish a clear planning framework for intensified development.

The Green Paper proposes ways to modernise the planning system for Western Australia to make it fairer, more open and understandable, less complicated and able to reach effective decisions quicker. The Green Paper identifies four principles to underpin WA's planning system as listed below.

Reform Principles

Fairness The views and interests of all stakeholders are considered and balanced	**Transparency** Users are able to understand the planning system
Integrity The community is meaningfully involved in strategic planning	**Efficiency** The planning system is well organised to deliver timely outcomes

Five Key Reform Proposals

The Green Paper proposes five key reforms as listed below.

1. Strategically-led — *Make strategic planning the cornerstone of the planning system*

2. Legible — *Make the planning system easy to access and understand*

3. Transparent — *Open up the planning system and increase community engagement in planning*

4. Efficient — *Make the planning system well-organised and more efficient.*

5. Delivering smart growth — *Refocus the planning system to deliver quality urban infill*

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Key reform 1: A strategically-led system

Currently, the emphasis of the planning system is on the local planning scheme to carry State, regional and local strategies into effect as the "statutory" requirements of what can be developed.

The focus of the planning system at State and local levels should be on the development of policies and strategic plans at an early stage of the planning process to establish shared objectives and set in place a framework for future development. This will improve the timeliness of later development steps because more of the important and difficult decisions can be resolved prior to development and rezoning proposals.

To emphasise the importance of strategic planning, it is proposed to provide that **strategic planning is a purpose of the *Planning and Development Act 2005* (PD Act)** with a definition of strategic planning.

The sustainable use and development of land is a key purpose of the PD Act but its application is not explained. It is proposed to **define sustainability** in a State Planning Policy with steps on how to balance economic, social and environmental factors for land use planning.

A **Local Planning Strategy** is essential to establish the strategic framework for a local government, and show how State policies and regional strategies are to be implemented through Key Reform 2: A Legible Planning System.

Key reform 2: A legible planning system

The planning framework in Western Australia follows the pattern of:

- State Planning Strategy;
- State Planning Policies;
- Regional Frameworks;
- Regional and Sub-Regional Strategies;
- a Region Scheme for some regions; and
- a local planning strategy and a local planning scheme.

While this is a logical sequence as set in the State Planning Framework, it is not possible to trace a goal, aspiration or objective of a State policy or regional plan to the local planning scheme. The State Planning Policies have developed over many years and many policies are not in a form capable of direct implementation.

For State Planning Policies to lead the WA planning system, it is proposed that they be consolidated together into a **single, concise State Planning Framework,** with clear implementation steps for each stage of the planning process. It is also proposed to reorganise state planning policies into **common elements** that are used directly for regional plans and local planning strategies. These are two fundamental steps required to organise the WA planning system. A user will then have a line-of-sight and can trace the common elements through the hierarchy of planning instruments.

Local planning strategies and local planning policies currently sit outside local planning schemes and are often out-of-date, ambiguously drafted, inconsistent and hard to find.

It is proposed as a third fundamental step to organise the WA planning system that a "**Comprehensive Local Planning Scheme**" contain local planning strategies (statements), all legal provisions, maps and local planning policies and become a one-stop shop for local users of the planning system.

There is an excessive level of inconsistency across local planning schemes which creates confusion and unnecessary costs for business. It is proposed that a set of **standardised zones, land uses and land use permissibility** apply in Perth and major regional centres.

It is proposed that an interactive **on-line planning portal** be developed by the Department of Planning, Lands and Heritage (DPLH) for keeping comprehensive local planning schemes online in a legible and user-friendly format that can easily be kept up-to-date.

Key reform 3: Transparent planning system

Integrity in the planning process requires that the community has a say in making strategies and plans, and has an understanding of why plans and decisions are made.

Following NSW and South Australia, it is proposed that a **Community Engagement Charter** be developed to establish a duty for planning authorities to engage meaningfully with the community in making and amending strategic plans.

Standards for publishing planning decisions are needed for the community to have confidence in the functioning of the planning system. It is proposed that LPS Regulations require **reasons for decisions** to be provided on planning decisions and that a guide be prepared as to the scope of reasons.

A range of proposals are provided to assist with the **transparency and accountability of DAPs,** for example that there is a longer meeting with more time for deputations if a development application proposes substantial variation to a local planning scheme, and that plans are readvertised prior to reconsideration by the DAP if they are amended through the SAT mediation process.

It is proposed that local governments be required to systematically report on planning matters and performance to provide a basis for monitoring and improvement of the WA planning system.

Key reform 4: An efficient planning system

An efficient planning system is well organised with clear roles and responsibilities, delivering key functions in the least complex way.

The WAPC's scope has become too wide for a single board of management to undertake. It is proposed that the **WAPC membership** be revised to five to seven specialist members and the WAPC be granted the ability to establish and abolish its own committees as required.

The WAPC **should refocus its efforts** to prepare and implement regional strategic planning, effectively manage state planning policies, and collaborate with local government to prepare structure plans for key centres and urban corridors. To do so the WAPC needs to create capacity by extending its delegations. It is proposed that the DPLH should assume responsibility for advising the Minister on the operation of the planning system, and an accreditation system be implemented for local government to receive WAPC delegations, such as determination of basic subdivision proposals.

Proposals have been developed to resolve process issues and bottlenecks that have emerged in the planning system. Proposals include:

- assisting proponents with issues arising from agency **planning referrals**;
- allowing an **applicant to seek pre-lodgement advice;**
- requiring local government advice **within 10 business days** if **additional information** is required;
- **approved structure plans** to be read as part of a local planning scheme, with the "force and effect" of the scheme;
- a fast-track **30-day planning approval process for single house applications** that require only minor variations to the R-Codes.

Key reform 5: Planning for smart growth

To meet infill housing and employment targets, the planning system needs to be able to plan and deliver the **key urban infill** locations of activity centres, urban corridors and station precincts. It is proposed that the State Government develops **clear planning and delivery arrangements among the WAPC, MRA and local government** and sets priorities and a program for actions.

The essence of planning is the distribution of population and housing, and it is proposed that local planning strategies include **local housing strategies** (except for small regional local governments).

Urban infill is transforming selected inner and middle suburbs into higher density areas. Upgrading existing infrastructure in inner city areas to cater for planned infill is particularly complicated and expensive and requires special coordination and commitment.

It is proposed that:

1. The WAPC assist with **infrastructure coordination** for the **delivery of priority precincts** including activity centres, urban corridors and station precincts.
2. Local governments be given **timely advice** on the **forward planning of State infrastructure** to inform preparation of Local Planning Strategies and structure plans and improve the response of land use plans to infrastructure capacity constraints and plans.
3. **Local planning strategies include** a section on **infrastructure** and link priority infrastructure items to their 10-year capital expenditure plans.
4. The Metropolitan Region Scheme (MRS) be updated to **include "Urban Corridor"** as a category of roads based on *Perth and Peel @ 3.5million*.

There is still a need to accommodate at least half of Perth's development in new greenfields development. It is proposed that:

1. An "**Industrial Deferred Zone**" is included in the MRS to provide for the staged consideration of infrastructure for new industrial areas.
2. **Liveable Neighbourhoods** is elevated to a **State Planning Policy, maintained and refined** as a best-practice approach to new greenfield development at regional, district and local level.

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2. Need for reform

The Western Australia planning system has supported Perth's position as one of the world's top liveable cities, and helped create regional growth opportunities in balance with the environment.

The planning system involves a complex interweaving of community, business, and government regulatory relationships. Everyone – individuals, organisations and business - needs to be able to participate in planning to achieve the best possible outcomes for Western Australian communities.

Over the years the planning system has become more and more complex, increasingly legalistic and less responsive. Unnecessary regulation needs to be removed to reduce costs for businesses and new home purchasers.

Planning has also become very difficult for people to understand and participate in. The community needs to have faith that the planning system is being operated in a fair and transparent manner that properly balances the wide range of interests that make up our communities.

The Minister for Planning Hon Rita Saffioti MLA has established this review to ensure our planning system is efficient, transparent and collaborative.

The State needs a contemporary planning system that meets our future needs: supporting infill development with increasingly complex projects such as METRONET; strengthening our suburbs by increasing housing choice and boosting public transport; and, enhancing the quality of our built and natural environments.

1.0 Review scope

The terms of reference for this planning review are:

1. **Make strategic planning the cornerstone of all planning decisions** by shifting the emphasis of the planning system to strategic planning and land use policy so that important issues are resolved before development proposals and rezoning requests, which will improve the quality and timeliness of development assessment.
2. **Clarify State and local planning roles** by setting clear roles, responsibilities and functions of the WAPC and the DPLH in conjunction with State departments and agencies, and local government.
3. **Open up the planning system** so that it is understandable to the wider community, recognising the need for community participation.
4. **Create more certainty for industry** by clearly defining development assessment pathways.
5. Link **planning and infrastructure delivery** to strategic planning for growth.
6. Ensure that the planning system facilitates a **sustainable settlement pattern**, ensuring land use is fully integrated with transportation and infrastructure, giving priority to infill development and ensuring any new areas of growth are contiguous with existing communities.
7. Respond to community concerns about the **accountability and transparency of Development Assessment Panels** in the approvals process.
8. Examine how **the use of technology** can be used to improve the planning system.

This **Green Paper** has been prepared by a review team, led by Evan Jones in the capacity of an independent reviewer. It includes an explanation of key issues and sets out proposals for modernising the planning system which can be assessed against the fundamental planning principles of fairness, transparency, integrity and efficiency.

The Green Paper process is to allow stakeholders to consider the review team's identified issues, options and proposals and to provide the opportunity to suggest alternative solutions that address the issues raised.

The **Green Paper** is a discussion paper and it does not commit the State Government to the views expressed or to a particular direction for future action.

Submissions received on the **Green Paper** will be considered in the preparation of a **White Paper** in 2018 by the State Government that will set out its proposed reforms for planning.

1.1 Review process

FIGURE 1: PLANNING REVIEW AND REFORM PROCESS

1.2 Pre-review legislative proposals

This review coincides with proposed legislative changes to the PD Act and LPS Regulations in response to *Planning Makes it Happen Phase Two (2013)* which had been identified over several years and are understood to have broad support from local government and industry.

It is proposed to progress proposals that will reduce red tape together with amendments which arise from the proposals of this review. The proposals to amend the PD Act are set out in Part 4 Implementation.

2.0 Reasons to change

2.1 Achieving consistency

Historically, the arrangement of the WA planning system was fixed by the creation of a central authority, the Town Planning Board, in 1928 to control subdivision of new settlements and to prepare their town planning schemes, the first being for Augusta, Nyabing and Wiluna.

The first Model Scheme Text in 1976 and more recently, LPS Regulations, set model and deemed provisions for local planning schemes. However over time, local planning schemes and the ancillary documents which support them, such as local planning policies, have become more and more complex with significant variation between them.

There are 146 local planning schemes currently in operation (2018) totalling 13,091 pages with 1,065 'general' zones and 1,365 'Special Use' zones. Figure 2 shows the wide variation in the number of zones amongst metropolitan local governments with most having 10 zones and one local government having some 22 zones.

In only 20 schemes reviewed in preparation for this Green Paper, there were 278 different land uses identified and 80 of those (almost a third) are used only once.

In a review of local planning frameworks, it was difficult to locate all relevant documents, read them together, understand the relationship between them and interpret the content. Some local governments would refer to planning, building and engineering policies without making a distinction between them.

> "Planning is always remaking itself as it is embedded in and responds to a world that is always in the process of being remade[1]"

The variation in scheme zones and land uses cannot be explained by the need for differing provisions to respond to local character.

Most planners, let alone residents, are unable to maintain a working knowledge of any particular local planning framework or how local planning schemes work across various local authorities. These results in uncertainty, delays and increased costs, and a loss of community trust.

The planning system has become complex and focusses heavily on process and not on the outcomes that users of the system are seeking to achieve. The Green Paper proposes to shift to a more streamlined planning system that facilitates development when it is in accordance with a strategic plan.

[1] Perry, David C. (2003). "Making Space: Planning as a Mode of Thought". *Readings in Planning Theory, Edition 2, Campbell S. and Fainstein, S. Editors* 142-162 at 151

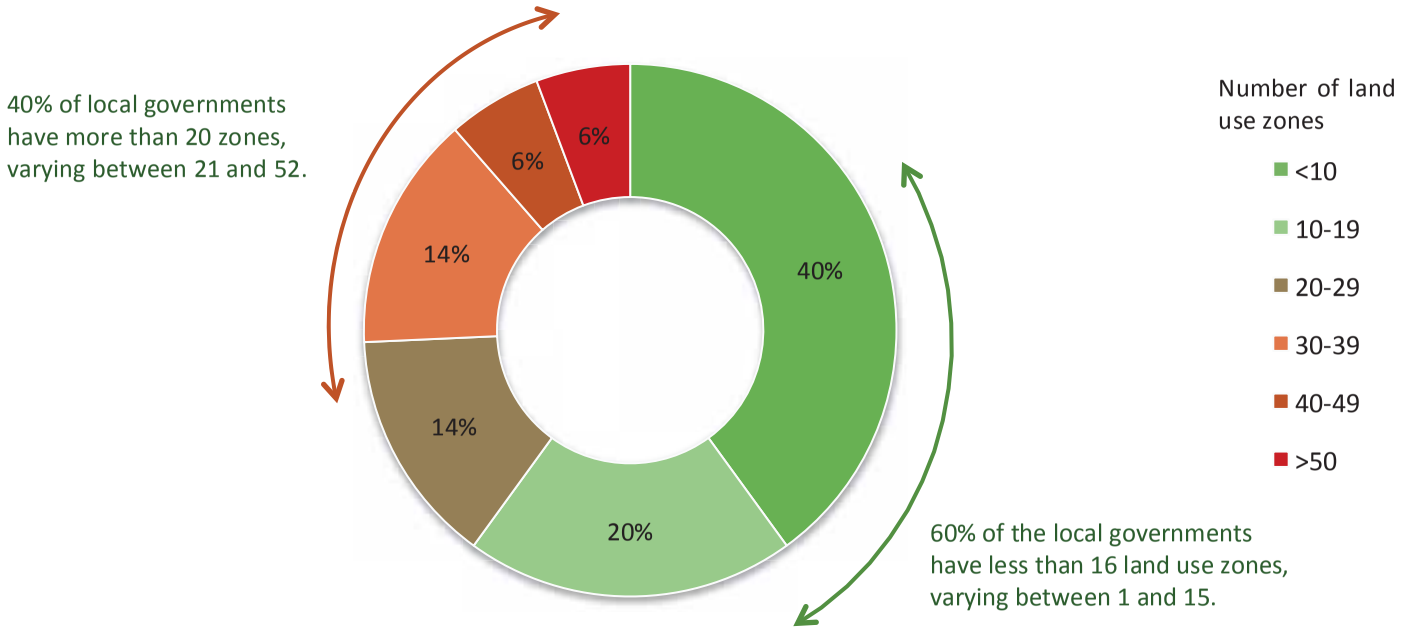

FIGURE 2: NUMBER OF ZONES IN METROPOLITAN LOCAL PLANNING SCHEMES

2.2 Moving to a strategic planning focus

The current operation of the planning system emphasises the local planning scheme as the focus of planning efforts with only weak links to strategic planning.

Regulation 11 of LPS Regulations provides that a local planning strategy must be developed for each local planning scheme, and include:

- long-term planning directions for the local government; and
- the rationale for any zoning or classification of land under the local planning scheme.

An audit of local planning strategies for the Green Paper indicated that the approach to local planning strategies has been highly inconsistent. Many are in draft form, some are published on a council website and others are published on the DLPH website; some councils have multiple strategies while others do not have a local planning strategy.

The Uniform Legislation and Statutes Review Committee in its 2015 Review of Development Assessment Panels found (p30):

> *Finding 1: The Committee finds that the out-dated nature of some local planning schemes; their inconsistency with state planning policies and strategic planning frameworks and the inconsistencies of local planning requirements across local governments have contributed to the types of determinations being made by development assessment panels.*

Without a clear message in a plan for a desired outcome, consideration of planning proposals for use or development has become focussed on consideration of the negative impacts, not what the proposals collectively aim to achieve[2].

Individual projects need to be placed in a broader strategic framework of planned urban and regional development.

The Productivity Commission reported that Australian State planning system reform efforts should be directed at focusing on the earlier stages of planning when strategic land use policy and its associated plans are put in place[3]. The Commission found that this is likely to improve the timeliness of development assessments because more of the important and difficult decisions have already been resolved prior to a development proposal or request for rezoning (Figure 3).

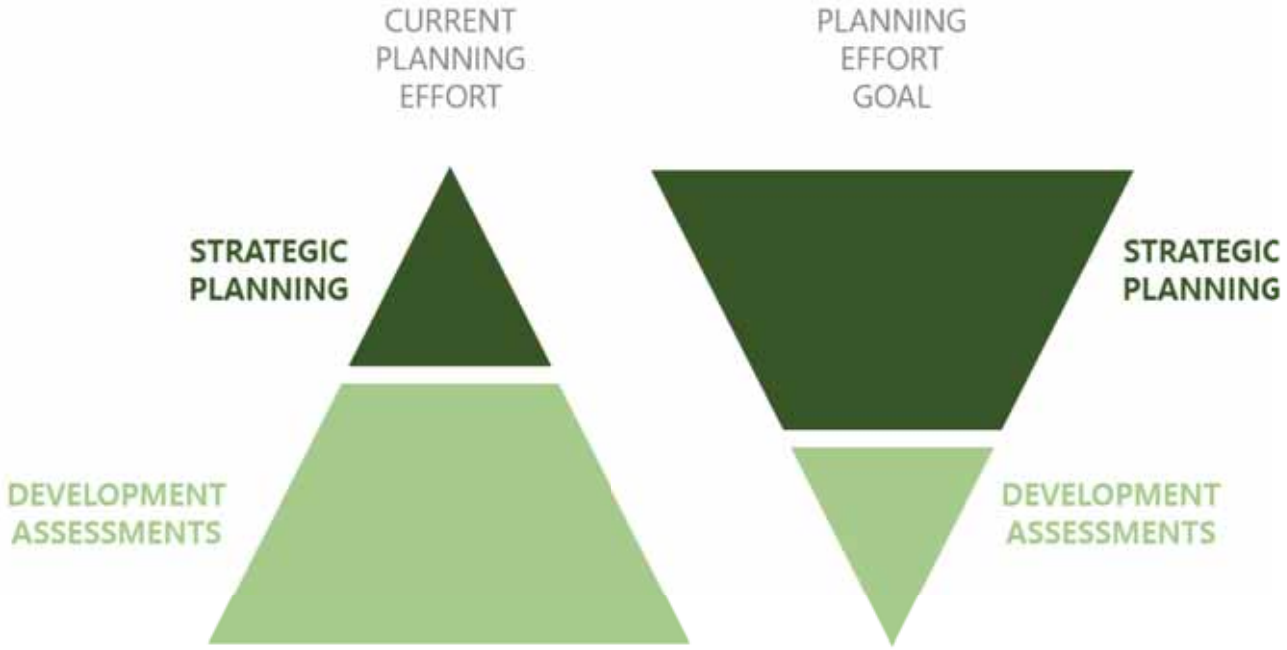

FIGURE 3: CHANGING THE FOCUS OF PLANNING EFFORTS - SOURCE: PRODUCTIVITY COMMISSION

[2] White, Gary. Government Planner, Queensland in presentation "Planning Culture" April 2012.

[3] Productivity Commission's Performance Benchmarking of Australian Business Regulation: Role of Local Authority as Regulator, July 2012

Figure 3 illustrates the current emphasis on development control under a local planning scheme instead of strategic planning being the main driver of planning decisions.

The modern idea of strategic planning is that it is an evidence-based examination of the character of the area to be planned, an analysis of the future increase in population, a collaboration with the community to identify their goals and aspirations for the future, and then a conclusion of the way in which land should be used to further the goals and aspirations.

The emphasis of modern town planning is on the strategic plan as it carries the aspirations of the community. The legal controls over the uses to which land can be put – the "planning scheme"- follows the strategic plan and implements that plan on the ground.

The strategic planning process provides an opportunity for the early involvement of the community to be part of their future. Landowners with the aid of that plan can better understand the background behind their land use options in a planning scheme.

A strategically-led system allows for a line of sight to be established through the various State and local strategies to understand how they work together and, most importantly, it will enhance the quality of decision-making.

A reversal of this emphasis is long overdue. Many of the proposals put forward in this Green Paper flow from giving precedence to strategic planning.

2.3 Clarify state and local planning roles

There are several different planning authorities in Western Australia, such as the WAPC, the Metropolitan Redevelopment Authority, and local government, as well as various agencies whose decisions impact on planning outcomes. It is not always clear how to navigate through the different levels of government or which is responsible for ultimate planning outcomes.

The State Government is undertaking reform of the public sector through structural changes aimed at creating collaborative departments focused on whole-of-government objectives and delivering services in a more efficient and effective way.

It is appropriate in this context for the Green Paper to examine land use planning roles of State and local government to ensure an efficient and effective planning system.

2.4 Adapting the planning system for urban infill

Western Australia is the most centralised planning system of all Australian States and Territories[4]. The State (through the WAPC) controls development for Perth and can call in major development within the Peel and Bunbury regions. It approves local structure plans for new development areas, and all subdivision.

The theory and concepts relating to urban planning have undergone major changes in the 90 years since the members of the Town Planning Association drew up the Town Planning and Development Bill in 1927.

It is essential and a key purpose of this review that the planning system now aligns with modern planning practices most particularly with an emphasis on a strategically-led system through "strategic planning".

Since its inception, the primary purpose of the planning system has been to efficiently shape outwards suburban growth and ensure a continuous land supply pipeline for new fringe housing.

There is an agreed need in Perth and the major regional centres for a more consolidated urban form by accommodating a significant proportion of growth in existing suburbs. Urban infill development is designed to make efficient use of existing areas through close access to existing urban infrastructure, land and buildings, thereby reducing costs and having better access to existing facilities and jobs.

As housing demand is turning inwards, the planning system needs to adapt from its orientation to fringe growth in order to establish a clear planning and regulatory framework that can provide the certainty over the location, types and quality of intensified development sought by developers, the community and local governments[5].

The changes also require a revision of State and local planning roles by setting clear roles, responsibilities and functions of the WAPC and the DLPH, in conjunction with related State departments and agencies and local authorities.

[4] Williams, Peter (2012). "Statutory Planning". Planning Australia. *An Overview of Urban and Regional Planning, Edition 2, Thompson S. and Maginn, P. Editors* 98-123 at 112.

[5] Buxton, Michael, Goodman, Robin and Moloney, Susie (2016). "Planning Melbourne. Lessons for a Sustainable City". CSIRO Publishing. Page 83.

3. Planning reform proposals

Reform principles

The purpose of land use planning by the public sector is to promote and protect the collective interests of the community through the planning, development and management of cities, towns and regions across the State.

Four key principles of **fairness**, **transparency**, **integrity**, and **efficiency** are set out in this Green Paper as the foundation premises for a capable and modernised planning system for Western Australia. The principles represent fundamental expectations of the way that planning as a governmental administrative system should be conducted.

The principles are used in this **Green Paper** as criteria against which proposals for reform can be analysed and assessed. Planning systems should not be static and they should be continually improved to maintain an effective system. New proposals should also be assessed against these principles to ensure that each proposal serves the greater community good. Application of the principles will increase the level of fairness, make the system more transparent to users, ensure that decisions have integrity, and that good practice is applied to allow the system to operate more effectively.

Reform principles

Fairness ensures that the rights and expectations of all residents will be considered and balanced when planning for growth and change.

In the planning context, the principle of fairness is contained in a "strategic plan," which sets out proposals as to the appropriate, balanced, future direction for a local or regional area. Strategic planning is therefore the backbone of planning as it is the place that all community and government expectations are formulated and explained.

Fairness is created in strategic planning where the community is involved in the making of the plan and where it is explained what plans have been made and why.

Transparency expects that users (residents, developers, and councillors) are able to understand how the planning system operates, have certainty about land use requirements and know why planning decisions are made.

Planning proposals and requirements derive their usefulness only if they are understood by the community.[6] The more the planning system is transparent and is able to be understood by the community, the greater is the chance of its acceptance and the promotion of better community and government relations. While all planning systems will have some complexity, it should be explained in a manner that minimises confusion.

Integrity in planning requires that that the community has a say in the making of strategies and plans, and understands therefore why decisions are made.

Integrity also expects that planning decisions as to the allocation of land uses, rezonings, and planning approvals be fully explained, justified, made available to the public, and be free of any impropriety. Research has shown that there will be respect for a decision if the decision makers are perceived as competent, honest, open, fair, reliable, reciprocating, respectful and committed.[7]

Efficiency ensures that the planning system is well organised and competently managed to deliver key activities in the least complex way through well-defined and adaptable processes with the right resources and defined outcome measures.

Efficiency arises as a consideration because as the planning system evolves to deal with change and complexity, the operation of the system inevitably develops administrative bottlenecks and practices become ingrained that are no longer relevant. The purpose of this planning review is to find key ways around these barriers informed by national and international best practice.

[6] Weston, J. & Weston, M. (2016). "Inclusion and transparency in planning decision-making: Planning officer reports to the planning committee". *Planning, Practice and Research, 28(2)*: 186-203.

[7] Hoppner, C. (2009). "Trust – A monolithic panacea in land use planning?" *Land Use Policy 26(4):* 1046-1054.

Key reform 1: A strategically-led system

Fairness principle realised through strategic planning

The principle of fairness for land use planning is that a strategic plan for a region or local government area will consider and balance the rights and expectations of all residents when planning for growth and change.

Indicating where increased density must go, preserving the character and amenity of neighbourhoods and distributing open space are examples of planning decisions made to balance the entitlements of residents and needs of the community. Planning accomplishes this through **strategic planning**, a process that is an evidence-based analysis of the nature of the area to be planned, its future needs, and the goals and aspirations that a community collectively seeks to accomplish.

A "strategic plan" sets out considerations as to the **appropriate, balanced, future direction for a local or regional area**. Strategic planning is therefore the backbone of planning as it is the place in which all community and government expectations are formulated and explained.

Fairness is therefore found in strategic planning when the proposals of a plan are explained along with reasons for the proposals.

1.1 Prominence of strategic planning

There have been many strategic plans in Western Australia; most importantly, the *Stephenson-Hepburn* 1955 *Plan for the Metropolitan Region: Perth and Fremantle* and the 1970 *The Corridor Plan for Perth.* The WAPC has a long standing record of making planning strategies, such as the State Planning Strategy 2050 as well as Regional and Sub-Regional Strategies.

The PD Act identifies the preparation and review of planning strategies and planning policies for the State as express functions of the WAPC[8]. The Act provides that these documents are a basis for "coordinating and promoting land use planning, transport planning and land development", but does not provide further detail of what the strategies and policies should contain.

The PD Act is deficient in its treatment of strategic plans and does not clearly articulate the relationship between plans, policies and schemes, except that a local planning scheme must apply any State Planning Policy that is relevant to the scheme and be consistent with a region planning scheme (if applicable).

The PD Act provides only that a "planning scheme" means a local or region planning scheme and the powers to prepare these schemes are given to local government and the WAPC. These are the statutory controls that implement strategic planning, however nothing is mentioned about the role of a strategic plan, its contents and the relationship of that strategy to the scheme.

[8] *Planning and Development Act 2005* (WA) s14(b)

In practice strategic plans follow the pattern of:

- State Planning Strategy;
- State Planning Policies;
- Regional Frameworks;
- Region and Sub-Regional Strategies;
- a Region Scheme for some regions; and
- a local planning strategy and a local planning scheme.

This is a very long string of documents that should be followed sequentially and consistently. However this rarely happens in practice due to the time and resources required to prepare these documents. Consequently, the centre of planning is occupied by the statutory region and local planning schemes with little connectivity to the strategic plans or policies that should have informed the local or regional planning scheme in the first place.

The emphasis of the system is on the local planning scheme to carry State, regional and local strategies into effect as the "statutory" requirements of what can be developed. However, a gap has widened between State policies, regional plans and local planning schemes, leading to a proposal-driven system, rather than strategically-led.

The importance of strategic planning is not made explicit and emphasised properly in Western Australia. It exists but, as it is the key to proper planning, it should be elevated to become the core of planning activity and not remain a concept in regulations and guidelines. Accordingly, if it is accepted that strategic planning is the essence of good planning in Western Australia, then it should be made the centrepiece of the PD Act.

There are many instances of the inclusion of the nature of a strategic plan in legislation. The British Columbia *Local Government Act,* provides (section 471(1)) "An official community plan (strategic plan) is a statement of objectives and policies to guide decisions on planning and land use management, within the area covered by the plan, respecting the purposes of local authorities." The Act then provides (section 478(2)) that once a strategic plan is effective, all actions by the council "must be consistent with the relevant plan." As the activities including the legal controls must be consistent, it is recognition that the strategic plan is prior in time to the legal control.

Review proposals:

1.1.1 Provide in the PD Act that strategic planning is a purpose of the Act and provide a definition of strategic planning.

FIGURE 2: HIERARCHY OF PLANNING ELEMENTS

A. Strategically-led LPS reviews

The LPS Regulations require a review of a local planning scheme every five years in which a local government looks at its local planning scheme and concludes if the scheme:

1. is satisfactory in its existing form; or
2. should be amended; or
3. should be repealed and a new scheme prepared in its place.

The local government is also to determine whether the local planning strategy for the scheme:

1. is satisfactory in its existing form; or
2. should be reviewed; or
3. should be repealed and a new strategy prepared in its place.

In a strategically-led approach, the starting point should be the review of a local planning strategy, and not the local planning scheme. This will, for example, indicate if the local government is delivering sufficient housing to meet a regional target.

The Local Planning Manual 2010 indicates that a local planning strategy should provide strategic direction for land use planning and development over the ensuing 10 years or longer as the basis for the local planning scheme.

The LPS Regulations timeframe of five years is appropriate for a local planning strategy as new State Planning Policies and strategies may need to be responded to, along with any local matters.

Review proposals:

1.1.2 Provide in the LPS Regulations that the review of a local planning scheme must be informed by, and respond to, a review of the local planning strategy.

B. Strategic basis for complex amendments

Regulation 11 of the LPS Regulations requires that a local planning strategy is required to be prepared for each local planning scheme. This establishes a connection between the strategic intent and the statutory scheme requirements.

"Complex Amendments" to a local planning scheme are categorised as not being consistent with a local planning strategy; the amendment proposal will either not have been contemplated or will necessitate a significant change to a local planning strategy. However, there is currently no requirement to examine the effect of a proposed complex amendment on a local planning strategy, notwithstanding there is a clear intention to institute a significant change.

Review proposals:

1.1.3 Provide in the LPS Regulations that a complex scheme amendment must be accompanied by a proposed amendment to the Local Planning Strategy (in the form of a report).

1.2 Need to explain sustainability for land use planning

The PD Act s. 3 (1) includes as a key purpose to "(c) promote the sustainable use and development of land in the State".

The importance of sustainability is further reinforced throughout the Act. The WAPC is to advise the Minister on "*the coordination and promotion of land use, transport planning and land development in the State in a sustainable manner*" and to keep the State Planning Strategy and planning policies under review for this purpose (PD Act s. 14).

The Act also provides that a planning scheme can deal with "*Any other matter necessary or incidental to the sustainable development or use of land* (PD Act Sched. 7 Cl. 15(1)."

The term also appears throughout the State Planning Framework, including State Planning Policy and supporting documents.

While it is therefore clear that sustainability is intended to be a core consideration in the planning system, there is no clear definition for either "sustainable" or "sustainable use and development" in the Act, or in other key documents within the planning framework, including the State Planning Strategy and State Planning Policies. Nor is there guidance as to how sustainability can be utilised as a concept in planning decision-making.

This was acknowledged by the State Administrative Tribunal in *Moore River Company Pty Ltd v Western Australian Planning Commission* [2007] WASAT 98, where it was stated [98] "The experts agreed that the principles of sustainability have yet to find expression in their full statutory form."

The term "sustainability" is widely accepted as describing the balancing of the diverse interests of economic growth, environmental protection, and social benefit in urban planning.

The exact principles to be applied and the manner in which they are to be implemented have not yet been made clear in the Act, in the State Planning Strategy or in a State Planning Policy with the State approach to sustainability still being led by the State Sustainability Strategy of 2003.

Importantly, in the context of planning, sustainability should not be guided solely by environmental needs. The planning system equally needs to ensure that economic and social needs of the current and future society are met through the pattern and nature of development which occurs.

To be useful, the concept of sustainability as a set of principles requires a wider meaning than just the balancing of economic growth, environmental protection, and social inclusion. A good example of this wider definition can be found in the Northern Ireland *Sustainable Development Implementation Plan 2011-2014:*

> *Sustainable development aims to bring viability, stability and opportunity to all of our social, economic and environmental activities and programmes. It does not aim to stop us from growing our economy. It does not seek to obstruct our attempts to improve our society and communities. It does not prevent us from using and capitalising on our natural resources. Rather its goal is to put in place economic, social and environmental measures to ensure that we can continue to do all of these things effectively in the years to come.*

In the now replaced UK *Planning Policy 1 – Delivering Sustainable Development,* it was provided (para. 24) that:

> *Planning authorities should demonstrate how their plans are integrating various elements of sustainable development and should seek to achieve outcomes which enable social, environmental and economic objectives to be achieved together. Considering sustainable development in an integrated manner when preparing development plans, and ensuring that policies in plans reflect this integrated approach, are the key factors in delivering sustainable development through the planning system. Planning decisions should be taken in accordance with the development plan unless other material considerations indicate otherwise. Planning decisions taken in accordance with the plan are therefore key to the delivery of sustainable development.*

Including "sustainability" as a specific planning element in a State Planning Policy will turn the attention of all planning authorities to this central element of the PD Act. Inclusion of the definition in a State Planning Policy rather than the PD Act will provide for flexible guidance, with the concept being able to be expanded over time.

Review proposals:

1.2.1 An overarching State Planning Policy be developed which:

i. Provides a definition of sustainability for the planning system which reflects a balancing of economic development, environmental considerations, and social needs;

ii. Reinforces sustainability as an essential element required to be taken into account in the making of any strategy or policy; and

iii. Indicates the particular steps related to how economic, social and environmental factors are balanced.

FIGURE5: BALANCED DECISION MAKING

1.3 Housing distribution

There is a need for greater housing density as the population increases in Western Australia. Areas that were previously low density or single-family housing may need to absorb medium or high density apartments and there is a very fine balance to be reached as to which areas to preserve and which to develop. This universal issue raises claims of unfairness by those seemingly disadvantaged and is a prime focus for controversy. Consequently, this issue should be given a higher priority than is currently the case.

The essence of planning is the distribution of population across a region and the need for areas to be developed for new housing or further infill. It is based on the idea that every local government accepts a fair share of housing types for different ages, incomes, family composition and increased density to support population growth. The decisions as to additional housing requirements for increased population for each area are carried out in Western Australia by the WAPC exercising its strategic planning function. To be implemented, it requires each local government to find the means to accept and accommodate the additional housing that has been ascribed to their area.

