

Development Plan Amendment

By the Council

Marion Council

Castle Plaza Activity Centre Development Plan Amendment

The Amendment - *For Approval*

Approved by the Minister responsible for the administration of the
Development Act 1993 pursuant to Section 25 (18), of the
Development Act 1993.


.....
Minister's Signature

Date..... **20 FEB 2018**

Amendment Instructions Table					
Name of Local Government Area: City of Marion					
Name of Development Plan: Marion Council Development Plan					
Name of DPA: Castle Plaza Activity Centre Development Plan Amendment					
<p><i>The following amendment instructions (at the time of drafting) relate to the Marion Council Development Plan consolidated on 28 April 2016.</i></p> <p><i>Where amendments to this Development Plan have been authorised after the aforementioned consolidation date, consequential changes to the following amendment instructions will be made as necessary to give effect to this amendment.</i></p>					
Amendment Instruction Number	Method of Change	Detail what is to be replaced or deleted or detail where new policy is to be inserted.	Detail what material is to be inserted (if applicable, i.e., use for <u>Insert</u> or <u>Replace</u> methods of change only).	Is Renumbering required (Y/N)	Subsequent Policy cross-references requiring update (Y/N) if yes please specify.
COUNCIL WIDE / GENERAL SECTION PROVISIONS (including figures and illustrations contained in the text)					
Amendments required (Yes/No): No					
Residential Development					
1.	Replace	PDC 19 (table)	Reference to “No minimum requirement” in column 2 to: “8 square metres”	N	N
ZONE AND/OR POLICY AREA AND/OR PRECINCT PROVISIONS (including figures and illustrations contained in the text)					
Amendments required (Yes/No): Yes					
Commercial Zone					
2.	Replace	Precinct 1 Edwardstown District Centre Fringe heading and PDC 9 (Page 127)	All references to “District Centre” or “District Centre Zone” with the following: “Activity Centre”	N	N
Mixed Use Zone (proposed)					
3.	Insert	Immediately following the Mineral Extraction Zone	Attachment A (new Mixed Use Zone)	N	N

TABLES					
Amendments required (Yes/No): Yes					
Table Mar/2A – Off Street Vehicle Parking Requirements for Designated Areas					
4.	Replace	Table Mar/2A Off Street Vehicle Parking Requirements for Designated Areas	Attachment A1	N	N
Table Mar/5 – Bicycle Parking Requirements for Mixed Use Zone (proposed)					
5.	Insert	Immediately following Table Mar/4 – State heritage places	Attachment B (new Table Mar/5 – Bicycle Parking Requirements for Mixed Use Zone)	N	N
MAPPING (Structure Plans, Overlays, Enlargements, Zone Maps, Policy Area & Precinct Maps)					
Amendments required (Yes/No): Yes					
Map Reference Table					
6.	Delete	Within Zone Maps heading and District Centre Zone listing	References to Mar/3 and Mar/6 within Column 2	N	N
7.	Insert	Within Zone Maps heading, immediately following the Mineral Extraction listing	Mixed Use Zone within Column 1 and Mar/3, Mar/6 and Mar/18 within Column 2	N	N
8.	Replace	Within Precinct Maps heading, the Precinct 1 Edwardstown District Centre Fringe	Precinct 1 Edwardstown Activity Centre Fringe	N	N
9.	Insert	Within Precinct Maps heading, immediately following Precinct 11 Retail Support Marion	Precinct 12 Castle Plaza Environmental Assessment Area in column 1 and Mar/3, Mar/6, Mar/18 in column 2	N	N
10.	Insert	Within Precinct Maps heading, immediately following Precinct 12 Castle Plaza Environmental Assessment Area	Precinct 13 Limited Residential Development in column 1 and Mar/3 and Mar/18 in column 2	N	N
11.	Insert	Concept Plan Maps heading, immediately following Concept Plan Map Mar/8 – Tonsley Park	Concept Plan Map Mar/9 – Mixed Use Zone	N	N
12.	Insert	Overlay Map Numbers for Affordable Housing	Mar/3 and Mar/6	N	N
13.	Insert	Overlay Map Numbers for Noise and Air Emissions	Mar/3 and Mar/6	N	N

Castle Plaza Activity Centre Development Plan Amendment
Marion Council
Amendment Instructions Table

Mapping					
14.	Replace	(Map Series Mar/3): <ul style="list-style-type: none"> • Overlay Map Mar/3 – Affordable Housing • Overlay Map Mar/3 – Noise and Air Emissions • Zone Map Mar/3 • Policy Area Map Mar/3 • Precinct Map Mar/3 	Attachment C	N	N
15.	Replace	(Map Series Mar/6) <ul style="list-style-type: none"> • Overlay Map Mar/6 – Affordable Housing • Overlay Map Mar/6 – Noise and Air Emissions • Zone Map Mar/6 • Precinct Map Mar/6 	Attachment D	N	N
16.	Replace	(Map Series Mar/18) <ul style="list-style-type: none"> • Zone Map Mar/18 • Policy Area Map Mar/18 • Precinct Map Mar/18 	Attachment E	N	N
Concept Plan Maps					
17.	Insert	new Concept Plan Map Mar/9 –Mixed Use Zone following Concept Plan Map Mar/8 – Tonsley Park	Attachment F	N	N

ATTACHMENT A

Mixed Use Zone

Mixed Use Zone

Refer to the [Map Reference Tables](#) for a list of the maps that relate to this zone.

OBJECTIVES

- 1 A mixed use zone accommodating a mix of employment generating land uses and medium to high density residential development and short term accommodation in close proximity to a high frequency public transport corridor.
- 2 Retail, commercial, community, civic and residential uses within a mixed use environment that are compatible with surrounding development and do not compromise the amenity of surrounding residential areas.
- 3 Smaller dwellings, including innovative housing designs located close to local services and public transit stations.
- 4 Mixed use development integrated with a high quality public realm that promotes walking, cycling, public transport patronage and positive social interaction.
- 5 A zone that provides a spatial separation, or transitions down, in scale and intensity to adjacent lower density residential zones.
- 6 Creation of a network of pedestrian and cycle routes linking retail, employment and residential activities with each other and public transport nodes and connection to cycling and walking networks outside the zone including the proposed 'Greenway' along the Adelaide - Seaford Railway Line.
- 7 Development that contributes to the desired character of the zone.

DESIRED CHARACTER

The **Mixed Use Zone** is intended to facilitate the redevelopment and expansion of an existing traditional retail centre into a more vibrant, compact and intensely developed mixed use activity centre with a focus on integration and connectivity between land uses and public transport facilities.

While the zone will continue to accommodate the weekly shopping and comparison goods needs of the surrounding community, it is envisaged that development will progressively expand the community and employment role of the zone through the provision of a range of appropriate and compatible commercial, cultural, entertainment, educational, civic and community uses.

The provision of high density housing will contribute to the creation of a vibrant and accessible place during both business hours and after business hours. Vitality and sense of place will be facilitated by the creation of attractive, safe and accessible public spaces that are enclosed by buildings that form a cohesive and continuous built form edge, reinforcing public spaces as key spatial elements within the built fabric.

Coordinated redevelopment of large and amalgamated sites that are developed to their full potential is strongly encouraged. Amalgamation of allotments into larger sites will enable the achievement of optimum uses of land through the development of multi-storey buildings containing a mixture of retail, commercial and community activities at ground and lower levels, with residential apartments generally located above ground level. Other than within Area 2 as shown in [Concept Plan Map Mar/9 – Mixed Use Zone](#), buildings will be provided with base podiums of at least two storeys.

The substantial redevelopment of the zone allows for the creation of a new character to the locality, with bold, high quality and contemporary architectural styles encouraged. The use of iconic built form and scale is

appropriate at key road intersections within the zone to emphasise major arrival focal points, accentuate key corners and terminate vistas. Building scale will take account of the lower scale residential areas located to the south of the zone.

Development will make provision for the proposed future North-South Road Corridor.

Development will respond to the need for a high quality pedestrian environment through the retention of human scale at key frontages, and setbacks of higher elements of buildings that prevent uncomfortable micro-climatic conditions at ground level.

Public environments will become integrated with the spaces in the private realm in a manner that creates interconnected streets and paths, with architectural features and outdoor activities that will encourage pedestrian activity. These high quality spaces will incorporate landscaping and public art, together with high quality paving, street furniture and lighting that foster a sense of place and belonging for residents, workers and visitors.

It is expected that any development of Area 2 between Ackland Street and Raglan Street will set aside land to allow for the future road connection between Raglan Avenue and Ackland Street, as shown in [Concept Plan Map Mar/9 – Mixed Use Zone](#). The future connection road will be created, along with the widening and upgrade of Ackland Street, upon the development of the land north of Ackland Street, so as to provide for the principal vehicular connection between Raglan Avenue, west of the rail line and Edward Street / South Road. All roadways within the zone will ensure the ease of pedestrian and bicycle movements throughout the zone and adjacent areas through their location and design.

The eastern portion of Raglan Avenue, as shown in [Concept Plan Map Mar/9 – Mixed Use Zone](#) will be transformed into a pedestrian friendly main street that reinforces a strong pedestrian connection between the northern and southern sides of the street. It is envisaged that land uses fronting the proposed main street will be a focus for after-hours activities in the form of cafes and restaurants as well as other activities that achieve vibrancy in this location.

Development will provide for the potential future provision of a train station and bus stops adjacent the rail line and ensure any future development adjacent this area, as shown on [Concept Plan Map Mar/9 – Mixed Use Zone](#), can be integrated with such a facility. Given the provision of a train station is uncertain at this stage, development needs to also ensure linkages to existing train and bus services are provided until such time that the station location is finalised.

Development will consolidate and coordinate car parking and service vehicle access points in order to reduce conflicts with key pedestrian paths. For retail development, at grade parking areas may be appropriate if located to the side or rear of buildings and broken up with extensive landscaping. Car parking associated with commercial, residential and mixed use development will, where feasible, be integrated below and/or within buildings in order to reduce the amount of car parking areas visible from street and other public areas. It is expected that existing large car park areas will be progressively redeveloped with buildings over time. Multi-storey parking stations are appropriate provided they are sleeved with active uses to street frontages and / or provided with attractive screens to facades that are visible from streets and other public places.

Land adjacent to the zone includes a range of commercial and industrial activities. Residential and other environmentally sensitive development within the zone will need to acknowledge and respond to the function of existing and potential non-residential land uses through solutions that mitigate adverse impacts without affecting the long term viability of those uses.

Precinct 12 Castle Plaza Environmental Assessment Area

Some areas within **Precinct 12 Environmental Assessment Area** have been identified as possibly being affected by contaminating land uses and activities. To minimize risk of harm to human health and the environment it is expected that development involving a change of land use, or land division, for a sensitive use will occur on a precautionary basis. This will include the appropriate level of site contamination investigation and, if necessary, auditing be applied prior to the development proceeding.

Precinct 13 Limited Residential Development

Land within **Precinct 13 Limited Residential Development** has been remediated following historic use as part of the Hills Industries manufacturing site. The site has been assessed by an accredited Auditor under the *Environment Protection Act 1993* with recommendations made for limitations on future residential development. It is expected that no habitable rooms¹ within dwellings will be established at either basement or ground level within the Precinct, in accordance with the recommendations of the auditor. It is important that future development occur in accordance with the requirements set out within the Groundwater Monitoring and Management Plan, Construction Environment Management Plan and Site Management Plan prepared for this location.

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

- 1 The following forms of development are envisaged in the zone:
 - affordable housing
 - community centre
 - consulting room
 - entertainment venue
 - hotel
 - library
 - office
 - residential flat building
 - row dwelling
 - serviced apartment
 - shop or group of shops (other than bulky goods retailing)
 - student accommodation
 - supported accommodation.
- 2 The following additional forms of development, or combination thereof, are only envisaged within Area 2 of the zone, identified on [Concept Plan Map Mar/9 – Mixed Use Zone](#):
 - discount department store
 - mini-major tenancy
 - supermarket.
- 3 Retail land uses should:
 - (a) provide convenience goods and a range of comparison goods to serve the major weekly shopping needs of residents, workers and visitors of the surrounding district and in the zone
 - (b) be located principally at ground level with activation of public spaces
 - (c) where comprising discount department stores, supermarkets or mini-major tenancies, only be within Area 2 identified in [Concept Plan Map Mar/9 – Mixed Use Zone](#).
- 4 Residential development should only be established outside of Area 1 identified within [Concept Plan Map Mar/9 – Mixed Use Zone](#).

¹ Habitable rooms has the same meaning as defined within the Building Code of Australia, and includes a bedroom, living room, music room, television room, dining room, sewing room, study, play room, family room, home theatre, and sunroom, but does not include a bathroom, laundry, toilet, pantry, walk-in-wardrobe, corridor/hallway, lobby / entry foyer, clothes drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.

- 5 Land uses that generate high levels of pedestrian activity should be located at ground level to contribute to the enlivening and surveillance of the public realm.
- 6 Land uses should be established with a view to promoting after-hours use to reinforce the centre as the focus of social activity in the district.
- 7 Development listed as non-complying is generally inappropriate.

Form and Character

- 8 Development should not be undertaken unless it is consistent with the desired character for the zone.
- 9 Development should be in accordance with relevant [Concept Plan Map Mar/9 – Mixed Use Zone](#).
- 10 Dwellings should achieve a minimum net residential site density of 67 dwellings per hectare.
- 11 Development should be designed to ensure that:
 - (a) the building fronting the street or public space forms the base podium of no less than two storeys and no greater than four storeys with the highest scale of development, being four storeys or greater, in the centre of the site
 - (b) the development enables an adequate level of daylight, sunlight, privacy and suitable wind patterns in relation to surrounding development and pedestrian environments
 - (c) vehicle access is integrated into the design of the development
 - (d) pedestrian access is safe and convenient through buildings and surrounding spaces
- 12 Development along the southern side of Raglan Avenue, west of Brooks Street should be a maximum of four storeys or 16.5 metres in height and set back in the following manner:
 - (a) buildings no greater than 3 metres in height located on the southern boundary
 - (b) buildings greater than 3 metres in height set back from the southern boundary an additional 2 metres for every 1 metre height above 3 metres.

Design and Appearance

- 13 Other than within Area 2, as shown in [Concept Plan Map Mar/9 – Mixed Use Zone](#), buildings should be built to the property boundary of public roads and open spaces in order to:
 - (a) create a continuity of frontage along streets and public spaces
 - (b) provide definition, enclosure and interaction with the public realm
 - (c) promote an active, interesting and vibrant frontage and streetscape
 - (d) contribute to the safety and security of the pedestrian environment.

Environmental

- 14 Public open spaces in the form of landscaped plazas and small parks should be provided in accordance with [Concept Plan Map Mar/9 – Mixed Use Zone](#) and should:
 - (a) incorporate landscaped settings, shelter and recreational activities suitable for residents of dwellings within the zone
 - (b) take advantage of existing mature vegetation including significant trees

- (c) provide an attractive focal point where residents, workers and visitors can stop, view, socialise and rest
- (d) enable views from nearby streets and other public places to encourage active use by all residents and visitors
- (e) be accessible and usable for all ages and for people with disabilities
- (f) provide an appropriate setting for dwellings at higher densities, particularly taller buildings, whilst encouraging a sense of place for residents and visitors
- (g) incorporate landscaping which includes local indigenous plantings and other treatments to complement surrounding buildings and soften built form
- (h) be designed to facilitate passive surveillance
- (i) incorporate high quality paving treatments, street furniture, lighting and public art to foster a sense of place and belonging
- (j) provide for water sensitive urban design measures.

Dwelling Configuration

- 15 Dwellings should provide a high quality living environment by ensuring the following minimum internal floor areas:

Dwelling configuration	Minimum internal floor area (including internal storage but excluding car parking or open space) requirement (square metres)
Studio (where there is no separate bedroom)	37 square metres
1 bedroom dwelling	50 square metres
2 bedroom dwelling	75 square metres
3 + bedroom dwelling	100 square metres

Adaptability

- 16 Multi-storey buildings should include a variety of internal designs that will facilitate adaptive reuse, including the conversion of ground floor residential to future commercial use (i.e. by including floor to ceiling heights suitable for commercial use).

Movement Systems and Access

- 17 Development should provide for the following road connections and treatments as shown in [Concept Plan Map Mar/9 – Mixed Use Zone](#):
- (a) a new connection road between Raglan Avenue and Ackland Street
 - (b) the development of a pedestrian friendly main street environment of part of Raglan Avenue
 - (c) the widening and upgrading of Ackland Street and its junction with South Road.
- 18 Ackland Street should comprise an attractive, tree lined boulevard with wide footpaths and high quality pedestrian amenity and safety along its length.

- 19 Development should facilitate appropriate vehicular and pedestrian/bicycle movement linkages through the zone as shown in [Concept Plan Map Mar/9 – Mixed Use Zone](#) through generous footpaths along the tree lined streets, the allocation of public open space and shared private and public open spaces.
- 20 Movement networks for vehicular, pedestrian and bicycle traffic within, through and entering/exiting the zone and surrounding areas should:
 - (a) connect any areas of open space within the zone
 - (b) provide safe and easy access to public transport routes
 - (c) ensure bicycle and pedestrian pathways are designed and landscaped so as to be easily identifiable, accessible and safe
 - (d) minimise potential conflicts between vehicular traffic, service vehicles and bicycle/pedestrian pathways
 - (e) connect with existing paths and the bicycle network in surrounding locations.

Vehicle and Bicycle Parking

- 21 Vehicle parking should be provided in accordance with the rates set out in [Table Mar/2A - Off Street Vehicle Parking Requirements for Designated Areas](#).
- 22 Secure bicycle parking facilities should be provided at the rate set out in [Table Mar/5 - Bicycle Parking Requirements for Mixed Use Zone](#).
- 23 Development should provide coordinated car parking between land uses and should be arranged to provide orderly and convenient vehicular movement within and adjacent to the zone.
- 24 Other than in public streets and within Area 2, as shown on [Concept Plan Map Mar/9 – Mixed Use Zone](#), the provision of additional at grade parking should be minimised, and where provided, should be located behind buildings which front public streets.
- 25 Existing hard paved at grade car parks should be progressively redeveloped with buildings containing a mixture of land uses complementary to the retail focus of this location.

Land Division

- 26 Land division should amalgamate allotments and facilitate the provision of a broad range of development options, with allotments capable of accommodating:
 - (a) multi-storey buildings comprising a mixture of land uses
 - (b) movement networks, as identified in [Concept Plan Map Mar/9 – Mixed Use Zone](#) that provide for strong connections and safe and convenient access to public facilities, public transport stops and adjacent future development sites.

PRECINCT SPECIFIC PROVISIONS

Refer to the [Map Reference Tables](#) for a list of the maps that relate to the following precinct(s).

Precinct 12 Castle Plaza Environmental Assessment Area

- 27 Development should not be undertaken unless it is consistent with the desired character for the precinct.
- 28 Development should not occur on land where potentially contaminating activities have occurred unless an appropriate site investigation report and, if necessary remediation plan, has been prepared by a

suitably qualified site contamination consultant to ensure that the site is suitable or could be made suitable, for its intended use.

Precinct 13 Limited Residential Development

- 29 Development should not be undertaken unless it is consistent with the desired character for the precinct.
- 30 Development should not occur within the precinct where it involves a dwelling with habitable rooms located at ground level or in a basement.
- 31 Development involving ground level private or communal open space and landscaping should be completed with a surface layer of at least 500 millimetres depth of clean soil.
- 32 Development should not include the extraction of groundwater from aquifers for any purpose.

PROCEDURAL MATTERS

Complying Development

Complying developments are prescribed in Schedule 4 of the *Development Regulations 2008*.

In addition, the following forms of development (except where the development is non-complying) are complying:

A change of use to a shop, office, consulting room or any combination of these uses where all of the following are achieved:

- (a) the area to be occupied by the proposed development is located in an existing building and is currently used as a shop, office, consulting room or any combination of these uses
- (b) the building is not a State heritage place
- (c) it will not involve any alterations or additions to the external appearance of a local heritage place as viewed from a public road or public space
- (d) if the proposed change of use is for a shop that primarily involves the handling and sale of foodstuffs, it achieves either (i) or (ii):
 - (i) all of the following:
 - (A) areas used for the storage and collection of refuse are sited at least 10 metres from any **Residential Zone** boundary or a dwelling (other than a dwelling directly associated with the proposed shop)
 - (B) if the shop involves the heating and cooking of foodstuffs in a commercial kitchen and is within 30 metres of any **Residential Zone** boundary or a dwelling (other than a dwelling directly associated with the proposed shop), an exhaust duct and stack (chimney) exists or is capable of being installed for discharging exhaust emissions
 - (ii) the development is the same or substantially the same as a development, which has previously been granted development approval under the *Development Act 1993* or any subsequent Act and Regulations, and the development is to be undertaken and operated in accordance with the conditions attached to the previously approved development
- (e) if the change in use is for a shop with a gross leasable floor area greater than 250 square metres and has direct frontage to an arterial road, it achieves either (i), (ii) or (iii):
 - (i) the primary vehicle access (being the access where the majority of vehicles access / egress the site of the proposed development) is from a road that is not an arterial road

- (ii) the development is located on a site that operates as an integrated complex containing two or more tenancies (and which may comprise more than one building) where facilities for off-street vehicle parking, vehicle loading and unloading, and the storage and collection of refuse are shared
- (iii) it is located within Area 2, as shown within [Concept Plan Map Mar/9 – Mixed Use Zone](#)
- (f) off-street vehicular parking is provided in accordance with the rate(s) specified in [Table Mar/2A - Off Street Vehicle Parking Requirements for Designated Areas](#) to the nearest whole number, except in any one or more of the following circumstances:
 - (i) the building is a local heritage place
 - (ii) the development is the same or substantially the same as a development, which has previously been granted development approval under the *Development Act 1993* or any subsequent Act and Regulations, and the number and location of parking spaces is the same or substantially the same as that which was previously approved
 - (iii) the development is located on a site that operates as an integrated complex containing two or more tenancies (and which may comprise more than one building) where facilities for off-street vehicle parking, vehicle loading and unloading, and the storage and collection of refuse are shared.

Non-complying Development

Development (including building work, a change in the use of land, or division of an allotment) for the following is non-complying:

Form of development	Exceptions
Bulky goods outlet	
Dwelling within Precinct 13 Limited Residential Development that includes habitable rooms located at ground level or basement.	
Fuel depot	
Horse keeping	
Horticulture	
Industry	Except a service industry.
Intensive animal keeping	
Prescribed mining operations	
Road transport terminal	
Service trade premises	
Stock sales yard	
Stock slaughter works	
Waste reception, storage, treatment or disposal	
Wrecking yard	

Public Notification

Categories of public notification are prescribed in Schedule 9 of the *Development Regulations 2008*.

Further, the following forms of development (except where the development is non-complying) are designated:

Category 1	Category 2
All kinds of development, except where the site of the development is adjacent land to land in another zone.	All kinds of development where the site of the development is adjacent land to land in another zone.

ATTACHMENT A1

Replacement:

Table Mar/2A - Off Street Vehicle Parking Requirements for Designated Areas

Table Mar/2A - Off Street Vehicle Parking Requirements for Designated Areas

Interpretation

- 1 The vehicle parking rates table applies to Designated Areas listed below except where:
- (a) any applicable condition(s) is/are not met
 - (b) the zone provisions require a lesser amount of on-site vehicular parking spaces than the amount determined using the vehicle parking rates tables below.

Designated Areas

- 2 The following are Designated Areas:

Designated Area	Conditions
Suburban Activity Node Zone	None
Mixed Use Zone	
District Centre Zone	Any part of the development site is located in accordance with at least one of the following:
Local Centre Zone	
Neighbourhood Centre Zone	(a) within 200 metres of any section of road reserve along which a bus service operates as a high frequency public transit service ⁽²⁾
Regional Centre Zone	(b) within 400 metres of a bus interchange ⁽¹⁾ that is part of a high frequency public transit service ⁽²⁾
	(c) within 400 metres of an O-Bahn interchange ⁽¹⁾
	(d) within 400 metres of a passenger rail station ⁽¹⁾ that is part of a high frequency public transit service ⁽²⁾
	(e) within 400 metres of a passenger tram station ⁽¹⁾
	(f) within 400 metres of the Adelaide Parklands.

(1) Measured from an area that contains any platform(s), shelter(s) or stop(s) where people congregate for the purpose waiting to board a bus, tram or train, but does not include areas used for the parking of vehicles

(2) A high frequency public transit service is a route serviced every 15 minutes between 7.30am and 6.30pm Monday to Friday and every 30 minutes at night, Saturday, Sunday and public holidays until 10pm.

Applicable off-street vehicular parking requirements

- 3 Development should provide off-street vehicle parking in accordance with the table(s) below. A lesser number of parking spaces may be provided based on the nature of the development and parking conditions in the wider locality including (but not limited to) the following:
- (a) the development is a mixed use development with integrated (shared) parking where the respective peak parking demands across the range of uses occurs at different times
 - (b) the development is sited in a locality where the respective peak demands for parking for the range of uses (existing and proposed) occurs at different times and suitable arrangements are in place for the sharing of adjoining or nearby parking areas

- (c) the development involves the retention and reuse of a place of heritage value, where the provision of on-site parking is constrained
- (d) suitable arrangements are made for any parking shortfall to be met elsewhere or by other means (including a contribution to a car parking fund)
- (e) generous on-street parking and/or public parking areas are available and in convenient proximity, other than where such parking may become limited or removed by future loss of access, restrictions, road modifications or widening
- (f) the site of the development is located within distances specified in the conditions applicable to Designated Areas for at least two different public transit modes.

Tables: Vehicle Parking Rates**Table 1: Non-residential development (excluding light industry)**

Location of development	Desired minimum number of vehicle parking spaces	Maximum number of vehicle parking spaces
All Designated Areas (unless otherwise stated)	3 spaces per 100 square metres of gross leasable floor area	6 spaces per 100 square metres of gross leasable floor area
Core Area as shown on Concept Plan Map Mar/8 – Tonsley Park of the Suburban Activity Node Zone	3 spaces per 100 square metres of gross leasable floor area	5 spaces per 100 square metres of gross leasable floor area

Table 2: Residential development, in the form of residential flat buildings and residential development in multi-storey buildings

Location of development	Rate for each dwelling based on number of bedrooms per dwelling	Plus number of required visitor parking spaces
Core Area as shown on Concept Plan Map Mar/8 – Tonsley Park of the Suburban Activity Node Zone	0.25 per studio (no separate bedroom) 0.75 per 1 bedroom dwelling 1 per 2 bedroom dwelling 1.25 per 3 + bedroom dwelling	0.25 per dwelling
Transition Area/Any other area not designated on Concept Plan Map Mar/8 – Tonsley Park of the Suburban Activity Node Zone	0.5 per studio (no separate bedroom) 1 per 1 bedroom dwelling 1.5 per 2 bedroom dwelling 2 per 3 + bedroom dwelling	0.25 per dwelling
Mixed Use Zone	1 per studio (no separate bedroom) 1 per 1 bedroom dwelling 1.25 per 2 bedroom dwelling 1.5 per 3+ bedroom dwelling	0.25 per dwelling

*Table Mar/2A – Off-Street Vehicle Parking Requirements for Designated Areas***Table 3: Row, semi-detached and detached dwellings**

Location of development	Number of bedrooms, or rooms capable of being used as a bedroom	Number of required vehicle parking spaces
Suburban Activity Node Zone	1 or 2 bedrooms	1
	3 + bedrooms	2

ATTACHMENT B

Table Mar/5 – Off-Street Bicycle Parking Requirements

Table Mar/5 – Off-Street Bicycle Parking Requirements

The following bicycle parking requirements apply to development specifically in **Mixed Use** and **Corridor Zones**.

- 1 In residential and mixed use development, the provision of bicycle parking may be reduced in number and shared where the operating hours of commercial activities complement the residential use of the site.
- 2 Residential and mixed use development, in the form of multi-storey buildings, should provide bicycle parking in accordance with the following rates:

Form of Development	Employee/resident (bicycle parking spaces)	Visitor/shopper (bicycle parking spaces)
Residential component of multi-storey building / residential flat building	1 for every 4 dwellings	1 for every 10 dwellings
Office	1 for every 200 square metres of gross leasable floor area	2 plus 1 per 1000 square metres of gross leasable floor area
Shop	1 for every 300 square metres of gross leasable floor area	1 for every 600 square metres of gross leasable floor area

ATTACHMENT C

Overlay Map Mar/3 – Affordable Housing

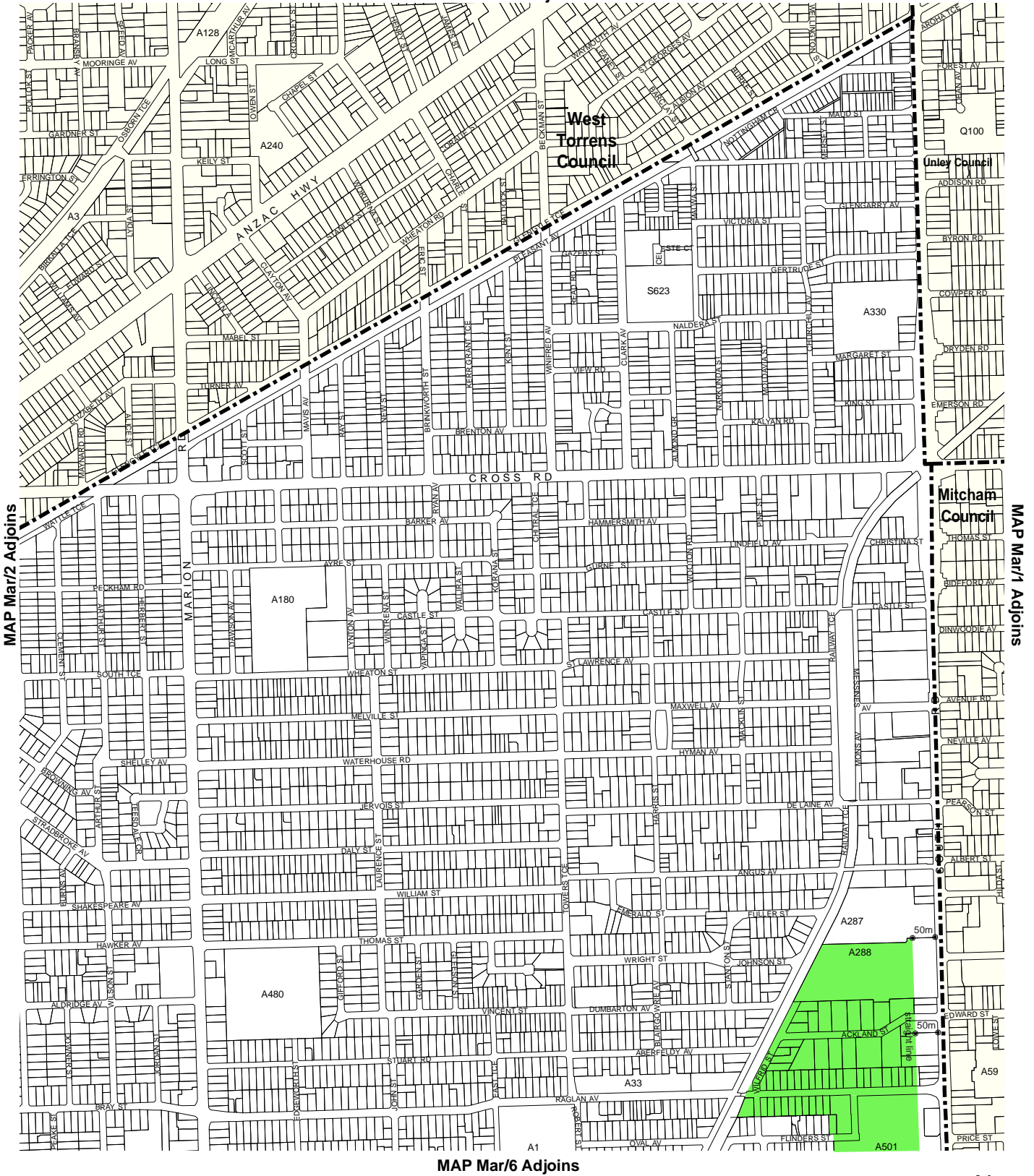
Overlay Map Mar/3 – Noise and Air Emissions

Zone Map Mar/3

Policy Area Map Mar/3

Precinct Map Mar/3

MAP Mar/1 Adjoins



Lamberts Conformal Conic Projection, GDA94

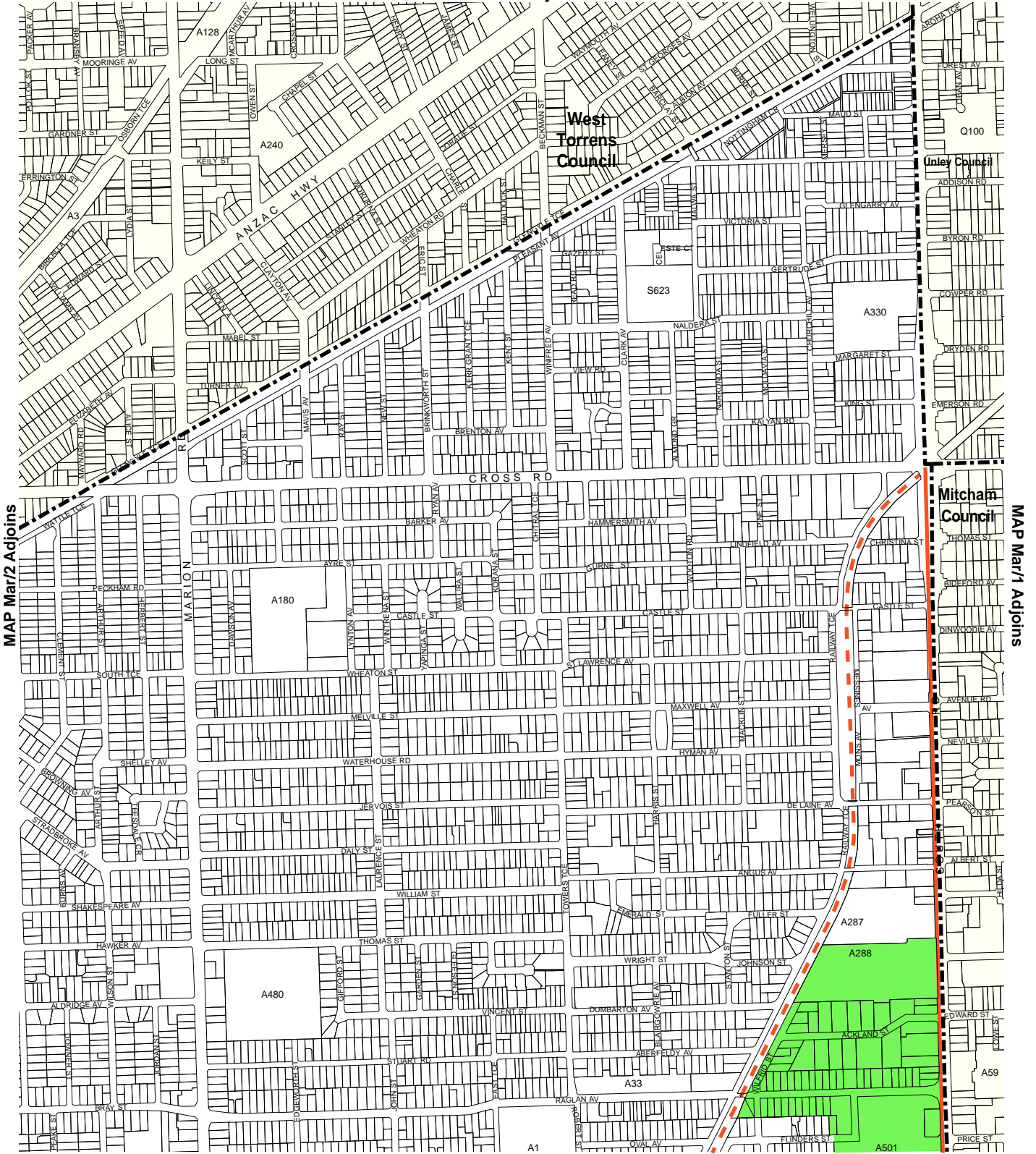


Overlay Map Mar/3 AFFORDABLE HOUSING

- Affordable Housing Designated Area
- Development Plan Boundary

MARION COUNCIL

MAP Mar/1 Adjoins



MAP Mar/6 Adjoins

Lamberts Conformal Conic Projection, GDA94

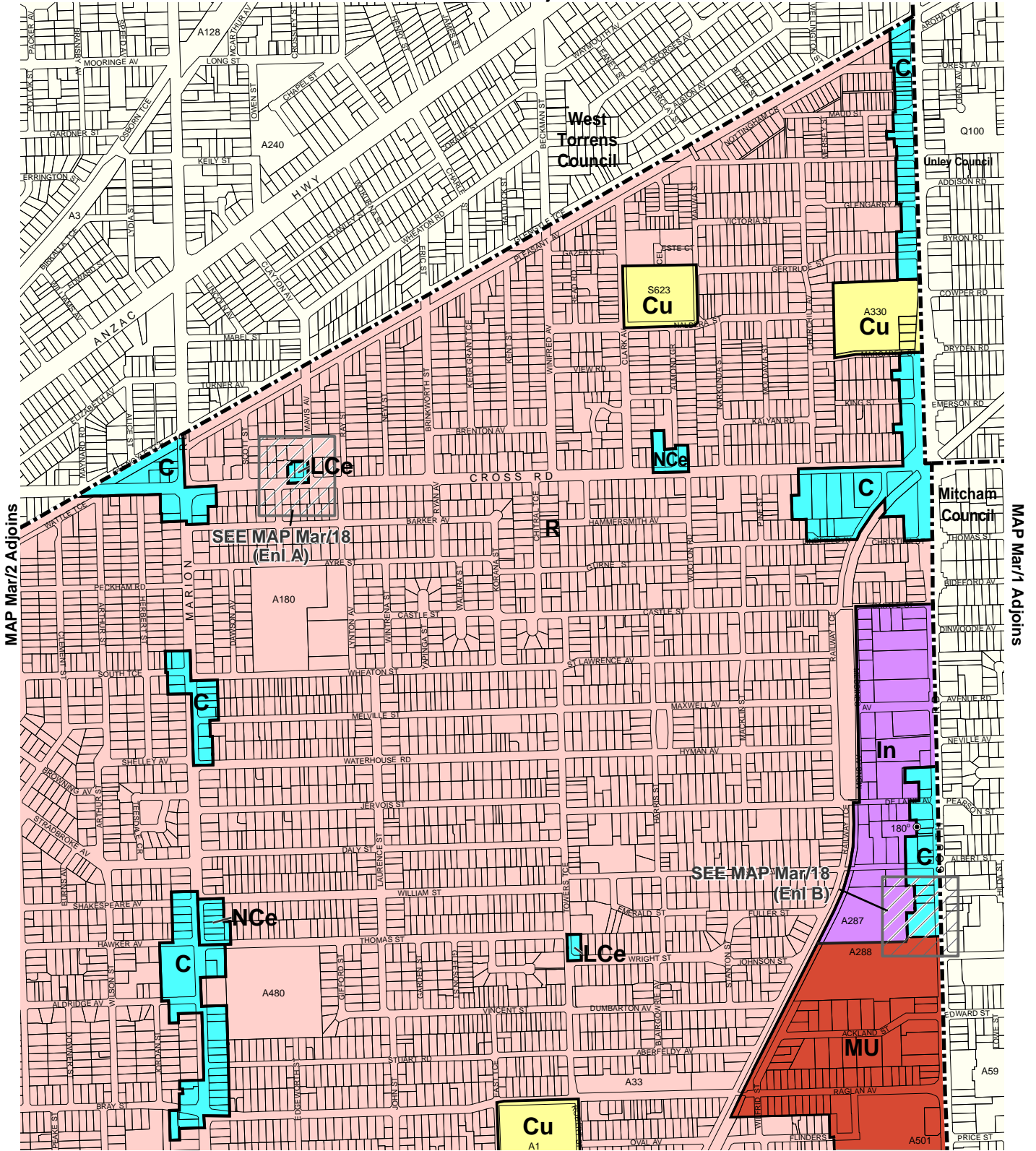


Overlay Map Mar/3 NOISE AND AIR EMISSIONS

MARION COUNCIL

- Type A Road
- - - Train Line
- Noise and Air Emissions Designated Area
- - - - - Development Plan Boundary

MAP Mar/1 Adjoins



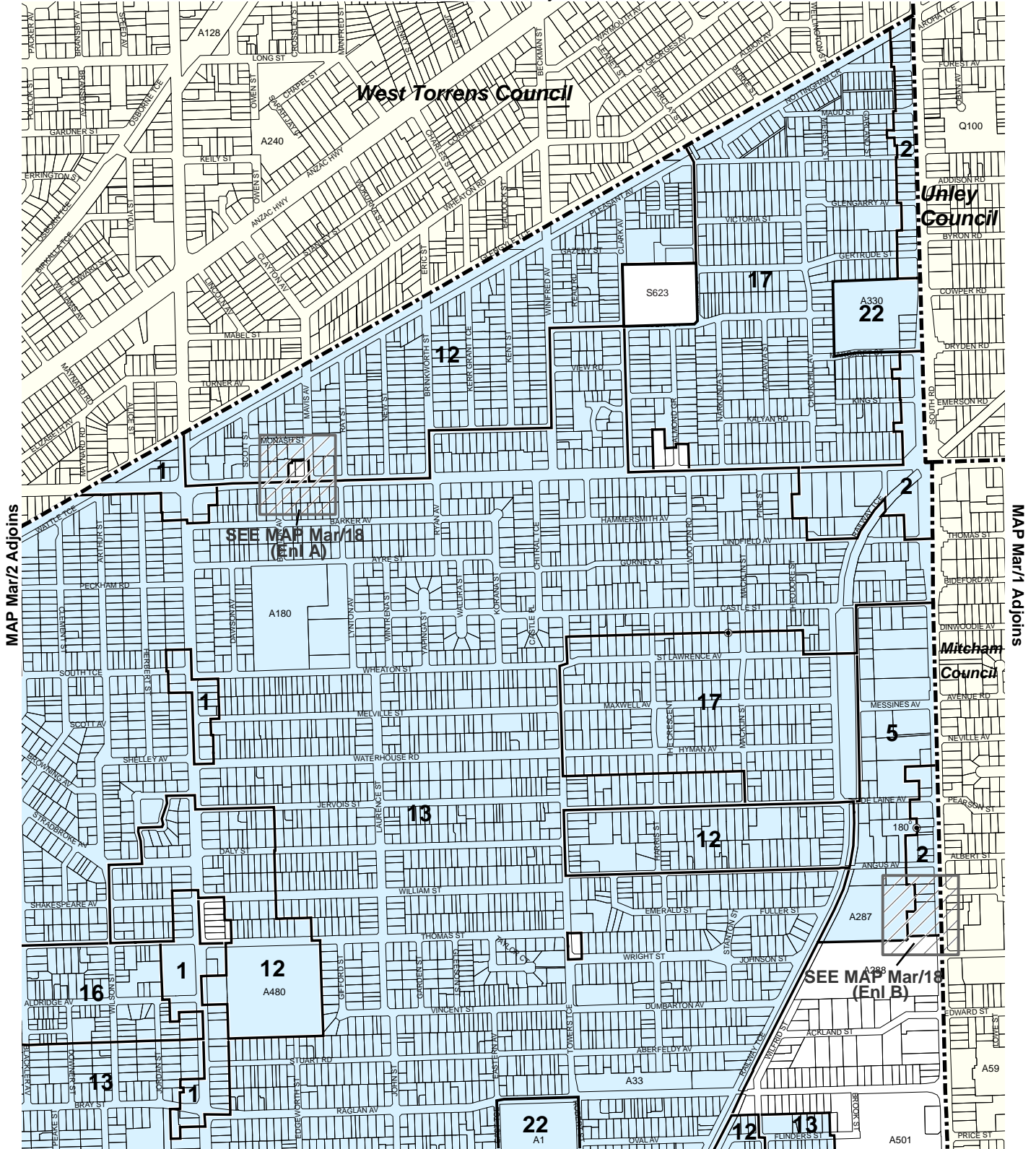
See enlargement map for accurate representation.
 Lambers Conformal Conic Projection, GDA94

- Zones**
- C** Commercial
 - Cu** Community
 - In** Industry
 - LCe** Local Centre
 - NCe** Neighbourhood Centre
 - R** Residential
 - MU** Mixed Use
 - Zone Boundary**
 - Development Plan Boundary**



Zone Map Mar/3

MAP Mar/1 Adjoins



MAP Mar/6 Adjoins

See enlargement map for accurate representation.
Lamberts Conformal Conic Projection, GDA94

Policy Area

- 1 Marion Road
- 12 Medium Density
- 13 Northern
- 16 Regeneration
- 17 Residential Character
- 2 South Road
- 5 Industry/Commerce Edwardstown
- 22 Recreation

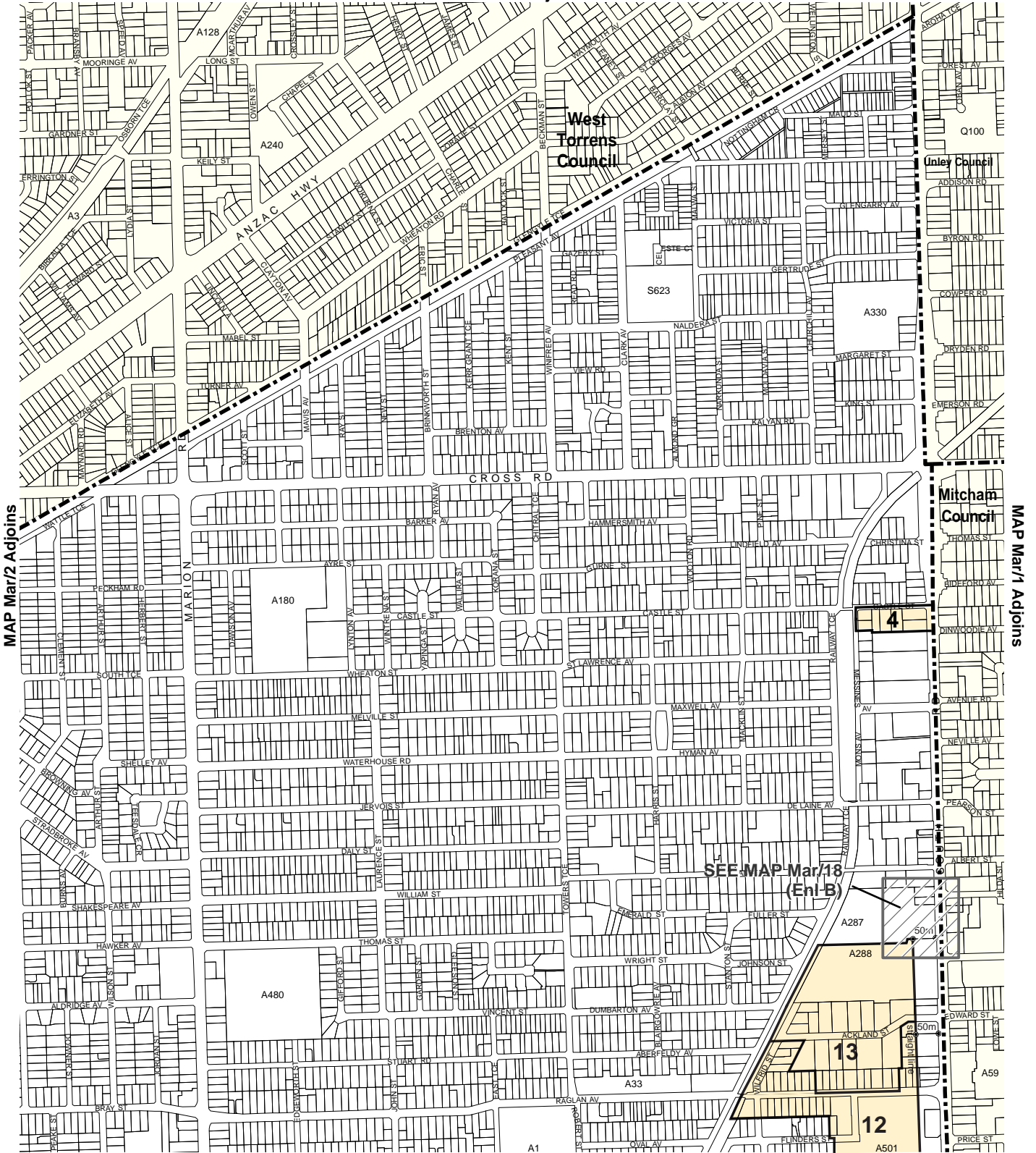


Policy Area Map Mar/3

- Policy Area Boundary
- Development Plan Boundary

MARION COUNCIL

MAP Mar/1 Adjoins



MAP Mar/6 Adjoins

See enlargement map for accurate representation.
Lamberts Conformal Conic Projection, GDA94

Precinct

- 4 Industry Interface
- 12 Castle Plaza Environmental Assessment Area
- 13 Limited Residential Development



Precinct Map Mar/3

- Precinct Boundary
- Development Plan Boundary

MARION COUNCIL

ATTACHMENT D

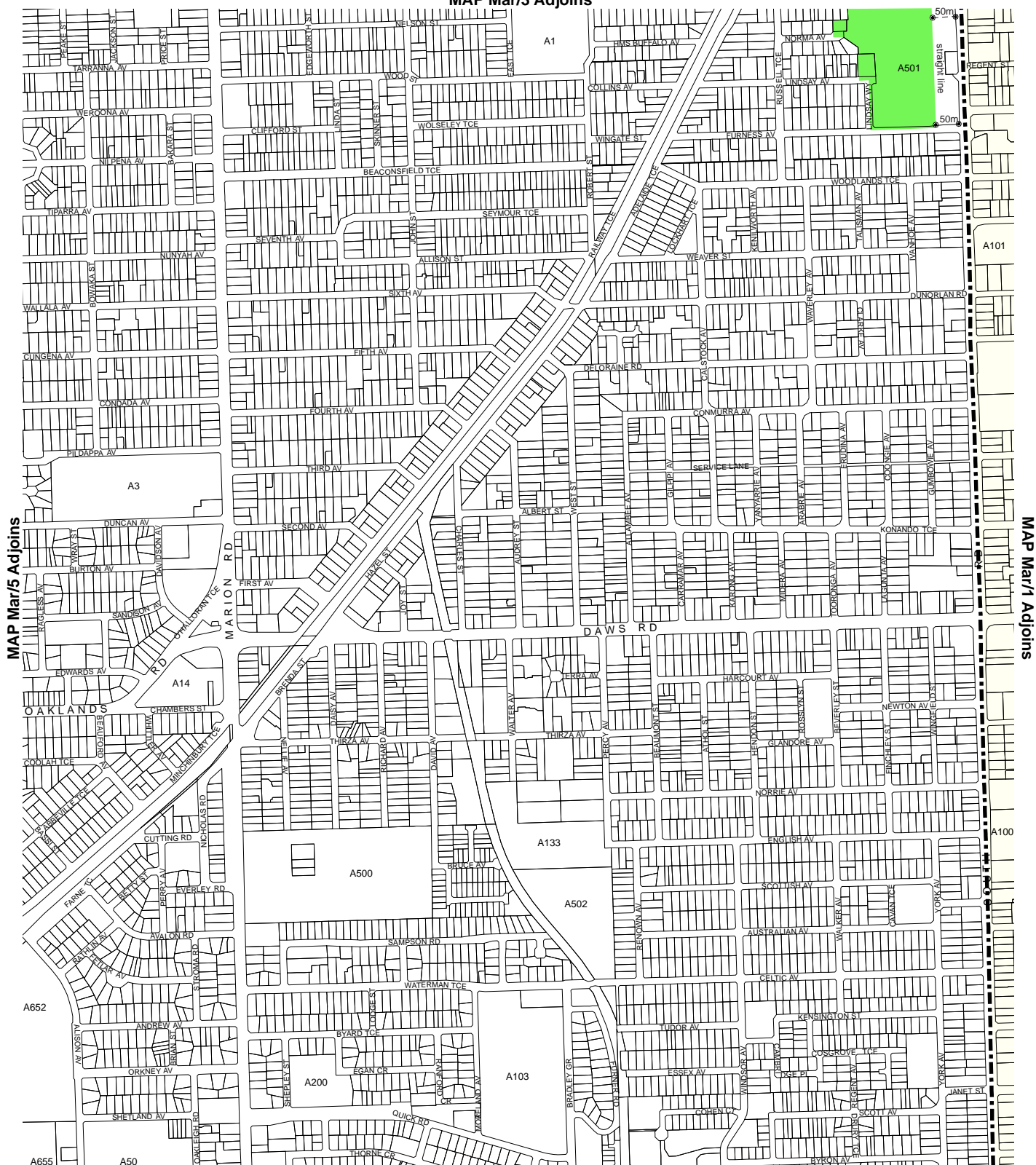
Overlay Map Mar/6 – Affordable Housing

Overlay Map Mar/6 – Noise and Air Emissions

Zone Map Mar/6

Precinct Map Mar/6

MAP Mar/3 Adjoins




Lamberts Conformal Conic Projection, GDA94



Overlay Map Mar/6




AFFORDABLE HOUSING

 Affordable Housing Designated Area
 Development Plan Boundary

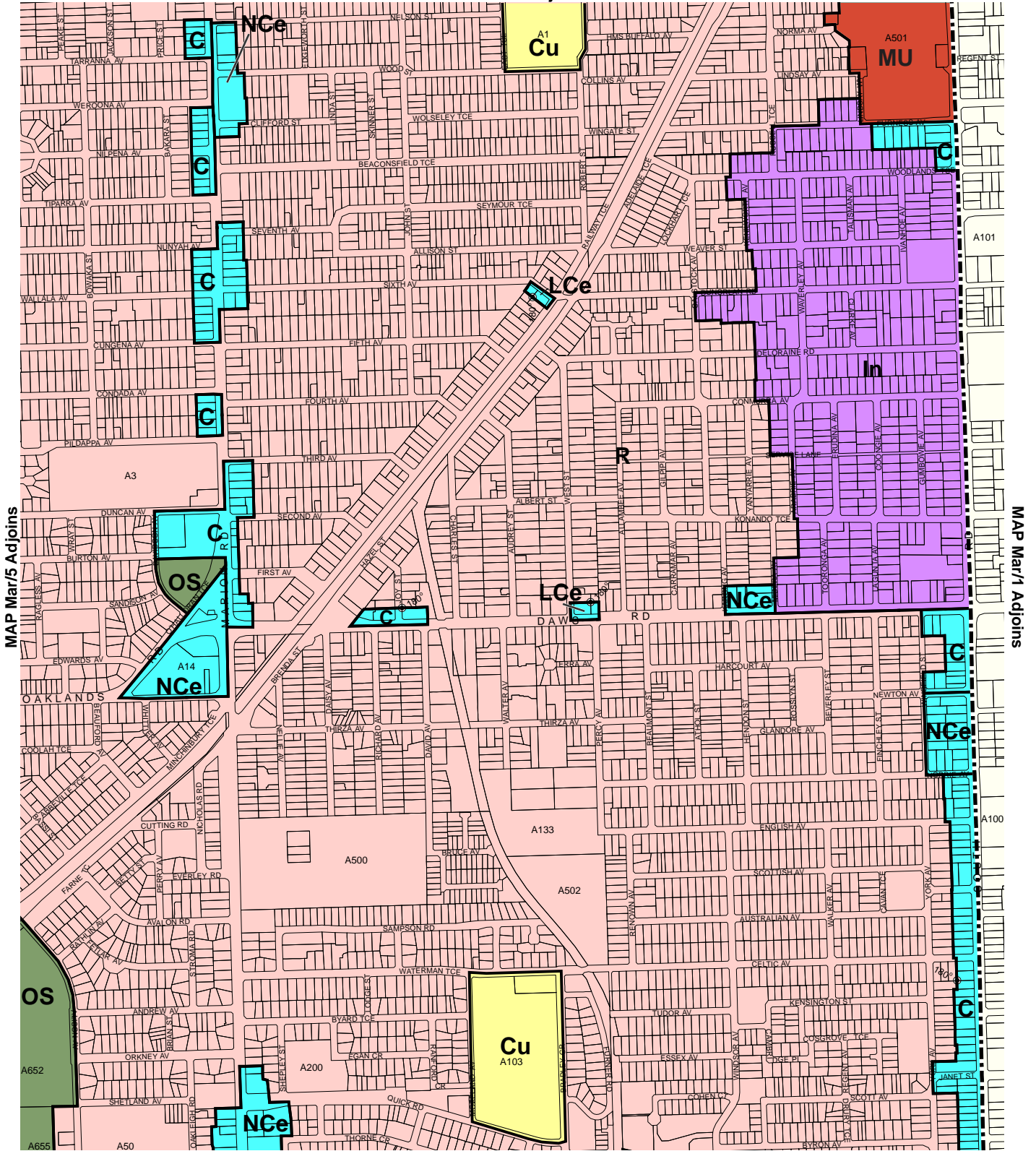
MARION COUNCIL

This is a detailed street map of a residential area in Oaklands, New Zealand. The map shows a grid of streets with various names like Tarranna Av, Weroona Av, and others. A large green area is labeled A501, and a large white area is labeled A500. The map is bordered by 'MAP Mar/5 Adjoins' on the left, 'MAP Mar/7 Adjoins' on the right, and 'MAP Mar/8 Adjoins' at the bottom. The top of the map is labeled 'MAP Mar/5 Adjoins'.