As an example, the WAPC's *Perth and Peel @ 3.5million* plan allocates additional dwellings to local governments for infill housing without explanation as to how the quantity was derived. No methodology is provided to the local government as to how to carry out an analysis of where additional housing ought to be located or how to balance the need for additional housing with protecting existing character.

Although this deficiency may appear to be a technical issue, its importance is in the context of upholding the principle of fairness for local residents. Strategic planning may show an area requiring higher density dwellings, changing the character of the area, and another may be left alone as a single family residential area. How a local government is to make these choices is among the most important of all planning issues but has been given little attention in Western Australia.

A local government, to understand where to accommodate increased density requirements and different dwelling types, must carefully analyse the current and future housing situation. In order to make an informed decision, it needs to analyse a range of factors such as an appropriate mix of tenure types (ownership, rental), the demand for each type, the median house and rental prices, the take-up rate by tenure type, the breakdown of the population by age and income, and then project this forward in terms of population growth.

Good practice internationally is to undertake a periodic analysis of housing needs as an essential local government duty. For example, the San Diego *Regional Housing Needs Assessment* (Policy No. 033) requires every local government to analyse how to accommodate regional growth forecasts by calculating housing needs based on demographic, housing and market factors, plus specific community needs based on hardship, vacancy rates and household size. The recognised period is to prepare the strategy every five years for a 10-year period.

Some of the larger local governments in WA have in the past prepared local housing strategies, such as the City of Wanneroo in 2005. These strategies are crucial to strategic planning and must be elevated in importance and prepared with instructions from the DPLH and, most importantly, with cooperation of DPLH and WAPC.

There is a range of local government sizes in Perth and there are formal and informal cooperative arrangements in place between local governments through which groupings of councils could undertake a joint Local Housing Strategy for particular areas.

Review proposals:

1.3.1 Provide that every local planning strategy include a local housing strategy, except for low growth and small regional local governments which only require basic local planning scheme requirements.

1.3.2 The DPLH to provide guidance for local government in the Local Planning Manual on how to prepare a Local Housing Strategy, including a methodology for local housing analysis.

Key reform 2: A legible planning system

Planning systems around the world take a similar form to Western Australia:

1. A **State strategic plan** that sets out the planning goals for the State.
2. Next are **policies** that indicate the State Government's overarching ideas of planning to be imposed on all local authorities.
3. **Regional strategies** create a framework for future development carried through **region schemes**.
4. Local authorities then have a **local planning strategy** conforming to the State policies and regional strategies.
5. There is the **planning scheme**, the legal requirements for implementation of the strategic plan at the local level.
6. Finally **local polices** that provide guidance on the content of the planning scheme.

A user of the planning system should be able to look at the goals in the local government strategic plan, understand the policies that shape those goals and see how that impacts their property through the planning scheme.

2.1 Key issues

The key issues that stand in the way of a legible planning system in Western Australia are:

- *Line-of-sight* failure of strategies and plans: planning strategies at the State and regional level express different aspirations and goals than local government strategies and plans. It makes it challenging to follow through one particular idea from one level to the next.
- *Complexity* of the planning process: the natural consequence of the complexity of understanding a strategic plan, policies, a planning scheme and land use decisions made under that scheme is that there are many government and consultant reports, policies, maps, final plans, draft plans, and reports and amendments in progress. It is very difficult for the community to understand how the documents, policies, and controls work together.
- *Confusion* as to the relationship of the legal instrument to the strategic plan: the historic development of planning in Western Australia has been with an emphasis on the legal controls contained within the local planning scheme, which is divorced from the strategic plan that led to the scheme. It is thus difficult to understand how a regional strategic plan and a local strategic plan have resulted in the controls in the Planning Scheme and why particular choices for zoning or permissible land uses have been made.

2.2 Streamlining state planning policies

State Planning Policy 1 – State Planning Framework categorises State Planning Policies, regional and sub-regional strategies and other policies and guidance, but it is still difficult for a user of the planning system to understand how the local planning strategy has been influenced by State regional and sub-regional strategies and policies. This is because the policies are inconsistent in form and many are not written in a manner that is directly capable of being implemented.

State Planning Policies have been developed over many years for a wide range of purposes and the overall policy suite has expanded significantly in length. There is little consistency of form. Many policies are lengthy and written in complex language and often are not directly capable of implementation.

Policies and strategies often overlap with no clear guidance as to how different policy strands are intended to be meshed. This gives rise to uncertainty for the translation of State Planning Policies into local planning strategies and local planning schemes and in decision making for all stakeholders and the community.

Good practice is for policies to be presented in a simple and consolidated form, written clearly "in plain English" without losing policy essence or clarity. Examples of reducing broad suites of state-level planning policies are the United Kingdom National Planning Framework, which is less than 100 pages, and Planning Policy Wales at around 200 pages.

The approach for Western Australia should be to craft a consolidated policy suite that sets the right balance between brevity and clarity[9], aiming at 100-150 pages.

The purpose of a consolidated policy suite is to set out policy in a clear and legible manner. There is a place for supplementary technical advice and guidance to local government to ensure the effective implementation of the state planning policies. Current guidance documents should be reviewed to ensure that they explain the meaning of State Planning Policies and are operationally and technically useful for local government and other stakeholders.

Rationalisation of policies should exclude those such as the R-Codes, which are included by reference into local planning schemes or are operational policies which guide subdivision and development.

Revision of State Planning Policies will require a priority effort including finalising outstanding draft policies in this new form. Most content is already available and requires reorganisation in a logical and standardised format.

Review proposals:

2.2.1 State Planning Policies be consolidated into a single state planning policy framework with supplementary technical guidance.

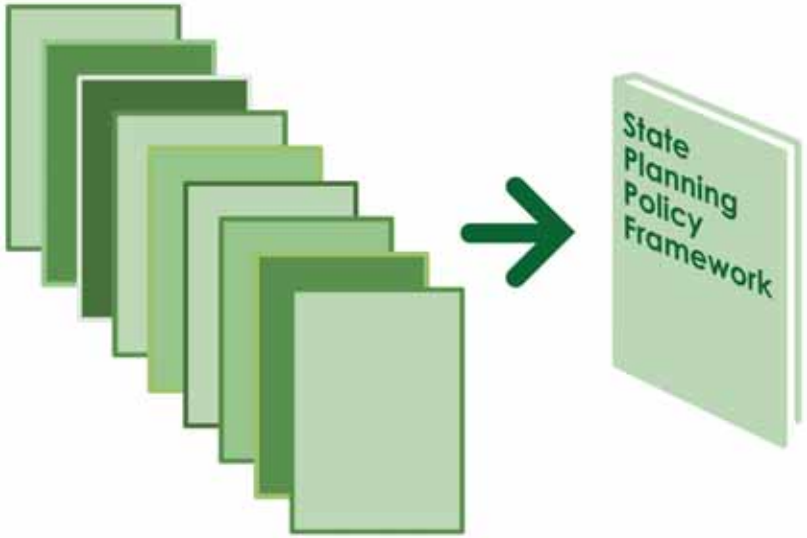

FIGURE 6: A SINGLE STATE POLICY FRAMEWORK

[9] House of Commons, Communities and Local Government Committee. The National Planning Framework 21 December 2011 (p.12)

2.3 Line-of-sight

There is no "line-of-sight" between the levels of strategic planning documents and statutory documents which implement them on the ground. It is not possible to trace a goal, aspiration or objective of the wider strategic plan to a local government plan. This reduces the importance of State Planning Policies as the strategies are not understood at the regional and local level where they are implemented.

Good practice for creating a line-of-sight from a local planning strategy to State strategic planning is to:

- require that State Planning Policies be organised into common planning elements that are also used for strategic planning; and
- require that every local government, in their local planning strategy and local policy documents, reflects the common planning elements that make up the State strategic planning framework.

The California *General Plan Guidelines* are mandated by legislation and require that every strategic plan be organised into separate elements, which are required for every city and metropolitan plan. They include such elements as density, education, flooding, health, housing, land use, public holdings and recreation, and an explanation of each element is provided. It is only when these elements are not suited to a particular community can they be excluded.

The advantage of this system is it organises State Planning Policies in topics that are directly useable for regional and local strategies, which then allows every State Planning Policy and regional strategy to follow a common format. Organising policies and strategies in this form enables a user to trace the common elements through the hierarchy of strategic planning instruments.

State Planning Policies need to be consolidated and reorganised into common elements in order to provide clear arrangements for planning efforts across the planning system (refer Figure 7).

FIGURE 7: PROPOSED COMMON PLANNING ELEMENTS

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Review proposals:

*2.3.1 WAPC to establish common strategic "elements" for the State Planning Framework including but **not limited to**:*

- *a "sustainability" element;*
- *a "land use element" that includes the distribution of uses of land as well as density;*
- *a "housing element" that includes the types of housing;*
- *an "environmental element";*
- *an "open space element";*
- *an "urban form and design element"; and*
- *an infrastructure element.*

and prepare Technical Guidance for the details of each element to be included;

2.3.2 Provide that every State Planning Policy, regional or sub-regional plan and the local planning strategy must follow these elements, unless otherwise agreed to by the WAPC.

2.3.3 Provide that every local planning strategy must explain how it has addressed the requirements of each common strategic element against the requirements of State Strategy, Planning Policy or regional or sub-regional strategy.

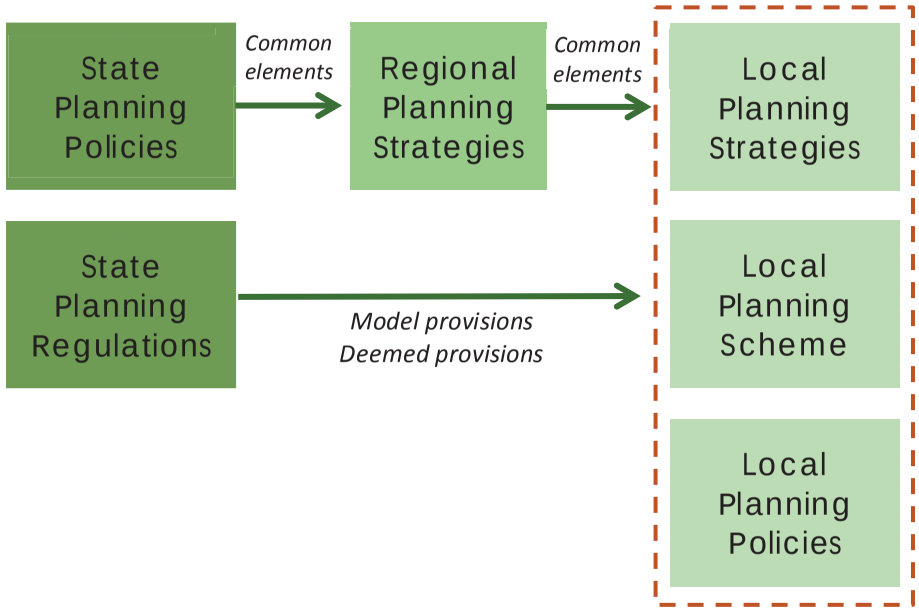

FIGURE 8: RELATIONSHIP BETWEEN STATE PLANNING DOCUMENTS AND LOCAL PLANNING SCHEME

A related issue is that the PD Act is ambiguous regarding the extent to which all public authorities (such as the MRA) are subject to State Planning Policies, or whether they apply only to local governments.

Review proposals:

2.3.4 Provide in the PD Act that all planning decision makers are to have due regard to State Planning Policies.

2.3.5 Provide in the Metropolitan Redevelopment Authority Act 2011 that in performing functions under the Act, the MRA must have regard to State Planning Policies.

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2.4 Planning process complexity

Local planning strategies and local planning policies sit outside local planning schemes and there is only a weak interlinking between these documents that are vital to explain the rationale for local planning scheme zones, land use permissions and development requirements.

It is a particularly difficult task for a user of the planning system to determine how the local planning framework may affect their property or proposal. It involves locating a number of documents (assuming the user knows what they are looking for), reading those documents together, understanding the relationship and precedence between the documents and interpreting the content into plain English.

Good Practice to enable efficient navigation and use of local planning requirements is to present the local planning framework as a coordinated framework including the strategic plan, planning scheme and policies so they can be understood as interlinked.

- There should only be *one* document that a user of the planning system needs to examine that contains local strategies, legal provisions, maps and policies.
- The legal controls that are needed to implement the strategic plan and to guide development should be in the one document. Those controls must be consistent with the strategic plan so that it is then clear to the reader why land use choices have been made.
- The single document should contain the relevant parts of all other documents that it advances as necessary to explain what is planned for the area and not require the reading of those external documents.

In addition, the documents often suffer from ambiguously drafted provisions, conflicting requirements and differing formats that make it difficult for a user to understand and translate what it means for them on the ground.

A review of local planning policies for the Green Paper had difficulty in locating the policies of many local governments, other local governments had hundreds of pages of policies, and some local planning policies were merged with building and engineering policies.

Officers from one local government advised the review team that they were not sure of the total number of their local planning policies (and structure plans). Others had their local plans and policies spread out over multiple documents, with some only available in hard copy.

Case study 1: Local process complexity

"A new mixed commercial and residential development in the Mixed Use Commercial Zone will have to consider this new policy plus up to 15 (yes 15!) other local planning policies. If it was a heritage site, add another 5 local planning policies.

This is as well as the new overarching local planning strategy and existing local planning strategies for Activity Centres & Neighbourhoods, and for Integrated Transport. These are all separate to the Scheme, or Local Area or Structure Plans, and independent of State Policy such as R-Codes, Design SPP etc. This collection of local policy and strategy add up to in order of 730 pages!!

730 pages that don't really help you know if your DA has any chance of success. 730 pages that do very little to guide and facilitate desired or good quality outcomes".

Email to the Review Team 13/02/18

This is the arrangement with the *Victorian Planning Provisions*. The concept behind this system is that the user can find all of the strategic plans, policies, and planning controls that apply to their land in one place. There is no need to trace through the various documents that led to the planning scheme or the various A Local Planning Strategy which sets out the long-term directions for land use and development in the local government area and provides a rationale for the zones and particular provisions of a local planning scheme.

- Local planning policies to guide decision-making in relation to specific discretion included in a zone or scheme provision.

This arrangement applied to Western Australia would see Part 1 of the Local Planning Strategy – the strategic statement - and all local planning policies being included into a "Comprehensive Local Planning Scheme" so that all relevant strategic and policy guidance is contained in one place with the statutory scheme provisions (refer Figure 9).

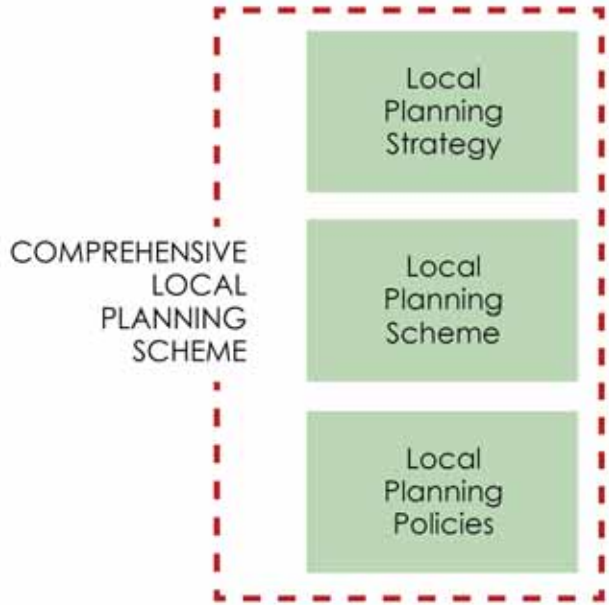

FIGURE 9: PROPOSED COMPREHENSIVE LOCAL PLANNING SCHEME

A Comprehensive Local Planning Scheme could have tailored steps for each component as follows in Figure 10.

COMPREHENSIVE LOCAL PLANNING SCHEME	Weight	Amendment / approval Process
Local planning strategy	Decision makers shall take into consideration the intent of the Local Planning Strategy	1. Initiated and prepared by the Local Government 2. Reviewed by DPLH for correct format and consistency with State strategic framework 3. Endorsed by WAPC 4. Approved by Minister
Local planning scheme	Retain the "force and effect" of the Act.	As per existing scheme adoption/ amendment processes
Local planning policies	Decision makers shall take into consideration Local Planning Policies	1. Initiated and prepared by the Local Government 2. Reviewed by DPLH for correct format and consistency with State Planning Policies 3. Endorsed by WAPC 4. Approved by Minister

FIGURE 10: PROPOSED COMPREHENSIVE PLANNING SCHEME COMPONENTS AND APPROVAL PROCES

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This proposal is a significant change for the Western Australian planning system and the way a local planning framework is presented. A Comprehensive Local Planning Scheme is advocated as the most direct method for improving transparency and legibility in the local planning framework. Without intervention, the planning system at the local level will likely follow the current pattern and continue with a high degree of disorder and illegibility for users.

To proceed, the Comprehensive Local Planning Scheme approach would require substantial initial resources from both State and local government, and it is suggested that the WAPC provide resources to assist in the establishment of this proposal.

The approach would also require additional processing at State level as it introduces the need for local planning policies to be subject to State-level scrutiny to ensure content does not conflict with State Planning Policies and use of a consistent format. This should be undertaken by the DPLH and approved by the Minister for Planning.

Review proposals:

2.4.1 Require that a local planning scheme be published with the inclusion of the local planning strategy (in the form of a local strategic statement) and local planning policies in a document to be called a "Comprehensive Local Planning Scheme".

2.4.2 DPLH to provide guidance for local government in the Local Planning Manual on the content and format of a local planning strategy and local planning policies.

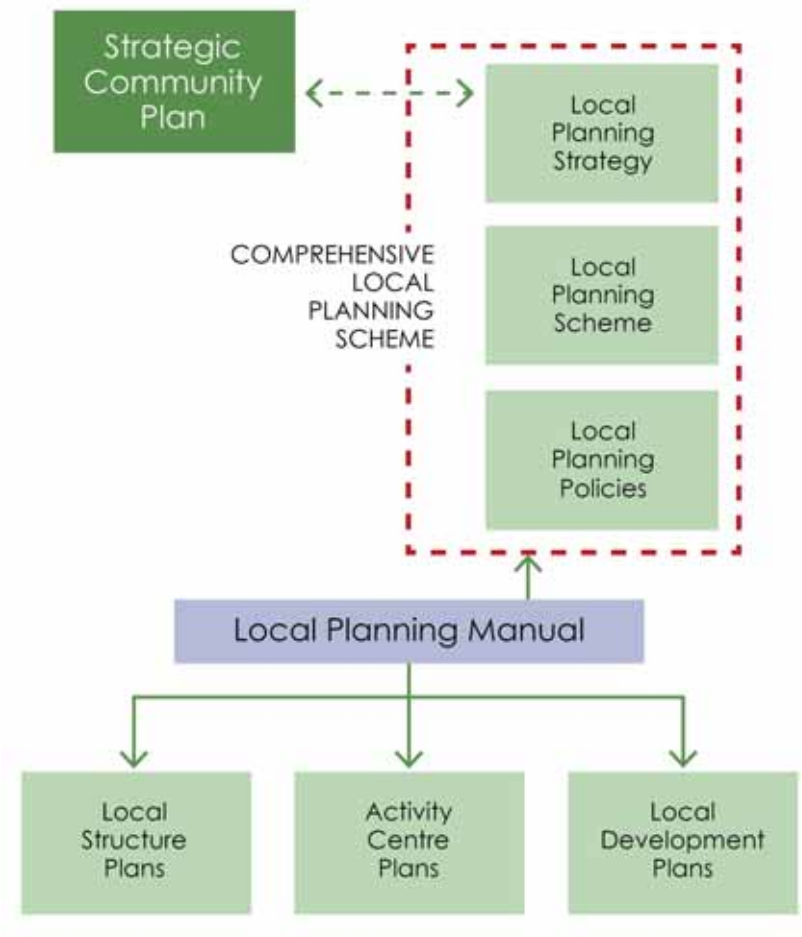

Figure 11: Local Planning Manual

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A. Local planning scheme reviews underway

The LPS Regulations provide that a local planning strategy must be prepared and reviewed concurrently with the local planning scheme to which it relates.

LPS Regulations (r.65 and 66) require local governments to review, and if necessary update any local planning strategies and local planning schemes more than five years old by April 2018, and it is unlikely that there will be full compliance.

Anticipating changes to the local planning framework arising from this review, substantive work on local planning strategies and schemes should be put on hold until there is certainty regarding the format and content of local planning strategies and schemes moving forward. Small low growth regional councils that only require basic local planning schemes should in any case be exempt.

Review proposals:

2.4.3 Local governments currently undertaking, or about to embark on, a substantive review of their planning frameworks delay preparation of local planning strategies and local planning schemes (and related omnibus amendments) until guidance on the format and content of local planning frameworks is available.

B. Overlapping use of planning instruments.

Informal feedback received by the review team indicates that some local governments may be avoiding local and activity centre structure plans because of the cost of preparation, the time taken to bring them into effect and their scrutiny by the WAPC.

There may also be an element of "process shopping", for example local structure plans being adopted as a local planning policy to avoid the normal process and WAPC review.

The planning system provides a range of planning instruments that have specific roles in order to maintain an orderly system and they should be used for their intended purposes.

Review proposals:

2.4.4 Provide in the LPS Regulations for a clear distinction of the purposes of Local Structure Plans, Activity Centre Plans, Local Development Plans and Local Planning Policies.

2.4.5 The DPLH to provide guidance in the Local Planning Manual on the appropriate use of each local planning instrument.

2.5 Form of a local planning strategy

The local planning manual of the WAPC sets out that local planning strategies are to be set out with a Part 1: Strategy and Part 2: Background Information and Analysis. As discussed, it is proposed that Part 1 of be included, as a succinct strategic statement, in the Comprehensive Local Planning Scheme.

The Victorian Municipal Strategic Statements is a good example that connects the local government profile and key issues to a vision and strategic plan as follows in Figure 12 (using WA terminology).

Review proposals:

2.5.1 The DPLH to update the Local Planning Manual with guidance on the preparation, the content and format of a Local Planning Strategy and strategic statement, in a similar form to a Victorian Municipal Strategic Statement.

Local planning strategy / strategic statement

INTRODUCTION
Local government profile
Key issues and influences
Vision and strategic directions
Strategic framework plans
OBJECTIVES AND STRATEGIES
Key Issues
Objectives to address issue
Land use strategies to achieve vision and objectives
IMPLEMENTATION
Policy guidelines
Scheme implementation

FIGURE 12: CONTENT OF LOCAL PLANNING STRATEGY

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Case Study 2 includes an example of good practice in the way in which simple and clear objectives and strategies are included in the Municipal Strategic Statement of the Whittlesea Planning Scheme for the topic of urban infill.

Case study 2: Whittlesea Planning, Municipal Strategic Statement extract, Victorian Planning Provisions

MANAGING GROWTH IN OUR ESTABLISHED SUBURBS

The City of Whittlesea is experiencing significant housing growth and change and will continue to do so in the future. Although much of this growth is directed towards the City's new growth areas, there is increasing pressure to manage housing growth within the established urban areas of the municipality.

Increasing the availability of housing options within the established suburbs of the municipality will be important to address the changing demographic profile and the general decline in household size in the city.

To accommodate the changing demographic trends and housing needs of the community, council has developed a *Housing Diversity Strategy* that provides the strategic approach to planning for residential growth and change in the established suburbs of the municipality.

The established suburbs of the municipality include Lalor, Thomastown, Bundoora, Epping, Mill Park, part of South Morang and Whittlesea Township.

More diverse housing in terms of size, type, tenure, cost and style within the established suburbs, in particular well located medium and higher density housing, will ensure greater housing choice for residents as their housing needs change and will enable residents to 'age in place' close to established social networks, family support and services. A diverse range of housing can also help to encourage greater housing affordability within the municipality.

Objective 1: To manage housing growth and change within the established suburbs of the municipality to ensure there is a diverse mix of housing that meets the needs of the local community and reflects demographic changes and trends.

- Strategy 1.1 Implement the Housing Diversity Strategy.
- Strategy 1.2 Provide diverse housing size, type, tenure, cost and style.
- Strategy 1.3 Provide well located medium and higher density housing.
- Strategy 1.4 Encourage developments which support "ageing in place".
- Strategy 1.5 Support housing affordability by providing a range of housing types.

2.6 Form of local planning policies

The deemed provisions of the LPS Regulations allow a local government to prepare a local planning policy in respect of any matter related to the planning and development of the local planning scheme area. A local planning policy must be based on sound town planning principles and may address either strategic or operational considerations in relation to the matters to which the policy applies.

There is a large range in the content and style among local governments for local planning policies that detract from their principle purpose of guiding planning discretion within local planning schemes.

A local planning policy is a policy statement of intent or expectation. It gives the local government an opportunity to state its view of a planning issue and its intentions for an area. It should state what a local government will do in specified circumstances to provide guidance to decision making on a day-to-day basis.

Local planning policies can be area-based to apply to all planning applications in a particular zone or location. They can also be theme-based for a particular land use type, for example bulky goods or for particular areas such as a local water catchment. Good practice when preparing a local planning policy is for it to:

- be written in clear, concise, plain English;
- not repeat or contradict the State Planning Framework;
- not repeat or contradict the local planning strategy;
- not contain broad strategic objectives and strategies which should be included in the local planning strategy;
- be derived from an objective or strategy found in the Local Planning Strategy;
- relate to a specific discretion provided by the scheme and assist the local government in making a decision using that discretion;
- be self-contained and not rely on external documents or guidelines unless those documents are incorporated into the scheme; and
- not contain mandatory requirements which should be included in a local planning scheme.

Review proposals:

2.6.1 The LPS Regulations be amended to provide that local planning policies are to be prepared in a manner and form approved by the WAPC.

2.6.2 The DPLH to update the Local Planning Manual to provide guidance for the form, content and writing of a local planning policy.

2.7 Consistency of local planning schemes

The State Government uses three methods in providing for consistency of local planning schemes:

1. The LPS Regulations provide model provisions which must be included, unless the Minister for Planning approves a variation.
2. The LPS Regulations provide deemed provisions which apply directly to local planning schemes.
3. State planning policies such as the R-Codes are included in a local planning scheme by reference. The LPS Model Provisions include a table for other State planning policies to be read as part of scheme.

Issues arise with the deemed and model zone provisions as outlined below.

A. Deemed provisions

The deemed provisions sit within the LPS Regulations, separate to the local planning scheme. This requires users to read separate documents together in order to understand how the scheme and deemed provisions work together. Users of the local planning scheme may not know that there are deemed provisions that supersede scheme requirements. Some local governments have prepared informal 'working copies' that combine deemed and scheme provisions for internal day-to-day use.

Local governments are meant to bring their local planning schemes into alignment with the deemed provisions over time by amending conflicting clauses and deleting obsolete ones. This will address the issue of conflicting clauses, but a user will still need to access the LPS Regulations in addition to the local planning scheme in order to read a whole document.

To meet the principle of legibility, a local planning scheme, when accessed by an end user, should also contain the deemed provisions. This will require a specific section to be allocated in a local planning scheme for the deemed provisions, so that updates to deemed provisions in the LPS Regulations are automatically reflected within a local planning scheme.

Review proposals:

2.7.1 Provide in the PD Act that deemed provisions are to be included in a comprehensive local planning scheme.

2.7.2 Provide in the LPS Regulations that a comprehensive local planning scheme is to include a specific section for deemed provisions.

B. Model zones

The LPS Regulations model provisions set out 20 model zones and zone objectives for adoption by local governments in their planning schemes. There is no guidance with respect to land use permissibilities within zoning tables for particular zones, but the model provisions set out the symbols to be used and definitions for the land use terms.

An audit of the 146 local planning schemes found some 1,036 zones with different names and different land use permissibilities. The same land use in a similar zone, for example a grouped dwelling in a Residential zone varies in permissibility among local governments with similar characteristics. A more detailed review of 20 sample local planning schemes identified the use of 278 unique land uses within those schemes that could mostly have been defined using the model land use definitions within the model provisions.

Figure 13 shows selected land use permissibility within the commercial zone for typical local governments. In one local government a land use may be permitted in a particular zone, and in another, the same land use may be prohibited in the same zone. This extreme degree of inconsistency cannot be explained by the need for local variation and is without any real justification.

Problems arise from a user's perspective. A simple change of use from a small 'shop' to a local 'office' may require a planning approval, and may be subject to different development standards such as the number of car parking bays required, triggering a request for payment of a cash-in-lieu of car parking contribution. These requirements are unnecessary red tape for small business.

Model provisions clearly have not been effective in achieving standardisation of zoning and land uses through periodic local planning scheme reviews in Western Australia.

Levels of standardisation for zones and land use permissibility have been introduced in other jurisdictions around Australia. In Victoria, state-wide planning provisions set out which land uses are permitted, discretionary or prohibited in a particular zone. New South Wales has a similar system, with the ability for local government to determine the permissibility of uses which are not provided within the standard instrument.

Land use	Belmont	Canning	Joondalup	Mosman Park	Rockingham	Victoria Park	Vincent	Wanneroo	Busselton
Aged persons home/dwelling	D	X	D	X		P	D	D	X
Caravan park and camping grounds	X	A	X	X	X		D	X	A
Child care centre/premises	D	A	D	D	D	P		D	A
Educational establishment	D	D	D	D	D	P	D	D	P
Grouped dwelling	D	X	D	X	D	P	D	D	D
Hazardous industry	X	X	X	X	X	X	X	X	
Hospital	X	X	D	X	X	D	D	D	D
Hotel	X	A	D	D	A	D	A	D	A
Light industry	X	IP	X	X	X	D	A	X	X
Multiple dwelling	D	X	D	X	D	P	D	D	D
Office	D	D	P	D	D	P	P	P	X
Residential building	X	X	D	X	D	D		D	X
Restaurant/café	D	D	P	D	D	P		P	P
Restricted premises	D	A	D	D	X	X/D		D	D
Service station	X	X	D	X	D	D	D	D	D
Shop	D	IP	P	D	P	D	P	P	P
Showroom	D	P	P	D	D	P	P	P	P
Single house	D	X	D	D	X	P	P	D	D
Tavern	A	A	D	D	D	D	A		A
Transport depot	X	X	X		X	X	D	X	D

FIGURE 13: SELECTED LOCAL GOVERNMENT LAND USE PERMISSIBILITY WITHIN THE COMMERCIAL ZONE

Note: In some cases, in one local government a land use may be permitted in a particular zone, and in another, the same land use may be prohibited in the same zone.

It is proposed for consistency that the most common zones be included in the deemed provisions of the LPS Regulations together with the permissibility of land uses. The zones should include residential, industrial, commercial and centre zones. A standard set of zones, land uses and permissibility would be triggered by a scheme review (and inclusion of the zoning) and henceforth be included in the local planning scheme as deemed provisions.

Many existing land uses are similar and there is an opportunity for like land uses to be grouped into themes to reduce the number of land uses, simplify land use permissibility and increase flexibility for operators. For example, land uses such as an 'amusement parlour', 'cinema/theatre', 'small bar' and 'restaurant/café' could be grouped into an entertainment theme. A single permissibility and common development standards could apply within the theme. Operators would then have flexibility to configure spaces as required, without the need to seek a change of use.

Proposals which have a very low level of planning risk are being subjected to a disproportionate level of planning assessment as they are caught up in an assessment and approval process established to deal with high-risk proposals. There is a need to refine land use definitions and their treatment in a zoning table to recognise differences in scale and potential impacts of development that falls under a single definition. For example, there is no difference in a zoning table between how a small shop or large shop, a small café or a large restaurant ought to be dealt with, although the planning considerations and potential impacts are very different. Similarly, a light industrial use located in the centre of an industrial area will be subject to the same approval requirements as a light industrial use on the perimeter of the industrial area (i.e. potentially adjoining residential uses), despite the potential for land use conflict being very different.

Other jurisdictions, including Victoria, Queensland, South Australia and Tasmania attach parameters or conditions to land use permissibility within their schemes, so that those proposals which are low risk are not subject to planning assessment or are subject to a streamlined assessment process.

Review proposals:

2.7.3 Provide in the LPS Regulations that there are deemed provisions which set out standardised zones, land uses and land use permissibility which:

i. group like-land uses into themes for which common development standards can be prepared;

ii. identify low risk land use proposals by including suitable parameters for which a streamlined planning process apply; and

iii. are mandatory for local government to adopt within their municipalities through the next scheme review or omnibus amendment.

C. Guidance provided to local government

The intent of the Local Planning Manual (2010) is to provide local government with a "how to" guide to preparing local planning strategies and schemes; however it requires significant updating.

A number of proposals within this Green Paper relate directly to the local planning framework and local government will require reliable and detailed guidance on how instruments should be prepared and administered, particularly regarding the scope, content and format of instruments. These include:

- preparation of a Local Housing Strategy;
- preparation of a Local Planning Strategy and local strategic statement, including technical guidance on how to incorporate the common strategic elements set out in the State Policy Framework;
- content and form of a Comprehensive Local Planning Scheme; and
- content and form of Local Planning Policies.

The Local Planning Manual should provide all the information necessary for a local government to prepare and administer its local planning framework in a single document. In addition to the proposals above, this should also include guidance for local government and proponents on how to prepare and administer local structure plans, activity centre plans and local development plans, which currently sit in separate documents. This document must be kept up to date and be the reference point for State and local government regarding how to prepare particular instruments and their manner and form.

Review proposals:

2.7.4 The DPLH to revise and keep up-to-date the Local Planning Manual to ensure it provides local government with the guidance required to prepare and administer its local planning framework and properly reflects the expectations of DPLH and WAPC.

2.8 Location of local development standards

Development standards were originally provided in local by-laws and were later transferred into planning schemes to provide certainty over requirements. In 1999 a general discretion clause was introduced into the Model Scheme Text to provide for reasonable variations to those requirements.

Mandatory development standards (where variation was not permitted) were still included in a local planning scheme via use of specific provisions to override the general discretion clause introduced through the Model Scheme Text. Other development standards were included in the local planning scheme or local planning policies, or both.

The model provisions of the LPS Regulations have removed the ability to include development standards in the General Development Requirements part of local planning schemes, except for placement in tables for *"Additional Site and Development Requirements"*, which are additional to those set out in the R-Codes, a local structure plan, activity centre plan, local development plans or State and local planning policies. The model provisions provide that decision-makers may vary any site and development requirements provided in those tables.

This arrangement is leading to community confusion and angst, particularly when planning approval is granted by a decision-maker (such as a Development Assessment Panel) for a development that includes a variation to a development standard.

A key assurance offered in the introduction of Development Assessment Panels was the ability for a local government to amend its local planning scheme to provide for appropriate development standards that would need to be followed by a DAP. The general discretion clause gives rise to the perception that there is no certainty in development standards provided through a local planning scheme.

Local planning schemes control use and development of land on the basis of a community vision established through a local planning strategy and other strategic documents incorporated into the local planning scheme. Local governments ought to have an ability to provide for certainty over key development requirements by inserting mandatory development standards in to their local planning scheme which aren't the subject of a general discretion clause.

Situations where mandatory development standards may be appropriate are thought to be quite limited (and should not be exploited). Situations which may be considered, for example, may include building height or plot ratio controls in communities which are in transition from a single or grouped dwelling neighbourhood to include multiple dwellings. Another example may be an urban corridor where higher density development is occurring which backs on to existing single houses and may warrant a fixed minimum rear setback for new development.

Introducing certainty with regard to particular development standards will assist communities in accepting the prospect of changing land use and higher densities in their neighbourhoods by providing certainty and comfort as to the final form of new development.

Review proposals:

2.8.1 Provide in the LPS Regulations that there be a location within the model provisions for mandatory development requirements for key sites and matters.

2.9 On-line local planning schemes

Local planning schemes in Western Australia are currently located on the DPLH website and are stored and processed in a single PDF document-based format.

Other States have available or are developing 'Planning Portals' which maintain all local planning schemes in a central location. Victoria (Planning Schemes Online) and New South Wales (ePlanning and Planning Portal) have both developed a "one stop shop" for accessing schemes electronically in a 'Table of Content' format, and also allows users to search for the relevant local planning framework by using their address.

An online system will help make a Comprehensive Local Planning Scheme accessible for users. In particular, the use of interactive or 'live' documents could also allow links, notes and hints/tips to be embedded in the document to further assist users in navigation and understanding of the local planning framework.

Maintaining local planning schemes electronically will also allow deemed provisions to be amended or updated automatically as they are finalised, removing the need for individual schemes to be amended when procedural matters are refined or clarified.

Review proposals:

2.9.1 Develop an interactive 'Planning Portal' for keeping local planning schemes online and accessing them in a legible and user-friendly format.

Figure 14: Victorian ***Planning Schemes On-Line*** Homepage

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Key reform 3: A transparent planning system

Integrity principle carried through community engagement in strategic planning

The essence of integrity in the planning process is that **the community has a say** in the making of strategies and plans, and understands therefore why plans and decisions are made.

Integrity in respect of decision-making is a continuum, starting with the community expressing views as to the strategic plan and then being able to **assess why a decision-maker has made a decision**. It requires community engagement with the strategic planning process, understanding how decisions get made and being able to have faith that the decision-makers will act properly.

This is a sound doctrine of participatory democracy as applied to planning.

3.1 Key issues

The question of community engagement in strategic planning is a matter of the planning culture. In some places, such as Portland, Oregon, there is a high level of community involvement in strategic planning and planning decisions, while in Singapore there is no community engagement of relevance.

In Western Australia the level of community engagement in planning processes is mixed, largely dependent on the culture and willingness of the planning authority. Some local authorities seek detailed involvement of their communities up front in preparation of a new plan or strategy, whilst others undertake the minimum level of consultation required to comply with the PD Act and LPS Regulations by only seeking community engagement after a scheme amendment has been initiated or a development proposal received.

The natural consequence of raising the strategic plan to prominence, as outlined in Key Reform Area 1: *A Strategically Led System*, is that there must be community engagement *during* the process of its creation and not merely after the strategic plan is prepared.

If an individual has been involved in the strategic planning process and development of a local planning scheme, there is a natural belief that decisions will be made in accordance with the intention of the strategic plan and content of the scheme. In order to understand the decisions that are then made, it is important to also have knowledge of how decisions are made and also that the reasons for a decision are clear and the decision-makers are accountable.

The following issues have been identified as barriers to improving the transparency and integrity of the planning system in Western Australia:

1. Inconsistent community engagement during the strategic planning process, often with community consultation only after the strategic plan is in draft form, i.e. consultation in the form of feedback rather than true engagement;
2. Lack of understanding of the reasons for planning decisions; and
3. Concerns regarding the transparency and accountability of the DAP process.

3.2 Community engagement

Many global cities are fostering community engagement in the planning system by enabling residents and communities to have involvement in developing the strategic plan at the formative stages - inputting to defining visions, objectives and challenges for the community.

It is recognised that this may require a reorientation of approach in some planning authorities. A difficulty in mandating different levels of community engagement in the planning process is that the means of engagement and its scope may have to vary greatly according to the level of complexity and sensitivity of the issues, resources available and the size of the planning authority. It is not possible to develop a "one size fits all" requirement for engagement in the making of a strategic plan.

A. Community engagement charter

Good practice identified from planning systems around the world is for community engagement in strategic planning which:

1. Give the highest visibility to the idea that every planning authority engage with their communities in the *making* of a strategic plan in such manner as it sees fit. There is thus a positive duty to engage and it makes the community aware that it is to be engaged.
2. Establish a Community Engagement Charter for the planning system that indicates the overall manner in which this is accomplished in terms of the goals of engagement, when to give notice to the community to participate, information to be provided (including the documents available to the planning authority), the methods to be used and the points of contact.

A charter or policy to guarantee participation in the strategic planning process is now common and an accepted aspect of strategic planning.

The 2017 New South Wales amendments to the *Environmental Planning and Assessment Act 1979* require planning authorities to prepare a Community Participation Plan that details how and when the community will be involved in planning matters and will give the community a right to be informed and an opportunity to participate early in respect of strategic planning.

The South Australian State Planning Commission is developing a Community Engagement Charter that provides the basic principles that:

1. Engagement is genuine;
2. Engagement is inclusive and respectful;
3. Engagement is fit for purpose;
4. Engagement is informed and transparent; and
5. Engagement is reviewed and improved.

As recognised in *Planning Makes it Happen: Phase Two*, the PD Act and LPS Regulations include some out-dated consultation requirements for planning proposals, such as requirement in the PD Act for notice of a State Planning Policy and region scheme amendments to be advertised in a daily and a Sunday newspaper. These should be reviewed and updated in conjunction with the development of the proposed community charter.

Review proposals:

3.2.1 The DPLH should develop a Community Engagement Charter for all aspects of the planning system that includes principles with regard to:

i Planning authorities having a duty to engage with the community in a manner that allows residents to contribute to the making or amending of a strategic plan; and

ii In the making or amending of a strategic plan, the community, as soon as possible, be given information as to what is proposed and any documents that the planning authority intends to examine.

3.2.2 Align engagement processes in the planning regulations to the Community Engagement Charter.

3.2.3 Revise public notification and engagement requirements for planning proposals in the PD Act and LPS Regulations to update out-dated requirements.

B. Local planning strategies and strategic community plans

In Western Australia there are two requirements at the local government level for the preparation of formal strategic plans; a "Strategic Community Plan" required by the *Local Government Act 1995*, and a local planning strategy under the LPS Regulations.

A Strategic Community Plan is part of a nation-wide system for integrated financial and administrative reporting. It is the highest level plan set by a local government, setting out a long-term vision, values and aspirations of an area. However it is not planning-focussed.

Where the preparation or review of a Strategic Community Plan and a local planning strategy coincide, a local government should be able to undertake community engagement on both strategic community planning and land use planning as a single process.

While the plans will be related, they should be kept separate as they are for different purposes. The Local Planning Manual (2010) blurs this distinction and provides that a local planning strategy should "incorporate the actions required to implement the strategy" including "such as infrastructure development, promotion, direct investment and other development initiatives" (p8).

FIGURE 15: COMMUNITY INVOLVEMENT IN STRATEGIC PLANNING

Actions in a local planning strategy should be limited to such as preparing policy guidelines, applying specific provisions such as applying a special control for an environmentally significant area, or identifying where further strategic work is required. Matters such as resourcing and infrastructure should be included in the 10-year capital expenditure plan of a Strategic Community Plan.

Review proposals:

3.2.4 Make provision within the LPS Regulations that the local planning strategy must be in accordance with the Community Strategic Plan under the Local Government Act to the extent that it is relevant.

3.2.5 DPLH to revise the Local Planning Manual to clarify that:

i. actions in local planning strategies are limited to those matters that can be carried out within the local planning scheme;

ii. acknowledge a concurrent community participation process between a Strategic Community Plan and a local planning strategy.

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Reasons for decisions

Planning decisions are made by the WAPC, DPLH (under delegation from the WAPC), the MRA, DAPs, local government and the SAT (on review). All of these decisions, including subdivision approval, development approval and amendments to local planning schemes, arise in different contexts with various considerations.

It may be the case that one decision does not express fully the reasons for that decision such as pro forma reasons for refusal, while others explain it in a complicated manner.

The decisions of the SAT, being part of our judicial system, have a long history of fulsome, well-reasoned decisions. The same cannot be said for other planning decision makers, such as local government or a DAP. There is currently a lack of consistency on full disclosure of reasons for planning decisions.

The introduction of standards for decision-makers to prepare and publish planning decisions gives the community greater confidence in the functioning of the planning system. If a planning decision is negative for residents, they should be able to examine and understand the reasons for the decision.

Good practice in other planning jurisdictions is to establish guidelines for the publication of planning decisions.

The practice in the UK has been to allow a summary of reasons to be provided where approval is granted, but detailed reasons for a refusal. The Queensland *Planning Act 2016* provides (s. 63(5)) that in the notice for the determination of a development application, reasons must be given that include a description of the assessment benchmarks applied, a description of the matters raised in submissions and how the decision-maker dealt with those matters and the reasons for the decision.

A fact sheet "Statement of Reasons" produced by the Queensland Department of Infrastructure, Local Government and Planning to support the requirement of the Act, states the essence of the reasons (adapted to the language of the Western Australian system).

- Set out the relevant parts of the scheme and the key issues on which the conclusions depend.
- Detail the steps in the reasoning process that led to the decision that will enable the reader to understand exactly how the decision was reached.
- Set out the information, documents and other material that the decision maker found to be relevant, credible, and significant in relation to each part of the decision.
- Use plain English, avoiding vague language or technical jargon.
- Be of a length that approximately reflects the nature, importance and complexity of the decision, as well as the time available to prepare it.

Review proposals:

3.3.1 The DLPH to publish a Guide as to the Scope of Reasons by Planning Decision Makers, having regard to the Queensland model.

3.3.2 Provide in the LPS Regulations that reasons for decisions are to be provided on planning proposals.

3.4 Transparency of DLPH and WAPC statutory reports

DPLH reports and recommendations to the Statutory Planning Committee and the WAPC regarding region schemes and local planning schemes are not currently made publicly available. Similarly the decisions of the Statutory Planning Committee and the WAPC are not published.

Industry and local government are particularly critical of this lack of transparency for a number of reasons:

- the content of reports and recommendations of officers of the DLPH are not able to be scrutinised and responded to;
- it is difficult to ascertain when matters will come before the Statutory Planning Committee or the WAPC for consideration and interested parties are therefore denied an opportunity to state their case through a deputation; and
- deputations are made to the WAPC and Statutory Planning Committee by proponents or submitters 'blindly', with no knowledge of the officers' advice, any issues raised or recommendation.

Making officers' reports and recommendations to the Statutory Planning Committee and the WAPC available to the public would resolve these concerns and allow stakeholders the opportunity to address any matters of concern directly, improving the deliberations of the Statutory Planning Committee and the WAPC.

Review proposals:

3.4.1 WAPC practice be modified to publish Statutory Planning Committee and WAPC agenda items, reports and recommendations on region and local schemes and amendments.

3.5 Reporting by Local and State Government on planning matters

While some local governments report voluntarily on the performance on planning matters in annual reports, this not a mandatory requirement. Monitoring of systems allows them to be scrutinised and managed; consequently, there are persistent industry calls for the collection and publication of information on local government performance in undertaking statutory planning functions.

New South Wales and Victoria have mandatory reporting systems in place for local government on a variety of planning matters.

Industry concerns have mainly focussed around timeliness. The lack of available data on planning processes is an impediment to analysing the planning regulatory system and identifying opportunities for improvement or directing efforts to address deficiencies. In addition to improving local government accountability and transparency, the provision and analysis of reporting by local government on planning matters would provide a reference for continuous improvements in local planning by:

- identifying opportunities for simpler, more consistent and innovative processes;
- identifying emerging trends or issues within the planning framework;
- informing development of policy and future planning reforms; and
- observing levels and distribution of planned development activity.

Figure 16 summarises the data which could be collected from local government on an annual basis, to align with current reporting required by the Local Government Act. Data could be published on the "My Council" website.

Quantity and value	Volume and value of development applications determined and the proposal type (i.e. new construction/addition/change of use).
Timeliness	Average net and gross development application processing times and the percentage determined within statutory timeframes.
Currency	Age, status and last review of the local planning scheme and local planning strategy.
Development activity	Details on the types of proposals, such as number of dwellings or floor space of commercial/retail/industrial proposals.
Consistency	Details on any variations to development standards supported (i.e. the use of discretion).
Delegations	The percentage of development applications determined by officers.

FIGURE 16: MEASURES OF PLANNING PERFORMANCE

Many planning decisions in WA are interconnected between local government, DLPH and the WAPC. A system of reporting on local government performance necessitates monitoring of key statutory planning items by DLPH and WAPC.

Performance indicators on consideration of subdivision, local planning schemes and scheme amendments are already provided by the WAPC and DLPH in their annual reports and should be extended in a second phase to include summary detail on assessment of local planning strategies, structure plans, and development applications.

It is proposed to introduce reporting on planning matters in two phases:

1. As a first phase to monitoring the planning system, regulations be prepared for mandatory reporting by local government on planning matters, including performance of statutory responsibilities.
2. As a second phase, performance monitoring of the WAPC/DPLH be extended to include detail on the consideration of local planning strategies, local planning scheme reviews, structure plans, and development applications.

Review proposals:

3.5.1 Provide in regulations mandatory reporting by local government on planning matters.

3.6 Transparency and accountability of Development Assessment Panels

DAPs were established in 2011 to determine development applications that meet set land use types and value thresholds. It was argued that DAPs would introduce more expertise into planning processes and expedite approvals. DAPs were to make their expert evaluation against local plans, and that a community through its local government, would have the ability to set the framework for DAPs to make it decisions.

A 2012 Review of DAPs in the Productivity Commission's Performance Benchmarking of Australian Business Regulation: Role of Local Government as Regulator concluded "In the Commission's view, the Western Australian Development Assessment Panel (DAP) system contains most of the features desirable in an alternative assessment pathway" (p. 431).

The idea of expert evaluation of development proposals was recommended in 2005 in *A Leading Practice Model for Development Assessment in Australia* by a national Development Assessment Forum (DAF). DAF's proposition of professional determination for most applications was to provide objective and expert evaluation of applications against known policies and objective rules and tests, and provide the efficient and transparent assessment of most applications[10].

As discussed in this Green Paper, the current planning system in Western Australia is unable to provide clear guidance. Finding 1 of the 2015 Uniform Legislation and Statutes Review Committee review of DAPs was[11]:

> *The Committee finds that the out-dated nature of some Local planning schemes; their inconsistency with state planning policies and strategic planning frameworks and the inconsistencies of local planning requirements across local governments have contributed to the types of determinations being made by development assessment panels.*

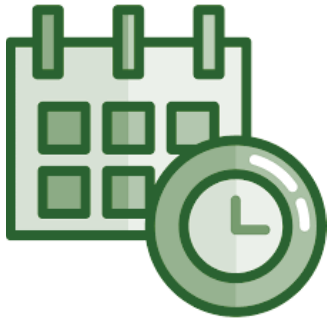
This review is also concerned that State and local planning frameworks are not up-to-date or clear for proponents, decision-makers and the community. Also, model provisions in the LPS Regulations allow decision-makers to vary any site and development requirements that have been included in a local planning scheme. These factors together with other significant discretions in some local planning schemes result in inconsistent DAP decision making and unpredictable and unclear outcomes for the community.

A. Meeting times and frequency

The openness of DAPs would be improved if they were more accessible. Currently, DAP meetings are sporadic and held at different times of day. This requires individuals who wish to attend a DAP meeting to ensure they are aware of the meeting time, date and location and for those with work, school or family commitments, to make arrangements to ensure they can attend. To improve accessibility and familiarity of the DAP process, it is proposed that meetings be held at regular times outside of business hours.

Review proposals:

3.6.1 Provide for DAP meetings to be held at regular times and outside of business hours.



[10] Development Assessment Forum *A Leading Practice Model for Development Assessment in Australia,* March 2005 p22

[11] Uniform Legislation and Statutes Review Committee, Report 93 *Review of Planning and Development (Development Assessment Panels) Regulations 2011*, 8 September 2015 page 30

B. Audio recording of DAP meetings

It is important that the meeting deliberations are open to those people present and others who may wish to review how particular decisions were made. Meeting minutes are insufficient for this purpose as they are only a very short summary of what was discussed and considered. If DAP meetings were recorded, it would be an exact record of everything that was presented and discussed and can be stored as a record of the meeting itself in accordance with the *State Records Act 2000*. Many local governments already make available recordings of their council meetings.

Review proposals:

3.6.2 Provide for the recording of each meeting of a DAP and made available on the DAP website of DPLH.

C. DAP deferring decisions

Two issues have arisen which require guidance as to when deferral of a DAP decision may be appropriate.

Firstly, the review team has been approached by local government concerned that after a RAR is provided for publication for an upcoming DAP meeting, a proponent may prepare new information to address any concerns raised in the RAR and provides this directly to the DAP via deputation at the meeting, bypassing the scrutiny of the responsible authority and community. Examples provided to the review team include amended plans or technical reports, such as a traffic impact assessment.

While the DAP Regulations (Reg 40(3)) contemplate further submissions at a DAP meeting, both oral and written, this should be limited to information to assist the DAP in determining the proposal presented in the RAR, rather than an opportunity to present new information for the DAPs consideration.

The DAP procedures allow for amended plans or additional information to be submitted during the assessment period. This allows the responsible authority time to digest any new information, undertake consultation (if required) and provide advice and recommendation on that information within the RAR.

If new information is provided to a DAP, which it intends to rely upon to make a determination, the item should be deferred to allow the information to be properly assessed and advice provided to the DAP by the responsible authority. It is recommended that clarification by provided in DAP practice notes on this point.

Secondly, there are time pressures on DAPs to resolve substantive issues by way of conditions, in order to make a decision as efficiently as possible, without the need for further submissions or another meeting. Examples have been provided to the review team where an ambiguous condition was imposed by the DAP to secure an approval which resulted in significant time and resources being required to determine how the condition could be satisfied, due to confusion regarding the expectation of the DAP in applying the condition, the expectations of the local government in administering the condition and the implications for the proposal as a whole, which were not understood.

While conditions of planning approval can be used to ensure proposals are acceptable, a condition should not be imposed if it is imprecise or results in a materially different proposal.

Review proposals

3.6.3 Provide clarification in DAP Practice Notes:

i. If new information is submitted to the DAP after an RAR, the DAP should consider whether a decision should be deferred pending further RAR advice; and

ii. As to when it may be appropriate to defer a decision, such as where issues are raised which require further detailed technical consideration by responsible authorities.

D. Reasons to be provided for each decision

Regulation 44 of the DAP Regulations requires that the minutes of a DAP meeting record the reasons for a determination of the DAP. The DAP practice notes provide that in cases where the DAP adopts the responsible authority's recommendation, the minutes of the meeting can provide that the reasons for decision is per the responsible authority report.

In these cases, there is no record of the reasons for determination of a development. This can give the impression that any matters raised with the DAP during deputations were not taken into account, and that the decision was based solely on the responsible authority report. Reasons for all determinations of the DAP, whether the responsible authority's recommendation has been adopted or not, is good practice in accountable and transparent decision making.

Section 3.3 of the Green Paper proposes that the DLPH develop a Guide on the scope of reasons for decisions, having regard to the Queensland model that sets out the rationale for all decisions.

At least one panel member will be required to draft reasons and it will be appropriate that they be remunerated accordingly.

Review proposals:

3.6.4 Amend the DAP Practice Notes to require reasons for decisions to be given in all decisions made by a DAP, including where the DAP adopts the responsible authority's recommendation contained within the RAR.

E. Reconsidering a decision arising from a SAT review

It is open to an applicant to seek a review by the State Administrative Tribunal (SAT) of a planning decision in response to a refusal, or condition of approval which is unacceptable to the applicant.

Generally, the first step the SAT will undertake is to hold mediation between the parties. In many cases, following a SAT mediation, new information or amended plans are submitted for reconsideration by the DAP but this is not re-advertised. There is no opportunity for the community to make further submissions until the responsible authority report is published on the DAP website.

Due to the lack of further consultation an impression is gained that a DAP reconsideration of a SAT matter is a foregone conclusion.

DAP regulations and practices should be modified to ensure that new information or amended proposals submitted through the SAT process are re-advertised prior to the responsible authority preparing its report and recommendation to the DAP. The only exception to this should be where the proposal is amended in such a way that the applicant complies with all development standards and therefore does not seek approval for any variations to the planning framework. To assist an understanding of any changes, an applicant should be required to clearly highlight amendments to plans and the justification for those amendments.

Review proposals:

3.6.5 Provide for a requirement that applications amended through a SAT process are readvertised unless the amended plans comply with all development standards.

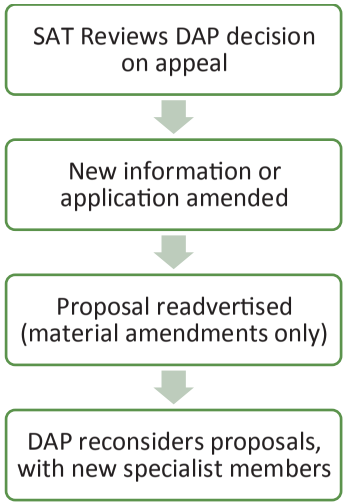


FIGURE 17: PROPOSED DAP ACTION FOLLOWING SAT PROCESSES

F. Constitution of a DAP responding to an invitation of the SAT to reconsider its decision

The DAP Procedures Manual provides that the appropriate person to attend SAT mediations and hearings on behalf of the DAP is the presiding member or, if they are unavailable, the deputy presiding member[12]. Where the matter is reconsidered, the DAP Practice Notes provide that the DAP member should publicly acknowledge if they have attended a SAT process in relation to any DAP application to be considered at that meeting, during the 'disclosure of interests' in the order of business[13].

Community members and DAPs members have raised concerns with this review about this process. DAP members have suggested that where they have participated in a SAT negotiation, they are perceived to have a preconceived position on an issue where it is reconsidered by the DAP. Community members have suggested that where there is not a unanimous DAP decision, the presiding member does not necessarily reflect the majority of the DAP in negotiations at SAT.

Options that could assist in addressing the apprehension of bias are:

1. Where an amended application is reconsidered by the DAP following a SAT mediation, new specialist members and/or the presiding member could be called on to hear the amended application. This would ensure that the amended application is considered afresh. However, it may result in the raising of new issues by the DAP and need for further SAT proceedings.
2. s.242 of the PD Act provides for SAT to receive or hear submissions in respect of an application from a person who is not a party, but in the Tribunal's view has a sufficient interest in the matter. Guidance in this process should be provided with a view to allowing submissions and sometimes hearings for contentious applications.

Review proposals:

3.6.6 Provide that where a DAP has been invited to reconsider its decision following a SAT mediation, new specialist members be drawn from the available pool of members.

3.6.7 The SAT should consider preparing a framework for allowing parties with a sufficient interest in a matter to make a submission or be heard during SAT mediation of DAP matters.

[12] Department of Planning, Lands and Heritage *Development Assessment Panel Procedures Manual*, November 2017 p 34

[13] Department of Planning, Lands and Heritage *Development Assessment Panel Practice Note 7: Tribunal, Court Reviews and Other Legal Proceedings,* November 2017 p 22

G. Proposals seeking significant variations

The expectation that DAP applications will be dealt with as efficiently as possible may result in DAPs feeling under pressure to resolve often complex and technically difficult issues during meetings in order to avoid the need for further submissions or meetings to determine a proposal.

There needs to be recognition in the operation of the DAP system that DAPs are often required to consider contentious proposals and there is sometimes wide discretion or little guidance provided in local planning frameworks that necessitates a broader examination of strategic intent and context than was intended under the DAF's *A Leading Practice Model for Development Assessment in Australia*.

A more accessible, inclusive and intensive DAP consideration is required where the presiding member is of the view that:

1. An application seeks substantial variations to site and development standards; or
2. A local planning scheme provides the DAP with the ability to exercise significant discretion such as a height bonus that is the subject of subjective criteria, notwithstanding that further technical advice may be given such as through a Design Advisory Committee; or
3. A proposal is of such a contentious nature that it warrants special consideration.

This may include a longer time for submitters to make deputations, the opportunity for panel members to undertake a site visit and could include meetings being held over two or more sessions for the DAP to hear presentations and then seek further advice or information from the responsible authority.

Review proposals:

3.6.8 Provide for expert DAP members to be drawn from a pool of members across the State on the basis of the type and complexity of the application being heard.

3.6.9 Provide for an expanded and flexible meeting process where the DAP Presiding member is of a view in relation to an application for development that wider community and local government viewpoints need to be examined.

H. DAP consideration of region scheme matters

The WAPC determines regionally significant development proposals by withdrawing its delegation to local government under region schemes. For example, under Clause 32 of the *Metropolitan Region Scheme* the WAPC will determine applications for extensions of shopping centres where there is no Activity Centre Structure Plans, new poultry farms or extensions, and constructions of buildings close to the coastline which exceed set out height limitations.

Following introduction of the DAPs, if a regionally significant proposal falls within the value and type set out by the DAP Regulations, the WAPC is required to forward the proposal to a DAP for consideration.

An applicant is also required to obtain a separate development approval under a local planning scheme which is also determined by a DAP.

The requirement for a DAP to determine regionally significant proposals is anomalous as the WAPC is already an independent technical decision-maker. The involvement of the DAP undermines the status of the WAPC as the highest order planning authority in the State. Further, a situation may result where a DAP determination gives rise to a land compensation claim with strategic and financial implications for the State.

The DAP Regulations should be amended to remove DAPs as a decision-maker for development applications of regional significance.

Review proposals:

3.6.10 Provide in the DAP Regulations that the WAPC retains its decision making ability with respect to development applications under region schemes.

I. Chief presiding member

The introduction of DAPs has required new administration arrangements in local and State government. This has caused teething problems with DAP operations which have been addressed on an ongoing basis since their introduction. DAPs continue to need refinement to improve their effectiveness and efficiency and it would be beneficial for a presiding member to also be appointed as the Chief Presiding Member with appropriate remuneration to take responsibility for the operation of key aspects of DAPs.

Review proposals:

3.6.11 Provide for a presiding member to be appointed also as the Chief Presiding Member to:

- *i Oversee the quality and consistency of DAP procedures and decisions (such as consistency of the use and content of conditions; the quality of RAR reports) and recommend changes to DAP procedures and Standing Orders to DPLH;*
- *ii Assist in identifying panel members appropriate to sit in accordance with the basis of the type and complexity of the application being heard; and*
- *iii Identify training needs for DAP members for the approval of the Director General DLPH.*

FIGURE 18: CHIEF PRESIDING MEMBER APPOINTED TO DAP

Key reform 4: An efficient planning system

Efficiency principle: to deliver activities in the least complex and most timely way

The **need for efficiency is clear**. The Productivity Commission's *Performance Benchmarking of Australian Business Regulation: Role of Local Government as Regulator* (2012) emphasises the need for process efficiency improvements in planning and that government should be accountable for the efficiency and effectiveness of their activities.

As used here, efficiency means that **the planning system is well organised** with clear roles and accountabilities, and is competently managed to deliver key functions in the least complex way through well-defined and adaptable processes with the right resources and defined outcome measures. It also includes the "process efficiency" – **resolving obvious bottlenecks** that have emerged by developing practical solutions.

4.1 Arrangement of state and local planning

A. Roles of WAPC, DPLH and local government

The planning system in Western Australia has been founded upon a centralised planning system with an independent, technical statutory authority[14].

A Town Planning Board was established in 1929 to control subdivision and make recommendations to the Minister on local government town planning schemes[15]. A Metropolitan Region Planning Authority was established in 1960 to prepare and manage a statutory region scheme for the Perth Metropolitan Region. In 1995,

both bodies were merged into a State Planning Commission, the functions of which were broadened to preparing a State Planning Strategy and undertaking regional planning across the State.

The current Western Australian Planning Commission was established in 2005, and replaced the State Planning Commission. The WAPC has been established under the PD Act as a board of management, and it is serviced by staff of the DPLH under a service agreement.

[14] Paul Maginn and Neil Foley. From a centralised to a 'diffused centralised' planning system in Western Australia. Australian Planning, 2014 Vol.51, No. 2, 151-162

[15] Foley, N. 1995. Outline of the Evolution of Town and Regional Planning Administration in Western Australia: 1927-1995. Nedlands: N. Foley.

The WAPC now has extensive responsibilities under the PD Act. These include:

- advising the Minister for Planning on the administration, revision and reform of legislation relating to land use, transport planning and land development;
- preparing a State Planning Strategy and State Planning Policies;
- preparing regional plans, administering statutory region schemes and determining or providing a Responsible Authority Report on regionally significant applications for development;
- providing recommendations to the Minister for Planning on local planning schemes and amendments;
- determining local structure plans and activity centre plans; and
- determining applications for subdivision.

The WAPC's broad range of functions makes for a substantial workload which is addressed through the use of WAPC Committees, particularly the Statutory Planning Committee and by delegating functions to the DPLH. Notwithstanding these management arrangements, the WAPC's scope has become too wide, with too many functions for a single board of management to undertake. The wide scope and large volume of matters coming before the WAPC results in inefficiencies in dealing with statutory planning matters, and a lack of focus and delays in undertaking strategic planning and policy development.

The WAPC needs to increase its capacity to effectively manage the State policy framework and prepare and implement regional and sub-regional plans. In particular, there is a need for the WAPC to strengthen its leadership role and work proactively with local governments and agencies to prepare urban corridor and activity centre plans.

Capacity needs to be created for the WAPC to undertake strategic planning by delegating statutory functions for matters that are not of regional or State strategic planning significance to the DPLH and local government.

Firstly, the roles of the WAPC and DPLH have been blurred with respect to advice on the operation of the State planning system, as a function of the WAPC is to advise the Planning Minister on "the administration, revision and reform of legislation relating to land use, transport planning and land development" (s.14(a)(ii) PD Act). Consistent with other States, the DPLH should be responsible for the operation of the State planning system (including the PD Act and regulations), and provide leadership and guidance to local government on how to manage their local planning frameworks.

Secondly, an accreditation system is proposed for local governments to receive additional WAPC delegations for local planning matters. The accreditation system would require local governments to have up-to-date local planning strategies and schemes, and have appropriately qualified planning officers and appropriate delegations to those officers.

Accredited local governments should receive delegation from the WAPC to determine small infill subdivision within the metropolitan area and regional centres, and subdivision in accordance with an approved local structure plan. Consideration should also be given to removing the "Optional DAP applications" category specified within the DAP Regulations for accredited local governments, handing back determination of these applications to the local government.

Figure 19 shows this review's proposed shifts in delegations. The revised delegation and accreditation system should be regularly reviewed with the WAPC making adjustments over time to ensure appropriate outcomes are being delivered.

Review proposals:

4.1.1 Provide that the PD Act be amended to delete the WAPC function s14.(a)(ii) of advising the Minister for Planning on the administration, revision and reform of legislation.

4.1.2 Provide for a local government accreditation process.

4.1.3 Increase delegations from WAPC to DPLH and local government, for the purpose of the WAPC focussing on the State policy framework and regional strategic planning.

FUNCTION	CURRENT DELEGATION / AUTHORITY	PROPOSED DELEGATION / AUTHORITY
Region Scheme		
Major Amendment	**WAPC recommends**	
Minor Amendment	WAPC recommends	**Statutory Planning Committee recommends**
Local Planning Strategies and Schemes		
Local Planning Strategy	Statutory Planning Committee endorses	**Statutory Planning Committee recommends**
New Scheme	**Statutory Planning Committee recommends**	
Complex LPS Amendment	**Statutory Planning Committee recommends**	
Basic and Standard LPS Amendment [1]	Statutory Planning Committee recommends	**DPLH recommends**
Structure Plans		
Activity Centre Structure Plan	**Statutory Planning Committee**	
Complex Local Structure Plan [2]	**Statutory Planning Committee**	
Basic and Standard Local Structure Plan [2]	Statutory Planning Committee	**DPLH**
Other		
Local Development Plan	WAPC Chair authorises	**DPLH authorises**
Local Planning Policy [3]	Local Government	**DPLH recommends**
Subdivision		
General subdivision	**DPLH**	
Small Infill	DPLH	**Local Government approves**
In accordance with Local Structure Plan	DPLH	**Local Government approves**

Notes:
1. Numerous functions are already delegated to DPLH. It is proposed that all basic and standard amendments be delegated to DPLH.
2. The Green paper proposes the introduction of a 'basic', 'standard' and 'complex' stream for region scheme amendments, local planning strategy amendments, local structure plans and amendments.
3. Included within the proposed Comprehensive Local Planning Scheme.

FIGURE 19: PROPOSED FRAMEWORK FOR WAPC DELEGATIONS

B. WAPC board and committees

As WA planning legislation has evolved, membership of the lead planning authority has expanded:

- the Town Planning Board comprised four members being a Town Planning Commissioner and three technical members;
- the Metropolitan Region Planning Authority comprised 11 members being the Chairperson, five people appointed by the Governor and five local government representatives;
- The current WAPC is established as a Board with 16 members being the Chairperson, six people appointed by the Governor including a metropolitan and a regional local government representative, and eight public sector CEOs and a regional representative.

The inclusion of the eight public sector CEOs into the WAPC board has resulted in accountability issues with respect to their obligations to Government and their input to the WAPC as an independent adviser to the Minister for Planning.

Further, public sector CEOs have extensive pressures and responsibilities related to their positions managing large agencies which means there is limited time for giving attention and effort to WAPC matters. The WAPC is now of a size that has proven to be difficult and inefficient to manage.

The common theme in each of the institutional arrangements in the evolution of WA's lead planning authority has been a specialised membership to provide expertise in the good planning methods and practices together with an independent decision-making role. It is recommended that the current WAPC Board should be reduced to a manageable size of five to seven members for these roles, with skilled members from fields relevant to sustainable land use planning, including town planning and local government.

The PD Act sets out in Schedule 2 requirements for the following committees:

- Executive, Finance and Property Committee
- Statutory Planning Committee
- Sustainable Transport Committee
- Infrastructure Coordinating Committee
- Coastal Planning and Coordination Council
- Regional planning committees; and
- District planning committees

Schedule 2 Committee appointments require the approval of the Minister for Planning, which cannot always be given priority.

Schedule 2 of the PD Act should be removed, and the WAPC provided with the ability to establish committees on a needs basis (with the approval of the Minister) to advise the Commission on any matter. This would allow the WAPC to seek specialist advice on matters as required, rather than manage an extensive list of committees and members for matters which may not be required for extended periods. Each committee should consist of at least one member of the Commission who is to be the chairperson of the committee.

Committees which carry out core functions of the WAPC, such as the Statutory Planning and Executive, Finance and Property Committee will still be required and would continue under the suggested committee system.

The Infrastructure Coordinating Committee will in large part be superseded by the recently announced Infrastructure WA, when it becomes operational. The WAPC recently established an Infrastructure Steering Group to look at the coordination of land use plans with physical and community infrastructure. The Infrastructure Steering Group would be usefully maintained as a WAPC Committee to look at key infrastructure to deliver regional and key local plans, for example to consider with a local government the timely provision of infrastructure for the development of a key centre.

It is noted that the Coastal Planning Committee has a history and role beyond the WAPC Framework and may be required to be retained. It is recommended the function and hosting and regulatory framework for this committee be reviewed.

The Sustainable Transport Committee and a range of Regional Planning Committees and District Planning Committees are not operating and can be disbanded.