MARION COUNCIL

-  Type A Road
 Noise and Air Emissions Designated Area
 Development Plan Boundary

MAP Mar/3 Adjoins



MAP Mar/8 Adjoins

Lamberts Conformal Conic Projection, GDA94

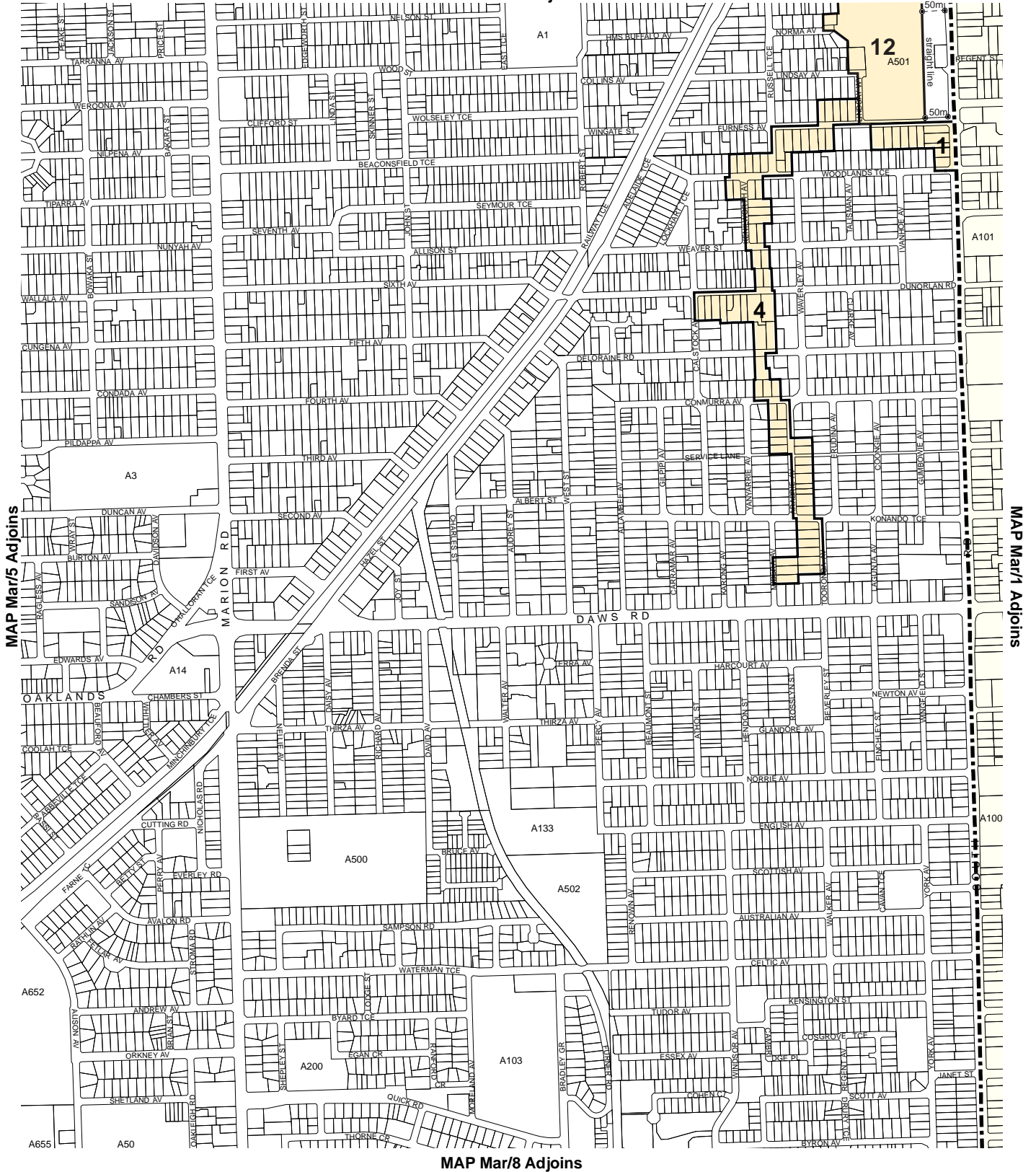
Zones

- C** Commercial
- Cu** Community
- In** Industry
- LCe** Local Centre
- NCe** Neighbourhood Centre
- OS** Open Space
- R** Residential
- MU** Mixed Use
- Zone Boundary**
- Development Plan Boundary**



Zone Map Mar/6

MAP Mar/3 Adjoins



Lamberts Conformal Conic Projection, GDA94

Precinct

- 1 Edwardstown Activity Centre Fringe
- 4 Industry Interface
- 12 Castle Plaza Environmental Assessment Area

- Precinct Boundary
- Development Plan Boundary

Precinct Map Mar/6

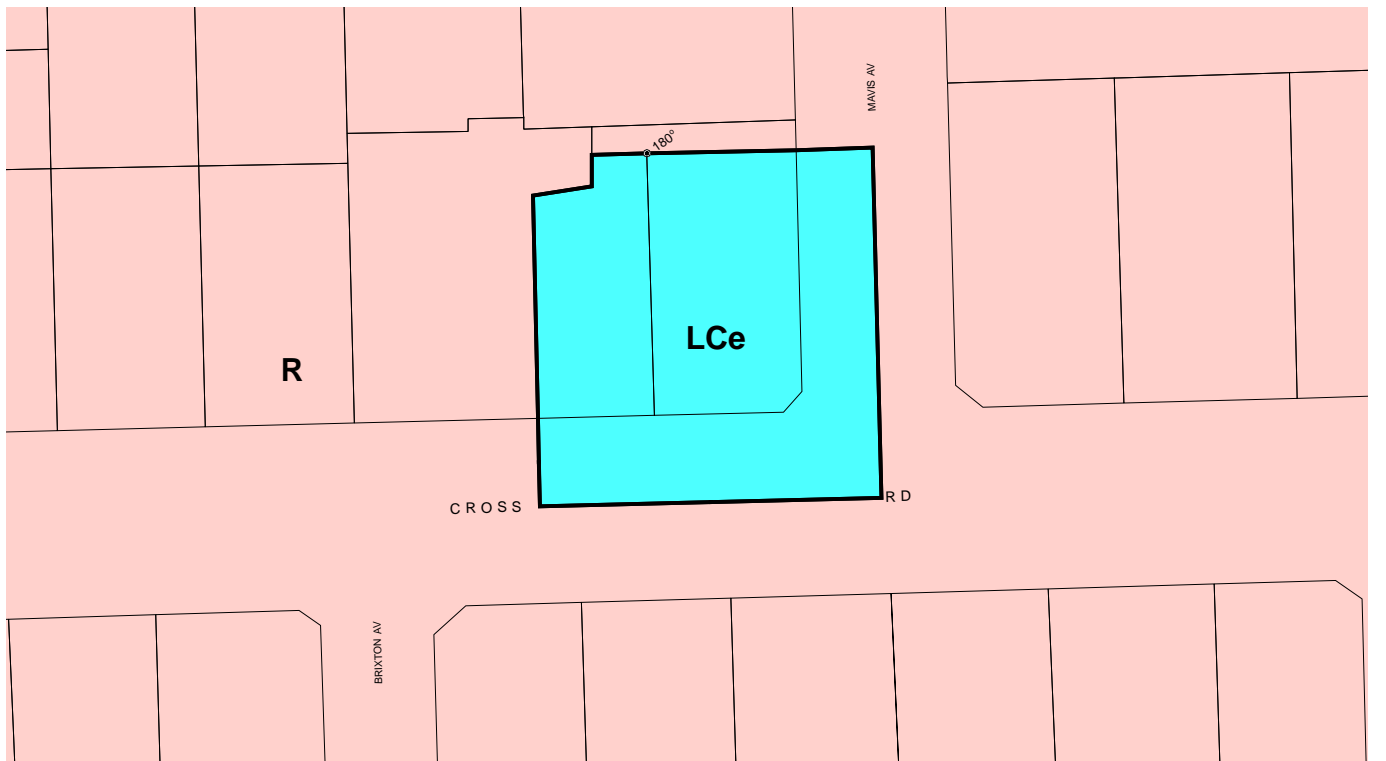
MARION COUNCIL

ATTACHMENT E

Zone Map Mar/18

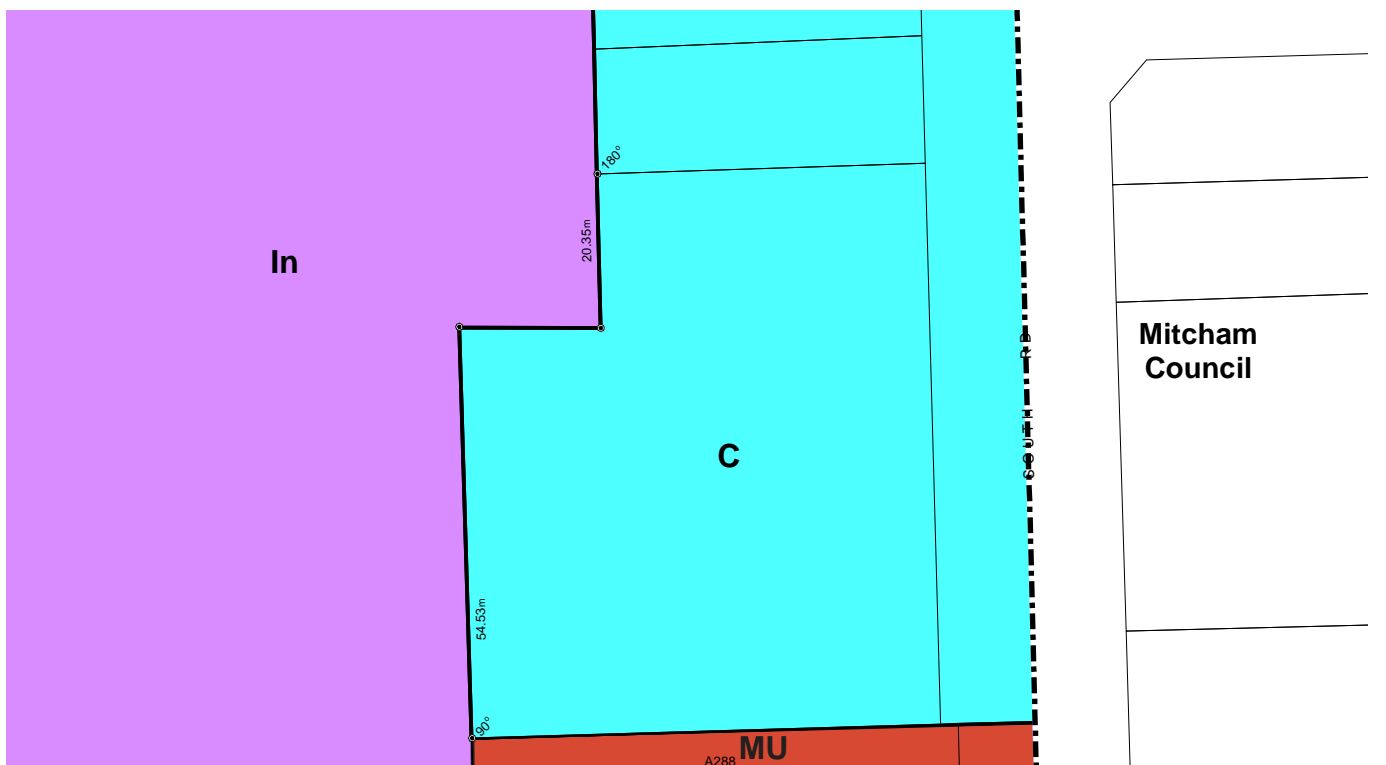
Policy Area Map Mar/18

Precinct Map Mar/18



Enlargement A

0 60 m



Enlargement B

0 60m

Lamberts Conformal Conic Projection, GDA94

- Zones**
- Commercial
 - Industry
 - Local Centre
 - Residential
 - Mixed Use

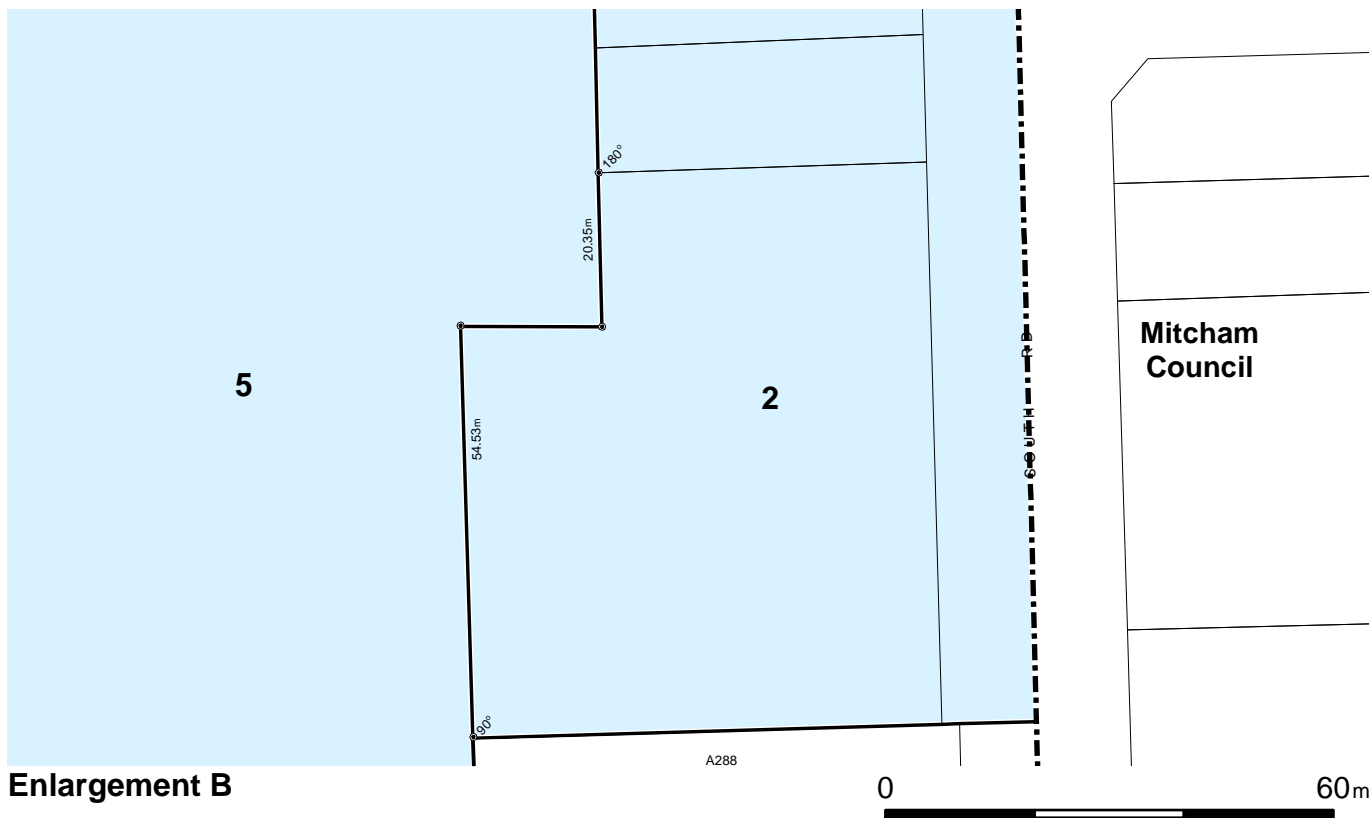
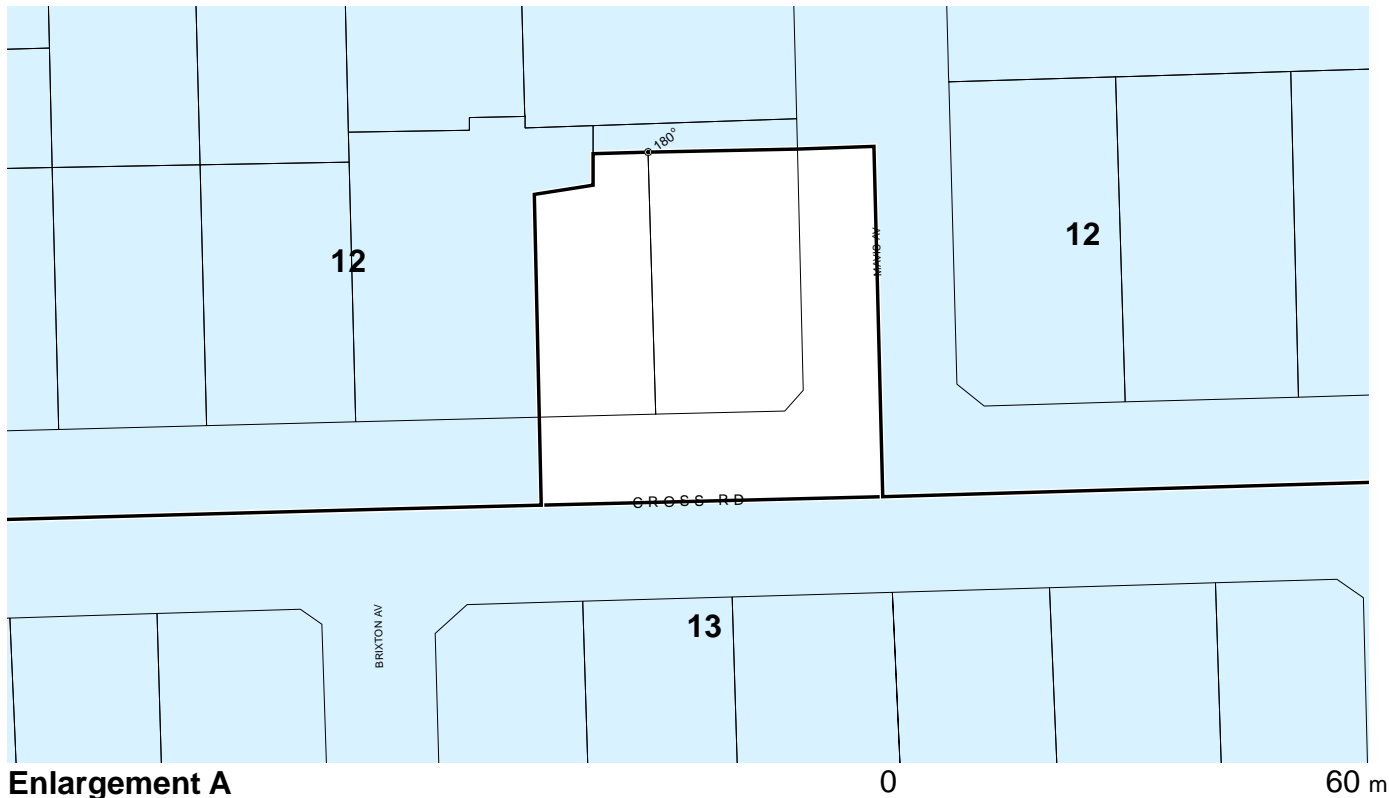
Zone Boundary

Development Plan Boundary



Zone Map Mar/18

MARION COUNCIL



Lamberts Conformal Conic Projection, GDA94

Policy Area

- 12 Medium Density
- 13 Northern
- 2 South Road
- 5 Industry/Commerce Edwardstown

Policy Area Boundary

Development Plan Boundary



Policy Area Map Mar/18

MARION COUNCIL



Enlargement A

0 60 m

Enlargement B

0 60 m

Lamberts Conformal Conic Projection, GDA94

Mitcham Council

13

A288



50m



Precinct

13 Limited Residential Development

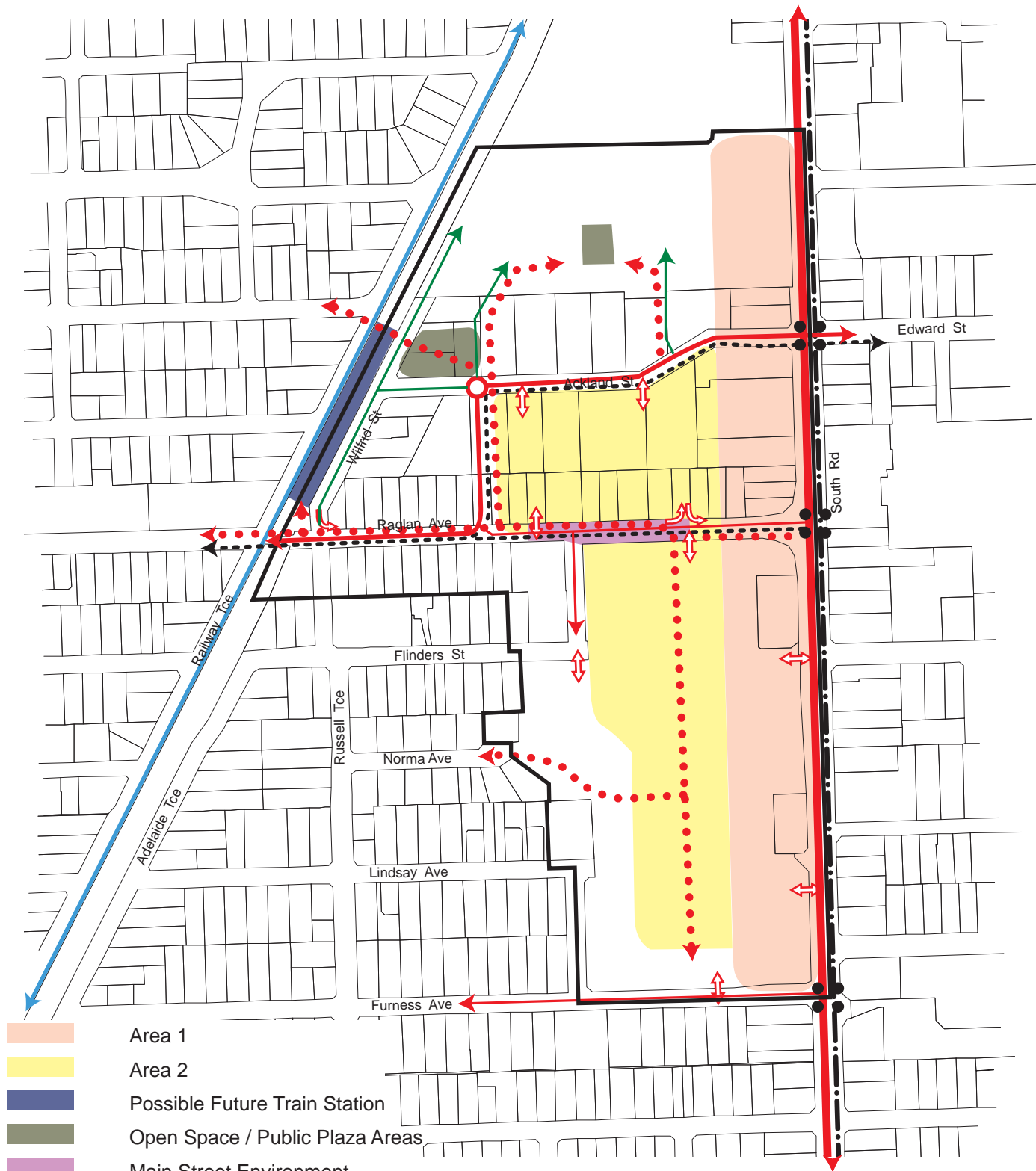
Precinct Map Mar/18

-  Precinct Boundary
-  Development Plan Boundary

MARION COUNCIL

ATTACHMENT F

Concept Plan Map Mar/9 – Mixed Use Zone



- Area 1
- Area 2
- Possible Future Train Station
- Open Space / Public Plaza Areas
- Main Street Environment
- Signalised Intersection
- Key Vehicular Access / Egress Points
- Key Pedestrian Paths
- Pedestrian and Cyclist Friendly Streets
- On Street Bike Link
- Greenway Route
- Local Road
- Key East/West Vehicular Route & Connection Road
- Arterial Road
- Extent of Concept Plan Map
- Development Plan Boundary

0 m 125 250

Concept Plan Map Mar/9 Mixed Use Zone

Marion Council

**Castle Plaza Activity Centre
Development Plan Amendment**

Summary of Consultation and Proposed Amendments (SCPA) Report

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Introduction

This report is provided in accordance with Section 25(13) of the Development Act 1993 to identify matters raised during the consultation period and any recommended alterations to the amendment. The report also provides details of the consultation process undertaken by Council.

The SCPA Report should be read in conjunction with the consultation version of the DPA. Where relevant, any new matters arising from the consultation process are contained in this Report.

The Amendment reflects the recommendations of Council contained in this Report.

Consultation

Consultation Process

Statutory consultation with agencies and the public was undertaken in accordance with DPA process B (consultation approval not required) and in accordance with Section 25(6) of the Development Act 1993; Regulations 10 and 11 of the Development Regulations 2008; and the agreed Statement of Intent.

The following Local Member(s) of Parliament were consulted on the DPA:

- (a) Hon Patrick Conlon MP (Member for Elder)
- (b) Hon Stephanie Key MP (Member for Ashford)

The response(s) are included within **Attachment A**.

The consultation period ran from 3 November 2010 to 12 January 2011

Public Notification

Notices were published in the 'The Advertiser' on 3 November 2010, the Government Gazette on 4 November 2010 and the 'Guardian Messenger' on 3 November 2010.

The DPA documents were also on display at Council's service centres and libraries and were made available on Council's website. Hard copies and CD-ROM were made available for purchase on request. A copy of the DPA was forwarded to the Department of Planning and Local Government and other relevant Agencies on 3 November 2010.

Public and Agency Submissions

Public Submissions

Fourteen (14) public submissions were received. Key issues raised in the submissions are summarised as follows:

- (a) Proposed extension to Castle Plaza shopping centre is not consistent with the aims of the 30 Year Plan for Greater Adelaide as its proposed floor area would not align with the current centres hierarchy.
- (b) Economic Impact Assessment report does not provide clear justification for the ability to establish additional retail floor space without creating a detrimental impact upon or hindrance on the development, function or role of the Regional Centre at Marion.
- (c) The proposed reduced car parking rate of 4.1 should be applied council wide to applicable like developments/centres that have excellent access to high quality public transport.

- (d) Inadequate investigations were undertaken to consider whether the subject land should be considered as a "Prime Industrial Area" within the meaning of the Metropolitan Adelaide Industrial Land Strategy.
- (e) The land is of sufficient size to provide adequate separation distances to appropriately accommodate 24 hour industrial land uses without affecting adjoining residential land uses to the west over the rail line.
- (f) No independent noise assessment has been undertaken to consider noise impacts on proposed residential development from South Road and noise impact/interface issues associated with the mix of uses envisaged within the mixed use zone.
- (g) In favour of moving Woodlands train station subway but not the station itself as it has a large number of regular users.
- (h) Inconsistencies in regard to height of development on southern side of Raglan Avenue.
- (i) A limit of 2 storeys should be imposed on any future development on the southern side of Raglan Avenue.
- (j) Making part of Raglan Avenue (currently a busy east-west connector road) into a mall may create traffic congestion problems, and may lead to increased traffic flow on the adjacent local street system.
- (k) Concerns about future traffic movements resulting from the proposed redesign of the South Road, Edward Street, Ackland Street intersection
- (l) Concern that the proposed alignment of the new roads (Raglan/Ackland) will not be conducive to either traffic movement or a pedestrian mixed use environment and may stifle the local economy and frustrate the community.
- (m) The traffic lights at the South Road/Raglan Avenue intersection should remain.
- (n) In support of the possibility of establishing a new train station adjacent the site but not in support of closing either Woodlands Park or Edwardstown stations.
- (o) Insufficient off street parking is to be provided.
- (p) Too much is to be crammed into the area the subject of the DPA.
- (q) Surface level car parking should be retained to cater for the elderly and people with a disability.
- (r) There will be a lack of open space and rest areas within the proposed area.
- (s) The area needs more aged care facilities and affordable housing and improved accessibility to services and transport.
- (t) Traffic Impact report does not model the impact of the development on the local road network sufficiently, rather discussing those streets leading immediately into the development. The increase in volume of traffic movements on Towers Terrace will affect the amenity and function of the street.
- (u) Although roads may operate within their traffic capacity the amenity to local residents may well be affected and should be considered further.

A report on each submission (summary, comments, and action taken in response to each submission) is included in **Attachment A**.

Agency Submissions

Twenty (20) responses were received from agencies. Key issues raised in the responses are summarised as follows:

- (a) There is sufficient capacity in the water network to supply the proposed development however the sewer network will require some upgrading.
- (b) Ensure an appropriate provision and mix of open space that caters for active & passive recreation and entertainment.
- (c) Residential buildings should be sited and designed to minimise noise from the arterial road, railway and non-residential land uses.
- (d) The centre should incorporate well located Community bus zones for the aged and people with a disability.
- (e) Residential component should comprise a diversity of housing types including affordable housing that is distributed throughout the zone.
- (f) Should ensure that an integrated and accessible development is created that caters for the wider community beyond the boundaries of the DPA.
- (g) Appropriate pedestrian linkages/connections are to be made available throughout the area (and area beyond the site) to open space and retail uses
- (h) Proposed station should be integrated with the centre development.
- (i) Economic Impact Report is vague and inconclusive about the potential impact on the Kurralta Park District Centre.
- (j) The retention of trees (particularly significant trees) within the affected area is encouraged.
- (k) The level of service to and from South Road for Edwards Street, Caulfield Avenue etc. for vehicular movements is to be maintained.
- (l) Pedestrian crossing facilities over South Road are to be maintained to the current level of service.
- (m) The SKM traffic analysis and proposed works are sufficient for DPTI (DTEI) to appreciate the likely scale of improvements required along South Road to accommodate the likely development scenarios for the "Affected Area" on the basis that SIDRA analysis for the intersections on South Road and AIMSUN modelling be undertaken.
- (n) Provision of a railway station adjacent the affected area cannot be guaranteed.
- (o) Appropriate bus services and pedestrian connections are to be provided/retained as part of the redevelopment process.
- (p) Pedestrian and cycling networks should be optimised within the affected area and should connect with existing and proposed networks in surrounding areas.
- (q) Site contamination investigations undertaken are incomplete and do not provide sufficient justification that all of the land proposed for rezoning is (or can be) fit for subsequent uses, particularly sensitive uses. It is recommended that site contamination investigations be conducted for the whole affected area of the DPA.
- (r) Policy amendments for Precinct 13 Limited Residential Development should match the requirements of the Auditor which require additional remediation and land management measures documented within the

report.

- (s) Precinct 12 Castle Plaza Environmental Audit Area name and policy should be changed to reflect a broader range of assessment options for this location, given there is uncertainty as to the exact level and extent of contamination that actually exists in this location (such that an environmental audit may not in itself actually be necessary).
- (t) Policies should be included that ensure adequate protection for sensitive land uses from noise and exposure to air pollutants associated with rail, industrial and road traffic.
- (u) Council to demonstrate how the DPA will implement the Housing and Employment Land Supply Program Report, 2010 (HELSP) and that policies are not at variance with the HELSP.
- (v) New State planning policy modules aimed at facilitating higher density centres and TODs should be considered over the Mixed Use Zone policy.
- (w) Developing policy around the built form rather than density of residential development should be given consideration due to limitations in area.

Review of Submissions and Public Meeting

Copies of all submissions were made available for public review from 29 August 2011 to 28 September 2011 on the Council website and at the Council offices.

Four (4) submitters requested to be heard, and therefore a public meeting was held on 28 September 2011. A copy of the proceedings and a summary of verbal submissions made at the public meeting are included in **Attachment B**.

Additional Matters and Investigations

The following additional matters were identified and the following investigations conducted after the consultation process:

- (a) Economic Impact Assessment – Response to Submissions – October 2011

The report provides responses to submissions raising questions of economic impacts on the existing District Centre at Kurralta Park, the Regional Centre at Marion and on other retailers within the West Torrens Council area. The report also considers the position of the centre in the centres hierarchy.

- (b) Traffic Impact Assessment - Final with Response to Comments – 13 July 2012

Amendments have been made to the original report following responses received as part of the consultation process. The amendments relate to addressing questions by DPTI regarding assumptions in the modelling and outcomes of AIMSUM modelling, as well as to “Local Street Traffic Impacts” in regard to capacity and amenity.

- (c) Assessment of DPA against Housing and Employment Supply Program (HELSP)

The HELSP estimates a target of 2500 dwellings to be supplied in major infill developments in the period to 2020 and a further 4000 in the 5 years to 2025 within the Southern Adelaide region. These larger infill opportunities are anticipated along transit corridors and within centres.

The Castle Plaza site is both associated with a centre and is located within the transit corridor. It is anticipated that up to 1000 medium to high density residential dwellings could be provided within the mixed use zone and surrounding locality, within the corridor, in the long term.

The HELSP states that some of the challenges in the Southern region of Adelaide include providing additional employment opportunities and improving the efficient movement of people, goods and services to and from the region.

The DPA proposes a mix of employment generating opportunities (retail, commercial, community and civic) which would potentially result in a higher number of jobs being created compared to the generally larger floor area per person requirements of the former industrial activities.

There is the potential for a future train station and bus stops adjacent to/on Raglan Avenue to be integrated with the proposed development of the site. Strong pedestrian and cycling connections are to be provided within the site and beyond into the surrounding locality.

(d) Site Remediation and Assessment by Accredited Auditor

Extensive remediation of the former Hills site has been undertaken since 2011 and the demolition of the former buildings and structures on the land. An assessment of the site identified numerous contaminated areas across the site including:

- northern and western portions of the site associated with in-ground solvent bath locations (solvent and light fraction hydrocarbons)
- maintenance and tool room (fuel-related hydrocarbons)
- numerous underground and storage tank and waste oil locations (heavy metals)
- filled locations (ashy lenses)

The assessment has also found that groundwater has been affected by contamination beneath the former manufacturing site and contaminants have migrated in a westerly direction, with groundwater quality impacted by chemical contamination.

Soil remediation and validation works for the 36 separate areas was undertaken as part of the demolition works in 2011 and included the following processes:

- materials excavated from the ground around subsurface structures of the former factory (along with other areas of contaminated soil) were stockpiled on hardstand while samples were analysed for classification of the material
- once available hardstand was removed, stockpiles of contaminated soil were stored on high density polyethylene (HDPE)
- stockpiles with visual or odour impacts were covered with plastic until removed from the site
- validated excavations were refilled with either site-sourced fill material (where deemed suitable for re-use) or imported clean fill material.

A portion of the site where significant solvent impact was detected (below the former Ironing Tables building) was identified as high risk of ongoing impacts to groundwater. This area was excavated to a depth of 5 metres below ground level and validated in accordance with an auditor approved Remediation Management Plan. This excavation was reinstated with a combination of site-sourced and imported material in accordance with the RMP.

An audit of the remediation works has been undertaken and is split into 3 areas being:

- north of Ackland Street
- south of Ackland Street
- former car park, overflow car park and warehouse (approximate location of proposed open space area)

The auditor has engaged with the EPA to ensure that the audit process is to their satisfaction. As such the auditor has confirmed via letter to Council that the remediation of the land means that the risks

posed by contamination are low and acceptable given the proposed use of the land. Notwithstanding this, the Auditor is proposing the following conditions in their final report:

- no habitable basements and ground floor residents be established on the former Hills Industries site
- no extraction of groundwater for any use from all aquifers within 200m radius of the northern portion of the site (ie northern side of Ackland Avenue)
- any soft landscaping within the area should be completed with a surface layer of at least 500mm depth of clean soil

The final reports were provided to the EPA and endorsed in 2016.

As a result of the auditor's recommendations, it is necessary to provide additional policy coverage which ensures that no habitable basements and ground level dwellings are established in the audited areas.

Since the previous revisions to the policy were made (and the EPA finalised their sign-off on these), there has been further comments from the EPA seeking additional changes to the policy wording. It is considered that some of these recommended changes are overly detailed for the Development Plan, however the intent of better reflecting the range of assessment options for Precinct 12 (along with the renaming of the Precinct) and further clarification of additional requirements of the Auditor within Precinct 13 are suitable for coverage in the policy. The Desired Character Statement and Precinct specific Principles of Development Control have been updated to reflect these suggestions.

In addition, further clarification has been sought from the auditor as to the potential for rooms within dwellings that could be positioned at the ground level or in basements based on the Auditor's condition within the Audit. This clarification is seen as necessary to avoid any ambiguity as to what is meant by "ground level dwelling" within the policy, particularly as the revised concept plan facilitates a larger area for dwellings to be established within the zone (potentially as stand-alone buildings). Defining what is meant by "habitable rooms" provides the most useful method of clarifying this within the policy, and following a review of Case Law and other existing definitions, use of the Building Code of Australia's definition was determined to be the most appropriate, and has been confirmed by the Auditor as aligning with their intent in the recommendation of this condition within their Audit report.

(e) Review of Master Plan and Revised Road Layout Concepts

Since the inception of the masterplan and draft DPA the state of the economy and retail sector has declined, significantly reducing anticipated demand for additional retail floorspace and oversupply of office floor space in Adelaide generally. In addition, changes to ownership structures for several of the giant retail chains has meant a change to the way certain stores cluster within centres.

As a result, Vicinity Shopping Centres has advised that an additional discount department store in the centre is unlikely into the future, and that the extent of specialty retail able to be accommodated on the northern side of Raglan Avenue is therefore also significantly reduced. As a result of these factors, the future expansion of the Castle Plaza shopping centre has been significantly downscaled from the previous 45,000m² of retail and 15,000m² commercial floor space to 28,000m² of retail floor space and 7,000m² of commercial floor space.

This means that the layout of the overall affected area needs to change, and this has been done through an amended master plan that:

- reduces the extent of Area 2 so that it does not extend north of the existing Ackland Avenue
- removes the longer loop road creating the east/west movement through the zone
- removes the proposal to pedestrianise Raglan Avenue and replaces it with a traffic calmed main street environment

The Concept Plan has been amended to reflect the new master plan layout (principally through the alteration to the loop road layout and representation of the extent of the main street environment, and a reflection that part of Area 2 may now in fact have at grade parking and a single storey form.

In support of the revised master plan, Vicinity, collaboratively with the City of Marion and DPTI (Transport) has prepared Concepts for the new Raglan Avenue main street environment, Ackland Avenue revised treatments and new loop road connecting the two. These are contained within Attachment F. These have been prepared to inform the revised traffic modelling prepared and provided to DPTI, to confirm the reduced extent of works required at the South Road junctions (and also confirm that flows can be maintained during Stage 1 of the development without the need to create the link road to Ackland Street in the short term).

The revised master plan creates a larger area for the establishment of a broader range of mixed use development and residential (only) development. This has warranted a review of the policy in order to accommodate some additional flexibility for the forms of residential development (as opposed to only within residential flat buildings). As such, the return to the Core Mixed Use zone policy position of envisaging row dwellings has been made. This provides additional flexibility and diversity in housing products able to be developed within the zone, and is also facilitated by the further clarification of the extent of components of dwellings able to be accommodated at ground level (ie a product such as 3 storey terraces with garaging entry and laundry at ground level is appropriate and should be facilitated by the policy).

- (f) Correction of policy expression errors, better clarity of intent and updating to contemporary policy expression and wording.

There has been an additional review of the policies proposed and a number of errors in expression of intent, or poor expression generally have been identified. A number of policies were also reviewed having regard to new General Section content and recent Ministerial DPA policy. This particularly includes:

- the reference to allowing supermarkets within Area 2 (which previously prevented other forms of retail in this space – contrary to intent)
- the listings for sensitive land uses within the two Precincts within the non-complying lists (which were overly restrictive and did not allow these to occur at upper levels)
- adaptability principle which was prescriptive and superseded by recent Ministerial policy updates

A copy of additional investigations and documents is provided in **Attachment F**

Additional Consultations

Additional consultation was conducted by way of the:

Castle Plaza Transit-oriented Development Health Lens Analysis

This project involved the investigation of opportunities to increase the potential for an improved urban environment to support health and wellbeing in the proposed Castle Plaza Development.

The project was undertaken by the Department of Health & City of Marion.

This project involved a new health lens tool, the Sustainability and Wellbeing Assessment Framework (SWAF) and a new process, the Rapid Assessment Workshop (RAW). The workshop involved staff from State government agencies, (including Department of Health, DPTI, DMITRE, Housing SA), Jensen Planning Design, the developers and the City of Marion.

The RAW produced a number of recommendations, directed specifically at the DPA, the City of Marion, various government departments, and the developers.

A copy of the Final Report for the Health Lens Analysis is provided in **Attachment G**

Timeframe Report

A summary of the timeframe of the DPA process relative to the agreed Statement of Intent timetable is located at **Attachment C**.

Delay(s) occurred because:

- (a) Investigations (site contamination, traffic flows, road alignments, building scale, open space etc) required more time than anticipated and the proposed Amendments were redrafted several times.
- (b) As above and:-consultation process put on hold whilst ground water contamination issues in suburbs to west of site were investigated.
- (c) Discussions and agreement on direction to be taken regarding site contamination took considerably longer than anticipated and required numerous meetings with the EPA, DPTI and developer.
- (d) Awaiting additional details/amendments to economic analysis and traffic reports.
- (e) Council sought to ensure that remediation of the site was undertaken and suitability of the site for the intended use was endorsed by an accredited Auditor. This work required 3 years to be undertaken and has now been completed with the Report now considered and accepted by the EPA.
- (f) revisions to the master plan and road layout and design concepts for the site as a result of changes to the market conditions, along with concept design development for alternative road arrangements and traffic modelling.

CEO's Certification

The consultation process has been conducted and the final amendment prepared in accordance with the requirements of the Act and Regulations as confirmed by the CEO's Certifications provided in **Attachment D** (Schedule 4A Certificate) and **Attachment E** (Schedule 4B Certificate).

Summary of Recommended Changes to the Amendment following Consultation

The following is a summary of the changes recommended to the Amendment following consultation and in response to public submissions and/or agency comments:

- (a) rewriting the zone to be consistent with the policies within the new policy modules (as desired by DPTI). A detailed analysis of the changes made from the consultation version of the zone and the new version proposed is contained within Attachment G.
- (b) providing additional policy coverage to affordable housing policy and noise and air quality issues adjacent noise sources through the insertion of the Overlay Modules into the Development Plan
- (c) creation of Precinct 12 Castle Plaza Environmental Audit Area within the zone covering the existing Castle Plaza shopping centre site to provide policy coverage that requires additional site contamination analysis and/or remediation prior to the establishment of sensitive land uses
- (d) creation of Precinct 13 Limited Residential Development over the former hills Industries site (ie north of Raglan Avenue) to provide policy coverage that limits the potential for ground level dwellings and habitable basement structures. This is also supported by a non-complying development listing for such structures within the Precinct.

- (e) amending the Concept Plan Map to more clearly show access options and connections
- (f) amendments to Map Reference Table and Mapping to reflect the above policy changes.

Attachment A – Summary and Response to Public Submissions

Report on each public submission received (including summary, comments and action taken in response)

Sub No.	Name	Submission Summary	Comments	Council Response
Submissions Received from Agencies				
1.	Geographical Names Unit (GNU) - Land Services Group - DTEI	<ul style="list-style-type: none"> The GNU will no longer be reviewing DPAs When naming zones or rating areas for use within the DPA, names used should not give a false impression of a valid suburb name If a place name does not appear in the State gazetteer database it should not be used in documentation until approval has been received from the GNU. 	<ul style="list-style-type: none"> Noted 	<ul style="list-style-type: none"> No change required
2.	Hon Steph Key MP Member for Ashford	<ul style="list-style-type: none"> Acknowledge receipt of correspondence regarding DPA. No further comment received. 	<ul style="list-style-type: none"> Noted 	<ul style="list-style-type: none"> No change required
3.	Electranet	<ul style="list-style-type: none"> Proposal has been reviewed and there is no comment to make. 	<ul style="list-style-type: none"> Noted 	<ul style="list-style-type: none"> No change required
4.	Aboriginal Affairs & Reconciliation Division - Department of the Premier and Cabinet	<ul style="list-style-type: none"> The central archives have no entries for Aboriginal sites at the area affected by the DPA. The Register is not a comprehensive record; sites and objects may exist even though not identified in the Register and sites and objects are protected under the Aboriginal Heritage Act, 1988 whether they are in Register or not. 	<ul style="list-style-type: none"> Noted Noted Noted 	<ul style="list-style-type: none"> No change required No change required No change required

Marion Council
 Castle Plaza Activity Centre Development Plan Amendment
 Attachment A — Summary and Response to Public Submissions

Sub No.	Name	Submission Summary	Comments	Council Response
		<ul style="list-style-type: none"> If an activity is likely to damage, disturb or interfere with a site or object, authorisation to undertake the activity must be obtained from the Minister. 		
5.	Metropolitan Fire Service – South Australia	<ul style="list-style-type: none"> All buildings should comply with the requirements of the Building Code of Australia. It is essential that the Fire Services have access for large aerial fire appliances to multistorey apartment buildings. Where heritage buildings are identified, a committee should be formed comprising the Council's building surveyor, building owner and the fire service to develop a fire safety package. It is expected that SA water will supply street mains with fire plug access and Road Transport Dept will maintain roadways with adequate emergency vehicle access. 	<ul style="list-style-type: none"> Noted - Outside the scope of DPA – BCA compliance will be assessed at individual Development Application stage. Not required as no heritage buildings within DPA area. Noted 	<ul style="list-style-type: none"> No change required No change required No change required
6.	South Australia Police	<ul style="list-style-type: none"> No objections to the revised plan as documented. 	<ul style="list-style-type: none"> Noted 	<ul style="list-style-type: none"> No change required
7.	SA Water	<ul style="list-style-type: none"> A preliminary review of the existing network indicates that there is sufficient capacity to supply the proposed development. Preliminary analysis of wastewater services indicates there is inadequate capacity available in the South Road Main trunk sewer to cater for the proposed development; proposed development is likely to be serviced by the sewer main on Marion Road, via collection mains on Ackland St and Raglan Ave. 	<ul style="list-style-type: none"> Noted Noted – Outside the scope of the DPA. This is likely to be addressed at land division stage and can be included as a condition of the approval 	<ul style="list-style-type: none"> No change required No change required

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		<ul style="list-style-type: none"> Provision should be made for upgrade of existing gravity sewer along Ackland St and Wilfred St. <p>GENERAL ASPECTS In general, the following comments apply to new developments or redevelopments:</p> <p><u>PROVISION OF WATER SUPPLY</u></p> <ul style="list-style-type: none"> Any development, including landscaping, shall be designed to incorporate water conservation principles and devices. Development shall only be permitted to occur where the water supply system can adequately meet quality, quantity, sustainability and reliability standards, as appropriate for the particular type of development, including the provision of adequate capacity for fire fighting and fire prevention. The use of rainwater tanks is encouraged. Tank sizes shall be based on water demand, local rainfall, contributing roof area and the level of reliability sought. The use of reclaimed water is recommended where appropriate. <p><u>Protection of Groundwater</u></p> <ul style="list-style-type: none"> Development/s shall have no deleterious effects on the quality or quantity of groundwater, or the natural environments that rely on this water. In particular, the following conditions shall apply: <ul style="list-style-type: none"> Landfill shall be outside of Water Protection Zones; Landfill area to include leachate collection facilities; Effluent disposal systems (including leach drains) to be designed and 	<ul style="list-style-type: none"> There is already sufficient policy coverage of this issue on the General section of the Development Plan. Noted – General comments not specifically relevant to DPA. Individual land division applications are referred to SA Water for checking and appropriate conditions. There is already sufficient policy coverage of this issue on the General section of the Development Plan. There is already sufficient policy coverage of this issue on the General section of the Development Plan. Noted – General comments not specifically relevant to DPA. Individual land division applications are referred to SA Water for checking and appropriate conditions. There is sufficient policy coverage within the existing Development Plan to adequately address the issues relating to surface water quality, protection of ground water and the timely provision of infrastructure to adequately service development (Natural Resources, Infrastructure and Orderly and Sustainable Development modules). Conditions of the Auditor's Assessment have 	<ul style="list-style-type: none"> No change required

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		<p>located to prevent contamination of groundwater; and</p> <ul style="list-style-type: none"> - Industry to be located in appropriate areas, with safeguards to ensure wastewater can be satisfactorily treated or removed from the site. • Development should not cause over-extraction of groundwater sources. • The Natural Resources Management Act 2004 includes wide ranging powers over groundwater quantity issues. The Department of Water, Land and Biodiversity Conservation should be consulted if in doubt over compliance with this Act. Ground water quality issues are addressed by the Environment Protection Authority through the Environment Protection Act 1993. <p><u>Protection of Surface Water</u></p> <ul style="list-style-type: none"> • Development/s shall have no deleterious effects on the quality or quantity of surface water or the natural environments that rely on this water. • Development shall not dam, interfere or obstruct a watercourse. • Development shall avoid or minimise erosion. • The Natural Resources Management Act 2004 includes wide ranging powers over surface water quantity issues. The Department of Water, Land and Biodiversity Conservation should be consulted if in doubt over compliance with this Act. Surface water quality issues are addressed by the Environment Protection Authority through the Environment Protection Act 1993. 	<p>placed prohibitions on access to groundwater within the audited area in any event.</p>	

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		<p><u>Provision of Infrastructure</u></p> <ul style="list-style-type: none"> • All extensions to water networks will be assessed on their individual commercial merits. Where more than one development is involved, it may be necessary for SA Water to establish an augmentation charge for that area, to equitably share the costs amongst those requiring and/or benefiting from the provision of the additional infrastructure. • If the existing water infrastructure requires an extension or new approach mains to serve any proposed development, the developer/s will be required to meet the costs associated with these works. • When a proposed development adversely impacts upon the capacity of existing water infrastructure, the developer will be required to meet the cost of upgrading or augmenting the infrastructure to service the proposed demands. • The developer is also required to meet the costs of providing all water supply mains and wastewater collection and transport sewers within the development site itself, including all water and wastewater pumping stations, pumping mains and water tanks. • All new water supply mains constructed to serve commercial / industrial areas shall be a minimum size of 150 mm diameter. This is to provide an adequate water supply for industry as well as for fire protection purposes. • All new wastewater collection pipes required to serve commercial/industrial areas shall be a minimum size of 225mm diameter, and all property connections shall be a minimum size of 150mm diameter. Where areas are being served by 		

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		<p>existing 150mm diameter sewers, restrictions may be imposed on the types of development permitted in view of the smaller size mains.</p> <ul style="list-style-type: none"> To facilitate orderly development and to minimise the costs of new infrastructure and services, new development/s (including re-zoning of existing areas for development), should wherever possible adjoin (or be nearby) to existing infrastructure. Water Supply services in areas zoned Rural Living or Country Living may be limited to 5 L/min. Given the nature of the contaminated land on this site, further discussion will be required with SA Water to convey information on the final composition of the sub-surface conditions. SA Water will require this information to review the potential impacts on system component material selection and protection and required safe work practices during construction and future maintenance activities. If extra mitigation is required, further charges may be incurred that are greater than the standard augmentation charge. 		
8.	Feedback from 3-day workshop – <i>Wellbeing Appraisal of the City of Marion Castle Plaza Development Plan Amendment</i> , held 30 Nov – 2 Dec 2010 and attended by	<p>The results of the workshop identified the following suggestions to the policy wording of the proposed DPA</p> <ul style="list-style-type: none"> Suggested additional wording shown in bold text Suggested deleted wording shown crossed out <p>Add to objectives</p>		<ul style="list-style-type: none"> No change required.

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	<p>representatives from the following agencies:</p> <ul style="list-style-type: none"> - City of Marion - Department of Health - Department of Trade & Economic Development - Department of Planning & Local Government - Jensen Planning + Design - Department of Transport, Energy and Infrastructure - Land Management Corporation - Housing SA - Colonial First State 	<ul style="list-style-type: none"> • <i>A development that is different to what has occurred before, that is innovative and visionary, that pushes the boundaries in development quality and development design to support holistic social, economic, cultural and environmental outcomes.</i> • Objective 1 – A vibrant transit people focused activity centre servicing the diverse retail, employment, office, community services, socio-cultural and housing needs of the community within the surrounding district, integrated with a highly accessible public transport network. • Objective 2 – High density and high quality residential development, that includes a minimum of 15 per cent affordable housing, designed to integrate with areas of open space, non-residential activities and public transport nodes. • Objective 3 – Development that focuses on the needs of diverse peoples to increase vitality and activity and achieves a safe and secure built environment through the activation of street frontages and adoption of appropriate design, materials, lighting, furniture, landscape and local public art. • Objective 4 – Creation of a network of prioritised pedestrian and cycle paths 	<ul style="list-style-type: none"> • Noted - Disagree. Whilst this outcome is supported, this can try to be captured through the Principles of Development Control and any social audit. • Noted. Revised wording has been picked up through the adoption of latest module policies which are core policies. There is a desire not to alter specific wording of core policy. The intent of the comments is still achieved through new policy. • Noted. Additional principles from the latest Residential Development and Multi-storey buildings modules can be included which provides some guidance to ensure high quality residential amenity is achieved. It is noted that the residential zones currently have the affordable housing policy within them, therefore, to ensure coverage for this zone, it would be appropriate to insert the Affordable Housing Overlay into the General section of the Development Plan • Noted. The diverse needs of the community are acknowledged within the Principles of Development Control with respect to dwelling sizes, however, to determine the 'needs of diverse people' is outside the scope of the DPA and can more likely be targeted through a social audit. • Noted – It is proposed that Principle of Development Control 27 be amended to note the importance of 	<ul style="list-style-type: none"> • No change required • Modify Mixed Use Zone to include principles within the Residential Development and Multi-storey buildings modules relating to residential amenity and outlook. Insert Affordable Housing overlay into General section of Development Plan. • No change required

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		<p><i>within the site</i> linking retail, employment and residential activities with each other and public transport nodes, <i>and connecting to networks outside the site.</i></p> <ul style="list-style-type: none"> Objective 5 - Development that minimises any adverse impacts upon <i>people</i>, the amenity of the locality <i>experienced by people</i>, and conflict between land uses <i>that might unduly affect people.</i> <i>Additional Objective 7 – A mixed use zone that is a model for protecting and promoting the health and wellbeing of diverse peoples. Children, families, youth, adults, older people, people with disabilities and people from diverse cultural backgrounds.</i> <p><i>Add to Desired Character:</i></p> <ul style="list-style-type: none"> References such as 'welcomes; supports; provides', 'for people; diverse peoples; families; children; youth; older people, people with disabilities' Instinctive way-finding/legibility-within and –into Castle Plaza site Reinforces strong links with services and facilities outside of the site A mix of hard/soft, green and play space for active/passive recreation Describe 'space that may in the future be used for a farmers market' Specific references to 'design and siting of buildings (especially residential) to respond to and mitigate noise from rail, road and mixed uses'. 	<p>linking surrounding areas with the movement networks proposed.</p> <ul style="list-style-type: none"> Noted - Disagree. Additional wording considered unnecessary as current policy as worded sufficiently addresses any potential land use conflict between existing and proposed development. Disagree. This is outside the scope of the DPA and more appropriate addressed in a social audit. Disagree – Many of the themes relating to the additional wording are covered by either the proposed Principles of Development Control for the Mixed Use Zone or within existing core policy modules in the City of Marion Development Plan. A number of these issues are too prescriptive in intention or outside the scope of the DPA and better considered through a social audit or as part of the master planning for the site. 	<ul style="list-style-type: none"> See proposed change to PDC 27 below (now PDC 39 in new zone) No change required No change required No change required

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		<ul style="list-style-type: none"> Public spaces that have provision for residential entertaining Local indigenous planting in landscaping Cultural dimensions that reflect the history of the site, indigenous peoples, relevant migrant groups and mainstream Australian culture Describes office, residential and retail buildings that are connected to high speed broadband Specific reference to development that contributes to improvements in outdoor and indoor air quality through building design, and mitigation of poor outdoor air quality by siting. 'flexible large floor plate office space' <p>Add to Principles of Development Control</p> <ul style="list-style-type: none"> 2 (a) or 4 - include space that may in the future be used for a farmers market 	<ul style="list-style-type: none"> Disagree. Land uses that promote after hours use is contemplated in Principle of Development Control 6. There is no need to be this prescriptive about the activities to occur in the public realm (a market may or may not eventuate in this area). 	<ul style="list-style-type: none"> No change required
		<ul style="list-style-type: none"> 8 (c) 'and has a lower priority than cycle or pedestrian modes' 	<ul style="list-style-type: none"> Disagree. This cannot be controlled through building design apart from limiting the number of car parks which is addressed in Principle 28 of the DPA. 	<ul style="list-style-type: none"> No change required
		<ul style="list-style-type: none"> '8 (e) 'the siting and design of buildings, especially residential, respond to and mitigate noise from rail, road and mixed uses' 	<ul style="list-style-type: none"> Noted. Development Plan includes a general section on "Interface Between Land Uses" where development can be assessed against the Principle stating "<i>Development should be designed to minimise negative impact on existing and potential future land uses considered appropriate in the locality.</i> ". However, additional policy support is provided via the new Noise and Air Emissions Overlay which has value in the Development Plan. 	<ul style="list-style-type: none"> Insert new Noise and Air Emissions Overlay into Development Plan

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		<ul style="list-style-type: none"> 8 (f) 'High speed broadband is available to and within all buildings' 8 (g) – 'contributes to improvements in outdoor and indoor air quality [include indoor if not covered by building code] through building design, and mitigation of potentially negative outdoor air quality by siting. 8 (h) – 'it is a leading example of energy efficiency, greenhouse gas reduction, water use, water capture and water reuse' (note, this is across the site, not just for buildings) 14 - Remove 'shared traffic zones' 	<ul style="list-style-type: none"> Noted – outside the scope of the Development Plan. Noted. The Building Code seeks to mitigate poor air quality inside a building. Noted - The General Section of the Development Plan provides Objectives and Principles which promote energy conservation, water harvesting and reuse and minimisation of waste. Disagree. Shared traffic zones can work well and create a more walking friendly outcome as speeds typically reduced to walking pace. 	<ul style="list-style-type: none"> No change required No change required No change required No change required
		<ul style="list-style-type: none"> 14 (a) include 'a mix of hard/soft, green and play space for active/passive recreation', and 'shade' 14 (c) – 'entertain' 14 (g) – 'local indigenous planting, trees' 	<ul style="list-style-type: none"> Noted – Disagree. This point is addressed under PDC 14(a) and use of the word 'socialise' in 14 (c) gives a similar connotation. Agree. Modify as suggested. 	<ul style="list-style-type: none"> No change required Re-word 16(g) to state "incorporate landscaping which includes local indigenous plantings (now PDC21(g) in new zone) No change required
		<ul style="list-style-type: none"> 14 (i) - 'local indigenous planting, trees, local public art and spaces for display of art' 14 – 'hard/soft green and play space for active/passive recreation' 14 (j) – expand description of 'water sensitive urban design measures' to be explicit 	<ul style="list-style-type: none"> Disagree. Plantings covered in (g). To include the wording 'local' public art and 'spaces for display of art' are too specific and this level of detail can be considered externally from the DPA process. Noted - Outside the scope of DPA as not Development assessed under the Development Act. Disagree. The existing policy under 'Natural Resources' in the General Section of the Development Plan adequately captures more specific details about 	<ul style="list-style-type: none"> No change required No change required No change required\

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		<ul style="list-style-type: none"> 14 (k) – incorporate cultural dimensions, motifs, designs, names that reflect the history of the site, indigenous peoples, relevant migrant groups and mainstream Australian culture 16 – Question the appropriateness of this principle as density should address this issue. If density does not address this issue, then specify different density levels for core/heart of the site. 20 - Dwelling layouts should be adaptable to accommodate: (d) accessibility and usability for people of all ages and for people with disabilities; (e) diverse family sizes, student housing, special needs housing, a diverse range of users (i.e. artist studios). 27 - 'surrounding areas' 27 (c) – include way-finding/legibility-within and –into Castle Plaza site <p>Concept Plan to:</p> <ul style="list-style-type: none"> Map local streets with potential for low speed residential mixed areas that have pedestrian and cyclist priority 	<p>water catchment areas, water quality and stormwater is therefore unnecessary in this part of the Development Plan. Specific forms of WSUD techniques to be used can be addressed within the Deed between Council and the Developer.</p> <ul style="list-style-type: none"> Disagree. Outside the scope of DPA. More appropriately captured in a social audit and addressed in discussions about open space design with proponents. Disagree. It is important to rule out row dwellings as they require separate road access (by definition of the Development Act) which is not suitable for this locality. Other forms of terrace housing may be appropriate which does not include street access. Noted – Disagree. Principle of Development control 20(b) adequately addresses the need to have flexible room sizes for a range of activities and occupants. Additional policies as part of the new policy modules also include adequate policy covering building adaptability. Agree. Modify Principle of Development Control to include 'surrounding areas'. Disagree. The current use of the wording 'easily identifiable' in this principle provides a similar explanation and is more common language. Noted – The specific routes and formats of minor streets is not formalised at this stage, although it is appropriate to provide greater clarity of the shared function of these streets with pedestrians and bicycles. 	<ul style="list-style-type: none"> No change required No change required No change required Amend PDC 27 to incorporate connections to networks within surrounding areas. (note PDC 27 is now PDC39 in new zone) No change required Amend Concept Plan Map to better show the priority pedestrian and cycle routes, as well as

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		<ul style="list-style-type: none"> Show pedestrian and cycling linkages, including 2-way permeability Identify existing cycle-use routes (along street network), dedicated cycle-ways, and proposed dedicated cycle-ways (e.g. along rail line), along with suggested access points into and out of the Castle Plaza site <p>Investigate special provision for:</p> <ul style="list-style-type: none"> A community garden A space that is flexible enough to be able to be used for a Farmers Market if desired by future residents High quality student housing with lower car parking ratios <p>Undertake:</p> <ul style="list-style-type: none"> a social audit as part of the process to inform decisions taken on the DPA <p>Other</p> <ul style="list-style-type: none"> pedestrian crossing at Raglan Avenue across South Road (unsure if the DPA can describe this), 	<p>This can be reflected within the Concept Plan Map to aid in supporting the policy.</p> <ul style="list-style-type: none"> An amended Concept Plan which includes existing and potential walking and cycling links in the area is to be incorporated into the final DPA. The proposed zoning allows flexibility for community uses to be established in the area. A social audit is likely to be undertaken as part of broader strategic development of the area and in consultation with the City of Mitcham. Student housing is not ruled out as a form of development envisaged within the DPA area, however, this is likely to be dictated by the market and car parking can be determined on its merits during the application process if an application is lodged. A social audit is being pursued separately to the DPA process. Noted – Outside the scope of the DPA as access for South Road is determined by DPTI. 	<p>local street connections that will act in this function.</p> <ul style="list-style-type: none"> No change required No change required No change required No change required
9.	Community Care Services Department – City of Marion	<ul style="list-style-type: none"> The Centre should incorporate Community Bus zones which: <ul style="list-style-type: none"> can accommodate at least 2 x 20 seater buses at one time; 	<ul style="list-style-type: none"> Noted – Outside the scope of DPA. Community Bus provisions can be considered during the design stage and examined in consultation with the developer at the land division stage where road networks are established. There is adequate policy coverage within the Transportation and Access module to address this. 	<ul style="list-style-type: none"> No change required

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		<ul style="list-style-type: none"> - are located at the nearest entrance to accommodate ease of access to food and retail stores; and - enable the possibility of several zones if retail and food stores are situated away from each other given that Community Bus users are frail aged or have a disability. 		
10.	Affordable Housing and Asset Strategy – Department for Families and Communities	<ul style="list-style-type: none"> • Housing SA is charged with the implementation of the 15% affordable housing policy and contributing to the development of sustainable communities. This includes ensuring a diversity of housing types (and prices) to enable accessibility to a broad range of the community, including those on lower incomes. • Housing SA is interested in ensuring an integrated and accessible development to the wider community beyond the DPA boundaries to maximise the retail, open space and community development opportunities that will be made available. • It will be important that appropriate pedestrian linkages are made available to public open space and retail and any development is scaled (i.e. higher density in the middle of the new development that tapers down e.g. to two storeys) to fit within the existing neighbourhood character. This will enable a variety of housing types and market segments that will encourage investment and reduce risk. • If Transit Orientated Development is a desired objective, ideally the proposed station should be integrated into the new development (not just adjacent) – e.g. built within some retail development. 	<ul style="list-style-type: none"> • Noted. Strength for the provision of affordable housing in accordance with the Government policy should be included in the subject area. This is most appropriate through General section (affordable Housing Overlay) • Noted • Linkages to public open space and other services are contemplated in the policy within the Desired Character Statement and Principles of Development Control 28. • Noted. The location of train stations is the responsibility of the Department of Planning, Transport and Infrastructure (DPTI) and whilst the station is not a certainty, the integration of future development to be integrated into such a facility is considered in the Desired Character Statement. The connection between the station, the 	<ul style="list-style-type: none"> • Incorporate affordable housing overlay • No change required • No change required • No change required

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		<p>expanded centre and future commercial and residential development will be strong and this is reinforced through the policy proposed.</p> <p>AFFORDABLE HOUSING</p> <ul style="list-style-type: none"> The provisions to include Affordable Housing in this DPA reflect the current BDP Policy Library and extend these to the Mixed Use Zone, which is supported by housing SA. Given the high density nature of this development, Housing SA recommends the following amendments to the current Affordable Housing policy from the BDP library: Integration Policy From: <i>18 Affordable housing should be distributed throughout the zone to avoid over-concentration in a particular area or building</i> To: <i>18 Affordable housing should be well integrated and complementary in design and appearance from other dwellings within the development</i> Incentive Policy An incentive policy could be considered by Council to assist in the delivery of affordable housing. Provisions may include increased heights, reduced car parking or floor/site area reductions (e.g. 10% reduction). A reduction in private open space is not recommended. Built form It is noted that Row Housing has been specifically excluded from the DPA. The 	<ul style="list-style-type: none"> Noted Noted. It is Council's desire to retain the core policy wording within the Development Plan and this is achieved through insertion of the Affordable Housing Overlay. This also achieves the intent of this comment. There is a legal requirement to provide 15% affordable housing. Notwithstanding this, the implementation of incentives through reduced heights and car parking is difficult given that the DPA already provides a reduced car parking rate and there are no height or floor area limits determined. Agreed. The revised master plan scheme provides greater area and flexibility to accommodate a more 	<ul style="list-style-type: none"> see change suggested above see change suggested above No change required include row dwellings within the envisaged

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		<p>DPA design focus is on apartments to achieve the necessary minimum density. Housing SA would recommend that consideration be given to promoting any built form that achieves the target density, including row housing which can be built with Torrens Titling – an important marketing sector.</p> <p>PDC 15 Row houses are still able to achieve the target of 67 dwellings/hectare. In addition, this addition is useful as an interface with other standard residential zones. An alternative to consider would be that single storey row housing is non-complying, while allowing for 2 storey plus row housing.</p> <p>PDC 16 Row dwellings should not be 'non-complying' as they add a valuable form and interface design function, while achieving target densities.</p> <p>PDC 22 (<i>now PDC 31</i>) Housing SA recommends a minimum dimension of private open space for all flats and apartments (including studio), with the suggestion italicised below. Private open space is important for liveability and urban/residential activation in all urban dwellings. As studios are likely to supply a proportion of the Affordable Housing component for this development, we strongly encourage private open space for this type of dwelling to be included.</p> <p><i>The development of a residential flat building should include minimum private open space of at least the area shown in</i></p>	<p>diverse range of dwelling types, aside from residential flat buildings (apartments). Notwithstanding the Auditor's conditions in relation to the audited area preventing habitable rooms at ground level and basement, further clarification has confirmed that terrace style dwellings with garaing, laundry and entry on ground floor with other living and sleeping spaces above can be accommodated in the zone. As such, it is appropriate to reinstate row dwellings into the zone (noting that this is already part of the core Mixed Use zone module).</p> <p>• Agreed. It is reasonable that provision of private open space be available for studio apartments that are the same as one-bedroom apartments.</p>	<p>uses list, as well as deleting PDC 11.</p> <p>• Alter PDC 22 (<i>now PDC 31</i>) so that where the open space requirement states "<i>No minimum requirement although some provision is encouraged</i>" it will state "<i>8 square metres</i>".</p>

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		<p><i>the following table. Private open space areas can be in the form of balconies, terraces or roof gardens directly accessible from a habitable room and should have a minimum dimension of at least 2 metres.</i></p> <ul style="list-style-type: none"> Floor sizes There does not appear to be a PDC that reflects floor size parameters for residential dwellings. The DPA should investigate the benefit in diversity of floor sizes for the retail mix. Different sizes influences store diversity. Also, note that we understand concentrating small scale retail shops together to avoid low retail density. The aim is to combine high density residential with high density retail which will attract greater foot traffic. Environmental Design We also encourage inclusion of environmental design features, including orientation. Correct orientation and planning for environmental design early in a development can drastically improve the liveability of high density apartments and dwellings, as well as reduce energy costs. 	<ul style="list-style-type: none"> Agree. Direction for minimum floor sizes has value for the forms of dwelling envisaged and will ensure a suitable area for inhabitants. Disagree. It is considered that floor sizes be influenced by market forces rather than Development Policy to minimise the risk of uneconomic retail spaces which then puts pressure on shop amalgamation. This is best left to retail analysis/market forces as determined by the developer. The policy does limit the establishment of larger scale retail outlets, such as discount department stores, supermarkets and mini-major retail tenancies to those areas within the Castle Plaza centre (existing and planned expansion). This effectively is consistent with the objective of achieving higher density retail amongst high density residential development, as suggested, without being overly prescriptive. Noted this is referred to in the Objectives and Principles under the heading “<i>Energy Efficiency</i>” in the current Development Plan policy. 	<ul style="list-style-type: none"> Insert Core policy from Residential Development Module covering minimum dwelling sizes. No change required No change required
11.	ETSA Utilities	<p>Electricity</p> <ul style="list-style-type: none"> The statement made in the DPA in part 4.3.3 <i>Electricity</i> is incorrect and recommends the statement be less 	<ul style="list-style-type: none"> It is noted that the statement referred to was incorrect and whilst this is regretful, it does not form part of the DPA policy and is unable to be changed. 	<ul style="list-style-type: none"> No change required

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		<p>specific and should simply state that the Castle Plaza shopping centre is currently supplied with high voltage power from the ETSA network and that no major barriers are foreseen to providing a power supply capable of meeting the demand generated by additional retail, commercial and residential development.</p> <ul style="list-style-type: none"> ETSA Utilities requests that Council and prospective developer ensure that power is available before any land division takes place. <p>Assets</p> <ul style="list-style-type: none"> Significant ETSA Utilities property interests within the council area are listed for council's information <p>Other Comments</p> <ul style="list-style-type: none"> It is not practical for ETSA to review every DPA to the extent necessary to comment on its individual property ownership/occupations or infrastructure impacts. In making generic comment, ETSA Utilities requests that consideration be given to the following matters In relation to land upon which electricity distribution infrastructure is currently located (primarily substations) or is held as a future substation site: <ul style="list-style-type: none"> any alteration to zoning should have regard for this current or proposed purpose. any development of land abutting or in the vicinity of such sites could be impacted by: <ul style="list-style-type: none"> noise associated with the operation of transformers and circuit breakers 	<ul style="list-style-type: none"> Noted. The provision of power is generally part of the land division process and not directly related to the DPA. Noted – As above Noted – General comments not specifically relevant to DPA. Consideration to these matters is given during the land division stage. Noted. No electricity infrastructure currently located within the DPA area. 	<ul style="list-style-type: none"> No change required No change required No change required No change required

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		<p>and may require special noise attenuation measures</p> <ul style="list-style-type: none"> ○ security required to protect against unauthorised access (ie: fencing that does not accord in height or nature with that generally allowed in the locality) ○ prescribed building setbacks and vegetation clearances from power lines ○ perceived health impacts of electro magnetic field radiation ○ general appearance of facilities of this nature ○ general community resistance to the existence of, or construction of new substations etc. <ul style="list-style-type: none"> • In relation to land on which is located facilities of a non- specific electricity distribution network nature, primarily depots and major complexes: <ul style="list-style-type: none"> • ETSA Utilities would like to ensure that it can continue to use the facilities for its intended purpose, and without impairment. Regard should be had for the need for unrestricted 24 hour 7 day a week heavy vehicle access • in the event that a decision is taken to divest the property, the zoning does not act as a disincentive to prospective purchasers. • In relation to future load growth: <ul style="list-style-type: none"> • prospective developers and those approving infill or green field development should give consideration to the current network capacity, any potential upgrade and the long lead in times 	<ul style="list-style-type: none"> • Noted. Not relevant to DPA • Noted. This is a likely consideration during the land division stage. 	<ul style="list-style-type: none"> • No change required. • No change required.

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12.	City of West Torrens	<ul style="list-style-type: none"> The proposed mixed use development and integration with various modes of public transport is consistent with the strategies being promoted by the State Government 30 year plan. Of interest to the City of West Torrens is the economic impact on retailers, in particular the existing District Centre and Kurralta Park. The Pitney Bowes Report suggests that this centre may experience different trading patterns upon the expansion of Castle Plaza. <p>There is concern that the report is vague and inconclusive about the potential impact on retail turnover of the Kurralta Park District Centre and is unable to make a reasonable assessment of this aspect of the DPA and as such, requests further information about the retail impacts.</p>	<ul style="list-style-type: none"> Noted – Agree Further discussion has been provided by Pitney Bowes in response to City of West Torrens' comments with an additional Report dated October 2011. The following is concluded: <p><i>Map 3.1 at page 13 of the EIA (reproduced as Appendix 1 to this report) shows the location of Centro Kurralta Park relative to Castle Plaza. The map indicates that Centro Kurralta Park is located approximately 3 km to the north of Castle Plaza, and on the northern side of Anzac Highway. The map also shows that Centro Kurralta is situated on the boundary of the defined main trade area for Castle Plaza, technically just outside the main trade area.</i></p> <p><i>The map further shows that Cumberland Park Shopping Centre is situated closer to Castle Plaza than Kurralta Park, as are various supermarket based centres, all of which are located within the main trade area defined for Castle Plaza.</i></p> <p><i>The average trading impact expected to result on other trade area retail facilities as a result of the proposed expansion of Castle Plaza is 4% as outlined above. This is because the amount of additional retail sales volume which will be attracted to Castle Plaza following its expansion represents a very small share of the total retail expenditure of trade area residents.</i></p> <p><i>In considering the likely impact on Centro Kurralta, the two key factors to be taken into account are the following:</i></p> <ul style="list-style-type: none"> <i>The trade area that is served by Centro Kurralta, as compared with the trade area that is served by Castle Plaza; and</i> <i>The level of direct competition between the two centres.</i> 	<ul style="list-style-type: none"> No change required No change required

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			<p><i>Given the location of Centro Kurralta relative to the main trade area that is served by Castle Plaza as shown on Map 3 attached, it is clear that a substantial proportion of the trade area served by Centro Kurralta, probably more than half, falls outside the main trade area that is served by Castle Plaza. This conclusion is reached because Centro Kurralta is situated at the northern edge of the main trade area served by Castle Plaza, and is on the northern side of Anzac Highway. The main trade area served by Centro Kurralta would therefore be expected to fall predominantly to the north of Anzac Highway, both because of the centre's location and because of the locations of other comparable or larger centres to its south, in particular Cumberland Park SC and Castle Plaza.</i></p> <p><i>Map 3 also shows that to the north or west of Centro Kurralta the nearest other discount department store based centre is Fulham Gardens, which is situated more than 6 km to the north-west. Therefore, Centro Kurralta would most likely draw the bulk of its business from the extensive suburban area which includes Kurralta and the suburbs to its north such as Hilton, Torrensville and Brooklyn Park.</i></p> <p><i>Given this situation, it can reasonably be concluded that the likely order of impact on Centro Kurralta will be no greater than the average impact expected on retail facilities located within the Castle Plaza main trade area, and in all likelihood will be somewhat smaller than that average impact, i.e. 4% or less.</i></p> <p><i>An impact of around 4%, and even higher impacts of, say, 6%–8%, are typical outcomes resulting from normal competitive situations as shopping centres are remodelled, refurbished or expanded throughout Australia's major urban areas. Impacts of such magnitude do not cause any concerns as to the future viability of any reasonably based shopping centre. It is also relevant to note in this regard that no objections to the proposed expansion of Castle Plaza have been received from the owner of Centro Kurralta.</i></p>	

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		<ul style="list-style-type: none"> It is noted that South Road is intended to become a non-stop road and comments from the DTEI will be crucial to determining the appropriate density, site layout and access/egress of future development. 	<ul style="list-style-type: none"> Noted – DPTI were notified during the consultation process and have provided comments accordingly 	<ul style="list-style-type: none"> No change required
13.	Water Planning and Management – Department for Water	<ul style="list-style-type: none"> The Department raises no concerns with the proposal but provides the following comment for advice: “Under the ‘Analysis’ section of the DPA, section 4.4.5 discusses water sensitive urban design, but the focus is strongly directed towards public spaces. It is recommended that this section be expanded to also highlight that opportunities and techniques suitable for incorporating water sensitive urban design principles into private spaces should also be considered.” 	<ul style="list-style-type: none"> Noted – Section 4.4.5 is not part of the DPA Policy Framework, however Council’s existing policy refers to water sensitive urban design in the General Section of the Development Plan under the heading ‘Natural Resources’. 	<ul style="list-style-type: none"> No change required
14.	City of Holdfast Bay	<ul style="list-style-type: none"> Council’s Administration does not object to the content and proposed revision of zoning as outlined in the DPA. 	<ul style="list-style-type: none"> Noted 	<ul style="list-style-type: none"> No change required
15.	Department of Environment and Natural Resources	<ul style="list-style-type: none"> DENR is generally supportive of this DPA noting that the affected area is exempt from the <i>Native Vegetation Act 1972</i>. However, DENR encourages the retention of trees within the affected area, as highlighted by the Arborist Report, that identified trees as significant and having high ‘habitat and diversity value’. While DENR understands that some of these trees are to be retained, DENR would encourage Council to seek a development outcome where all significant trees within the affected area are retained. 	<ul style="list-style-type: none"> Noted Noted – It is agreed that as many significant trees as possible should remain however each tree will be assessed on its individual merit and is outside the scope of the DPA 	<ul style="list-style-type: none"> No change required No change required
16.	City of Mitcham	<ul style="list-style-type: none"> The City of Mitcham generally has no major concerns in relation to the DPA and 	<ul style="list-style-type: none"> Noted – Disagree. The proposed DPA will not eliminate opportunities to cross South Road either by car or on foot 	<ul style="list-style-type: none"> No change required

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		<p>rezoning of the land to Mixed Uses and the policy content. However the implications of the proposed road closures and pedestrian links across South Road may have adverse effects on residents and businesses located within the City of Mitcham.</p> <ul style="list-style-type: none"> • Further to this and having regard to supporting documentation and advice contained therein, Council wishes to raise the following specific points of concern: <p>Traffic Impact Assessment prepared by Sinclair Knight Merz dated 16 April 2009</p> <p>City of Mitcham requires that the level of service to and from South Road/ Edward Street for vehicular movements (including articulated vehicles) is to be maintained. This applies to maintaining existing semi trailer turning movements off South Road into Edward Street and visa versa.</p> <p>The proposed changes to the Caulfield Avenue median opening are not supported.</p> <p>Pedestrian crossing facilities over South Road are to be maintained to the current level of service.</p> <p>The City of Mitcham requests that it be informed and actively involved in any discussions and negotiations with Department of Transport Energy and Infrastructure (DTEI) and the City of Marion in relation to any proposed road widening, re-alignment of South Road and adjoining</p>	<p>but conversely, the policy will enable improvement of pedestrian linkages within the locality which is considered to have positive impacts on the business within the City of Mitcham.</p> <ul style="list-style-type: none"> • Noted – The additional modelling undertaken by SKM and the revised intersection design accommodates the movement of semi-trailers into and out of the turning lanes to South Road, thereby maintaining the level of service available. • Noted - The revised modelling undertaken in response to the revised master plan and reduced retail and commercial capacity of the affected confirms that no changes are required to the South Road pavement design, meaning Caulfield Avenue is no longer blocked by a proposed median.. • Noted – Agree. No pedestrian crossing points are proposed to be removed. • Noted – Agree. City of Mitcham is encouraged to be involved in discussions with DPTI regarding access and road widening. <p>The roadway design has taken into account the need to accommodate vehicle movements into and out of the</p>	<ul style="list-style-type: none"> • No change required • No change required • No change required • No change required

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		roads and intersection changes that might have an effect on access and egress for local businesses and residents located within the City of Mitcham, (eg: Parmalat Food Products Pty Ltd formerly Dairyvale).	Parmalat facility on Edward Street, as well as the existing retirement village off Edward Street.	
17.	City of Onkaparinga	<ul style="list-style-type: none"> No formal comment to make given its geographical separation from the City of Onkaparinga. The Council would appreciate the opportunity to collaborate and share research outcomes in relation to planning policy for centres and transit oriented development, given the common issues and broader metropolitan centres and TOD agenda. 	<ul style="list-style-type: none"> Noted Noted 	<ul style="list-style-type: none"> No changes required
18.	Department of Transport, Energy and Infrastructure (DTEI)	<p><u>Traffic Impacts</u></p> <p>The “Affected Area” is located adjacent South Road. As such, it should be recognised that in conjunction with the release of the ‘Strategic Infrastructure Plan for South Australia’ in 2005, the Rann Government announced its intention to create a non-stop north-south corridor between the Port River Expressway and the Southern Expressway. Hundreds of millions of dollars have been committed for major projects along South Road including the Gallipoli Underpass (\$118 million) and the Glenelg Tram Overpass (\$32 million).</p> <p>The Australian Government also recognises the importance of a north-south corridor to South Australia and has committed \$500 million through the Nation Building Program to partner the State Government on this corridor. The State Government has also committed \$430 million towards South Road out to June</p>	<ul style="list-style-type: none"> Noted. The Concept Plan and investigations informing the Concept Plan have taken into account the strategic importance of South Road and the changes as a result of the DPA are not likely to impinge on the future goal of achieving a non-stop corridor. 	<ul style="list-style-type: none"> No changes required

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		<p>2014 and this combined funding will be used to remove key bottlenecks along the corridor.</p> <p>As part of the above South Road funding, \$70 million has been allocated to the planning of the South Road corridor, all the way from the Port River Expressway to the Southern Expressway. This planning is an important step in making the project a reality, and will include detailed concept design, traffic modelling, community consultation, environmental assessments and detailed cost estimates.</p> <p>Following on from the recently completed Gallipoli Underpass, Glenelg Tram Overpass and the soon to be constructed South Road Superway projects, the next priority for the project funding is Darlington. The Darlington Transport Study is nearing completion and incorporates the grade separation of South Road from Sturt Road and Flinders Drive and the connection to the Southern Expressway. The State Government will approach the Australian Government to be a funding partner in this project.</p> <p>The State Government now needs to determine the best solution for the next priority, which is the section of South Road between the South Road Superway and the Gallipoli Underpass (i.e. Regency Park to Anzac Highway).</p> <p>At this point in time, the nature and timing of potential improvements to the section of South Road in the vicinity of the subject site are yet to be determined, and any potential future land requirements and access arrangements are unknown.</p>		

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		<p>While DTEI acknowledges the detailed traffic analysis undertaken by SKM (reports dated 16 April 2009 and 6 August 2010), there are aspects of this analysis which are inconsistent with DTEI's recommendations provided at the Statement of Intent (SOI) stage. DTEI is nevertheless of the view that the detailed traffic analysis undertaken and the proposed works shown on the SKM report dated 16 April 2009 Appendix E Concept Design are sufficient for DTEI to appreciate the likely scale of improvements required along South Road to accommodate the likely development scenarios for the "Affected Area", on the basis that:</p> <ul style="list-style-type: none"> • DTEI requested that SIDRA analysis for the intersections on South Road be undertaken for the year representing the completion of the development. However, SIDRA analysis was undertaken using 2010 volumes. Although traffic volumes on South Road are not predicted to increase significantly between 2010 and 2021, DTEI requires that the analysis and required improvements are confirmed prior to any future development application, with the SIDRA analysis representing the year of completion of the entire development (ie not just any stage of development). • AIMSUN modelling has not been undertaken as requested by DTEI. However, given the proposed removal of traffic signals at the South Road/Raglan Avenue junction, DTEI considers that AIMSUN modelling is required to be undertaken to DTEI's satisfaction prior to any future development application, with this analysis representing the year of completion of the entire development. • Analysis of the impact of the entire development on safety at the level crossing 	<ul style="list-style-type: none"> • Noted – The developer's traffic consultant (SKM/Jacobs) has liaised directly with DPTI to agree on assessment criteria and assumptions, including for the revised modelling undertaken for the new master plan. This is now reflected in the revised report dated May 2017. • Noted – This is now reflected within the revised Traffic Impact Assessment prepared by Jacobs. • Noted – AIMSUN modelling has been undertaken, collaboratively with DPTI, and has now been reviewed and endorsed by DPTI. 	<ul style="list-style-type: none"> • No changes required • No changes required • No changes required • No changes required

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		<p>on Raglan Avenue near the Raglan Avenue/ Wilfrid Street intersection (shown as Wilfred Street in Concept Plan Map Mar/8) has not been undertaken. Whilst noting that the crossing has recently been provided with a 'yellow box' treatment to prevent stacking over the level crossing, analysis needs to consider the adequacy of stacking distance along Raglan Avenue from the Wilfrid Street Junction in light of the predicted traffic increases resulting from future development. This analysis should be undertaken as part of the AIMSUN modelling outlined above.</p> <p>DTEI requires the developer of Castle Plaza to enter into a Deed of Agreement prior to any approval of the DPA to ensure that the required analysis, as detailed above, is undertaken, with a commitment to undertake the works identified to the satisfaction of DTEI, with all costs being borne by the developer. The Deed of Agreement must incorporate the following:</p> <ul style="list-style-type: none"> • SIDRA analysis and required improvements to be confirmed prior to any future development application, with the SIDRA analysis representing the year of completion of the entire development. • AIMSUN modelling demonstrating the final proposed scheme works in terms of signal coordination and capacity. The modelling should incorporate South Road between Edward Street and Corunna Avenue, and Raglan Avenue between South Road and the level crossing (including the nearby Raglan Avenue/Wilfrid Street intersection). This must be undertaken to DTEI's satisfaction prior to any future development application, with this analysis representing 	<ul style="list-style-type: none"> • Noted – Further analysis undertaken by SKM. The recommendation is to ensure that right turn movements into Adelaide Terrace should be prevented so that queuing across the rail line does not occur. This can easily be achieved via a median in this location; however, this is a matter for the detailed design of the roadway, which will form part of the land division process, and the Development Deed with the Developer. • The additional analysis requested has been undertaken and agreed to by DTEI therefore there is no need for a Deed to cover these matters. The commitment to undertake the works is only required as part of any development application proposal for the land division creating the new road and/or expansion of the retail facilities and is not appropriate as part of this DPA process. 	<ul style="list-style-type: none"> • No changes required

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		<p>the year of completion of the entire development.</p> <ul style="list-style-type: none"> • Agreement on the assumptions made in traffic generation, traffic distribution etc. • The required improvements being undertaken to the satisfaction of DTEI, including timing, with all costs being borne by the developer. • As the required improvements to the South Road/Edwards Street intersection restrict access to Caulfield Avenue to a left turn in and left turn out basis (as shown on the SKM report dated 16 April 2009 Appendix E Concept Design) the developer must consult with the City of Mitcham and the businesses affected along South Road and the eastern side of South Road (such as Dairy Farmers). Consideration needs to be given to access for commercial vehicles (e.g. semi0trailers) into Caulfield Avenue and Edward Street. <p><u>Public Transport</u></p> <p>The DPA states that Council has considered the potential for a new railway station adjacent the 'Affected Area' and specifically near the former Hills Industries site. As indicated at the SOI stage, DTEI does not currently support the option of an additional station as the train is intended for high speed, long distance journeys. While DTEI supports any TOD type development, DTEI needs to ensure that the train line continues to facilitate such journeys. DTEI is currently reviewing the Noarlunga Line as part of the rail revitalisation project, which includes the determination of optimum station distribution. The long term objective is to have train stations at a reasonable distance apart so that they do not resemble tram or bus stops</p>	<ul style="list-style-type: none"> • Noted – It is acknowledged that the location of train stations will be subject to further analysis from DPTI and that the location is dependent on investigations from reviews of the Noarlunga line and is not guaranteed. 	<ul style="list-style-type: none"> • No changes required

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		<p>in their separation distances. As such, provision of a station at this location can not be guaranteed.</p> <p>The Department acknowledges Council's recognition of such uncertainties as outlined in Section 4.2.3 of the DPA, and considers that appropriate policies have been introduced to ensure that future development will not compromise the potential for the installation of a train station in the future. However, to ensure that connectivity is maintained should a new station be considered unfeasible, it is recommended that the following amendment be made to the Desired Character Statement of the Mixed Use Zone:</p> <p><i>Development will provide for the potential future provision of a train station and bus stops adjacent the rail line and ensure any future development adjacent this area, as shown on Concept Plan Map Mar/8 can be integrated with such a facility. Given the <u>provision of a train station is uncertain at this stage, development should also ensure linkages to existing train and bus services are provided until such time that station location are finalised.</u> (emphasis provided by DTEI).</i></p> <p>In addition to the consideration of the establishment of a station (which would replace at least one existing station) near the site, the existing bus routes through the site (Raglan Avenue) will be affected. Good bus access will become an issue at this location due to the proposal to create an open space plaza along Raglan Avenue and the closure of Brooks Terrace. Specifically:</p>	<ul style="list-style-type: none"> • Noted – It is agreed to amend the wording of the Desired Character Statement to acknowledge the uncertainty of the train station and to ensure linkages to existing train stations are provided. • Noted - It is acknowledged that consultation will need to take place with the Public Transport Board to determine the revised bus routes and the placement of bus stops given the proposed road closures, however given that east-west access is still maintained from South Road to Railway Terrace, it is not considered that the changes to bus access will be significantly affected as a result of the proposed DPA. The roadway design has continued to 	<ul style="list-style-type: none"> • Update the Desired Character Statement to include the wording "Given the provision of a train station is uncertain at this stage, development should also ensure linkages to existing train and bus services are provided until such time that station location are finalised." • No change required.

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		<ul style="list-style-type: none"> Route 190 that currently travels along Edward Street, South Road and Raglan Avenue will be required to travel across South Road onto the realigned Ackland Street and then loop around to Raglan Avenue. As the proposed route would be more circuitous than the existing route and further away from Castle Plaza, careful consideration would need to be given to appropriate bus stops and good pedestrian access to the northern centre expansion and Castle Plaza. There does not appear to be any access points suitable at this stage. Route 241 that currently travels along Raglan Avenue, Brooks Terrace, Flinders Street and Adelaide Terrace will be required to travel along the new road that replaces the closure of Brooks Terrace. The new road will need to be in place prior to the closure of Brooks Terrace, to ensure that appropriate bus services are maintained. Careful consideration would need to be also given to appropriate bus stops and good pedestrian access near the junction of the new road and Flinders St. There does not appear to be any access points suitable at this stage. <p>The developer should liaise with the Public Transport Services Division at an early stage in the development process in order to ensure that appropriate bus services and pedestrian connections are provided. The developer should liaise with Mr John Grose, Senior Project Officer, Integrated Transport Services, Bus and Rail Planning, telephone (08)82048132.</p> <p><u>Walking and Cycling</u></p>	ensure that the movement of buses is maintained in these locations.	

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		<p>DTEI supports Council's intent to optimise the walking and cycling linkages throughout the "Affected Area" and in particular, supports the intent of the Mixed Use Zone Principle of Development Control (PDC) 24. However, it is recommended that further consideration be given to the creation of walking and cycling linkages that extend beyond the Castle Plaza and Hills Industries sites, including the proposed 'Greenway' along the Noarlunga Rail Line. As such, it is recommended that the following amendments be made to Objective 4 of the Mixed Use Zone:</p> <p><i>4. Creation of a network of pedestrian and cycle paths routes linking retail, employment and residential activities with each other and public transport nodes, and connection to cycling and walking networks outside the zone including the proposed 'Greenway' along the Noarlunga Rail Line.</i></p> <p>Similar to the above, it is recommended that Council include the following PDC as a local addition to the Mixed Use Zone:</p> <p><i><u>X Pedestrian and cycling networks should connect with existing and, where identified, proposed pedestrian and cycling networks in surrounding areas.</u></i></p>	<ul style="list-style-type: none"> • Noted – Agree to DPA modifications as per recommendations for "greenways" • Noted – Agreed. 	<ul style="list-style-type: none"> • Replace the word "paths" in Objective 4 (now Objective 6 in new zone) with the word "routes" and include the sentence "and connection to cycling and walking networks outside the zone including the proposed 'Greenway' along the Noarlunga Railway Line". • Principle of Development Control 22 to be modified to state "Movement networks for vehicular, pedestrian and bicycle traffic within, through and entering/exiting the zone and <u>surrounding areas</u> should:"

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		<p>DTEI supports the identification of key pedestrian areas and paths on Concept Plan Map Mar/8. To ensure similar importance is given to the cycle network, it is strongly recommended that Concept Plan Map Mar/8 be amended to illustrate the key cycling routes within the “Affected Area” and connections with the surrounding bike <i>direct</i> routes. Furthermore, the 30-Year Plan for Greater Adelaide introduces the concept of ‘Greenways’ along key transit routes including the Noarlunga Rail Line. A component of ‘Greenways’ is the inclusion of dedicated cycling and walking routes (green travel corridors) along rail corridors. It is therefore recommended that the proposed ‘Noarlunga Greenway’ also be shown on the Concept Plan along with key linkages from the ‘Greenway’ to the ‘Affected Area’.</p> <p>Given the proposed removal of signals at the South Road/Raglan Avenue junction, the ability for pedestrians to safely access businesses on the eastern side of South Road will be reduced at this location. As such, careful consideration will need to be given to pedestrian links in this area. Walking paths within the area should discourage the use of the South Road/Raglan Avenue junction as a crossing point and redirect pedestrians to safer crossing points such as the existing pedestrian crossing on South Road and the signalised intersections of South Road/Edward Street and South Road/Furness Avenue.</p> <p><u>Aviation</u> The site lies under the OLS for Adelaide Airport and as such, height restrictions apply, although they are not considered onerous. It is</p>	<ul style="list-style-type: none"> Noted – Agree that walking and cycling path linkages should be shown on a Concept Map including the ‘Noarlunga Greenway’ to highlight the importance of these movement networks within the ‘Affected Area’ and to coincide with the 30-Year Plan for Greater Adelaide. Noted – Whilst the details of the walking and cycling networks are dependent on the final layout of the development which is not determined as part of this DPA, it is considered appropriate that pedestrian linkages be directed to safe crossing points on South Road to access business on the other side. Noted 	<ul style="list-style-type: none"> Amend the Concept Plan to show the proposed Greenway location. No change required No change required

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		clear from the documentation that Council has been in contact with Adelaide Airport Limited, and understands the height restrictions applicable and intend to comply with those restrictions. DTEI is therefore satisfied that all issues associated with aircraft operations over the "Affected Area" have been adequately addressed.		
19.	Environment Protection Authority (EPA)	<ul style="list-style-type: none"> Two issues in particular have been identified by the EPA as requiring further investigation: <ol style="list-style-type: none"> While the EPA acknowledges the site contamination investigations undertaken by <i>Environmental and Earth Sciences</i> for portion of the land affected by the DPA, the EPA considers that the site contamination investigations that have been undertaken and documented for the DPA are incomplete, and do not provide sufficient justification that all of the land proposed for rezoning is (or can be made) fit for subsequent uses, particularly sensitive sites. Due to the scale and nature of the previous contaminating activities on much of the land proposed for rezoning to sensitive and retail/commercial uses, it is recommended that site contamination investigations be conducted for the whole affected area of the DPA. It is considered best practice to conduct the necessary site contamination investigations as early as possible in the planning and development process. This in turn, reflects the policies outlined in the 30 Year Plan, specifically referencing the <i>Emergency management and hazard avoidance Policy 4</i> (pg. 148): 	<ul style="list-style-type: none"> Agree in part. Additional discussions have occurred between Council, the EPA and the developer with regard to further testing and remediation of the land subject to the DPA. It was generally agreed from the discussions that the land in the ownership and control of the developer that can potentially be developed for residential development in the future (whether intended to or not) will be subject to further assessment and confirmation from an Auditor via an Interim Audit Report that the land can be made suitable for residential purposes. <p>For the remainder of the land, where neither Council nor the developer has control to undertake testing, an additional precinct (supported by a policy) will be created to identify the need for further testing of the site for contamination prior to any residential land uses being established. This would also apply to the existing centre.</p> <p>Additional investigations continue to be undertaken by the developer's environmental consultants. This includes the assessment of the levels of contamination across the site, the recommended remediation measures, where required. The outcome of the investigations will include confirmation of the suitability of the land by an accredited Auditor.</p> <p>Given the time required to finalise an Interim Audit Report and the level of remediation currently occurring on the land, it was agreed between the EPA, Council and DPTI</p>	<ul style="list-style-type: none"> Create an additional Precinct over those areas subject to residential development by the policy, and insert a policies which reflect the key recommendations from the Auditor's Report.

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		<p><i>“integrate adaption to climate change, disaster risk reduction and hazard avoidance policies, standards and actions into strategic plans, Development Plan policies and development assessment processes using best practice modes to –</i></p> <ul style="list-style-type: none"> <i>• Protect human health and the environment where contamination is identified to have occurred.</i> <i>• Adopt appropriate processes and methods when remediating contaminated land and ensure its suitability for the proposed zoning”.</i> <p>The EPA therefore recommends that further consideration of this DPA be deferred until such time as through site contamination investigations are conducted by an independent site contamination auditor accredited by the EPA under the Environment Protection Act for the areas proposed for rezoning to sensitive uses (including Residential). It is recommended these investigations be undertaken before the Minister for Planning and Urban Development determines whether to approve this DPA and the EPA has had the opportunity to review such investigations and provide further advice to Council about the proposed rezoning.</p> <p>2. The promotion of high density living in close proximity to rail corridors and major roads need to be carefully considered to ensure that any potential impacts are appropriately managed through the planning system. Given the potential for adverse health implications associated with elevated noise and air pollution levels along major traffic corridors, the EPA is aware that the City of Marion seeks to</p>	<p>staff to facilitate the progression of the DPA to the Minister’s office pending final resolution of the Interim Report being submitted and accepted by the EPA.</p> <p>The auditor has finalised their report and the Report has been submitted to, and accepted by the EPA. The report recommends specific conditions for the audited area relating to the ability to establish sensitive land uses at ground or basement level, as well as requirements about top soil replacement for ground level open space areas for dwellings.</p> <p>• It is noted that the mixed use zone and desire for compact mixed use development within transit corridors is a central policy direction within the 30 Year Plan and the DPA is entirely consistent with this policy goal. This inevitably raises issues of potential conflicts between land uses. Consideration of health impacts has been included in the investigations, particularly from the impacts of South Road (both from noise and air quality). The insertion of the 50 metre exclusion zone for residential development in this location effectively prevents residential</p>	<p>• Insert new Noise and Air Emissions module into Development Plan.</p>

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		<p>ensure that the Castle plaza development meets healthy city criteria and that a Health in All Policies (HiAP) approach will be a key component of this DPA. Further to this, the EPA advises that careful consideration of specific detailed responsive building design will be required. These considerations will need to recognise and reflect the policies outlined in the 30 Year Plan, specifically referencing the <i>health and well being policies: Policy 2</i> (page 101):</p> <p><i>“Ensure health and wellbeing requirements are incorporated into Structure Plans: Structure Plans will...incorporate guidelines to protect homes along major transport corridors from noise and air pollution.”</i></p> <p>This will ensure that noise and air quality issues will be appropriately recognised and provided for at the planning policy level.</p> <p><u>RECOMMENDATIONS</u></p> <ul style="list-style-type: none"> • The site contamination identified on the Hills Industry site needs to be adequately assessed, and remediated before any rezoning can take place; • The whole affected area of the DPA will need to be assessed by an independent site contamination auditor accredited by the EPA under the <i>Environment Protection Act 1993</i> for the areas proposed for rezoning to retail/commercial and sensitive uses (including Residential). <p>The EPA does not support rezoning of land with the potential to create future environmental problems for new land owners without the affected land being appropriately</p>	<p>development adjacent South Road. This buffer, together with the taller built form likely to act as a screen to these impacts, assist in ensuring health of residents is protected.</p> <p>There is sufficient policy coverage within the General section of the Development Plan to address the issue of managing conflicts; however it is noted that the Noise and Air Emissions Overlay module has additional policy support than that within the current Development Plan. Therefore, it is appropriate that these policies be brought across into the Marion Development Plan.</p>	

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		<p>assessed, and appropriate remediation measures identified and implemented. This work must be carried out by appropriate independent qualified professionals (as recommended in PAN20).</p> <p>This approach is consistent with Policy 4 <i>Emergency management and hazard avoidance policies</i> of the 30 Year Plan.</p> <p>The EPA has specific site contamination information in relation to land affected by the DPA and recommends the inclusion of specific objectives and principles to address site contamination issues.</p> <p>The EPA considers it imperative that a site contamination auditor, accredited by the South Australian Environment Protection Authority, be engaged to prepare a site contamination audit of the whole affected area. As a means of ensuring this occurs, the EPA proposes the inclusion of the following PDC within the Mixed Use Zone.</p> <p>PDCX <u>Residential development should not occur on a site where a potentially contaminating activity has been undertaken previously unless:</u></p> <ul style="list-style-type: none"> i. <u>site contamination audit report has been prepared (by a site contaminations auditor accredited by the EPA pursuant to the Environment Protection Act) that assesses the suitability of the site for the intended use; and</u> ii. <u>the development is undertaken in accordance with the recommendations contained in such a report.</u> <p>The affected area outlined in this DPA is bound by two major roads being South Road and Railway Terrace. These roads carry a</p>		

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		<p>significant number of heavy vehicle movements. A railway corridor also runs directly west of the site which allows heavy freight train movements at all hours.</p> <p>Noise from heavy vehicle movements and freight train movements has the potential to impact severely on the amenity of sensitive uses (e.g. residential, child care centres) and non-sensitive uses (e.g. offices).</p> <p>These potential sources of conflict need to be appropriately addressed in order to progress the DPA as necessary. The EPA recommends the inclusion of policies that will ensure adequate protection of sensitive uses from rail, industrial and road traffic through noise barriers and/or building design as follows.</p> <p><u>Mixed use</u> Mixed use development (including transit oriented developments) may result in medium to high residential living near commercial land uses and busy transport corridors.</p> <p>Noise and air quality impacts may result from:</p> <ol style="list-style-type: none"> 1. Close proximity to rail and tram stations and tracks, bus routes, and arterial roads. 2. Multistorey, mixed use development with residential on upper levels and commercial at ground level. 3. High ambient noise from multiple sources such as motor vehicle traffic, rail, and music venues. 4. Air toxins and particulates from vehicle emissions, and odours from food outlets such as restaurant and cafes. <p><u>Noise</u></p>		

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		<p>Mixed use development may lead to a situation where each noise source meets requirements in the <i>Environmental Protection (Noise) Policy 2007</i> (or EPA Interim Noise Criteria) for issues exempt from the Noise Policy, but the total noise level is significantly higher than in an area zoned for residential uses only. This means that the health risks for residents in mixed use developments is significantly higher than in conventional residential areas.</p> <p>The mixed uses proposed will likely have a different amenity, lifestyle, expectations and ambient external noise levels when compared with a suburban residential area.</p> <p>Normally, in a suburban residential area there are relatively large private outdoor recreational areas on each allotment. This is not the case for a development where many living areas may be above ground level (possibly on balconies) or indoors. In addition to this, because of the location and exposure due to elevation, there are many noise sources such as road, traffic, rail, entertainment noise, and commercial premises. Some of the noise from these sources may be generated in another policy area or off site. Other noise may be generated on site from commercial premises, an entertainment venue, mechanical ventilation plant or general noise transmission within buildings. The area is likely to have a higher outdoor ambient noise level than many residential areas.</p> <p>Ground floor dwellings can easily be designed to keep noise out by the use of fences or barriers. In the case of multistorey living, such as this, in a high ambient noise environment, achieving internal noise levels will rely largely</p>		

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		<p>upon building design, for example, set back distance, orientation, building materials and/or locating sleeping areas away from noise sources.</p> <p><u>Air Quality</u></p> <p>Given the nature of mixed use development and the potential for medium to high density living close to train lines and main arterial roads, it should be noted that people living in such environments may be more exposed to air pollutants (e.g. nitrous oxides, carbon dioxide, volatile organic carbons, air toxins and fine particulates) and associated health risks than the general population.</p> <p>Exposure to fine particles can chronically and acutely affect human health, particularly the pulmonary function.</p> <p>While mixed use developments may potentially reduce or limit the increase of air pollution over Adelaide, it may increase the risk from the local air emissions to nearby residents. Generally a proposed mixed use development will result in an increase in the number of residents and a likely increase in the number of multistorey residential buildings near a busy arterial road and commercial developments in designated zones.</p> <p>Restaurant, fast food outlets, coffee roasting, bakeries etc are known to be a source of ongoing public odour complaints in mixed use areas. This is made more acute when there are chimneys or exhaust flues from such commercial sources which are the same height or lower than the nearby residential buildings.</p>		

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		<p><u>Interface with existing railway line</u> Railways, particularly passenger and freight lines, can be a significant source of noise and vibration impact complaints by residents. Due to the nature of rail operations, noise levels immediately next to a railway line normally consist of relatively short periods of high noise levels throughout the day and night periods separated by longer periods of quiet.</p> <p>For new noise sensitive development adjacent rail corridors, appropriate planning measures should be implemented prior to any other mitigation measures, such as fences and building treatments, being considered. Considerations about the design of developments to minimise risks from noise may include adequate separation, perhaps by creative use of open spaces within the development, or siting and orientation of houses and apartment buildings to minimise penetration of noise into a development. It can be argued that the 30-Year Plan foreshadows the use of green areas to provide buffering of noise from transport routes, thus- <i>“A network of connected open spaces would characterise the major activity centres and transit corridors. These very distinct green buffers would improve amenity, have a cooling affect and provide a noise buffer between residential accommodation and transport thoroughfares.”</i> (Page 63)</p> <p><u>Interface with existing major roads</u> Residential development in close proximity to South Road and Railway Terrace result in residents being exposed to noise and poor air quality from vehicles.</p> <p>Noise from cars and heavy vehicles may cause disturbance to general amenity and</p>		

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		<p>impede the enjoyment of outdoor areas and at its most intense may impede sleep.</p> <p>People living in such environments may be more exposed to air pollutants including nitrous oxides, carbon dioxide, volatile organic carbons, air toxins and fine particulates. Exposure to fine particles can chronically and acutely affect human health, particularly the pulmonary function. In light of this, EPA recommends consideration of appropriate design and orientation of development along major transport corridors in order to mitigate potential noise and air quality concerns.</p>		
20	Department of Planning, Transport and Infrastructure (DPTI)	<p>The Metropolitan Adelaide Industrial Land Strategy and State Housing Plan have now been superseded by the Housing and Employment Land Supply Program Report, 2010 (HELSP)</p> <p>The HELSP was released in October 2010 to replace the Metropolitan Adelaide Industrial Land Strategy and the State Housing Plan. Council should have regard to the HELSP when finalising the DPA to demonstrate how the DPA will implement the HELSP and ensure that the policies proposed are not at variance with the HELSP.</p>	Noted – DPA is not at variance to the HELSP as it seeks to provide additional housing opportunities within the transit corridor, assisting in achieving the targets established.	A brief summary of how the DPA accords with the HELSP will be included within the SCPA.
		<p>2.3.1 - City of Marion Section 30 Development Plan Review - Proposed DPAs for the wider Edwardstown area</p> <p>The Department supports Council undertaking additional DPAs as identified in the Section 30 Review to facilitate higher residential densities within the vicinity of the Activity Centre to</p>	Noted.	No change required

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		support the transit oriented development policies proposed.		
		<p>6. Conclusions and Recommended Policy Changes</p> <p>The proposed mixture of land uses for the site is considered appropriate. However given the existing retail area and the limitations for residential development adjacent to South Road, consideration should be given to the developing policy around the built form rather than density of residential development as the densities proposed may be difficult to achieve in the limited area available.</p> <p>As outlined earlier, the Department is currently developing new policies aimed at facilitating higher density centres and transit-oriented developments (TODs). It is considered that these new policies may form a more appropriate basis for the DPA rather than the Mixed Use Zone which Council has had to modify significantly (including one core policy) to achieve the desired outcome for the site.</p> <p>These policies cover issues such as interface between land uses within the zone, managing site densities and design for multi storey buildings amongst other things.</p> <p>The Department encourages Council to meet to discuss these new policies prior to finalising the DPA.</p>	<ul style="list-style-type: none"> Noted. The draft DPA was developed at a time that the policies discussed were not available for reference. However, now that the suite of policies has been released, it is desirable to adapt the core policies, where applicable into the zone. <p>Discussions with department staff supported the retention of the mixed use zone, with adaptation of policies as required from the new module sets.</p>	<ul style="list-style-type: none"> Convert Mixed Use Zone to new policy set.
		<p>Attachment J - Concept Plan</p> <p>The proposed changes to Ackland Street and traffic movements/signals along South Road</p>	<ul style="list-style-type: none"> The proposed changes to Ackland Street have been undertaken in full consultation with DPTI and have largely been shaped by the needs of DPTI and Council. 	No change

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		are significant and Council should ensure that the Department for Transport, Energy and Infrastructure (DTEI) are satisfied with the changes proposed.		
		The 30 Year Plan for Greater Adelaide (the Plan) was released in 2010; references to the draft version with the investigations are outdated.	<ul style="list-style-type: none"> The draft 30-Year Plan for Greater Adelaide was current at the time that the draft DPA was prepared. Nevertheless, the DPA remains consistent with the intent of the released version. 	No change
		<p>Attachment A – Mixed Use Zone - PDCs 2 (c), 3 and 16</p> <p>The Department considers that where possible policies should be phrased positively to demonstrate what development is appropriate and/or where such development should be located. Consideration should be given to rephrasing these PDCs to focus on what is desired (or where).</p>	Agree. Principles 2(c), 3 and 16 amended to be phrased positively.	Alter wording of policies 2(c), 3 and 16 (now PDCs 3, 4 and 26 in new zone)
		<p>PDC 4</p> <p>The PDC is ambiguous as it could be interpreted as “if you create land uses that generate high levels of pedestrian activity then place them at ground level etc...” but it could also mean “spaces at ground level with frontage to major public spaces should have uses that generate high levels of pedestrian activity etc” Please clarify.</p>	<p>Noted. Principle of Development Control 4 to be reworded as follows:</p> <ul style="list-style-type: none"> Land uses that generate high levels of pedestrian activity should be located at ground level and contribute to the enlivening and surveillance of the public realm. 	Replace PDC 4 (now PDC 5 in new zone) as suggested.
		PDC 9	With the revised master plan scheme, there are no road closures proposed. Therefore, this is no longer relevant.	No change

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		The PDC refers to Brooks Street; however this street is not named on the Concept Plan so it may be unclear where this PDC applies. Consider identifying Brooks Street (even though proposed to be closed) on the Concept Plan.		
		<p>Concept Plan Mar/8 was provided from Jensen Planning and Hills Mapping and Design, which requires amending.</p> <p>The remaining maps required reworking and correcting in some areas (Policy areas missing from Policy Area Map 3). These were addressed by DPTI. Amended mapping is now in possession of DPTI and the correct versions will need to be supplied by DPTI for the final approval package.</p>	Noted.	Check correct mapping for final version of DPA

Submissions Received from the Public

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21.	Masterplan SA Pty Ltd On behalf of – Westfield Ltd	<p>1. <u>Activity Centres within the 30-Year Plan for Greater Adelaide</u></p> <p>It is noted that the area affected is identified as “District’ level Activity Centre within the Southern Adelaide Region of the 30 year plan for Greater Adelaide</p> <p>Appendix 3 of the 30-Year Plan provides for an Activity Centre Typology and the following is provided for centres within the metropolitan area: ‘Adelaide City Centre’ ‘Regional Centre’ ‘Major District Centre’ ‘District Centre’</p> <p><i>(see appendix 3 of the 30-Year Plan for descriptions of each Centre Typology)</i></p> <p>Given the Activity Centre Typologies above, consider the following:</p> <ul style="list-style-type: none"> • A great emphasis of the 30-Year Plan is on ‘higher-order’ activity centres, of which a ‘District’ level Activity Centre does not form part of (higher-order is limited to those centres shown on Map D6 of the Plan). • The Area Affected is <u>not identified</u> as one of the 14 ‘transit oriented developments’. The Area Affected is located between 500 and 1240 metres (as ‘the crow flies’) from the Edwardstown Rail Station (i.e. the entire Area Affected is more than 400 metres, or five minutes walking distance from a train station). (Emphasis provided by Masterplan) 	<p>It is noted that Castle Plaza / Edwardstown is not identified as one of the 14 Transit Oriented Development sites across Adelaide within the 30 Year Plan, however it is listed as one of the ‘other transit oriented style development’ sites within Target L of the 30 Year Plan. As such, the form of development envisaged is consistent with the aims of the Planning Strategy.</p> <p>Whilst changing the zoning, the intent is for this activity centre to remain as a District Centre within the metropolitan hierarchy. It is noted that no retail floor area cap has been provided within the policy and this is entirely consistent with departmental approach to centres. The level of retail growth within the affected area will be determined by market forces, and limitations have been placed on the ability for large scale retail activities such as supermarkets and discount department stores to establish in certain parts of the zone. It is expected that other retail will be small in scale and service primarily the day to day needs of the surrounding community, with some comparison shopping complementing the existing centre. By far more growth is expected in commercial and other employment related activities within the centre, as well as residential development. This is considered consistent with the function of a district centre.</p> <p>Notwithstanding this, the analysis has considered the largest potential capacity for the centre, both in terms of impacts on existing centres, and impacts on the road network as a result of additional traffic demands. Further consideration of the impact of potential future expansion based on the modelling has been provided by Pitney Bowes in their report dated 11 October 2011 as follows:</p>	No change.

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		<p>The documentation prepared by Pitney Bowes in support of the DPA nominates a new 'sub regional' centre typology. The Typology of a 'Sub-Regional' centre is not recognised within the 30-Year Plan for Greater Adelaide, and as such, it is not clear where such a centre fits within the existing hierarchy of the Plan.</p> <ul style="list-style-type: none"> The documentation prepared by Pitney Bowes nominates an existing retail floor area at Castle Plaza of 21613 sq metres, and a potential expansion of an additional 22495 sq metres. This would result in a total floor area of 44108 sq metres (<i>which is effective doubling of the available retail floor space at this Centre</i>). Furthermore, the zone provisions do not provide for a designated maximum retail floor space. The Marion 'Regional Centre' is located only 3.4 kilometres away from the Area Affected. <p>Further, the following <i>Centres and Retail Council-Wide Objectives</i> of the Marion (City) Development Plan seek for development to occur in alignment with the existing centres hierarchy of the 30-Year Plan and are considered to be inconsistent with the proposed re-zoning:</p> <p>Objective 5 – Centres developed in accordance with a hierarchy based on function, so that each type of centre provides a proportion of the total requirement of goods and services commensurate with its role.</p> <p>Objective 7 – Development of the Marion Regional Centre as a focus for a large part of the southern Adelaide Metropolitan area.</p>	<p><i>The EIA referred to the current retail floorspace of Westfield Marion at Table 4.1 on page 27. Attached as Appendix 2 to this report is the current entry in the Property Council of Australia (PCA) Shopping Centres Database for Westfield Marion, which corresponds almost exactly with the indicated retail floorspace of 109,360 sq.m as shown in Table 4.1 of the EIA.</i></p> <p><i>Other facilities make up the balance of the 145,000 sq.m of floorspace claimed for Marion Shopping Centre by MasterPlan, including commercial floorspace, a Greater Union cinema, a Bunnings hardware store, Bowland, Super Cheap Auto and various other motor vehicle related or entertainment related facilities. Therefore, the retail floorspace of 109,360 sq.m for Westfield Marion as indicated in the EIA is correct. Further, the expansion of Castle Plaza as proposed is not at all likely to have any detrimental impact on these various other facilities located at Marion.</i></p> <p><i>Even if all of the sales increment to be achieved by Castle Plaza were to be redirected from Westfield Marion, then the percentage impact on Westfield Marion would be less than 10%. Whilst that would be a noticeable impact, it would not be an impact likely to cause undue stress, as opposed to reasonable competition, for Westfield Marion and certainly not likely to threaten its future, or its future potential for expansion. Indeed, it would most likely result in the expansion of Westfield Marion being pursued with renewed vigour.</i></p> <p><i>In any case, clearly the percentage trading impact on Westfield Marion will be much, much lower than 10%. As previously noted in this report, the City of West Torrens is concerned about the impact on facilities located in that</i></p>	

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		<p>With regards to the above Council-Wide Objectives:</p> <ul style="list-style-type: none"> • Future development at the Castle Plaza District Centre as supported by the rezoning changes is conflicting with the Council-wide Objectives of the Marion (City) Development Plan; • Amending the retail expansion capacity to approximately double what is existing, will cause the capacity of the District Centre to increase above and beyond its existing designated function as a District Centre (as identified in the 30-Year Plan); • The expansion of the District Centre is likely to compromise the existing centre hierarchy within the City of Marion and beyond to the adjacent Council areas as identified in Objective 5; and • The retail expansion is likely to detract from the focus of development at the Marion Shopping Centre as identified in its role as Regional Centre within the southern Adelaide metropolitan area. <p>Given the hierarchy of Activity Centres as designated within the 30-Year Plan, the land owners recommend that the City of Marion review the policy to determine the volume of retail development which is envisaged within a 'District Centre', and consider whether the rezoning would amount to the potential for development above and beyond what is envisaged at this Activity Centre typology.</p> <p>2. <u>Economic Analysis</u></p>	<p><i>municipality, in particular the District Centre at Kurralta Park. Obviously there would be some impact on that centre. Similarly, there would be some impact on Cumberland Park Shopping Centre, as there would be on the various supermarket facilities located within and just beyond the main trade area identified for Castle Plaza. There would also be some trading impact on the various facilities located throughout Glenelg, and on facilities located further away, such as the Adelaide CBD.</i></p> <p><i>Once all of the likely outcomes are taken into account, the impact that can be anticipated for Westfield Marion will be much less than 10%, and most likely in the order of a few percentage points. An impact of 3% on Westfield Marion, for example, given its reported sales volume, would mean a sales transfer in excess of \$20 million for the expanded Castle Plaza. An impact of 4%, which would still be a relatively modest impact for Westfield Marion, would mean a sales transfer of around \$30 million, and in our view it is extremely unlikely that the order of impact would be any higher than this figure.</i></p> <p><i>Westfield Marion, as the submission from MasterPlan states, is committed to a further expansion of approximately 18,000 sq.m. That expansion would obviously increase significantly the retail sales volume of Westfield Marion, and will have some impact on Castle Plaza, reducing the current sales volume of Castle Plaza at the time that Westfield Marion is expanded. Therefore, the likely order of impact on Westfield Marion resulting from the Castle Plaza expansion will, in net terms, be significantly less than the 4% indicative estimate outlined above – in broad terms, the two impacts are likely to cancel each other out.</i></p>	

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		<p>We would like to draw attention to the economic analysis undertaken by Pitney Bowes, which was based on the Marion Activity Centre having a base retail floor space of 109000 sq metres. The Marion shopping centre has an existing floor space of 145000 sq metres, and an approved floor space of 163000 sq metres. Consequently, it can be considered that this element of the economic analysis undertaken by Pitney Bowes has not been based on accurate information, and as such the analysis has not taken into account the expansion of competing centres.</p> <p>An Economic Impact Assessment was undertaken by Dimasi and MapInfo in 2006 for the development application for Marion shopping centre's expansion. The analysis identified that Castle Plaza is located within the 'secondary' trade area catchment of the Marion shopping centre. We note that the Pitney Bowes analysis makes reference to the approved expansion to the Marion shopping centre, contemplating the 18000 sq metre expansion; however this does not appear to be reflected in the economic analysis of impact. We also note that it incorrectly states that the expansion does not accommodate any new major stores, where the proposal clearly includes a new full-line supermarket and specialty shops.</p> <p>We are of the opinion that the economic analysis does not adequately consider the rezoning's impact on both the existing function of the centre, or whether the significant increase of retail floor space will</p>	<p><i>Given all of the above, in our view the statement by MasterPlan that the EIA report does not provide clear justification for the ability to establish additional retail floorspace through the rezoning process that will not detrimentally impact upon or hinder the development, function or role of the (Marion) Regional Centre, is not supportable.</i></p> <p><i>Appendix 3 to The 30-Year Plan for Greater Adelaide provides an activity centre typology, which includes the following description of the District Centre level in the hierarchy:</i></p> <p><i>District Centres</i> <i>Large centres that provide a range of retail, office, community and entertainment facilities. Shopping usually provides the most significant role, with associated civic, community, commercial and recreational services. Outside metropolitan Adelaide, District Centres provide local offices, and health, welfare, entertainment and community facilities.</i></p> <p><i>The expansion that is proposed for Castle Plaza will increase the centre's retail offer, and the range of stores which it offers to the substantial trade area which the centre serves. However, the centre will continue to be a large centre providing a range of retail and other facilities, with shopping as the most significant role.</i></p> <p><i>The nature of all activity centres evolves and changes over time, and typically metropolitan activity centres of any scale or significance continue to grow over time. This has certainly been the pattern not only throughout Adelaide but even more so throughout the eastern state capitals of Melbourne, Sydney and Brisbane.</i></p>	

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		<p>hinder the future development of the Regional Centre.</p> <p>The Assessment identifies that the bulk of the impact is likely to be felt by the larger competitive centres outside of the trade area, including Marion shopping centre. It fails to provide any specific quantitative or empirical data related to the direct impact. Accordingly, the economic impact report does not provide clear justification for the ability to establish additional retail floor space through the rezoning process that will not detrimentally impact upon or hinder the development, function or role of the Regional Centre.</p>	<p><i>There is a major and very significant difference between Regional Centres as designated in The 30-Year Plan for Greater Adelaide (of which Westfield Marion is one) and District Centres. As noted in the EIA prepared by Pitney Bowes, and as is made evident in the submission from MasterPlan, the Marion regional centre is currently 6 – 7 times the size of Castle Plaza centre, and has approval for expansion of an additional 18,000 sq.m.</i></p> <p><i>Even after its planned expansion, Castle Plaza shopping centre would be less than one-third the size of the expanded Marion regional centre.</i></p> <p><i>Therefore, the planned expansion of Castle Plaza would not be inconsistent with either the centres typology guidelines provided in The 30-Year Plan for Greater Adelaide or Objectives 5 and 7 of the Centres and Retail Development Objectives in the Marion (City) Development Plan.</i></p>	
		<p>3. <u>Car Parking Provisions</u></p> <p>The policy recommendations seek to provide reduced car parking requirements with the Mixed Zone, being to a level of 4.1 spaces per 100 sq metres of gross leasable floor area for 'retail' land uses, and to 1 space per 40 sq metres of gross leasable floor area for 'office and commercial' land uses. The reduced requirements have been inserted to reflect the level of access to public transport within the zone.</p> <p>As per Section 25(3) (iii) of the <i>Development Act, 1993</i>, the DPA must include an assessment of the extent to which the</p>	<p>Agree in part. There is merit in considering reduced car parking ratios for other developments/centres within the Council area that have excellent access to high quality public transport. However, this is outside the scope of the DPA given that it is not within the identified affected area forming part of this DPA.</p> <p>It is noted that the Structure Planning for the southern corridor is to occur shortly and this will be followed by a DPA. It would be</p>	<p>Consider the investigation of revised car parking ratios for activity centres with excellent access to high quality public transport as part of future Council / Ministerial DPA.</p>

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		<p>proposed amendment accords with other parts of the Development Plan. Therefore, in order to provide consistency across the land not located with the Mixed Use Zone, it is appropriate that such car parking provisions be applied Council Wide to be applicable to like developments/centres which have immediate access to frequent public transport.</p> <p>For example, the Marion shopping centre is accessible by both frequent trains and bus services. The Centre is located immediately adjacent to the Oaklands Train station, which has been identified as a Higher-Order transit oriented development within the 30-Year Plan and the bus interchange on the shopping centre land is the largest point of destination for public transport users outside of the City of Adelaide as according to modelling undertaken by the Public Transport Authority.</p>	<p>appropriate for this matter to be included and considered within that future DPA</p> <p>Post script: The Minister has provided reduced parking ratios for Activity Centres identified as “Designated Area” that have access to frequent public transport. This addresses this matter.</p>	
		<p>4. <u>Rezoning of Industrial Land</u></p> <p>Inadequate investigations were undertaken to consider whether the subject land should be considered as a ‘Prime Industrial Area’ within the meaning of the Metropolitan Adelaide Industrial Land Strategy (MAILS). The investigations determined that the subject land is not considered to qualify as ‘Prime Industrial Land’. The following was provided as justification for rezoning in Section 4.1.2:</p> <p><i>The industrial land subject to rezoning displays some of these characteristics, however, has limitations in achieving 24 hour operation, as well as having substantial adjoining land use constraints as a result of existing residential areas directly adjacent the zone. The land also has access limitations as a result of the rail line providing a barrier to the</i></p>	<p>Disagree.</p> <p>The extent of the area affected by the DPA is 16 hectares of which just under half is located within the existing District Centre Zone (the Castle Plaza Shopping Centre). The depth of the land and proximity of the land to adjacent residential development has in the past, and on occasions continues to raise conflict issues between industrial activities and residential development. These issues were the catalyst for the previous Development Plan Amendment in 2005 which placed emphasis on policy and desired character statement in managing these conflicts.</p>	No change

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		<p><i>west (with limited crossing points linking directly into the residential areas), together with capacity and flow limitations associated with the South Road corridor.</i></p> <p>The Area Affected by the DPA is approximately 20 ha in size. As such, the land is of sufficient size and can accommodate sufficient separation distances to adequately accommodate 24 hour industrial land uses (particularly in the northern part of the site where already existing) without affecting adjoining residential land uses which are physically separated from the land to the west of the rail line.</p> <p>The justification also argues that the Area Affected has '<i>substantial adjoining land use constraints as a result of existing residential areas directly adjacent the zone</i>'. It is noted that the existing industrial land uses at the northern part of the site are only adjacent to residential land uses at the western edge, and are further separated from those uses with the rail corridor. It is not considered that the adjacent residential land uses are a 'substantial' impediment to industry across the <i>whole</i> of the northern part of the site.</p> <p>The 'access limitations' and 'limited crossing points' to the west of the rail corridor were not considered as impediment to access to the Area Affected within the retail and economic analysis undertaken, and as such should not pose an impediment to industrial activity at the site. It is noted that DTEI Route Network Maps for B-Double Vehicles up to 25 metres in length allow access along a section of Raglan Avenue to the railway line and along Wilfrid Street. As such, no B-Double vehicles currently travel along the section of Raglan Avenue where there are residential land uses.</p>	<p>Therefore, the land is considered to have limited value for large scale industrial activities, in particular those requiring 24 hour activity.</p> <p>An alternative zoning which can facilitate higher levels of employment generation as well as increase residential development within the transit corridor is considered to be a better use for the land.</p>	

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		<p>Industrial land uses should not be limited in this location as a result of access limitations.</p> <p>Whilst South Road is identified to be developed as a 'non-stop' road, it is likely that there will be an on/off ramp at this location given the existing retail land uses and industry at Edwardstown, and given proximity to the train station. As such, 'capacity and flow limitations associated with the South Road corridor' should not be considered as an impediment to industry at this location.</p> <p>Further analysis within Section 4.1.2 considers that the loss of traditional manufacturing and warehouse activities at the subject land can be recouped with the development of the former Mitsubishi site, despite this being envisaged for 'clean technology and renewable energy hub' within the 30-Year Plan and within the Department of Trade and Economic Development's vision for the site, rather than 'large scale manufacturing' as indicated.</p> <p>It is recommended that an in depth assessment of the land should be undertaken, providing analysis against the criteria identified with the MAILS. This should include both the value of the land for industrial purposes, and the justification for rezoning.</p>		
		<p>5. <u>Noise Issues</u></p> <p>No independent noise assessment has been undertaken to consider:</p> <ul style="list-style-type: none"> The noise impacts associated with South Road and appropriate separation distances for residential living (particularly given that living will be in the form of residential flat buildings at the upper levels); and 	<ul style="list-style-type: none"> Disagree. This form of assessment is usually reserved for development applications and not DPAs. <p>However, it is noted that the addressing of interface issues such as noise are appropriate in this context and the level of coverage provided within the new policy</p>	<ul style="list-style-type: none"> Insert new Noise and Air Emissions Overlay into Development Plan.