Review proposals:

4.1.4 Provide for the PD Act to be amended to:

i Revise the membership of the WAPC to five to seven members to have experience, skills or knowledge of any one or more of the following fields—

- *planning, including strategic land use planning in metropolitan or regional areas;*
- *infrastructure planning, delivery, policy and strategy;*
- *public administration and public policy;*
- *property development;*
- *housing supply;*
- *corporate or public sector governance;*
- *economics, finance or financial management;*
- *management of business or commercial ventures; and*
- *local government.*

ii Remove committees of the WAPC from Schedule 2, in favour of an ability for the WAPC to establish committees to advise the Commission on any matter, recognising the Statutory Planning Committee and Executive, Finance and Property Committee carry out core functions of the WAPC and will be required immediately under this new system. A committee would consist of at least one member of the Commission who is to be the chairperson of the committee.

4.1.5 The role and purpose of a Coastal Planning Committee be reviewed, and consideration be given to the most appropriate host organisation and regulatory framework for the Committee.

C. DLPH resourcing of WAPC

The DPLH provides resources and expertise to the WAPC. The arrangement between the WAPC and DPLH is formalised in a four-year Service Delivery Agreement that sets out projects and services to the WAPC, together with an Annual Scope of Services.

The agreements between the WAPC and DPLH need to be reviewed to accord with the revised roles of the WAPC and DLPH as proposed above.

In particular, the DPLH needs new positions to be created to recruit senior and experienced town planners to undertake the policy development necessary to underpin the refocussing of WAPC efforts to strategic planning.

Expertise in the private, community and academic sector should also be made more use of in the early stages of policy development to help DLPH and the WAPC scope projects.

Review proposals:

4.1.6 Revise the Service Delivery Agreement between the WAPC and DPLH to accord with the revised roles of the WAPC and DPLH.

4.1.7 Provide for new positions to be created to enable DPLH to recruit senior and experienced town planners to undertake strategic planning and policy development for the WAPC.

4.1.8 The DPLH and WAPC establish a protocol for the engagement of non-public sector expertise in the scoping and development of policies.

4.2 Process efficiency for planning proposals

Key Reform Area 2 sets out proposals to address planning complexity that has arisen over time from a lack of connectedness between State policies and strategies, and between local planning strategies, schemes and policies.

There are always efficiency and timeliness measures that can be introduced based on national and international good practice. This part includes efficiency measures to aid the efficiency of the development process in Western Australia having regard to the key principles of the Green Paper.

This work will be ongoing beyond this review and it is proposed that the DPLH retain a planning reform team for continuous improvement of the planning system.

Review proposals:

4.2.1 A planning reform team be retained by the DPLH to implement proposals arising from the planning review and ongoing reforms to the Western Australian planning system.

A. Planning referrals and conditions

Departments and agencies play a key role in providing specialist advice to planning decision makers on referrals for subdivisions, development applications, structure plans and scheme amendments. Referral authorities will generally advise the planning decision maker if they support or object to a proposal, any advice relating to the proposal or any conditions which ought to be applied in supporting the proposal.

How referral advice is treated by a planning decision maker has developed over time with several issues observed:

1. An industry complaint is that notwithstanding statutory time periods for referral authorities to respond to a request for advice or comment, planning proposals will often not progress until a response is received.
2. Where concerns are raised by a referral authority, a planning decision-maker will defer dealing with the proposal and expect the proponent to satisfy the concerns regardless, as a matter of course.
3. In some cases, planning proposals are reliant on further approvals being received from other agencies under separate legislation. For example, several approaches to this review were made with regard to Main Roads WA which sets its own standards and requirements outside the conditions imposed by a planning approval. This practice diminishes the value of the planning approval process and creates uncertainty and unnecessary delays for industry.
4. Examples have been provided to the review where planning proposals (particularly structure plans or activity centre plans) have been subject to duplicate referral processes, referred once by local government and again by WAPC/DPLH, adding unnecessary time and resources to consideration of a planning proposal.
5. The need for referral of planning proposals to the EPA on matters of detail (for example a structure plan or subdivision) has been raised with the review, particularly following EPA consideration of a region or local scheme amendment for the same area.

The Development Assessment Forum's *A Leading Practice Model for Development Assessment* includes Leading Practice Five: a single point of assessment as follows:

- Only one body should assess an application, using consistent policy and objective rules and tests.
- Referrals should be limited only to those agencies with a statutory role relevant to the application. Referral should be for advice only. A referral authority should only be able to give direction where this avoids the need for a separate approval process.
- Referral agencies should specify their requirements in advance and comply with clear response times.

The objective of a referrals system with a single point of assessment is to ensure the consistent application of policy, through objective rules and tests. Where referrals are required, the assessment criteria or policy are clearly expressed in advance. Applicants therefore know what is required before submitting an application.

Queensland and Victoria have developed frameworks for referrals that list the types of planning applications that are required to be referred and which agencies the applications are referred to. This reform will be valuable to pursue but will require time and dedicated resources to develop.

In the meantime, the DPLH Independent Planning Reviewer should undertake a circuit-breaker role for WAPC matters where a proponent can demonstrate that a referral authority has failed to come to a reasonable position.

Review proposals:

4.2.2 A framework for referral of planning applications to be incorporated in regulations as appropriate.

4.2.3 As an interim arrangement, the DPLH Independent Planning Reviewer be available to assist on issues regarding referral for WAPC matters.

B. Cooperation in an application

Approaches to the review have raised concerns regarding inconsistencies in the way planning authorities process applications, with regard to undertaking referrals, requests for further information or discussion on likely outcomes. The LPS Regulations provide little guidance to planning decision-makers on how to undertake development assessment or interpretation of procedures for dealing with applications.

In one example provided to the review, two days prior to expiry of the statutory timeframe for consideration of an application, a local authority advised the applicant that further information and amended plans were required. These delays lead to a lack of trust in the development assessment process.

After a development application has been lodged, there is no formal process for further discussion and modification or, in fact, alternative ideas, as the development assessment and determination process are geared towards a yes or no final determination. This has flow on effects where appeals to the State Administrative Tribunal force both sides into an adversarial position. From this root cause, comes lack of efficiency in effectively processing an application for development or subdivision.

The UK Barker Review of Land Use Planning (2006) suggested that efficiency includes an increased use of pre-application discussions, better engagement by planning authorities with the public and developers, assistance in complying with conditions by early and speedy assessment by authorities. Although these may or may not be applicable to Western Australia, they illustrate that the most important factor is increased cooperation and not a system where discussion freezes until there is a final determination.

Figure 20 illustrates three methods that are used internationally for encouraging cooperation in the making and processing of a planning application.

Stages	Cooperation model
Pre-lodgement cooperation	Formal discussions between a potential applicant and the planning authority to identify the issues that must be addressed.
Options at application	The applicant may submit multiple options for the same use and development, addressing issues raised in the pre-lodgement phase. A planning authority then meets with the applicant and assists with the preferred option.
Mediation prior to decision	The applicant and planning authority enter into formal mediation to reach agreement on the best outcome for the land the subject of an application.

FIGURE 20: METHODS FOR COOPERATION IN MAKING AND DECIDING AN APPLICATION

Good practice is to improve the efficiency of the application process by providing some means for the planning authority and the landowner to resolve issues before and during the assessment process.

The New South Wales planning department has issued "Development Assessment Best Practice Guide to assist councils to improve delivery timeframes" (March 2017). The Guide suggests a pre-lodgement stage where the applicant meets with council officers to discuss lodgement requirements, optional design review according to the NSW equivalent of the R-Codes, with council providing advice on all aspects of design and planning. The applicant can also request a meeting to review the application for completeness and address any outstanding issues. This involves setting up a formal "pre-lodgement advisory service" in council.

A new procedure with a commensurate fee would be required for a pre-lodgement advice service in Western Australia.

The Queensland state planning department has published "Development Assessment Rules" which provide decision-makers detail on procedures set out in regulations and advises users of the planning system on what they can expect in the development assessment process. The rules include that a local government is to advise an applicant within 10 days of lodgement of an application whether any further information is required. Similar guidance in WA for planning decision-makers would improve efficiency and understanding of the development assessment process.

The review has also heard from local government and the development industry that onerous requirements are being imposed for the preparation of local structure plans.

The Structure Plan Framework includes a comprehensive list of matters to be considered, but not all factors need to be followed for all proposals. The rigid application of the framework leads to unnecessarily long and expensive structure plan processes. It would be helpful if, prior to the preparation of a structure plan In particular, requirements for structure planning of small regional locations in particular should be targeted for reduced requirements.

Review proposals:

4.2.4 Provide in regulation that an applicant may seek pre-lodgement advice for development applications.

4.2.5 Development Assessment Guidance be published by the DPLH in consultation with local government and industry bodies.

4.2.6 Provide in the LPS Regulations that a local government must advise an applicant within 10 business days of receipt of a development application whether additional information is required.

4.2.7 Provide a procedure for local government and developer proponents to agree upfront the scope and content of a local structure plan with the DPLH and other agencies as appropriate.

C. Elevating the status of local structure plans

Prior to the introduction of the LPS Regulations, local structure plans were accepted as having the "force and effect" of a scheme, by being read as they were part of the scheme.

This was reviewed during preparation of the LPS Regulations due to a concern that there may not be power in the PD Act to give structure plans this status. As a result the LPS Regulations provided that structure plans are to be given "due regard". Incorporation of a structure plan into a local planning scheme to provide a high level of certainty requires a separate scheme amendment process.

Industry stakeholders and local government have strongly promoted to this review the elevation of the status of structure plans to be read as part of the scheme to bring certainty to zonings, reservations, density codings and statutory development controls, and to avoid two lengthy separate processes for no real planning gain.

Options to avoid the time taken through sequential structure plan and scheme amendment processes are:

1. incorporate the Structure Planning Process as a Scheme Amendment process so that upon approval it can be incorporated into the local planning strategy and the local planning scheme; or
2. amend the PD Act to provide a head of power for structure plans, once given final approval, to be read as part of the scheme with the "force and effect" of the scheme.

Review proposals:

4.2.8 Provide in the PD Act that the implementation section (part one) of approved structure plans and activity centre plans are to be read as part of the scheme and have the "force and effect" of the scheme.

D. Automatic progression of structure plan proposals

Local government has also raised concerns with the review that under the LPS Regulations, local government must progress a structure plan to advertising and assessment, even if the proposal is considered to lack planning merit. This has resulted in some poor proposals which are unlikely to be supported, unnecessarily causing community angst. It is proposed that this be addressed through an amendment to the LPS Regulations to give the power to local government to refuse to progress, but to include the right for a proponent to seek the views of the WAPC if it feels it has been dealt with unfairly.

Review proposals:

4.2.9 Provide in the LPS Regulations that local government may refuse to progress a local structure plan or activity centre plan and amendment, if it is of the view that the proposals lacks sufficient planning merit. The amendment should also include ability for a proponent affected by such a decision to seek the views of the WAPC and the power for the WAPC to direct a local government to progress a proposal.

E. Development contribution plans

SPP3.6 Development Contribution Plans has been under review by the DPLH to improve the effective operation of contributions for the provision of infrastructure in new and established development areas.

This review has considered further issues raised by stakeholders and suggests proposals to improve the effectiveness of development contribution plans as follows.

1. Scope Creep: Industry has strong concerns regarding local government changing the scope of DCPs without following due process. To improve transparency, a summary of both costs and cost contributions should be included as a schedule in a local planning scheme. This would provide certainty regarding the scope of infrastructure to be delivered, along with costs and cost apportionment. Material changes to these parameters would require a scheme amendment through which owners and developers would be consulted.
2. The DPLH is required to oversee the operation of development contributions, but lacks specialist infrastructure expertise. It is proposed that a planning panel with appropriate infrastructure expertise be established to provide appropriate expertise in reviewing development contribution plans for the WAPC and the Minister for Planning. The cost of the planning panel should be included as a scheme cost.
3. The development industry has raised the concern that monies in development contribution plans in some local governments are not spent when it would be timely to do so. It would be appropriate for the Minister to be able to seek a special report from a particular local government on the operation of a development contribution plan and if necessary, instruct particular actions be taken in the administration of the Development Contribution Plans. Consideration should be given to whether s.211 of the PD Act is sufficient to consider a representation of this nature.

Review proposals:

4.2.10 Provide for development contribution plan cost and cost contributions schedules to be included as a schedule in local planning schemes.

4.2.11 Establish a Development Contributions Infrastructure Panel to review proposed local planning scheme amendments that include Development Contribution Plans, with the cost of the review to be included as a development contribution plan administration cost.

4.2.12 Provide for in the PD Act an ability for the Minister for Planning to:

i require a special report from a local government on the operation of a development contribution plan; and

ii instruct a local government to take particular actions for the administration of a development contribution plan.

F. Fast track approvals for single houses

Often the only interaction with the WA planning system for many people is through an application to a local government to construct a new home or a home addition.

A key reform introduced through the LPS Regulations in 2015 was to exempt the need for planning approval for single house proposals which meet the "deemed-to-comply" requirements of the R-Codes. Planning approval is still required for variations to the R-Codes.

Feedback from industry groups has indicated that the need for planning approval often for R-Code variation is not identified until a building licence is being assessed by a local government. This then results in an eleventh hour requirement to seek planning approval, which leads to building schedule delays, with costs and frustrations for the owner and builder.

Often the source of the confusion lies in the complexity of the regulatory framework and differences in interpretation of policies. The DPLH released a number of R-Codes practice notes to address common areas of confusion and misinterpretation in 2017 and these should be updated or new practice notes added over time to respond to common issues as they arise.

Some local governments for a fee have introduced a 'deemed-to-comply' check which allows applicants to submit residential building plans to the local government for assessment and formal written advice as to whether the proposal will require a development approval prior to a building licence being issued. This is helpful, but minor variations to the R-Codes still need to go through a full assessment (with a 60-day statutory timeframe) which is unnecessary where there will be little or no impact for neighbours.

A fast-track planning approval stream of 30 days is proposed for single houses that require only minor variations to the R-Codes such as front and side setbacks, the size of the site area, open space and outdoor living areas, retaining walls, and patios. A definitive list will need to be developed in consultation with local government and industry having regard to the most common minor R-Code variations currently sought.

It is proposed that a working group of DPLH, industry and local government recommend the list of minor variations to be eligible for the fast-track planning approval stream.

Review proposals:

4.2.13 Provide in the LPS Regulations for a voluntary 'deemed-to-comply' check for single houses and provide in the PD Regulations a specified fee for the service.

4.2.14 Provide in the LPS Regulations and R-Codes a fast-track 30-day planning approval process for single house applications that require only minor variations to the R-Codes.

G. Track-based approach to planning activity and proposals

Aligning all levels of the planning system with common strategic goals allows a track-based approach, based on the degree of alignment with strategic planning, to be adopted for most planning proposals.

The LPS Regulations have already introduced for local planning scheme amendments a 'Basic', 'Standard' and 'Complex' stream, which allows for more minor matters to follow a fast-track process, and those which are more complex to follow a process with higher levels of scrutiny.

The principle of track-based consideration of planning proposals should be adopted across all levels of the planning system to improve efficiency and focus resources on more complex and higher impact proposals. A track-based approach could be adopted for:

- region planning scheme amendments (as contemplated by *Planning Makes it Happen: Phase Two*);
- local planning strategies and amendments; and
- local structure plan and activity centre plans and amendments.

The basis of a track-based approach could follow:

- Basic: Consistent with strategic planning and only minor technical considerations.
- Standard: Consistent with strategic planning with some consideration of technical matters or potential impacts required.
- Complex: Not contemplated by strategic planning and/or requires detailed consideration of technical issues or impacts.

The streams, depending on the instrument or proposal involved, may include reduced information, consultation, referral and assessment requirements, as well as, future consideration of delegation of basic or standard proposals to local government.

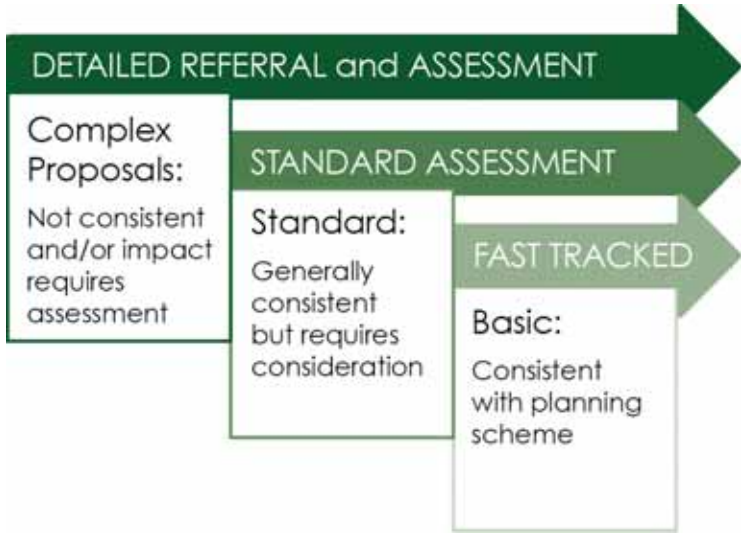


FIGURE 21: TRACK BASED APPROACH FOR PLANNING PROPOSALS

Review proposals:

4.2.15 A framework for "Basic", "Standard" and "Complex" streams for region scheme amendments, local planning strategies and amendments, and local structure plan/activity centre plans and amendments be developed by the DPLH for implementation through regulation.

Key reform 5: Planning for consolidated, connected and smart growth

Policies and plans to manage the growth of urban centres are now established in every Australian State and internationally in the United States, Canada, the United Kingdom, Europe and Asia. Urban growth management controls seek to prevent sprawl and foster more compact development in accordance with widely accepted "smart growth principles"[16].

The WAPC's metropolitan strategy *Perth and Peel @ 3.5million (2018)* proposes to manage urban growth by limiting new greenfield development to 53 per cent of new dwelling growth and accommodating 47 per cent within existing urban areas through "urban infill".

The majority of urban infill is proposed to be accommodated within urban corridors, activity centres and station precincts with the remaining portion to be located in general residential areas[17]. Given that earlier metropolitan plans for Perth with ambitious infill targets remain unfulfilled, meeting the current urban infill target is a major challenge.

WAPC policies for management of urban growth include State Planning Policy 3 and Development Control Policy 1.6, which both date from 2006. They require updating to reflect the State Government's METRONET transit oriented development intentions.

The role of State planning agencies also need to be clarified in response to the proposed establishment of Infrastructure WA and emerging conflicts between the coordination of State agencies and infrastructure to deliver new greenfields and infill development.

For example, *Perth and Peel @ 3.5million* proposes the transitioning of over 300 kilometres of key transport corridors into multi-functional corridors, but the plan is difficult to implement because of consistent Main Roads objections to allowing additional access and further development along major roads.

Finally, while significant attention of the planning system needs to shift to delivering infill, there is still a need to accommodate at least half of Perth's growth in new greenfields development. Liveable Neighbourhoods remains the primary document setting standards for greenfields development in Western Australia. However the 2015 review of Liveable Neighbourhoods has failed to gain industry support for proposed amendments and remains incomplete.

The key matters requiring attention to plan for consolidated and connected smart growth are:

1. clarifying the responsibilities of local and State Government in meeting the WAPC infill development target for *Perth and Peel @ 3.5million*;
2. updating State planning policies to reflect leading practices for urban growth management;
3. clarifying the role of land use and infrastructure planning following the establishment of Infrastructure WA and ensure State infrastructure needs are considered at structure planning and rezoning;
4. revising governance arrangements of urban corridors to promote their revitalisation as proposed under *Perth and Peel @ 3.5million*; and
5. while elevating Liveable Neighbourhoods to a State Planning Policy, ensuring that its content as a best-practice content to new greenfields development at regional, district and local level is maintained with any necessary refinements.

[16] Leslie Stein. Comparative Urban Land Use Planning; Best Practice p 90

[17] WAPC Central Sub Regional Planning Framework of Perth and Peel at 3.5million. 2018 p.49

FIGURE 22: 3.5 ADDITIONAL INFILL DWELLINGS FOR EVERY TEN EXISTING DWELLINGS

5.1 Planning for targeted urban infill

Key Reform Areas 1 – 4 are designed to modernise the planning system into a strategically-led system with a clear connection between State and local planning. This will facilitate incremental infill development which occurs over time as one planning step progresses to the next.

The planning system also needs an ability to be able to intervene more quickly for activity centres, urban corridors and station precincts and directly to bridge the gap[18] between plan-making and implementation through a development-led approach.

Victoria and New South Wales have developed arrangements for the planning and development of key locations that are relevant to Western Australia. In Victoria, "Urban Renewal Precinct Planning" for centres and station precincts is led by the Victorian Planning Authority with local government and relevant agencies. The Victorian Government's development authority Places Victoria carries out precinct development where State assistance is required.

In New South Wales "Priority Precinct Planning" for key urban renewal corridors and centres is undertaken by the Department of Planning and Environment in consultation with local governments and relevant agencies. Urban Growth NSW Development Corporation then manages the development of "Sydney Growth Centres" where there is a State interest.

In Western Australia, a variety of structure planning approaches are undertaken for key locations of activity centres, urban corridors and station precincts. They range from developer-led, to local government-led and State-led by LandCorp, the MRA, the WAPC and recently METRONET. A chart indicating the relative approaches is shown in Figure 11.

[18] L. Albechts. Bridge the Gap; From Spatial Planning to Strategic Projects. European Planning Studies Vol.14 No.10 November 2006. P. 1489

Approaches to planning for urban infill precincts					
	Plan	Rezone	Coordinate infrastructure	State planning powers	State investment
Developer-led structure plans (incl Landcorp)	✔	✘	✘	✘	✘
Local government-led structure plans	✔	✔	✘	✘	✘
Joint WAPC/local government structure plans	✔	✔	✔	✘	✘
WAPC improvement plans and schemes	✔	✔	✔	✔	✔
MRA redevelopment scheme	✔	✔	✔	✔	✔

FIGURE 23: APPROACHES TO PLANNING FOR URBAN INFILL PRECINCTS

The various structure planning approaches often overlap with no clear guidance as to when or where a particular approach is appropriate. Further, there is no guidance or leadership with regard to which precincts are a priority for planning. Related issues include:

- developers may prepare structure plans for areas in which they have an interest and can progress to WAPC approval but still require a local government to initiate a local planning scheme amendment to give it effect;
- developer-led structure plans were intended for greenfields, and when carried out for infill areas may include proposals for land owned by third parties. There is contention that developers should not be able to apply to propose changes to planning controls for land outside of their control. The circumstances in which a developer-led structure plan for an infill area needs to be defined and the potential for implementation of an approved structure plan to stall due to the need to undertake a scheme amendment needs to be resolved;
- the success of regional plans requires local governments to prepare activity centre plans, and local structure plans for urban corridors, but they have little ability to influence the coordination and delivery of required State infrastructure to unlock the potential of these areas. There is a role for the WAPC to plan for key locations in partnership with local government;
- the MRA was initially focussed on complex redevelopment schemes at rail stations and over the past several years moved into a range of assorted State projects that have a variety of objectives. The WAPC has supported local governments through improvement plans and improvement schemes. Guidance is needed on the appropriate use for State-led and State-supported structure planning and implementation for key infill locations.

The range of approaches to achieving urban infill outcomes needs to be rationalised for the planning, rezoning and implementation of the key urban infill locations of activity centres, urban corridors and station precincts with clear guidance on the roles and relationships of developers, local government and State agencies.

Review proposals:

5.1.1 That the State Government develops clear arrangements for the planning and delivery of the key urban infill locations of activity centres, urban corridors and station precincts, including prioritising of areas which require State and local government collaboration.

5.2 Updating growth management policies for smart infill development

WAPC policies *SPP 3 - Urban Growth and Settlement* and *DCP 1.6 - Planning to Support Transit Use and Transit Oriented Development,* have not been updated since 2006 and require updating to guide planning for urban infill. A review of these policies presents an opportunity to express the principles that underpin METRONET for wider application.

A review of these policies should adopt as a foundation the Smart Growth principles (see Case Study 3) which provide a positive set of growth management values in straightforward language that can be adapted for Western Australia.

Review proposals:

5.2.1 A new Consolidated and Connected Smart Growth State Planning Policy that builds on the State Government's METRONET policy and establishes contemporary smart growth principles and practices.

Case study 3: Smart growth principles

1. Mix land uses.
2. Take advantage of **compact design.**
3. Create a **range of housing opportunities** and choices.
4. Create **walkable neighbourhoods.**
5. Foster distinctive, attractive communities with a **strong sense of place**.
6. Preserve open space, farmland, natural beauty, and **critical environmental areas.**
7. Direct development towards **existing communities.**
8. Provide a **variety of transportation** choices.
9. Make **development decisions predictable**, fair, and cost effective.
10. Encourage **community and stakeholder collaboration** in development decisions.

https://smartgrowthamerica.org/

5.3 Planning for land use and infrastructure coordination

A significant part of planning for the State's settlements is largely in place[19]. The State Planning Strategy indicates that these planning frameworks now need to be supported through the provision of infrastructure and services. For example, a local government seeking to increase density in a particular area may seek improved public transport to lessen congestion, or require upgrades to utilities such as power or water.

The State Government is establishing Infrastructure WA (IWA) to undertake long-term infrastructure planning and major project coordination for the State. IWA will perform a strategic coordination role across the State, which will both inform and be informed by the WAPC's strategic land use planning work:[20]

> "*The WAPC will inform IWA's strategy and other work through the preparation of strategic land use plans and policies (for example Perth and Peel @ 3.5 million), which set the strategic direction for land use across the State. This will assist IWA in identifying infrastructure needs and vice-versa. For example, IWA may prepare advice on how better to utilise existing infrastructure assets, which, in turn, may inform areas more suited to urban consolidation*".

With the establishment of IWA, the role of the State Planning Strategy should transition to planning for the State's network of settlements, informing and having regard for IWA infrastructure plans and priorities as indicated in Figure 24.

Population growth in Western Australia is concentrated in and around Perth and major regional centres. Within Perth and the regional cities greenfields outer suburbs are continuing to expand and require the orderly and timely extension of infrastructure. Urban infill is transforming selected inner and middle suburbs into higher density areas. These established areas have existing infrastructure, but particular infrastructure may be aging or not fit-for-purpose and requires upgrading to service additional population. Often upgrading existing infrastructure in inner city areas to cater for planned infill is particularly complicated and expensive and requires special coordination and commitment.

Coordinated planning for these areas by the WAPC, local government and utility providers will help ensure infrastructure such as schools, parks, community facilities, public transport and road upgrades are delivered to support community needs.

Review proposals:

5.3.1 The WAPC to assist with land use and infrastructure coordination for the delivery of priority precincts through a renewed Committee.

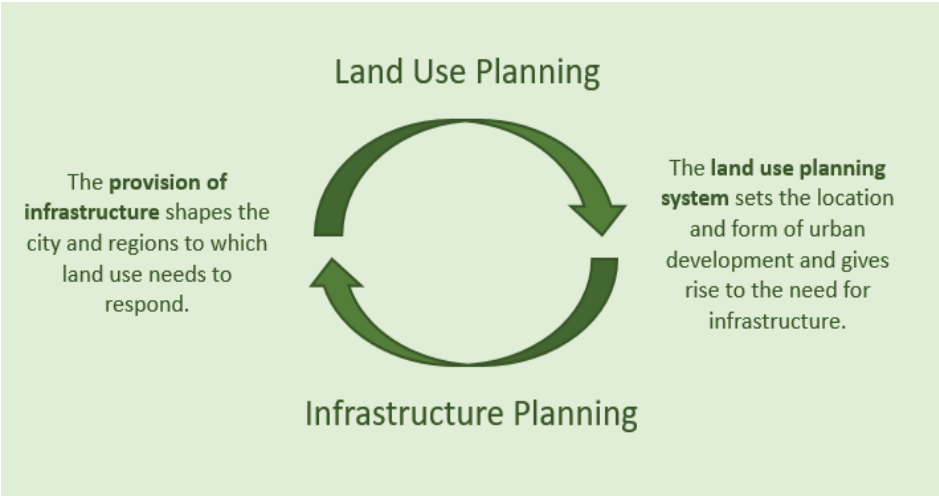


FIGURE 24: LAND USE PLANNING AND INFRASTRUCTURE PLANNING RELATIONSHIP

[19] WAPC State Planning Strategy p 26

[20] Infrastructure WA Proposal for public consultation. February 2018. Government of Western Australia p 31

5.4 Coordinating state infrastructure with regional rezonings

Concern has been expressed by local government to the review team that insufficient regard was being paid to the availability of State infrastructure in undertaking amendments to region schemes, particularly the lifting of Urban Deferment under the MRS and in rezoning land from Rural to Industrial.

The WAPC draft *Guidelines for Lifting of Urban Deferment 2017* provides for the transfer of land from the urban deferred zone to the urban zone to be initiated by a landowner, the local government or any public authority. Evidence is required that "the land is capable of being provided with essential services and agreement has been reached between the developers and service providers with regard to staging and financing of services".

Developers are only responsible for standard infrastructure items that can be required directly as a condition of subdivision. There is a range of State infrastructure, such as roads, which are outside the control of a developer but may be essential for a new development area.

The WAPC should ensure that arrangements are in place for the provision of State infrastructure, concurrent to the lifting of Urban Deferment or rezoning to allow development to occur.

It is noted that the MRS does not currently include the flexibility offered by an "Industrial Deferred Zone" which is currently included in the Peel and Greater Bunbury Region Schemes.

Review proposals:

5.4.1 Provide in the Metropolitan Region Scheme an "Industrial Deferred Zone".

5.4.2 The WAPC to ensure that any requirements for State infrastructure are in place in the lifting of Urban Deferment or Industrial Deferment, and that the draft Guidelines for Lifting of Urban Deferment 2017 be amended accordingly.

5.5 Coordination of infrastructure for land development

Currently, there is limited advice on State infrastructure plans to assist local government with the preparation of local planning strategies, local structure plans and activity centre plans. As a result there are areas of Perth where "first-in" developers have utilised or exceeded existing infrastructure capacity and development has then become uneconomic for the remaining developers who cannot afford the costs of upgrading infrastructure to create additional capacity.

Preparing land use plans without guidance on infrastructure is inefficient as it gives rise to pressure for infrastructure agencies to respond to unscheduled infrastructure needs; or may result in the prolonged deferment of planned development until infrastructure can be upgraded. Both scenarios distort the programming of orderly development.

Provision should be made for advice on the forward planning of State infrastructure to local governments to inform the preparation of local planning strategies, as well as to proponents of structure plans so that land use plans are better aligned with infrastructure plans, including development contribution plans where needed.

Review proposals:

5.5.1 Provision be made for advice on the forward planning of State infrastructure, including utility providers, to assist local governments in the preparation of local planning strategies and structure plans.

5.6 Coordination of land use and transport for urban corridor development

The importance of land use planning and transport planning integration is a key function of the WAPC in the PD Act, as set out in the State Planning Framework (Community Principal p. 4) as:

> "Integrating land use and transport planning and promoting patterns of land use which reduce the need for transport, promote the use of public transport and reduce the dependence on private cars".

Perth and Peel @ 3.5million includes a direct proposal for key urban corridors in the central area to transition into "locations for increased and diversified places for people to live and work"[21] .

The transition of over 300 kilometres of these corridors is vital to achieve infill housing and employment targets. For example the City of Stirling proposes 30,000 new dwellings along its key urban corridors.

There are numerous agency and authority interests over roads identified as urban corridors, extending to utility infrastructure, regional road functions controlled by Main Roads and public transport interests managed by Department of Transport and Public Transport Authority. Some of these are protected by other Acts outside of the planning system. Consequentially, local government has to negotiate with various interests and navigate a complex web of approvals which can be upturned at any stage by powers given under other Acts. As a result, delivery of urban corridors is occurring very slowly with little infill delivered on these corridors.

The vital transition of road corridors under *Perth and Peel @ 3.5million* into dense mixed urban corridors requires coordination and a broader transport and land use view than can be offered by a single agency or authority with a particular interest in the future of the corridor. To achieve this, the MRS should be updated to reflect planning for mixed use urban corridors via the inclusion of a new MRS reservation of 'Urban Corridor' which signal corridors intended to be regionally important public transport corridors, including denser land uses through redevelopment. It is proposed that the Department of Transport would coordinate a whole-of-transport portfolio response to planning referrals within these reservations. Other governance and funding issues will also need to be resolved in the context of the vital role of these corridors for urban infill development.

A related issue arises in that road widening from plans long past remain embedded in the MRS through road reservations. These reservations are not regularly reviewed and result in the ad hoc setback of development which is disturbing coherent redevelopment plans, such as along Beaufort Street in Mount Lawley.

Review proposals:

5.6.1 The Metropolitan Region Scheme be updated to include "Urban Corridor" as a category of Reserved Roads based on Perth and Peel @ 3.5 Million, with the Department of Transport being made responsible for coordinating a whole of transport portfolio response to planning proposals along the corridor.

5.6.2 A review be undertaken of regional road reservations in place to accommodate road widenings within the Metropolitan Region Scheme for designated Urban Corridors.

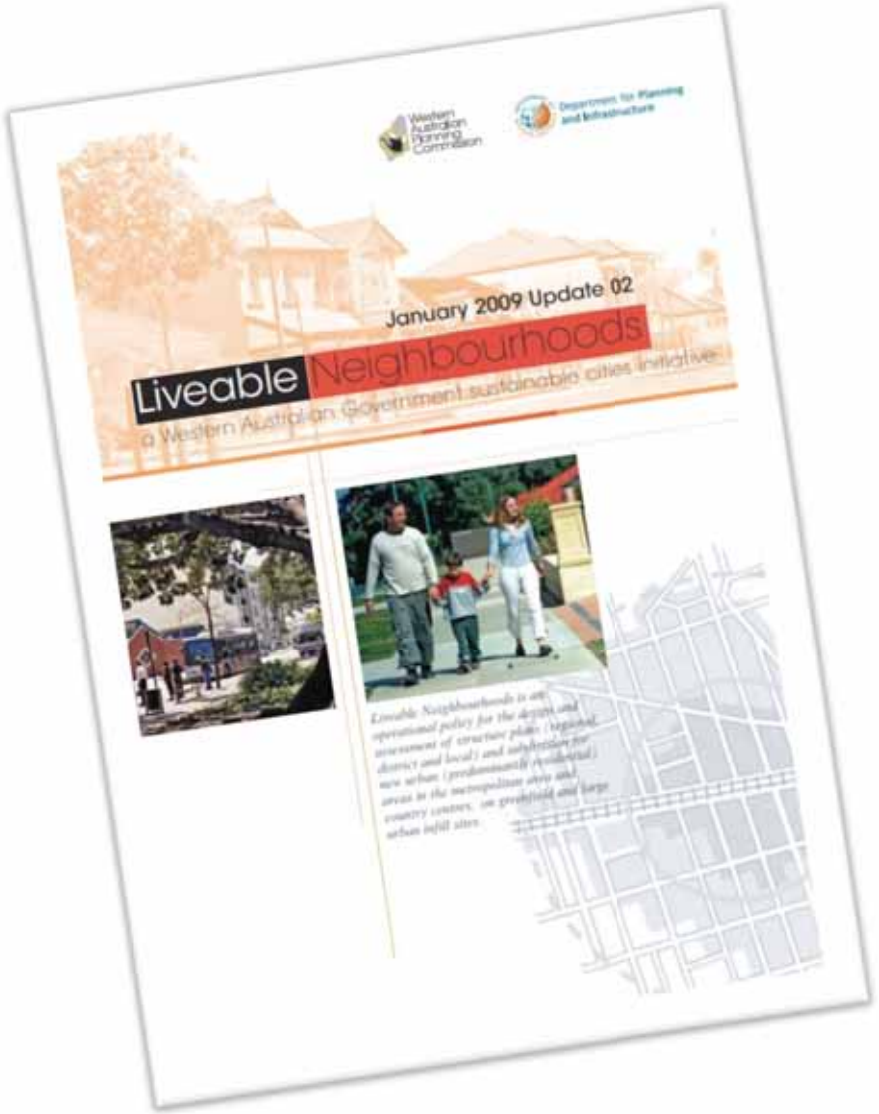
[21] Central Sub-regional Planning Framework of Perth and Peel @ 3.5million, March 2018 (P.32)

5.7 Liveable Neighbourhoods

There is still a need to accommodate at least half of Perth's development in new greenfields development. Liveable Neighbourhoods was developed to provide for a more sustainable form of development on Perth's fringes and WA's regional centres. Liveable Neighbourhoods remains nationally and internationally recognised as an influential statement of contemporary residential planning principles[22].