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		<ul style="list-style-type: none"> The impact/interface issues associated with land uses proposed within and adjacent to the zone, particularly including loading/services areas and refrigeration associated with supermarkets, discount department stores, restaurants (including noise late at night), and shops. Residential land uses are proposed to be located within the zone, and are adjacent to the zone, and no policy provisions have adequately considered these noise impact/interface issues. 	modules for the forms of development envisaged (residential and non-residential) is useful in providing further policy support to the existing policy within the Interface Between Land Uses module in the General section of the Development Plan.	
		<p>6. <u>Summary</u></p> <p>The land owners strongly oppose:</p> <ul style="list-style-type: none"> Policy that facilitates retail expansion which <i>will</i> hinder the function and role of existing centres and the future development of the Marion Regional Centre. <p>The land owners are supportive of:</p> <ul style="list-style-type: none"> The reasonable expansion of the existing centre within the framework as a District Centre of the 30-Year Plan for Greater Adelaide; A consistent approach for lower car parking ratios for centres well serviced by public transport. PDC 28 should be established as a Council-wide policy; and Mixed use centres and rezoning to facilitate residential development. 	<ul style="list-style-type: none"> See comments from points above. 	<ul style="list-style-type: none"> No change
22.	Lawrence Nominees Pty Ltd 16-20 Birmingham Street Mile End 5031	<ul style="list-style-type: none"> The premises at 15-17 Lindsay Avenue, Edwardstown, which adjoins the Castle Plaza car park, should be included in the red area covered by this DPA. 	<ul style="list-style-type: none"> Noted and agreed. The property's exclusion from 'Map 1' of the DPA investigations was in error, however, the property is included in Concept Plan Map Mar/8 and is therefore covered in this policy. 	<ul style="list-style-type: none"> No change required

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23.	Mrs. Pamela Skurray 69 Railway Terrace Edwardstown 5039	<ul style="list-style-type: none"> Expressed concerns with the Woodlands train station subway and the poor state that it is often left in. In favour of moving subway but not the station as it has a large number of regular commuters using it. Does not believe sufficient time has been given to view the details of the Development Plan and suggests a community meeting be held. 	<ul style="list-style-type: none"> Noted – outside scope of DPA. The review of the railway stations will be a separate process and the final decision as to whether stations remain or are closed will be made by DTEI. A community engagement process is being undertaken to coincide with the DPA process. 	<ul style="list-style-type: none"> No change required No change required
24.	Mrs. Glenda Cameron 73 Railway Terrace Edwardstown 5039	<ul style="list-style-type: none"> Lives opposite Woodlands Park Railways Station and is interested in the plans for relocating it. The subway is a haven for drug users and often has faeces, drug needles and a strong smell of urine in it even though it is frequently cleaned by railway workmen. Cannot comment on changes envisioned for Castle Plaza as have not seen it but would suggest that the plans be shown in the shopping centre and perhaps a meeting held for residents to comment on the changes. 	<ul style="list-style-type: none"> Refer to comments related to submission 23. 	<ul style="list-style-type: none"> No change required
25.	Geoff Crouch 47 Flinders St Edwardstown 5039	<ul style="list-style-type: none"> Concerns relate to the proposed development on the Southern side of Raglan Avenue, specifically the proposed “landmark site” adjacent to the Raglan Avenue level crossing. There are inconsistencies within the DPA regarding the level of development that is to be undertaken at this site, including the following excerpts: <ul style="list-style-type: none"> From part 4.4.2: <i>Notwithstanding the desire to create a new urban form in this location, there needs to be recognition of the existing urban form in surrounding areas that is</i> 	<ul style="list-style-type: none"> The inconsistency in the investigations and the policy with respect to maximum building heights is noted and this appears to be an error in the policy investigations. 	<ul style="list-style-type: none"> No change required

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		<p><i>principally low rise and low density in nature. The policy direction needs to appropriately balance the goal of the zone, with an appropriate form that interacts with the surrounding neighbourhood. While this is less important along the northern and eastern boundaries of the proposed zone, it is particularly important along the southern boundary where the proposed zone is adjacent established residential development. Policy guidance is therefore necessary in limiting the height of buildings at this interface to three storeys at the southern interface.</i></p> <ul style="list-style-type: none"> From Attachment 1 – Principles of Development Control – Clause 9: <i>“Development along the southern side of Raglan Avenue, west of Brooks Street should be a maximum of <u>four storeys</u> or 14 metres in height....”</i> There are also several other references to the desire to locate a landmark site at the western end of Raglan Avenue. Whilst there are no specific references to the proposed height of these landmark sites, it is suggested that they will “emphasise major arrival focal points” and will enable visitors and users to “orientate and find their way through the zone”. This suggests that landmark sites will need to be substantially higher than surrounding buildings. Notwithstanding, the DPA also states that <i>“Building scale will take account of the lower scale residential areas located to the south of the zone”</i>. There is clearly a discrepancy in the maximum height of buildings on the southern side of Raglan Avenue. 	<ul style="list-style-type: none"> Noted – Disagree. The term ‘Landmark Site’ refers to a major corner however the site does not have to be represented by a tall building. The site should contain a building which addresses both street frontages and incorporates articulated features to emphasise the importance of the corner but not necessarily through height particularly if it does not reflect the scale of surrounding buildings. Noted – Disagree. The impacts of the built form on properties to the south of Raglan Avenue is addressed in Principle of 	<ul style="list-style-type: none"> No change required No change required

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		<p>Notwithstanding this discrepancy, I believe that either option proposed – three or four storeys will have a significant negative impact on adjoining properties, including mine. These negative impacts will be in the form of shadowing, loss of amenity, loss of privacy, and consequentially, they may cause a decline in property values. These issues have been recognised in the DPA (part 4.4.2) but have not been adequately addressed in the proposed amendment.</p> <ul style="list-style-type: none"> • For these reasons, I believe that a limit of two storeys should be imposed to any future development on the southern side of Raglan Avenue. Further, stricter setback requirements from the rear boundary should be imposed. <i>(emphasis provided by respondent)</i> • Additionally, for the same reasons stated above, I believe that the “landmark site” proposed for the western end of Raglan Avenue should also be limited to two storeys. 	<p>Development Control 9 (b) (PDC 12 in new zone) where the height of buildings on the southern boundary is restricted to 3m with incremental increases to the building height further away from the boundary. This is considered to adequately deal with the amenity of adjacent land to limit overshadowing and visual impacts.</p> <ul style="list-style-type: none"> • Noted – Disagree. The heights and setbacks proposed in the policy give adequate consideration to the scale of adjoining properties, where 3m is equivalent to a single storey dwelling (which primarily reflects the existing built form) and increasing in height further away from the boundary. The desired density may not be achieved if the policy was to restrict building heights to two storeys in the area requested. • The policy stated in PDC 9 (b) will also apply to “landmark sites”. 	<ul style="list-style-type: none"> • No change required
26.	Barry Bassett 14 Ormond Avenue Daw Park 5041	<ul style="list-style-type: none"> • Wishes to raise objections to the Development Plan as follows: <ul style="list-style-type: none"> • Making part of Raglan Avenue into a pedestrian mall is a complete disaster. This is a busy through road to cross the railway line and gives access to Marion Road and Morphett Road. It also is on a bus route through to Glenelg. • The closure of Ackland Street is a further complication as this also caters for through traffic in the same 	<ul style="list-style-type: none"> • Noted. The revisions to the masterplan no longer require the closure of Ackland Street to accommodate the new loop road. A new connection between Raglan Avenue and Ackland Street facilitates the east-east movement through the zone. Raglan Avenue is also intended to remain open and be traffic calmed to form a main street environment, supporting improved pedestrian spaces and slower traffic 	<ul style="list-style-type: none"> • No change required • No change required

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		<p>manner. If the former Hills Industries site is developed as residential, all the cars housed in it will only have access to South Road which is already congested and no doubt with all the activity created by the extension of the shopping area, there will be inadequate parking.</p>	<p>speeds which aid in crossing the road and safety generally.</p> <p>The revised layout has been modelled and confirmed to not impact on DPTI traffic flows, nor the local road network.</p>	
27.	<p>Tim Pfeiffer</p> <p>Councillor for City of Marion – Woodlands Ward</p>	<ul style="list-style-type: none"> In support of project but would like to raise two particular concerns: <ul style="list-style-type: none"> First concern is one of traffic management. I am generally in support of the rerouting of Raglan Ave/Ackland St to the North of the site, linking with Edward Street, to create a pedestrian plaza and further improving the flow of South Road (left turn in and out of Raglan/South intersection). However, I am concerned that the proposed alignment of the new roads (as presented in Attachment J) will not be conducive to either traffic movement or a pedestrian mixed use environment. Raglan Ave is the main East-West thoroughfare between Cross Road to the North and Daws Road to the South. While I welcome a quieter (and slower!) Raglan Ave, I am concerned that the proposed alignment which requires road users to travel an indirect route may have the potential to stifle the local economy and frustrate the community. The proposed alignment also has the potential to greatly increase traffic flow on quieter streets adjacent to the site (like 	<ul style="list-style-type: none"> Noted. The revised masterplan provides a more rational vehicle movement path which utilises the existing Ackland Avenue road reserve. Noted. The revised master plan layout assists in ensuring a safer and better distribution of traffic flows into and through the area. Those wishing to access the Castle Plaza shopping centre can still do so with relative ease due to Raglan Avenue remaining open, as well as car park entries and onstreet parking. The low traffic speeds envisaged in this location assist with pedestrian movements. 	<ul style="list-style-type: none"> No change required (other than revised master plan adoption through revised amendment) No change required (other than revised master plan adoption through revised amendment)

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		<p>Russell/Furness), as road users seek alternative routes in order to avoid the proposed alignment. Similarly, the numerous tight and potentially blind bends in the proposed alignment are a hazard for pedestrian and cyclist visibility, in what would be a highly pedestrianised area (as a TOD).</p> <ul style="list-style-type: none"> While I am a supporter of the outcomes being sought in regard to realigning Raglan/Ackland, I believe it is absolutely essential that the existing community and economy is considered, particularly those located near (but not on) the site who regularly utilise these roads. I do not believe these users have been adequately considered to date. My second concern is in regard to the possible future train station. I am in support of the possibility of establishing a new train station adjacent to the site (at the Raglan Ave crossing); however I am not in support of closing either the Edwardstown or Woodlands Park stations. Both of the existing stations support a large number of passengers per day (much larger than a lot of other stations on the Noarlunga line). The surrounding existing population has become much denser over recent years and is likely to become denser still, meaning train usage is high and growing. If you take the example of a regular user of the Woodlands Park train station that lives near the corner of 	<ul style="list-style-type: none"> Noted – See previous comment. Noted – the future placement and operation of train stations will be determined by DPTI separate to the DPA process. While it is desirable for a train station to be placed adjacent the affected area, there is no commitment from the state government to do so at this stage. Therefore, the DPA indicates this station as a potential future station, and continues to emphasise the need for development to maintain and improve connections to existing stations at Woodlands Park and Edwardstown. This will also be facilitated by the proposed Greenway along the rail corridor. 	<ul style="list-style-type: none"> No change required No change required

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		<p>Beaconsfield Tce and John St, Ascot Park – the individual currently walks 650 metres to the Woodlands Park station. If this station were removed and replaced with a station at the Raglan Ave crossing, this individual would need to walk 1,050 metres to the new station. Another example is an individual living near the corner of Melville St and Towers Tce, South Plympton, who currently walks 600 metres to the Edwardstown train station. If this station were removed and replaced with a station at the Raglan Ave crossing, this individual would need to walk 1,300 metres to the new station (over double the distance). While a new station would have great benefits for the future mixed use activity centre, removing either existing station could alienate the existing moderate density population.</p>		
28.	Edwardstown/Melrose Park Residents Action Group (EMPRAG)	<ul style="list-style-type: none"> • EMPRAG objects to the Castle Plaza Activity Centre DPA • Edwardstown, Melrose Park, Castle Plaza, Edward Street, Raglan Avenue, South Road, Woodlands Railway Station. With redevelopment these are about to change along with the Residential Zones, Commercial South Road Zone, Edwardstown/Melrose Pk/Clarence Gdns Industrial/Commercial Zone, Interface Zone, Local Centre Zone. • They will affect a very wide range of users and it will be for some time. • Consequently many issues should be embraced not least being the most generous dimensions 	<ul style="list-style-type: none"> • Noted • Noted • Noted – Does not specify how users will be affected. • Noted – It is considered that pedestrian rest areas, parking and traffic safety has been adequately addressed in the 	<ul style="list-style-type: none"> • No change required • No change required • No change required • No change required

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		for parking planning principles and conditions and pedestrian rest and green areas. These and traffic safety (public transport & private vehicles, commercial traffic) being given consideration ahead of Density. We live or exist for the rest of our lives with the results.	investigations of the DPA process and are in accordance with the relevant Australian Standards.	
29.	Henry Smith 134 Corunna Avenue Melrose Park SA 5039	<ul style="list-style-type: none"> My wife and I object to the Castle Plaza Activity Centre Development Plan Amendment. It is not a step forward. As this proposal is not in one mall, we will not struggle from one side to another in the weather, particularly with walker or gopher. This is complicating and pulling a mall to bits! What will happen to the two buses? Businesses. What happens to them? The biggest majority now have a frontage to South Road. This proposal is mainly about closing roads on and off South Road and making a main Highway. But this won't be possible until there is a wider road! It is also about Infrastructure. By the Local Government and State Government showing added <u>Infrastructure</u> in projects the Reserve Bank reviews the country/state's 'value' and more money is printed. 	<ul style="list-style-type: none"> Noted Noted - Disagree. The connection between the two sides of Raglan Avenue will be designed to provide easy crossing points. The policy requires buildings fronting main road to provide continuous canopy coverage, so there is protection from weather for pedestrians. Buses that currently use Raglan Avenue are not affected by the proposed changes. There are not expected to be any changes to the business which have frontages to South Road. Noted. Outside the scope of DPA. 	<ul style="list-style-type: none"> No change required No change required No change required No change required No change required
30.	David and Shirley Bailey	<ul style="list-style-type: none"> I do not agree that the closure of Raglan Ave and South Rd Corner will help the flow of traffic. The loop to Ackland St and South Rd corner will only cause more and longer holdups and congestion with cars going into Edward St and turning 	<ul style="list-style-type: none"> Noted. Revised master plan retain Raglan Avenue as open main street environment and creates new connection to Ackland Street for more streamlined east-west movement. 	<ul style="list-style-type: none"> No change required

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		left and right into South Rd from Ackland St. <ul style="list-style-type: none"> The traffic lights at Raglan Ave /South Rd intersection should remain. I consider that direct traffic access along Raglan Ave from Marion Rd to South Rd is essential. 	<ul style="list-style-type: none"> Noted.Revised master plan retains these traffic signals. Noted. The DPA no longer changes this.. 	<ul style="list-style-type: none"> No change required No change required
31.	Melrose Park/Daw Park Community Association	We have several objections and questions:- 1. Health and its non mention. 2. Insufficient off street parking and spacing (This together with good traffic management had been the top priority by both Business & Residents in the Edwardstown/ Melrose Pk/ Clarence Gdns P.A.R. 2003). 3. Cramming too much into the DPA area. Appearing like another 'Marion' mistake. (Traffic management & healthy buffer could/ should be the aim for this site and if any room left, housing perhaps. Let's get this right. Otherwise we or future generations will be paying). 4. Notification . How many homes and businesses have been notified? Within what boundaries? 5. Apparent non-consideration in regard to car travel and ease of it for the elderly and people with disabilities in our local areas . Page 21 of info disc: ' Discourage low intensity activities (e.g. surface level car parking, '-With many elderly, people with disabilities & parents with littlies, discouraging surface level car parking is unacceptable locally	<ul style="list-style-type: none"> Noted. A Health Lens Analysis has been undertaken with the DPA revised based on some of the outcomes. Disagree. Parking provisions are considered adequate given the intended desired character of the zone. Disagree. Whilst high density is a specific desire of TOD development, appropriate traffic management is a careful consideration which includes a well connected public transport system and integrated walking and cycling linkages. Notification has been undertaken in accordance with the legislative requirements. Notwithstanding this, further community engagement has been undertaken to further inform the community and provide input into Council's considerations. Noted. Disagree. Covered car parking is a viable and common alternative form of parking most able to be adequately accessed by people with disabilities and parents with children. Indeed, a more compact form of development assists those with mobility difficulties. 	<ul style="list-style-type: none"> No change required No change required No change required No change required No change required

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		<p>6. The absence of discussion yet need for a 'fly-over' (South Road/Raglan across railway crossing).</p> <p>7. On CD: 2.3.6 'Other sections of the Development Plan namely policies'. We find missing are references to the People's Health, Rest Areas, Heritage. Where do we find any trace of 'Edwardstown, the Elegant Outer Suburb of Adelaide' (1940's)? The Woodlands (castle) Estate disappeared overnight in the late 1980's. Not to be outdone, across the road the Flemings homestead & 'Sherwood Forest' had its Open Space (for the people) Proclamation overturned in the late 1990's. These sins against the people occurred relatively recently.</p> <p>8. Lack of Open Space and rest areas for Castle Plaza. Yet again this reflects on the lack of attention to health issues.</p> <p>9. Where is the Park 'n Go Facility?</p> <p>10. On the proposal what happened to the intersection lights at Raglan.</p> <p>11. Where are the Pedestrian lights near Price?</p>	<ul style="list-style-type: none"> Noted. Outside scope of DPA. Access and placement of railway line responsibility of DTEI. Noted. No heritage items were identified in a recent heritage study within the DPA area. See first note in relation to addressing health. Disagree. Additional open space contemplated where currently none exists with particular reference in Principle of Development Control 14 and Concept Map Plan Mar/8. Additional support is within policy for high quality public realm with public spaces being interesting and places for gathering, socialising or resting. No facility is proposed as part of DPA. The idea of a TOD is for public transport nodes to be focused around connective walking and cycling links. The revised Concept Plan Map Mar/8 retains this intersection. Not all traffic signals are required to be shown on the concept plan; however, pedestrian crossings on South Road are the responsibility of DTEI. 	<ul style="list-style-type: none"> No change required No change required No change required No change required No change required No change required No change required

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		<p>12. In the Plan the Intensification of Edward/Ackland intersection removes the ability to gradually disperse and sift traffic from Edward St OR to the Centre OR across the railway crossing to west, Edwardstown, Ascot Park, Plympton, Marion Road OR to continue along South Road.</p> <p>13. Already the Edward intersection on the eastern Melrose Park side has a huge line-up.</p> <p>14. Where will the already lined-up Raglan rail crossing traffic, fit? Fly-over might be the answer especially if moving the station. Save money, time, headaches, frustration and above all deaths (refer Salisbury, Oaklands Park, Hove).</p> <p>15. CAN WE HAVE AN EXPLANATION OF THE TRAFFIC MANAGEMENT & WHY THE CONFIGURATION?</p> <p>16. Where are the South Road exits and access points? What is the Long Term Master Plan for all along South Road (Cross Road to Daws Road)?</p> <p>17. Where are the large transport truck depots this side of town - Mitsubishi would have been ideal. What we have now and it looks like for the future is navigating Edwardstown and Melrose Park streets that are not suitable. Compare with Cavan.</p> <p>18. In this proposal can we hear what specifically will make this a 'Transit Orientated Development'. What do we stand to lose?</p> <p>19. What happens to the two bus routes currently within this site?</p>	<ul style="list-style-type: none"> Noted. The revised master plan now retains these options. See previous comment No change is proposed for the Raglan Rail crossing and thus there will be no impact on the ability for the road to contain traffic that is lined up while a train passes. A revised traffic management report is included within the DPA investigations which provides an explanation of the proposed traffic management. All decisions made pertaining to South Road are considered by DPTI and are outside of the scope of this DPA in addressing. Outside the scope and intent of DPA. The DPA investigation report discusses elements of what comprises a 'Transit Orientated Development'. A communication strategy to provide further clarification on a TOD is also being adopted. The bus routes are unchanged in the revised master plan.. 	<ul style="list-style-type: none"> No change required No change required No change required No change required No change required No change required No change required No change required

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		<p>20. What people want are more nursing places and affordable housing.</p> <p>21. The area is already well served with shopping and commercial outlets and any additions just add woe and demolishes small businesses and nearby local centres.</p> <p>22. Will Castle Plaza's small businesses be forced to pay higher rent? As occurs at Marion.</p>	<ul style="list-style-type: none"> Noted - Agree. The zone policy envisages both aged care facilities and affordable housing in the zone. The Pitney Bowes Economic Impact Assessment included with the policy investigations identified that the proposed expansion to Castle Plaza would provide significant benefits to the local economy and any trading impacts for existing retailers outside the area would be relatively minor. Not a relevant consideration for DPA. 	<ul style="list-style-type: none"> No change required No change required No change required
32.	<p>Mrs C Sibley</p> <p>81 Railway Terrace Edwardstown 5039</p>	<ul style="list-style-type: none"> Our community comprises a large number of disabled, elderly and pedestrian traffic which depend on the services of Castle Plaza. We need ready access to the train, bus and South Road and any changes in the present traffic pattern concern us greatly. 	<ul style="list-style-type: none"> Noted. The premise of the DPA is to increase accessibility by creating links and networks to public spaces, services and public transport stations. 	<ul style="list-style-type: none"> No change required
33.	<p>Graeme Maxwell</p> <p>3 Gare Court Victor Harbor 5211</p> <p>Daniel and Nicole Maxwell 7 Norma Ave Edwardstown 5039</p>	<ul style="list-style-type: none"> Generally have no objection to the re-zoning proposals...The proposed DPA would facilitate the achievement of a range of State Government and Council Objectives as identified in the DPA. The primary purpose of our submission is to express concern about any proposed changes that may impact the current amenity and function of Norma Avenue. Our concerns have been raised by the Pitney Bowes Memorandum of 17th March 2008 making reference to the 'Option 7' scheme. The attached diagram indicated the development of a 'future by-pass road' to the west of the Castle Plaza shopping centre which would clearly require the acquisition of properties outside of the proposed zone. This raises two concerns: 	<ul style="list-style-type: none"> Noted. Agree. 	<ul style="list-style-type: none"> No change required

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		<ol style="list-style-type: none"> 1. Is Norma Avenue to become a connector to the proposed by-pass road (i.e. lose its cul-de-sac status)? Should this occur, we would have concerns about the increased traffic this would generate and the capacity of Norma Avenue to cater for such as increase. 2. Any erosion of the current separation between the shopping centre and neighbouring housing in Norma Avenue, particularly if the erosion is to make way for a by-pass road, will expose such housing to increased noise. 	<ul style="list-style-type: none"> • The DPA does not propose any changes to the function of Norma Avenue. The diagram that is referred to is out of date and was not considered as part of the DPA proposal. • Concept Plan Map Mar/8 shows Norma Avenue to be an entrance/exit point to a key Off Street Pedestrian Path, confirming the intention to maintain Norma Avenue as a no through road for vehicular access. 	<ul style="list-style-type: none"> • No change required • No change required
34.	Steve Walker 14 Towers Terrace, Edwardstown 5039	<p><u>Local Roads</u></p> <p>You have made the comment that the conclusion of the report states that <i>"with respect to traffic impacts on the local streets is that any traffic increases attributable to the Development will not create traffic capacity issues on these streets and that they will continue to operate well below their amenity threshold"</i>. This is indeed the case however the body of the report discusses local roads not in the context of the local road network but the immediate roads leading into the development from the west via Russell Street, Lindsay Avenue and Brookes Terrace (refer section 4.5 on page 18).</p> <p>Also it notes that <i>"We do not consider the scope of the generated traffic to create traffic capacity issues on these roads"</i>. It could and should be argued that although the road may operate within its traffic capacity the amenity to local residents may well be affected and should be considered further by Council.</p>	<p>It's opinion is that <i>"traffic patterns outside the area of influence (fig 2.1) are primarily due to factors other than the shopping centre and beyond the control of the development"</i>.</p> <p>Comprehensive assessments of the existing traffic patterns and existing local amenity on all streets within the area of influence have been documented in Section 2.3 of SKM 13 July 2012 Traffic Impact Assessment report.</p>	<ul style="list-style-type: none"> • No change required

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		<p>The report in fact does not model the impact of the development in terms of traffic volume on the local road network. I could not find any reference to actual traffic volume (AADT) values in the report other than an occasional reference to a 2007 Shane Foley Report, although the report I received was minus any Annexures. It appears that the report has used data available from DTEI from major intersections such as Raglan Av / Marion Road and Raglan / South Road but has stopped well short of analysing the specific impact on the local road network.</p> <p>As a resident of Towers Terrace I am particularly concerned about the impact the development may have on the road on which I and my family have lived for some time. The growth of peak hour traffic using Towers Terrace has increased markedly over recent years (particularly the last 10) due to many factors some which are:</p> <p>□□□□□□□□ Commuters using the road and the associated network of roads from well south of Daws Road to Henley Beach Road as a means of avoiding peak hour traffic on the congested Goodwood / South and Marion Roads.</p> <p>□□□□□□□□ The relatively recent addition of traffic lights at the intersection of Chitral Ave and Cross Road.</p> <p>□□□□□□□□ The lack of any significant traffic controls by the Councils of Marion & West Torrens to discourage this 'rat running' practice.</p> <p>The issue of the traffic volumes on Towers Terrace is however the subject of a separate approach to Council but the impact of the proposed development on this road cannot be overlooked given the points stated above.</p>	<p>SKM have inferred traffic volumes from traffic counts on intersecting arterials, from Castle Plaza car park surveys by Shane Foley in 2007, and from spot counts carried out by SKM during site visits. In all cases implied traffic volumes on the local streets are 1000 to 2000 vpd, or less. These are typical local street volumes that would not constitute either a traffic capacity or noise/amenity issue under Austroads Guidelines.</p> <p>SKM have concluded that as the development is not oriented towards the local streets they do not expect that there will be a significant change to the traffic volumes on the local streets from the expansion.</p> <p>In terms of changes to residential amenity on these local streets SKM have acknowledged that there may be some minor local street amenity impact (although remaining well below their amenity thresholds) and accordingly have recommended mitigation measures in table 4.7. A significant improvement recommended is the closure of the median on Raglan Ave at Wilfred St to improve both safety and the potential reduction of through traffic along Russell Tce.</p> <p>SKM are of the opinion that through traffic on Chitral Tce and Towers Tce is an issue irrespective of the shopping centre, and is as a result of substantial internally generated traffic within the suburb, as well as "rat running" to avoid South Rd which has been further encouraged by the relatively recent traffic lights at Cross Rd.</p> <p>SKM advise that if the flow of traffic improves along South Rd as a result of the Ackland St intersection upgrade, as expected, then there</p>	

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		<p>The report under section 3.3 looks at trip distribution and under section 3.2.2 at RTA traffic generation factors. As previously noted the report has not documented specific traffic volumes from the development but has been more focused on the impact the development may have on adjacent major intersections. If the figures and assumptions documented in sections 3.3 & 3.2.2 are used to estimate the impact of the development on traffic volumes in Towers Terrace however, I estimate the following additional movements on Towers Terrace to the South of Raglan Avenue:</p> <p><i>Additional daily vehicle movements</i> 1900 <i>Additional peak hour movements</i> 206</p> <p>These figures are based on my interpretation of the information contained in the report, using data relevant to the additional development only and estimated east - west traffic distribution, together the estimated additional movements at the intersection of Marion Road and Raglan Avenue.</p> <p>Given the foregoing assumptions it appears that the impact of the volumes on Towers Terrace will be large and affect the amenity and function of the street, not only during peak hour, but more importantly during the remainder of the day and indeed week due to weekend shopping.</p> <p>These figures may however be conservative due to the difference between what has been modelled in the report and the actual proposed development as further discussed below.</p> <p><u>Proposed Development compared to that modelled in the SKM report</u></p>	<p>may be less rat running along Towers Tce as a result of the development.</p> <p>The best way forward may be the preparation of a post development Local Area Traffic Management Plan once any new traffic patterns have stabilised.</p>	

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		<p>It appears from reading the SKM report that the traffic modelling contained in it has been based on the retention of the intersection of Raglan Avenue with South Road albeit restricted to left in left out only movements. The current development however proposes that Raglan Avenue be closed off to form a pedestrian precinct and that traffic is redirected Ackland Street to a single signalised intersection with South Road / Ackland Street and Edward Street. It appears that SKM have done significant modelling of the South Road intersections viz Ackland Street / Raglan Avenue and Furness Street. This modelling has been based on the assumption that the Raglan / South intersection remains open (left in / left out). Even so SKM have established that the Ackland Street / South Road / Edward Street will require significant adjustments to support the additional traffic volumes from the proposed development. This however is for a significantly different layout to that now proposed with the following remaining unresolved:</p> <ul style="list-style-type: none"> • Impact of the closure of Raglan Av at South Road on the capacity of the proposed intersection of Ackland Street / South Road / Edward Street • Impact of the closure and potential redirection of traffic on access to the centre from the West viz Raglan Avenue. • Impact of the closure and potential redirection of traffic for access to the centre from the West using the local road network. There is a distinct potential of movements being redirected to short cut the potentially congested intersection of Ackland Street / South Road / Edward 	<p>Raglan Avenue is no longer proposed to be closed to traffic and revised modelling has been prepared, in consultation with DPTI,</p>	

Sub No	Name	Submission Summary	Comments	Council Response
		<p>the following matters still need to be addressed to support the development:</p> <ul style="list-style-type: none"> • An update of the report to reflect the current layout of the development. • An update of the report to reflect current and estimated traffic volumes (both peak and off peak) on the local street network including Towers Terrace. • Consideration of local streets from an amenity point of view rather than capacity. • Consideration of traffic calming measures on the local road network to limit the impact of the development. <p>As previously stated the traffic on Towers Terrace and connecting roads has been increasing measurably over recent years and has not been addressed by either Marion Council or West Torrens Council. In light of the pending redevelopment of Castle Plaza it is considered that this matter should be addressed urgently in a collaborative manner.</p> <ul style="list-style-type: none"> • 	<p>Done</p> <p>Inferred traffic estimates have been provided, which are well within the thresholds that constitute either a traffic capacity or noise/amenity issue under Austroads Guidelines.</p> <p>This has been done.</p> <p>Some mitigation measures have been identified in table 4.7.</p> <p>It is considered appropriate to commission a post development LATM to treat any measured traffic impacts.</p>	

Attachment B – Summary and Response to Public Meeting Submissions

Four (4) submitters requested to be heard, and therefore a public meeting was held on 28 September 2011.

Sub No.	Name	Summary of Issues Raised	Comment	Recommended DPA Amendments
1.1	Janet Hillgrove (on behalf of Edwardstown / Melrose Park Action Group & Melrose Park/Daw Park Community Association)	<u>Health</u> – EPA require environmental auditing to ensure land is suitable for residential purposes	Noted. Refer to comments in response to EPA written submission within “Summary and Response to Agency Submissions”.	<ul style="list-style-type: none"> Create an additional Precinct over those areas subject to residential development by the policy, and insert a policy requiring site assessment and, if necessary, remediation for any development incorporating sensitive land uses, such as residential development.
1.2		<u>Heritage</u> – Numerous places of heritage significance have been lost from the suburb of Edwardstown over the years. These properties and the Hills Industries site (particularly the “Hills Hoist”) should be recognised in some way	Noted. There are no specific identified heritage places within the area covered by the DPA; however it is appropriate for some form of interpretive link to the past uses of the site to be incorporated into future development. Development Plan policy is not considered the appropriate avenue for this, rather it is being pursued through the Public Realm development Concept forming part of the Development Deed between Council and the Developer (tied to the land through a Land Management Agreement referenced by the Deed).	Nil
1.3		<u>Open Space</u> – There is a distinct lack of open space in the Edwardstown area. Proposed use of the existing treed Hills carpark area is insufficient. Increased setbacks would allow for trees and larger green areas between roads and buildings.	Disagree. While open space in the traditional sense is limited to the former car park site (treed area) the DPA encourages the provision of active and vibrant streetscapes and spaces between buildings, which will be public and semi-public in nature, including the covered pedestrian mall space over the closed section of Raglan Avenue. They will offer opportunities for gathering and socialising, as well as a number of art and event spaces.	Nil

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Sub No.	Name	Summary of Issues Raised	Comment	Recommended DPA Amendments
1.4		<u>Parking</u> – Suitable numbers of car parking should be provided as walking with your shopping or taking it onto public transport is not realistic.	The direction for the development of the area is for an intense, compact form, encouraging active engagement of building interfaces with the surrounding streetscape, implying reduced setbacks in most cases. The desired character statement and supporting policy identified the need for high quality streetscapes, including opportunities for vegetation, with opportunities for outdoor dining as well. Disagree. The intent of the DPA is to encourage active transport over motor vehicles. This is partly done by encouraging people to live and work and recreate / socialise within close distances, preventing the need for use of motor vehicles. It is noted that the shopping centre currently functions as a centre servicing the surrounding catchment, and parking is still required for this purpose. However, reduced levels of parking are considered appropriate due to the excellent service to public transport, particularly for residential and commercial development.	Nil
1.5		Regard should be given to ease of access for the elderly and persons with a disability.	Noted. The issue of access for people with mobility difficulties is covered by building code requirements. However, the policy does cover the issue of access for all users within public spaces and key pedestrian connections, including the provision of seating, covered areas, lighting and other street furniture.	Nil
1.6		Need for a park and ride facility.	Disagree. DTEI has specifically indicated it does not wish for a park and ride facility to be within this location. In addition, there has not been a commitment to place a station in this location.	Nil
1.7		<u>Traffic</u> – The volume of and dispersal of traffic due to the proposed realignment of Raglan Avenue and change to the Edward Street/South Road intersection is questionable, particularly potential queuing at the Raglan Avenue rail crossing.	Traffic modelling undertaken to accompany the investigations has been based on the additional anticipated commercial and retail floor area, as well as the additional potential dwellings within the affected area. It has also considered the future growth of the metropolitan road network through MASTEM modelling and the road junction has been designed specifically to cater for these anticipated traffic loads without compromising the flow and therefore function of South Road as a Strategic freight corridor.	Nil
1.8		DTEI involvement and comment on the proposed changes to the road system are required.	Noted. All modelling and roadway design approach has been undertaken in collaboration with DPTI.	Nil
1.9		Object to the proposed removal of the Raglan Avenue signalised intersection and intensification	Noted. The revised master plan and road arrangement no longer seeks the removal of the Raglan Avenue / South Road intersection,	Nil

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Sub No.	Name	Summary of Issues Raised	Comment	Recommended DPA Amendments
1.10		of the Edward Street / Ackland Street intersection. Perhaps Raglan Avenue could remain open with new buildings bridging the road.	although distribution of traffic over time will still be towards the Ackland Street unction – reflective of the desire to maintain Raglan Avenue as a lower traffic and calmed main street environment, whilst also facilitating rationalisation of traffic flows for South road through the dog-leg movement of the east west traffic in this location. Noted. The revised master plan scheme addresses the reduced scope for retail and commercial land uses. The closure of Raglan Avenue is no longer proposed and the need for buildings to bridge the road is unviable economically.	Nil
1.11		Businesses located on both sides of South Road that could be affected by the proposed changes in road alignment should be consulted.	Noted. This will be undertaken as part of the Roads Opening and Closing process, which is separate to the DPA process.	Nil
1.12		Need for suitable public transport access points.	Agree. Provision has been made within the Concept Plan Map to include a rail station adjacent the zone, with existing bus routes able to be accommodated within the existing road network.	Nil
1.13		Pedestrian comfort and safety and issues mentioned above should be considered ahead of increased residential densities.	Agree. There is a strong focus on improving the pedestrian environment through any redevelopment on the affected land. This will include making sure buildings front onto public spaces and engage with pedestrians through shopfronts, windows etc, and also provide a comfortable environment through canopies, seating areas and a pleasant public realm that incorporates landscaping, public art and high quality finishes. The increase in residential densities, with dwellings above retail and commercial premises not only provides for passive surveillance after business hours, but also increases the activity within this location which contributes to the perception of safety.	Nil
1.14		<u>Design</u> – Would like to see elegant quality development rather than pokey, boxy Tuscan/contemporary types.	Noted. The Development Plan cannot discriminate about the specific architectural era or style of buildings, particularly given this location has no specific existing character of note. The attractiveness of development is open to interpretation and the Development Plan policy should be focussed in key design elements such as bulk, scale, modulation and articulation, rather than seeking to endorse a particular vernacular or period of architectural style.	Nil
1.15		Should not have a continuous built form edge to public spaces and road frontages.	Disagree. The policy supports the creation of built form edges along public spaces that are activated as much as possible.	Nil

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1.16		Buildings could incorporate an imaginative and elegant castle facet.	Disagree. The original castle façade of the earlier buildings on the land have long been removed. The Development Plan cannot be prescriptive in requiring such a specific design element, particularly in the lack of clear relevance to the site exists today.	Nil
1.17		Perhaps on higher levels balconies could contain “Hills Hoist” style balcony umbrellas.	Noted. The interpretation of the historic connection of the site to the Hills Hoist should be incorporated into the future development of the land, however, this is overly prescriptive for the Development Plan policy.	Nil
1.18		Should not have large landmarks on corner sites.	Disagree. The corner sites typically are the gateways into the zone and form an important part of identification and way finding throughout the zone. A landmark site does not need to be large, but rather needs to provide some design or treatment that makes it a notable element within the streetscape.	Nil
1.19		Don’t cram too much onto the site. Traffic management and a healthy buffer (from major transport routes?) could/should be the aim for the site, with perhaps housing if there is room left.	Noted. The intent of the policy is to create a more compact built form which supports an increase in resident and worker populations adjacent a transit corridor. This aligns with the intent of the 30 Year Plan for Greater Adelaide. It is acknowledged that the level of built form needs to be appropriately balanced with the need to manage other impacts such as traffic. This is particularly relevant given the strategic function of South Road. The modelling supporting the DPA supports the intensity of development sought.	Nil
1.20		<u>Residential</u> – Health impacts need to be taken into consideration in the design and location of any residential buildings. (noise, fumes from trains and vehicles using South Road)	Agree. Consideration of potential impacts as a result of proximity to South road have been included in the investigations. The policy restricts the development of dwellings within 50 metres of the road frontage as a result. Additional policy seeks to ensure that housing takes into account potential noise impacts from noise sources on occupants, and this is supported by existing Development Plan Policy (Interface Between Land Uses).	Nil
1.21		<u>Deliveries & Waste Removal</u> There is a need for the conditioning of delivery and waste removal vehicles associated with the proposal to ensure minimal impacts on adjoining residential areas.	Noted. This is an issue that would need to be considered in the assessment of development application. Notwithstanding this, there is policy within the existing Development Plan which allows for Council to adequately guide this issue when assessing development in this location. It is likely that all developments on this land, given the desire for a coordinated approach, will need to have private waste management facilities and servicing.	Nil

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1.22		<u>Stormwater</u> The stormwater system in Edwardstown is at capacity so needs to be taken into consideration.	It is noted that the pre-development characteristics of the land already are predominantly impervious in nature. The Master Plan for the entire affected area would most likely be equivalent to or slightly less than the existing impervious surfaces. Nevertheless, there is an opportunity to ensure that future development incorporates an appropriate level of water harvesting for use within development and the public realm. In this regard there is adequate policy coverage on this issue within the General section of the Development Plan.	Nil
1.23		<u>Security</u> Consideration should be made for caretaker residences.	Disagree. There is no need to distinguish this form of residence. The policy seeks to encourage mixed use development, including dwellings in this location.	Nil
1.24		Advisory Committee for Edwardstown_- should be re-instated.	This is a matter to be considered outside of the DPA process.	Nil
1.25		Council to keep local residents/businesses informed_– about the proposal/process	Council is undertaking a community engagement process for the Castle Plaza redevelopment, outside of the DPA process, which amongst other things seeks to keep the residents and businesses in the area informed of the redevelopment process.	Nil
2.1	Maureen Hearl	Would like to see existing railway stations remain, as replacing them with a station adjacent Raglan Avenue would result in further distance to walk.	Noted. The DPA does not seek to alter the existing stations. This is a decision for the State Government and not relevant to this DPA.	Nil
3.1	Robert Pearce	Edwardstown Station has historical significance so should not be removed.	Noted. See comment 2.1	Nil
4.1	Joe Carey	Something needs to be done about the impact that heavy vehicles have on the amenity of residential properties on Furness Avenue.	Council to undertake a “Local Area Traffic Management” Plan (which will include Furness Avenue) following creation of the new road system and development of the shopping centre extension component.	Nil
5.1	Tim Pfeiffer	Supportive of development as long as it is done right !	Noted. The DPA seeks to provide an appropriate level of guidance to achieve positive design outcomes.	Nil
5.2		Transport Management <u>Road Realignment</u> Would like to see a more direct route through to Edward Street rather than the proposed loop.	Noted. The revised Master Plan does provide a more direct route between Ackland Street and Raglan Avenue due to the reduced scale of envisaged retail development in the centre.	Nil

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5.3		<u>Connectivity with South Road, Edward Street and Rail Crossing</u> Major engineering works would be required to ensure appropriate flows through proposed intersection and realignment. Brook Street is shown as being off-set from the re-alignment of Ackland Street which may create traffic flow issues.	Concept design for the proposed Ackland Street realignment and intersection upgrade is being undertaken and the developer is aware of the scope of the engineering works required. The Brooks Street junction is no longer being revised within the new master plan.	Nil
		<u>Traffic Flow</u> Local streets (in particular Furness) are used as “rat runs” by tradespeople/workers With the expected increase in traffic volumes it was good to see the realignment would include 2 lanes in each direction	Noted. Consideration has been given to the potential for rat-running as a result of increased traffic volumes. This has been negated by ensuring appropriate flows on principal routes through the affected area, as well as the provision of traffic management measures that prevent these movements along potential rat-run routes (such as Adelaide Terrace and Raglan Avenue). One local traffic management measure suggested includes median extensions across the Raglan Avenue / Wilfred Street intersection. The new Ackland Street will be one lane in each direction with the additional road reserve width used for turning lanes/median, footpath widening, parking and bicycles lanes. This combination will provide sufficient capacity for anticipated additional traffic. This allocation of road space is intended to achieve a balance between improved amenity and traffic capacity.	Nil
5.4		<u>Car parking</u> There is currently little connectivity between the car parking areas to the east and west of the shopping centre – Is this to be rectified as part of the proposal?	Disagree. The retention of Raglan Avenue is a main street in the revised Master Plan, with on-street parking, provides connection between the eastern and western car parking areas for the existing centre. The indicative layout for the northern centre addition does connect the eastern and western car park layouts. However, this matter is an issue for a development application and not the DPA.	Nil
5.5		<u>Public transport, pedestrian and cycling access</u> Very supportive of the potential for a new train station at Raglan Avenue but opposed to the closure of either of the existing nearby stations.	Noted. The DPA does not commit to the closure of any rail stations. This is a decision that rests with the State Government and is not relevant to the DPA. Rather flexibility is provided within the character statement and policies to ensure that development considers the potential future station, as well as ensuring it maintains an appropriate level of connectivity to the existing stations.	Nil
5.6		Zoning, Design and Construction	Agree. Connection between the two shopping centre buildings is important in them reading as one centre and not competing with each	Nil

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5.7		Wants to see good connectivity between the existing internal mall and the proposed internal mall on the northern side of Raglan Avenue and well activated outdoor space. <u>CPTED</u> Would like to see passive forms of surveillance used and a design that attracts people to the area.	other. The revised scope for the centre addition however removes an additional internal mall, with the focus now places on creating a strong connection between the two sides of the road through the treatment of Raglan Avenue as a main street environment, with tree planting, landscaping, outdoor dining opportunities and designated pedestrian crossing points. Agree. The policy specifically identifies design techniques that encourage activation and activity to support surveillance. This is additional to the existing policy within the Development Plan (Crime Prevention Module).	Nil
5.8		Would like better clarity over the elements that the developer will be developing and those that will be sold off to a 3 rd party for development . The non-retail space could sit vacant for a considerable time so have to ensure the best possible outcome.	Noted. This is not relevant to the DPA and is being addressed via a Deed of Agreement between Council and the Developer. Design concepts have been developed for the existing and proposed key public roads and spaces which applies to the land. Council is also guided for future development by the policy constant which requires high quality public spaces, as well as Council's Streetscape Design Guidelines. The development of the overall site will be dependent on the market attractiveness, and flexibility and opportunity for development. The DPA seeks to provide policy guidance and flexibility to make the site attractive to further investment, which is likely to be supported by the developer's investment in the public road works and redevelopment of the Castle Plaza shopping centre.	Nil
5.9		<u>Public Space</u> With an intention for higher density residential (with smaller areas of private open space) there will be a need for more public open space than has been allocated Developer to contribute to the upgrading of Edwardstown Oval?	Noted. The developer will provide the existing treed area as a reserve, together with its upgrading. In addition, it is expected that the Raglan Avenue streetscape improvements will form an important part of public space, along with other areas of public realm generally. The requirement for contributions by the Developer for open space is outside the scope of DPA considerations.	Nil
5.10		<u>Relationship to neighbouring residential area</u> Is supportive of encouraging new higher density development but have to be mindful of protecting existing and proposed "character areas" also.	Noted. The neighbouring residential areas on the opposite side of the rail line are well separated from the development (approximately 30 metres) providing greater flexibility for a more intense form of development. Building height limits adjacent certain residential areas (such as to the south) are included in the policy to address specific issues of shadowing.	

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5.11		<u>Building Heights</u> Greater clarity is required in regard to the anticipated heights of buildings within the zone – are they to be 4 storeys or 12 storeys?	Disagree. The intent of the policy was to retain as much flexibility as possible to cater for changing market demands and needs. While it is noted that the policy does not provide clarity on this issue for the general community, height limits are effectively imposed by the OLS Limits associated with passing aircraft (effectively 7 storeys). Rather, given the desire for a more intense form of development in this location, minimum building heights are considered appropriate.	Nil
5.12		<u>Design & build quality</u> Need to be 2 nd to none in order to attract people to both live there and work and shop there.	Agree. The proposed policy highlights the importance of good design, and puts in place basic design principles which are needed to achieve good design outcomes. However, the policy should not be overly prescriptive.	Nil
5.13		<u>Site safety</u> There must be provisions for ensuring that the site is suitably remediated for the proposed mixed uses, particularly residential.	Agree. Remediation is required for those portions of the land covered by the DPA which are envisaged for residential land uses. This will be required as part of any development application. Refer to response to EPA submission for more detail on this issue.	Refer to Response to EPA Submission within "Summary and Response to Agency Submissions".
5.14		<u>Acknowledgement of site history</u> Needs to be acknowledgement of both any indigenous and previous industrial heritage within the site. The site is the home of the "Hills Hoist" so should be acknowledged with public art or the like.	Noted. The significance of the historic use of the site can be incorporated into future development, most notably through public art installations, or an interpretive trail. While the proposed policy does encourage the incorporation of public art within development, it is inappropriate to mandate what form the art should take. Rather this is more appropriately negotiated as part of the development application process, as well as part of engagement of the community / users of the spaces with which the artwork will be placed.	Nil
6.1	Greg Vincent – MasterPlan (on behalf of Lend Lease Real Estate – Marion Shopping Centre)	<u>Economic Analysis</u> <ul style="list-style-type: none"> Economic analysis undertaken does not adequately reflect the centre hierarchy outlined within the 30 Plan. Castle Plaza is shown as a District Centre. Proposed arrangement goes beyond the role of a "District Centre" (10,000m² - 40,000m²). The policies proposed for the zone allow the opportunity for this centre to grow to 70,000m², which is more akin to the size of a "Major District Centre" (50,000m² - 100,000m²) 	Disagree. A further analysis of these matters was considered by Pitney Bowes and are summarised as follows: <i>Appendix 3 to The 30-Year Plan for Greater Adelaide provides an activity centre typology, which includes the following description of the District Centre level in the hierarchy:</i> <i>District Centres</i> <i>Large centres that provide a range of retail, office, community and entertainment facilities. Shopping usually provides the most significant role, with associated civic, community, commercial and</i>	Nil

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Attachment B – Summary and Response to Public Meeting Submissions

Sub No.	Name	Summary of Issues Raised	Comment	Recommended DPA Amendments
		<ul style="list-style-type: none"> Economic analysis undertaken does not identify the actual retail needs of the community. Rather it appears to be based on the extent of expansion to Castle Plaza that Colonial First Mutual want to try to achieve (the assessment preceded the Sol and the investigation stage of the DPA process) There appears to be no analysis of the role of the centre or its place in the hierarchy, within the DPA. Council should undertake an independent retail/economic assessment to: <ul style="list-style-type: none"> ascertain what the actual retail needs of the community are in the locality and, be satisfied that the amount of retail expansion proposed is within the bounds of the centre hierarchy, and would not have a detrimental impact on other centres (DCe, NCe, LCe) in the catchment area. 	<p><i>recreational services. Outside metropolitan Adelaide, District Centres provide local offices, and health, welfare, entertainment and community facilities.</i></p> <p><i>The expansion that is proposed for Castle Plaza will increase the centre's retail offer, and the range of stores which it offers to the substantial trade area which the centre serves. However, the centre will continue to be a large centre providing a range of retail and other facilities, with shopping as the most significant role.</i></p> <p><i>The nature of all activity centres evolves and changes over time, and typically metropolitan activity centres of any scale or significance continue to grow over time. This has certainly been the pattern not only throughout Adelaide but even more so throughout the eastern state capitals of Melbourne, Sydney and Brisbane.</i></p> <p><i>There is a major and very significant difference between Regional Centres as designated in The 30-Year Plan for Greater Adelaide (of which Westfield Marion is one) and District Centres. As noted in the EIA prepared by Pitney Bowes, and as is made evident in the submission from MasterPlan, the Marion regional centre is currently 6 – 7 times the size of Castle Plaza centre, and has approval for expansion of an additional 18,000 sq.m.</i></p> <p><i>Even after its planned expansion, Castle Plaza shopping centre would be less than one-third the size of the expanded Marion regional centre.</i></p> <p><i>Therefore, the planned expansion of Castle Plaza would not be inconsistent with either the centres typology guidelines provided in The 30-Year Plan for Greater Adelaide or Objectives 5 and 7 of the Centres and Retail Development Objectives in the Marion (City) Development Plan.</i></p>	
6.2		<p><u>Zone Policy</u></p> <ul style="list-style-type: none"> The DPA contains no policy that reflects future expansion of floor space. Being a mixed use zone a greater range of uses is anticipated in the zone (retail, commercial, residential, community etc.) 	<p>Disagree. The policy for retail expansion is included in the desire for limiting large scale retail tenancies to certain locations identified within Concept Plan Mar/8 which reflects the future expansion.</p> <p>Noted. This is the intent and desirable in this location.</p> <p>Noted.</p>	<p>Nil</p> <p>Nil</p> <p>Nil</p>

Marion Council
Castle Plaza Activity Centre Development Plan Amendment
Attachment B – Summary and Response to public Meeting Submissions

Sub No.	Name	Summary of Issues Raised	Comment	Recommended DPA Amendments
		<ul style="list-style-type: none"> An additional 60,000m² of total floor space is to be added to the existing centre, with approximately 25,000m² being for retail uses. The policy in the DPA does not restrict/limit the amount of retail use to 25,000m² within the zone. In order to ensure a greater range of uses in the zone the policy needs strengthening. 	<p>Noted. Not considered necessary as will be largely market driven. It is noted that there is no longer any desire by the government to place retail floor area caps within centres.</p> <p>Disagree. The intent of the zone for a mixture of uses is clear and the flexibility provided in the range of uses is consistent with that desired within activity centres adjacent transit corridors.</p>	<p>Noted.</p> <p>Nil</p>
6.3		<p><u>Carparking Rates</u></p> <ul style="list-style-type: none"> A carparking rate of 4.1/100m² of retail space has been nominated for the Castle Plaza Centre Elsewhere the Development Plan requires 5/100m² for retail space. An argument has been put that Castle Plaza requires a lesser rate due to the proximity of good public transport systems. The Marion RCE has the 2nd largest public transport interchange outside of the City but has a carparking rate requirement of 5/100m². <p>There needs to be a more consistent and fairer carparking rate in Council's Development Plan to cater for other retail centres with similar access to public transport.</p>	<p>Agree in part. There is merit in considering reduced car parking ratios for other developments/centres within the Council area that have excellent access to high quality public transport. However, this is outside the scope of the DPA given that it is not within the identified affected area forming part of this DPA.</p> <p>It is noted that the Structure Planning for the southern corridor is to occur shortly and this will be followed by a DPA. It would be appropriate for this matter to be included and considered within that future DPA</p>	<p>Consider the investigation of revised car parking ratios for activity centres with excellent access to high quality public transport as part of future Council / Ministerial DPA.</p>

Attachment C – Timeframe Report

SCPA Timeframe Report: Process B – without consultation approval / 1 Step

The SOI was agreed by the Minister and Council on 9 May 2009

Key steps	Period agreed to in SOI	Actual time taken	Reason for difference (if applicable)
Investigations conducted and DPA prepared	10 weeks (July 2009)	October 2010	Investigations (site contamination, traffic flows, road alignments, building scale, open space etc) required more time than anticipated and DPA redrafted several times.
Agency and public consultation period (report on any delays incurred by agencies)	8 weeks (October 2009)	3 November 2010 to 12 January 2011	As above and:-consultation process put on hold whilst ground water contamination issues in suburbs to west of site were investigated.
Public Hearing held, submissions summarised and DPA amended in accordance with Council's assessment of submissions. Summary of Consultations and Proposed Amendments submitted to Minister for approval.	6 weeks (November 2009)	Public Hearing held on 28 September 2011 SCPA forwarded April 2015 Revised SCPA and amendment submitted July 2017.	As above Awaiting additional details/amendments to economic analysis and traffic reports. Significant time required to undertake site remediation and Auditor Assessment. Revisions to Master Plan and road layouts following changed market conditions and development potential.

CERTIFICATION BY COUNCIL'S CHIEF EXECUTIVE OFFICER

DEVELOPMENT REGULATIONS 2008

SCHEDULE 4A

Development Act 1993 – Section 25 (10) – Certificate - Public Consultation

CERTIFICATE OF CHIEF EXECUTIVE OFFICER

That a Development Plan Amendment (DPA) is suitable for the purposes of public consultation


I Mark Searle, as Chief Executive Officer of the City of Marion, certify that the Statement of Investigations, accompanying this DPA, sets out the extent to which the proposed amendment or amendments-

- (a) accord with the Statement of Intent (as agreed between the City of Marion and the Minister under section 25(1) of the Act) and, in particular, all of the items set out in Regulation 9 of the *Development Regulations 2008*; and
- (b) accord with the Planning Strategy, on the basis that each relevant provision of the Planning Strategy that related to the amendment or amendment has been specifically identified and addressed, including by an assessment of the impacts of each policy reflected in the amendment or amendments against the Planning Strategy; and on the basis that any policy which does not fully or in part accord with the Planning Strategy has been specifically identified and an explanation setting out the reason or reasons for the departure from the Planning Strategy has been included in the Statement of Investigation; and
- (c) accord with the other parts of the Development Plan (being those parts not affected by the amendment or amendments); and
- (d) complement the policies in the Development Plans for adjoining areas; and
- (e) satisfy the other matters (if any) prescribed under section 25(10)(e) of the *Development Act 1993*.

The following person or persons have provided advice to the council for the purposes of section 25(4) of the Act:

- David Barone, MPIA CPP
- Peter Jensen, LFPIA CPP
- Steve Hooper, MPIA CPP
- David Melhuish, MPIA CPP

DATED this 21 day of October 2010


.....
(Signature of Chief Executive Officer)

Attachment E – Schedule 4B Certificate

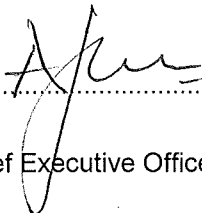
Schedule 4B—Certificate—section 25(14)(b)

Certificate of chief executive officer that an amendment to a Development Plan is suitable for approval

I, Adrian Skull, as Chief Executive Officer of City of Marion, certify, in relation to the proposed amendment or amendments to Marion Council Development Plan as last consolidated on 28 April 2016, referred to in the report accompanying this certificate—

- (a) that the Council has complied with the requirements of section 25 of the Development Act 1993 and that the amendment or amendments are in a correct and appropriate form; and
- (b) in relation to any alteration to the amendment or amendments recommended by the Council in its report under section 25(13)(a) of the Act, that the amendment or amendments (as altered)—
 - (i) accord with the Planning Strategy, on the basis that each relevant provision of the Planning Strategy that relates to the amendment or amendments has been specifically identified and addressed, including by an assessment of the impacts of each policy reflected in the amendment or amendments against the Planning Strategy, and on the basis that any policy which does not fully or in part accord with the Planning Strategy has been specifically identified and an explanation setting out the reason or reasons for the departure from the Planning Strategy has been included in the report of the Council; and
 - (ii) accord with the other parts of the Development Plan (being those parts not affected by the amendment or amendments); and
 - (iii) complement the policies in the Development Plans for adjoining areas; and
 - (iv) satisfy the other matters (if any) prescribed under section 25(14)(b)(ii) of the Development Act 1993; and
- (c) that the report by the Council sets out a comprehensive statement of the reasons for any failure to complying with any time set for any relevant step under section 25 of the Act; and
- (d) that the following person or persons have provided professional advice to the Council for the purposes of section 25(13)(a) of the Act: David Melhuish, Senior Policy Planner, City of Marion, Steve Hooper, former Manager Development and Regulatory Services, City of Marion, David Barone, MPIA, CPP.

Date: 26 July 2017


.....
Chief Executive Officer

Attachment F – Additional Matters and Investigations

Economic Impact Assessment – Response to Submissions – October 2011

Castle Plaza, Adelaide

Economic Impact Assessment Response to Submissions

October 2011

DRAFT



Pitney Bowes Business Insight

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Prepared for: Colonial First State Global Asset Management

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Introduction

In March 2009 Pitney Bowes Business Insight (PBBI) prepared an Economic Impact Assessment (EIA) for the proposed expansion of Castle Plaza, located in the suburb of Edwardstown in southern Adelaide.

Two submissions have been received by the City of Marion regarding the EIA – the first from the City of West Torrens, and the second from MasterPlan, on behalf of the owners of Marion Shopping Centre. This report responds to the matters raised in those submissions which relate specifically to the EIA.

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1. Summary of Pitney Bowes EIA

The key findings and conclusions of the EIA prepared by Pitney Bowes Business Insight in March 2009 were the following:

- The key economic benefits that would result from the provision of additional retail facilities at Castle Plaza as now proposed would be:
 - Increased shopping choice for residents of the surrounding area.
 - Significant additional employment, estimated at some 741 long-term jobs created by the additional retail floorspace, as well as further employment due to the construction of the project.
 - Increased amenity for residents.
 - A positive adaptive re-use of an underutilised site.
- Against these economic benefits, the EIA concluded that there would be some likely trading impacts on other retail facilities throughout the surrounding region. In particular, in regard to this point, the EIA concluded as follows:
 - The expanded Castle Plaza was expected to redirect an estimated \$62 million of retail expenditure, from its main trade area, which would otherwise go to other retail facilities, located both within the main trade area and beyond. This estimation was presented for 2010/11, which at that point was anticipated to be the first full trading year of the expanded centre.
 - The retail expenditure generated by the main trade area population at 2010/11 was projected at \$1,506.5 million, meaning that the additional expenditure directed to the expanded Castle Plaza would be equivalent to about 4% of the available expenditure.
- The estimated order of impact on other main trade area retailers was projected in the EIA at an average of 4%, at 2010/11.

- This level of impact was not considered likely to have any viability implications for any main trade area retailers.
- The expansion of Castle Plaza was projected to also have some impacts on various retail facilities located outside the trade area, in particular Westfield Marion and, to a lesser degree, the Adelaide CBD. However, the percentage impacts on those centres were projected to be minimal, given their respective scales and estimated turnover levels as compared with the volume of sales which would be likely to be transferred from them to the expanded Castle Plaza.

2. Submission from City of West Torrens

The submission from the City of West Torrens has raised the question of economic impact on retailers within West Torrens and in particular the impact on the existing District Centre at Kurralta Park as its major concern relating specifically to the EIA:

The City of West Torrens submission further states:

Council is concerned that the report by Pitney Bowes is vague and inconclusive about the potential impact on retail turnover at the Kurralta Park District Centre.

Response from Pitney Bowes

Map 3.1 at page 13 of the EIA (reproduced as Appendix 1 to this report) shows the location of Centro Kurralta Park relative to Castle Plaza. The map indicates that Centro Kurralta Park is located approximately 3 km to the north of Castle Plaza, and on the northern side of Anzac Highway. The map also shows that Centro Kurralta is situated on the boundary of the defined main trade area for Castle Plaza, technically just outside the main trade area.

The map further shows that Cumberland Park Shopping Centre is situated closer to Castle Plaza than Kurralta Park, as are various supermarket based centres, all of which are located within the main trade area defined for Castle Plaza.

The average trading impact expected to result on other trade area retail facilities as a result of the proposed expansion of Castle Plaza is 4% as outlined above. This is because the amount of additional retail sales volume which will be attracted to Castle Plaza following its expansion represents a very small share of the total retail expenditure of trade area residents.

In considering the likely impact on Centro Kurralta, the two key factors to be taken into account are the following:

- The trade area that is served by Centro Kurralta, as compared with the trade area that is served by Castle Plaza; and
- The level of direct competition between the two centres.

Given the location of Centro Kurralta relative to the main trade area that is served By Castle Plaza as shown on Map 3 attached, it is clear that a substantial proportion of the trade area served by Centro Kurralta, probably more than half, falls outside the main trade area that is served by Castle Plaza. This conclusion is reached because Centro Kurralta is situated at the northern edge of the main trade area served by Castle Plaza, and is on the northern side of Anzac Highway. The main trade area served by Centro Kurralta would therefore be expected to fall predominantly to the north of Anzac Highway, both because of the centre's location and because of the locations of other comparable or larger centres to its south, in particular Cumberland Park SC and Castle Plaza.

Map 3 also shows that to the north or west of Centro Kurralta the nearest other discount department store based centre is Fulham Gardens, which is situated more than 6 km to the north-west. Therefore, Centro Kurralta would most likely draw the bulk of its business from the extensive suburban area which includes Kurralta and the suburbs to its north such as Hilton, Torrensville and Brooklyn Park.

Given this situation, it can reasonably be concluded that the likely order of impact on Centro Kurralta will be no greater than the average impact expected on retail facilities located within the Castle Plaza main trade area, and in all likelihood will be somewhat smaller than that average impact, i.e. 4% or less.

An impact of around 4%, and even higher impacts of, say, 6%–8%, are typical outcomes resulting from normal competitive situations as shopping centres are remodelled, refurbished or expanded throughout Australia's major urban areas. Impacts of such magnitude do not cause any concerns as to the future viability of any reasonably based shopping centre. It is also relevant to note in this regard that no objections to the proposed expansion of Castle Plaza have been received from the owner of Centro Kurralta.

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3. Submission from MasterPlan

The submission from MasterPlan, on behalf of the owners of Marion Shopping Centre, makes the following statement regarding the Pitney Bowes' EIA:

We would like to draw the City's attention to the economic analysis undertaken by Pitney Bowes, which was based on the Marion Activity Centre having a base retail floorspace of 109,000 sq.m. The Marion Shopping Centre has an existing floorspace of 145,000 sq.m, and an approved floorspace of 163,000 sq.m. Consequently, it can be considered that this element of the economic analysis undertaken by Pitney Bowes has not been based on accurate information, and as such the analysis has not taken into account the expansion of competing centres.

The Economic Impact Assessment identifies that the bulk of the impact is likely to be felt by the larger competitive centres outside of the trade area, including Marion Shopping Centre. It fails to provide any specific quantitative or empirical data related to the direct impact. Accordingly, the economic impact report does not provide clear justification for the ability to establish additional retail floorspace through the rezoning process that will not detrimentally impact upon or hinder the development, function or role of the Regional Centre.

Response from Pitney Bowes

The EIA referred to the current retail floorspace of Westfield Marion at Table 4.1 on page 27. Attached as Appendix 2 to this report is the current entry in the **Property Council of Australia (PCA) Shopping Centres Database** for Westfield Marion, which corresponds almost exactly with the indicated retail floorspace of 109,360 sq.m as shown in Table 4.1 of the EIA.

Other facilities make up the balance of the 145,000 sq.m of floorspace claimed for Marion Shopping Centre by MasterPlan, including commercial floorspace, a Greater Union cinema, a Bunnings hardware store, Bowland, Super Cheap Auto and various other motor vehicle related or entertainment related facilities.

Therefore, the retail floorspace of 109,360 sq.m for Westfield Marion as indicated in the EIA is correct. Further, the expansion of Castle Plaza as proposed is not at all likely to have any detrimental impact on these various other facilities located at Marion.

With regard to the likely order of impact of the expansion of Castle Plaza on Westfield Marion, the EIA stated, at page 44, as follows:

Part 4 also shows the expansion of Castle Plaza is projected to reduce escape spending, or that spending which would otherwise be directed to retailers beyond the main trade area, by around \$42.6 million in 2010/11. The majority of this impact is likely to be distributed across a number of the larger centres located beyond the trade area, such as Westfield Marion to the south and the Adelaide CBD to the north.

The percentage impact to these centres is projected to be relatively minimal given the current MAT being achieved at Westfield Marion is \$738.1 million, while the estimated turnover level being achieved by retailers in the Adelaide CBD is in the order of \$1.5 billion.

Even if all of the sales increment to be achieved by Castle Plaza were to be redirected from Westfield Marion, then the percentage impact on Westfield Marion would be less than 10%. Whilst that would be a noticeable impact, it would not be an impact likely to cause undue stress, as opposed to reasonable competition, for Westfield Marion and certainly not likely to threaten its future, or its future potential for expansion. Indeed, it would most likely result in the expansion of Westfield Marion being pursued with renewed vigour.

In any case, clearly the percentage trading impact on Westfield Marion will be much, much lower than 10%. As previously noted in this report, the City of West Torrens is concerned about the impact on facilities located in that municipality, in particular the District Centre at Kurralt Park. Obviously there would be some impact on that centre. Similarly, there would be some impact on Cumberland Park Shopping Centre, as there would be on the various supermarket facilities located within and just beyond the main trade area identified for Castle Plaza. There would also be some trading impact on the various facilities located throughout Glenelg, and on facilities located further away, such as the Adelaide CBD.

Once all of the likely outcomes are taken into account, the impact that can be anticipated for Westfield Marion will be much less than 10%, and most likely in the order of a few percentage points. An impact of 3% on Westfield Marion, for example, given its reported sales volume, would mean a sales transfer in excess of \$20 million for the expanded Castle Plaza. An impact of 4%, which would still be a relatively modest impact for Westfield Marion, would mean a sales transfer of around \$30 million, and in our view it is extremely unlikely that the order of impact would be any higher than this figure.

Westfield Marion, as the submission from MasterPlan states, is committed to a further expansion of approximately 18,000 sq.m. That expansion would obviously increase significantly the retail sales volume of Westfield Marion, and will have some impact on Castle Plaza, reducing the current sales volume of Castle Plaza at the time that Westfield Marion is expanded. Therefore, the likely order of impact on Westfield Marion resulting from the Castle Plaza expansion will, in net terms, be significantly less than the 4% indicative estimate outlined above – in broad terms, the two impacts are likely to cancel each other out.

Given all of the above, in our view the statement by MasterPlan that the EIA report does not provide clear justification for the ability to establish additional retail floorspace through the rezoning process that will not detrimentally impact upon or hinder the development, function or role of the (Marion) Regional Centre, is not supportable.

The second point raised in the submission received from MasterPlan relates to *The 30-Year Plan for Greater Adelaide* and the designation of Castle Plaza as a 'District Centre' under the Activity Centre Typology included in the plan. Further to this point, MasterPlan also claims that the proposed redevelopment of Castle Plaza is 'inconsistent' with Objectives 5 and 7 of the *Centres and Retail Development Objectives* contained within the City of Marion Development Plan. Those objectives are the following:

Objective 5

Centres developed in accordance with a hierarchy based on function, so that each type of centre provides a proportion of the total requirement of goods and services commensurate with its role.

Objective 7

Development of the Marion Regional Centre as a focus for a large part of the southern Adelaide metropolitan area.

Response from Pitney Bowes

Appendix 3 to *The 30-Year Plan for Greater Adelaide* provides an activity centre typology, which includes the following description of the District Centre level in the hierarchy:

District Centres

Large centres that provide a range of retail, office, community and entertainment facilities. Shopping usually provides the most significant role, with associated civic, community, commercial and recreational services. Outside metropolitan Adelaide, District Centres provide local offices, and health, welfare, entertainment and community facilities.

The expansion that is proposed for Castle Plaza will increase the centre's retail offer, and the range of stores which it offers to the substantial trade area which the centre serves. However, the centre will continue to be a large centre providing a range of retail and other facilities, with shopping as the most significant role.

The nature of all activity centres evolves and changes over time, and typically metropolitan activity centres of any scale or significance continue to grow over time. This has certainly been the pattern not only throughout Adelaide but even more so throughout the eastern state capitals of Melbourne, Sydney and Brisbane.

There is a major and very significant difference between Regional Centres as designated in *The 30-Year Plan for Greater Adelaide* (of which Westfield Marion is one) and District Centres. As noted in the EIA prepared by Pitney Bowes, and as is made evident in the submission from MasterPlan, the Marion regional centre is currently 6 – 7 times the size of Castle Plaza centre, and has approval for expansion of an additional 18,000 sq.m.

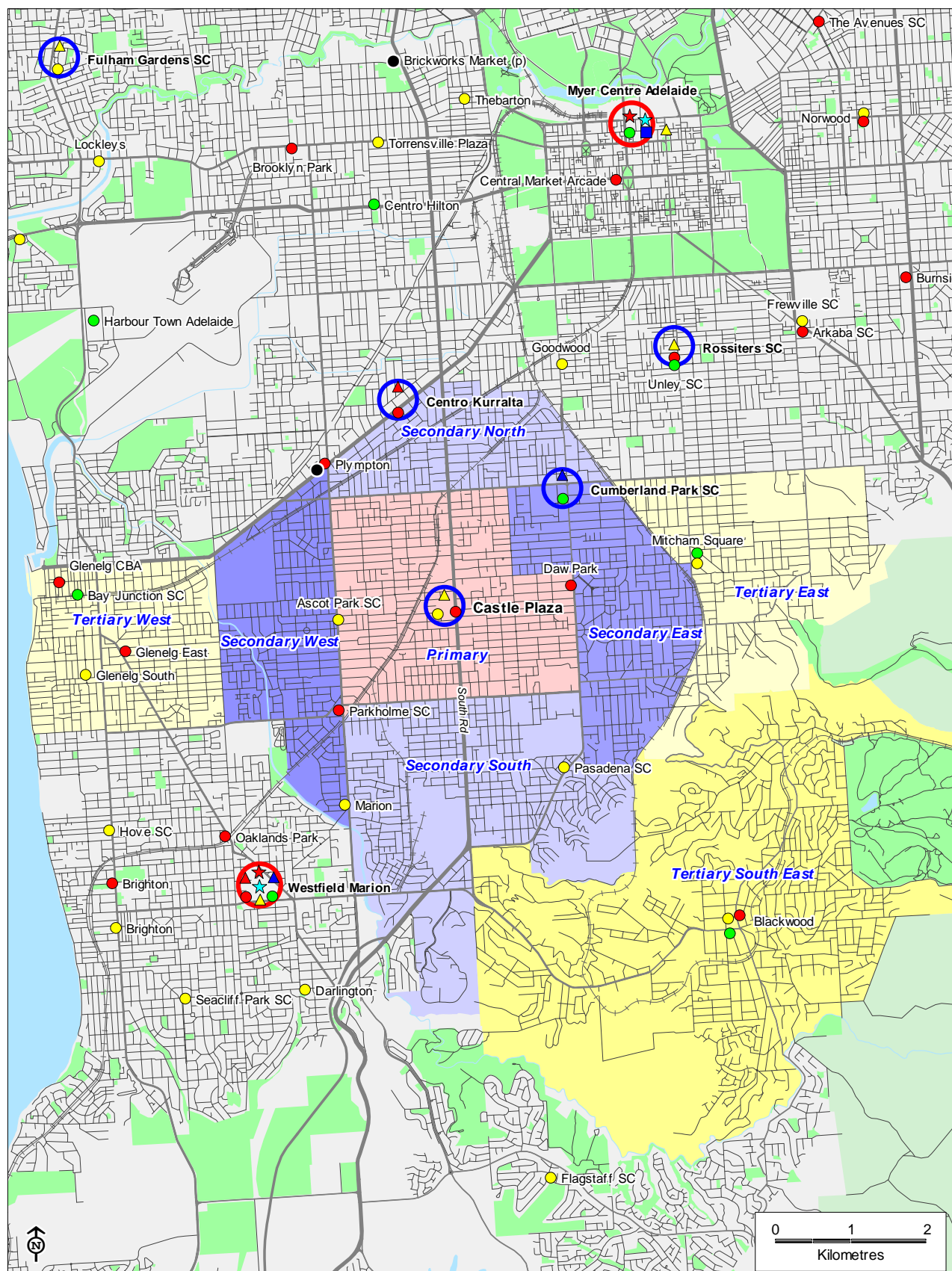
Even after its planned expansion, Castle Plaza shopping centre would be less than one-third the size of the expanded Marion regional centre.

Therefore, the planned expansion of Castle Plaza would not be inconsistent with either the centres typology guidelines provided in *The 30-Year Plan for Greater Adelaide* or Objectives 5 and 7 of the *Centres and Retail Development Objectives* in the Marion (City) Development Plan.

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Appendix 1

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Map 3: Castle Plaza
Trade Area & Competition

- | | | |
|-----------------------|---------------|----------------|
| ○ Regional Centre | ★ Myer | ● Woolworths |
| ○ Sub-Regional Centre | ★ David Jones | ● Coles |
| | ▲ Big W | ● Foodland IGA |
| | ▲ Target | |
| | ▲ Kmart | |
- * Haloed symbols indicate proposed stores*

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Appendix 2

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Subscriber Centre Report

Page 1 of 2

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Brought to you by...

[Print friendly](#)**Westfield Marion****Address:** 297 Diagonal Road Oaklands Park SA**Region:** Adelaide**Phone:** (08) 8298 1188**Fax:** (08) 8298 7032**E-Mail:** marion@au.westfield.com**Website:** [Westfield Marion](#)**Owner(s):** Westfield Group / Lend Lease (APPF)**Owner Type:** Listed Property Trust / Unlisted Property Trust**Date Purchased:** 1/06/1987**Purchase Price:****Management:** Westfield Shopping Centre Management**Merchant Association:** No**Centre Manager:** Malcolm Creswell**Marketing Manager:** Cathy Main**Leasing Manager:** Jim McConnell**Operations Manager:** Peter Schmidt**Tenancy Details**

Major Tenants	65,407 sq.m
Lincraft	1,350 sq.m
Rebel Sport	1,600 sq.m
Dan Murphy's	1,655 sq.m
Harris Scarfe	2,992 sq.m
Coles	3,637 sq.m
Woolworths	4,577 sq.m
Kmart	6,623 sq.m
Target	7,413 sq.m
Big W	7,948 sq.m
Myer	13,796 sq.m
David Jones	13,816 sq.m
Specialties	44,142 sq.m [301 specialty shops on 2 level(s)]

3, 5 Star Alterations, ABC Shop, Adairs, Adelaide Bank, Alphones, Amcal Chemist, Angs Special Coffee And Teas, Angus & Coote, Angus & Robertson, ANZ Bank, Aroma Café, Australia Post, Australian Central Credit Union, Australian Geographic, Ausvac, B Shop, Bakers Delight, Balfours, Bank Sa, Barbaras Home & Gifts, Best & Less, Betts, Bevilles Jewellers, Big City Chic, Boost Juice, Bras N Things, Budget Eyewear, Cafe De Paris, Campbell Page, Campbells Newsagencies, Carousel Fruit, Carrig Chemists, Casalboro Salon, Casuarina, Central Line, Charlesworth Nuts, Charlies Club Sandwich, Charltons Pool Lounge, Cheap As Chips, Chi Body Spirit, Chicken Treat, Cibo Espresso, Citi Nails & Beauty, City Chic, Citywide Clothing Alterations, Clinique, Cobbler Extra, Cold Rock Ice Creamery, Colorado, Commonwealth Bank, Computer Net, Confucius, Cookie Man, Cool Connect, Cotton On, Cotton On Kids, Country Road, CPS Credit Union, Crazy Johns, Creative Poultry, Credit Union Australia, Cue, Curry Zone, Daily Grind Skate Co, Darrell Lea Chocolates, Delishes, Diamonds, Dick Smith Electronics, Discount Curtains & Lace, Diva, Donut King, Dusk, Dymocks, EB Games, Ed Harry Menswear, Electronics Boutique, Erichsen Jewellers, Escape Internet, Esprit, Esprit Kids, Essential beauty, Evia Yoghurt Bar, EZYDVD, Factorie, Fellas Gifts, Flaschengeist, Fletcher Jones, Flight Centre, Fone Zone, Foot Locker, Game, Giordano, Global Gourmet, Globalize, Gloria Jean's Coffees, Gloss, Godfreys, Goldmark, Gourmet Kitchen, Grahams Jewellers, Groove Accessories, Gw Cox My Jeweller, Hair Machine, Hairhouse Warehouse, Happy House Design, Harvey World Travel, Healthy Life, Hi-Tech Communication, Homeart, House, Hudson's Coffee, Hungry Jacks, Ice Design, Imagine If - Educational Toys & Hobbies, Inglot, Intensity, Itami, Jacqui E, JAG, Jay Jays Trademark, JB Hi Fi, JeansWest, Jeremys Card & Gifts, Jetset Travel, Jetty Surf, Jj S Taste Of Italy, Joanne Mercer, Jol, Jrs Surf And Ski, Judells, Jurlique, Just Cuts, Just Jeans, Just Leather, Just Spectacles, Kaos, Kartridge Kiosk, Kathmandu, Katies, Kaz Hair & Beauty, Kazbar Yiros, Kennys Cardiology, KFC, Kids Central, Kids United, Kids Who, King of Knives, Kleins, Kookai, Laubman & Pank Optometrists, Lazari Hair Care, Lbnt-Valleygirl, Lenards, Look Melbourne, Look Smart Alterations, Lost To Mmi, Man to Man, Manuels Seafood, Marion Florist, Marion Hair & Beauty, Marion Locksmiths, Marion Pets, Mathers For Shoes, Mazzucchellis, Mcdonalds, Mcl Fashions, Medibank Private, Medicare, Men At Work, Merringtons, Michael Hill Jeweller, Michels Patisserie, Mikasa, Millers Fashion Club, Mister Minit, Mitchells Adventure, Mo's Mobile, Motoquipe, Motor Registration, Mtm Collections, Muffin Break, Mutual Community, My Size, Mystic Moon, Napoleon Perdis, National Australia Bank, National Pharmacies Optical, Net-Lan Pc Games Centre, New York Bar & Grill, Noni B, Nuts About Charlesworth Nuts, Oporto, OPSM, Optus World, Oxfam Community Aid Abroad, Oz Bites, Perfume Empire, Pets Paradise, Phone Xpress, Pizza Hut, Platypus Shoes, Police Credit Union, Portmans, Power Loan, Price Attack, Priceline, Prints 4 U, Professional, Profile Hair Studio, Pumpkin Patch, Pure & Natural, Rabbit Photo, Red Back Char Grill, Refan, Reflection, Revolution Eyz, Rheinland Boutique Bakery, Rishi Fashions, Rivers, Rockmans, Rodd & Gunn, Roger David, Rowe & Jarman, Rubi Shoes, Sanity, Savings & Loans Credit Union, Shaver Shop, Sheppards, Shiels, Shoo Biz, Silver Circle, Sintra Metro, Smokemart & Giftware, Sonic Hearing, Southcoast Lighting, Southern Music, Spargos, Spec Savers, Spendless Shoes, Sportsgirl, Springfield Butchers, STA Travel, Standish

http://pbmiretail.mapinfo.com/pca/subscriber_html_centre.aspx?name=Westfield%20... 3/23/2011

Cycles, Strandbags, Subway, Sumo Salad, Sunglass Hut International, Super Cheap Auto, Superstars & Legends, Supre, Sussan, Suzanne Grae, Swarovski, Tandy Electronics, Tarocash, Teds Camera Stores, Telechoice, Telstra Shop, Temt, Terry White Chemists, The Athletes Foot, The Body Shop, The Coffee Club, The General Trader, The Optical Superstore, The Perfume Connection, The Reject Shop, The Yoghurt Shop, Tnm-Hocus Pocus, Trak Cycles, Trims, Turners Butchers, Valleygirl, Victoria Station, Virgin Music, Vision Centre, Vizzi, Vodafone, Watch Works Australia, We Massage, Wendys, Westpac, Wetzels Pretzels, Wild, Williams The Shoemen, Wilchery, Woks Cookin', Wombat, Woolworths Liquor, YD, Zamels Jewellers, Zu

Total Retail Area (GLAR):	109,549 sq.m
Other Tenancies	27,388 sq.m
Motoquipe	96 sq.m
Shenanigans Bar & Grill	400 sq.m
Intencity	505 sq.m
Charltons Pool Lounge	525 sq.m
Supercheap Auto	684 sq.m
Beach House Health & Fitness	844 sq.m
KFC	1,222 sq.m
Bowland	1,980 sq.m
Bunnings	10,102 sq.m
Greater Union Cinema	11,030 sq.m
Office Tenancies	5,184 sq.m [20 office tenants on 6 level(s)]
Total Centre Area:	142,121 sq.m

Other Centre Details

Site Area(ha):	23
Open Car Bays:	3,721
Enclosed Car Bays:	1,779
Promotion Fund:	Yes
Promotion Area:	Yes
Food Court Outlets:	19
Food Court Seats:	850
Cinema Screens:	26
Pedestrian Estimate (pa):	15,599,000
MAT:	\$738,100,000
GST Inclusive:	Yes

Construction

Year Opened: 1980
 Year(s) Refurbished/Extended: 1984 1987 1989 2001 2003
 Plans for Refurbishment: Yes
 Plans for Extension: Yes
 Developer(s): Westfield Developments

Centre Type: Enclosed Mall
 Ventilation: Fully Air Conditioned
 Data correct as at: 17/11/2009
 Architect(s): Westfield Design & Construction

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http://pbmiretail.mapinfo.com/pca/subscriber_html_centre.aspx?name=Westfield%20... 3/23/2011





Traffic Impact Assessment - Final with Response to Comments – 13 July 2012

Castle Plaza Shopping Centre Expansion



TRAFFIC IMPACT ASSESSMENT

- Final with Response to Comments
- 13 July 2012



Castle Plaza Shopping Centre Expansion

TRAFFIC IMPACT ASSESSMENT

- Final with Response to Comments
- 13 July 2012

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Document history and status

Revision	Date issued	Reviewed by	Approved by	Date approved	Revision type
Rev A	6 Feb 09	G. Davidson	S. Elaurant	6 Feb 09	Draft
Rev B	10 Feb 09	W. Coller	S. Elaurant	10 Feb 09	Minor corrections
Rev C	27 Mar 09	W. Coller	S. Elaurant	27 Mar 09	Additional work
Rev D	16 Apr 09	J. Haigh	D. Waltham	16 Apr 09	Final
Rev E	7 Sep 11	S. Elaurant	D. Osborne	7 Sep 11	Revised Final
Rev F	16 Dec 11	S. Elaurant	S. Freeman	16 Dec 11	Revised Final
Rev G	18 June 12	S. Osborne	D. Osborne	16 Dec 12	Revised Final
Rev H	11 July 12	S Elaurant	G Davidson	12 July 12	V2 Response to Comments

Distribution of copies

Revision	Copy no	Quantity	Issued to
Rev A	1 x Electronic	1	Jensen Planning, Don Smith
Rev B	1 x Electronic	1	Jensen Planning, Don Smith, Phil Lawes
Rev C	1 x Electronic	1	Jensen Planning, Don Smith, Phil Lawes
Rev D	1 x Electronic	1	Jensen Planning
Rev E	1 x Electronic	1	Don Smith (Colonial First State)
Rev F	1 x Electronic	1	Jensen Planning
Rev G	1 x Electronic	1	Jensen Planning
Rev H	1 x Electronic	1	Jensen Planning

Printed:	13 July 2012
Last saved:	12 July 2012 04:53 PM
File name:	I:\BAIF\Projects\BA24341\Deliverables\Reports\100\TP_00X\BA24237_RE_TP_001.docx
Author:	Scott Elaurant / Daniel Osborne
Project manager:	Scott Elaurant / Daniel Osborne
Name of organisation:	Colonial First State Property Management
Name of project:	Castle Plaza Shopping Centre Expansion
Name of document:	Traffic Impact Assessment
Document version:	Rev H
Project number:	BA24237 / BA24341.100



1. Introduction

1.1. Background

The Hills Industries Site is a large parcel of land north of the existing Castle Plaza shopping centre. It is bounded by South Road, Angus Avenue, Raglan Avenue and the Noarlunga rail reserve. The site is now controlled by Colonial First State Property Management, who also own Castle Plaza Shopping Centre.

This report documents a traffic impact assessment for the proposed development of this land including an expansion of the Castle Plaza shopping centre, as well as associated commercial and residential developments. The proposed development, as assessed in this document, is as per the following DPA supporting documentation:

- Proposed precinct plan, Hames Sharley drawing no. SK_CP_100, dated 13/06/12
- Road layout plan, Wallbridge & Gilbert drawing no. SK30B, dated 15/02/12

This report expands upon an original report prepared on arterial road traffic impacts in response to the Department of Planning, Transport and Infrastructure (DPTI) requirements for assessment of the project. It has been expanded to include other issues such as impact on local traffic, access and amenity, so that it may form a more comprehensive overview of the traffic impact of the proposed development. This is for the guidance of DPTI and City of Marion Council and is in response to traffic issues raised by local residents.

This revised (July 2012) version of the report contains a response to comments received during public consultation on the project planning proposal. It does not alter the engineering analysis or modelling contained in the previous version of December 2011.

1.2. Brief

SKM has been engaged by Jenson Planning on behalf of Colonial First State Property Management to undertake a traffic impact assessment for the proposed development of the Hills Industry Site on South Road, Edwardstown. The brief was to examine the proposed development options for their site and to investigate traffic impacts and remedial works that may be required to accommodate it.

1.3. Scope of Report

This report has been prepared in accordance with the brief issued by Jensen Planning and the proposal made by SKM of November 2008. The technical scope of the analysis contained in this report is as follows:



- Definition of assessment framework and data utilised;
- Modelling of existing system capacity;
- Estimation of development traffic generation;
- Assessment of external traffic impact;
- Identification of works required to ameliorate traffic impact;
- Estimation of development car parking requirements

Note that this report documents traffic assessment of intersections using the SIDRA computer package. DPTI has requested that micro-simulation analysis using the AIMSUN package also be carried out. This analysis is documented in the separate SKM reports, entitled *Castle Plaza Shopping Centre Expansion, Aimsun base model development (June, 2011)* and *Castle Plaza Shopping Centre Expansion, Aimsun scenario model analysis report (June 2011)*.

1.4. Assessment Framework

A meeting was held with planning officers of the Department of Planning, Transport and Energy (DPTI) on 1 December 2008, to agree the assessment parameters for the traffic assessment. The following points were confirmed electronically on 4 December 2008:

- DPTI intends to ultimately transform South Road into a non-stop corridor. The section adjacent to the site is currently unfunded, and not likely to be funded within 10 years (or more).
- In line with previous advice, DPTI considers Raglan Avenue should be left-in/left-out only. This would also improve the amenity/safety of Raglan Avenue for pedestrians through the centre. Note: under the current Castle Plaza development design, access to Raglan Avenue from South Road will be closed.
- Any proposal involving constructing a new station in place of the existing Edwardstown and/or Woodlands Park stations would need to demonstrate the potential benefits for the local community in conjunction with the shopping centre (e.g. access, amenity, etc)
- DPTI requires improvements to be undertaken to the intersections on South Road so that the Level of Service (LOS) along South Road is maintained upon the completion of the development.
 - Analysis should be carried out for Edwards Street, Raglan Avenue, Furness Avenue and Corunna Avenue intersections but no further
 - Traffic generation rates from the NSW RTA would be acceptable to DPTI for the assessment of new land uses.
 - Distribution of traffic generated by the development is to be determined by SKM.



- Development generated traffic is to be added to predicted South Road traffic.
- SIDRA is to be used to determine individual intersection improvement needs.
DPTI considers Aimsun model should also be used to demonstrate that the final proposed scheme works effectively in terms of signal coordination and capacity.
- DPTI agrees to SKM interrogating MASTEM to obtain traffic volumes for input into analysis, upon confirmation of the model to be used. No other information from the MASTEM model is to be extracted without explicit agreement from DPTI.
- Analysis should be carried out for one horizon year representing the completion of the development. MASTEM is capable of extracting information for 2011 and each 5 year period beyond that year up to 2031.
- Also consider traffic from east and west including through traffic to Raglan Avenue / South Road intersection.
- Some changes to local traffic access (e.g. Caulfield Avenue) may be acceptable to DPTI provided alternative access exists and safety is improved.



2. Existing Situation

2.1. Base Year Traffic

The impacts of the proposal on existing signalised intersections along South Road adjacent to the site have been modelled using Sidra Intersection 3.2. These included:

- Edward Street and Ackland Street;
- Raglan Avenue;
- Furness Avenue; and
- Corunna Avenue.

Additionally, the nearby intersection of Raglan Avenue and Marion Road has been modelled.

2.2. Intersection analysis

A number of assumptions were made for the SIDRA analysis, these included:

- A peak flow factor of 100% has been assumed;
- The peak flow period has been assumed to be the whole peak hour. This is because the peaks on major arterial roads tend to be more constant;
- The SIDRA calculated practical cycle time has been adopted for all intersection analysis

2.2.1. Current Volumes

The traffic volumes used were the most recent counts available from DPTI at the time of the assessment (2011).

The results of this analysis are summarised in Table 2-1.

■ **Table 2-1: Existing PM Peak Intersection Analysis (2011)**

Location	Degree of Saturation	LOS	Average Delay (s)	95 th percentile max queue (m)
Edward Street/Ackland Street/South Road	0.90	B	34.9	251
Raglan Avenue/South Road	1.00	A	4.4	108
Furness Avenue/South Road	0.86	A	8.3	118
Corunna Avenue/South Road	0.797	A	4.2	109
Raglan Avenue/Marion Road	0.79	C	24.7	285

Degree of Saturation = worst case movement; LOS = average Level of Service for intersection

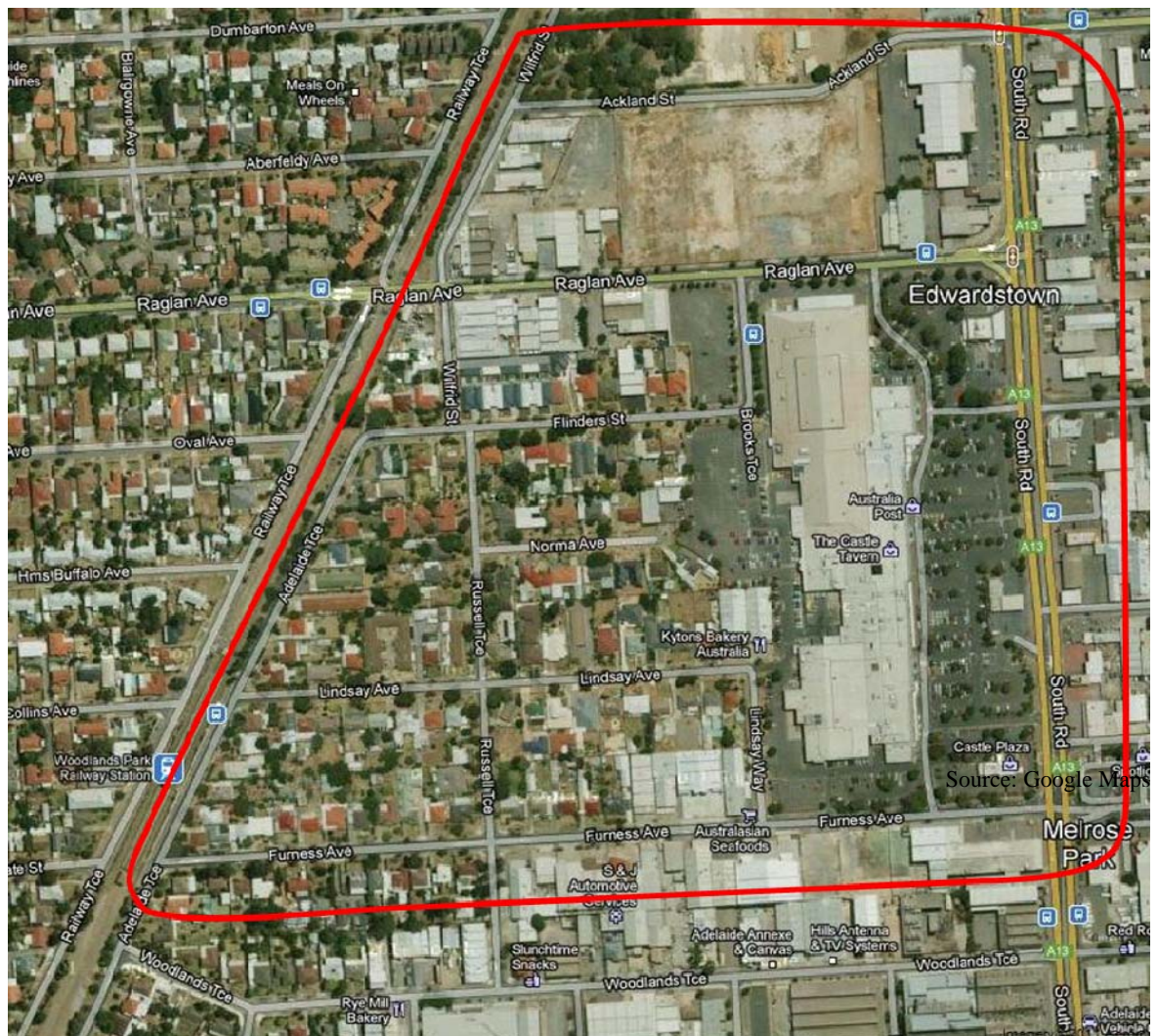
Signal Coordination has been assumed for the north – south movements on South Road for all analysis options. This is as per the existing corridor and is necessary due to the close signal spacing and general density of the traffic on the South Road corridor.



2.3. Local Access and Local Streets

The area of influence of the Castle Plaza shopping centre development has been defined as being bound by Ackland Street to the north, South Road to the east, Furness Avenue to the south and Adelaide Terrace to the west. This was as agreed with DPTI in 2009. A map showing the area of influence can be seen in Figure 2-1 below. The existing conditions of each of the streets within the area of influence are described in this section, and impacts of the development on these streets are described in Section 4.4.

■ **Figure 2-1 Area of influence of Castle Plaza shopping centre development**



Source: Google Maps

In SKM's view traffic patterns outside the area of influence are primarily due to factors other than the shopping centre and beyond the control of the development. Therefore, while traffic issues



may exist outside this area, they are not considered appropriate to consider in the context of this development's impact.

Outside of the area of influence, a community concern exists over Chitral Terrace and Towers Terrace. These two streets provide a connection between Cross Road and Raglan Avenue, northwest of Raglan Avenue. They are local streets but quite busy with approximately 100-200 vehicles per hour in the off peak observed in our site visit, hence they act as local distributor roads. As well as local traffic there appears to be some "rat running" (i.e. through traffic) from Raglan Avenue to Cross Road in order to avoid South Road. With a roundabout at Raglan Avenue and signals at Cross Road (see Figure 2-2) access to these roads is unrestricted. Parked buses were observed along Chitral Terrace indicating it is accessible to larger vehicles (Chitral Terrace and Towers Terrace make up part of the route for bus 241, see Figure 2-3).

■ **Figure 2-2 Chitral Terrace / Cross Road intersection**



The question of what constitutes "through traffic" in the area west of Castle Plaza requires careful definition. The residential areas bounded by South Road, Marion Road, Raglan Avenue and either Cross Road, or Dawes Road, are both extremely large, being 2.2 and 2.3 square kilometres respectively. They both have substantial internally generated traffic, and require an internal traffic distribution system. Roads such as Chitral Terrace, Towers Terrace, Adelaide Terrace, and Railway Terrace form part of this traffic distribution system, and inevitably receive traffic from adjacent streets. They are also used by bus services designed to service the suburbs of Edwardstown and South Plympton. This will be the case with or without the development.

In this context, SKM has identified all through traffic movements observed on the roads and local streets discussed in this report. However this does not mean they are external to the local area. During our site inspections we saw no evidence of significant traffic movements using any of these



distribution roads to traverse beyond these local suburbs. The potential for this to occur is discussed in Chapter 4

■ **Figure 2-3 Bus stop on Chitral Terrace**



We therefore note that through traffic on Chitral Terrace and Towers Terrace is an issue with or without the shopping centre. Impacts that the proposal may have on this factor are discussed in section 4.4

Other than South Road, Raglan Avenue is the busiest street within the area of influence. Raglan Avenue acts as a local distributor road. It is busy, with 400-500 vehicles per hour in the off peak. It has a rail crossing with regular train usage that backs up traffic on either side (see Figure 2-4). There is also on street parking. A number of pedestrians were observed in the vicinity of the railway line. To the west of the rail crossing there is a left in/left out access to/from Railway Terrace.

East of the railway crossing, closer to South Road, there are a number of businesses and a bus stop.

- Simpson Furniture has poor side/rear access off Raglan Avenue.
- K&A Auto Services, Castle Trim and Bridgestone Select have improved access off Raglan Ave
- Bridgestone Select's access continues through to South Road. The main existing access is off Raglan Avenue.

This section of Raglan Avenue is two lanes, with a narrow footpath.



■ **Figure 2-4 Rail crossing in use on Raglan Avenue**



Ackland Street is a local street with low traffic (volume less than 50 vehicles per hour in the off-peak). It is a narrow road with a very narrow footpath (2 metres or less). There is rear access off Ackland Street for service/loading for Vision Stream (962 South Rd), 966 South Road and Benson Radiology (972 South Road). The rear access for these businesses is shown in Figure 2-5. These businesses all have car access at the front, off South Road. The connectivity has been blocked on site from front to back. Ackland Street is not currently affected by Castle Plaza.

■ **Figure 2-5 Rear access off Ackland Street for South Road businesses**





South Road is a very busy main arterial route. There are few pedestrians and only a narrow footpath. Pedestrian crossing across South Road is difficult due to traffic volume on South Road, even at midday on a weekday, so currently it creates a high severance impact.

Woodlands Terrace is a 2 lane road with minimal traffic. It contains the now defunct Bridgestone Factory and some small businesses. It is not considered here as it is outside the area of influence of Castle Plaza and unaffected by the proposal, so has no effect on traffic generation or distribution.

Furness Avenue is a 2 lanes road with a narrow footpath, however the road widens at the intersection with South Road. There are two access points to Castle Plaza from Furness Avenue. There are few pedestrians on the eastern section near Castle Plaza. The majority of the traffic entering from South Road turns right into Castle Plaza car park with remaining traffic continuing to the west. Most of the traffic that does continue west is trucks heading to the commercial area west of Castle Plaza. Furness Avenue is also used by trucks coming from Woodlands Terrace, heading east, in order to turn right onto South Road. (There is no right turn permitted from Woodlands Terrace onto South Road.) Few private cars were observed to continue west of Castle Plaza on Furness Avenue during SKM's site visit. There is very little local car traffic generated in the residential area between Castle Plaza and Adelaide Terrace.

Lindsay Way is a local access road. Around the intersection with Furness Avenue it is mostly commercial (there is only one house in this vicinity). It is a quiet residential area to the west of Castle Plaza, continuing on as Lindsay Avenue. There are three rear access points to Castle Plaza from Lindsay Way or Lindsay Avenue, one of which can be seen in Figure 2-6. At the time of SKM's site inspection, and during a previous traffic survey, these were the least used of the Castle Plaza access points. There are a number of pedestrians along Lindsay Avenue from Woodlands Park train station, located to the west.



■ **Figure 2-6 Rear access to Castle Plaza shopping centre off Lindsay Way**



Russell Terrace is another local access road intersecting with Furness Avenue. To the east of this intersection it is mostly commercially zoned land with 12 businesses and 3 houses. To the west it is residential. Russell Terrace is a quiet residential local access street. It is narrow with 2 lanes and runs east/west from Woodlands Terrace to Flinders Street. The section of road from Woodlands Terrace to Furness Avenue also contains some commercial properties. This is a regenerating residential area with a number of new houses. The residential amenity in this area is perceived to be high. There is pedestrian activity both north/south and east/west around the intersection with Furness Avenue and there is local traffic travelling on it through to Adelaide Terrace.

Adelaide Terrace is another local access road that intersects with Furness Avenue. It is a residential street and is the major access point for traffic to Woodlands Park Station coming from the east. There is provision for approximately 20 cars to be parked along Adelaide Terrace around the train station and these were 100% utilised when observed during the SKM site visit (see Figure 2-7). There is also a bus stop next to the train station. Adelaide Terrace connects to Daws Road and is used as a 'rat run' for traffic heading east on Daws Road, turning left into Adelaide Terrace and then right into Furness Avenue to avoid South Road northbound between Daws Road and Furness Avenue.



■ **Figure 2-7 Woodlands Park Station alongside Adelaide Terrace**



Flinders Street and Brooks Terrace connect immediately west of Castle Plaza, next to an access to Castle Plaza which is busy and used by both cars and trucks turning off Raglan Avenue. Flinders Street is a quiet, new, medium density residential street. It is part of the route for bus numbers 241 and 190. The bus stop for these routes is located on Brooks Terrace as seen in Figure 2-8. There is an isolated car park for Castle Plaza on the western side of Brooks Terrace with access from it.

■ **Figure 2-8 Bus stop on Brooks Terrace**



Wilfred Street is another quiet local access road. It is a narrow 2 lane street that connects Raglan Avenue to Flinders Street. The separation between the Wilfred Street intersection with Raglan



Avenue and the Raglan Avenue rail level crossing is very small, creating potential safety issues if turning vehicles queue back over the rail line.

Norma Avenue is a quiet residential street off Russell Terrace. It is a dead end street with no access to Castle Plaza shopping centre.

Traffic volumes on these local roads immediately west of Castle Plaza (Adelaide Terrace, Flinders Street, Lindsay Way, Norma Avenue, Russell Terrace, and Wilfred Street) have not been individually surveyed, but may be inferred from traffic counts on intersecting arterials, from the Castle Plaza car park surveys by Shane Foley in 2007, and from spot counts carried out by SKM during our site visits. In all cases, the implied traffic volumes on the local streets are 1000 to 2000 vehicles per day, or less. These volumes are typical of local access streets, and would not be considered sufficient to constitute either a traffic capacity or noise/amenity issue under Austroads Guidelines.



3. Development Impact

3.1. Components of Proposed Development

The proposed development has been analysed in the following stages:

- Ultimate Development: The complete expansion of Castle Plaza to approximately 45,000m² GFLA, including closure of Raglan Avenue and realignment of Ackland Street.
- Ultimate Development + Residential & Commercial Development. This includes further residential and commercial development north of the expanded Castle Plaza.

3.2. Traffic Generation

3.2.1. Assumptions

The additional trip generation due to the development has been calculated using the RTA¹ Guide to Traffic Generating Developments (Version 2.2 October 2002).

The followings development assumptions have been used to calculate the trip generation:

- Existing gross leasable area of 22,747 m² made up of:
 - Specialty: 7,593 sqm;
 - Kiosk: 188 sqm;
 - Majors: 14,506 sqm;
 - Pad sites (external to centre): 460 sqm;
- Ultimate Development made up of:
 - Total retail gross leasable area of 45,200 sqm, including the existing retail area;
- Residential & commercial development made up of:
 - 100 residential apartments;
 - Commercial/office space: 15,000 sqm.

3.2.2. RTA Traffic Generation Factors

The RTA factors that will be assumed for the design are shown in Table 3-1. The trip rates provided are for one way trips. Note that the retail trip rates are different for the different

¹ Roads and Traffic Authority, NSW



development stages due to the size of development and the information known at each stage. The Thursday trip generation factors have been used as a design case as they are more likely to coincide with the highest peak traffic volumes.

■ **Table 3-1: RTA Trip Rates**

Type of Development	Daily Vehicle Trips	Peak Hour Trips
Retail (stage 1)	63 per 100m ² gross floor area	5.9 per 100m ² gross floor area
Retail (ultimate development)	50 per 100m ² gross floor area	4.6 per 100m ² gross floor area
Office and Commercial	10 per 100m ² gross floor area	2 per 100m ² gross floor area
Residential	5 per dwelling	0.5 per dwelling

3.3. Trip Distribution

The distribution of vehicle trips generated by the expansion of Castle Plaza has been adopted unchanged from the Castle Plaza Aimsun model. In general, this distribution is based upon observations made at car park entrances and roads surrounding the centre, with alterations made to account for proposed road network changes.

For more details, please see section 3.4 for the SKM report entitled *Castle Plaza Shopping Centre Expansion, Aimsun scenario model analysis report (June 2011)*.



4. Traffic Analysis

4.1. Scenarios Analysed

Traffic analysis has been undertaken for the following scenarios:

■ **Table 4-1: Scenario Descriptions**

Scenario	Forecast Year	Road Network	Traffic Demand
1	2016	Existing	MASTEM 2016
2	2016	Design	MASTEM 2016 + Castle Plaza development
3	2021	Existing	MASTEM 2021
4	2021	Design	MASTEM 2021 + Castle Plaza development + residential & commercial development

From the analysis of the existing intersections, the Edward Street/Ackland Street/South Road intersection was identified to be the critical intersection. Therefore this intersection will be analysed for the scenarios above with possible intersection improvements included.

4.2. Analysis Assumptions

The following assumptions have been made for the analysis:

- Forecast traffic volumes have been adopted from the demand matrices developed for the Castle Plaza Aimsun Model.
 - For base network scenarios 1 and 3, direct translation of demand matrices to intersection turn volumes was not possible at the Raglan Avenue / South Road and Ackland Street / South Road intersections due to multiple route choices. As such, forecast volumes for these intersections have been taken from volume outputs produced by the Castle Plaza Aimsun Model.
- The degrees of saturation reported in the following tables are the degrees of saturation for the worst movement. In some cases the degree of saturation for the main north/south movements will reduce while they increase for the minor movements. This is reflected in the overall level of service for the intersection.



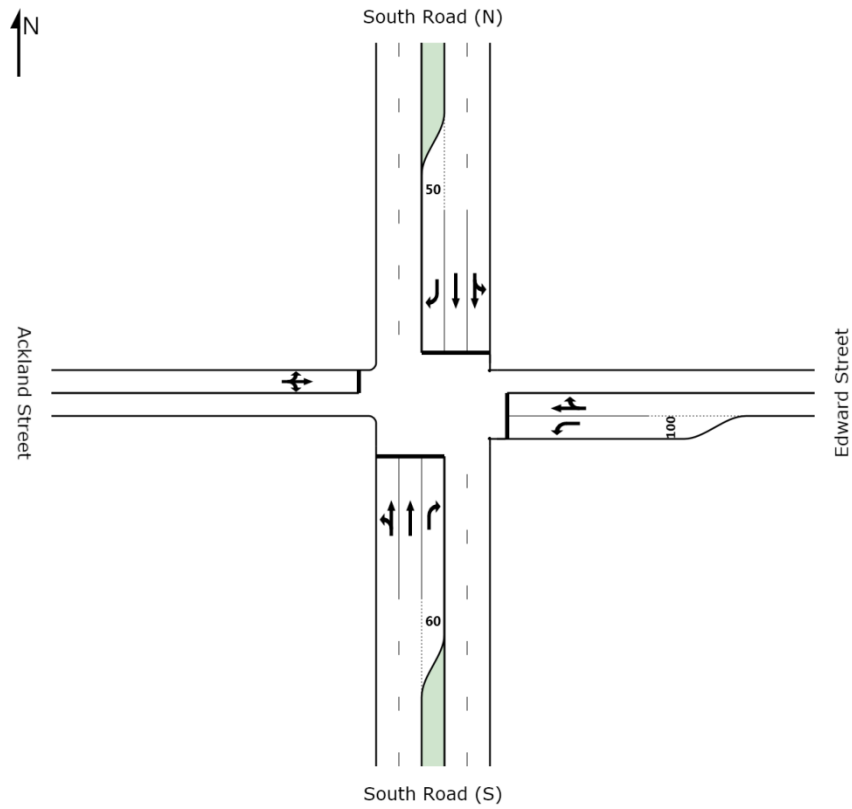
4.2.1. Capacity Improvements at Ackland / Edward / South Road intersection

A number of intersection improvements have been investigated for this intersection based on the available space. These improvements include the following:

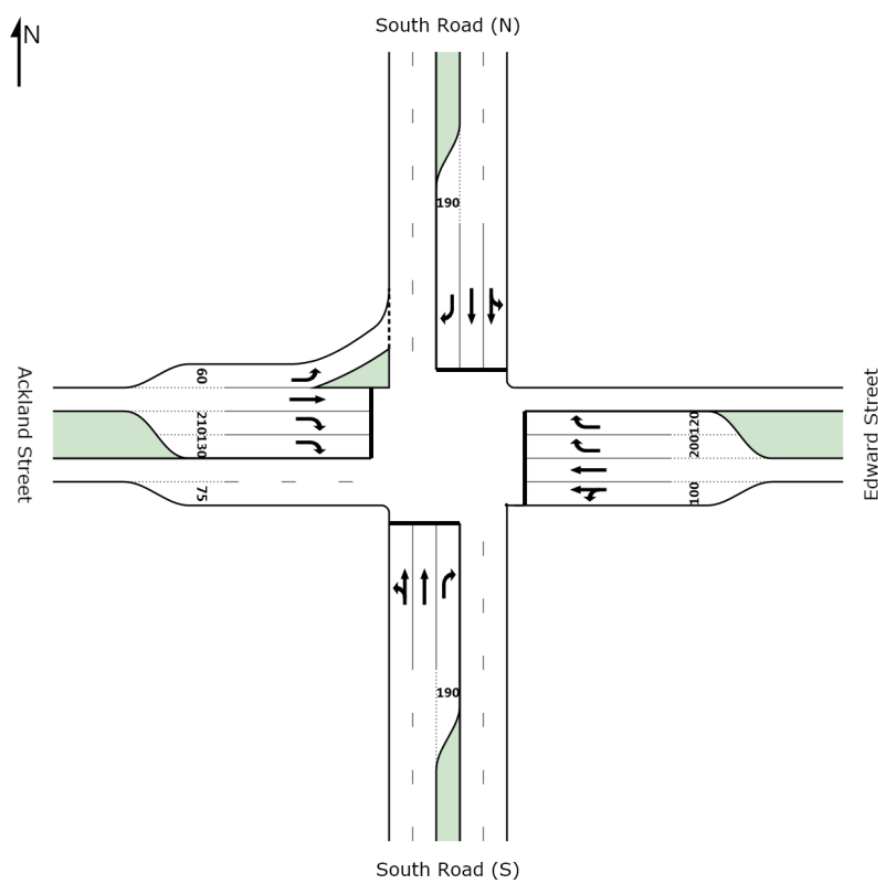
- Two additional right turn lanes added to Ackland Street;
- Two additional right turn lanes added to Edward Street;
- Slip lanes added from Ackland Street to South Road (N);
- Lengthening of the northbound South Road right turn lane making use of the additional space provided when Raglan Street is closed to through traffic;
- Lengthening of the southbound South Road right turn lane, making use of additional space created by restricting right turn access at Caufield Avenue

These intersection modifications are shown diagrammatically in Figure 4-1 and Figure 4-2. The South Road intersection upgrade has been developed as a design plan by Wallbridge and Gilbert Consulting Engineers. The relevant plan is South Road/New Ackland Intersection, Drawing Number 100503 SK23-A, November 2011.

We consider that it should be possible to implement these modifications to meet DPTI road design guidelines; within either the existing South Road reserve, or adjacent land some of which is held by the applicant. Alternative improvements were investigated, such as additional right turn lanes north – south in South Road. However these were found to have significantly greater property impacts than the recommended plan, and not provide any capacity benefit.



■ **Figure 4-1: Base intersection layout (no improvements)**



■ **Figure 4-2: Design intersection improvements**

The Level of Service (LOS) of the improved intersection with proposed capacity improvements is shown in Table 4-2 and Table 4-3.