A review of Liveable Neighbourhoods was commenced in 2015. The review has failed to gain industry support for proposed amendments and remains incomplete. This is despite direct evidence of Liveable Neighbourhood's effectiveness by the Centre for the Built Environment and Health at the University of Western Australia and two independent reviews (the Planning Group 2003 and the Centre for the Built environment and Health 2015) that any problems lay in the lack of full implementation of the policy.

Reducing the scope of Liveable Neighbourhoods to a neighbourhood design policy will compromise the intent of the document as neighbourhood design policy as well as a sub-regional and local level design policy for greenfields areas. Liveable Neighbourhoods should be elevated to a State Planning Policy and retained intact with minor refinements, with attention given to implementation rather than another review and restructure.



Review proposals:

5.71 Liveable Neighbourhoods be elevated to a State Planning Policy and maintained and refined as a best-practice approach to new greenfields development at regional, district and local level.

[22] Robert Freestone. Urban Nation: Australia's Planning Heritage, 2010 (p. 67,68)

4. Delivery approach

4.1 Overview

The following provides an overview of an approach for delivery of the main recommended Green Paper proposals, should they be supported by Government following consultation and review. Detailed implementation options will be provided in the White Paper.

A. Modernising the WA planning system

Three essential steps are proposed to modernise the WA planning system:

1. to reorganise state planning policies into **common elements;**
2. to consolidate state planning policies into a **single, concise State Planning Framework**; and
3. to develop a **Comprehensive Local Planning Scheme** that contains local planning strategies (statements), all legal provisions, maps and local planning policies.

There are international and national precedents from which the proposed common elements, the State Planning Framework and Comprehensive Local Planning Scheme can be modelled.

It is proposed that a **single State Planning Framework** could be developed over an 18-month period by the DLPH with WAPC consideration. This will require additional expertise resourced by the WAPC.

Similarly, the legislative framework to implement the proposed **Comprehensive Local Planning Scheme** and guidance to local governments through the Local Planning Manual could be developed concurrently over the same 18-month period. This should include a pilot program of local planning schemes for three typical local governments, including an inner metropolitan, a metropolitan growth and a regional local government. This program will also require additional expertise resourced by the WAPC.

It would be timely for the proposed standardisation of key common zones, land uses and land use permissibility to also be developed for inclusion into new Comprehensive Local Planning Schemes.

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Reviews of many local planning strategies and local planning schemes are currently underway as a requirement of the LPS Regulations. There are two options to achieve local government compliance with the new Comprehensive Local Planning Scheme format:

1. await the regular five-year review cycle. Any reviews currently underway which are significantly advanced should continue to finalisation. Any local government in the early stages of review or about to embark on substantive review of its frameworks should await finalisation of arrangements for the new Comprehensive Local Planning Scheme: or
2. commit to a condensed timeframe to implement the changes and provide appropriate resources and expertise from the WAPC to both DPLH and local government to implement within two years of the finalisation of arrangements for Comprehensive Local Planning Schemes.

It is recommended an interactive **online planning portal** be developed by the DPLH to keep comprehensive local planning schemes online in a legible and user-friendly format that is quick to amend. This should be scoped for implementation to coincide with the updating of local planning schemes into a Comprehensive Local Planning Scheme format.

Key steps in preparing a consolidated State Planning Framework and Comprehensive Local Planning Scheme are set out in Figure 25.

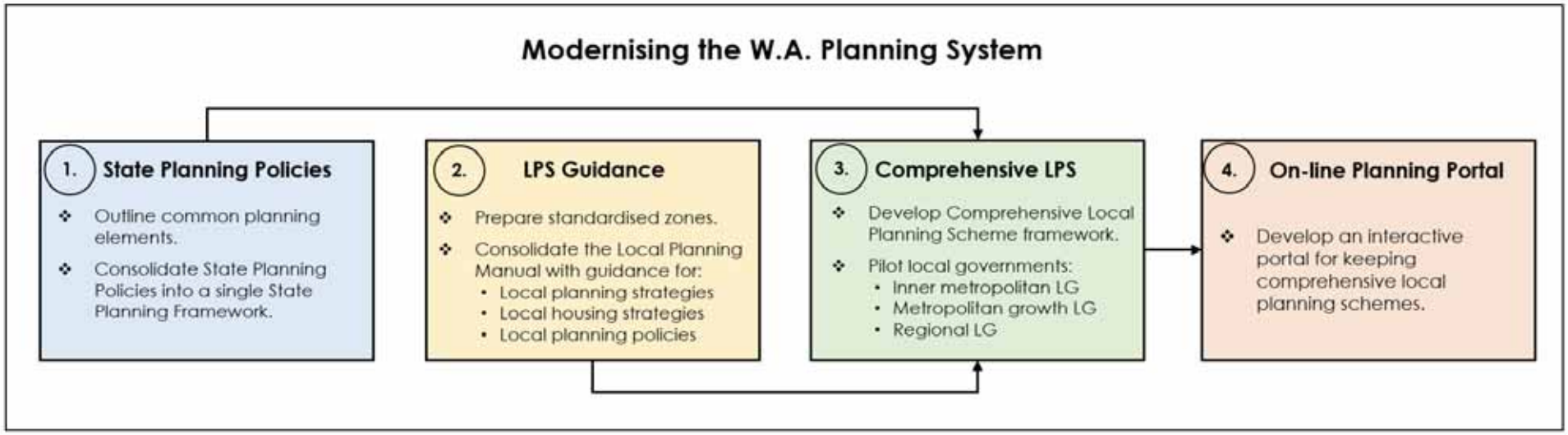

FIGURE 25: IMPLEMENTATION STEPS FOR STATE PLANNING POLICIES AND THE PROPOSED COMPREHENSIVE LOCAL PLANNING SCHEME

B. Arrangement of state and local planning

The PD Act requires amendment to provide for the restructure of the WAPC and its committees. Concurrently, the WAPC should develop a local government accreditation criteria and system to extend delegations proposed in this review, to free the WAPC to effectively manage the State policy framework and prepare and implement regional and sub-regional plans.

It is recommended that the State Government provide for new additional positions to be created within the DPLH to recruit senior and suitably experienced town planners to expedite WAPC strategic planning and policy development.

C. Process efficiency improvements

It is proposed that the DPLH retain a planning reform team for continuous improvement of the planning system. Priorities from this review to improve process efficiency are:

- fast-track approvals for single houses;
- DPLH Independent Planning Reviewer assistance with planning referrals for WAPC;
- approved structure plans to be able to be read as part of the scheme and have the "force and effect" of the scheme; and
- clarifications to Development Contributions Plans.

D. Proposed PD Act amendments

Proposals within this Green Paper require amendments to the PD Act for implementation. A consolidated list of amendments arising from the Green Paper proposals and those identified within the *Planning Makes it Happen: Phase Two* reform package have been prioritised as follows:

Essential planning system reforms:

Planning system framework

- Strategic planning to be made a purpose of the PD Act; (Proposal 1.1.1)
- Provide for a Comprehensive Local Planning Scheme (Proposal 2.4.1)
- Include deemed provisions in a Comprehensive Local Planning Scheme (Proposal 2.7.1)
- Provide for Region Scheme Regulations (Phase Two) to introduce risk-based amendment streams and revise public notification requirements (Proposal 3.2.3).

WAPC governance and functions

- Revise WAPC membership (Proposal 4.1.4)
- Remove committees from Schedule 2 (Proposal 4.1.4)
- Remove WAPC legislative advisory role (Proposal 4.1.1).

Other

- All planning decision-makers to have due regard to State Planning Policies to ensure that the MRA and any other authorities that may receive delegated power from the WAPC give proper consideration to their content (Proposal 2.3.4).

Red tape reduction

- Approved structure plans to have the force and effect of a local planning scheme (Proposal 4.2.8.)
- WAPC to have the power to prepare or amend a local planning scheme to ensure consistency with a region planning scheme (Phase Two)
- Minister for Planning to have the power to be able to withdraw a proposed region scheme amendment (Phase Two)
- Minister for Planning to be able to require a report from a local government on a development contribution plan, and can make instructions (Proposal 4.2.12)

- Provide for certain classes of region and local planning scheme amendments to be exempt from referral to the EPA (subject to separate regulations under the *Environmental Protection Act 1986*) (Phase Two)
- Ability to seek two-year extension of time to lodge 'certified correct' diagram or survey of subdivision (Phase Two)
- Clarification of WAPC approval for pre-sale (Phase Two)
- Expand list of public works which are exempt from development approval under s.5 and 6 (Phase Two).

Administrative refinements

The Planning Makes it Happen: Phase Two package of planning reforms also recommended a number of administrative refinements to aid the clarity and legibility of provisions of the PD Act. These should be progressed in due course.

E. Smart growth

Arrangements for planning and delivery of infill housing and employment should be developed among the WAPC, MRA/LandCorp and METRONET together with establishing priorities for the planning and delivery of key urban infill locations of activity centres, urban corridors and station precincts. The WAPC has a role in assisting local government in planning and infrastructure coordination for key activity centre and urban corridors.

The MRS should be amended to include "Urban Corridor" as a category of Reserved Roads based on *Perth and Peel @ 3.5million*, with the Department of Transport being made responsible for coordinating a whole of transport portfolio response to planning proposals along the corridor.

F. Transparency and accountability of DAPs

This review includes a number of recommendations that require amendments to the DAP Regulations and others that should be implemented through DAP Standing Orders and Practice Notes as soon as practicable.

4.2 Further work

This review has identified further work to help streamline the WA planning system. Two priority matters are:

1. The development of a framework for the referral of planning applications, that provides the types of planning applications that are required to be referred and to which agencies the applications are referred to.

   This is required to provide certainty and rigour around interactions of the planning system with specialist agencies, including the need for and timeliness of referrals and methods to resolve issues raised in advice.

2. The expansion of the track-based risk approach to planning activity and proposals which would improve efficiency and focus resources on more complex and higher risk proposals.

5. Schedule of proposals

1.0	**A STRATEGICALLY-LED SYSTEM**
1.1	**Prominence of Strategic Planning**
1.1.1	Provide in the PD Act that strategic planning is a purpose of the Act and provide a definition of strategic planning.
1.1.2	Provide in the LPS Regulations that the review of a local planning scheme must be informed by, and respond to, a review of the local planning strategy.
1.1.3	Provide in the LPS Regulations that a complex scheme amendment must be accompanied by a proposed amendment to the Local Planning Strategy (in the form of a report).
1.2	**Need to explain sustainability for land use planning**
1.2.1	An overarching State Planning Policy be developed which: i Provides a definition of sustainability for the planning system which reflects a balancing of economic development, environmental considerations, and social needs; ii Reinforces sustainability as an essential element required to be taken into account in the making of any strategy or policy; and iii Indicates the particular steps related to how economic, social and environmental factors are balanced.
1.3	**Housing distribution**
1.3.1	Provide that every local planning strategy include a local housing strategy, except for low growth and small regional local governments which only require basic local planning scheme requirements.
1.3.2	The DPLH to provide guidance for local government in the Local Planning Manual on how to prepare a Local Housing Strategy, including a methodology for local housing analysis.
2.0	**A LEGIBLE PLANNING SYSTEM**
2.2	**Arranging state planning policies for brevity and simplicity**
2.2.1	State Planning Policies be consolidated into a single state planning policy framework with supplementary technical guidance.

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2.3	**Line of sight**
2.3.1	WAPC to establish common strategic "elements" for the State Planning Framework including but not limited to: • A "sustainability" element • A "land use element" that includes the distribution of uses of land as well as density • A "housing element" that includes the types of housing • An "environmental element" • An "open space element" • An "urban form and design element" • An infrastructure element. and prepare Technical Guidance for the details of each element to be included.
2.3.2	Provide that every State Planning Policy, Regional or sub-regional plan and the local planning strategy must follow these elements, unless otherwise agreed to by the WAPC.
2.3.3	Provide that every local planning strategy must explain how it has addressed the requirements of each common strategic element against the requirements of State Strategy, Planning Policy or Regional or sub-regional strategy.
2.3.4	Provide in the PD Act that all planning decision makers are to have due regard to State Planning Policies.
2.3.5	Provide in the *Metropolitan Redevelopment Authority Act 2011* that in performing functions under the Act, the MRA must have regard to State Planning Policies.
2.4	**Complexity locating and interpreting the local planning framework**
2.4.1	Require that a local planning scheme be published with the inclusion of the Local Planning Strategy (in the form of a local strategic statement) and Local Planning Policies in a document to be called a "Comprehensive Local Planning Scheme".
2.4.2	DPLH to provide guidance for local government in the Local Planning Manual on the content and format of a Local Planning Strategy and Local Planning Policies.
2.4.3	Local governments currently undertaking, or about to embark on, a substantive review of their planning frameworks delay preparation of local planning strategies and local planning schemes (and related omnibus amendments) until guidance on the format and content of local planning frameworks is available.
2.4.4	Provide in the LPS Regulations for a clear distinction of the purposes of Local Structure Plans, Activity Centre Plans, Local Development Plans and Local Planning Policies.
2.4.5	The DPLH to provide guidance in the Local Planning Manual on the appropriate use of each local planning instrument.
2.5	**Form of a Local Planning Strategy**
2.5.1	The DPLH to update the Local Planning Manual with guidance on the preparation, content and format of a Local Planning Strategy and strategic statement, in a similar form to a Victorian Municipal Strategic Statement.
2.6	**Form of Local Planning Policies**
2.6.1	The LPS Regulations be amended to provide that local planning policies are to be prepared in a manner and form approved by the WAPC.
2.6.2	The DPLH to update the Local Planning Manual to provide guidance for the form, content and writing of a local planning policy.

2.7	**Consistency of Local Planning Schemes**
2.7.1	Provide in the PD Act that deemed provisions are to be included in a comprehensive local planning scheme.
2.7.2	Provide in the LPS Regulations that a comprehensive local planning scheme is to include a specific section for deemed provisions.
2.7.3	Provide in the LPS Regulations that there are deemed provisions which set out standardised zones, land uses and land use permissibility which: i group like-land uses into themes for which common development standards can be prepared ii identify low risk land use proposals by including suitable parameters for which a streamlined planning process apply iii are mandatory for local government to adopt within their municipalities through the next scheme review or omnibus amendment.
2.7.4	The DPLH to revise and keep up to date the Local Planning Manual to ensure it provides local government with the guidance required to prepare and administer its local planning framework and properly reflects the expectations of DPLH and WAPC.
2.8	**Location of Local Development Standards**
2.8.1	Provide in the LPS Regulations that there be a location within the model provisions for mandatory development requirements for key sites and matters.
2.9	**On-line Local Planning Schemes**
2.9.1	Develop an interactive Planning Portal for keeping local planning schemes online and accessing them in a legible and user-friendly format.
3.0	**A TRANSPARENT PLANNING SYSTEM**
3.2	**Community engagement**
3.2.1	The DPLH should develop a Community Engagement Charter for all aspects of the planning system that includes principles with regard to: i Planning authorities having a duty to engage with the community in a manner that allows residents to contribute to the making or amending of a strategic plan; and ii In the making or amending of a strategic plan, the community, as soon as possible, be given information as to what is proposed and any documents that the planning authority intends to examine.
3.2.2	Align engagement processes in the planning regulations to the Community Engagement Charter.
3.2.3	Revise public notification and engagement requirements for planning proposals in the PD Act and LPS Regulations to update out-dated requirements.
3.2.4	Make provision within the LPS Regulations that the local planning strategy must be in accordance with the Community Strategic Plan under the Local Government Act to the extent that it is relevant.
3.2.5	DPLH to revise the Local Planning Manual to clarify that: i actions in local planning strategies are limited to those matters that can be carried out within the local planning schemeii acknowledge a concurrent community participation process between a Strategic Community Plan and a local planning strategy.
3.3	**Reasons for decisions**
3.3.1	The DLPH to publish a Guide as to the Scope of Reasons by Planning Decision Makers, having regard to the Queensland model.
3.3.2	Provide in the LPS Regulations that reasons for decisions are to be provided on planning proposals.
3.4	**Transparency of DLPH and WAPC statutory reports**
3.4.1	WAPC practice be modified to publish Statutory Planning Committee and WAPC agenda items, reports and recommendations on region and local schemes and amendments.

3.5	**Reporting by Local and State Government on planning matters**
3.5.1	Provide in regulations mandatory reporting by local government on planning matters.
3.6	**Transparency and accountability of Development Assessment Panels**
3.6.1	Provide for DAP meetings to be held at regular times and outside of business hours.
3.6.2	Provide for the recording of each meeting of a DAP and made available on the DAP website of DPLH.
3.6.3	3.6.3 Provide clarification in DAP Practice Notes: i. If new information is submitted to the DAP after an RAR, the DAP should consider whether a decision should be deferred pending further RAR advice ii. As to when it may be appropriate to defer a decision, such as where issues are raised which require further detailed technical consideration by responsible authorities.
3.6.4	Amend the DAP Practice Notes to require reasons for decisions to be given in all decisions made by a DAP, including where the DAP adopts the responsible authority's recommendation contained within the RAR.
3.6.5	Provide for a requirement that applications amended through a SAT process are readvertised unless the amended plans comply with all development standards.
3.6.6	Provide that where a DAP has been invited to reconsider its decision following a SAT mediation, new specialist members be drawn from the available pool of members.
3.6.7	The SAT should consider preparing a framework for allowing parties with a sufficient interest in a matter to make a submission or be heard during SAT mediation of DAP matters.
3.6.8	Provide for expert DAP members to be drawn from a pool of members across the State on the basis of the type and complexity of the application being heard.
3.6.9	Provide for an expanded and flexible meeting process where the DAP Presiding member is of a view in relation to an application for development that wider community and local government viewpoints need to be examined.
3.6.10	Provide in the DAP Regulations that the WAPC retains its decision making ability with respect to development applications under region schemes.
3.6.11	Provide for a Presiding Member to be appointed also as the Chief Presiding Member to: i Oversee the quality and consistency of DAP procedures and decisions (such as consistency of the use and content of conditions; the quality of RAR reports) and recommend changes to DAP procedures and Standing Orders to DPLH ii Assist in identifying panel members appropriate to sit in accordance with the basis of the type and complexity of the application being heard iii Identify training needs for DAP members for the approval of the Director General DLPH.
4.0	**AN EFFICIENT PLANNING SYSTEM**
4.1	**Arrangement of the WA planning system**
4.1.1	Provide that the PD Act be amended to delete the WAPC function s14.(a)(ii) of advising the Minister for Planning on the administration, revision and reform of legislation.
4.1.2	Provide for a local government accreditation process.
4.1.3	Increase delegations from WAPC to DPLH and local government, for the purpose of the WAPC focussing on the State policy framework and regional strategic planning.

4.1.4	Provide for the PD Act to be amended to: i Revise the membership of the WAPC to 5-7 members to have experience, skills or knowledge of any one or more of the following fields— • planning, including strategic land use planning in metropolitan or regional areas • infrastructure planning, delivery, policy and strategy • public administration and public policy • property development • housing supply • corporate or public sector governance • economics, finance or financial management • management of business or commercial ventures • local government. ii Remove committees of the WAPC from Schedule 2, in favour of an ability for the WAPC to establish committees to advise the Commission on any matter, recognising the Statutory Planning Committee and Executive, Finance and Property Committee carry out core functions of the WAPC and will be required immediately under this new system. A committee would consist of at least one member of the Commission who is to be the chairperson of the committee.
4.1.5	The role and purpose of a Coastal Planning Committee be reviewed, and consideration be given to the most appropriate host organisation and regulatory framework for the Committee.
4.1.6	Revise the Service Delivery Agreement between the WAPC and DPLH to accord with the revised roles of the WAPC and DPLH.
4.1.7	Provide for new positions to be created to enable DPLH to recruit senior and experienced town planners to undertake strategic planning and policy development for the WAPC.
4.1.8	The DPLH and WAPC establish a protocol for the engagement of non-public sector expertise in the scoping and development of policies.
4.2	**Process efficiency for planning proposals**
4.2.1	A Planning Reform Team be retained by DPLH to implement proposals arising from the planning review and ongoing reforms to the Western Australian planning system.
4.2.2	A framework for referral of planning applications, to be incorporated in regulations as appropriate.
4.2.3	As an interim arrangement, the DPLH Independent Planning Reviewer be available to assist on issues regarding referral for WAPC matters.
4.2.4	Provide in regulation that an applicant may seek pre-lodgement advice for development applications.
4.2.5	Development Assessment Guidance be published by DPLH in consultation with local government and industry bodies.
4.2.6	Provide in the LPS Regulations that a local government must advise an applicant within 10 business days of receipt of a development application whether additional information is required.
4.2.7	Provide a procedure for local government and developer proponents to agree upfront the scope and content of a local structure plan with the DPLH and other agencies as appropriate.
4.2.8	Provide in the PD Act that the implementation section (part one) of approved structure plans and activity centre plans are to be read as part of the scheme and have the “force and effect” of the scheme.
4.2.9	Provide in the LPS Regulations that local government may refuse to progress a local structure plan or activity centre plan and amendment, if it is of the view that the proposals lacks sufficient planning merit. The amendment should also include ability for a proponent affected by such a decision to seek the views of the WAPC and the power for the WAPC to direct a local government to progress a proposal.

4.2.10	Provide for development contribution plan cost and cost contributions schedules to be included as a schedule in local planning schemes.
4.2.11	Establish a Development Contributions Infrastructure Panel to review proposed local planning scheme amendments that include Development Contribution Plans, with the cost of the review to be included as a development contribution plan administration cost.
4.2.12	Provide for in the PD Act an ability for the Minister for Planning to: i require a special report from a local government on the operation of a development contribution plan ii instruct a local government to take particular actions for the administration of a development contribution plan.
4.2.13	Provide in the LPS Regulations for a voluntary 'deemed-to-comply' check for single houses and provide in the P&D Regulations a specified fee for the service.
4.2.14	Provide in the LPS Regulations and R-Codes a fast-track 30-day planning approval process for single house applications that require only minor variations to the R-Codes.
4.2.15	A framework for "Basic", "Standard" and "Complex" streams for region scheme amendments, local planning strategies and amendments, and local structure plan/activity centre plans and amendments be developed by DPLH for implementation through regulation.
5.0	**PLANNING FOR CONSOLIDATED AND CONNECTED SMART GROWTH**
5.1	**Planning for targeted urban infill**
5.1.1	That the State Government develops clear arrangements for the planning and delivery of the key urban infill locations of activity centres, urban corridors and station precincts, including prioritising of areas which require State and local government collaboration.
5.2	**Updating growth management policies**
5.2.1	A new Consolidated and Connected Smart Growth State Planning Policy that builds on the State Government's METRONET policy and establishes contemporary smart growth principles and practices.
5.3	**Planning for land use and infrastructure coordination**
5.3.1	The WAPC to assist with land use and infrastructure coordination for the delivery of priority precincts through a renewed Committee.
5.4	**Coordinating State infrastructure with regional rezonings**
5.4.1	Provide in the Metropolitan Region Scheme an "Industrial Deferred Zone".
5.4.2	The WAPC to ensure that any requirements for State infrastructure are in place in the lifting of Urban Deferment or Industrial Deferment, and that the draft Guidelines for Lifting of Urban Deferment 2017 be amended accordingly.
5.5	**Coordination of infrastructure for land development**
5.5.1	Provision be made for advice on the forward planning of State infrastructure, including utility providers to assist local governments in the preparation of local planning strategies and structure plans.

5.6	Coordination of land use and transport for corridor development
5.6.1	The MRS be updated to include "Urban Corridor" as a category of Reserved Roads based on Perth and Peel @ 3.5 Million, with the Department of Transport being made responsible for coordinating a whole of transport portfolio response to planning proposals along the corridor.
5.6.2	A review be undertaken of regional road reservations in place to accommodate road widenings within the Metropolitan Region Scheme for designated Urban Corridors.
5.7	**Liveable Neighbourhoods**
5.7.1	Liveable Neighbourhoods be elevated to a state planning policy and maintained and refined as a best-practice approach to new greenfield development at regional, district and local level, rather including it into a single Neighbourhood part of Design WA.

Ordinary Council Meeting 28/08/18

Item 12.2 refers

Attachment 9

Draft City of Belmont Submission

BELMONT • CITY OF OPPORTUNITY •

Green Paper – Proposals for modernising the planning system

Response Template

This response template is intended to assist industry groups, local governments and practitioners respond in detail to the proposals outlined in the paper. The template is structured in accordance with the reform Proposals and the subheading and recommendations within those.

Completed templates may be submitted via the online survey at www.planning.wa.gov.au/planningreform. You will be directed to an upload page after the first two pages of identifying questions.
Submissions close on 20 July 2018.

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
1.0	**A STRATEGICALLY-LED SYSTEM**		
1.1	**Prominence of Strategic Planning**		
1.1.1	Provide in the PD Act that strategic planning is a purpose of the Act and provide a definition of strategic planning.	In Part	Providing a clear definition of strategic planning in the PD Act is supported. Strategic planning should not be a 'purpose' itself in the PD Act, but it should be the main means to achieve the objectives already in place; consequently, Part 3 of the Act regarding state planning policies might require modification in such a way that the policies provide 'strategic directions' on general planning issues. This would be consistent with Key reform No 2 regarding 'legibility' of the planning system.
1.1.2	Provide in the LPS Regulations that the review of a local planning scheme must be informed by, and respond to, a review of the local planning strategy.	Yes	This proposal is supported as it requires any changes to a local planning scheme to be considered in the context of strategic planning.
1.1.3	Provide in the LPS Regulations that a complex scheme amendment must be accompanied by a proposed amendment to the Local Planning Strategy.	Yes	The LPS Regulations defines a 'standard' and 'complex' scheme amendment according to their consistency with the Local Planning Strategy. Should a Local Planning Strategy be amended to align with a scheme amendment proposal, then the amendment would no longer be considered a 'complex' scheme amendment. As such, the manner in which this process will unfold is unclear. Terms such as 'minimal' or 'significant' impact should also be clarified, if the purpose is to 'strategically lead' the entire planning system.
1.2	**Need to Explain Sustainability for Land Use Planning**		
1.2.1	An overarching State Planning Policy be developed which: i Provides a definition of sustainability for the planning	No	The definition of "sustainability" provided in the Green Paper proposes an inclusive community (social), prosperous economy (economic) and healthy

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
	system which reflects a balancing of economic development, environmental considerations, and social needs; ii Reinforces sustainability as an essential element required to be taken into account in the making of any strategy or policy; and iii Indicates the particular steps related to how economic, social and environmental factors are balanced.		environment (environmental). The Sustainable Development Goals (SDGs) are a collection of 17 global goals set by the United Nations in 2015. These goals make continual reference to the importance of government in achieving these goals. Social, economic and environmental values cannot be implemented without strong governance via institutions and government. Governments must translate sustainability values into state legislation, develop a plan of action, establish budgets and actively search for partners to engage with. For this reason, it is considered that "governance" be added into the definition of sustainability in the green paper. https://www.un.org/sustainabledevelopment/sustainable-development-goals/ The term sustainability should be defined in the PD Act to add weight to the principle that the planning discipline should enact sustainable practices.
1.3	**Housing Distribution**		
1.3.1	Provide that every local planning strategy include a local housing strategy, except for low growth and small regional local governments which only require basic local planning scheme requirements.	Yes	Housing distribution should be a mandatory component of a local planning strategy. As housing/residential is a dominant land use within metropolitan local planning schemes, further attention needs to be given to density and its location. Infill development should be considered in terms of its location, density, built form, accessibility to local and regional services and amenities, co-ordination with future infrastructure projects occurring at the State level, in terms of the local socio-economic status of the area and dwelling typologies. As local planning strategies are the precursor for local planning scheme reviews, consideration to housing distribution within local planning strategies should be mandated.
1.3.2	The DPLH to provide guidance for local government in the Local Planning Manual on how to prepare a Local Housing Strategy, including a methodology for local housing analysis.	Yes	A model for the preparation of a Local Housing Strategy should be provided to ensure consistency between Local Governments and for ease of preparation and use.
2.0	**A LEGIBLE PLANNING SYSTEM**		
2.2	**Arranging State Planning Policies for Brevity and**		

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
	Simplicity		
2.2.1	State Planning Policies be consolidated into a single state planning policy framework with supplementary technical guidance.	In Part	It is uncertain whether consolidating State Planning Policies into a single state planning policy framework would be more clear and legible. State Planning Policies that have been recently prepared or reviewed are shorter and consistent in their format and are therefore more legible. Should all the existing State Planning Policies be reviewed to be made consistent with this format, then there would be significant improvements in legibility of the planning system. There is a concern that consolidating State Planning Policies into a single state planning policy framework may disconnect the policies with the supporting technical guidance. It is recommended that a maximum reading age should be set for State Planning Policies and other planning documents to improve comprehension (e.g. Flesch-Kincaid grade level readability test). It would also be beneficial to include a methodology for prioritising competing state objectives.
2.3	**Line of Sight**		
2.3.1	WAPC to establish common strategic "elements" for the State Planning Framework including but not limited to: • A "sustainability" element • A "land use element" that includes the distribution of uses of land as well as density • A "housing element" that includes the types of housing • An "environmental element" • An "open space element" • An "urban form and design element" • An "infrastructure element". and prepare Technical Guidance for the details of each element to be included.	Yes	The proposed common strategic elements are supported however it is considered that a "governance", "economic development", "community development" and "community engagement" elements also be included. In terms of economic development, the Perth and Peel region is facing an enormous economic development challenge. Despite 'sustainability' rhetoric, our city is still sprawling. Residential development continues to grow rapidly in the coastal suburbs of the North-West and South-West sub-regions. This is due to lack of affordable inner sector housing, high levels of natural amenity associated with coastal living, and the reinforcement of north-south oriented transport infrastructure. In contrast, industry development continues to concentrate centrally to maximise agglomeration benefits, including the sharing of infrastructure and proximity to supply chains and knowledge networks. A consequence of this imbalance is that working residents of the outer sub-regions are forced to commute in order to access employment. This leads to peak hour congestion on the road system and associated negative externalities such as pollution, lost labour productivity, stress and increasing travel costs for the commuting worker.

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
			One of the primary objectives of economic developers is to achieve a more balanced distribution of employment across the metropolitan area. If the planning system is to fully support this objective, Economic Development must be included as a core strategic element of the State Planning Framework. Community development/engagement should also be supported as an element, as one of the major drawbacks as highlighted by the Green Paper is that the planning system is seen as convoluted by the general public. The incorporation of this element could help to improve the legibility of the planning to the general public. If the Green Paper is serious about incorporating sustainability into land use planning, it makes sense that when establishing common elements for the State Planning Framework, the four aspects of sustainability be included as "common strategic elements".
2.3.2	Provide that every State Planning Policy, Regional or sub-regional plan and the local planning strategy must follow these elements, unless otherwise agreed to by the WAPC.	Yes	Clarification as to whether each policy will be required to utilise all "elements" or only those relevant to the policy. Consideration should be given to mandating the "governance" element, as this will be crucial in ensuring the policy carries more weight.
2.3.3	Provide that every local planning strategy must explain how it has addressed the requirements of each common strategic element against the requirements of State Strategy, Planning Policy or Regional or sub-regional strategy.	Yes	This proposal is supported.
2.3.4	Provide in the PD Act that all planning decision makers are to have due regard to State Planning Policies.	Yes	This proposal is supported.
2.3.5	Provide in the Metropolitan Redevelopment Authority Act 2011 that in performing functions under the Act, the MRA must have regard to State Planning Policies.	Yes	This proposal is supported.
2.4	**Complexity locating and interpreting the local planning framework**		
2.4.1	Require that a local planning scheme be published with the inclusion of the Local Planning Strategy (in the form of a local strategic statement) and Local Planning Policies in a document to be called a "Comprehensive Local Planning Scheme".	No	It is acknowledged that there is currently too much disconnect between the strategic and statutory planning frameworks and that efforts should be made to bring the supporting strategic principles to the forefront of the statutory planning framework. It is considered that a concisely written Local Planning Strategy could achieve this without needing to consolidate both documents.