■ **Table 4-2: Edward/Ackland St. – AM Peak LOS with desired Intersection improvements included**

Scenario	Worst Movement Degree of Saturation	Intersection LOS	Intersection Average Delay (s)	Worst Movement 95 th percentile max queue (m)
Base 2011	0.974	D	38.0	670
Base 2016	1.159	F	127.6	1166
Design 2016	1.02	E	62.4	860
Base 2021	1.198	F	144.6	1299
Design 2021	1.06	D	46.1	829



■ **Table 4-3: Edward/Ackland St. – PM Peak LOS with desired Intersection improvements included**

Scenario	Worst Movement Degree of Saturation	Intersection LOS	Intersection Average Delay (s)	Worst Movement 95 th percentile max queue (m)
Base 2011	0.989	B	14.5	251
Base 2016	1.289	E	65.0	933
Design 2016	1.05	E	72.4	975
Base 2021	1.066	E	66.5	1087
Design 2021	1.058	E	71.6	1030

4.3. Other Intersection Analysis

4.3.1. Furness Avenue

The other major intersection used to access to the shopping centre is Furness Avenue. This intersection has been modelled for the various scenarios with no changes to the intersection layout. The results can be seen in Table 4-4 and Table 4-5.

■ **Table 4-4: Furness Avenue Intersection Analysis AM Peak**

Scenario	Worst Movement Degree of Saturation	Intersection LOS	Intersection Average Delay (s)	Worst Movement 95 th percentile max queue (m)
Base 2011	0.871	A	3.5	141.2
Base 2016	0.883	A	3.9	140.7
Design 2016	0.885	A	4.1	260.8
Base 2021	0.877	A	3.7	145.9
Design 2021	0.886	A	4.1	178.6

■ **Table 4-5: Furness Avenue Intersection Analysis PM Peak**

Scenario	Worst Movement Degree of Saturation	Intersection LOS	Intersection Average Delay (s)	Worst Movement 95 th percentile max queue (m)
Base 2011	0.859	A	8.3	118.3
Base 2016	0.858	A	9.0	126.2
Design 2016	0.859	A	7.3	103.9
Base 2021	0.877	A	3.7	145.9
Design 2021	0.878	A	7.3	133.7



There are a number of minor movements from Furness Avenue and the Radio Rentals access that have a LOS of F; however they still had a degree of saturation well under 1.0. This occurred in all cases including the base case and therefore is not considered to be an issue.

4.3.2. Raglan Avenue/Marion Road

The most likely approach for additional westbound trips is along Raglan Avenue through the intersection with Marion Road. This intersection is not sensitive to small scale traffic control measures in and around the development site and thus has only been modelled for the existing and design development conditions. The results of the intersection analysis using the same traffic distribution as the existing traffic using the intersection are shown in Table 4-6.

■ **Table 4-6: Raglan Avenue/Marion Road Intersection Analysis**

Scenario	Worst Movement Degree of Saturation	Intersection LOS	Intersection Average Delay (s)	Worst Movement 95 th percentile max queue (m)
Existing 2010	0.80	C	27.4	292
Existing 2020	0.84	C	28.3	314
Design 2010	1.00	D	35.2	393
Design 2020	1.00	D	43.5	500

Based on the analysis assumptions the intersection of Raglan Avenue and Marion Road doesn't fail due to the additional traffic generated by the development. The southbound right turn movement on Marion Road is very close to capacity however the additional volume of traffic through the intersection does not cause the overall intersection LOS to be worse than D.

4.4. Local Street Traffic Impacts

4.4.1. Local Street Traffic capacity

Other local streets border the shopping centre to the west, such as Russell Street, Lindsay Avenue and Brooks Terrace. These all currently carry some proportion of shopping centre-generated traffic due to the location of rear access points to Castle Plaza and other businesses on or near them i.e. existing businesses located to the west of Castle Plaza.

Previous traffic surveys were conducted to identify the traffic pattern for vehicles approaching the shopping centre, including local streets on the western side of Castle Plaza (Shane Foley 2007). These surveys indicated that the total volume of traffic for all these movements was less than 1,000 vehicles in a three hour period. As these trips also constitute traffic with local origins, and the proposed development is not orientated towards them; we expect that there will be no change to the traffic volumes on these local streets from the expansion. We do not consider the scope of



generated traffic from this direction to be sufficient to create traffic capacity issues on these roads. Capacity analysis of these streets and intersections has not been carried out, however it is evident from the traffic volumes observed that all would operate at Level of Service A.

4.4.2. Local Street Traffic Amenity

SKM observed traffic operations on the local streets between Castle Plaza and Adelaide Terrace on several occasions during site visits in 2010 and 2011. While traffic volumes on these streets are not a capacity issue, the potential for increased traffic having an amenity impact has also been considered.

During the site inspection it was apparent that there is an existing potential safety issue with the intersection of Raglan Avenue and Wilfred Street, located approximately 20 metres east of the Noarlunga Rail line level crossing in Raglan Avenue. This distance is below Austroads desirable separation standards between conflict points and represents a potential safety hazard from vehicles attempting to turn right into Wilfred Street queuing back towards the level crossing. Arguably the median opening at Wilfred Street should be closed on that basis now.

This hazard will potentially be worsened by increased traffic on Raglan Avenue. SKM therefore recommends that the median in Raglan Avenue be closed at Wilfred Street, making the intersection left-in/left-out only. This will have the effect of transferring right turning traffic from Wilfred Street to the south to the reconstructed Brooks Terrace. Right turning traffic from Wilfred Street to the north will be transferred to the new Ackland Street link. Note that the development plan as assessed by SKM includes a new link between Wilfred Street (north) and the new Ackland Street link.

The primary local road change from the development is the closure of the existing Brooks Terrace and its reconstruction in a new location approximately 40 metres to the west. This link is required to remain open for local access to the residential portion of Edwardstown to the west of Castle Plaza. It is also used by local buses, on TransAdelaide Route 241. Right turning traffic from Wilfred Street will be transferred to it, although this transferred traffic is expected to be less than 1000 vehicles per day. Overall potential for through traffic penetration into the residential area west of Castle Plaza is considered to be reduced by the changes, due to the closure of the Wilfred Avenue right turn and less direct route via Brooks Terrace.

The following Table 4-7 summarises which of the local streets are considered vulnerable to through traffic from the extension of Castle Plaza and what measures are proposed to mitigate those impacts. None of these would be sufficient to constitute a capacity or safety issue, although there may be some impact on residential amenity. Measures have been recommended to avoid this.



■ **Table 4-7: Local Streets' Vulnerability to Through Traffic Impact**

Local Street	Impact from Castle Plaza?	Proposed measures
Chitral Terrace and Towers Terrace	No	If the traffic on South Road improves due to upgraded intersection at Ackland Street there may in fact be less rat running, creating a positive impact.
Raglan Avenue	Yes	Businesses near South Road with accesses off Raglan Avenue will have less direct access in some directions due to the proposed left in / left out restriction at South Road/Raglan Avenue intersection.
Furness Avenue	Yes	There will be some increase in traffic however the effects will be minimal (see section 4.3.1), hence no measures are suggested.
Woodlands Terrace	No	NA
Lindsay Way and Lindsay Avenue	Possible	There may be some transfer of local traffic however the effects are expected to be minimal, hence no measures are suggested.
Russell Terrace	Possible	There is potential for Russell Terrace to be used as a rat run between Furness Avenue and Raglan Avenue, however the measure proposed for Wilfred Street below, along with current stop priority at the intersection with Lindsay Avenue, could mitigate this.
Adelaide Terrace	No	NA
Flinders Street	Yes	Minimal impact provided median extended over Wilfred/Raglan intersection.
Brooks Terrace	Yes	Relocated by development. Diverted local traffic from Wilfred Street small in volume and should have minimal effect
Wilfred Street (North)	Yes	Extend median 30m east on Raglan Avenue to ban right turns out of/into Wilfred Street to reduce rail collision risk. This will require right turning traffic to access Wilfred Street via the new Ackland Street link. This should improve safety and reduce risk of rat running traffic and slightly increase delay.
Wilfred Street (South)	Yes	Extend median 30m east on Raglan Avenue to ban right turns out of/into Wilfred Street to minimise traffic intrusion. This will also prevent queuing on Raglan Ave (due to cars wanting to turn right into Wilfred Street) that could otherwise extend back over the rail crossing. This should result in reduced risk of collision with a train, and less risk of rat running traffic.



5. Car Parking

5.1. Car Parking Assumptions

The existing number of car parking spaces is 1,345. This equates to a rate of parking provision of 6 spaces per 100 square metres of existing retail area (reasonable for a small neighbourhood centre but high for a district or regional shopping centre).

The Marion City Council Development Plan (11 December 2008) specifies car parking rates for retail usage in adjacent District Centres of 5 spaces per 100 square metres. This requirement is higher than the RTA design rate for car parking provision even though the current measured traffic generation at Castle Plaza is lower than the RTA design rate for traffic generation.

The number of car parking spaces required for the proposed development has been calculated based on relevant planning regulations (RTA) and based on our data from similar developments. The RTA factors used for this analysis are shown in Table 5-1.

■ **Table 5-1: RTA Car Parking Factors**

Type of Development	Number of Car Parks Required
Retail	4.1 spaces per 100m ² of gross leasable floor area
Office and Commercial	1 space per 40m ² gross floor area
Residential	1 space per unit + 1 space per 5 x 2 bedroom units + 1 space per 2 x 3 bedroom units.

The existing shopping centre contains 22,747m² of gross leasable floor area which equates to 933 required car parking spaces. This is less than the existing number of car parking spaces (1,345) and therefore there is spare car parking capacity available.

5.2. Ultimate Development Car Parking

Using the RTA guidelines the following parking spaces are required for the Ultimate development:

- 1,853 spaces for 45,200 square metres of retail

5.3. Commercial / Residential Car Parking

Using the RTA guidelines the following parking spaces are required for the commercial & residential development:

- 1,853 spaces for 45,200 square metres of retail
- 375 spaces for office/commercial
- 100 spaces for residential apartments



6. Conclusions

SKM have examined the impact of the proposed Castle Plaza expansion, as defined on Hames Sharley Plan 30844 DA04-C, February 2011. We have determined the likely parking requirement, generated traffic, and traffic impact on adjacent arterial roads including South Road and Raglan Avenue. The traffic impact has been modelled using both AIMSUN and SIDRA packages as per DPTI requirements. We have also reviewed potential impacts on local streets and traffic movements, and adjacent accesses.

Our analysis of the existing situation for arterial road traffic capacity reveals that;

- The Ackland Street/Edward Street intersection is currently close to capacity;
 - Based on MASTEM forecast demand, it will fail by 2016;
- Adjacent signalised intersections at Raglan Avenue, Furness Street and Corunna Street are all below capacity by a significant margin;
- As part of the design road network, traffic signals at Raglan Avenue will be removed. This will slightly increase congestion at Ackland Street. It will also enable better traffic signal coordination.

We have undertaken the analysis of traffic impacts of an expanded Castle Plaza Shopping Centre using RTA guidelines for traffic generation and car parking. The following range of development size and generated traffic distribution scenarios have been tested.

■ Table 6-1: Scenario summary

Scenario	Forecast Year	Road Network	Traffic Demand
1	2016	Existing	MASTEM 2016
2	2016	Design	MASTEM 2016 + Castle Plaza development
3	2021	Existing	MASTEM 2021
4	2021	Design	MASTEM 2021 + Castle Plaza development + residential & commercial development

■ Table 6-2: AM peak intersection analysis summary

Intersection	LOS (2016)		LOS (2021)	
	Base	Design	Base	Design
Edward / Ackland / South (Improved)	F	E	F	D
Furness / South	A	A	A	A



■ **Table 6-3: PM peak intersection analysis summary**

Intersection	LOS (2016)		LOS (2021)	
	Base	Design	Base	Design
Edward / Ackland / South (Improved)	E	E	E	E
Furness / South	A	A	A	A

Using Sidra and the agreed assessment framework we have reached the following conclusions:

- With any major expansion of Castle Plaza and elimination access at Raglan Avenue, the capacity of the Ackland Road intersection will be exceeded (LOS F) and upgrading required.
- The Ackland Avenue intersection may be increased in capacity by adding additional right turn lanes from the east (Edward Street) and west (Ackland Street).
 - Under base forecast scenarios 1 and 3, the intersection operates at LOS F during the AM peak and LOS E during the PM peak.
 - Under design forecast scenarios 2 and 4, which include intersection improvements and Castle Plaza traffic generation, the intersection operates no worse than LOS E in all cases.
- Furness Street and Corunna Street intersections operate acceptably in all scenarios.
- Sufficient queue length is available to accommodate turning movements without blocking through movements on South Road.
- The intersections of Raglan Avenue/Marion Road and Furness Avenue/South Road remain below LOS D with the additional development traffic

The South Road analysis was carried out for the years 2011, 2016 and 2021, reflecting current traffic conditions and likely conditions at completion of each development stage. The analysis results show that for both forecast years, traffic impact due to development of Castle Plaza is effectively mitigated, with the Ackland Street intersection operating at an equal or better level of service compared to the forecasted base scenario.

Traffic volumes on adjacent side streets do not appear sufficient to significantly alter residential amenity or exceed their capacity. Raglan Avenue and Edwards Street will remain with a significant traffic carrying function, while other roads will operate well below their amenity threshold. Extension of the Raglan Avenue median by 30 metres east from the existing level crossing is recommended to minimise risk of rat running in local streets to the west of Castle Plaza. The median should also improve safety by reducing the risk of cars queuing over the rail line. This

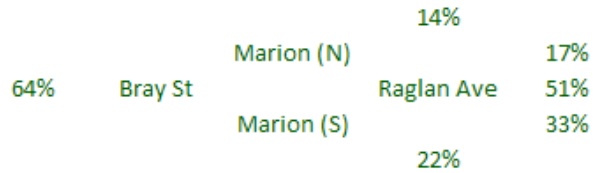


will divert Wilfred Street traffic to the new Brooks Terrace alignment for southern traffic and the new Ackland Street alignment for northern traffic. Delays will be slightly increased however traffic volumes and impacts should be small and risk of rat running will be reduced.



Appendix A Traffic Distributions

Raglan / Marion Distribution



Raglan/Marion distribution is based on the current turning movement distribution.



Appendix B SIDRA Movement Summaries

B.1 Edward Street / Ackland Avenue / South Road

Base 2011 AM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
							Vehicles veh	Distance m			
South: South Road (S)											
1	L	4	0.0	0.974	52.7	LOS D	91.2	669.5	0.99	1.08	25.7
2	T	2193	5.7	0.974	44.5	LOS D	91.2	669.7	0.99	1.07	25.9
3	R	234	4.5	0.939	43.6	LOS D	13.5	97.9	0.97	0.95	27.3
Approach		2431	5.6	0.974	44.4	LOS D	91.2	669.7	0.99	1.06	26.0
East: Edward Street											
4	L	273	2.7	0.740	53.6	LOS D	16.3	116.6	0.85	0.84	24.2
5	T	16	0.0	0.961	104.6	LOS F	13.5	97.8	1.00	1.08	14.7
6	R	128	4.9	0.961	112.9	LOS F	13.5	97.8	1.00	1.08	14.6
Approach		417	3.3	0.961	73.8	LOS E	16.3	116.6	0.90	0.92	19.8
North: South Road (N)											
7	L	46	2.3	0.628	19.9	LOS B	19.9	150.5	0.44	0.99	40.0
8	T	1335	9.9	0.628	11.7	LOS B	19.9	151.1	0.44	0.40	43.9
9	R	40	13.2	0.283	47.8	LOS D	1.9	14.8	0.92	0.75	26.0
Approach		1421	9.7	0.628	13.0	LOS B	19.9	151.1	0.45	0.43	43.0
West: Ackland Street											
10	L	77	4.1	0.603	63.0	LOS E	16.1	115.0	0.94	0.85	22.5
11	T	159	0.7	0.603	54.7	LOS D	16.1	115.0	0.94	0.80	22.7
12	R	12	9.1	0.603	63.1	LOS E	16.1	115.0	0.94	0.85	22.5
Approach		247	2.1	0.603	57.7	LOS E	16.1	115.0	0.94	0.82	22.7
All Vehicles		4516	6.5	0.974	38.0	LOS D	91.2	669.7	0.81	0.83	28.5

Base 2011 PM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
							Vehicles veh	Distance m			
South: South Road (S)											
1	L	2	0.0	0.541	11.4	LOS B	7.2	52.5	0.17	1.06	46.4
2	T	1419	4.4	0.541	3.2	LOS A	7.2	52.5	0.17	0.15	54.4
3	R	265	2.0	0.898	34.9	LOS C	13.8	97.9	0.96	0.94	30.6
Approach		1686	4.0	0.898	8.2	LOS A	13.8	97.9	0.29	0.28	48.5
East: Edward Street											
4	L	300	0.7	0.855	72.0	LOS E	21.2	149.4	0.99	0.93	20.1
5	T	9	0.0	0.893	83.9	LOS F	8.4	59.0	1.00	0.99	17.1
6	R	97	1.1	0.893	92.1	LOS F	8.4	59.0	1.00	0.99	17.0
Approach		406	0.8	0.893	77.1	LOS E	21.2	149.4	0.99	0.94	19.2
North: South Road (N)											
7	L	74	2.9	0.889	14.6	LOS B	34.9	250.5	0.47	1.01	44.5
8	T	2280	3.0	0.889	6.3	LOS A	34.9	250.8	0.47	0.45	49.1
9	R	13	0.0	0.054	9.2	LOS A	0.0	0.2	0.06	0.68	47.9
Approach		2366	3.0	0.889	6.6	LOS A	34.9	250.8	0.47	0.47	48.9

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West: Ackland Street											
10	L	21	5.0	0.392	71.9	LOS E	5.1	35.9	0.97	0.78	20.7
11	T	53	0.0	0.392	63.6	LOS E	5.1	35.9	0.97	0.75	20.8
12	R	4	0.0	0.392	71.7	LOS E	5.1	35.9	0.97	0.78	20.7
Approach		78	1.4	0.392	66.2	LOS E	5.1	35.9	0.97	0.76	20.8
All Vehicles		4537	3.1	0.898	14.5	LOS B	34.9	250.8	0.46	0.44	42.0

Scenario 1 (Base 2016) AM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		Vehicles	Distance		per veh	km/h
South: South Road (S)											
1	L	1	0.0	1.158	204.0	LOS F	164.0	1166.0	1.00	1.70	9.2
2	T	2289	1.8	1.158	195.8	LOS F	164.0	1166.0	1.00	1.69	9.3
3	R	179	4.8	1.000 ³	88.5	LOS F	13.4	97.9	1.00	1.06	17.5
Approach		2468	2.0	1.158	188.1	LOS F	164.0	1166.0	1.00	1.65	9.6
East: Edward Street											
4	L	202	6.3	0.504	39.9	LOS D	9.7	71.8	0.71	0.79	28.6
5	T	21	5.0	1.154	235.5	LOS F	35.4	259.6	1.00	1.38	7.8
6	R	223	5.7	1.154	243.8	LOS F	35.4	259.6	1.00	1.38	7.8
Approach		446	5.9	1.154	151.1	LOS F	35.4	259.6	0.87	1.11	11.6
North: South Road (N)											
7	L	173	12.2	0.651	29.6	LOS C	25.0	186.7	0.62	0.92	34.2
8	T	1063	6.3	0.651	21.0	LOS C	25.6	189.1	0.62	0.56	36.4
9	R	23	4.5	0.186	48.0	LOS D	1.0	7.1	0.96	0.70	25.8
Approach		1259	7.1	0.651	22.7	LOS C	25.6	189.1	0.62	0.61	35.8
West: Ackland Street											
10	L	63	3.3	0.661	53.5	LOS D	21.5	157.8	0.91	0.88	24.9
11	T	223	5.7	0.661	45.3	LOS D	21.5	157.8	0.91	0.80	25.3
12	R	60	7.0	0.661	53.6	LOS D	21.5	157.8	0.91	0.88	24.9
Approach		346	5.5	0.661	48.2	LOS D	21.5	157.8	0.91	0.83	25.1
All Vehicles		4520	4.1	1.158	127.6	LOS F	164.0	1166.0	0.88	1.24	13.1

Scenario 1 (Base 2016) PM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		Vehicles	Distance		per veh	km/h
South: South Road (S)											
1	L	1	0.0	0.644	18.2	LOS B	19.8	146.6	0.40	1.02	41.3
2	T	1493	6.6	0.644	10.0	LOS A	19.8	146.6	0.40	0.37	45.7
3	R	103	9.2	0.857	69.3	LOS E	5.8	44.1	1.00	0.91	20.7
Approach		1597	6.7	0.857	13.8	LOS B	19.8	146.6	0.44	0.41	42.4
East: Edward Street											
4	L	314	6.4	0.900	68.4	LOS E	22.1	163.2	0.91	0.90	20.8
5	T	17	6.3	1.289	353.6	LOS F	25.3	187.2	1.00	1.57	5.5
6	R	127	6.6	1.289	361.9	LOS F	25.3	187.2	1.00	1.57	5.5
Approach		458	6.4	1.289	160.5	LOS F	25.3	187.2	0.94	1.11	11.1
North: South Road (N)											
7	L	155	2.7	1.033	87.8	LOS F	130.0	928.2	1.00	1.24	18.1



8	T	2299	2.2	1.033	79.4	LOS E	130.8	933.1	1.00	1.25	18.2
9	R	19	0.0	0.126	16.7	LOS B	0.3	2.1	0.36	0.70	41.0
Approach		2473	2.3	1.033	79.5	LOS E	130.8	933.1	1.00	1.25	18.3
West: Ackland Street											
10	L	33	3.2	0.853	82.0	LOS F	16.4	121.8	1.00	1.01	18.8
11	T	127	6.6	0.853	73.8	LOS E	16.4	121.8	1.00	1.01	18.9
12	R	41	12.8	0.853	82.3	LOS F	16.4	121.8	1.00	1.01	18.8
Approach		201	7.3	0.853	76.8	LOS E	16.4	121.8	1.00	1.01	18.9
All Vehicles		4728	4.4	1.289	65.0	LOS E	130.8	933.1	0.80	0.94	21.0

Scenario 2 (Design 2016) AM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed	
		veh/h	%	v/c	sec	veh	m		per veh	km/h	
South: South Road (S)											
1	L	66	1.6	1.020	80.4	LOS F	120.9	859.5	1.00	1.21	19.3
2	T	2291	1.9	1.020	72.4	LOS E	120.9	859.5	1.00	1.21	19.4
3	R	129	3.3	0.691	26.4	LOS C	4.1	29.6	0.70	0.81	34.8
Approach		2486	1.9	1.020	70.2	LOS E	120.9	859.5	0.98	1.19	19.9
East: Edward Street											
4	L	135	5.5	0.435	68.5	LOS E	8.9	65.2	0.94	0.80	20.8
5	T	93	4.5	0.524	71.9	LOS E	6.7	48.4	1.00	0.78	19.5
6	R	266	5.5	0.699	81.2	LOS F	9.8	72.1	1.00	0.83	18.6
Approach		494	5.3	0.699	76.0	LOS E	9.8	72.1	0.98	0.81	19.3
North: South Road (N)											
7	L	202	10.4	0.538	20.8	LOS C	17.5	130.5	0.44	0.90	39.2
8	T	999	6.0	0.538	11.3	LOS B	17.5	130.5	0.41	0.37	44.1
9	R	123	3.4	0.983	90.6	LOS F	8.0	57.6	1.00	1.03	17.2
Approach		1324	6.4	0.983	20.2	LOS C	17.5	130.5	0.47	0.51	37.9
West: Ackland Street											
10	L	116	1.8	0.450	57.8	LOS E	7.3	51.7	0.88	0.81	23.4
11	T	176	4.8	0.996	115.0	LOS F	17.0	123.9	1.00	1.15	14.1
12	R	382	2.8	0.983	117.4	LOS F	18.1	129.7	1.00	1.07	14.2
Approach		674	3.1	0.996	106.5	LOS F	18.1	129.7	0.98	1.04	15.2
All Vehicles		4978	3.6	1.020	62.4	LOS E	120.9	859.5	0.85	0.95	21.6

Scenario 2 (Design 2016) PM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed	
		veh/h	%	v/c	sec	veh	m		per veh	km/h	
South: South Road (S)											
1	L	172	4.3	0.699	19.5	LOS B	24.1	177.7	0.46	0.94	40.2
2	T	1414	6.5	0.699	11.6	LOS B	25.0	184.9	0.47	0.44	43.8
3	R	109	9.6	0.832	68.2	LOS E	6.0	45.7	1.00	0.91	21.0
Approach		1695	6.5	0.832	16.0	LOS B	25.0	184.9	0.50	0.52	40.6
East: Edward Street											
4	L	174	7.9	0.593	71.5	LOS E	11.9	89.0	0.98	0.82	20.2
5	T	147	4.3	0.971	104.2	LOS F	13.4	97.6	1.00	1.09	15.1
6	R	155	6.1	0.408	77.4	LOS E	5.4	40.0	0.98	0.77	19.2



Approach	476	6.2	0.971	83.5	LOS F	13.4	97.6	0.98	0.89	18.0
North: South Road (N)										
7 L	184	3.4	1.050	102.1	LOS F	136.2	973.2	1.00	1.30	16.2
8 T	2258	2.3	1.050	94.1	LOS F	136.6	974.9	1.00	1.31	16.3
9 R	242	1.3	1.028	117.0	LOS F	23.4	166.0	1.00	1.17	14.3
Approach	2684	2.3	1.050	96.7	LOS F	136.6	974.9	1.00	1.30	16.0
West: Ackland Street										
10 L	174	1.2	0.677	19.9	LOS B	6.4	45.2	0.53	0.77	39.0
11 T	74	4.3	0.485	73.6	LOS E	5.3	38.8	1.00	0.77	19.2
12 R	406	3.1	1.048	155.9	LOS F	22.4	161.2	1.00	1.16	11.4
Approach	654	2.7	1.048	110.5	LOS F	22.4	161.2	0.88	1.01	14.9
All Vehicles	5508	4.0	1.050	72.4	LOS E	136.6	974.9	0.83	0.99	19.7

Scenario 3 (Base 2021) AM

Movement Performance - Vehicles										
Mov ID	Turn	Demand Flow	HV Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec	Vehicles	Distance		per veh	km/h
South: South Road (S)										
1	L	1	0.0	1.198	239.3	LOS F	182.9	1298.6	1.00	1.83
2	T	2373	1.6	1.198	231.1	LOS F	182.9	1298.7	1.00	1.83
3	R	94	3.4	0.704	47.3	LOS D	4.2	30.2	0.99	0.83
Approach		2467	1.7	1.198	224.2	LOS F	182.9	1298.7	1.00	1.79
East: Edward Street										
4	L	101	4.2	0.247	37.8	LOS D	4.6	33.0	0.66	0.76
5	T	13	8.3	1.182	259.4	LOS F	40.9	303.1	1.00	1.41
6	R	255	6.6	1.182	267.8	LOS F	40.9	303.1	1.00	1.41
Approach		368	6.0	1.182	204.4	LOS F	40.9	303.1	0.91	1.23
North: South Road (N)										
7	L	249	11.8	0.927	48.0	LOS D	62.7	466.8	0.94	1.00
8	T	1515	5.8	0.927	39.1	LOS D	64.0	470.1	0.94	0.94
9	R	23	4.5	0.186	48.0	LOS D	1.0	7.1	0.96	0.70
Approach		1787	6.6	0.927	40.5	LOS D	64.0	470.1	0.94	0.95
West: Ackland Street										
10	L	47	2.2	0.535	51.5	LOS D	19.0	139.4	0.87	0.88
11	T	255	6.6	0.535	43.3	LOS D	19.0	139.4	0.87	0.75
12	R	20	5.3	0.535	51.6	LOS D	19.0	139.4	0.87	0.88
Approach		322	5.9	0.535	45.0	LOS D	19.0	139.4	0.87	0.78
All Vehicles		4945	4.1	1.198	144.6	LOS F	182.9	1298.7	0.96	1.38

Scenario 3 (Base 2021) PM

Movement Performance - Vehicles										
Mov ID	Turn	Demand Flow	HV Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec	Vehicles	Distance		per veh	km/h
South: South Road (S)										
1	L	1	0.0	0.758	17.5	LOS B	27.2	199.0	0.45	1.02
2	T	1825	5.5	0.758	9.3	LOS A	27.2	199.0	0.45	0.42
3	R	93	5.7	0.749	63.5	LOS E	5.2	38.1	1.00	0.84
Approach		1919	5.5	0.758	11.9	LOS B	27.2	199.0	0.48	0.44
East: Edward Street										



4	L	238	4.4	0.688	56.5	LOS E	14.4	104.7	0.88	0.82	23.5
5	T	15	7.1	1.048	152.7	LOS F	15.2	120.7	1.00	1.21	11.1
6	R	120	16.7	1.048	161.3	LOS F	15.2	120.7	1.00	1.21	11.1
Approach		373	8.5	1.048	94.0	LOS F	15.2	120.7	0.92	0.96	16.7
North: South Road (N)											
7	L	114	6.5	1.066	111.2	LOS F	152.3	1083.5	1.00	1.36	15.2
8	T	2513	1.5	1.066	102.7	LOS F	153.3	1086.7	1.00	1.37	15.3
9	R	23	4.5	0.172	18.9	LOS B	0.4	2.8	0.42	0.72	39.5
Approach		2649	1.7	1.066	102.4	LOS F	153.3	1086.7	0.99	1.36	15.4
West: Ackland Street											
10	L	20	10.5	0.695	70.4	LOS E	12.2	95.5	0.98	0.87	21.0
11	T	120	16.7	0.695	61.9	LOS E	12.2	95.5	0.98	0.85	21.1
12	R	34	3.1	0.695	70.2	LOS E	12.2	95.5	0.98	0.87	21.0
Approach		174	13.3	0.695	64.5	LOS E	12.2	95.5	0.98	0.86	21.1
All Vehicles		5115	4.0	1.066	66.5	LOS E	153.3	1086.7	0.80	0.97	20.7

Scenario 4 (Design 2021) AM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		Vehicles	Distance		per veh	km/h
South: South Road (S)											
1	L	154	0.7	0.996	56.7	LOS E	116.4	826.0	1.00	1.12	24.4
2	T	2354	1.7	0.996	48.8	LOS D	116.7	828.8	1.00	1.13	24.5
3	R	54	3.9	0.272	16.1	LOS B	0.9	6.7	0.39	0.71	41.7
Approach		2561	1.7	0.996	48.5	LOS D	116.7	828.8	0.99	1.12	24.7
East: Edward Street											
4	L	53	6.0	0.352	80.0	LOS F	3.9	28.6	0.98	0.76	18.8
5	T	72	2.9	0.779	83.4	LOS F	5.5	39.5	1.00	0.85	17.7
6	R	271	5.4	1.032	145.3	LOS F	14.2	104.0	1.00	1.12	12.0
Approach		395	5.1	1.032	125.3	LOS F	14.2	104.0	1.00	1.03	13.4
North: South Road (N)											
7	L	267	11.4	0.748	15.8	LOS B	22.7	168.5	0.38	0.93	43.0
8	T	1554	5.5	0.748	7.7	LOS A	24.3	178.4	0.39	0.37	47.8
9	R	183	1.7	1.046	103.6	LOS F	15.7	111.2	1.00	1.04	15.6
Approach		2004	5.9	1.046	17.5	LOS B	24.3	178.4	0.45	0.50	39.7
West: Ackland Street											
10	L	161	1.3	0.639	67.0	LOS E	10.6	75.0	0.94	0.94	21.3
11	T	94	4.5	1.060	155.7	LOS F	10.4	75.7	1.00	1.15	11.2
12	R	160	2.0	0.596	84.0	LOS F	5.9	42.3	1.00	0.78	18.1
Approach		415	2.3	1.060	93.6	LOS F	10.6	75.7	0.97	0.93	16.8
All Vehicles		5375	3.6	1.060	46.1	LOS D	116.7	828.8	0.79	0.87	25.8

Scenario 4 (Design 2021) PM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		Vehicles	Distance		per veh	km/h
South: South Road (S)											
1	L	143	1.5	0.776	18.4	LOS B	29.7	216.2	0.49	0.96	41.2
2	T	1689	5.4	0.776	10.6	LOS B	30.7	225.2	0.50	0.47	44.6



3	R	101	4.2	0.809	65.6	LOS E	5.6	40.9	1.00	0.87	21.5
Approach		1934	5.1	0.809	14.0	LOS B	30.7	225.2	0.53	0.53	42.0
East: Edward Street											
4	L	114	2.8	0.493	75.2	LOS E	7.9	56.7	0.98	0.79	19.5
5	T	86	3.7	0.971	104.8	LOS F	7.8	56.3	1.00	1.03	15.1
6	R	191	11.0	0.437	75.0	LOS E	6.6	50.5	0.97	0.79	19.6
Approach		391	7.0	0.971	81.7	LOS F	7.9	56.7	0.98	0.84	18.4
North: South Road (N)											
7	L	125	6.7	1.057	105.0	LOS F	144.7	1029.9	1.00	1.33	15.9
8	T	2426	1.4	1.057	96.8	LOS F	145.3	1029.9	1.00	1.33	15.9
9	R	222	2.4	1.058	139.9	LOS F	23.5	168.1	1.00	1.22	12.4
Approach		2774	1.7	1.058	100.7	LOS F	145.3	1029.9	1.00	1.33	15.6
West: Ackland Street											
10	L	226	1.4	0.888	44.5	LOS D	13.8	97.9	0.72	0.90	27.2
11	T	77	2.7	0.859	87.2	LOS F	6.2	44.7	1.00	0.92	17.2
12	R	478	0.9	1.022	137.6	LOS F	24.9	175.6	1.00	1.12	12.5
Approach		781	1.2	1.022	105.7	LOS F	24.9	175.6	0.92	1.04	15.4
All Vehicles		5879	3.1	1.058	71.6	LOS E	145.3	1029.9	0.83	0.99	19.8

B.2 Furness Avenue / South Road

Base 2011 AM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: RoadName											
1	L	62	5.1	0.871	10.5	LOS B	19.4	141.2	0.32	1.03	48.0
2	T	2351	4.8	0.871	2.2	LOS A	19.4	141.2	0.32	0.27	54.2
3	R	26	0.0	0.126	9.1	LOS A	0.1	0.6	0.06	0.68	47.9
Approach		2439	4.8	0.871	2.5	LOS A	19.4	141.2	0.31	0.29	54.0
East: RoadName											
4	L	22	0.0	0.073	8.1	LOS A	0.1	0.9	0.10	0.62	49.2
5	T	1	0.0	0.288	97.0	LOS F	1.6	11.4	1.00	0.70	15.5
6	R	17	0.0	0.288	105.2	LOS F	1.6	11.4	1.00	0.70	15.4
Approach		40	0.0	0.288	51.3	LOS D	1.6	11.4	0.50	0.65	25.0
North: RoadName											
7	L	1	0.0	0.367	8.9	LOS A	1.9	14.2	0.08	1.07	48.5
8	T	1069	10.7	0.367	0.8	LOS A	1.9	14.2	0.08	0.07	58.3
9	R	74	2.9	0.298	13.4	LOS B	0.9	6.2	0.26	0.71	43.9
Approach		1144	10.2	0.367	1.6	LOS A	1.9	14.2	0.09	0.12	57.1
West: RoadName											
10	L	9	22.2	0.246	55.8	LOS E	1.5	11.3	0.98	0.72	23.9
11	T	2	0.0	0.246	47.0	LOS D	1.5	11.3	0.98	0.71	24.0
12	R	32	6.7	0.246	78.4	LOS E	1.5	11.3	0.99	0.70	19.0
Approach		43	9.8	0.246	71.9	LOS E	1.5	11.3	0.99	0.71	20.1
All Vehicles		3666	6.5	0.871	3.5	LOS A	19.4	141.2	0.26	0.25	53.2

Base 2011 PM

Movement Performance - Vehicles											
Mov ID	Turn	Demand	HV	Deg. Satn	Average	Level of	95% Back of Queue	Prop.	Effective	Average	

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		Flow			Delay	Service	Vehicles	Distance	Queued		
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: RoadName											
1	L	123	0.9	0.763	15.0	LOS B	16.2	117.8	0.59	0.94	44.3
2	T	1539	5.1	0.763	7.0	LOS A	16.2	118.3	0.60	0.54	47.8
3	R	58	0.0	0.385	15.2	LOS B	0.8	5.6	0.40	0.74	42.2
Approach		1720	4.7	0.763	7.8	LOS A	16.2	118.3	0.59	0.58	47.3
East: RoadName											
4	L	69	0.0	0.413	13.0	LOS B	1.4	9.5	0.37	0.68	44.3
5	T	14	0.0	0.656	71.4	LOS E	3.9	27.0	1.00	0.79	19.0
6	R	43	0.0	0.656	79.6	LOS E	3.9	27.0	1.00	0.79	18.9
Approach		126	0.0	0.656	42.1	LOS D	3.9	27.0	0.65	0.73	27.8
North: RoadName											
7	L	27	0.0	0.859	9.6	LOS A	10.7	77.0	0.30	1.03	48.7
8	T	2351	2.9	0.859	1.5	LOS A	10.7	77.0	0.30	0.21	54.6
9	R	101	2.1	0.277	16.9	LOS B	1.4	10.1	0.44	0.74	40.9
Approach		2479	2.8	0.859	2.2	LOS A	10.7	77.0	0.30	0.24	53.8
West: RoadName											
10	L	38	0.0	0.732	47.5	LOS D	7.3	51.2	1.00	0.88	26.1
11	T	16	0.0	0.732	39.3	LOS D	7.3	51.2	1.00	0.88	26.2
12	R	196	0.5	0.732	58.1	LOS E	7.3	51.2	1.00	0.86	23.1
Approach		249	0.4	0.732	55.3	LOS E	7.3	51.2	1.00	0.86	23.7
All Vehicles		4575	3.3	0.859	8.3	LOS A	16.2	118.3	0.46	0.41	46.9

Scenario 1 (2016 Base) AM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Prop. Queued	Effective Stop Rate	Average Speed	
		veh/h	%	v/c	sec		Vehicles Distance		per veh	km/h	
South: RoadName											
1	L	119	0.9	0.883	10.4	LOS B	19.8	140.7	0.34	1.00	48.1
2	T	2319	1.9	0.883	2.1	LOS A	19.8	140.7	0.34	0.28	53.8
3	R	27	0.0	0.166	9.4	LOS A	0.1	0.7	0.07	0.68	47.7
Approach		2465	1.8	0.883	2.6	LOS A	19.8	140.7	0.34	0.32	53.4
East: RoadName											
4	L	11	0.0	0.038	8.1	LOS A	0.1	0.4	0.11	0.62	49.1
5	T	1	0.0	0.529	93.0	LOS F	3.0	21.3	1.00	0.73	15.9
6	R	34	0.0	0.529	101.1	LOS F	3.0	21.3	1.00	0.73	15.9
Approach		45	0.0	0.529	79.3	LOS E	3.0	21.3	0.79	0.71	18.9
North: RoadName											
7	L	1	0.0	0.434	9.0	LOS A	2.3	17.3	0.09	1.07	48.5
8	T	1283	6.2	0.434	0.8	LOS A	2.3	17.3	0.09	0.08	58.2
9	R	76	2.8	0.296	14.2	LOS B	1.0	6.9	0.30	0.72	43.2
Approach		1360	6.0	0.434	1.6	LOS A	2.3	17.3	0.10	0.12	57.0
West: RoadName											
10	L	37	2.9	0.200	51.2	LOS D	1.8	12.8	0.98	0.72	24.9
11	T	1	0.0	0.200	43.0	LOS D	1.8	12.8	0.98	0.71	25.1
12	R	13	0.0	0.193	98.8	LOS F	1.1	7.5	1.00	0.68	16.1
Approach		51	2.1	0.200	63.0	LOS E	1.8	12.8	0.98	0.71	21.9
All Vehicles		3921	3.2	0.883	3.9	LOS A	19.8	140.7	0.27	0.26	52.5



Scenario 1 (2016 Base) PM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: RoadName											
1	L	222	2.4	0.761	14.7	LOS B	16.8	124.4	0.57	0.92	44.3
2	T	1427	8.1	0.761	6.6	LOS A	16.9	126.2	0.58	0.53	47.9
3	R	42	0.0	0.283	18.8	LOS B	0.7	5.2	0.51	0.74	39.5
Approach		1692	7.2	0.761	8.0	LOS A	16.9	126.2	0.58	0.58	47.2
East: RoadName											
4	L	21	0.0	0.120	13.9	LOS B	0.4	2.7	0.38	0.66	43.5
5	T	18	0.0	0.835	68.1	LOS E	6.7	47.2	1.00	0.92	19.6
6	R	86	0.0	0.835	76.2	LOS E	6.7	47.2	1.00	0.92	19.5
Approach		125	0.0	0.835	64.6	LOS E	6.7	47.2	0.90	0.88	21.5
North: RoadName											
7	L	14	0.0	0.858	11.0	LOS B	13.1	94.3	0.41	1.02	47.8
8	T	2226	3.2	0.858	3.0	LOS A	14.6	105.3	0.43	0.38	52.5
9	R	144	1.5	0.473	19.4	LOS B	2.5	18.1	0.58	0.77	39.1
Approach		2384	3.1	0.858	4.0	LOS A	14.6	105.3	0.43	0.40	51.4
West: RoadName											
10	L	137	3.1	0.508	37.8	LOS D	4.1	29.8	1.00	0.78	29.4
11	T	1	0.0	0.508	29.5	LOS C	4.1	29.8	1.00	0.78	29.6
12	R	43	0.0	0.465	72.2	LOS E	2.6	18.5	1.00	0.73	20.1
Approach		181	2.3	0.508	46.0	LOS D	4.1	29.8	1.00	0.77	26.5
All Vehicles		4382	4.5	0.858	9.0	LOS A	16.9	126.2	0.53	0.50	46.2

Scenario 2 (2016 Design) AM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: RoadName											
1	L	105	0.0	0.885	10.5	LOS B	22.6	160.8	0.34	1.00	47.9
2	T	2421	1.9	0.885	2.3	LOS A	22.6	160.8	0.34	0.29	53.8
3	R	28	0.0	0.199	9.2	LOS A	0.1	0.7	0.07	0.68	47.8
Approach		2555	1.8	0.885	2.7	LOS A	22.6	160.8	0.34	0.32	53.4
East: RoadName											
4	L	28	0.0	0.120	8.2	LOS A	0.2	1.4	0.11	0.62	49.0
5	T	1	0.0	0.250	102.4	LOS F	1.4	9.9	1.00	0.69	14.9
6	R	14	0.0	0.250	110.5	LOS F	1.4	9.9	1.00	0.69	14.9
Approach		43	0.0	0.250	42.9	LOS D	1.4	9.9	0.42	0.65	27.6
North: RoadName											
7	L	1	0.0	0.449	9.1	LOS A	2.9	21.3	0.09	1.07	48.5
8	T	1360	5.6	0.449	0.9	LOS A	2.9	21.3	0.09	0.09	58.1
9	R	161	1.3	0.575	16.3	LOS B	3.3	23.4	0.42	0.76	41.4
Approach		1522	5.1	0.575	2.5	LOS A	3.3	23.4	0.13	0.16	55.7
West: RoadName											
10	L	19	5.6	0.300	57.2	LOS E	2.2	15.6	0.99	0.73	23.4
11	T	1	0.0	0.300	48.8	LOS D	2.2	15.6	0.99	0.72	23.5
12	R	41	2.6	0.300	82.8	LOS F	2.2	15.6	0.99	0.72	18.3
Approach		61	3.4	0.300	74.2	LOS E	2.2	15.6	0.99	0.72	19.7
All Vehicles		4181	3.0	0.885	4.1	LOS A	22.6	160.8	0.27	0.27	52.4

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Scenario 2 (2016 Design) PM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: RoadName											
1	L	226	2.3	0.641	10.4	LOS B	7.2	53.4	0.20	0.92	47.3
2	T	1412	7.8	0.641	2.3	LOS A	7.7	57.8	0.21	0.19	55.2
3	R	46	0.0	0.373	14.6	LOS B	0.7	4.6	0.32	0.72	42.8
Approach		1684	6.8	0.641	3.7	LOS A	7.7	57.8	0.21	0.31	53.6
East: RoadName											
4	L	74	0.0	0.541	15.1	LOS B	1.9	13.5	0.39	0.69	42.5
5	T	16	0.0	0.579	87.6	LOS F	3.4	23.7	1.00	0.75	16.7
6	R	25	0.0	0.579	95.8	LOS F	3.4	23.7	1.00	0.75	16.7
Approach		115	0.0	0.579	42.9	LOS D	3.4	23.7	0.61	0.71	27.5
North: RoadName											
7	L	7	0.0	0.859	9.9	LOS A	14.5	103.9	0.30	1.04	48.5
8	T	2500	2.9	0.859	1.7	LOS A	14.5	103.9	0.30	0.23	54.6
9	R	304	1.0	0.746	14.4	LOS B	6.3	44.4	0.37	0.77	43.0
Approach		2812	2.7	0.859	3.1	LOS A	14.5	103.9	0.31	0.29	53.0
West: RoadName											
10	L	61	1.7	0.829	55.9	LOS E	7.5	53.6	1.00	0.88	23.6
11	T	1	0.0	0.829	47.7	LOS D	7.5	53.6	1.00	0.88	23.7
12	R	159	2.0	0.829	76.4	LOS E	7.5	53.6	1.00	0.88	19.3
Approach		221	1.9	0.829	70.6	LOS E	7.5	53.6	1.00	0.88	20.4
All Vehicles		4832	4.0	0.859	7.3	LOS A	14.5	103.9	0.31	0.33	48.6

Scenario 3 (2021 Base) AM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: RoadName											
1	L	94	1.1	0.877	10.4	LOS B	20.6	145.9	0.33	1.01	48.0
2	T	2384	1.7	0.877	2.2	LOS A	20.6	145.9	0.33	0.28	54.0
3	R	27	0.0	0.218	9.3	LOS A	0.1	0.7	0.07	0.68	47.8
Approach		2505	1.6	0.877	2.6	LOS A	20.6	145.9	0.32	0.31	53.7
East: RoadName											
4	L	18	0.0	0.079	8.2	LOS A	0.1	0.8	0.11	0.62	49.0
5	T	1	0.0	0.407	97.9	LOS F	2.3	16.2	1.00	0.71	15.4
6	R	24	0.0	0.407	106.0	LOS F	2.3	16.2	1.00	0.71	15.3
Approach		43	0.0	0.407	65.3	LOS E	2.3	16.2	0.63	0.67	21.5
North: RoadName											
7	L	1	0.0	0.492	9.1	LOS A	3.1	23.2	0.10	1.07	48.5
8	T	1475	6.1	0.492	0.9	LOS A	3.1	23.2	0.10	0.09	58.0
9	R	105	2.0	0.411	14.5	LOS B	1.5	10.5	0.31	0.73	42.9
Approach		1581	5.9	0.492	1.8	LOS A	3.1	23.2	0.12	0.14	56.7
West: RoadName											
10	L	37	2.9	0.212	54.4	LOS D	1.9	13.8	0.98	0.72	24.1
11	T	1	0.0	0.212	46.1	LOS D	1.9	13.8	0.98	0.71	24.2
12	R	13	0.0	0.204	104.5	LOS F	1.1	8.0	1.00	0.68	15.5
Approach		51	2.1	0.212	66.7	LOS E	1.9	13.8	0.99	0.71	21.1
All Vehicles		4180	3.2	0.877	3.7	LOS A	20.6	145.9	0.26	0.25	52.9

SINCLAIR KNIGHT MERZ



Scenario 3 (2021 Base) PM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed	
		veh/h	%	v/c	sec	veh	m		per veh	km/h	
South: RoadName											
1	L	94	1.1	0.877	10.4	LOS B	20.6	145.9	0.33	1.01	48.0
2	T	2384	1.7	0.877	2.2	LOS A	20.6	145.9	0.33	0.28	54.0
3	R	27	0.0	0.218	9.3	LOS A	0.1	0.7	0.07	0.68	47.8
Approach		2505	1.6	0.877	2.6	LOS A	20.6	145.9	0.32	0.31	53.7
East: RoadName											
4	L	18	0.0	0.079	8.2	LOS A	0.1	0.8	0.11	0.62	49.0
5	T	1	0.0	0.407	97.9	LOS F	2.3	16.2	1.00	0.71	15.4
6	R	24	0.0	0.407	106.0	LOS F	2.3	16.2	1.00	0.71	15.3
Approach		43	0.0	0.407	65.3	LOS E	2.3	16.2	0.63	0.67	21.5
North: RoadName											
7	L	1	0.0	0.492	9.1	LOS A	3.1	23.2	0.10	1.07	48.5
8	T	1475	6.1	0.492	0.9	LOS A	3.1	23.2	0.10	0.09	58.0
9	R	105	2.0	0.411	14.5	LOS B	1.5	10.5	0.31	0.73	42.9
Approach		1581	5.9	0.492	1.8	LOS A	3.1	23.2	0.12	0.14	56.7
West: RoadName											
10	L	37	2.9	0.212	54.4	LOS D	1.9	13.8	0.98	0.72	24.1
11	T	1	0.0	0.212	46.1	LOS D	1.9	13.8	0.98	0.71	24.2
12	R	13	0.0	0.204	104.5	LOS F	1.1	8.0	1.00	0.68	15.5
Approach		51	2.1	0.212	66.7	LOS E	1.9	13.8	0.99	0.71	21.1
All Vehicles		4180	3.2	0.877	3.7	LOS A	20.6	145.9	0.26	0.25	52.9

Scenario 4 (2021 Design) AM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed	
		veh/h	%	v/c	sec	veh	m		per veh	km/h	
South: RoadName											
1	L	107	0.0	0.886	10.6	LOS B	25.2	178.6	0.35	1.00	47.9
2	T	2489	1.6	0.886	2.4	LOS A	25.2	178.6	0.35	0.30	53.7
3	R	28	0.0	0.276	9.4	LOS A	0.1	0.9	0.07	0.68	47.7
Approach		2625	1.5	0.886	2.8	LOS A	25.2	178.6	0.34	0.33	53.4
East: RoadName											
4	L	25	0.0	0.137	8.4	LOS A	0.2	1.5	0.12	0.63	48.8
5	T	1	0.0	0.320	108.6	LOS F	1.8	12.7	1.00	0.70	14.3
6	R	17	0.0	0.320	116.7	LOS F	1.8	12.7	1.00	0.70	14.3
Approach		43	0.0	0.320	53.1	LOS D	1.8	12.7	0.49	0.66	24.5
North: RoadName											
7	L	1	0.0	0.522	9.1	LOS A	4.0	29.4	0.11	1.07	48.4
8	T	1611	5.5	0.522	0.9	LOS A	4.0	29.4	0.11	0.10	57.9
9	R	159	1.3	0.587	16.2	LOS B	3.2	22.6	0.41	0.76	41.5
Approach		1771	5.1	0.587	2.3	LOS A	4.0	29.4	0.13	0.16	55.9
West: RoadName											
10	L	19	5.6	0.350	61.4	LOS E	2.4	17.4	1.00	0.73	22.4
11	T	1	0.0	0.350	53.0	LOS D	2.4	17.4	1.00	0.73	22.5
12	R	41	2.6	0.350	87.3	LOS F	2.4	17.4	1.00	0.72	17.6
Approach		61	3.4	0.350	78.7	LOS E	2.4	17.4	1.00	0.72	18.9
All Vehicles		4500	2.9	0.886	4.1	LOS A	25.2	178.6	0.27	0.27	52.4

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Scenario 4 (2021 Design) PM

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
							Vehicles veh	Distance m			
South: RoadName											
1	L	233	1.4	0.717	10.2	LOS B	8.5	62.2	0.20	0.94	47.5
2	T	1652	5.9	0.717	2.1	LOS A	9.2	67.9	0.21	0.19	55.4
3	R	46	0.0	0.409	15.8	LOS B	0.8	5.5	0.35	0.73	41.8
Approach		1931	5.2	0.717	3.4	LOS A	9.2	67.9	0.21	0.30	53.9
East: RoadName											
4	L	74	0.0	0.623	21.4	LOS C	2.7	18.6	0.42	0.73	38.0
5	T	17	0.0	0.667	100.1	LOS F	3.9	27.6	1.00	0.78	15.3
6	R	25	0.0	0.667	108.2	LOS F	3.9	27.6	1.00	0.78	15.2
Approach		116	0.0	0.667	51.8	LOS D	3.9	27.6	0.63	0.75	24.7
North: RoadName											
7	L	7	0.0	0.878	10.0	LOS B	18.9	133.7	0.33	1.04	48.5
8	T	2689	1.4	0.878	1.9	LOS A	18.9	133.7	0.33	0.25	54.0
9	R	297	1.4	0.691	10.9	LOS B	3.4	24.1	0.23	0.72	46.2
Approach		2994	1.4	0.878	2.8	LOS A	18.9	133.7	0.32	0.30	53.1
West: RoadName											
10	L	62	3.4	0.802	68.9	LOS E	9.2	65.5	1.00	0.90	20.7
11	T	1	0.0	0.802	60.6	LOS E	9.2	65.5	1.00	0.90	20.8
12	R	158	1.3	0.802	83.8	LOS F	9.2	65.5	1.00	0.89	18.1
Approach		221	1.9	0.802	79.5	LOS E	9.2	65.5	1.00	0.89	18.8
All Vehicles		5261	2.8	0.878	7.3	LOS A	18.9	133.7	0.32	0.33	48.5

B.3 Raglan Avenue / South Road

Base 2011 PM

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
South Road (S)										
1	L	79	0.0	0.049	7.8	LOS A	1	0.05	0.61	49.5
2	T	1349	4.4	0.475	1.4	LOS A	35	0.10	0.09	57.8
Approach		1428	4.2	0.475	1.8	LOS A	35	0.10	0.12	57.2
South Road (N)										
8	T	2081	3.0	0.762	2.1	LOS A	93	0.20	0.19	56.7
9	R	329	0.9	1.001#	12.1	LOS B	108	1.00	0.92	44.8
Approach		2410	2.8	1.000	3.1	LOS A	108	0.27	0.26	55.3

**Raglan Avenue**

10	L	253	1.6	0.204	7.9	LOS A	10	0.11	0.63	49.2
12	R	113	2.7	0.391	57.8	LOS E	55	0.94	0.79	23.2
Approach		366	1.9	0.392	23.3	LOS C	55	0.37	0.68	36.6
All Vehicles		4204	3.2	1.001	4.4	LOS A	108	0.22	0.25	53.5

B.4 Corunna Avenue / South Road**Base 2011 PM****Vehicle Movements**

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
South Road (S)										
2	T	1515	3.6	0.519	1.4	LOS A	41	0.11	0.10	57.8
3	R	33	0.0	0.381	14.0	LOS B	5	0.23	0.72	43.2
Approach		1548	3.6	0.519	1.7	LOS A	41	0.11	0.11	57.4
Corunna Avenue										
4	L	42	0.0	0.562	55.3	LOS E	69	0.98	0.80	23.9
6	R	111	0.9	0.560	55.6	LOS E	69	0.98	0.80	23.7
Approach		153	0.7	0.560	55.5	LOS E	69	0.98	0.80	23.7
South Road (N)										
7	L	59	0.0	0.793	10.5	LOS B	109	0.23	0.73	46.5
8	T	2290	2.1	0.797	2.3	LOS A	109	0.23	0.22	56.5
Approach		2349	2.0	0.797	2.5	LOS A	109	0.23	0.23	56.2
All Vehicles		4050	2.6	0.797	4.2	LOS A	109	0.21	0.21	53.8



B.5 Raglan Avenue / Marion Road

RaglanAve/MarionRd

Existing PM Peak (2007)

Signalised - Fixed time Cycle Time = 120 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Marion Road										
1	L	63	3.2	0.749	40.7	LOS D	207	0.92	0.88	28.3
2	T	1098	3.6	0.748	32.4	LOS C	208	0.92	0.82	31.8
3	R	52	3.8	0.624	59.6	LOS E	32	0.94	0.86	22.7
Approach		1213	3.6	0.748	34.0	LOS C	208	0.92	0.83	31.0
Raglan Ave										
4	L	144	3.5	0.535	34.9	LOS C	89	0.89	0.85	30.7
5	T	235	3.4	0.534	35.5	LOS D	89	0.91	0.78	30.4
6	R	74	4.1	0.535	53.0	LOS D	82	0.93	0.82	24.5
Approach		452	3.5	0.535	38.2	LOS D	89	0.91	0.81	29.3
Marion Road										
7	L	34	2.9	0.788	26.0	LOS C	285	0.81	0.88	35.0
8	T	1846	3.6	0.790	17.7	LOS B	285	0.81	0.75	40.4
9	R	123	3.3	0.410	26.3	LOS C	30	0.82	0.78	34.9
Approach		2003	3.5	0.790	18.3	LOS B	285	0.81	0.75	39.9
Bray St										
10	L	83	3.6	0.230	22.5	LOS C	32	0.73	0.77	37.2
11	T	154	3.9	0.757	40.8	LOS D	99	0.91	0.81	28.3
12	R	104	3.8	0.756	62.0	LOS E	99	1.00	0.91	22.2
Approach		341	3.8	0.756	42.8	LOS D	99	0.89	0.83	27.6
All Vehicles		4009	3.6	0.790	27.4	LOS C	285	0.86	0.79	34.3



RaglanAve/MarionRd

PM Peak (2010)

Signalised - Fixed time Cycle Time = 120 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Marion Road										
1	L	63	3.2	0.741	39.9	LOS D	207	0.91	0.87	28.6
2	T	1110	3.6	0.741	31.6	LOS C	208	0.91	0.81	32.1
3	R	52	3.8	0.635	61.0	LOS E	32	0.95	0.87	22.4
Approach		1225	3.6	0.741	33.2	LOS C	208	0.91	0.82	31.4
Raglan Ave										
4	L	145	3.4	0.542	35.4	LOS D	91	0.90	0.85	30.5
5	T	238	3.8	0.542	35.7	LOS D	91	0.91	0.78	30.3
6	R	75	4.0	0.542	53.1	LOS D	83	0.93	0.82	24.4
Approach		458	3.7	0.542	38.5	LOS D	91	0.91	0.81	29.2
Marion Road										
7	L	35	2.9	0.800	26.2	LOS C	291	0.81	0.88	34.9
8	T	1866	3.6	0.799	17.8	LOS B	292	0.81	0.76	40.3
9	R	125	3.2	0.418	26.4	LOS C	30	0.82	0.79	34.8
Approach		2026	3.6	0.799	18.5	LOS B	292	0.82	0.76	39.8
Bray St										
10	L	84	3.6	0.236	22.7	LOS C	33	0.73	0.77	37.1
11	T	155	3.9	0.777	41.6	LOS D	101	0.91	0.82	28.0
12	R	105	3.8	0.778	63.9	LOS E	101	1.00	0.92	21.8
Approach		344	3.8	0.778	43.8	LOS D	101	0.89	0.84	27.3
All Vehicles		4053	3.6	0.800	27.4	LOS C	292	0.86	0.79	34.3



Raglan Avenue/Marion Road

PM Peak (2020)

Signalised - Fixed time Cycle Time = 120 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Marion Road										
1	L	66	3.0	0.769	40.5	LOS D	218	0.93	0.88	28.4
2	T	1153	3.6	0.770	32.2	LOS C	219	0.93	0.83	31.9
3	R	54	3.7	0.698	67.1	LOS E	35	0.98	0.91	21.1
Approach		1273	3.6	0.770	34.1	LOS C	219	0.93	0.84	31.0
Raglan Ave										
4	L	151	3.3	0.567	36.2	LOS D	95	0.91	0.85	30.2
5	T	247	3.6	0.567	36.6	LOS D	95	0.92	0.79	29.9
6	R	77	3.9	0.567	54.2	LOS D	86	0.95	0.82	24.2
Approach		475	3.6	0.568	39.3	LOS D	95	0.92	0.82	28.9
Marion Road										
7	L	36	2.8	0.835	26.9	LOS C	314	0.85	0.89	34.5
8	T	1937	3.6	0.829	18.6	LOS B	314	0.85	0.79	39.7
9	R	129	3.9	0.445	27.4	LOS C	33	0.84	0.79	34.2
Approach		2102	3.6	0.829	19.2	LOS B	314	0.85	0.79	39.3
Bray St										
10	L	87	3.4	0.251	23.3	LOS C	35	0.75	0.78	36.7
11	T	161	3.7	0.826	43.8	LOS D	107	0.91	0.85	27.2
12	R	109	3.7	0.826	67.6	LOS E	107	1.00	0.98	21.0
Approach		357	3.6	0.826	46.0	LOS D	107	0.90	0.87	26.5
All Vehicles		4207	3.6	0.835	28.3	LOS C	314	0.88	0.81	33.8



Raglan Avenue/Marion Road

Design development (2010)

Signalised - Fixed time Cycle Time = 120 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Marion Road										
1	L	63	3.2	0.690	36.4	LOS D	197	0.86	0.86	30.0
2	T	1110	3.6	0.690	28.1	LOS C	198	0.86	0.77	33.9
3	R	80	4.1	1.000#	96.4	LOS F	53	1.00	0.96	16.4
Approach		1253	3.6	1.000	32.5	LOS C	198	0.87	0.79	31.7
Raglan Ave										
4	L	188	3.7	0.624	36.7	LOS D	125	0.89	0.87	30.0
5	T	307	3.6	0.624	35.1	LOS D	125	0.92	0.80	30.5
6	R	97	3.1	0.624	53.4	LOS D	94	0.95	0.83	24.3
Approach		592	3.5	0.624	38.6	LOS D	125	0.91	0.83	29.2
Marion Road										
7	L	54	3.7	0.891	41.0	LOS D	392	0.95	1.00	28.2
8	T	1866	3.6	0.890	32.7	LOS C	393	0.95	0.97	31.6
9	R	125	3.2	0.510	29.8	LOS C	36	0.88	0.79	33.0
Approach		2045	3.6	0.890	32.7	LOS C	393	0.95	0.96	31.6
Bray St										
10	L	84	3.6	0.270	24.2	LOS C	47	0.73	0.78	36.2
11	T	239	3.8	0.890	48.0	LOS D	134	0.90	0.91	25.9
12	R	105	3.8	0.889	74.6	LOS E	134	1.00	1.08	19.7
Approach		428	3.7	0.889	49.9	LOS D	134	0.89	0.92	25.3
All Vehicles		4318	3.6	1.000	35.2	LOS D	393	0.91	0.89	30.5



Raglan Avenue/Marion Road

Design development (2020)

Signalised - Fixed time Cycle Time = 120 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Marion Road										
1	L	66	3.0	0.761	39.7	LOS D	218	0.92	0.88	28.7
2	T	1153	3.6	0.763	31.4	LOS C	219	0.92	0.82	32.2
3	R	82	4.3	1.000#	110.7	LOS F	53	1.00	1.07	14.8
Approach		1301	3.6	1.000	36.0	LOS D	219	0.92	0.84	30.1
Raglan Ave										
4	L	194	3.6	0.627	36.2	LOS D	127	0.89	0.87	30.2
5	T	317	3.5	0.627	34.6	LOS C	127	0.91	0.80	30.7
6	R	99	4.0	0.627	52.7	LOS D	96	0.95	0.83	24.5
Approach		609	3.6	0.627	38.1	LOS D	127	0.91	0.83	29.4
Marion Road										
7	L	55	3.6	0.938	57.4	LOS E	499	1.00	1.15	23.3
8	T	1937	3.6	0.938	49.0	LOS D	500	1.00	1.15	25.6
9	R	129	3.9	0.508	31.8	LOS C	37	0.92	0.80	32.0
Approach		2121	3.6	0.938	48.2	LOS D	500	1.00	1.12	25.8
Bray St										
10	L	87	3.4	0.273	24.3	LOS C	47	0.73	0.78	36.1
11	T	245	3.7	0.899	49.0	LOS D	140	0.90	0.92	25.6
12	R	109	3.7	0.898	76.3	LOS E	140	1.00	1.10	19.4
Approach		441	3.6	0.899	50.9	LOS D	140	0.89	0.94	25.1
All Vehicles		4472	3.6	1.000	43.5	LOS D	500	0.95	0.98	27.3

Letter from Environmental Auditor, ERM – 2 April 2015



2 April, 2015

City of Marion
PO Box 21,
OAKLANDS PARK SA 5046

Our Reference: ERM_0130130_SC AUDIT_2 APRIL 2015.DOCX

Attention: Steve Hooper — Manager, Development Services
Steve.Hooper@marion.sa.gov.au

Dear Sir,

**RE: SITE CONTAMINATION AUDIT, FORMER HILLS INDUSTRIES
SITE, 944-956 SOUTH ROAD, EDWARDSTOWN SA**

1. INTRODUCTION

Following our recent discussions, this letter provides an update on the status of the site contamination audits being prepared for the former Hills Industries site situated in South Road, Edwardstown. From the town planning perspective, the letter outlines site management conditions that are likely to be contained in the relevant audit reports.