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
			There is a concern that should Local Planning Policies be incorporated into the Local Planning Scheme, a scheme amendment would be required to make modifications to any Local Planning Policy. Should this be the case, it would also remove the local government's power to make Local Planning Policies without interference from the WAPC who are the final determining authority for scheme amendments. It is unclear whether incorporating Local Planning Policies into a Comprehensive Local Planning Scheme will give them more statutory weight for decision making. There is also a concern that a comprehensive Local Planning Scheme, incorporating a Local Planning Strategy and Local Planning Policies, would be too 'bulky' and difficult to use/interpret, which would not improve legibility of the planning system. It is considered that requiring local governments to (i) prepare Local Planning Strategies, Local Planning Schemes and Local Planning Policies in a consistent manner; and (ii) publish those documents in an easily accessible place, would address issues associated with the complexity of locating and interpreting the local planning framework.
2.4.2	DPLH to provide guidance for local government in the Local Planning Manual on the content and format of a Local Planning Strategy and Local Planning Policies.	Yes	This proposal is supported. It is considered that the existing Local Planning Manual should be updated to also provide guidance on the preparation of sub-strategies, such as a Local Housing Strategy and an Activity Centres Planning Strategy. Guidance on the content and format of Local Planning Policies is supported as it would provide consistency between local governments.
2.4.3	Local governments currently undertaking, or about to embark on, a substantive review of their planning frameworks delay preparation of local planning strategies and local planning schemes (and related omnibus amendments) until guidance on the format and content of local planning frameworks is available.	No	It is not considered appropriate to delay local governments who are due to undertake a substantive review of their planning frameworks. It is considered that adequate guidance is provided by the current Local Planning Manual on the format and content of Local Planning Strategies, and should clarification be required, then the DPLH should be readily available to assist. Similarly, the Model Provisions for local planning schemes allows local governments to commence the review/preparation of their local planning schemes. There is a concern that should the review process be delayed, there would be

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
			uncertainty surrounding how long the delay may last. Meanwhile, local governments may have several pressing issues that need to be addressed through the review of their local planning frameworks.
2.4.4	Provide in the LPS Regulations for a clear distinction of the purposes of Local Structure Plans, Activity Centre Plans, Local Development Plans and Local Planning Policies.	Yes	The LPS Regulations currently provide some distinction between these planning instruments, particularly when read in conjunction with the Local Development and Structure Plan Frameworks. It is considered however that better distinction should be provided on the purpose of Local Planning Policies which are not currently well addressed by the LPS Regulations or any Framework.
2.4.5	The DPLH to provide guidance in the Local Planning Manual on the appropriate use of each local planning instrument.	Yes	This proposal is supported.
2.5	**Form of a Local Planning Strategy**		
2.5.1	The DPLH to update the Local Planning Manual with guidance on the preparation, content and format of a Local Planning Strategy and strategic statement, in a similar form to a Victorian Municipal Strategic Statement.	No	The Local Planning Manual should provide adequate guidance on the preparation, content and format of a Local Planning Strategy, as well as sub-strategies such as a Local Housing Strategy, an Activity Centres Strategy and a Public Open Space Strategy. The current format for a Local Planning Strategy, as provided by the existing Local Planning Manual, is supported as it brings the 'core' of the Strategy, being the Vision and Planning Principles, Objectives, Strategic Plan and Strategies and Actions to the front of the document as Part 1, with all supporting information being provided separately as Part 2. The format of the Victorian Municipal Strategic Statement appears to have these key aspects dispersed throughout the document, which may reduce conciseness and legibility. There is also a concern that this format may result in the key points of a Local Planning Strategy being lost amongst excessive background and supporting information. The existing 'Part 1' and 'Part 2' format for Local Planning Strategies provided by the current Local Planning Manual is consistent with/similar to the formatting of Structure Plans and Activity Centres Plans. Maintaining a consistent approach of having key points at the beginning of planning documents, without being clouded by extensive background information, is supported.
2.6	**Form of Local Planning Policies**		
2.6.1	The LPS Regulations be amended to provide that local planning policies are to be prepared in a manner and form approved by the WAPC.	Yes	An established format for local planning policies will provide consistency between local governments.
2.6.2	The DPLH to update the Local Planning Manual to provide guidance for the form, content and writing of a local	Yes	Guidance for the form, content and writing of a local planning policy is supported as it would ensure a level of consistency between local governments.

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
	planning policy.		Notwithstanding, this guidance would need to be broad given that local planning policies address a range of matters, some of which are unique to certain local governments.
2.7	**Consistency of local planning schemes**		
2.7.1	Provide in the PD Act that deemed provisions are to be included in a comprehensive local planning scheme.	No	The inclusion of the deemed provisions in a local planning scheme is a matter of preference and should therefore be optional. The exclusion of deemed provisions from local planning schemes may be considered preferable as it provides a clearer delineation of non-negotiable and universally applicable requirements. Furthermore, the deemed provisions largely relate to process requirements which could be considered less necessary to bring to the forefront compared to development requirements. The LPS Regulations local planning scheme review process will capture any local planning schemes that maintain any provisions which are inconsistent with the deemed provisions. It is unreasonable to expect that this would occur immediately after the LPS Regulations became effective.
2.7.2	Provide in the LPS Regulations that a comprehensive local planning scheme is to include a specific section for deemed provisions.	No	See response for 2.7.1 above.
2.7.3	Provide in the LPS Regulations that there are deemed provisions which set out standardised zones, land uses and land use permissibility which: i group like-land uses into themes for which common development standards can be prepared ii identify low risk land use proposals by including suitable parameters for which a streamlined planning process apply iii are mandatory for local government to adopt within their municipalities through the next scheme review or omnibus amendment.	In Part	There are both positives and negatives to introducing standardised zones, land uses and land use permissibility. In terms of the model zones and land uses, it is noted that the Model Provisions in the LPS Regulations currently provide standard zones and land uses and it is the City's understanding that the DPLH have been strictly requiring them in local planning schemes. Given that the LPS Regulations have only been in place since late-2015, it is unreasonable to expect that this streamlined approach would already be widely adopted. It is considered that the land uses (including definitions) and the zones in the Model Provisions require an in-depth review. It is apparent that insufficient consideration was given to some of the land use definitions which are vague, confusing and/or open to manipulation. Similarly, the intent of certain zones remains unclear and in some cases there is no obvious zone that represents the intended planning for an area. In the absence of improved standardised zones, it is considered that some guidance should be given on the creation of non-standard

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
			zones. The idea of grouping like-land uses into themes for which common development standards can be prepared has merit. It could potentially reduce political reactions to certain controversial land uses and instead turn focus on an assessment of merit. Notwithstanding, this approach could be viewed as less transparent to the community who are interested in the particulars of a development and may feel that local governments are 'hiding' behind vague development proposals. The introduction of mandatory development requirements is not supported as local governments should retain their ability to respond to local issues through establishing particular development controls. Should this concept be progressed further, more information and explanation is needed to allow the City to provide informed feedback.
2.7.4	The DPLH to revise and keep up to date the Local Planning Manual to ensure it provides local government with the guidance required to prepare and administer its local planning framework and properly reflects the expectations of DPLH and WAPC.	Yes	This proposal is supported.
2.8	**Location of Local Development Standards**		
2.8.1	Provide in the LPS Regulations that there be a location within the model provisions for mandatory development requirements for key sites and matters.	No	It is considered important for local governments to retain the ability to establish development requirements which respond to the needs of their communities.
2.9	**On-line Local Planning Schemes**		
2.9.1	Develop an interactive Planning Portal for keeping local planning schemes online and accessing them in a legible and user-friendly format.	Yes	This proposal is strongly supported as it will reduce time spent searching for planning documents on individual local government websites and make the planning system more accessible and legible. It will also offer an easy comparison of planning documents between various local governments.
3.0	**A TRANSPARENT PLANNING SYSTEM**		
3.2	**Community Engagement**		
3.2.1	The DPLH should develop a Community Engagement Charter for all aspects of the planning system that includes principles with regard to: i Planning authorities having a duty to engage with the community in a manner that allows residents to	Yes	The creation of a Community Engagement Charter is supported. The DPLH should not only develop a Community Engagement Charter, but also prepare standardised education notes that any member of the public can access on particular aspects of the planning system.

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
	contribute to the making or amending of a strategic plan; and ii In the making or amending of a strategic plan, the community, as soon as possible, be given information as to what is proposed and any documents that the planning authority intends to examine.		If a set of standardised zones, land uses and land use permissibility is applied across the State, then it is recommended that standardised public notification processes and forms are formulated. All local governments should be required to provide an online platform where the community can view plans and comment on planning proposals. There should also be greater public access to application information. Public housing proposals should be required to follow the same process as other private sector development including community consultation.
3.2.2	Align engagement processes in the planning regulations to the Community Engagement Charter.	Yes	This proposal is supported.
3.2.3	Revise public notification and engagement requirements for planning proposals in the PD Act and LPS Regulations to update out-dated requirements.	Yes	This proposal is supported. The advertising timeframes in the PD Act and LPS Regulations are considered appropriate. Extending advertising timeframes could create unnecessary delays and are not considered conducive to meaningful community engagement.
3.2.4	Make provision within the LPS Regulations that the local planning strategy must be in accordance with the Community Strategic Plan under the Local Government Act to the extent that it is relevant.	Yes	This proposal is supported.
3.2.5	DPLH to revise the Local Planning Manual to clarify that: i actions in local planning strategies are limited to those matters that can be carried out within the local planning scheme. ii acknowledge a concurrent community participation process between a Strategic Community Plan and a local planning strategy.	Yes	This proposal is supported.
3.3	**Reasons for Decisions**		
3.3.1	The DLPH to publish a Guide as to the Scope of Reasons by Planning Decision Makers, having regard to the Queensland model.	Yes	The publication of a guide for the scope of reasons by Planning Decision Makers is supported. Any standards for decision makers to prepare and publish planning decisions must have a statutory basis to ensure conformity between local governments. Planning Decision Makers should also be given longer timeframes to prepare reasons for decisions so they are not poorly thought out or articulated through meeting minutes.

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
3.3.2	Provide in the LPS Regulations that reasons for decisions are to be provided on planning proposals.	Yes	This proposal is supported.
3.4	**Transparency of DLPH and WAPC Statutory Reports**		
3.4.1	WAPC practice be modified to publish Statutory Planning Committee and WAPC agenda items, reports and recommendations on region and local schemes and amendments.	Yes	This proposal is supported, and should be extended to require publishing of agendas a minimum of 7 business days prior to the meeting. The meetings should be open to the public, with the ability to make short presentations and deputations.
3.5	**Reporting by Local and State Government on Planning Matters**		
3.5.1	Provide in regulations mandatory reporting by local government on planning matters.	In Part	Whilst this proposal is supported in principle, it would be crucial that a standardised framework for data collection is produced by the Department of Planning, Lands and Heritage for local governments. There are concerns with the suggested quantitative measures of planning performance. Reliance on numbers without insights could be directly misleading. Examples of this could include the timeliness of planning decisions being recorded as quantitative data without considering the factors influencing the decision making process (e.g. referrals), as well as the quality of the decisions being made. There are concerns that some of the measures of planning performance listed in the Green Paper would be onerous for local governments to collect. Should this proposal be introduced, thorough consultation should be undertaken with local governments. Any data collection should be aligned with strategic state government key performance indicator metrics. It is unclear as to why the second phase, being performance monitoring of the WAPC/DPLH, is not listed as a specific review proposal. It is also unclear as to why this second phase cannot occur at the same time as the introduction of mandatory reporting by local governments.
3.6	**Transparency and Accountability of Development Assessment Panels**		
3.6.1	Provide for DAP meetings to be held at regular times and outside of business hours.	Yes	This proposal is supported as stronger community engagement and awareness can be promoted.
3.6.2	Provide for the recording of each meeting of a DAP and made available on the DAP website of DPLH.	No	It is unclear if recording meetings will have any advantage over simply accurately documenting meetings. Notwithstanding, the City has previously investigated this proposal for its own Council meetings and it became apparent that there are several disadvantages to recording meetings. Firstly, in the absence of absolute

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
			privilege for statements made in meetings, there may be a potential threat of defamation or slander claims. Any recorded material could also be used as evidence in any legal action. There may also be a reluctance for members to 'speak their mind' in relation to certain matters, which may not be conducive of open and transparent discussion.
3.6.3	Provide clarification in DAP Practice Notes: i. If new information is submitted to the DAP after an RAR, the DAP should consider whether a decision should be deferred pending further RAR advice ii. As to when it may be appropriate to defer a decision, such as where issues are raised which require further detailed technical consideration by responsible authorities.	Yes	This proposal is supported.
3.6.4	Amend the DAP Practice Notes to require reasons for decisions to be given in all decisions made by a DAP, including where the DAP adopts the responsible authority's recommendation contained within the RAR.	Yes	This proposal is supported.
3.6.5	Provide for a requirement that applications amended through a SAT process are readvertised unless the amended plans comply with all development standards.	No	The need to re-advertise an application should be determined on its individual merits and should not be mandated across the board as it could lead to unnecessary delays. To provide informed comments on this proposal, clarification should be provided on what amendments would trigger an application to be readvertised.
3.6.6	Provide that where a DAP has been invited to reconsider its decision following a SAT mediation, new specialist members be drawn from the available pool of members.	No	The DAP members who made the initial decision should be afforded the right to reconsider their own decisions. This could induce a lengthy, drawn out process in reconsidering previous decisions.
3.6.7	The SAT should consider preparing a framework for allowing parties with a sufficient interest in a matter to make a submission or be heard during SAT mediation of DAP matters.	In Part	Any framework should clearly define what constitutes a sufficient interest. It is also unclear as to why this might only apply to DAP matters rather than any matter which is before the SAT. It is noted however that it is necessary to consider wider points of view in making an informed decision, however there is a risk that the SAT process could become politicised.
3.6.8	Provide for expert DAP members to be drawn from a pool of members across the State on the basis of the type and	No	DAP members can become familiar with local context and therefore having consistency with members is helpful. Nonetheless, DAP members should be

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
	complexity of the application being heard.		appropriately skilled on all facets of planning, and should they require any advice on specific technical matters (e.g. traffic, odour, noise, etc), an independent body/panel of technical personnel could be established to serve that purpose. It is considered that this arrangement could assist a DAP when dealing with conflicting advice from local governments, agencies, applicants and/or the community.
3.6.9	Provide for an expanded and flexible meeting process where the DAP Presiding member is of a view in relation to an application for development that wider community and local government viewpoints need to be examined.	In Part	There is a risk that an expanded and flexible meeting process may lead to delays in determining applications.
3.6.10	Provide in the DAP Regulations that the WAPC retains its decision making ability with respect to development applications under region schemes.	In Part	This proposal is supported for applications where Clause 32 of the MRS is applicable but it is considered that it would not need to be expanded for other determinations under the MRS as they do not always relate to complex matters.
3.6.11	Provide for a Presiding Member to be appointed also as the Chief Presiding Member to: i Oversee the quality and consistency of DAP procedures and decisions (such as consistency of the use and content of conditions; the quality of RAR reports) and recommend changes to DAP procedures and Standing Orders to DPLH ii Assist in identifying panel members appropriate to sit in accordance with the basis of the type and complexity of the application being heard iii Identify training needs for DAP members for the approval of the Director General DLPH.	No	An entity/person who is completely separate and removed from the DAP process should be providing an independent review of the process to ensure accountability and transparency.
4.0	**AN EFFICIENT PLANNING SYSTEM**		
4.1	**Arrangement of the WA Planning System**		
4.1.1	Provide that the PD Act be amended to delete the WAPC function s14.(a)(ii) of advising the Minister for Planning on the administration, revision and reform of legislation.	No	This proposal does not seem to be totally consistent with the Key reform 4: *The WAPC needs to focus on the provision of strategic leadership for the State Planning Policy framework and regional and sub-regional planning.* Should the WAPC not provide this function, then it is unclear as to who would.
4.1.2	Provide for a local government accreditation process.	Yes	The proposal could be supported provided that the accreditation process will not create an additional burden for the WAPC and local government and provides clear guidance to exercise certain functions.
4.1.3	Increase delegations from WAPC to DPLH and local government, for the purpose of the WAPC focussing on the	Yes	This proposal is supported. The WAPC should be focused on providing a clear planning frameworks and DPLH and local government should have delegation to

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
	State policy framework and regional strategic planning.		make determination on specific matters as well administrative matters that do not affect the planning framework.
4.1.4	Provide for the PD Act to be amended to: i Revise the membership of the WAPC to 5-7 members to have experience, skills or knowledge of any one or more of the following fields— • planning, including strategic land use planning in metropolitan or regional areas • infrastructure planning, delivery, policy and strategy • public administration and public policy • property development • housing supply • corporate or public sector governance • economics, finance or financial management • management of business or commercial ventures • local government. ii Remove committees of the WAPC from Schedule 2, in favour of an ability for the WAPC to establish committees to advise the Commission on any matter, recognising the Statutory Planning Committee and Executive, Finance and Property Committee carry out core functions of the WAPC and will be required immediately under this new system. A committee would consist of at least one member of the Commission who is to be the chairperson of the committee.	In Part	The fields of expertise should be expanded to those areas related to 'sustainability' and 'social inclusion', as they are the main key points of the proposed reforms No 1 and 3.
4.1.5	The role and purpose of a Coastal Planning Committee be reviewed, and consideration be given to the most appropriate host organisation and regulatory framework for the Committee.	Yes	The role of the Coastal Planning Committee should follow the same state planning framework.
4.1.6	Revise the Service Delivery Agreement between the WAPC and DPLH to accord with the revised roles of the WAPC and DPLH.	Yes	This proposal is supported.
4.1.7	Provide for new positions to be created to enable DPLH to recruit senior and experienced town planners to undertake strategic planning and policy development for the WAPC.	In Part	Strategic planning and policies should not only be developed by town planners. Other areas of expertise may be required in order to develop a holistic planning framework. Emphasis should be given to address all (5) proposed key reforms through different areas of expertise.

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
4.1.8	The DPLH and WAPC establish a protocol for the engagement of non-public sector expertise in the scoping and development of policies.	Yes	A protocol may help to create consistency when the scoping and development of policies requires engagement of non-public sector expertise.
4.2	**Process Efficiency for Planning Proposals**		
4.2.1	A Planning Reform Team be retained by DPLH to implement proposals arising from the planning review and ongoing reforms to the Western Australian planning system.	Yes	It is considered crucial for the Planning Reform Team to be retained by DPLH. The Planning Reform Team will be able to continuously identify where reform is required and action change accordingly. The Planning Reform team will need to be adequately resourced to lead, facilitate and deliver initial and continual reform.
4.2.2	A framework for referral of planning applications, to be incorporated in regulations as appropriate.	Yes	This proposal is supported as it will result in a high level of consistency.
4.2.3	As an interim arrangement, the DPLH Independent Planning Reviewer be available to assist on issues regarding referral for WAPC matters.	In Part	It is considered that an Independent Planning Reviewer may not be necessary. Referral authorities should be making reasonable decisions which align with relevant planning legislation. It is acknowledged however that in practice, some level of mediation is required between referral agencies and local governments. As such, it is considered that an Independent Planning Review should not be simply limited to WAPC matters and also include local government matters.
4.2.4	Provide in regulation that an applicant may seek pre-lodgement advice for development applications.	Yes	The City of Belmont has already implemented a pre-lodgement advice application process. This allows applicants to lodge a 'Preliminary Comments Application' for preliminary feedback and advice, prior to lodging a formal Development Application. This allows for a number of issues to be addressed prior to formal determination of any application and saves both the City and Applicant time. The City is supportive of applicants providing a range of development application options and attending mediation prior to a decision being made.
4.2.5	Development Assessment Guidance be published by DPLH in consultation with local government and industry bodies.	Yes	The publication of this guidance may allow for consistency to be achieved across what information Local Government's require to assess and determine an application. There is concern however that if standard advice is provided, it may not be relevant or may miss key criteria relevant to particular sites at the local level.
4.2.6	Provide in the LPS Regulations that a local government must advise an applicant within 10 business days of receipt of a development application whether additional information is required.	In Part	Whilst this proposal is supported, allowance should still be made for further information to be requested at a later point if necessary. The City of Belmont has established an application vetting process that entails applications being checked to ensure that all relevant information is provided prior to the application being formally accepted.
4.2.7	Provide a procedure for local government and developer proponents to agree upfront the scope and content of a local structure plan with the DPLH and other agencies as	In Part	The Structure Plan Framework should provide sufficient detail on the scope and content of a local structure plan. Should it be necessary for a local structure plan to depart from the scope and content provided by the Structure Plan Framework,

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
	appropriate.		the DPLH should be readily available to discuss the particulars of the proposal and provide upfront guidance given that they are the ultimate decision makers for structure plans. Whether the DPLH are able to fulfil this need would determine whether a formal procedure is required.
4.2.8	Provide in the PD Act that the implementation section (part one) of approved structure plans and activity centre plans are to be read as part of the scheme and have the "force and effect" of the scheme.	In Part	It is unclear as to why the PD Act would be used to provide structure plans and activity centre plans with the "force and effect" of the scheme as opposed to the LPS Regulations. Whilst removing the force and effect of the scheme from structure plans was not well received upon the introduction of the LPS Regulations, it is considered that there are some benefits to retaining their 'due regard' status, including • Providing more flexibility to depart from structure plan provisions without needing to undertake a structure plan amendment; • Reducing multiple statutory planning framework layers; and • Encouraging local governments to 'normalise' the zoning of structure plan areas. It is considered that reintroducing the "force and effect" provisions for structure plans in local planning schemes would be preferably on the provision that the DPLH are consistent in enforcing standards on formatting and parameters.
4.2.9	Provide in the LPS Regulations that local government may refuse to progress a local structure plan or activity centre plan and amendment, if it is of the view that the proposals lacks sufficient planning merit. The amendment should also include ability for a proponent affected by such a decision to seek the views of the WAPC and the power for the WAPC to direct a local government to progress a proposal.	No	If a structure plan or activity centre plan proposal contains sufficient information and is accompanied by the relevant fees, it is considered that proponents have a right to have their proposals considered through the formal process, including consideration by the WAPC.
4.2.10	Provide for development contribution plan cost and cost contributions schedules to be included as a schedule in local planning schemes.	In Part	The requirement for local planning schemes to include explicit details of development contribution plan items and cost apportionment methodology is supported as it is agreed that there is a potential for 'scope creep' should it be left vague. It does not seem logical however to include a cost contribution schedule in the local planning scheme given that the costings are reviewed regularly and any alterations in costings would potentially result in the need to undertake a scheme amendment. Ideally, the review of State Planning Policy 3.6 should be prioritised and adequate

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
			guidance should be provided on the preparation of Development Contribution Plans and accompanying Development Contribution Plan Reports. In considering scheme amendments for the establishment of a Development Contribution Plan, the DPLH should also concurrently consider (and be adequately equipped to be able to consider) the content of a Development Contribution Plan Report.
4.2.11	Establish a Development Contributions Infrastructure Panel to review proposed local planning scheme amendments that include Development Contribution Plans, with the cost of the review to be included as a development contribution plan administration cost.	In Part	The principle of this proposal is supported as it would aid the DPLH and any local governments who are not adequately experienced in dealing with Development Contribution Plans. Given that local governments take on the financial burden of administering Development Contribution Plans, they should maintain some control over the ultimate costing figures and be able to similarly recoup the cost of administrating a Development Contribution Plan. It was may be worthwhile considering the establishment of an advisory board that could provide standardised/benchmark rates for particular infrastructure. Should local governments need to depart from the standardised rates, they will need to demonstrate why it is necessary.
4.2.12	Provide for in the PD Act an ability for the Minister for Planning to: i require a special report from a local government on the operation of a development contribution plan ii instruct a local government to take particular actions for the administration of a development contribution plan.	Yes	This proposal is supported.
4.2.13	Provide in the LPS Regulations for a voluntary 'deemed-to-comply' check for single houses and provide in the P&D Regulations a specified fee for the service.	Yes	This proposal is supported.
4.2.14	Provide in the LPS Regulations and R-Codes a fast-track 30-day planning approval process for single house applications that require only minor variations to the R-Codes.	In Part	The principle of fast-tracking single house approvals is supported, however it is considered that there may be difficulties with implementing this proposal when factoring in advertising and assessment against statutory requirements (other than the R-Codes).
4.2.15	A framework for "Basic", "Standard" and "Complex" streams for region scheme amendments, local planning strategies and amendments, and local structure plan/activity centre plans and amendments be developed by DPLH for implementation through regulation.	Yes	This proposal is supported as a means of fast-tracking simple changes to planning frameworks, however to provide informed comments it is necessary to know more information on what would constitute basic, standard and complex streams for amendments to planning frameworks.

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
5.0	**PLANNING FOR CONSOLIDATED AND CONNECTED SMART GROWTH**		
5.1	**Planning for Targeted Urban Infill**		
5.1.1	That the State Government develops clear arrangements for the planning and delivery of the key urban infill locations of activity centres, urban corridors and station precincts, including prioritising of areas which require State and local government collaboration.	Yes	Providing clarification of the responsibilities of Local and State Government is supported, particularly for the planning and delivery of key urban infill locations at activity centres, urban corridors and station precincts. Establishing a clear connection between State and local planning will allow the WAPC to progress strategic planning over key urban infill locations, whilst relying on the advice of the local government and relevant servicing authorities "on the ground". Any proposal to concurrently assess structure plan and local planning scheme amendments is supported, as the structure plan often provides the rationale for the scheme amendment. The identification and prioritisation of areas which require State and local government collaboration is supported.
5.2	**Updating Growth Management Policies**		
5.2.1	A new Consolidated and Connected Smart Growth State Planning Policy that builds on the State Government's METRONET policy and establishes contemporary smart growth principles and practices.	Yes	The review and updating of all relevant State Planning Policies, especially those that are several years old, and related to the delivery of urban infill and METRONET projects, is supported. A review and consolidation of State Planning Policies will help remove inconsistencies and repetition that currently exist and help reflect contemporary practices for urban growth management.
5.3	**Planning for Land Use and Infrastructure Coordination**		
5.3.1	The WAPC to assist with land use and infrastructure coordination for the delivery of priority precincts through a renewed Committee.	Yes	This proposal is supported. Establishing an Infrastructure WA Committee will be beneficial in ensuring new growth zones and growing established residential areas contain necessary infrastructure to allow for people to live, work and play comfortably within areas. Thought should be given to who should make up the proposed Infrastructure WA Committee.
5.4	**Coordinating State Infrastructure with Regional Rezonings**		
5.4.1	Provide in the Metropolitan Region Scheme an "Industrial Deferred Zone".	Yes	The introduction of an "Industrial Deferred" zone is supported as it would allow for the identification of such land ahead of the investigation and provision of appropriate State infrastructure to land within the zone.

	PROPOSAL	SUPPORT Yes/No/In Part	RESPONSE
5.4.2	The WAPC to ensure that any requirements for State infrastructure are in place in the lifting of Urban Deferment or Industrial Deferment, and that the draft Guidelines for Lifting of Urban Deferment 2017 be amended accordingly.	Yes	This proposal is supported.
5.5	**Coordination of Infrastructure for Land Development**		
5.5.1	Provision be made for advice on the forward planning of State infrastructure, including utility providers to assist local governments in the preparation of local planning strategies and structure plans.	Yes	This proposal is supported given the increasing integration of infrastructure and planning to help deliver key projects. Consideration should be given to the provision of such information digitally / on-line to allow local government prepare plans and strategies in a more informed manner.
5.6	**Coordination of Land Use and Transport for Corridor Development**		
5.6.1	The MRS be updated to include "Urban Corridor" as a category of Reserved Roads based on Perth and Peel @ 3.5 Million, with the Department of Transport being made responsible for coordinating a whole of transport portfolio response to planning proposals along the corridor.	Yes	This proposal is strongly supported, particularly given the City's ongoing work on the Great Eastern Highway Urban Corridor Strategy. A shift from Main Roads to Department of Transport is supported in line with the shift away from the dominance of private vehicle travel and supporting alternate modes of transport particularly along key routes.
5.6.2	A review be undertaken of regional road reservations in place to accommodate road widenings within the Metropolitan Region Scheme for designated Urban Corridors.	Yes	This proposal is supported.
5.7	**Liveable Neighbourhoods**		
5.7.1	Liveable Neighbourhoods be elevated to a state planning policy and maintained and refined as a best-practice approach to new greenfield development at regional, district and local level, rather including it into a single Neighbourhood part of Design WA.	Yes	Elevating Liveable Neighbourhoods to a State Planning Policy is supported. Prior to becoming a State Planning Policy however, the review of the document should be completed and retrofitted to be consistent with the manner and form of other State Planning Policies.

Ordinary Council Meeting 28/08/18

Item 12.5 refers

Attachment 10

City of Belmont Standing Orders Amendment Local Law (2) 2018

LOCAL GOVERNMENT ACT 1995

City of Belmont

CITY OF BELMONT STANDING ORDERS AMENDMENT LOCAL LAW (2) 2018

Under the powers conferred by the *Local Government Act 1995* and under all other powers enabling it, the Council of the City of Belmont resolved on ..... to make the following local law.

1. Citation
This local law may be cited as the *City of Belmont Standing Orders Amendment Local Law (2) 2018.*

2. Commencement
This local law will come into operation 14 days after the day on which it is published in the *Government Gazette.*

3. Principal local law amended
This local law amends the *City of Belmont Standing Orders Local Law 2017* as published in the *Government Gazette* on 18 July 2017.

4. Section 15.1 amended
Delete section 15.1 and insert:

(1) Subject to subsection (2), the Council or a committee is not to consider a motion to revoke or change a decision –
  (a) where, at the time the motion is moved or notice is given, any action has been taken under section 15.2 to implement the decision; or
  (b) where the decision is procedural in its form or effect.

(2) The Council or a committee shall not consider a motion to revoke or change a decision of the kind described in subclause (1)(a) without having considered a statement of impact prepared by or at the direction of the CEO of legal and financial consequences of the proposed revocation or change.

Dated:

The common seal of the City of Belmont)
was affixed by the authority of the Council)
in the presence of –)

_____
JOHN CHRISTIE
CHIEF EXECUTIVE OFFICER

_____
PHIL MARKS
MAYOR

Ordinary Council Meeting 28/08/18

Item 12.6 refers

Attachment 11

Accounts for Payment July 2018

BELMONT • CITY OF OPPORTUNITY •

City of Belmont

Accounts for Payment - July 2018

Compiled : 03/08/18 06:52

Pmnt_Ref	Date	CR_Code	Supplier	Pmnt_Amnt	Description
Contractors					
EF056772	04/07/18	03343	Solon Security Ltd	6,383.61	Security Services
EF056795	06/07/18	00295	Capital Recycling	1,270.30	Rubbish Removals
EF056799	06/07/18	00585	Hydroquip Pumps	429.00	Bore Drilling/ Maintenance
EF056800	06/07/18	00707	LoGo Appointments	2,082.41	Labour/Personnel Hire
EF056802	06/07/18	00760	Alison M Barrett, Art Consultant	357.50	Public Art Project Consultancy
EF056804	06/07/18	01082	Sparks Refrigeration & Airconditioning	6,885.00	Airconditioning/Refrigeration Maintenance
EF056808	06/07/18	01350	ACE Plus Plumbing	194.53	Plumbing Maintenance/Supplies
EF056809	06/07/18	01476	Hays Specialist Recruitment (Aust)	5,788.70	Labour/Personnel Hire
EF056811	06/07/18	01499	Porter Consulting Engineers	5,445.00	Professional Fees - Design
EF056812	06/07/18	01507	The Pressure King	4,270.28	Graffiti Removal
EF056814	06/07/18	01675	Horizons West Bus & Coachlines	291.50	Plant/Equipment Hire
EF056815	06/07/18	01697	Allied Seating Group	407.60	Plant Parts & Repairs
EF056817	06/07/18	01714	Total Eden Pty Ltd	23,656.68	Reticulation Parts & Repairs
EF056820	06/07/18	02032	M J B Payne Consultants	440.00	Professional Fees - Building
EF056821	06/07/18	02078	Psyco Sand	3,832.03	Gardening Contractor
EF056823	06/07/18	02172	Miss Maud	327.30	Catering/Catering Supplies
EF056825	06/07/18	02229	Belgravia Leisure Pty Ltd	568.40	Oasis Expenses
EF056828	06/07/18	02298	Pelican Linemarking	990.00	Line Marking
EF056829	06/07/18	02371	Kone Elevators Pty Ltd	3,059.17	Building Maintenance
EF056830	06/07/18	02387	Triton Electrical Contractors Pty Ltd	21,993.18	Electrical Contractor
EF056835	06/07/18	02672	Ruah Community Services	12,826.00	Domestic Violence Advocate
EF056837	06/07/18	02873	Cranetech Australia	8,415.00	Plant Parts & Repairs
EF056838	06/07/18	02933	Q Engineering Designs Pty Ltd	5,280.00	Professional Fees - Design
EF056839	06/07/18	03347	W A Treeworks	506.00	Gardening Contractor
EF056842	06/07/18	03790	Storage King Perth Airport	825.00	Records Storage
EF056845	06/07/18	03906	Elec Power Technologies Pty Ltd	5,530.80	Computer Hardware Maintenance
EF056846	06/07/18	04105	Cleanflow Environmental Solutions	10,552.30	Drainage Maintenance
EF056847	06/07/18	04120	Randstad Pty Ltd	9,608.30	Labour/Personnel Hire
EF056848	06/07/18	04211	Advance Scanning Services	5,786.00	Survey Expenses
EF056849	06/07/18	04253	Camstruct Design & Build Pty Ltd	3,828.00	Building Construction
EF056851	06/07/18	04298	Sandra Curtis - A C I Heritage Services	363.00	Museum Relocation Consultant
EF056852	06/07/18	04301	Michael Page International - Page Personnel	3,900.16	Labour/Personnel Hire
EF056856	06/07/18	04380	Multiclean WA Pty Ltd	1,206.70	Cleaning Services
EF056858	06/07/18	04454	FM Contract Solutions Pty Ltd	3,300.00	Professional Fees - Analysis
EF056860	06/07/18	04579	Mills Resources	1,885.62	Labour/Personnel Hire
EF056861	06/07/18	04608	Exclusive Pest Control	121.00	Pest Control
EF056862	06/07/18	04720	TPG Aged Care	1,043.52	Home Care
EF056864	06/07/18	04832	West Coast Jetties	50,765.00	Epsom Ave Jetty Removal
EF056866	06/07/18	04963	Centigrade	36,278.00	Airconditioning/Refrigeration Maintenance
EF056867	06/07/18	05043	GTA Consultants (WA) Pty Ltd	10,846.00	Professional Fees - Planning
EF056868	06/07/18	05049	HenderCare Pty Ltd	1,101.54	Home Care
EF056875	06/07/18	99966	MAIA Financial Pty Ltd	4,985.54	Oasis Cardio Equipment Lease
EF056824	06/07/18	02221	YouthCARE	140.00	Catering/Catering Supplies
EF056883	12/07/18	00118	Australia Post	3,311.90	Postage
EF056884	12/07/18	00251	Catalyse Pty Ltd	25,410.00	Professional Fees - Analysis
EF056885	12/07/18	00309	Cleanaway	1,213.89	Rubbish Removals
EF056886	12/07/18	00346	Action Couriers	342.14	Courier Service
EF056887	12/07/18	01002	RAC Businesswise Vehicle Breakdowns	99.00	Plant Parts & Repairs
EF056892	12/07/18	01353	Aurion Corporation Pty Ltd Chandler Macleod Ltd	11,955.70	Computer Software Maintenance
EF056894	12/07/18	01507	The Pressure King	23,861.63	Graffiti Removal
EF056895	12/07/18	01675	Horizons West Bus & Coachlines	330.00	Plant/Equipment Hire
EF056896	12/07/18	01743	Corporate Health Professionals	5,148.00	Medical Examinations
EF056897	12/07/18	02078	Psyco Sand	15,901.96	Gardening Contractor
EF056902	12/07/18	04067	Taylor Burrell Barnett	21,866.79	Professional Fees - Planning
EF056904	12/07/18	04269	The Scene Team	566.50	Photography/Framing Expenses
EF056906	12/07/18	04555	MG Group WA	10,851.76	Building Construction
EF056907	12/07/18	04643	Nyoongar Outreach Services Inc	5,500.00	Nyoongar Outreach Service
EF056909	12/07/18	05031	Owlkeyme Ltd	1,144.00	Community Exercise Classes
EF056910	12/07/18	05101	De Lage Landen Pty Ltd	6,198.70	Oasis Cardio Equipment Lease
EF056911	12/07/18	05152	Huemen Media Pty Ltd	4,719.00	Photography/Framing Expenses
EF056912	12/07/18	05210	Mulloway Studio Pty Ltd	6,732.00	Professional Fees - Architect
EF056935	20/07/18	00164	BBC Entertainment	550.00	Music/Entertainment Expenses
EF056936	20/07/18	00195	Bin Bath Australia Pty Ltd	544.83	Cleaning Services
EF056938	20/07/18	00230	Jackson McDonald	1,243.19	Legal Expenses
EF056939	20/07/18	00247	CAI Fences	58,102.00	Fencing
EF056944	20/07/18	00707	LoGo Appointments	4,090.56	Labour/Personnel Hire
EF056945	20/07/18	00818	Morries Backhoe & Plant Hire	4,125.00	Plant/Equipment Hire
EF056946	20/07/18	00863	Zone Bowling - Bowling Centres Australia Pty Ltd	95.50	Music/Entertainment Expenses
EF056947	20/07/18	00931	Sonic HealthPlus Pty Ltd	139.40	Medical Examinations
EF056948	20/07/18	00943	Cirrena Pty Ltd	1,980.00	Computer Software Maintenance
EF056952	20/07/18	01125	Sweet Pea Musical Productions	280.00	Music/Entertainment Expenses
EF056953	20/07/18	01170	Relay Concrete	21,893.80	Concrete Contractor
EF056954	20/07/18	01221	Landgate - Gross Rental Valuations	2,390.54	Valuation Expense
EF056958	20/07/18	01476	Hays Specialist Recruitment (Aust)	15,554.20	Labour/Personnel Hire
EF056959	20/07/18	01499	Porter Consulting Engineers	1,100.00	Professional Fees - Design