The audits are being undertaken to ensure that the Edwardstown Redevelopment zone and adjoining areas remain environmentally suitable for current and future uses (including the proposed Castle Plaza shopping centre). The audit work is being conducted in accordance with relevant guidance issued by the Environment Protection Authority (EPA). We also advise that we have regularly advised EPA of progress, and sought and obtained its valuable feedback.

The audit work will culminate in detailed audit reports, as well as auditor statements pursuant to section 103Z of the *Environment Protection Act 1993*. We are nearing completion of such documentation.

Please regard this letter as containing preliminary advice, pending further discussions with EPA.

2. AUDIT AREAS

The former Hills Industries site has been split into three separate audit areas. Each area has been tabulated below with details of each audit site.

2.1 AUDIT AREA 1 (AA1) - NORTH OF ACKLAND STREET - (EPA REFERENCE: 60485/05/18939)

Audit Site and address	Former Hills Industries Site <ul style="list-style-type: none"> • 944-956 South Road Edwardstown SA • 5 – 7 Ackland Street Edwardstown; • 1 Ackland Street Edwardstown • 958 South Road Edwardstown
Auditor	Warren Pump

2.2 AUDIT AREA 2 – SOUTH OF ACKLAND STREET - (EPA REFERENCE: 60893/05/2418)

Audit Site and address	Former Hills Industries Site: South of Ackland Street. 2 – 8 Ackland Street and 14 – 18 and 20 – 26 Ragland Avenue Edwardstown SA
Auditor	Paul Fridell (also of ERM)

2.3 AUDIT AREA 3 – MIXED USE AREAS 1 & 2 (EPA REFERENCE: 60708/05/19820)

Auditor	Paul Fridell
Audit Site and address	Former Hills Industries Site: Former Employee Car park (MUA1) and Former Employee Overflow Car park and Warehouse (MUA2). Ackland Street Edwardstown SA
Where to from here	Finalisation of ESA/SRA by AEC Finalisation of Audit Report by Auditor

3. CURRENT STATUS OF THE AUDITS

An adequate detailed assessment of the historical site uses, former manufacturing processes and potential contaminants of concern has been undertaken for each of the three areas described above. All remnants of manufacturing infrastructure have been removed.

In consideration of the information detailed in the reviewed reports, the remedial works undertaken to remove the identified sources of contamination and the risks to proposed future users of the site and current off-site receptors, the Auditors are not contemplating further clean-up work at this stage. Overall, the Auditors are of the opinion that risks posed by contamination at the sites are low and acceptable, given the proposed uses of the sites.

4. PROPOSED CONDITIONS FOR SITE MANAGEMENT

In proposed discussion with EPA, the Auditors will be recommending that the site contamination audit state the following for the three sites, AA1, AA2 and AA3:

- Land uses be restricted to the following in future:
 - High density residential (minimal access to soil) with no habitable basements¹ and ground floor residences; or
 - Commercial use; or
 - Industrial use.
- No extraction of groundwater for any use from all aquifers within a 200 m radius of the AA1 site, and accordingly EPA should arrange for a restrictive/prohibition zone on taking groundwater over such an area.
- Prior to completion and occupation of any redevelopment of the site, any soft landscaped areas proposed for the development (eg garden beds and lawns, but excluding paved areas) should be completed with a surface layer of at least 0.5m thickness of clean soil (eg commercially available topsoil).

¹ Habitable basements would include subsurface spaces used for human occupation including places of work, recreational rooms, bedrooms, living areas, etc, but excluding car parks, wine cellars, storage rooms etc.

Please do not hesitate to contact the undersigned if you have any questions.

Yours sincerely,
for Environmental Resources Management Australia Pty Ltd

A handwritten signature in black ink, appearing to read 'Warren Pump', is positioned above the printed name.

Warren Pump
Site Contamination Auditor (accredited
pursuant to Division 4 of Part 10A of
the *Environment Protection Act 1993*) w

Email Conformation of Habitable Rooms from Auditor 21 June 2017

From: Warren Pump
To: [David Barone](#)
Cc: [Don Smith](#); [Paul Fridell](#)
Subject: RE: Castle Plaza, Edwardstown - Audit Recommendation Clarification
Date: Wednesday, 21 June 2017 1:42:46 PM
Attachments: [image004.png](#)
[image005.jpg](#)
[image001.png](#)

David,

I agree that your description of the three story terrace house (an entry with stairs going up, garage and sometimes a laundry on the ground floor) would not fall within the meaning of a "ground floor residence" in my Site Contamination Audit Statement of 25 February 2016. I am comfortable that the known residual site contamination in Audit Area 1 would pose a low and acceptable level of risk to an occupied three storey terrace house designed on this basis.

I am also supportive of the Building Code's definition of habitable rooms. Such a definition is consistent with my intention in the audit report.

Warren Pump
Managing Partner

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Level 6, 99 King Street, Melbourne VIC 3000 Australia
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E warren.pump@erm.com | W www.erm.com

From: David Barone [<mailto:db@jensenplus.com.au>]
Sent: Wednesday, June 21, 2017 10:25 AM
To: Warren Pump
Cc: Don Smith
Subject: Castle Plaza, Edwardstown - Audit Recommendation Clarification
Importance: High

Hi Warren

As you're aware we are in the process of finalising the rezoning for the land covered by your Audit.

We are trying to provide some flexibility in the types of residential products able to be accommodated in this location – within the ambits of your recommendations for no ground level dwellings and habitable basements.

However, I want to get some greater clarification as to exactly what components of a dwelling would be acceptable on a ground floor in the audited area. For example, a 3 storey terrace house often developed in our CBD commonly includes an entry (with stairs going up), garage and sometimes a laundry on the ground floor (and no open space as this is upstairs with living rooms in the form of a balcony).

I'm considering defining what is meant by "habitable rooms" in the zone itself and am considering adopting the Building Code's definition as follows:



Is this something that would align with what you have recommended in your audit? If you can confirm / advise ASAP, as we are in the process of finalising the zoning for submission back to Council.

Regards

David Barone
Associate
BURP (Hons) MPIA

cid:image001.jpg@01D2761F.967B9170



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Frewville 5063 South Australia
(enter via North Street)

Jensen PLUS is the new name for Jensen Planning + Design

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Updated Aimsum Scenario Model Analysis Report – Jacobs, May 2017



Castle Plaza Shopping Centre Redevelopment

Vicinity Centres

Aimsun scenario model analysis report

IW143700-TP-RP-0001 | 2

08 March 2017

Client Reference

Document history and status

Revision	Date	Description	By	Review	Approved
0	13/02/2017	Internal draft	D. Osborne		D. Osborne
1	08/03/17	Issue	D. Osborne	S. Kapadia	S. Elaurant
2	10/03/17	Amended	S Elaurant		S Elaurant

Distribution of copies

Revision	Issue approved	Date issued	Issued to	Comments
0	13/02/2017	13/02/2017	Jensen Plus	
1	08/03/17	08/03/17	Jensen Plus	

Castle Plaza Shopping Centre Redevelopment

Project No: IW143700
Document Title: Aimsun scenario model analysis report
Document No.: IW143700-TP-RP-0001
Revision: 2
Date: 10 March 2017
Client Name: Vicinity Centres
Client No: Client Reference
Project Manager: Scott Elaurant
Author: Daniel Osborne
File Name: J:\IE\Projects\06_Central West\IW143700\21 Deliverables\IW143700-TP-RP-0001.docx

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Appendix A. Comparative result figures

1. Introduction

The Castle Plaza Shopping Centre is a medium sized retail centre located on South Road, Edwardstown, approximately 6 km from the Adelaide CBD. The centre is currently owned by Vicinity Centres and covers more the 22,000 m² gross leasable floor area (GFLA), including discount department store and supermarket anchors.

Former modelling for the entire site was previously done in 2012 to inform the development of a master plan and draft DPA investigations. The scheme at that time was substantially larger in scale and included over 45,000m² of retail floor space (ie double the existing centre), up to 15,000m² of commercial floor space and 100 residential apartments. Since this modelling was completed, there have been a number of changes to the strength of the retail and commercial markets, as well as changes to the ownership structures of key retail anchors which has seen a shift in the manner in which they cluster within existing centres. As a result, the likelihood of achieving the retail and commercial floor space previously modelled is highly unlikely into the long term future. As a result, Vicinity Shopping Centres has had to review the approach to the expansion of the activity centre, resulting in a significantly scaled down master plan scheme.

The revised scheme incorporates a reduced expansion of the Castle Plaza Shopping Centre onto the northern side of Raglan Avenue, with what is anticipated to include an additional full size supermarket of approximately 3,600m², a smaller supermarket of 1700m² and a range of speciality retail tenancies of up to 700m² sleeving the two supermarkets to the Raglan Avenue frontage. The scheme also includes additional retail floor space (in the order of 500m²) to the north of the existing Castle Plaza shopping centre, so there is an active frontage to Raglan Avenue to complement the new retail spaces on the northern side of Raglan Avenue.

Parking for up to 287 cars is provided on the site, accessed from both the Ackland Street and Raglan Avenue frontages. Servicing and loading of the supermarkets will be to their rear and accessed directly from Ackland Street. Revised road design and materials are anticipated to be applied to Raglan Avenue to create a slower main street environment to support easier and more comfortable pedestrian movement in this new destination.

A number of currently vacant land parcels located to the immediate north of Castle Plaza, including the former Hill Industries site, are also owned by Vicinity Centres. The proposed development of this site will be completed in two key stages. The first will consist of the new retail development between Raglan Avenue and Ackland Street. The second and ultimate stage will consist of mixed use residential and commercial development to be located on the vacant land north of Ackland Street.

As part of the traffic impact assessment for this proposed development, a microsimulation traffic model of the road network surrounding Castle Plaza has been developed using the Aimsun software package. This report documents the analysis carried out using the traffic microsimulation model to test the traffic impacts of the proposed development and the associated road network improvements.

1.1 Related documentation

This report forms part of the overall documentation of the proposed Castle Plaza Shopping Centre redevelopment and should be read in conjunction with the related documentation detailed in Table 1.1.

Table 1.1 : Related documentation

Document number	Type	Title/Description
IW143700-TP-RP-0002	Report	Base Model Development Report

2. Scenario Models

Three scenario models (including base model) have been developed as part of this project, as detailed in Table 2.1, each covering a distinct development stage. Across all scenarios, background traffic demand is based on existing observed traffic volumes. No scenarios incorporating forecast future demand have been developed.

Table 2.1 : Summary of modelled scenarios

Scenario	Road network	Traffic demand
1 (base model)	Existing	Existing observed
2	Stage 1 design	Existing observed + stage 1 retail development
3	Stage 2 design	Existing observed + stage 1 retail development + stage 2 commercial and residential development

The use of current traffic demand and not forecast future demand for the base traffic level is deliberate and consistent with previous traffic assessments of Castle Plaza. The reason is that base traffic demand on adjacent roads is highly constrained and has reached an effective saturation point. For local traffic, the entire residential catchment bounded by South Road, Cross Road, Dawes Road and Marion Road is fully developed.

Through traffic on South Road is limited by upstream capacity of the South Road corridor. Congested intersections north (Cross Road) and south (Dawes Road) of the site prevent significant traffic increase in the section adjacent to the Castle Plaza site. Past studies have confirmed that there was no growth in traffic volume on South Road between the first round of assessment in 2009 and the most recent in 2013. The Department of Transport Planning and Infrastructure (DPTI) is undertaking studies for the long term upgrading of South Road. However neither the form of any works that may be recommended by those studies, nor their timing, have been released to the public. Without major upgrading, assuming the base traffic on adjacent roads remains at its existing level is the most realistic assumption.

2.1 Scenario road networks

The Castle Plaza development Stage 1 and 2 design road networks as modelled are shown in Figure 2.1 and Figure 2.2.

2.1.1 Stage 1 network

The road network alterations proposed to accommodate the Stage 1 retail development are limited to facilitating car park access at four new property crossovers:

- Two full access crossovers on Ackland Street.
- One full access crossover on Raglan Avenue between Wilfrid Street and Brooks Street.
- One left-in/left-out only crossover on Raglan Avenue opposite the existing Castle Plaza access. This crossover has been limited to left-in/left-out movement only due to its proximity to the signalised intersection with South Road and a desire to avoid the creation of a busy 4-way priority controlled intersection within the influence zone of South Road.
- Reducing the speed limit on Raglan Avenue east of the Brook Street junction to 30 km/hr, reflective of its planned function as a pedestrian friendly main street environment.

2.1.2 Stage 2 network

The road network alterations proposed as part of the Stage 2 development are more extensive. In order to both facilitate access to the new development and mitigate the impacts of increased traffic generation, the following system has been modelled:

- Creation of a new single carriageway loop road off of Ackland Street to the north. This road is required to facilitate access to the proposed commercial & residential development on land north of Ackland Street.
- Creation of a new access road off of Ackland Street to the west of the intersection with South Road. This access road will serve proposed commercial development fronting South Road north of Ackland Street.
- Creation of a link road between Raglan Avenue and Ackland Street, incorporating a roundabout junction on Raglan Avenue. The link road is intended to provide improved connectivity between the proposed development and Raglan Avenue, while also minimising traffic activity at Wilfrid Street, addressing potential issues with vehicles queueing close to the railway level crossing.
- Restriction of right turn access from Raglan Avenue to Wilfrid Street. Again, this has been adopted to address issues around congestion and queuing in close proximity to the railway level crossing on Raglan Avenue.
- Traffic capacity improvements to the signalised intersection between South Road, Edward Street and Ackland Street, see Figure 2.2. Capacity improvement at this intersection is required to cater for additional traffic generation associated with the Stage 2 development. The changes consist of:
 - An additional right turn lane and lengthening of turn slots on the Edward Street approach.
 - Additional right turn and left turn lanes on Ackland Street.

Figure 2.1 : Stage 1 development network



Figure 2.2 : Stage 2 development road network



Figure 2.3 : South Road, Edward Street, Ackland Street intersection – existing configuration

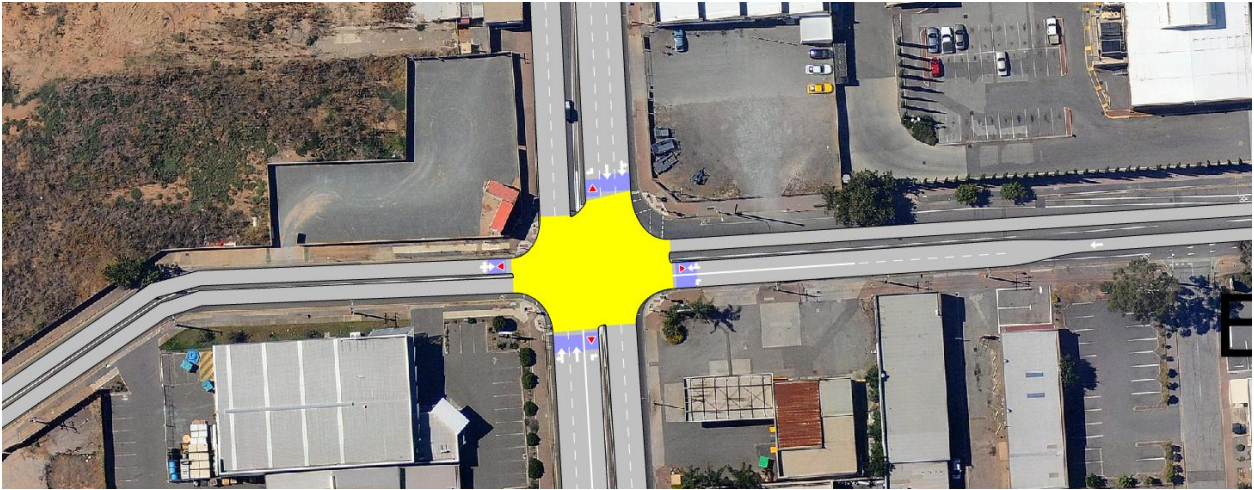
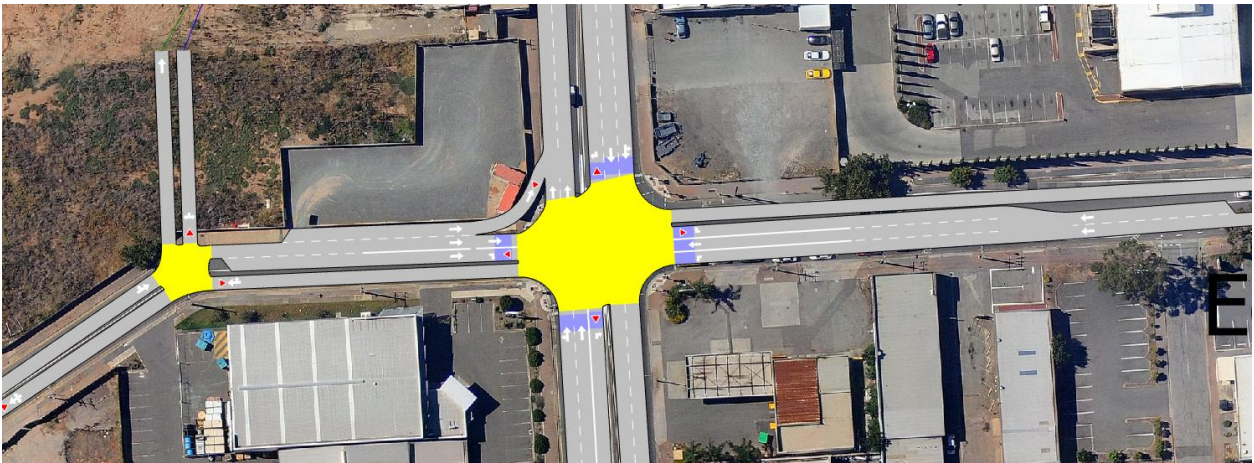


Figure 2.4 : South Road, Edward Street, Ackland Street intersection – stage 2 development increased traffic capacity configuration



3. Scenario demand

Traffic demand across all modelled scenarios incorporates existing observed background demand (light, heavy, public transport) as well as estimated new traffic generation associated with the proposed development. Estimation of existing base traffic demand is detailed in the Castle Plaza Aimsun Base Model Development Report (Jacobs 2017).

Calculation of likely development traffic generation and distribution has been based on the DPTI trip generation guidelines¹ and the ITE Trip Generation Manual².

3.1 Development traffic generation

Adopted traffic generation rates and total peak hour traffic generation attributable to each stage of development are summarised in Table 3.1 and Table 3.2.

For each modelled hour outside the peak hour for a particular land use, a scaling factor has been applied to the peak hour trip generation rate, as detailed in Table 3.3.

Scaling factors for retail land use have been calculated based on two-way volume counts taken at a number of the access points to the existing Castle Plaza centre. Given the centre is comprised almost entirely of retail, traffic volumes at these access points are considered to be a good indication of the retail traffic volume profile in the area. Factors for commercial and residential land use have been calculated based on the profile of observed traffic on Raglan Avenue, taken from a count at the intersection with Wilfrid Avenue in 2016. Traffic travelling along on Raglan Avenue is likely to have an origin or destination within the residential area bounded by South Road, Cross Road, Dawes Road and Marion Road, and as such, is considered to be a suitable proxy for the profile of new residential and commercial traffic generation in the Castle Plaza primary catchment area.

Table 3.1 : Stage 1 trip generation summary

Land use	Unit	Quantity	Peak hour trip rate	Peak hour trips (veh/hr)
Large supermarket	GFA (m ²)	3600	155 per 1000m ² GFA	558
Small supermarket	GFA (m ²)	1700	155 per 1000m ² GFA	264
Specialty retail	GFA (m ²)	915	46 per 1000m ² GFA	42
Total				864

Table 3.2 : Stage 2 trip generation summary

Land use	Unit	Quantity	Peak hour trip rate	Peak hour trips (veh/hr)
Commercial	GFA (m ²)	7000	2.02 per 100m ² GFA	141
Residential (Medium density)	Dwelling	290	0.42 per dwelling ³	123
Faster trade retail (existing centre expansion)	GFA (m ²)	1500	51 per 1000m ² GFA	77
Specialty retail (existing centre expansion)	GFA (m ²)	500	46 per 1000m ² GFA	23
Total				364

¹ Trip generation rates for assessment of development proposals, Department of Planning, Transport and Infrastructure

² Institute of Transportation Engineers, Trip Generation Manual, 8th Edition

³ Trip rate includes 20% discount to account for mixed use nature of overall development and close proximity high frequency rail and bus public transit.

Table 3.3 : Hourly factors applied to peak hour trip generation

	Modelled hour starting			
Land use type	7am	8am	4pm	5pm
Retail	20%	40%	100%	96%
Commercial & Residential	58%	100%	100%	90%

3.2 Development traffic distribution

Trip distributions for development generated traffic have been applied based on the land use type, consistent with the Castle Plaza trip distribution determined from analysis of existing access and intersection traffic count data. These are as follows:

- Stage 1 retail development and existing centre expansion trips have been distributed based on estimated distribution for the existing centre. This has been calculated based on turning count data collected at key Castle Plaza access points.
- Retail and commercial trips have been distributed based on a combination of inbound/outbound splits provided in the ITE Trip Generation Manual and origin destination data collected as part of a prior Castle Plaza traffic study.

Table 3.4 : Development traffic distribution

Land use	South Road (North)	South Road (South)	Raglan Avenue	Edward Street
Retail (Inbound)	26%	28%	43%	3% ¹
Retail (Outbound)	23%	18%	57%	3%
Commercial & Residential (Inbound)	16%	31%	48%	5%
Commercial & Residential (Outbound)	18%	37%	39%	6%

Note:

1. Turning traffic volumes at the South Road / Edwards Street / Ackland Street intersection indicate this volume is low. It is apparent that Castle Plaza customers approaching from the east are more likely to do so via Corunna Avenue, then approaching from the south on South Road.

4. Scenario performance

4.1 South Road Traffic Capacity Impacts

A summary of overall and route specific performance statistics across each modelled scenario is provided in Table 4.1. These results are also comparatively illustrated in Figure 4.1 to Figure 4.4. Route statistics have been reported for travel along South Road and Raglan/Edward, providing coverage of key areas to be affected by the proposed development. In addition, network plots illustrating change in traffic flow and travel delay between the base case and development case models are provided in Appendix A.

From the model results, the following overall outcomes can be observed:

- Across measures of delay, travel speed and travel time, traffic performance (level of service) during both peak periods is marginally reduced under the Stage 1 development scenario.
- Under the Stage 2 development scenario, network performance compared to existing is generally mixed. Overall delay and travel speed is approximately equal across both peak periods. Route travel time on South Road is marginally improved (excepting PM peak northbound travel), while on Raglan/Edward it is moderately degraded.

The general minor reduction in travel performance under the stage 1 development scenario is purely attributable to additional trip generation likely to be created by the proposed new retail floor space. As no road network changes or improvements are proposed under this scenario (other than development access), this is an expected result. However, the overall impact to travel conditions due to the proposed development is low. For example, Table 4.1 demonstrates that the average delay time for the base case and development scenarios in both AM and PM peak varies by less than 10 seconds per km. This indicates that the additional development traffic generation can be accommodated by the existing road network without causing any substantial congestion issues. This is supported by review of the simulation animation, which shows a generally similar level of vehicle queueing compared with the base case and no new operational issues (such as excessive turn lane spill over).

The Stage 2 development scenario results show that, for the most part, the proposed network changes and improvements successfully mitigate traffic impacts associated with the additional traffic generation. This is largely due to the improved east/west accessibility created by increased capacity at the South Road / Edward Street / Ackland Street intersection and the new link road between Raglan Avenue and Ackland Street. By providing a high quality link between Ackland and Raglan, including a relatively high capacity roundabout intersection on Raglan, Ackland Street becomes a more attractive route for east/west and north/west travel. The result is reduced traffic volumes at the Raglan Avenue / South Road intersection which, when combined with capacity improvement to the Edward Street / South Road intersection, allows for increased green time for South Road movements.

Despite the proposed mitigation measures, travel time between Raglan Avenue to Edward Street is moderately increased under the Stage 2 development scenario. This is largely due to the new link road intersection, increased side friction from development access and, for some movements, increased traffic volume. However, the simulation animation does not reveal any substantial operational issues along this route, and given the intention to create a lower speed environment along Raglan Avenue, this impact is not considered critical.

Table 4.1 : Scenario model performance summary

	Base Case AM	Base Case PM	Stage 1 AM	Stage 1 PM	Stage 2 AM	Stage 2 PM
General Statistics						
Average Delay Time (sec/km) - All	52.77	59.22	55.36	65.02	50.25	61.11
Average Speed (km/h) - All	34.29	32.38	33.35	30.98	34.68	31.78
Route Statistics						
South Road (northbound)						
Travel time	230.05	189.08	242.59	204.66	219.33	201.83
Delay	103.80	62.34	116.36	77.91	93.11	75.09
South Road (southbound)						
Travel time	166.16	231.60	166.91	229.32	157.70	204.54
Delay	40.95	106.49	41.69	104.18	32.47	79.41
Raglan to Edward						
Travel time	199.46	196.95	199.70	229.48	226.43	238.49
Delay	91.42	89.51	91.61	122.02	100.22	110.16
Edward to Raglan						
Travel time	223.59	186.55	231.89	200.41	259.08	230.09
Delay	113.73	77.31	122.52	91.35	107.66	100.37

Figure 4.1 : Average model network delay comparison

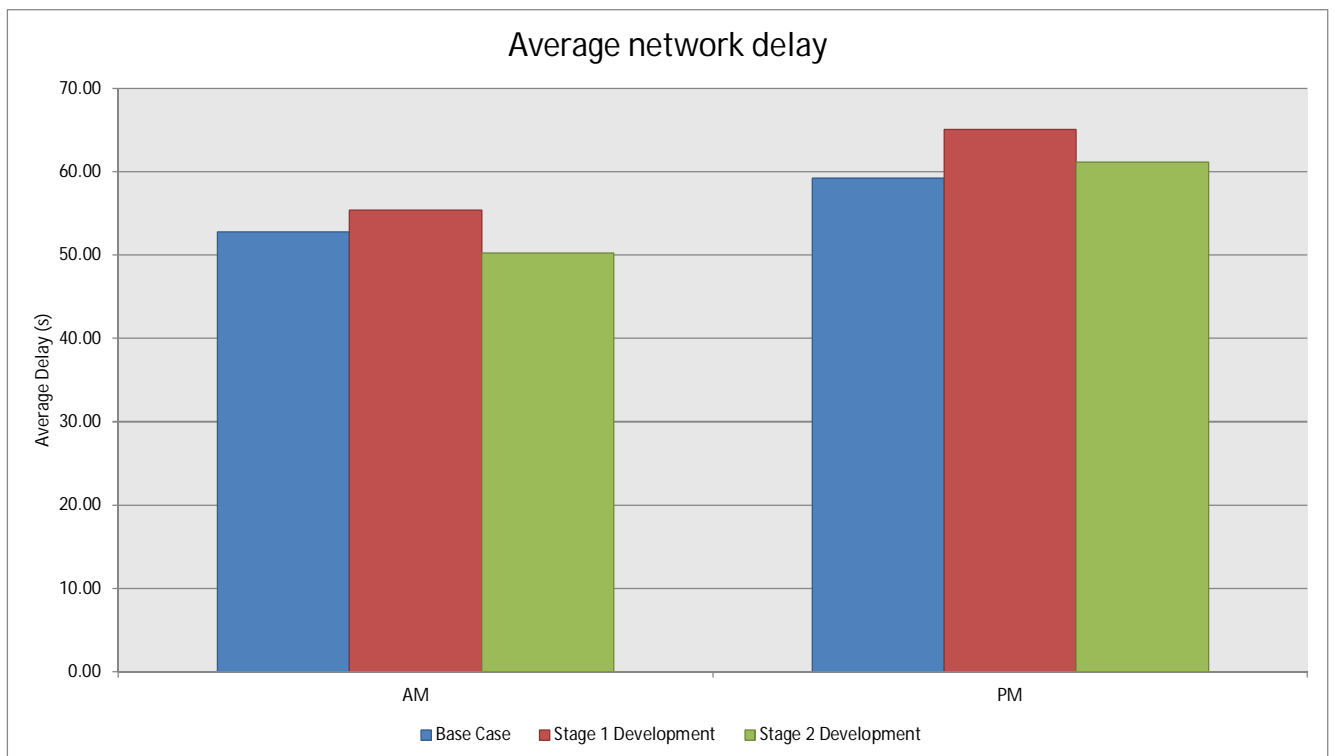


Figure 4.2 : Average model network travel speed comparison

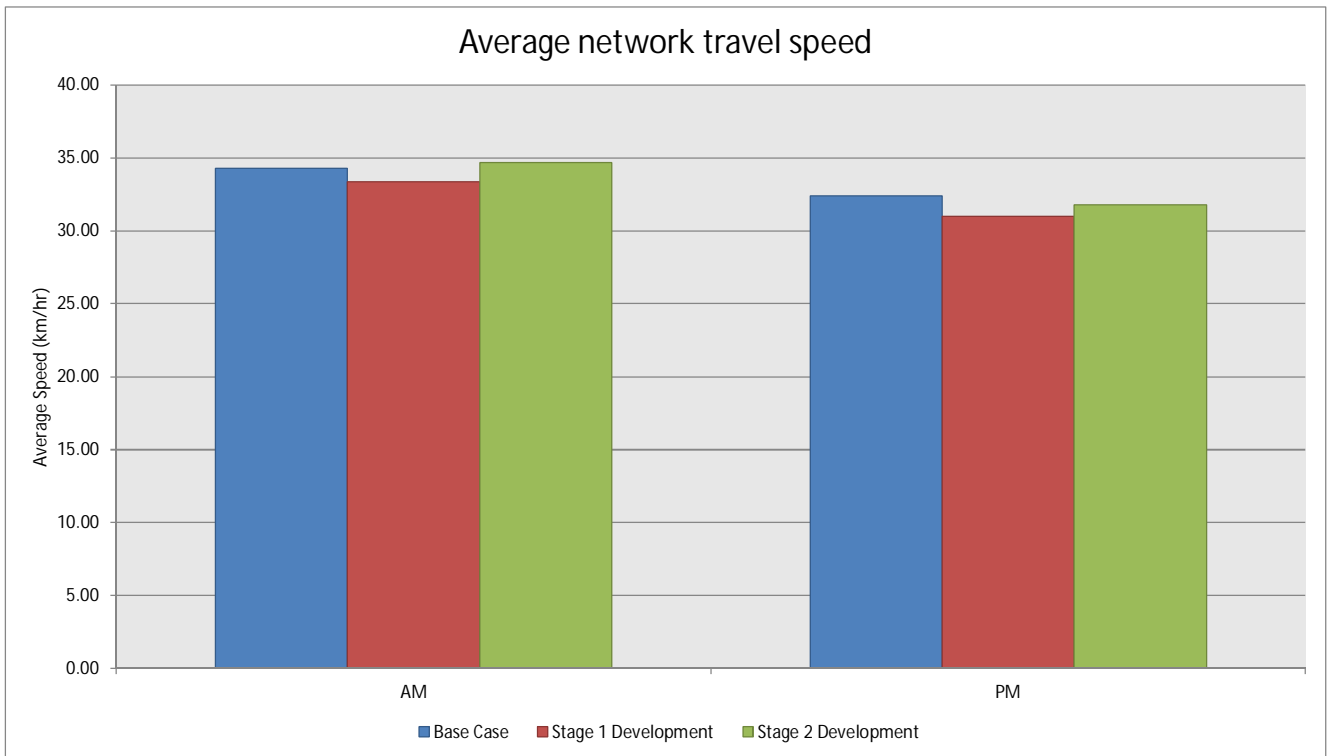


Figure 4.3 : AM peak (7:00am – 9:00am) route travel time comparison

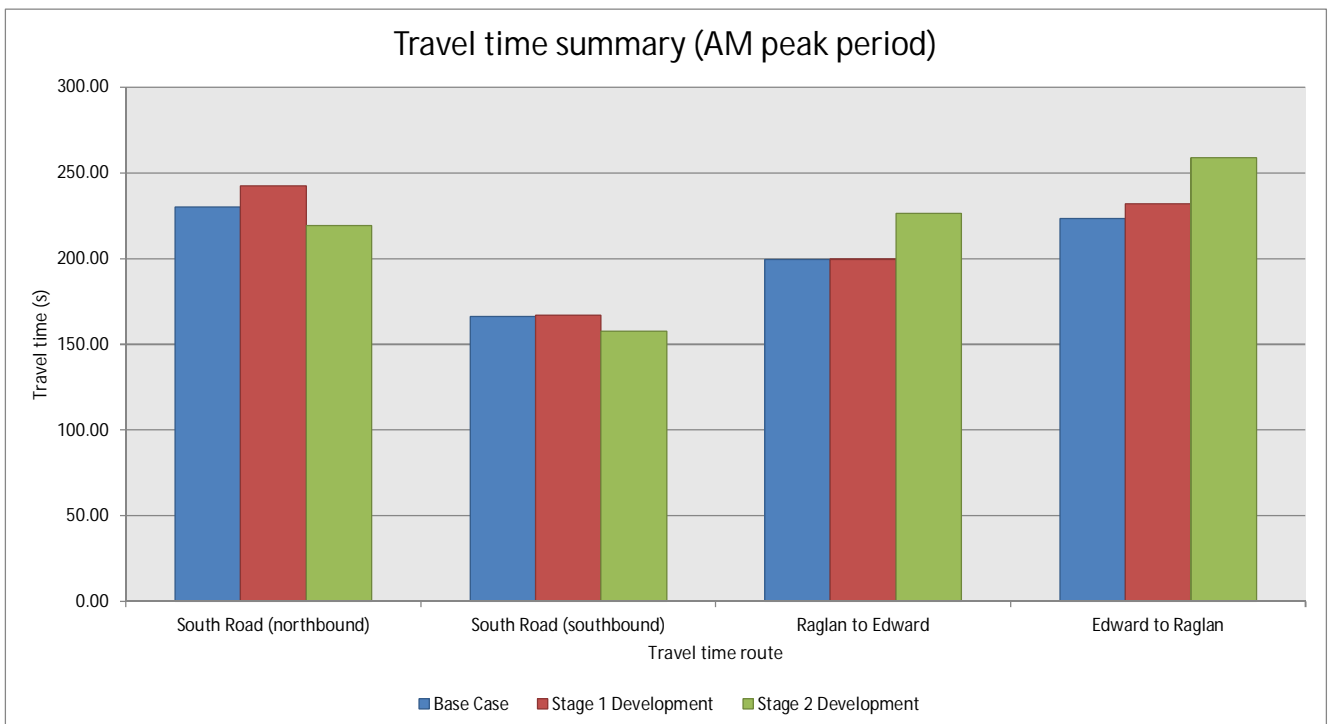
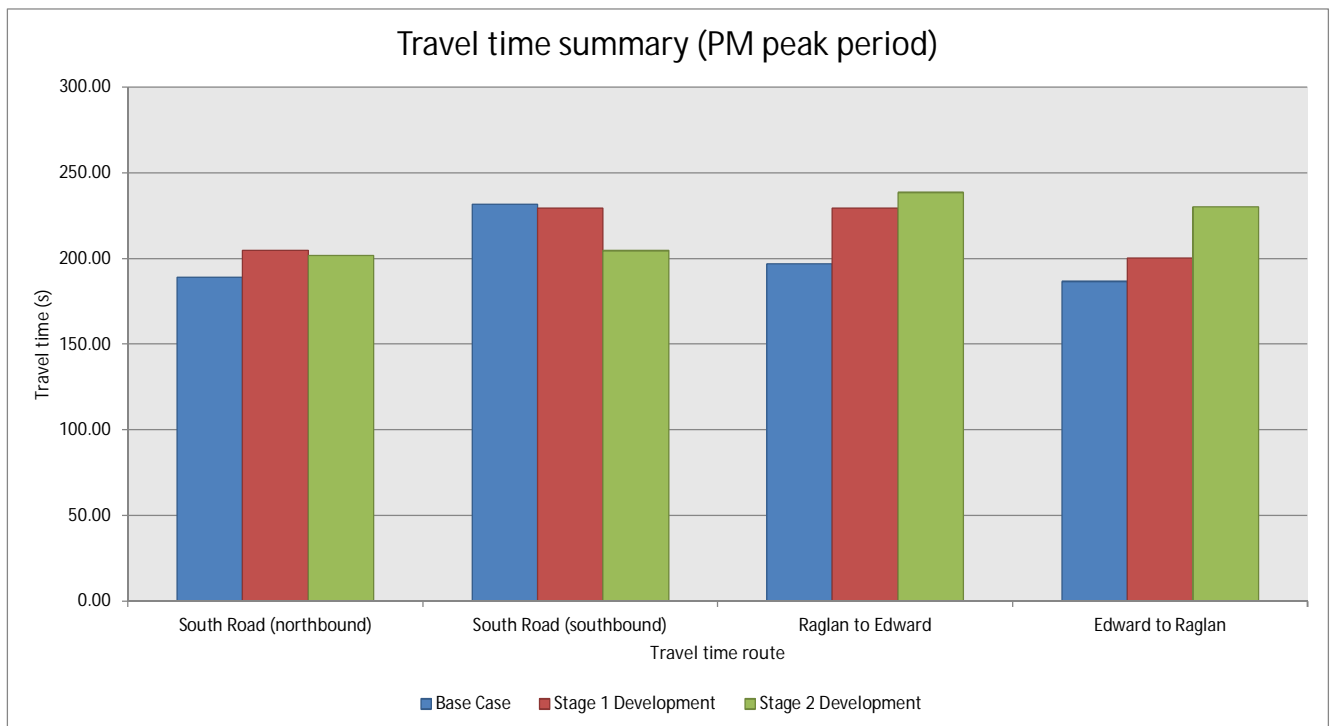


Figure 4.4 : PM peak (4:00pm – 6:00pm)



4.2 Traffic Operations on Raglan Avenue

The addition of the new link between Ackland Street and Raglan Avenue has a redistributive effect on development generated traffic and local traffic. Daily (24 hour) traffic count data was not available for this section of Raglan Avenue (adjacent to the shopping centre). Based on modelled peak hourly flows, daily traffic volumes have been synthesised. Resulting Raglan Avenue traffic volume are shown in Table 4.2.

Table 4.2 Hourly traffic volumes along Raglan Avenue

Modelled Scenario	Raglan Avenue Traffic Volume		
	Base	Stage 1	Stage 2 (New Link)
AM	600 veh/hr	700 veh/hr	500 veh/hr
PM	900 veh/hr	1100 veh/hr	800 veh/hr
Daily = (AM + PM) x 5	8000 veh/day	9000 veh/day	7000 veh/day
Daily Count	None available		

The addition of a single lane roundabout at the Raglan Avenue/new link intersection in particular facilitates the rerouting of some traffic from Raglan Avenue to Ackland Street. Based on the model traffic assignment:

- With the addition of the expanded shopping centre but no new link to Ackland Street, traffic volumes on Raglan Avenue increase, though to a level still below 10,000 veh/day
- With the addition of the Stage 2 traffic generation and new link between Ackland Street and Raglan Street, traffic volumes on Raglan Avenue decline to below their current level.

- In all cases, peak traffic volume on Raglan Avenue (1100 vehicles per hour) is well below the mid-block capacity of a traffic lane (1700 vehicles per hour).

Raglan Avenue has been proposed as a traffic calmed “main street” environment, with greater priority given to pedestrian amenity and safety. This would see the speed environment reduced from the present 60 km/hr to 30 km/hr, for the section of Raglan Avenue adjacent to the development frontage. Reducing traffic speed from 60 km/hr to 30 km/hr would reduce theoretical traffic capacity from 1700 veh/hr to 900 veh/hr (Austroads Part 3⁴) though in modelling and practice has shown higher volumes are able to be accommodated. The modelled demand would be below the theoretical capacity of a speed-reduced Raglan Avenue in the AM peak, and slightly above in the PM peak. Raglan Avenue is not listed as a freight route, major traffic route or peak hour route. Hence speed reduction is considered appropriate in a functional sense.

There are currently no prescriptive guidelines on the classification and design of Main Streets in Australia. VicRoads has published SmartRoads guidelines (VicRoads 2016) that classifies every road in Melbourne on a functional basis by time of day. Under these speed limits are lowered next to shops during trading hours to 40 km/hr or less, then returned to 60 km/hr after hours. This highlights the desirability of lowering speed limits near retail facilities for safety reasons, particularly for pedestrians. Internationally, traffic standards are being revised to recognise this change in design philosophy. The 2009 revised French traffic Code recognises 30 km/hr zones as desirable to achieve a balance between traffic and “local life” functions (Bertrand 2016⁵).

Whilst there are not exact local or national guidelines, there are examples of other roads in Adelaide that have been treated in a similar manner. Prospect Road, Unley Road and Pirie Street are all examples of roads carrying over 10,000 vehicles a day that are in places slowed to 50 km/hr or less to reflect the urban environment and road function. All of these operate safely, demonstrating that the critical issues are road function and speed management, not traffic volume. In this context it is considered that Raglan Avenue will operate satisfactorily as a main street in the frontage of the development, provided design features are added to reduce speed. This would be achieved through measures such as kerb buildouts to reduce the perceived trafficable pavement width, on-street parking, speed zoning, and possibly raised pavements and paving treatments. In our view this would all be consistent with Raglan Avenue’s function as a Council-controlled, Sub-Arterial or Collector level Road.

As a design example, Prospect Road is discussed in greater detail. Prospect Road is a State-controlled road in the City of Prospect, formerly designated as an arterial road, now designated as a “priority pedestrian corridor”, in the “Functional Hierarchy for South Australia’s Land Transport Network”, DPTI (2012). Daily traffic volume varies from 18,000 to 13,000 vehicles per day (DPTI, 2015), more than 60% greater than Raglan Avenue. It has a road reserve width of 18 metres to 20 metres wide, comparable to Raglan Avenue adjacent to the development frontage. Prospect Road is shown in Figure 4.5. Under the Prospect Road Masterplan streetscapes are being upgraded to facilitate its development as a more urbanised environment. We are not aware of any significant adverse traffic issues since its classification has changed.



Figure 4.5 : Example Main Street Development in Prospect Road

⁴ Austroads Guide to Traffic Management (2009), Part 3 Traffic Studies, Figure 3.1

⁵ Bertrand, D. (2016) Inserting Streetcars into Pedestrian Areas: French Examples, 13th National LRT and Streetcar Conference, P.16.

5. Summary

The traffic capacity and operational impacts associated with the expansion of Castle Plaza Shopping Centre have been evaluated using a traffic microsimulation model, developed using the Aimsun software package, of the road network surrounding the shopping centre. Two stages of development have been tested; Stage 1 consisting of a new retail centre on Raglan Avenue immediately north of the existing centre, and Stage 2 consisting of residential and commercial development on the remaining vacant land owned by Vicinity Centres.

Under the Stage 1 development scenario, the model results show that the increased retail traffic generation will likely result in a marginal decline in travel conditions on South Road and Raglan Avenue. However, the overall impact on traffic performance is low, indicating that that additional development traffic generation can be accommodated by the existing road network without causing any substantial congestion issues. As such, no impact mitigation measures have been proposed as part of the Stage 1 development.

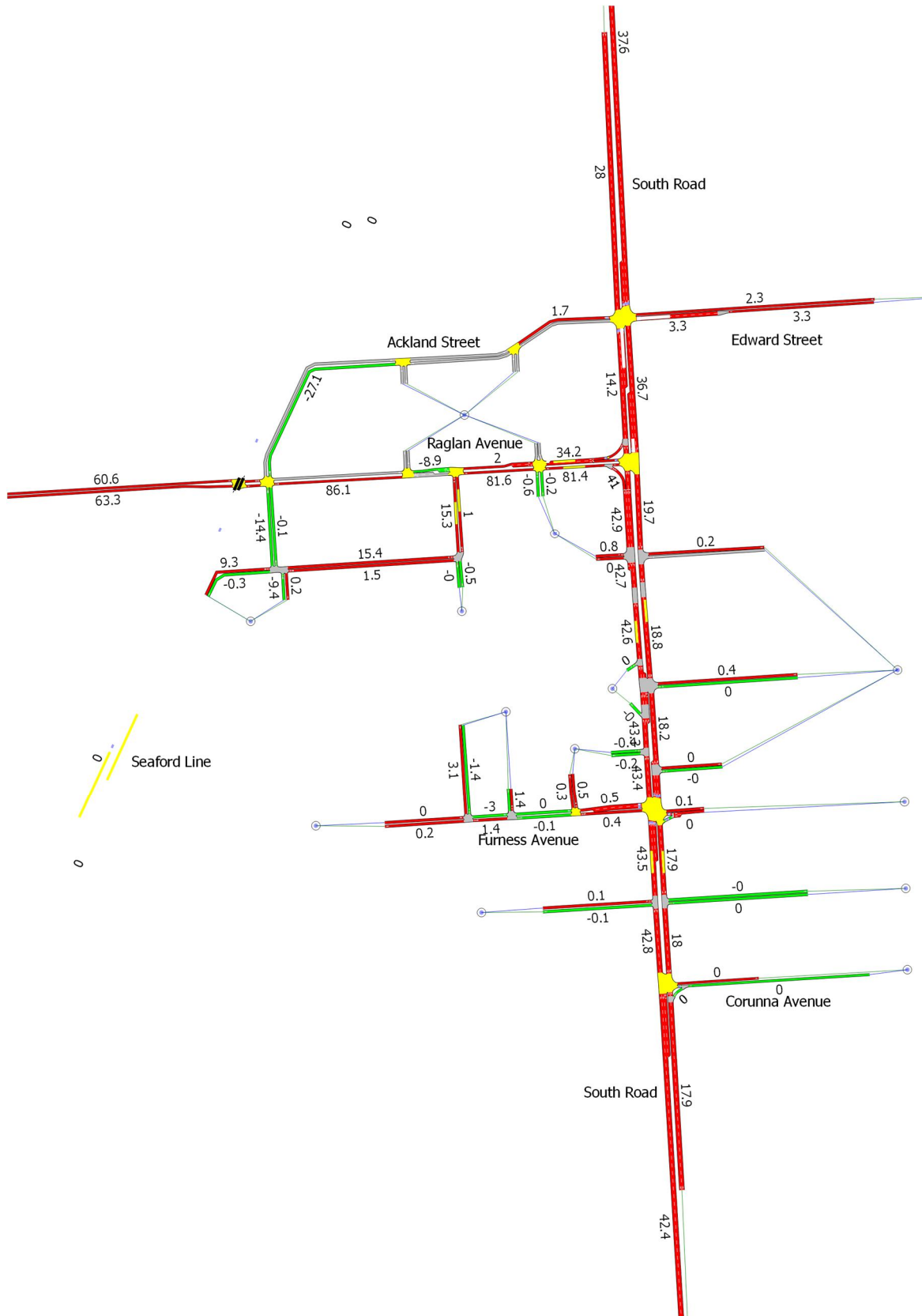
As part of the Stage 2 development, traffic capacity improvements to the Edward Street / Ackland Street / South Road intersection and a new link road between Raglan Avenue and Ackland Street will be implemented. Modelling of this scenario has shown that these improvements are able to successfully mitigate traffic impacts associated with the development, maintaining travel conditions on South Road adjacent Castle Plaza as existing.

The proposed expansion and new local link will also have an effect on traffic operations and the level of traffic volume in Raglan Avenue and amenity. Traffic volumes on Raglan Avenue adjacent to the shopping centre will increase by 12.5% with the addition of the Stage 1 development traffic. Traffic volumes at the same location with the addition of Stage 2 traffic and the new local link between Ackland Street and Raglan Avenue decline by 28%, to below their current base level. This highlights the benefits of the proposed roundabout and new link on local traffic distribution and accessibility.

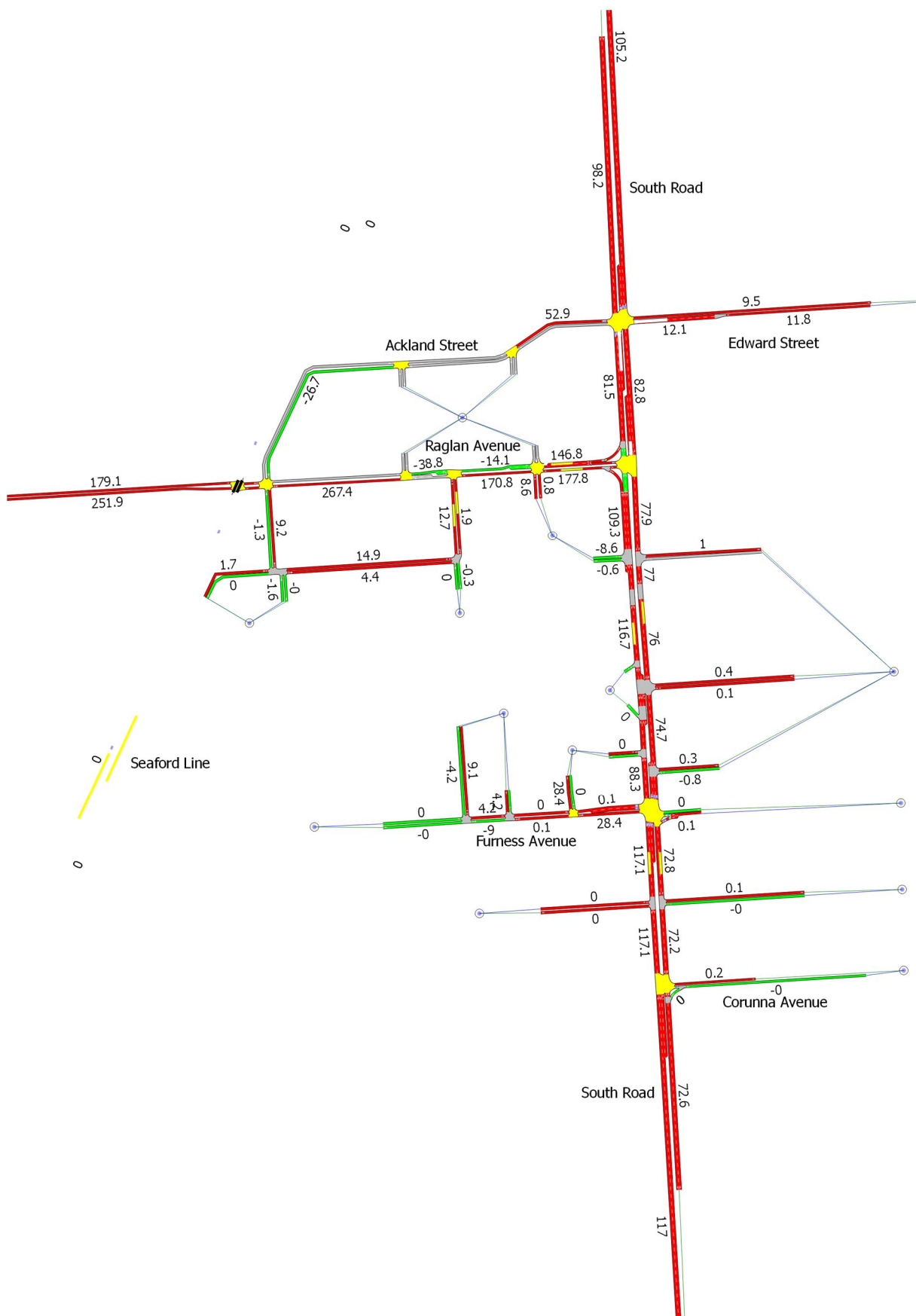
The section of Raglan Avenue between Brooks Street and South Road is proposed to become a “main street”, with traffic speed reduced to 30 km/hr. Speed reduction should be achieved through a range of design features including kerb and paving treatments and on-street parking. This will reduce the traffic capacity of Raglan Avenue, but it should still be sufficient to cater for the modelled volume of traffic in Stage 1 and Stage 2. Speeds have already been lowered on other similar roads in Adelaide with higher traffic volumes. The speed reduction should greatly improve the level of safety for active transport modes.