Pmnt_Ref	Date	CR_Code	Supplier	Pmnt_Amnt	Description
EF056961	20/07/18	01614	Maxwell Robinson & Phelps	145.00	Pest Control
EF056962	20/07/18	01772	Data#3 Limited	1,943.68	Computer Software Maintenance
EF056963	20/07/18	02127	Royal Life Saving Society W A	148.50	First Aid Service
EF056964	20/07/18	02229	Belgravia Leisure Pty Ltd	959.13	Oasis Expenses
EF056965	20/07/18	02335	Frame-ography	90.00	Photography/Framing Expenses
EF056967	20/07/18	02425	Prestige Alarms	10,642.50	Security Services
EF056969	20/07/18	02711	CPG Research & Advisory Pty Ltd	1,375.00	Professional Fees - Analysis
EF056970	20/07/18	02837	GLG Greenlife Group	457.38	Gardening Contractor
EF056972	20/07/18	03142	Redfish Technologies Pty Ltd	9,174.00	Electrical Contractor
EF056975	20/07/18	03419	Gott Health	6,109.50	Community Exercise Classes
EF056976	20/07/18	03504	Classic Tree Services	4,778.27	Gardening Contractor
EF056977	20/07/18	03614	Julies Boarding Kennels & Cattery	2,802.00	Pound Expenses
EF056978	20/07/18	03619	Kidsafe W A	9,999.00	Playground Inspections/Repairs
EF056979	20/07/18	03655	Acclaimed Catering	7,220.96	Catering/Catering Supplies
EF056981	20/07/18	03790	Storage King Perth Airport	825.00	Records Storage
EF056982	20/07/18	03816	Triple B International Pty Ltd	3,099.25	Home Care
EF056984	20/07/18	04067	Taylor Burrell Barnett	3,370.29	Professional Fees - Planning
EF056985	20/07/18	04105	Cleanflow Environmental Solutions	11,872.84	Drainage Maintenance
EF056986	20/07/18	04120	Randstad Pty Ltd	5,492.20	Labour/Personnel Hire
EF056987	20/07/18	04137	Greive Panelbeaters	500.00	Plant Parts & Repairs
EF056988	20/07/18	04259	Urbis Pty Ltd	11,000.00	Professional Fees - Planning
EF056989	20/07/18	04301	Michael Page International - Page Personnel	6,831.28	Labour/Personnel Hire
EF056990	20/07/18	04372	Hawk Concrete Floor Coatings	880.00	Concrete Contractor
EF056992	20/07/18	04579	Mills Resources	2,357.03	Labour/Personnel Hire
EF056994	20/07/18	04720	TPG Aged Care	847.39	Home Care
EF056995	20/07/18	04754	Allied Pickfords - Perth Local BR	709.50	Removalists
EF056998	20/07/18	04888	Database Consultants Australia	6,053.30	Computer Software Maintenance
EF056999	20/07/18	04941	Perth Pet Cremation	152.00	Pound Expenses
EF057001	20/07/18	05042	Jenna-Lee Rodney	900.00	Music/Entertainment Expenses
EF057002	20/07/18	05049	HenderCare Pty Ltd	1,527.79	Home Care
EF057006	20/07/18	05257	CODE Group Pty Ltd	643.50	Professional Fees - Analysis
EF057017	27/07/18	00346	Action Couriers	386.85	Courier Service
EF057018	27/07/18	00390	Landgate - Land Enquiry	50.60	Title Searches
EF057024	27/07/18	00943	Cirrena Pty Ltd	2,839.10	Computer Software Maintenance
EF057030	27/07/18	01276	Westside Fire Services	802.73	Fire Equipment/Service
EF057032	27/07/18	01439	SGS Australia Pty Ltd	16,918.00	Audit Fee
EF057034	27/07/18	01772	Data#3 Limited	6,264.72	Computer Software Maintenance
EF057037	27/07/18	02050	Austraffic W A	1,540.00	Traffic Control
EF057039	27/07/18	02216	Western Australia Police	75.50	Volunteer National Police Check
EF057040	27/07/18	02229	Belgravia Leisure Pty Ltd	23,251.44	Oasis Management Fee
EF057042	27/07/18	02376	Kevin Hennah	5,203.00	Professional Fees - Building
EF057048	27/07/18	03655	Acclaimed Catering	1,089.28	Catering/Catering Supplies
EF057051	27/07/18	04302	Southern Cross Housing Ltd	6,500.00	Independent Living Units Management
EF057053	27/07/18	04529	Southern Cross Care (WA) Inc	5,050.00	Independent Living Units Management
EF057055	27/07/18	04779	One 20 Productions	840.95	Plant/Equipment Hire
EF057057	27/07/18	05150	PACT Construction Pty Ltd	774,518.69	Building Construction
EF057058	27/07/18	05169	Hunter Communications	2,200.00	Professional Fees - Marketing
EF057059	27/07/18	05181	Aloft Hotel Perth	5,000.00	Catering/Catering Supplies
EF057062	27/07/18	05262	Boorloo Aboriginal Cultural Experience	400.00	Music/Entertainment Expenses
EF057064	27/07/18	05267	Mobcube	475.00	Electrical Contractor
EF057061	27/07/18	05234	Sports Surfaces	23,974.50	Concrete Contractor
EF057075	30/07/18	00014	Armaguard	861.84	Security Services
EF057076	30/07/18	00033	ATF Services Pty Ltd	4,282.52	Fencing
EF057077	30/07/18	00086	Aslab Pty Ltd	5,710.86	Professional Fees - Testing
EF057079	30/07/18	00147	Dormakaba Australia Pty Ltd	198.00	Building Maintenance
EF057081	30/07/18	00166	BSC Motion Technology Bearing Service	18.70	Plant Parts & Repairs
EF057082	30/07/18	00195	Bin Bath Australia Pty Ltd	1,088.89	Cleaning Services
EF057086	30/07/18	00247	CAI Fences	1,386.00	Fencing
EF057088	30/07/18	00295	Capital Recycling	29,677.35	Rubbish Removals
EF057089	30/07/18	00313	Coates Hire Operations Pty Ltd	97.02	Plant/Equipment Hire
EF057091	30/07/18	00391	Chemistry Centre (WA) t/as ChemCentre	3,811.50	Professional Fees - Testing
EF057092	30/07/18	00394	Department of Health WA	301.57	Immunisation Expenses
EF057095	30/07/18	00412	Dowsing Group Pty Ltd	255,104.44	Concrete Contractor
EF057097	30/07/18	00424	Eastern Metropolitan Regional Council	181,322.06	Rubbish Removals
EF057098	30/07/18	00436	Action Asbestos Removals	1,617.00	Rubbish Removals
EF057099	30/07/18	00442	Dial Before You Dig WA Limited	110.00	Survey Expenses
EF057100	30/07/18	00458	ECL Group Australia Pty Ltd	412.64	Plant Parts & Repairs
EF057101	30/07/18	00471	Filters Plus	56.10	Plant Parts & Repairs
EF057103	30/07/18	00491	Fuji Xerox Australia Pty Ltd	3,364.30	Photocopy Expenses
EF057104	30/07/18	00496	Garrards Pty Ltd	2,684.00	Pest Control
EF057108	30/07/18	00608	Programmed Integrated Workforce Ltd	4,397.15	Labour/Personnel Hire
EF057109	30/07/18	00651	Kerbing West	32,917.68	Kerbing Contractor
EF057111	30/07/18	00659	Active Transport & Tilt Tray Services	1,430.00	Towing Vehicles
EF057113	30/07/18	00718	Major Motors Pty Ltd	1,969.07	Plant Parts & Repairs
EF057114	30/07/18	00726	T-Quip	42.70	Plant Parts & Repairs
EF057115	30/07/18	00734	McIntosh & Son WA	7,747.67	Plant Parts & Repairs
EF057116	30/07/18	00736	McLeods	11,554.88	Legal Expenses
EF057117	30/07/18	00783	iSentia Pty Ltd	2,200.00	Professional Fees - Marketing
EF057118	30/07/18	00784	Bucher Municipal	26.73	Plant Parts & Repairs
EF057119	30/07/18	00815	New Town Toyota	357.40	Plant Parts & Repairs
EF057121	30/07/18	00856	John Papas Trailers Pty Ltd	60.00	Plant Parts & Repairs

Pmnt_Ref	Date	CR_Code	Supplier	Pmnt_Amnt	Description
EF057122	30/07/18	00917	Positive Auto Electrics	1,033.73	Plant Parts & Repairs
EF057123	30/07/18	00927	Professional Glass & Maintenance	590.00	Building Maintenance
EF057124	30/07/18	00931	Sonic HealthPlus Pty Ltd	297.00	Medical Examinations
EF057125	30/07/18	00988	Reece Pty Ltd	176.67	Plumbing Maintenance/Supplies
EF057127	30/07/18	01059	Sledgehammer Concrete Cutting Service	1,091.82	Concrete Contractor
EF057130	30/07/18	01149	The Lifting Company Pty Ltd	77.00	Plant Parts & Repairs
EF057131	30/07/18	01186	ZircoDATA Pty Ltd	2,079.11	Records Storage
EF057132	30/07/18	01201	Truckline	19.03	Plant Parts & Repairs
EF057135	30/07/18	01233	Stihl Shop Redcliffe	91.05	Tools/Tool Repairs
EF057136	30/07/18	01239	WA Limestone Co	616.97	Limestone Contractor
EF057137	30/07/18	01243	WARP Group	127,543.85	Traffic Control
EF057138	30/07/18	01255	Wattleup Tractors	2,309.95	Plant Parts & Repairs
EF057139	30/07/18	01264	ABS Auto Brake Service Kewdale	742.40	Plant Parts & Repairs
EF057140	30/07/18	01289	Wayne's Windscreens Welshpool	156.00	Plant Parts & Repairs
EF057142	30/07/18	01318	Flexi Staff Pty Ltd	25,477.28	Labour/Personnel Hire
EF057144	30/07/18	01350	ACE Plus Plumbing	877.99	Plumbing Maintenance/Supplies
EF057145	30/07/18	01358	Kevrek Australia Pty Ltd	748.00	Plant Parts & Repairs
EF057147	30/07/18	01447	Initial Hygiene	1,147.51	Cleaning Services
EF057148	30/07/18	01498	Autosweep Industrial Sweeping	7,315.00	Plant/Equipment Hire
EF057150	30/07/18	01533	WC Convenience Management Pty Ltd	1,187.24	Building Maintenance
EF057153	30/07/18	01705	Econo-Mow Lawn & Garden Care	1,425.00	Home Care - Garden Service
EF057154	30/07/18	01712	Donegan Enterprises Pty Ltd	42,438.00	Gardening Contractor
EF057155	30/07/18	01714	Total Eden Pty Ltd	1,083.29	Reticulation Parts & Repairs
EF057156	30/07/18	01721	Fulton Hogan Industries	19,928.32	Road Building Contractor
EF057157	30/07/18	01831	Mow Master Turf Equipment	60.20	Plant Parts & Repairs
EF057159	30/07/18	01976	Ecoscape (Australia) Pty Ltd	378.40	Professional Fees - Landscaping
EF057160	30/07/18	02023	YMCA Perth Youth & Community Services Inc	62,031.95	Youth Services Expenses
EF057161	30/07/18	02059	Western Resource Recovery Pty Ltd	247.50	Rubbish Removals
EF057165	30/07/18	02155	Tim Davies Landscaping Pty Ltd	17,496.41	Gardening Contractor
EF057166	30/07/18	02207	Wilson Security	109,374.59	Security Services
EF057167	30/07/18	02248	Tutoring Australasia Pty Ltd	14,877.50	Computer Software Maintenance
EF057168	30/07/18	02316	Ayres Tyre Service	1,965.00	Plant Parts & Repairs
EF057169	30/07/18	02322	AFL SportsReady Limited	5,648.02	Labour/Personnel Hire
EF057170	30/07/18	02387	Triton Electrical Contractors Pty Ltd	15,842.75	Electrical Contractor
EF057171	30/07/18	02410	System Maintenance	176.00	Plumbing Maintenance/Supplies
EF057172	30/07/18	02425	Prestige Alarms	15,906.83	Security Services
EF057173	30/07/18	02458	Technology One Ltd	1,188.00	Computer Software Maintenance
EF057174	30/07/18	02589	Zenien	43,477.44	Security Services
EF057175	30/07/18	02595	Dinghy World	1,262.35	Plant Parts & Repairs
EF057178	30/07/18	02779	Natural Area Holdings Pty Ltd	6,569.80	Gardening Contractor
EF057179	30/07/18	02839	LG Net	165.00	Advertising
EF057180	30/07/18	02840	ALS Environmental - Australian Laboratory Services	2,367.20	Professional Fees - Testing
EF057182	30/07/18	03001	Roy Gripske & Sons Pty Ltd	583.04	Plant Parts & Repairs
EF057183	30/07/18	03117	OCP Sales	318.00	Electrical Goods
EF057184	30/07/18	03194	Datatel Electrical & Communications	88,932.00	Electrical Contractor
EF057186	30/07/18	03366	Daimler Trucks Perth	1,604.25	Plant Parts & Repairs
EF057187	30/07/18	03504	Classic Tree Services	47,125.02	Gardening Contractor
EF057190	30/07/18	03689	Landmann I T Consulting Pty Ltd	478.50	Computer Hardware Maintenance
EF057191	30/07/18	03824	Konica Minolta	173.84	Photocopy Expenses
EF057193	30/07/18	03930	The Good Guys	49.90	Electrical Goods
EF057197	30/07/18	04146	JB Hi-Fi Group Commercial Account	3,936.28	Electrical Goods
EF057198	30/07/18	04163	CMS Engineering	3,785.69	Airconditioning/Refrigeration Maintenance
EF057199	30/07/18	04309	IAS Fine Art Logistics Pty Ltd	400.73	Records Storage
EF057200	30/07/18	04320	ABM Landscaping	27,297.32	Bricks/Bricklaying
EF057201	30/07/18	04340	WA Profiling / WA Stabilising	6,273.57	Road Building Contractor
EF057202	30/07/18	04352	Grama Bazita Service & Maintenance	287.54	Fire Equipment/Service
EF057203	30/07/18	04371	ID Fleet Hire	220.00	Plant/Equipment Hire
EF057204	30/07/18	04474	Aquamonix	148.50	Gardening Contractor
EF057205	30/07/18	04496	Azure Painting Pty Ltd	825.00	Painting Contractor
EF057206	30/07/18	04544	SirsiDynix Pty Ltd	1,650.00	Computer Software Maintenance
EF057209	30/07/18	04689	Hempfield Small Motor Service	55.05	Plant Parts & Repairs
EF057210	30/07/18	04693	Allwest Plant Hire Australia Pty Ltd	59,792.00	Plant/Equipment Hire
EF057214	30/07/18	04772	ATM Advanced Traffic Management	486.20	Plant/Equipment Hire
EF057215	30/07/18	04783	Coffey Services Australia Pty Ltd	5,427.40	Professional Fees - Engineering
EF057216	30/07/18	04943	Cleandustrial Services Pty Ltd	8,606.65	Cleaning Services
EF057217	30/07/18	04974	Turf Care WA Pty Ltd	649.00	Gardening Contractor
EF057218	30/07/18	05023	Skyline Landscape Services Group Pty Ltd	6,223.22	Gardening Contractor
EF057222	30/07/18	05239	Majestic Plumbing Pty Ltd	5,602.88	Plumbing Maintenance/Supplies
EF057227	30/07/18	00204	Bollig Design Group Pty Ltd	11,865.70	Professional Fees - Architect
EF057230	30/07/18	00309	Cleanaway	294,270.37	Rubbish Removals
EF057231	30/07/18	00491	Fuji Xerox Australia Pty Ltd	640.20	Photocopy Expenses
EF057234	30/07/18	00699	Marketforce Pty Ltd	9,626.33	Advertising
EF057235	30/07/18	00707	LoGo Appointments	2,045.27	Labour/Personnel Hire
EF057241	30/07/18	00917	Positive Auto Electrics	610.50	Plant Parts & Repairs
EF057243	30/07/18	01243	WARP Group	3,979.07	Traffic Control
EF057244	30/07/18	01255	Wattleup Tractors	2,189.10	Plant Parts & Repairs
EF057245	30/07/18	01476	Hays Specialist Recruitment (Aust)	10,083.98	Labour/Personnel Hire
EF057246	30/07/18	01712	Donegan Enterprises Pty Ltd	17,045.60	Playground Inspections/Repairs
EF057248	30/07/18	02298	Pelican Linemarking	1,650.00	Line Marking
EF057250	30/07/18	02316	Ayres Tyre Service	145.00	Plant Parts & Repairs
EF057251	30/07/18	02451	Carlisle Events Hire Pty Ltd	6,656.00	Plant/Equipment Hire

Pmnt_Ref	Date	CR_Code	Supplier	Pmnt_Amnt	Description
EF057252	30/07/18	02672	Ruah Community Services	10,784.53	Domestic Violence Advocate
EF057254	30/07/18	02913	Syrinx Environmental Pty Ltd	1,155.00	Professional Fees - Landscaping
EF057256	30/07/18	03772	Open Windows Australia Pty Ltd	24,029.09	Computer Software Maintenance
EF057257	30/07/18	03816	Triple B International Pty Ltd	1,516.35	Home Care
EF057260	30/07/18	04105	Cleanflow Environmental Solutions	1,582.28	Drainage Maintenance
EF057262	30/07/18	04301	Michael Page International - Page Personnel	3,861.56	Labour/Personnel Hire
EF057263	30/07/18	04508	Rev Sealin Garlett - JILBARR	400.00	Music/Entertainment Expenses
EF057264	30/07/18	04693	Allwest Plant Hire Australia Pty Ltd	2,079.00	Plant/Equipment Hire
EF057266	30/07/18	05101	De Lage Landen Pty Ltd	6,198.70	Oasis Cardio Equipment Lease
EF057267	30/07/18	05220	Astro Synthetic Surfaces	15,760.80	Gardening Contractor
EF057268	30/07/18	05246	Kooda Pty Ltd	198.00	Rubbish Removals
EF057083	30/07/18	00221	John Hughes Group	1,608.46	Plant Parts & Repairs
EF057107	30/07/18	00557	City Subaru	2,966.29	Plant Parts & Repairs
EF057189	30/07/18	03567	Gardner Autos Pty Ltd T/as Gardner Holden	395.00	Plant Parts & Repairs
EF057194	30/07/18	04046	Beacon Equipment	645.00	Plant Parts & Repairs
EF057233	30/07/18	00557	City Subaru	313.25	Plant Parts & Repairs
	Contractors Total			**3,312,821.54**	
Fuels and Utilities					
EF056781	04/07/18	05249	Google Australia Pty Ltd	5.50	Phone/Internet expenses
787803	06/07/18	00042	Alinta Energy	161.80	Light, Power, Gas
787806	06/07/18	01142	Telstra Corporation Limited	6,412.51	Phone/Internet expenses
787807	06/07/18	01252	Water Corporation	1,136.30	Water, Annual & Excess
787808	06/07/18	01274	Synergy	79,471.05	Light, Power, Gas
EF056796	06/07/18	00323	John Christie	792.00	Phone/Internet expenses
EF056798	06/07/18	00573	Maureen Hooper	18.24	Volunteer Driver Fuel Allowance
EF056810	06/07/18	01481	Command-A-Com Pty Ltd	957.00	Phone Expenses
EF056834	06/07/18	02635	MessageMedia - Message4U Pty Ltd	33.00	Phone/Internet expenses
EF056855	06/07/18	04367	Ian Smith	7.80	Volunteer Driver Fuel Allowance
EF056797	06/07/18	00497	Robin Garrett	328.00	Phone/Internet expenses
787810	12/07/18	01252	Water Corporation	619.66	Water, Annual & Excess
787811	12/07/18	01274	Synergy	13,402.90	Light, Power, Gas
EF056893	12/07/18	01488	ZettaNet Pty Ltd	1,684.98	Phone/Internet expenses
EF056898	12/07/18	02631	Caltex Energy WA	23,174.34	Fuel, Oil, Additives
EF056903	12/07/18	04216	Robert Boulter	35.10	Volunteer Driver Fuel Allowance
787815	18/07/18	00392	Department of Transport - Fleet Licensing	44,483.40	Vehicle Licences
787817	20/07/18	00042	Alinta Energy	6,643.21	Light, Power, Gas
787818	20/07/18	00392	Department of Transport - Fleet Licensing	2,000.00	Vehicle Licences
787820	20/07/18	01142	Telstra Corporation Limited	14,117.06	Phone/Internet expenses
787821	20/07/18	01252	Water Corporation	846.16	Water, Annual & Excess
EF056966	20/07/18	02336	Vodafone Messaging	314.34	Phone/Internet expenses
787823	27/07/18	00042	Alinta Energy	195.85	Light, Power, Gas
787825	27/07/18	01142	Telstra Corporation Limited	263.07	Phone/Internet expenses
787826	27/07/18	01252	Water Corporation	6,698.50	Water, Annual & Excess
787828	27/07/18	01274	Synergy	5,912.80	Light, Power, Gas
EF057022	27/07/18	00788	Motorcharge Ltd (Wright Express Aust)	17,654.72	Fuel, Oil, Additives
EF057043	27/07/18	02422	Insight Call Centre Services	955.96	Phone/Internet expenses
EF057047	27/07/18	03067	David McKinlay	70.68	Volunteer Driver Fuel Allowance
EF057050	27/07/18	04300	Joan Greenwood	158.08	Volunteer Driver Fuel Allowance
EF057261	30/07/18	04216	Robert Boulter	36.40	Volunteer Driver Fuel Allowance
	Fuels and Utilities Total			**228,590.41**	
Materials					
EF056771	04/07/18	03010	City of Belmont Catering Account	355.64	Groceries
EF056776/1	04/07/18	04348	City of Belmont Corporate Card Events	6,932.25	Event equipment
EF056778	04/07/18	04968	Hampers with Bite Pty Ltd	111.10	Groceries
EF056801	06/07/18	00742	Trillion Trees	814.65	Gardening - Plants/Supplies
EF056805	06/07/18	01093	SAI Global Limited	131.94	Publications/Newspapers
EF056807	06/07/18	01265	Westbooks	585.67	Books/CDs/DVDs
EF056819	06/07/18	01906	Frazzcon Enterprises	1,846.24	Signs
EF056826	06/07/18	02271	Party Frenzy / Perth Novelty Company	162.00	Promotional Items
EF056831	06/07/18	02431	ASB Marketing Pty Ltd	5,623.75	Promotional Items
EF056833	06/07/18	02596	Safety Barriers WA	5,225.00	Metal Goods
EF056836	06/07/18	02862	James Bennett Pty Ltd	2,643.72	Books/CDs/DVDs
EF056840	06/07/18	03452	R T K netwest	4,400.00	Computer Software
EF056843	06/07/18	03815	A D Engineering International Pty Ltd	528.00	Metal Goods
EF056844	06/07/18	03856	SEM Distribution	254.54	Publications/Newspapers
EF056857	06/07/18	04394	JB Hi-Fi Belmont Forum	2,164.98	Books/CDs/DVDs
EF056859	06/07/18	04491	Woolworths Limited (WA)	594.32	Groceries
EF056863	06/07/18	04805	Mai Flower Supplies	150.00	Flowers
EF056865	06/07/18	04932	Keep Australia Beautiful Council	40.00	Stationery & Printing
EF056870	06/07/18	05144	Tangibility Pty Ltd	3,850.00	Stationery & Printing
EF056873	06/07/18	05256	Bannamesh - Industroquip Safety Solutions	7,405.20	Signs
EF056874	06/07/18	05260	Data Signs Pty Ltd	396.00	Signs
EF056888	12/07/18	01010	Salmat Mediaforce Pty Ltd	1,173.46	Stationery & Printing
EF056889	12/07/18	01040	Sheridans Badges & Engraving	1,527.90	Badges & Pendants
EF056890	12/07/18	01085	OHS Alert - Specialist News Pty Ltd	895.00	Publications/Newspapers
EF056891	12/07/18	01261	Wesfarmers Kleenheat Gas Pty Ltd	64.34	Welding Equipment/Supplies
EF056900	12/07/18	03905	Unicare Health	30.00	Medical/First Aid Supplies
EF056905	12/07/18	04491	Woolworths Limited (WA)	342.95	Groceries
EF056908	12/07/18	05011	WA Fresh Delivered	819.00	Groceries
EF056943	20/07/18	00699	Marketforce Pty Ltd	15,480.26	Stationery & Printing
EF056937	20/07/18	00203	BOC Gases Australia Ltd	125.66	Welding Equipment/Supplies

Pmnt_Ref	Date	CR_Code	Supplier	Pmnt_Amnt	Description
EF056950	20/07/18	00984	Risk Management Technologies - Chem Alert	5,107.30	Computer Software
EF056951	20/07/18	01040	Sheridans Badges & Engraving	265.54	Badges & Pendants
EF056960	20/07/18	01570	Blackwoods	219.65	Hardware
EF056974	20/07/18	03401	Signwave Belmont	5,273.40	Signs
EF056980	20/07/18	03660	Safe T Card Australia Pty Ltd	1,144.00	Safety Clothing/Equipment
EF056983	20/07/18	04014	LFA First Response	1,490.71	Medical/First Aid Supplies
EF056991	20/07/18	04491	Woolworths Limited (WA)	1,107.86	Groceries
EF056993	20/07/18	04687	Stealth Global Industries	346.50	Safety Clothing/Equipment
EF056996	20/07/18	04805	Mai Flower Supplies	150.00	Flowers
EF057000	20/07/18	05036	Smedia Pty Ltd	1,650.00	Books/CDs/DVDs
EF057003	20/07/18	05082	Accidental Health & Safety - Perth	3,093.22	Medical/First Aid Supplies
EF057004	20/07/18	05144	Tangibility Pty Ltd	1,411.74	Stationery & Printing
EF057005	20/07/18	05211	Manic Botanic	2,450.00	Flowers
EF057014	27/07/18	00203	BOC Gases Australia Ltd	201.59	Welding Equipment/Supplies
EF057016	27/07/18	00282	Childrens Book Council of Australia (WA)	136.00	Books/CDs/DVDs
EF057025	27/07/18	01066	Snap Printing - Belmont	392.26	Stationery & Printing
EF057026	27/07/18	01074	Specialised Security Shredding	20.24	Stationery & Printing
EF057029	27/07/18	01263	West Australian Newspapers Ltd	72.40	Publications/Newspapers
EF057038	27/07/18	02201	Neverfail Springwater Limited	26.40	Beverages
EF057049	27/07/18	03856	SEM Distribution	59.72	Publications/Newspapers
EF057052	27/07/18	04491	Woolworths Limited (WA)	1,061.04	Groceries
EF057060	27/07/18	05227	Little Bird Company Pty Ltd	160.00	Toys
EF057063	27/07/18	05265	BCJ Plastic Products	651.64	Hardware
EF057056	27/07/18	04911	Unicard Systems Pty Ltd	144.10	Stationery & Printing
EF057259	30/07/18	03940	True Blue Gallery Pty Ltd	320.00	Glass Awards, Plaques & Trophies
EF057074	30/07/18	00009	Cafe Corporate	360.00	Groceries
EF057078	30/07/18	00099	Ausrecord Pty Ltd	447.43	Stationery & Printing
EF057080	30/07/18	00148	Bladon WA Pty Ltd	4,372.50	Promotional Items
EF057084	30/07/18	00231	Bunnings Group Ltd	3,213.15	Hardware
EF057085	30/07/18	00233	Bunzl Limited	3,868.32	Cleaning Products
EF057087	30/07/18	00261	Atom Supply	11.02	Metal Goods
EF057090	30/07/18	00368	Holcim (Australia) Pty Ltd	13,691.03	Road/Drainage Material
EF057093	30/07/18	00403	Boral Construction Materials Group Ltd	187.00	Road/Drainage Material
EF057094	30/07/18	00406	Domus Nursery	537.63	Gardening - Plants/Supplies
EF057096	30/07/18	00414	Dulux Australia	949.17	Paint & Accessories
EF057102	30/07/18	00475	Saferight Pty Ltd	880.00	Safety Clothing/Equipment
EF057105	30/07/18	00500	Geodetic Supplies & Repairs Pty Ltd	330.00	Hardware
EF057106	30/07/18	00506	Geofabrics Australasia Pty Ltd	1,210.00	Hardware
EF057110	30/07/18	00653	Humes - Holcim (Australia) Pty Ltd	2,310.00	Concrete Products
EF057112	30/07/18	00664	Kmart Australia Limited	198.00	Kitchen items
EF057120	30/07/18	00850	Pacific Safety Wear Malaga	84.70	Safety Clothing/Equipment
EF057126	30/07/18	00990	ABCorp Australasia Pty Ltd	22.00	Stationery & Printing
EF057128	30/07/18	01073	Spotlight Stores Pty Ltd	115.29	Craft/Display Materials
EF057129	30/07/18	01115	Supa IGA Belmont Belvidere Street	2,328.11	Groceries
EF057133	30/07/18	01206	Access Icon Pty Ltd t/a Cascada	3,708.93	Concrete Products
EF057134	30/07/18	01214	Visimax	774.20	Safety Clothing/Equipment
EF057141	30/07/18	01305	Workwear Group Pty Ltd	616.25	Safety Clothing/Equipment
EF057143	30/07/18	01325	Poolegrave Signs & Engraving	550.00	Signs
EF057146	30/07/18	01398	Winc Australia Pty Ltd (was Staples)	3,295.48	Stationery & Printing
EF057149	30/07/18	01529	Safemaster Safety Products	6,079.70	Safety Clothing/Equipment
EF057151	30/07/18	01547	Big W	1,795.60	Stationery, Books & Equipment
EF057152	30/07/18	01570	Blackwoods	1,652.59	Hardware
EF057158	30/07/18	01920	Midalia Steel - OneSteel Trading Pty Ltd	254.57	Metal Goods
EF057162	30/07/18	02088	Lock, Stock & Farrell Locksmith	779.05	Hardware
EF057164	30/07/18	02139	Ulverscroft Large Print Books Ltd	29.69	Books/CDs/DVDs
EF057177	30/07/18	02757	Quick Corporate Australia Pty Ltd	815.61	Stationery & Printing
EF057181	30/07/18	02922	United Fasteners	170.54	Hardware
EF057185	30/07/18	03197	West Coast Turf	965.80	Gardening - Plants/Supplies
EF057188	30/07/18	03552	Perth Safety Products Pty Ltd	220.00	Signs
EF057192	30/07/18	03901	Nutrarich Pty Ltd	1,320.00	Gardening - Plants/Supplies
EF057195	30/07/18	04053	Totally Workwear	1,594.80	Safety Clothing/Equipment
EF057196	30/07/18	04132	Castledex Pty Ltd	202.00	Stationery & Printing
EF057207	30/07/18	04658	Vital Packaging Pty Ltd	232.10	Hardware
EF057208	30/07/18	04687	Stealth Global Industries	475.20	Safety Clothing/Equipment
EF057211	30/07/18	04705	Quality Press Digital	1,579.60	Stationery & Printing
EF057213	30/07/18	04759	StrataGreen	1,779.80	Gardening - Plants/Supplies
EF057219	30/07/18	05120	Crush	4,402.20	Stationery & Printing
EF057220	30/07/18	05124	Alloy & Stainless Products Pty Ltd	612.61	Metal Goods
EF057221	30/07/18	05134	Promotionsonly	2,359.50	Promotional Items
EF057224	30/07/18	05259	Creative Pty Ltd t/a Brandsense	4,757.50	Promotional Items
EF057229	30/07/18	00261	Atom Supply	633.13	Metal Goods
EF057232	30/07/18	00506	Geofabrics Australasia Pty Ltd	2,206.60	Hardware
EF057242	30/07/18	01066	Snap Printing - Belmont	395.24	Stationery & Printing
EF057253	30/07/18	02862	James Bennett Pty Ltd	370.98	Books/CDs/DVDs
EF057258	30/07/18	03856	SEM Distribution	234.84	Publications/Newspapers
EF057265	30/07/18	04705	Quality Press Digital	132.00	Signs
	Materials Total			**171,740.34**	
Other					
EF056773	04/07/18	03369	Woolworths	595.00	Staff 20 Year Service gift voucher
EF056827	06/07/18	02279	Gregory Dally	45.00	Vehicle puncture repair reimbursement
787804	06/07/18	00889	Petty Cash - Finance	600.85	Petty Cash Recoup

Pmnt_Ref	Date	CR_Code	Supplier	Pmnt_Amnt	Description
787805	06/07/18	00893	Petty Cash - Library	282.50	Petty Cash Recoup
EF056782	06/07/18	165539	Diabetes Association of WA (Inc)	250.00	Bond Payment/Refund
EF056783	06/07/18	165769	DNA Kingston Training	400.00	Bond Payment/Refund
EF056784	06/07/18	166211	Association of Malaysians in WA Inc	400.00	Bond Payment/Refund
EF056785	06/07/18	166479	Aleisha Kylie Questel	400.00	Bond Payment/Refund
EF056786	06/07/18	166485	Sarah Todd	400.00	Bond Payment/Refund
EF056787	06/07/18	166490	Paola Gonzalez	400.00	Bond Payment/Refund
EF056788	06/07/18	166495	Gayan Koralagamage	1,000.00	Bond Payment/Refund
EF056789	06/07/18	166496	Ervin Francisco	750.00	Bond Payment/Refund
EF056790	06/07/18	166497	G T & N J Humphrey	400.00	Bond Payment/Refund
EF056791	06/07/18	00106	Environmental Health Australia (NSW) Inc	550.00	Subscription
EF056792	06/07/18	00169	Belmont Business Enterprise Centre Inc	22,000.00	Accommodation Support
EF056793	06/07/18	00242	Cabcharge Australia Pty Ltd	352.61	Taxi Fares
EF056794	06/07/18	00292	Belmont State Emergency Service Inc	9,307.20	State Emergency Services Expense
EF056803	06/07/18	00795	LGIS WA	3,076.15	Insurance Premiums
EF056806	06/07/18	01244	Western Australian Treasury Corporation	21,817.89	Loan Repayment
EF056818	06/07/18	01761	Royal W A Historical Society Inc	95.00	Subscription
EF056841	06/07/18	03595	Ascot Eagles Junior Cricket Club Inc	5,000.00	Community Contribution Fund
EF056850	06/07/18	04294	Sporting Warriors Soccer Club	4,055.00	Community Contribution Fund
EF056854	06/07/18	04342	Australian Institute for Conservation Cultural Material Inc	714.00	Membership Fee
EF056872	06/07/18	05254	Optus Stadium	660.00	Volunteer outing guided tour
EF056876	06/07/18	99998	Planning Solutions (Aust) Pty Ltd	147.00	Application fee refund
EF056877	06/07/18	99998	Bailee Harrison	400.00	Sporting Donation
EF056878	06/07/18	99998	James Cork	800.00	Sporting Donation
EF056879	06/07/18	99998	Source Machinery Pty Ltd	147.00	Application fee refund
EF056816	06/07/18	01711	Irrigation Australia Ltd	649.00	Membership Fee
EF056853	06/07/18	04333	Oral History Association WA Branch Inc	65.00	Membership Fee
787809	12/07/18	00890	Petty Cash - Harman Park Adult Day Care	64.60	Petty Cash Recoup
787812	12/07/18	01730	Department of Finance Office of State Revenue	129.28	Rate Refund
787813	12/07/18	99999	Betty Doreen Della	691.91	Rate Refund
EF056899	12/07/18	03809	Moving on Audit - M O A Benchmarking	1,400.00	Membership Fee
EF056901	12/07/18	03960	Befriend Inc	5,500.00	Memorandum of Understanding Contribution
EF056913	12/07/18	05264	Belmont Radio Controlled Car Club Inc	3,261.23	Community Contribution Fund
EF056919	12/07/18	99998	Elizabeth Pelle	48.00	HACC refund
EF056920	13/07/18	166345	Hero Town Geelong Inc	400.00	Bond Payment/Refund
EF056921	13/07/18	166500	Robert Yammouni / Childcare Experts	400.00	Bond Payment/Refund
EF056922	13/07/18	166501	Perth Airport Pty Ltd	400.00	Bond Payment/Refund
EF056923	13/07/18	166503	Celine Qianru Wu	400.00	Bond Payment/Refund
787814	18/07/18	00290	City of Belmont Municipal Account	1,300.00	Cash advance for Adachi Student Delegation to Belmont - July 2018
787816	18/07/18	00890	Petty Cash - Harman Park Adult Day Care	240.65	Petty Cash Recoup
EF056924	18/07/18	01236	Department of Fire & Emergency Services	25,779.75	Emergency Services Levy
787819	20/07/18	00889	Petty Cash - Finance	641.40	Petty Cash Recoup
EF056926	20/07/18	166406	Gabrielle Gardos	400.00	Bond Payment/Refund
EF056927	20/07/18	166487	Antonio Jucar	1,000.00	Bond Payment/Refund
EF056928	20/07/18	166488	Nirajkumar Patel	400.00	Bond Payment/Refund
EF056929	20/07/18	166492	Alice Grebenshikoff	400.00	Bond Payment/Refund
EF056930	20/07/18	166498	John Moseray Sillah	1,000.00	Bond Payment/Refund
EF056931	20/07/18	166504	Teagan L Visser	400.00	Bond Payment/Refund
EF056932	20/07/18	166506	Pu Ti Lian She Society Perth Inc	400.00	Bond Payment/Refund
EF056933	20/07/18	166508	Alicia Carolina Edwards	400.00	Bond Payment/Refund
EF056934	20/07/18	00116	Australasian Performing Right Association	1,796.87	Subscription
EF056940	20/07/18	00292	Belmont State Emergency Service Inc	84.38	State Emergency Services Expense
EF056955	20/07/18	01280	Perth Airport Pty Ltd	579.63	Rate Refund
EF056957	20/07/18	01396	Volunteering WA	165.00	Membership Fee
EF056971	20/07/18	03071	Department of Transport	177.55	Vehicle Ownership Searches
EF056973	20/07/18	03375	Belmont Villa Soccer Club	332.00	Turf Line Marking Reimbursement
EF056949	20/07/18	00953	Planning Institute of Australia Limited	1,242.00	Membership Fee
EF057036	27/07/18	01982	Northam Avon Descent Association Inc	8,800.00	Avon Descent Sponsorship
EF057021	27/07/18	00712	Richard Lutey	966.74	Professionals Australia membership Fee and Phone/Internet expenses
787822	27/07/18	166453	Cassie Rowe MLA	400.00	Bond Payment/Refund
787824	27/07/18	00890	Petty Cash - Harman Park Adult Day Care	265.80	Petty Cash Recoup
EF057007	27/07/18	165775	Stephen Allars	400.00	Bond Payment/Refund
EF057008	27/07/18	166260	Stephen Fullbrook	400.00	Bond Payment/Refund
EF057009	27/07/18	166512	Lifestyle Solutions	400.00	Bond Payment/Refund
EF057010	27/07/18	166513	Outside School Office Hours Care WA Inc	400.00	Bond Payment/Refund
EF057011	27/07/18	166515	Nimao Dualeh	1,000.00	Bond Payment/Refund
EF057012	27/07/18	166516	Western Flames Drill Dance Club	400.00	Bond Payment/Refund
EF057013	27/07/18	00169	Belmont Business Enterprise Centre Inc	20,658.00	Small Business Awards sponsorship
EF057015	27/07/18	00242	Cabcharge Australia Pty Ltd	223.88	Taxi Fares
EF057041	27/07/18	02366	Jacaranda Community Centre Inc	500.00	NAIDOC Family Fun Day MC contribution
EF057054	27/07/18	04595	Copyright Agency Limited	5,183.64	Subscription
EF057065	27/07/18	05269	Great Aussie Patios	47.00	Application fee refund
EF057066	27/07/18	05271	Homebuyers Centre Pty Ltd	427.30	Application fee refund
EF057072	27/07/18	99998	Jeff L Mullen	125.00	Insurance Claim
EF057073	27/07/18	99998	Marni Hollingsworth	60.00	Parking Infringement Refund
EF057031	27/07/18	01413	Parks & Leisure Australia	1,336.50	Membership Fee
EF057033	27/07/18	01660	Local Government Planners Assoc	500.00	Membership Fee
EF057035	27/07/18	01919	Infor Public Sector User Forum Inc	1,430.00	Membership Fee

Pmnt_Ref	Date	CR_Code	Supplier	Pmnt_Amnt	Description
EF057236	30/07/18	00712	Richard Lutey	98.10	Expense of Office, Staff thank you lunch
EF057226	30/07/18	00140	Australian Library & Information Association	724.00	Membership Fee
EF057228	30/07/18	00242	Cabcharge Australia Pty Ltd	1,234.55	Taxi Fares
EF057237	30/07/18	00791	LGIS Property	106,868.92	Insurance Premiums
EF057238	30/07/18	00795	LGIS WA	92,427.78	Insurance Premiums
EF057239	30/07/18	00797	LGIS Workcare	113,556.65	Insurance Premiums
EF057247	30/07/18	02265	LGIS - Jardine Lloyd Thompson	103,393.07	Insurance Premiums
EF057270	30/07/18	99998	HKK Holdings Pty Ltd	47.00	Application fee refund
	Other Total			**587,467.38**	
Property, Plant & Equipment					
EF056869	06/07/18	05128	All4cycling Pty Ltd	12,424.50	Street Furniture - bicycle stand
EF056941	20/07/18	00301	City Toyota	32,730.15	Plant Purchase
EF056942	20/07/18	00481	Forpark Australia	5,063.30	Playground Equipment
EF057045	27/07/18	02849	Total Nissan & Kia - Total Autos (1990)	36,397.00	Plant Purchase
EF057212	30/07/18	04723	Future Logic	66,309.17	Computer Hardware
EF057223	30/07/18	05241	True Blue Containers	7,150.00	Parklet Shipping Container
EF057240	30/07/18	00859	Parkland Mazda	41,494.05	Plant Purchase
EF057163	30/07/18	02090	Woodlands Distributors & Agencies	12,923.90	Street Furniture
EF057249	30/07/18	02310	Exteria Pty Ltd - Landmark Engineering	7,203.90	Street Furniture
EF057255	30/07/18	03424	The Chair Doctor WA Pty Ltd	1,375.00	Office Furniture
	Property, Plant & Equipment Total			**223,070.97**	
Salaries/Wages					
EF056767	03/07/18	99971	Superchoice	115,054.42	Superannuation Contribution
WG050718	05/07/18	COB	City of Belmont Payroll	164,792.73	COB PAYS CITY OF BELMONT/
EF056914	12/07/18	99950	Australian Services Union	109.80	Salaries/Wages
EF056915	12/07/18	99952	Child Support Agency	1,389.85	Salaries/Wages
EF056916	12/07/18	99954	City of Belmont Social Club	425.00	Salaries/Wages
EF056917	12/07/18	99960	Health Insurance Fund of WA	281.50	Salaries/Wages
EF056918	12/07/18	99962	LGRCEU - WA Shire Councils Union	153.76	Salaries/Wages
SL110718	12/07/18	COB	City of Belmont Payroll	609,734.20	COB PAYS CITY OF BELMONT/
EF056925	17/07/18	99971	Superchoice	113,721.81	Superannuation Contribution
WG180718	19/07/18	COB	City of Belmont Payroll	151,541.99	COB PAYS CITY OF BELMONT/
EF056956	20/07/18	01380	Town of Claremont	4,554.24	Long Service Leave
SL250718	26/07/18	COB	City of Belmont Payroll	609,866.52	COB PAYS CITY OF BELMONT/
EF057067	27/07/18	99950	Australian Services Union	77.70	Salaries/Wages
EF057068	27/07/18	99952	Child Support Agency	733.20	Salaries/Wages
EF057069	27/07/18	99954	City of Belmont Social Club	420.00	Salaries/Wages
EF057070	27/07/18	99960	Health Insurance Fund of WA	281.50	Salaries/Wages
EF057071	27/07/18	99962	LGRCEU - WA Shire Councils Union	153.76	Salaries/Wages
EF057225	30/07/18	99971	Superchoice	112,315.76	Superannuation Contribution
	Salaries/Wages Total			**1,885,607.74**	
Training and Conferences					
EF056776/2	04/07/18	04348	City of Belmont Corporate Card Events	3,009.75	Mumbrella Conference - L Bradley & D Morton - accommodation & taxi fares; State of Social Media course - E Denham - registration
EF056770	04/07/18	02346	Our Community Pty Ltd	60.00	Grantmaker workshop - M Makuch & N DeSousa - registration
EF056779	04/07/18	05121	City of Belmont Corporate Card CEO	327.39	ALGA National General Assembly & Stakeholder meeting - P Marks & J Christie - meals; City of Perth Parking
EF056768	04/07/18	00762	Qantas Airways Limited	301.37	Australian Mayoral Aviation Council committee meeting - P Marks - Airfare reimbursed by AMAC
EF056769	04/07/18	01908	Urban Development Institute of Aust WA	1,750.00	Creating a City of Villages seminar - P Marks, J Christie, N Griggs, J Hammah, L Langford and W Loh - registration
EF056774	04/07/18	03580	Virgin Australia	631.49	Australian Mayoral Aviation Council committee meeting - P Marks - Airfare reimbursed by AMAC
EF056775	04/07/18	03675	Institute of Public Administration Australia WA	170.00	IPAA WA Division Achievement Awards - J Christie - registration
EF056777	04/07/18	04804	Novotel Canberra	1,772.75	ALGA National General Assembly - P Marks and J Christie - accommodation and meals
EF056780	04/07/18	05248	Eventbrite	30.00	Social Inclusion Forum - L Dobrin and M Makuch - registration
EF056813	06/07/18	01660	Local Government Planners Assoc	30.00	LGPA AGM and Networking Drinks - J Hardison
EF056822	06/07/18	02093	Verbal Judo Australia	5,000.00	Verbal Judo One Day Program - staff training
EF056832	06/07/18	02577	Powdersafe Pty Ltd	726.00	Safe Mail Handling course - J Dalby & M Hellmrich
EF056871	06/07/18	05221	Goolarri Media Enterprises Pty Ltd	1,400.00	Oral History training - B Curran, K Wylde, B Digweed-Downey and G Godfrey - registration
EF056968	20/07/18	02498	City of South Perth	750.00	Communicating in Recovery course - L Timol, G Todd & D Morton - registration
EF056997	20/07/18	04884	Public Sector Network Pty Ltd	171.60	Digital Government and CX Series seminar - R Das - registration
EF057019	27/07/18	00429	Economic Development Australia Ltd	48.00	Creating a more enabling local business environment - M Somers - registration
EF057020	27/07/18	00607	International Quality & Productivity Centre	4,178.96	Digital Disruption for Government Conference - R Das - registration
EF057023	27/07/18	00898	Property Council of Australia W A Division	110.00	WA Office Market Report - J Hardison - registration
EF057027	27/07/18	01178	Kelyn Training Services	1,795.00	Advanced Worksite Traffic Management course - A Dix - registration

Pmnt_Ref	Date	CR_Code	Supplier	Pmnt_Amnt	Description
EF057028	27/07/18	01240	WA Local Government Association	677.00	Managing Contacts in Local Government - C Niemann - registration
EF057044	27/07/18	02601	International Cities Town Centres & Communities Society Inc	2,075.00	ICTC Conference - N Griggs & N DeSousa - registration
EF057046	27/07/18	02985	Bank of IDEAS	275.00	ABCD Masterclass with Jim Diers - J Warner - registration
EF057176	30/07/18	02719	Aveling	55.00	Safety Inductions - C Grapes - registration
EF057269	30/07/18	05272	Rockhampton Regional Council	1,099.00	National Economic Development Conference - J Hardison - registration
Training and Conferences Total				**26,443.31**	
MUNI Total				**6,435,741.69**	
Trust Funds					
EF056880	04/07/18	150748	Building & Construction Industry Training Levy	20,260.53	Building & Construction Industry Training Levy
EF056881	04/07/18	154102	Building Commission Building Services Levy	26,230.53	Building Commission Building Services Levy
EF056882	04/07/18	164040	Department of Planning DAP fees	196.00	Development Assessment Panel fees
Trust Funds Total				**46,687.06**	
TRUST Total				**46,687.06**	
Grand Total				**6,482,428.75**	

Breakdown - Cheques : 186,981.26
EFT : 6,295,447.49

Ordinary Council Meeting 28/08/18

Item 12.7 refers

Attachment 12

Monthly Activity Statement as at 31 July 2018

BELMONT • CITY OF OPPORTUNITY

City of Belmont

Monthly Financial Activity Statement for the Period Ending July 2018

Note: Material variances have been identified in accordance with the Local Government (Financial Management) Regulations 34(1)(d) and Australian Accounting Standards (AASB 1031). A variance on the budgeted closing balance has been applied in the determination of material variances. M=Material Variance

Budget: 19CLBUD, Actual: 19CLACT Created:01-Aug-2018 11:48:02

	Budget	Budget YTD	Actual YTD	YTD Variance	YTD Var %	
1. Expenditure						
Capital						
Governance						
Finance Department	89,750	0	0	0	0.00%	
Computing	443,675	750	0	750	100.00%	
Marketing & Communications	257,875	0	0	0	0.00%	
Transfer To Reserve	3,693,083	0	0	0	0.00%	
Executive Services	89,750	0	0	0	0.00%	
Chief Executive Officer	57,003	0	0	0	0.00%	
Human Resources	134,625	44,875	0	44,875	100.00%	
Governance	69,003	1,000	0	1,000	100.00%	
Belmont Trust	43,697	0	0	0	0.00%	
Total Governance	**4,878,461**	**46,625**	**0**	**46,625**	**100.00%**	
General purpose funding						
Property & Economic Development	44,875	0	0	0	0.00%	
Financing Activities	675,561	0	0	0	0.00%	
Total General purpose funding	**720,436**	**0**	**0**	**0**	**0.00%**	
Law, order and public safety						
Belmont Community Watch	116,433	38,811	0	38,811	100.00%	
Rangers	38,811	0	0	0	0.00%	
Crime Prevention & Comm Safety	127,000	10,583	0	10,583	100.00%	
Total Law, order and public safety	**282,244**	**49,394**	**0**	**49,394**	**100.00%**	
Health						
Health	77,622	38,811	33,172	5,639	14.53%	
Total Health	**77,622**	**38,811**	**33,172**	**5,639**	**14.53%**	
Education and welfare						
Community Services	200,119	38,811	0	38,811	100.00%	
Belmont HACC Services	38,811	0	0	0	0.00%	
Youth Services General	7,500	0	0	0	0.00%	
Total Education and welfare	**246,430**	**38,811**	**0**	**38,811**	**100.00%**	
Housing						
Orana Aged Housing	46,472	0	0	0	0.00%	
Gabriel Gardens	36,112	2,176	0	2,176	100.00%	
Faulkner Park Retirement Vill.	120,000	0	0	0	0.00%	
Total Housing	**202,584**	**2,176**	**0**	**2,176**	**100.00%**	
Community amenities						
Town Planning	395,814	95,814	0	95,814	100.00%	**M**
Technical Services	85,000	0	88	-88	0.00%	
Total Community amenities	**480,814**	**95,814**	**88**	**95,726**	**99.91%**	
Recreation and culture						
Belmont Oasis	75,000	0	0	0	0.00%	
Ruth Faulkner Library	47,789	0	0	0	0.00%	
Community Wellbeing	30,000	0	0	0	0.00%	
Grounds Operations	2,046,345	20,000	21,895	-1,895	-9.47%	
Total Recreation and culture	**2,199,134**	**20,000**	**21,895**	**-1,895**	**-9.47%**	
Transport						
Road Works	9,865,765	305,248	384,349	-79,101	-25.91%	**M**

	Budget	Budget YTD	Actual YTD	YTD Variance	YTD Var %
Streetscapes	248,493	0	0	0	0.00%
Footpath Works	732,581	0	0	0	0.00%
Drainage Works	847,272	20,490	4,359	16,131	78.73%
Operations Centre	1,139,928	934	40,580	-39,646	-4243.26%
Total Transport	**12,834,039**	**326,672**	**429,288**	**-102,616**	**-31.41%**
Economic services					
Ascot Close Housing	45,000	0	0	0	0.00%
Wahroonga Housing	45,000	0	0	0	0.00%
Building Control	122,497	0	0	0	0.00%
Building Operations	29,285,716	21,410	21,219	191	0.89%
Total Economic services	**29,498,213**	**21,410**	**21,219**	**191**	**0.89%**
Other property and services					
Technical Services	224,375	0	0	0	0.00%
Total Other property and services	**224,375**	**0**	**0**	**0**	**0.00%**
Total Capital	**51,644,352**	**639,714**	**505,662**	**134,052**	**20.95%**

	Budget	Budget YTD	Actual YTD	YTD Variance	YTD Var %	
Operating						
Governance						
Finance Department	2,036,940	202,924	201,379	1,545	0.76%	
Computing	2,422,601	210,187	428,367	-218,180	-103.80%	**M**
Marketing & Communications	1,179,720	116,779	96,236	20,542	17.59%	
Reimbursements	267,336	12,667	36,396	-23,730	-187.34%	
Insurance	795,704	404,864	378,531	26,333	6.50%	
Executive Services	1,819,927	168,800	172,796	-3,996	-2.37%	
Chief Executive Officer	827,360	72,363	68,215	4,148	5.73%	
Records Management	797,536	64,830	75,778	-10,948	-16.89%	
Human Resources	1,365,836	123,601	137,900	-14,300	-11.57%	
Governance	3,797,125	324,733	325,125	-392	-0.12%	
Belmont Trust	170,000	0	0	0	0.00%	
Accommodation Costs	599,583	48,619	44,604	4,015	8.26%	
Total Governance	**16,079,669**	**1,750,366**	**1,965,327**	**-214,961**	**-12.28%**	
General purpose funding						
Rates	2,583,189	87,077	79,283	7,794	8.95%	
General Purpose Income	1,040	87	0	87	100.00%	
Property & Economic Development	993,614	107,863	105,916	1,947	1.81%	
Financing Activities	705,976	0	0	0	0.00%	
Total General purpose funding	**4,283,820**	**195,027**	**185,200**	**9,828**	**5.04%**	
Law, order and public safety						
Belmont Community Watch	1,304,380	109,169	9,847	99,322	90.98%	**M**
BelmontNeighbourhood Watch	11,558	963	86	877	91.08%	
Criminal Damage	149,481	12,428	22,420	-9,992	-80.40%	
Rangers	962,872	84,125	67,710	16,415	19.51%	
Crime Prevention & Comm Safety	675,423	70,970	55,816	15,154	21.35%	
Volunteer Emergency Services	113,928	18,776	9,369	9,407	50.10%	
Total Law, order and public safety	**3,217,642**	**296,431**	**165,248**	**131,183**	**44.25%**	
Health						
Health	1,431,977	123,493	118,049	5,444	4.41%	
Immunisation	14,936	1,245	442	803	64.52%	
Total Health	**1,446,913**	**124,738**	**118,490**	**6,247**	**5.01%**	
Education and welfare						
Aboriginal Strategies	337,414	25,121	17,459	7,662	30.50%	
Senior Citizens Centre	9,359	1,348	1,832	-485	-35.95%	
Meals On Wheels	0	0	1,729	-1,729	0.00%	
Podiatry	0	0	490	-490	0.00%	
Community Services	869,049	70,560	83,044	-12,483	-17.69%	
Community Lifestyle & Learning	654,517	53,395	30,479	22,916	42.92%	
Volunteers Programs	93,450	5,794	5,227	567	9.79%	
Belmont HACC Services	2,682,890	223,961	243,202	-19,241	-8.59%	
Youth Services General	713,566	62,301	4,533	57,768	92.72%	**M**
Pre-Schools & Kindys	6,578	704	616	88	12.49%	
Total Education and welfare	**5,366,823**	**443,184**	**388,612**	**54,573**	**12.31%**	
Housing						
Ascot Close Housing	61,996	6,854	6,652	202	2.95%	
Wahroonga Housing	49,211	5,892	5,564	328	5.56%	
Orana Aged Housing	58,528	8,414	8,363	51	0.60%	
Gabriel Gardens	57,888	9,380	10,753	-1,373	-14.64%	
Faulkner Park Retirement Vill.	80,000	0	0	0	0.00%	
Total Housing	**307,623**	**30,540**	**31,332**	**-793**	**-2.59%**	
Community amenities						
Regional Development	23,986	12	14	-3	-23.22%	
Town Planning	2,922,330	254,565	237,875	16,690	6.56%	
Sanitation Charges	6,470,333	143,434	109,514	33,921	23.65%	
Technical Services	210,476	15,193	13,074	2,119	13.95%	

	Budget	Budget YTD	Actual YTD	YTD Variance	YTD Var %	
Total Community amenities	**9,627,124**	**413,204**	**360,477**	**52,727**	**12.76%**	
Recreation and culture						
Marketing & Communications	931,700	44,352	9,364	34,989	78.89%	
Donations and Grants	399,320	43,509	14,545	28,964	66.57%	
Belmont Trust	4,960	415	1,530	-1,114	-268.20%	
Public Facilities Operations	91,605	1,535	6,727	-5,193	-338.33%	
Belmont Oasis	593,685	67,245	74,668	-7,423	-11.04%	
Youth & Family Services Centre	145,585	14,137	9,176	4,961	35.09%	
Ruth Faulkner Library	2,378,405	221,536	241,448	-19,912	-8.99%	
Community Services	55,089	25,674	5,489	20,185	78.62%	
Community Wellbeing	809,981	47,636	64,056	-16,420	-34.47%	
Building - Active Reserves	870,470	102,854	52,880	49,973	48.59%	
Building Operations	840	0	0	0	0.00%	
Streetscapes	22,000	0	0	0	0.00%	
Grounds Operations	5,490,485	390,383	310,110	80,273	20.56%	**M**
Grounds - Active Reserves	1,133,705	56,720	31,963	24,758	43.65%	
Grounds Overheads	1,484,057	220,095	214,617	5,479	2.49%	
Total Recreation and culture	**14,411,887**	**1,236,093**	**1,036,573**	**199,519**	**16.14%**	
Transport						
Road Works	964,315	77,267	49,067	28,200	36.50%	
Streetscapes	1,787,463	68,968	55,491	13,477	19.54%	
Footpath Works	209,300	17,442	4,081	13,360	76.60%	
Drainage Works	377,830	31,486	4,105	27,381	86.96%	
Operations Centre	757,711	92,572	61,160	31,412	33.93%	
Grounds Operations	66,358	4,202	4,188	13	0.32%	
Total Transport	**4,162,977**	**291,936**	**178,092**	**113,844**	**39.00%**	
Economic services						
Building Control	1,297,418	114,488	131,747	-17,259	-15.08%	
Building Control Customer Service	457,023	38,370	48,094	-9,724	-25.34%	
Building Operations	980,756	72,947	78,188	-5,241	-7.18%	
Building Overheads	94,300	8,645	7,675	970	11.23%	
Streetscapes	9,749	3,652	3,651	1	0.03%	
Total Economic services	**2,839,246**	**238,102**	**269,354**	**-31,253**	**-13.13%**	
Other property and services						
Building Operations	3,930	0	0	0	0.00%	
Public Works Overheads	1,544,053	224,638	231,562	-6,925	-3.08%	
Plant Operating Costs	1,084,267	143,947	114,467	29,479	20.48%	
Technical Services	2,855,961	234,723	234,496	227	0.10%	
Other Public Works	883,316	71,128	9,267	61,861	86.97%	**M**
Total Other property and services	**6,371,528**	**674,435**	**589,793**	**84,642**	**12.55%**	
Total Operating	**68,115,251**	**5,694,056**	**5,288,498**	**405,558**	**7.12%**	
Total 1. Expenditure	**119,759,603**	**6,333,770**	**5,794,160**	**539,610**	**8.52%**	

	Budget	Budget YTD	Actual YTD	YTD Variance	YTD Var %	
2. Revenue						
Capital						
Governance						
Finance Department	-102,209	0	0	0	0.00%	
Computing	-375,367	0	-20,909	20,909	0.00%	
Marketing & Communications	-75,872	-8,710	0	-8,710	100.00%	
Executive Services	-62,834	0	0	0	0.00%	
Chief Executive Officer	-39,908	0	0	0	0.00%	
Human Resources	-94,251	0	0	0	0.00%	
Governance	-39,908	0	0	0	0.00%	
Belmont Trust	-174,960	0	0	0	0.00%	
Total Governance	**-965,309**	**-8,710**	**-20,909**	**12,199**	**-140.06%**	
General purpose funding						
Property & Economic Development	-1,131,417	0	0	0	0.00%	
Financing Activities	-6,545	0	0	0	0.00%	
Total General purpose funding	**-1,137,962**	**0**	**0**	**0**	**0.00%**	
Law, order and public safety						
Belmont Community Watch	-81,516	0	0	0	0.00%	
Rangers	-27,172	0	0	0	0.00%	
Total Law, order and public safety	**-108,688**	**0**	**0**	**0**	**0.00%**	
Health						
Health	-100,553	0	0	0	0.00%	
Total Health	**-100,553**	**0**	**0**	**0**	**0.00%**	
Education and welfare						
Community Services	-140,105	0	0	0	0.00%	
Community Lifestyle & Learning	-5,899	0	0	0	0.00%	
Belmont HACC Services	-38,661	0	0	0	0.00%	
Total Education and welfare	**-184,665**	**0**	**0**	**0**	**0.00%**	
Housing						
Ascot Close Housing	-61,996	0	0	0	0.00%	
Wahroonga Housing	-49,211	0	0	0	0.00%	
Total Housing	**-111,207**	**0**	**0**	**0**	**0.00%**	
Community amenities						
Town Planning	-380,699	0	0	0	0.00%	
Technical Services	-18,842	0	-18,842	18,842	0.00%	
Total Community amenities	**-399,541**	**0**	**-18,842**	**18,842**	**0.00%**	
Recreation and culture						
Ruth Faulkner Library	-44,176	0	0	0	0.00%	
Community Wellbeing	-7,077	0	0	0	0.00%	
Grounds Operations	-485,975	0	-30,000	30,000	0.00%	
Grounds Overheads	-35,969	0	0	0	0.00%	
Total Recreation and culture	**-573,197**	**0**	**-30,000**	**30,000**	**0.00%**	
Transport						
Road Works	-3,559,151	-198,666	-890,100	691,434	-348.04%	**M**
Drainage Works	-50,000	0	0	0	0.00%	

	Budget	Budget YTD	Actual YTD	YTD Variance	YTD Var %
Operations Centre	-1,082,160	0	0	0	0.00%
Total Transport	**-4,691,311**	**-198,666**	**-890,100**	**691,434**	**-348.04%**
Economic services					
Ascot Close Housing	-45,000	0	0	0	0.00%
Wahroonga Housing	-45,000	0	0	0	0.00%
Building Control	-85,761	0	-27,727	27,727	0.00%
Building Operations	-15,618,856	0	0	0	0.00%
Total Economic services	**-15,794,617**	**0**	**-27,727**	**27,727**	**0.00%**
Other property and services					
Public Works Overheads	-23,756	0	0	0	0.00%
Technical Services	-342,994	0	-21,591	21,591	0.00%
Total Other property and services	**-366,750**	**0**	**-21,591**	**21,591**	**0.00%**
Total Capital	**-24,433,800**	**-207,376**	**-1,009,169**	**801,793**	**-386.64%**

	Budget	Budget YTD	Actual YTD	YTD Variance	YTD Var %	
Operating						
Governance						
Finance Department	-2,036,940	-169,745	-201,379	31,634	-18.64%	
Computing	-2,422,601	-201,883	-428,367	226,484	-112.19%	**M**
Reimbursements	-267,336	-22,278	-8,228	-14,050	63.07%	
Insurance	-795,704	-738,765	-725,546	-13,218	1.79%	
Records Management	-797,536	-66,461	-75,778	9,317	-14.02%	
Human Resources	-1,365,836	-113,820	-137,900	24,080	-21.16%	
Governance	0	0	-191	191	0.00%	
Belmont Trust	-43,697	0	0	0	0.00%	
Accommodation Costs	-599,583	-49,965	-44,604	-5,361	10.73%	
Total Governance	**-8,329,233**	**-1,362,917**	**-1,621,994**	**259,076**	**-19.01%**	
General purpose funding						
Rates	-50,075,943	-37,239,649	-37,264,324	24,674	-0.07%	
General Purpose Income	-385,880	0	0	0	0.00%	
Property & Economic Development	-405,520	-74,355	-73,208	-1,147	1.54%	
Financing Activities	-2,011,214	-167,601	-24,981	-142,621	85.10%	**M**
Total General purpose funding	**-52,878,557**	**-37,481,606**	**-37,362,512**	**-119,093**	**0.32%**	
Law, order and public safety						
Rangers	-251,575	-20,965	-12,217	-8,748	41.73%	
Crime Prevention & Comm Safety	-10,000	-833	-884	51	-6.14%	
Volunteer Emergency Services	-75,532	0	-21,435	21,435	0.00%	
Total Law, order and public safety	**-337,107**	**-21,798**	**-34,536**	**12,738**	**-58.44%**	
Health						
Health	-449,869	-37,489	-85,459	47,970	-127.96%	
Immunisation	-2,000	-167	-144	-23	13.60%	
Total Health	**-451,869**	**-37,656**	**-85,603**	**47,947**	**-127.33%**	
Education and welfare						
Senior Citizens Centre	-5,496	-458	-170	-288	62.88%	
Community Services	0	0	-200	200	0.00%	
Belmont HACC Services	-2,683,040	-621,984	-525,734	-96,250	15.47%	**M**
Youth Services General	-70,500	-15,375	-15,264	-111	0.72%	
Total Education and welfare	**-2,759,036**	**-637,817**	**-541,368**	**-96,449**	**15.12%**	
Housing						
Orana Aged Housing	-105,000	0	0	0	0.00%	
Gabriel Gardens	-94,000	0	0	0	0.00%	
Faulkner Park Retirement Vill.	-200,000	0	0	0	0.00%	
Total Housing	**-399,000**	**0**	**0**	**0**	**0.00%**	
Community amenities						
Town Planning	-1,133,249	-94,437	-99,336	4,899	-5.19%	
Sanitation Charges	-6,460,661	-6,313,707	-6,308,146	-5,561	0.09%	
Technical Services	-20,750	0	0	0	0.00%	
Total Community amenities	**-7,614,660**	**-6,408,145**	**-6,407,482**	**-662**	**0.01%**	
Recreation and culture						
Marketing & Communications	-157,500	-105,680	-8,105	-97,575	92.33%	**M**
Donations and Grants	0	0	-496	496	0.00%	
Public Facilities Operations	-307,841	-23,442	-23,283	-159	0.68%	

	Budget	Budget YTD	Actual YTD	YTD Variance	YTD Var %
Belmont Oasis	-1,000	0	0	0	0.00%
Youth & Family Services Centre	-13,360	-1,113	0	-1,113	100.00%
Ruth Faulkner Library	-80,589	-3,983	-4,507	523	-13.13%
Community Wellbeing	-4,600	-1,067	0	-1,067	100.00%
Grounds Operations	-13,552	0	-109	109	0.00%
Grounds Overheads	-1,448,088	-119,986	-91,928	-28,058	23.38%
Total Recreation and culture	**-2,026,530**	**-255,272**	**-128,427**	**-126,845**	**49.69%**
Transport					
Road Works	-259,528	0	0	0	0.00%
Streetscapes	-104,000	0	0	0	0.00%
Total Transport	**-363,528**	**0**	**0**	**0**	**0.00%**
Economic services					
Building Control	-421,771	-50,181	-42,509	-7,672	15.29%
Building Control Customer Service	-457,023	-38,085	-48,094	10,009	-26.28%
Building Overheads	-114,041	-9,299	-8,311	-987	10.62%
Total Economic services	**-992,835**	**-97,565**	**-98,914**	**1,349**	**-1.38%**
Other property and services					
Public Works Overheads	-1,520,297	-84,114	-83,944	-170	0.20%
Plant Operating Costs	-1,710,437	-120,280	-98,129	-22,151	18.42%
Technical Services	-486,714	-40,560	-37,522	-3,037	7.49%
Other Public Works	-69,000	-8,083	-51,131	43,048	-532.55%
Total Other property and services	**-3,786,448**	**-253,036**	**-270,726**	**17,690**	**-6.99%**
Total Operating	**-79,938,803**	**-46,555,811**	**-46,551,563**	**-4,249**	**0.01%**
Total 2. Revenue	**-104,372,603**	**-46,763,187**	**-47,560,731**	**797,544**	**-1.71%**
3. Opening/Closing Funds					
Operating					
P&L Clearing					
Opening Balance - Budget Only	-15887000	0	0	0	0.00%
Closing Balance - Budget Only	500,000	0	0	0	0.00%
Total P&L Clearing	**-15,387,000**	**0**	**0**	**0**	**0.00%**
Total 3. Opening/Closing Funds	**-15,387,000**	**0**	**0**	**0**	**0.00%**
	0	-40,429,417	-41,766,571	1,337,154	6.81% **M**

Add Opening Balance:	-15,887,000
Nett Current Assets:	-57,653,571

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