Appendix A. Comparative result figures

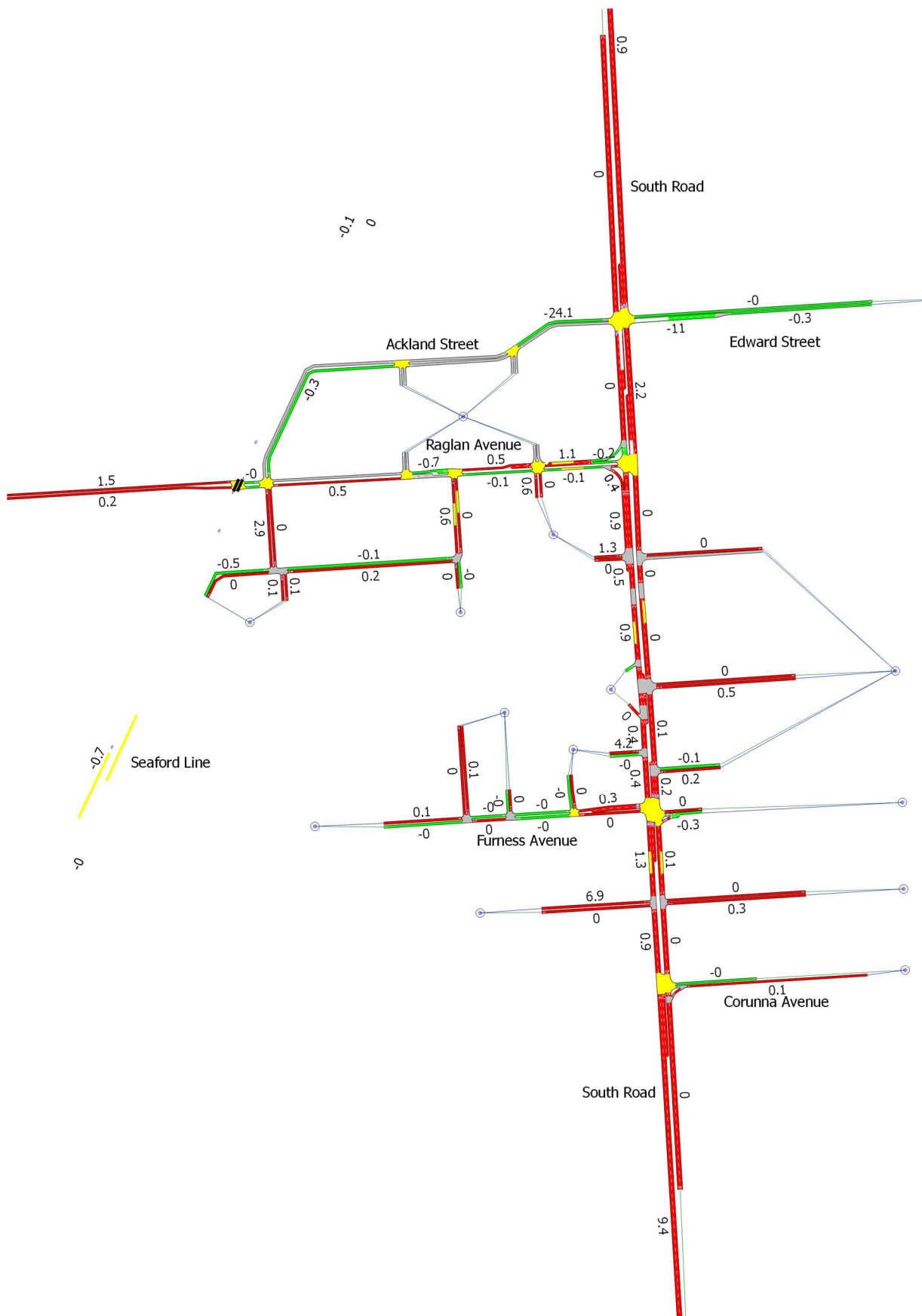
Stage 1 development AM average flow difference (7:00am – 9:00am) (veh/hr)



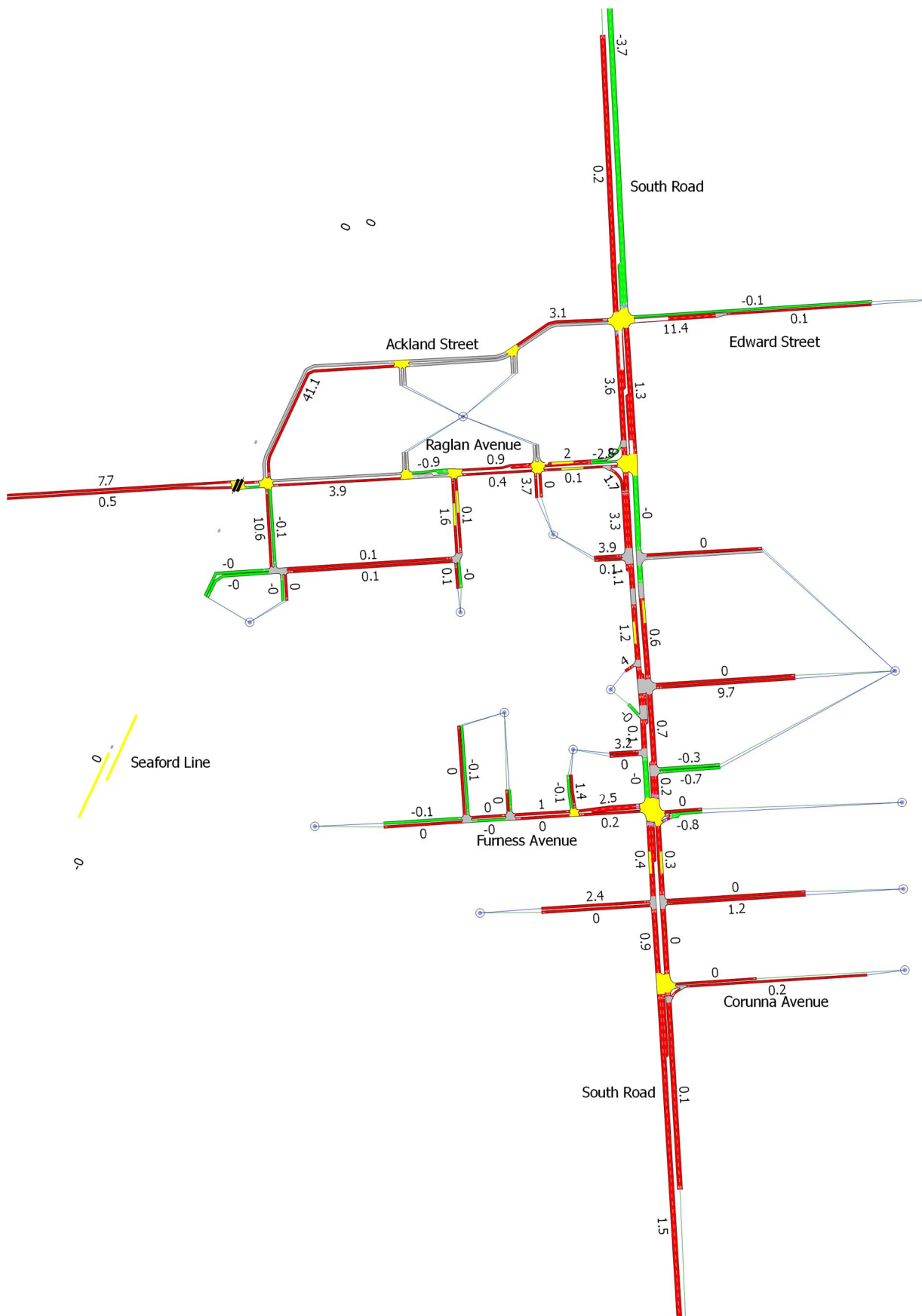
Stage 1 development PM average flow difference (4:00pm – 6:00pm) (veh/hr)



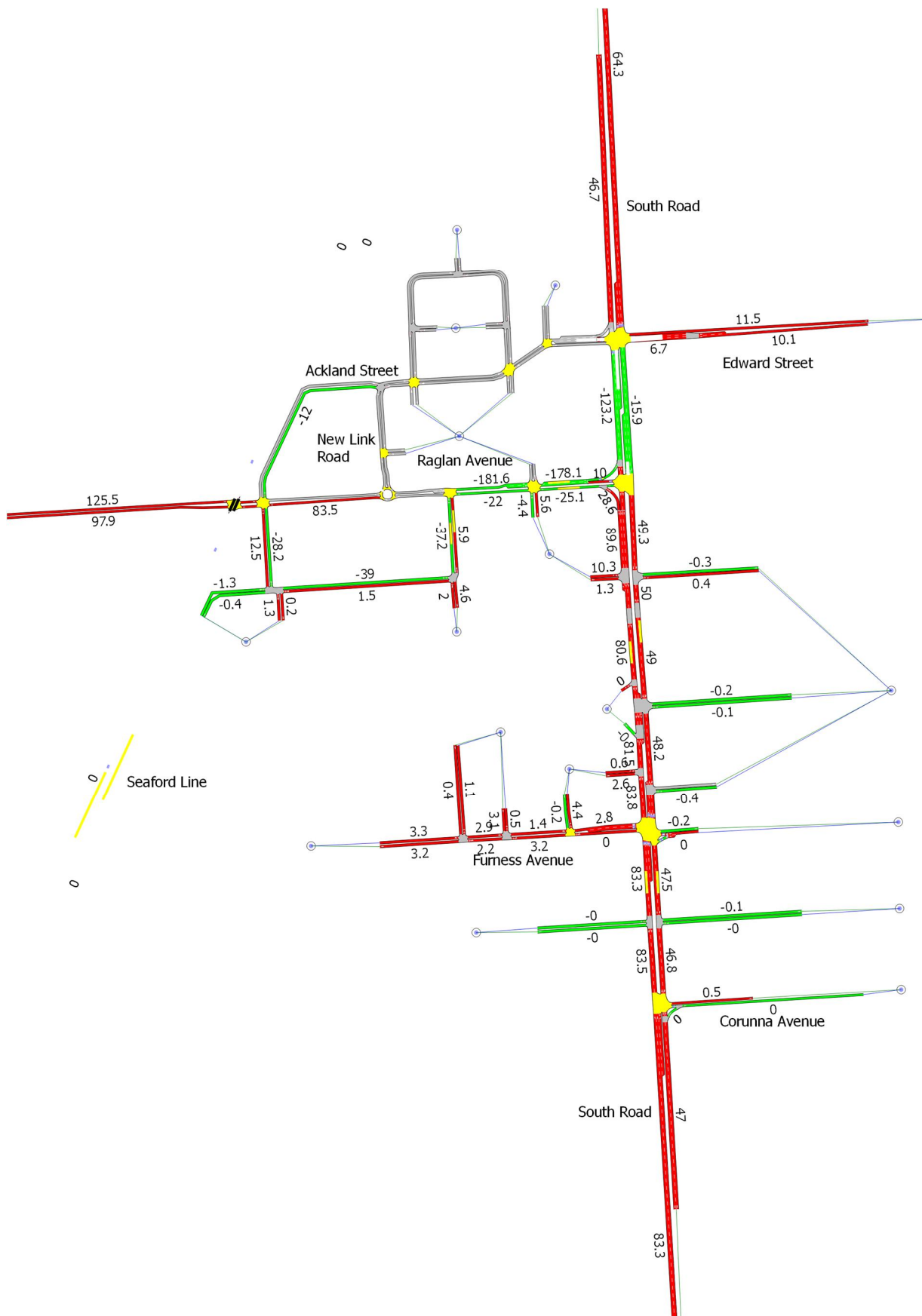
Stage 1 development AM average delay difference (7:00am – 9:00am) (seconds)



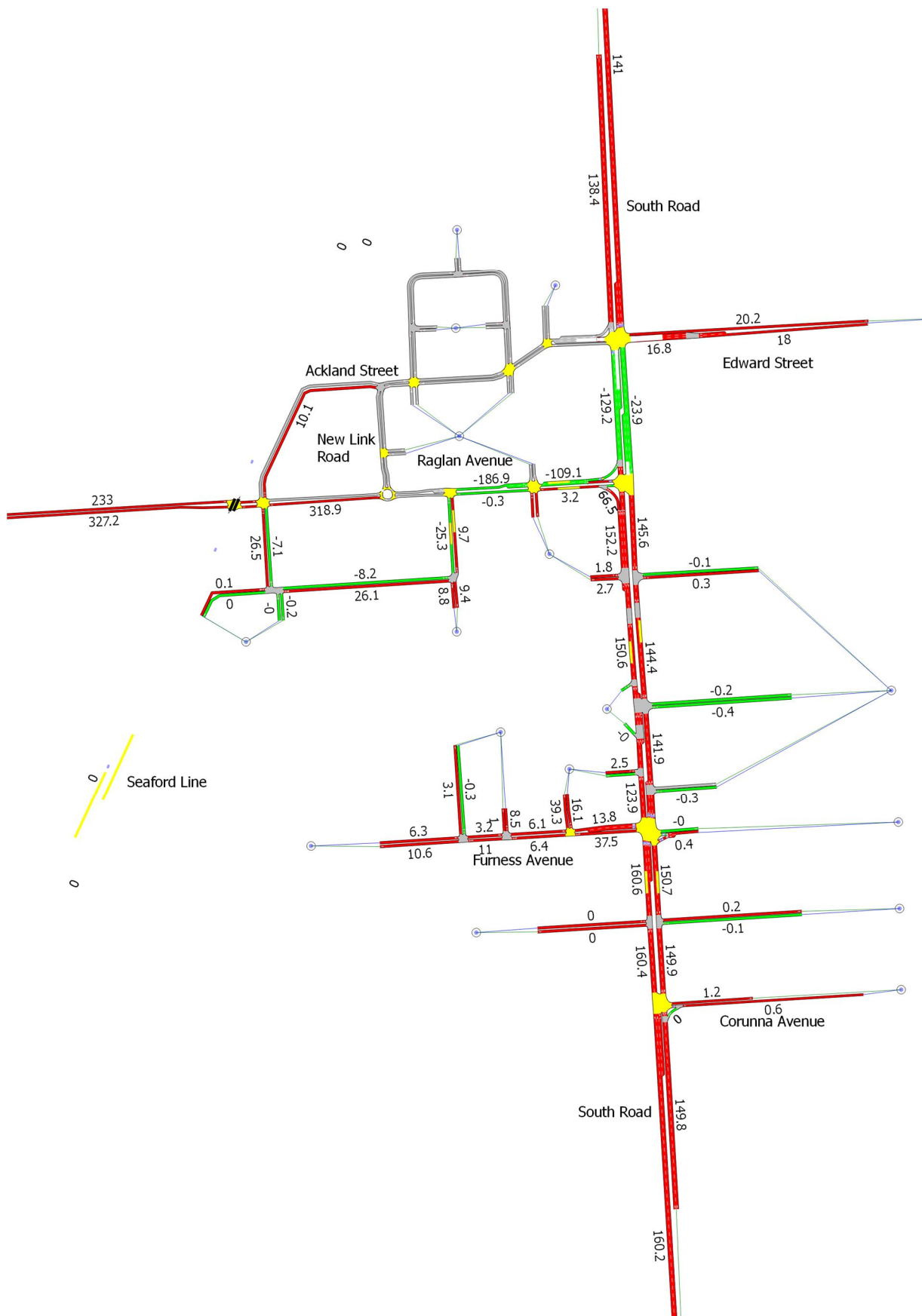
Stage 1 development PM average delay difference (4:00am – 6:00am) (seconds)



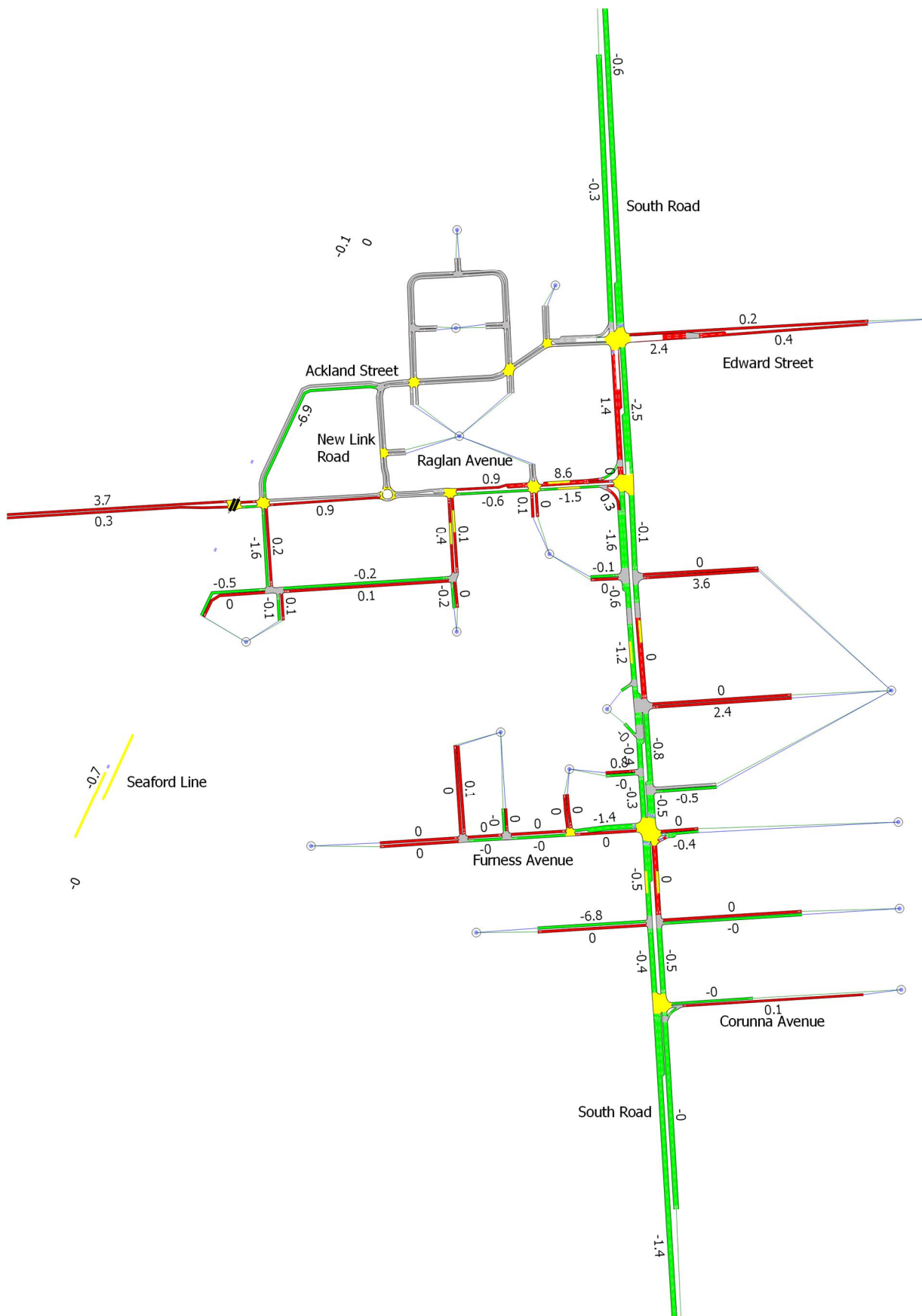
Stage 2 development AM average flow difference (7:00am – 9:00am) (veh/hr)



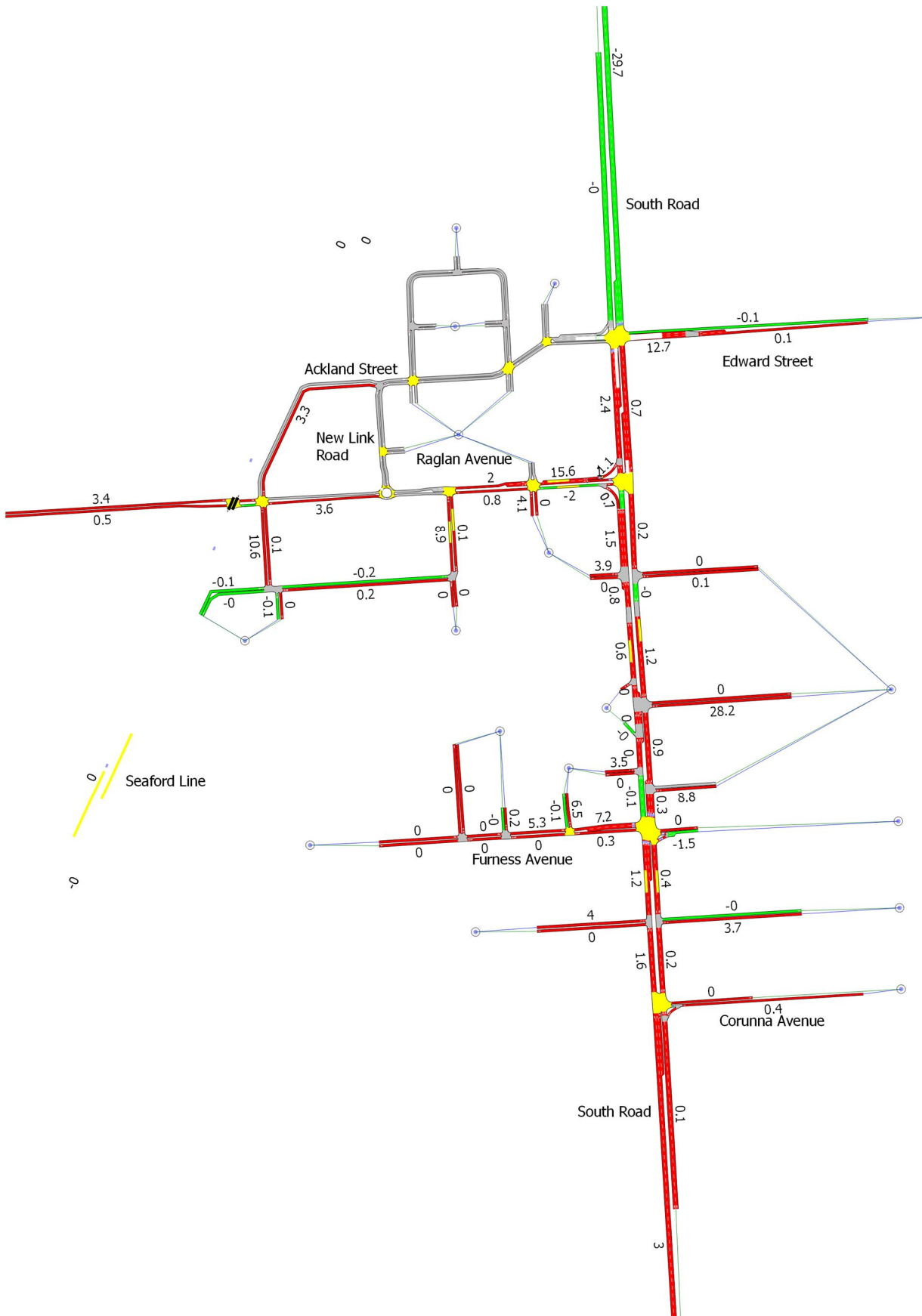
Stage 2 development PM average flow difference (4:00pm – 6:00pm) (veh/hr)



Stage 2 development AM average delay difference (7:00am – 9:00am) (seconds)



Stage 2 development PM average delay difference (4:00am – 6:00am) (seconds)



Roadways Concept Plans and Cross Sections

- ENCLOSED MALL
- NEW CARPARK/LOADING
- EXISTING ROADWAYS
- NEW SUPERMARKET
- NEW SUPERMARKET
- NEW RETAIL
- NEW LANDSCAPING
- NEW PLAZA
- FOOTPATH
- PAVED TRAFFIC CONTROL
- FUTURE DEVELOPMENT/ROAD CONNECTION
- PEDESTRIAN ACCESS

PROPOSAL SUMMARY	
MAJOR RETAIL	3600
	1700
	5300
SPECIALTY RETAIL775	
TOTAL	6075
CARPARKS	
EAST	106
WEST	129
SOUTH	22
NORTH	27
STAFF	26
TOTAL	310
CARPARK RATIO	
(310/6075) x 100	5.10

Proposal Summary - SHORT TERM
1 : 500

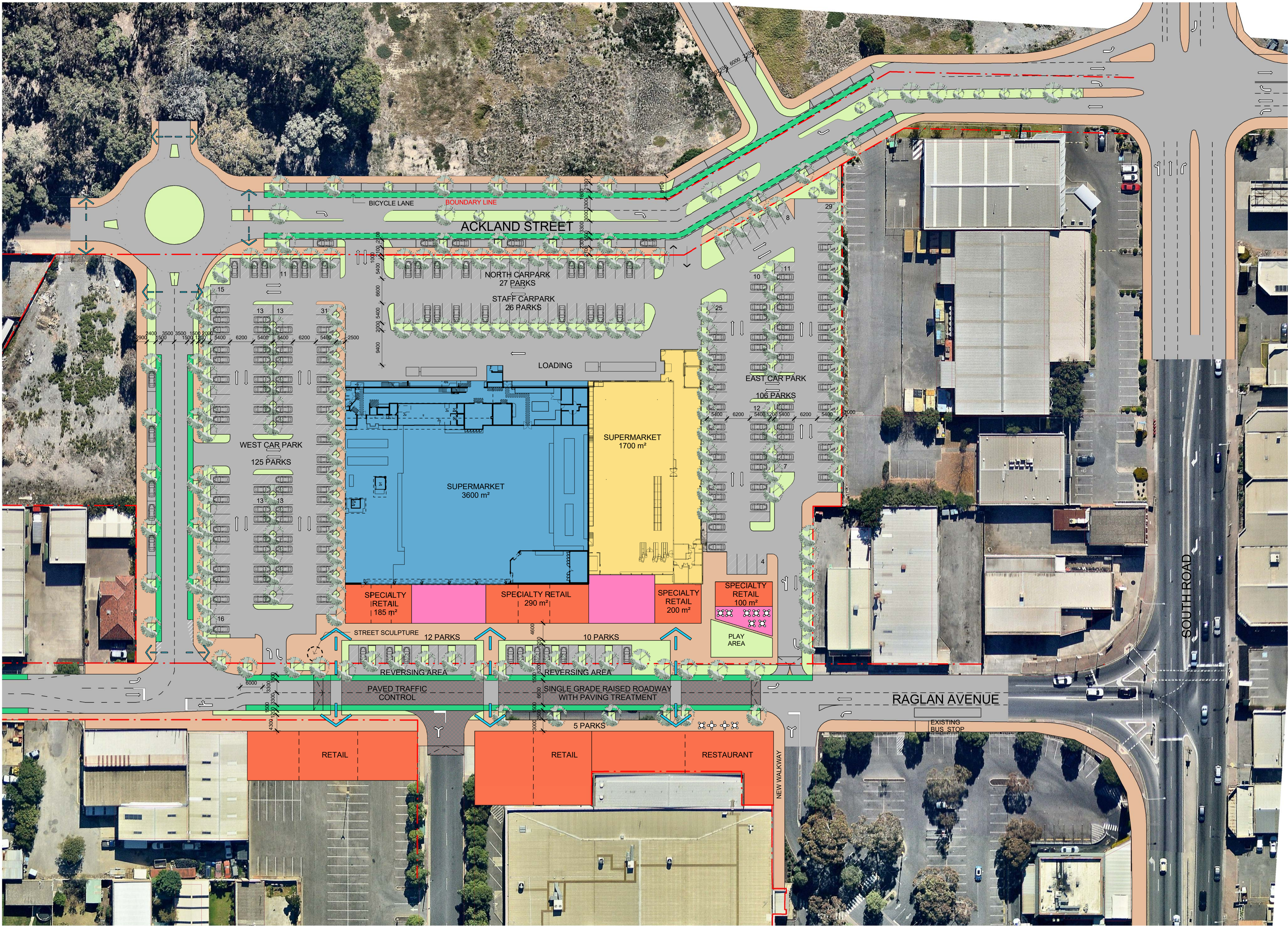


1 Site Plan
1 : 500

- ENCLOSED MALL
- NEW CARPARK/LOADING
- EXISTING ROADWAYS
- NEW SUPERMARKET
- NEW SUPERMARKET
- NEW RETAIL
- NEW LANDSCAPING
- NEW PLAZA
- FOOTPATH
- PAVED TRAFFIC CONTROL
- FUTURE DEVELOPMENT/ROAD CONNECTION
- PEDESTRIAN ACCESS

PROPOSAL SUMMARY	
MAJOR RETAIL	3600
	1700
	5300
SPECIALITY RETAIL	775
TOTAL	6075
CARPARKS	
EAST	106
WEST	125
SOUTH	22
NORTH	27
STAFF	26
TOTAL	306
CARPARK RATIO (306/6075) x 100	5.04

Proposal Summary LONG TERM
1:500





South

5.4 m

1.5 m

3.3 m

3.3 m

1.5 m

8.2 m

5 m (approx.)

North

Footpath

Bike
Lane

Bike
Lane

90 Degree Parking with
reversing area

Raglan Avenue East with Crossing Point & Protuberance

(looking west)

1 : 100 at A3



South

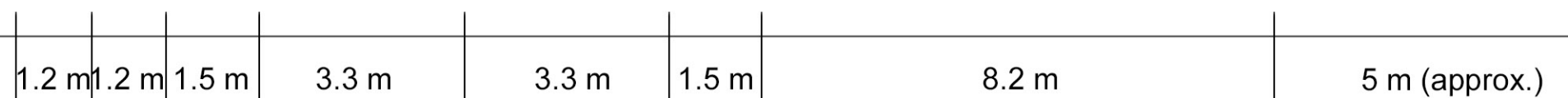
3 m	2.1 m	0.3 m	1.5 m	3.3 m	3.3 m	1.5 m	8.2 m	5 m (approx.)
Footpath	Parallel Parking		Bike Lane			Bike Lane	90 Degree Parking with reversing area	

North

**Raglan Avenue East with Parking
(looking west)**
1 : 100 at A3



South



Footpath
(2.4m)

Bike
Lane

Bike
Lane

90 Degree Parking with
reversing area

North

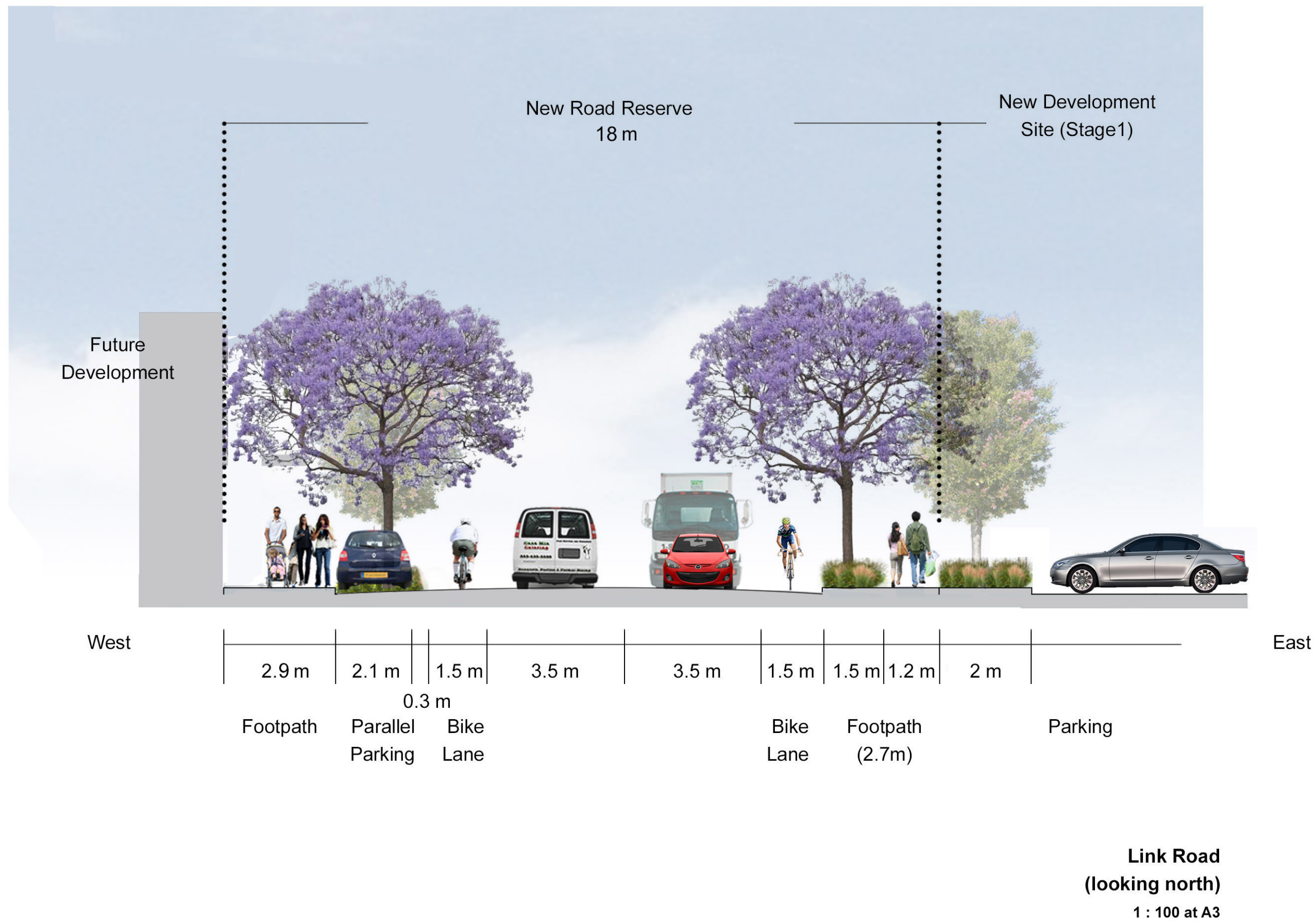
**Raglan Avenue West with Parking
(looking west)**

1 : 100 at A3



	1 m	2 m	2.1 m	1.5 m	3.3 m	3 m	3.3 m	1.5 m	2.1 m	2 m
			0.3 m					0.3 m		
Parking		Foot-path	Parallel Parking	Bike Lane		Median with Right Turn Lane		Bike Lane	Parallel Parking	Foot-path

Ackland Street
(looking west)
1 : 100 at A3



Attachment G – Conversion of Consultation Version Zone to Proposed Zone.

Marion Council
 Castle Plaza Activity Centre Development Plan Amendment
 Attachment G – Conversion of Consultation Version Zone to Proposed Zone.

Existing Consultation Version of Zone		Latest Version of the Zone	
Consultation Version	Change / Reason for Change of Consultation Version	Latest Version (June 2017)	Change / Reason for Change and Where Policy Previously Was in Zone.
OBJECTIVES			
1	Covered by Urban Core Zone Objective 1	1	Adopted Urban Core Zone objective 1
2	Covered by Urban Core Zone Objective 1	2	Adopted Urban Core Zone objective 2 (slightly reworded)
3	Covered by Urban Core Zone Objective 4	3	Adopted the Affordable Housing Module Objective
4	Retained as is	4	Adopted Urban Core Zone objective 3
5	Covered by Urban Core Zone Objective 2	5	Adopted Urban Core Zone Objective 4
6	Retained as is	6	Was Objective 4
		7	Was Objective 6
DESIRED CHARACTER STATEMENT - This has changed to reflect: <ul style="list-style-type: none"> • changes to road layout and closures within Concept Plan • changes to provision of car parking arrangements on sites (reflective of market realities and how Auditor's recommendations make ground level parking the most appealing option for residential / mixed use development) • additional Precinct 13 Limited Residential Development • changes to contamination assessment requirements in response to auditor's conditions and EPA's expectations. 			
PRINCIPLES OF DEVELOPMENT CONTROL			
Land Use		Land Use	
1	Some listed uses not consistent with BDP terminology or are covered by other definitions within the list. Need to also frame with positive language and not include exclusions for certain areas.	1	Adopted SAPPL wording and removed uses that were covered by other uses. Reinstated row dwelling and residential flat building to list (consistent with Core Mixed Use Zone module)
2	Have reworded slightly to be positive, in accordance with BDP guiding principles.	2 NEW	Required to clarify where those forms of shops are only envisaged (positive wording and separate from other use list)
3	Have reworded slightly to be positive, in accordance with BDP guiding principles.	3	Adapted from previous PDC 2 and correct error in expression within (c).
4	Slight rewording to clarify meaning	4	Adapted from previous PDC 3
5	Retained as is	5	Adapted from previous PDC 4
6	Retained as is	6	Was PDC 5
		7	Was PDC 6
Form and Character		Form and Character	
7	Retained as is	8	Was PDC 7
8	Retained as is	9 NEW	Inserted to emphasise Concept Plan and pick up on other representations in Concept Plan not covered by other PDCs

Marion Council
 Castle Plaza Activity Centre Development Plan Amendment
 Attachment G – Conversion of Consultation Version Zone to Proposed Zone.

Existing Consultation Version of Zone		Latest Version of the Zone	
Consultation Version	Change / Reason for Change of Consultation Version	Latest Version (June 2017)	Change / Reason for Change and Where Policy Previously Was in Zone.
9	Retained as is	10	Was PDC 15 (adapted and simplified)
10	Retained with changes to part (c) which pick up the points listed in new Design and Appearance module	11	Was PDC 8
11	Deleted – following direction from DPTI to remove landmark sites from Concept Plan Map	12	Was PDC 9
12	Adequately covered by existing Council wide policies – delete	Design and Appearance	New Heading to align with the Multi-storey Buildings Module
13	Covered by draft residential development module policies - delete	13	Was PDC 10 (amended to exclude development in Area 2)
14	Retained as is	Environmental	New Heading to align with the Multi-storey Buildings Module
15	Covered by Urban Core Zone core policy	14	Was PDC 14
16	Change in direction with policy to seek a wider range of dwelling types – including row dwellings. Deleted	Dwelling Configuration	New Heading to align with the Residential Development Module
17	Covered by Affordable Housing module core policy (which brings in the 20 dwelling criteria)	15	
18	Covered by Affordable Housing module core policy	Adaptability	New Heading to align with the Residential Development Module
19	Covered by Residential Development module core policy	16 NEW	Adopted from Core policy within the Multi-storey buildings module (was covered by PDC 20)
20	Partially covered by Multi-Storey Buildings Core policy	Movement Systems and Access	New heading to reflect importance of movement and access patterns within and across the zone.
21	Covered by Multi-Storey Buildings Core policy	17	Was PDC 24 (adapted)
22	Covered by Residential Development General Policy	18	Was PDC 25
23	Covered by Residential Development Core	19	Was PDC 26 (with missing word inserted)
24	Adapted to reflect new master plan layout that does not close Raglan Avenue	20	Was PDC 27
25	Retained as is	Vehicle and Bicycle Parking	
26	Retained as is	21	Was PDC 28 (adapted to reference Table Mar/2A)
27	Retained as is with additional point (e) relating to recommendations from Health in All Policy workshop to link with surrounding networks and paths.	22	Was PDC 29

Marion Council
 Castle Plaza Activity Centre Development Plan Amendment
 Attachment G – Conversion of Consultation Version Zone to Proposed Zone.

Existing Consultation Version of Zone		Latest Version of the Zone	
Consultation Version	Change / Reason for Change of Consultation Version	Latest Version (June 2017)	Change / Reason for Change and Where Policy Previously Was in Zone.
28	Replaced by assignment of Activity Centres as designated Centres within Existing Activity Centres Policy Review DPA (Ministerial) – reference Table Mar/2A	23	Was PDC 30
29	Retained as is	24	Was PDC 31 (with adapted text)
30	Retained as is	25	Was PDC 33
31	Reworded to exclude Area 2, given this is not likely to be delivered in this format any longer within revised master plan.	Land Division	
32	Covered by new Transportation and Access Core policy	26	Was PDC 35
33	Retained as is	Precinct 12 Castle Plaza Environmental Audit Area	New Heading created to highlight land where an environmental audit may be required due to potential site contamination
34	Covered by existing Outdoor Advertising core policies. Deleted to avoid repetition.	27 NEW	Created to ensure residential development is not undertaken unless a site contamination audit states that the land is suitable for the use
35	Retained as is	Precinct 13 Limited Residential Development	New Heading created to highlight land where habitable basements and ground level residential development is not appropriate
		28 NEW	Created to ensure condition of Auditor limiting habitable basements and ground level dwellings on the former Hills site are adhered to.
		29 NEW	Created to reflect condition of Auditor's report for these forms of development.
		30 NEW	Created to reflect condition of Auditor's report for these forms of development.
PROCEDURAL MATTERS – Complying Development – insertion of additional complying development listings to reflect Existing Activity Centres Policy Review DPA (Ministerial), including additional local variation which adds shops in Area 2 within part €			

Marion Council
 Castle Plaza Activity Centre Development Plan Amendment
Attachment G – Conversion of Consultation Version Zone to Proposed Zone.

Existing Consultation Version of Zone		Latest Version of the Zone	
Consultation Version	Change / Reason for Change of Consultation Version	Latest Version (June 2017)	Change / Reason for Change and Where Policy Previously Was in Zone.
Non-complying Development - Additional listings for Child Care Centre, Dwelling, Pre-school, Primary school within Precinct 13 Limited Residential Development reflective of condition of Auditor's Report. The wording has been altered to better clarify elements of dwellings that make the trigger relevant, as well as correct an anomaly in previous finalised zone text which incorrectly changed the intent of the listing..			

Attachment H – Castle Plaza Transit-oriented Development Health Lens Analysis

Wellbeing Assessment of the Castle Plaza Development Plan Amendment

Report

for

**City of Marion
Department of Health**

**From
Quigley and Watts Ltd.**

Robert Quigley

April 2011



Contact:
Robert Quigley
Quigley and Watts

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1. Introduction

Quigley and Watts and Martin Ward were contracted by the Department of Health and the City of Marion to develop and facilitate an assessment process. The purpose was to assess how well the Development Plan Amendment (DPA) for the redevelopment of the Castle Plaza site in Edwardstown contributed to reaching the 'Healthy Transit-Oriented Development (TOD) Principles', and identify where the DPA could be further strengthened. This assessment process formed part of the Castle Plaza Health in All Policies health lens project.

1.1 Aims

The aims of the work were to:

1. trial the feasibility of applying the Healthy TOD Principles to a DPA process in a local government setting.
2. trial a Health Lens Rapid Assessment Process within a local government setting as part of the Health in All Policies (HiAP) approach.
3. identify whether the Castle Plaza DPA can be strengthened to support the delivery of urban form that
 - a. supports positive health and wellbeing
 - b. increases community amenity
 - c. delivers a commercially viable and sustainable development.
4. engage with key agencies to build and strengthen partnerships.
5. identify opportunities for the City of Marion to incorporate the findings of the Health Lens Rapid Assessment Process into future DPAs for the Castle Plaza TOD as well as future development proposals.
6. provide Department of Health and City of Marion staff with opportunities to gain the skills and knowledge necessary to apply a rapid assessment process in other work areas of the City of Marion, and in other council areas.

1.2 South Australian Government and City of Marion Commitment to Health

South Australian Government

The South Australian Government is committed to improving the health and wellbeing of the population, as reflected in the South Australian Strategic Plan (SASP). Targets contained in the Plan reflect direct and indirect factors that contribute to the health wellbeing of the population and include T3.6 Use of Public Transport, T1.21 Strategic Infrastructure, T3.5 Greenhouse Gas Emissions, T3.7 Ecological Footprint, T3.12 Renewable energy, T3.14 Energy efficiency-dwellings, T2.2 Healthy Weight, T2.4 Healthy South Australians, T2.8 Statewide Crime Rates, T2.9 Road Safety- Fatalities and T2.10 Road Safety- Serious Injuries.

City of Marion

Community wellbeing, which is synonymous with 'health', is a high priority for the City of Marion. This is evidenced in Council's membership of the World Health Organization's Alliance for Healthy Cities. The *City of Marion Strategic Plan 2010-2020 'Broad Horizons Bright Future'* and associated Theme Plans representing *Community Wellbeing*, *Healthy Environment*, *Dynamic Economy and Cultural Vitality* set out the vision, direction and strategies for the future of a healthy city.

To ensure robust health outcomes are achieved across all sectors, the City of Marion has a strong commitment to building collaborative partnerships with state and federal governments, its business community, and importantly the wider community that is represented by individuals and groups that have a diversity of interests and needs.

1.3 Background information

30-Year Plan for Greater Adelaide

The South Australian Government has recently developed its '*30-Year Plan for Greater Adelaide*'. The *30-Year Plan* is an integrated approach to urban planning and amongst other objectives seeks to fundamentally shift the mix of new residential development from being predominantly at the urban fringe to being predominantly within infill areas. TODs are an essential part of achieving greater infill development that is also integrated with public transport, employment and a range of facilities including retail outlets and services.

Castle Plaza has been identified as a TOD and required a DPA to enable the development to proceed.

In the past, land use development was centred on automobile use and has consequently contributed to a range of health, social and environmental concerns. These include the global epidemic of obesity, community isolation, poor air quality, over-consumption of valuable land and increased reliance on private vehicles which are reliant on ever depleting supplies of fossil fuel. Well planned TODs offer a different approach to development and offer new lifestyle options for people. They provide more travel choices as well as greener and healthier travel options through the creation of new walkable communities in and around TODs. The *30-Year Plan* seeks to create more walkable neighbourhoods, develop higher density areas of good-practice, sustainable urban design, and create a network of open space precincts to absorb local carbon emissions and provide sheltered, cooler places for people to use.

Role of Development Plan Amendments

Across South Australia, each Council is required to maintain a Development Plan - a legally binding document that sets out the guidelines for development in the Council area. This is the primary document that contains the City's planning vision and policies. A Development Plan Amendment enables Council to provide enough land for future use, respond to changing development and population patterns and reflect State Government objectives for future development. The DPA consists of an explanation of the proposed changes to the existing Development Plan as well as the research that underpins these proposed changes. The process associated with each DPA includes a number of checks and balances, including a public consultation period; an informal information session; an official, formal public hearing; and consultation with other government agencies.

DPAs are integral to enabling a change in the nature of development in a given area. A DPA requires endorsement by both the relevant Council and the State Government. DPAs achieve better policy outcomes where there is effective collaboration across State agencies, the development proponent, Council and the community.

Health in All Policies

The Health in All Policies (HiAP) approach was adopted by the South Australian Government following a key recommendation from Professor Ilona Kickbusch as 2007 Adelaide Thinker in Residence. 'Health lens' is part of the broader HiAP approach and involves a collaborative process between Department of Health and other government agencies to analyse their proposals, plans and policy decisions to identify opportunities to maximise the health benefit to the South Australian community and, at the same time, to achieve the other agencies goals.

Applying a health lens to the planning and delivery of TODs can help understand the complex interplay between a range of factors that impact on health and wellbeing and hence the "liveability" and desirability of these developments.

Healthy TOD Principles

The development of Castle Plaza Healthy TOD sub-Principles builds on a recently completed collaborative TODs Health Lens project between four South Australian Government agencies: the Department of Health, the Department of Planning and Local Government, the Department for Transport, Energy and Infrastructure, and the Land Management Corporation. One of the key outcomes of this project was a Healthy TODs information resource, including a series of Healthy TOD Principles. The City of Marion has drafted sub-principles (under the broad Healthy TOD Principles) which are particularly relevant to the Castle Plaza development. These principles (*see Appendix 1*) have been used as the basis of the key tool for this Rapid Assessment Process.

The City of Marion and the Department of Health recognised that the redevelopment of Castle Plaza provided an ideal opportunity to trial the application of the Healthy TOD Principles to a proposed TOD site.

Castle Plaza Development

The Castle Plaza TOD, located between South Road and the rail corridor in Edwardstown, is one of the first to be planned and constructed within the context of the *30-Year Plan* and is of a similar scale to the Bowden TOD being developed by the State Government's Land Management Corporation. Castle Plaza is predominantly in single ownership by developer Colonial First State. The developer purchased the adjacent Hills Industries site (approximately 8 hectares) in 2007 and is well advanced in the development of a design for the extension of their retail area. Colonial First State has undertaken significant analyses and investigations and is ready to proceed with the development of the site once rezoning has been gazetted.

City of Marion endorsed a draft DPA for community consultation on 28 September 2010. This consultation occurred from November 2010 - January 2011. A copy of the DPA is in *Appendix 2* of this report.

City of Marion wished to undertake a health lens project to investigate opportunities to strengthen its DPA policies so as to increase the potential for an improved urban environment which will support health and wellbeing.

1.4 Definitions and Acronyms

The following definitions have been used in this report:

- 'Castle Plaza Development (CPD) site' – the area for which the DPA has been submitted.
- 'Castle Plaza TOD' – the area including the DPA area and the neighbouring areas

CPD	Castle Plaza Development
CPTED	Crime Prevention Through Environmental Design
IDC	Integrated Design Commission
DFC	Department of Families and Communities
DPLG	Department of Planning and Local Government
DTEI	Department of Transport, Energy and Infrastructure
EPA	Environment Protection Authority
OPAL	Obesity Prevention and Lifestyle program
PIA	Planning Institute of Australia
SASP	South Australia's Strategic Plan
TOD	Transit-Oriented Development

2. Approach – Wellbeing Assessment

The Healthy TOD Principles developed through the collaborative health lens process and revised by the City of Marion are holistic and include components such as liveability, biodiversity, economic growth and environmental sustainability to name a few.

As a continuation of the HiAP approach Department of Health and the City of Marion agreed to jointly undertake a health lens analysis of the Castle Plaza DPA. The purpose of this analysis was to assess how well the Castle Plaza DPA contributed to reaching the Healthy TOD Principles and where it could be further strengthened.

Development of assessment process and tool

An innovative process was required and a new process and wellbeing appraisal tool was drafted by Quigley and Watts Ltd and Martin Ward to be used throughout a three-day rapid assessment process. The agenda for the three day workshop is presented as *Appendix 3*.

The process and tool needed to allow a complex DPA to be transparently assessed in a pragmatic and useful manner for decision makers. To undertake the work, five supporting aspects were required:

1. A set of principles against which the proposal could be assessed, in this case the City of Marion Healthy TOD Sub-Principles (already available).
2. A thorough understanding about the proposal being assessed, in this case the Castle Plaza DPA (provided by the workshop participants).
3. A thorough understanding of the decision-making process so that recommendations for change could be useful (provided by the participants).
4. Excellent working relationships between the key stakeholders.
5. Participation by people with appropriate knowledge and skills including a good understanding of economic, environmental, social and cultural issues and trends.

The process was designed to provide a pragmatic assessment approach where identifiable gains could be made to the DPA using limited time and human resources. Because many of the components that make up the Healthy TOD Principles cannot be objectively defined or measured the draft tool was further developed by the workshop participants based on their knowledge, and then the DPA was scored against the refined tool. The scoring process identified whether the DPA was likely to meet, or not meet, the desired outcomes set by the participants. The benefit of this situation is that the information produced is simple to understand and communicate, and it is highly likely to be useful to the decision maker.

While there are well-established practices for assessing impact across multiple criteria, they are typically not undertaken in a single workshop and instead are undertaken as separate assessments e.g. Environmental IA, Social IA, Health IA, cost-benefit etc. The intention of this health lens approach was to further develop the scoring scale using the City of Marion Healthy TOD Sub-Principles, assess each of the necessary principles, make an assessment of the DPA policies and develop recommendations in one integrated meeting.

The three day wellbeing assessment workshop was held from 30 November – 2 December 2010.

Participants in the wellbeing assessment workshop included:

State government agencies Department of Health
 Department of Planning and Local Government
 Department of Transport, Energy and Infrastructure
 Land Management Corporation
 Housing SA

City of Marion
 Colonial First State (site owner)
 Jensen Planning

Scoring Process

The scoring scale developed by participants in the workshop is presented in Appendix 4.

The scoring scales show the:

- Criterion – overarching groupings of criteria that relate back to the groupings in the City of Marion Healthy TOD sub-principles
- Sub-Criterion – (31/32 etc) key elements of the City of Marion Healthy TOD sub-principles.
- Description – a more detailed description of the sub-criterion.
- Scoring scales – a 5-point scale from negative (-1) through to strongly positive (+3), that sets out potential outcomes for the DPA
- Assessment Criteria – selected issues under each of the scoring scales that reflect one or more important aspects within each subcriterion.
- Lower bound –the lowest acceptable conditions that in turn *should* contribute to a healthy community. The lower bound as assessed by the workshop participants is denoted by a **blue** square
- Upper bound – more ambitious conditions that should contribute to a healthy community both within the DPA area and for people living outside the DPA area. A stretch target. The upper bound as assessed by the workshop participants is denoted by a **green** square.
- DPA Scores - the rating given by participants of the Castle Plaza DPA against the scoring scale, denoted by a black circle.

Castle Plaza Development Plan Amendment Health Lens - Final list of criteria								
RED								
Criterion			Description	Moderate negative impact -1	Neutral impact -0	Moderate Positive impact +1	Strong positive impact +2	Positive impact beyond TOD area +3
J. Workplace access and amenity	31	Employment and economic diversification	Enables establishment of diverse economic activities providing up to 3000 new jobs	Less than 250 new jobs accommodated on Castle Plaza site	Less than 500 new jobs accommodated on Castle Plaza site	At least 1000 new jobs	At least 2000 new jobs AND local hiring policy	At least 3000 new jobs AND local hiring policy AND sustainable workplace travel policy
	32	Education and training services	Access to all levels of education and training services (via public or active transport)	Poor public transport services to training / education sites	Frequent public transport only available during peak periods to training / education sites	Frequent public transport available within 800 metres of TOD during extended periods to training / education sites	Frequent public transport available within 400 metres of TOD during extended periods to training / education sites	2+ AND Light and heavy rail to range of CBD and metro education facilities. When scored anticipating new rail station

The Criteria and assessment criteria identified were:

Principal Criteria/Criterion	Assessment Criteria
Workplace Access and Amenity	Employment and economic diversification
	Access to education and training services
	Diversity of type and size of businesses
	Broadband access
Healthy Environments	Water use
	Water sensitive urban design
	Greenhouse gas emissions
	Outdoor air quality
	Indoor air quality
	Noise – outdoors in the public realm
	Noise – indoors in the private realm
Physical Activity	Biodiversity
	Permeable neighborhoods linking with surrounding areas
	Connectedness – destinations within the CPD site
	Active transport
Sustainability and vibrancy	Integration – mix of land uses
	Open space
	Net housing density and diversity
Mental health and wellbeing	High amenity streetscapes
	Crime prevention through environmental design (CPTED)
Sense of place	Streetscape legibility
	Structure – street connectedness
	Afterhours use of sites
	Community and civic space in commercial area
	Art, celebration of community identity and culture
Social inclusion and cohesion	Building design and flexibility
	Affordable housing
	Housing tenure
	Inclusive design process
Accessible public transport	Public transport access
	Travel modes
	Residential car parking
	Retail car parking
	Office car parking
Climate change mitigation	Energy efficient commercial building design
	Energy efficient residential building design
	Use of renewable energy
Access to healthy food	Access to healthy food

The workshop had an appropriate number of participants to run four small groups. Therefore the criteria were divided into four groupings so that each group had a similar number of criteria to assess. There was a broad attempt to keep like content areas together, but the main rationale for the groups was work volume (i.e. number of criteria per group). The four groups were colour coded as follows:

Red group	Workplace access and amenity Healthy environment
Black group	Physical activity Sustainability and vibrancy Mental health and wellbeing
Green group	Accessible public transport Climate change Access to healthy food
Blue group	Social inclusion and cohesion Sense of place

2.2 Assessment Criteria, Upper and Lower Bounds and Castle Plaza DPA Score

Within their four groups the workshop participants:

- Refined the assessment criteria and the elements of the 5-point scoring scale.
- Identified the upper and lower bounds of the 5-point scoring scale against the assessment criteria
- Scored the Castle Plaza DPA against the assessment criteria
- Developed a series of recommendations for the DPA, the City of Marion, State Government Agencies and the developers. The recommendations can be found in Sections 3 and 4 of this report.

This report outlines the Recommendations as well as the findings from the process of scoring the Castle Plaza Development Plan Amendment.

3. Recommendations – Development Plan Amendment

A number of the recommendations were directed specifically at the DPA process. To supplement this work participants recorded additional information (where possible) and this has also been captured for each of the assessment criteria as described below.

Add to Objectives

Specific wording changes to the Objectives of the DPA were identified by participants, as outlined below – additions are in **bold**.

Objective 0 – A development that is different to what has occurred before, that is innovative and visionary, that pushes the boundaries in development quality and development design to support holistic social, economic, cultural and environmental outcomes.

Objective 1 – A vibrant ~~transit~~ **people** focused activity centre servicing the **diverse** retail, employment, **office**, community services, **socio-cultural** and housing needs of the community within the surrounding district, integrated with a highly accessible public transport network.

Objective 2 – High density **and high quality** residential development, **that includes** a minimum of 15 per cent affordable housing, designed to integrate with areas of open space, non-residential activities and public transport nodes.

Objective 3 – Development that **focuses on the needs of diverse peoples** to increase vitality and activity and achieves a safe and secure built environment through the activation of street frontages and adoption of appropriate design, materials, lighting, furniture, landscape and **local** public art.

Objective 4 – Creation of a network of **prioritised** pedestrian and cycle paths **within the site** linking retail, employment and residential activities with each other and public transport nodes, **and connecting to networks outside the site.**

Objective 5 - Development that minimises any adverse impacts upon **people**, the amenity of the locality **experienced by people**, and conflict between land uses **that might unduly affect people.**

Objective 6 – Removed (Development that contributes to the desired character of the zone.)

Objective 7 – A mixed use zone that is a model for protecting and promoting the health and wellbeing of diverse peoples. Children, families, youth, adults, older people, people with disabilities and people from diverse cultural backgrounds.

Add to Desired Character:

- References such as 'welcomes; supports; provides', 'for people; diverse peoples; families; children; youth; older people, people with disabilities'
- Instinctive way-finding/legibility both within and into Castle Plaza site
- Reinforces strong links with services and facilities outside of the site
- A mix of hard/soft, green and play space for active/passive recreation
- Describe 'space that may in the future be used for a farmers market'
- Specific references to 'design and siting of buildings (especially residential) to respond to and mitigate noise from rail, road and mixed uses'
- Public spaces that have provision for residential entertaining
- Local indigenous planting in landscaping
- Cultural dimensions that reflect the history of the site, indigenous peoples, relevant migrant groups and mainstream Australian culture
- Describes office, residential and retail buildings that are connected to high speed broadband
- Specific reference to development that contributes to improvements in outdoor and indoor air quality through building design, and mitigation of poor outdoor air quality by siting.
- 'flexible large floor plate office space'

Add to Principles of Development Control

- 2 (a) or 4 - include space that may in the future be used for a farmers market
- 8 (c) 'and has a lower priority than cycle or pedestrian modes'
- '8 (e) 'the 'siting' and design of buildings, especially residential, respond to and mitigate noise from rail, road and mixed uses'
- 8 (f) 'High speed broadband is available to and within all buildings'
- 8 (g) – 'contributes to improvements in outdoor and indoor air quality [include indoor if not covered by building code] through building design, and mitigation of potentially negative outdoor air quality by 'siting'.
- 8 (h) – 'it is a leading example of energy efficiency, greenhouse gas reduction, water use, water capture and water reuse' (note, this is across the site, not just for buildings)
- 8 (i) – 'high speed broadband capability is able to be used within and throughout each building'.
- 14 - Remove 'shared traffic zones'
- 14 (a) include 'a mix of hard/soft, green and play space for active/passive recreation', and 'shade'
- 14 (c) – 'entertain'
- 14 (g) – 'local indigenous planting, trees'
- 14 (i) - 'local indigenous planting, trees, local public art and spaces for display of art'
- 14 – 'hard/soft green and play space for active/passive recreation'
- 14 (j) – expand description of 'water sensitive urban design measures' to be explicit
- 14 (k) – incorporate cultural dimensions, motifs, designs, names that reflect the history of the site, indigenous peoples, relevant migrant groups and mainstream Australian culture
- 16 – Question the appropriateness of this principle as density should address this issue. If density does not address this issue, then specify different density levels for core/heart of the site.
- 20 - Dwelling layouts should be adaptable to accommodate: (d) accessibility and usability for people of all ages and for people with disabilities; (e) diverse family sizes, student housing, special needs housing, a diverse range of users (i.e. artist studios).

- 27 - 'surrounding areas'
- 27 (c) – include way-finding/legibility-within and –into Castle Plaza site

Concept Plan to:

- Map local streets with potential for low speed residential mixed areas that have pedestrian and cyclist priority
- Show pedestrian and cycling linkages, including 2-way permeability
- Identify existing cycle-use routes (along street network), dedicated cycle-ways, and proposed dedicated cycle-ways (e.g. along rail line), along with suggested access points into and out of the Castle Plaza site

Investigate special provision for:

- A community garden
- A space that is flexible enough to be able to be used for a Farmers Market if desired by future residents
- High quality student housing with lower car parking ratios

Undertake:

- a social audit/needs analysis as part of the process to inform decisions taken on the DPA

4. Recommendations – State Government, City of Marion and Developer

The following recommendations were identified through the process of assessing the DPA but sat outside the DPA process.

Each sector had recommendations specifically directed at them. They are:

Recommendations to State Government

Recommendations	Agency
Public transport	
Government Ministers support a new train station (and inter-modal facilities such as bike parking) at Castle Plaza site to support the reduced car park ratios.	Ministers
Support electrification of rail corridor.	DTEI
Ensure that bus route services in the TOD connect with rail.	Public Transport Services Division of DTEI
Investigate the better characterisation of public transport demand and opportunities, to inform a public transport plan for the CPD site and wider.	DTEI
Ensure public transport frequencies and hours of operation are reviewed/extended.	DTEI
State and public transport providers deliver clean, affordable, efficient and safe public transport to reduce private transport vehicle use.	DTEI
Provide access to the Castle Plaza site from the proposed cycleway along the rail line.	DTEI
Provide pedestrian crossing across South Road at Raglan Avenue, coordinated with adjacent intersection crossings.	DTEI
Urban structure	
Marion City and DTEI to identify ways to connect the existing community to the CPD site across South Road.	DTEI
Establish appropriate pedestrian crossings across the rail corridor, and maintain or improve access across South Road, for example add a pedestrian crossing across South Road.	DTEI
Redevelop South road.	DTEI
Develop design standards for shared zones and endorse (where local roads give priority to pedestrians and cyclists).	DTEI
DTEI to provide cycle access from the proposed cycleway along the railway line into the CPD site.	DTEI
Energy efficiency	
Promote energy efficient buildings to public.	
DPLG to investigate policy options for climate change adaptation to be included in the Development Plans and Development Plan Amendments.	DPLG

Recommendations	Agency
Economic	
Include the pursuit of 3000 jobs as part of the state and local governments 30 year plan.	
Consider CPD site as a developing service centre for Southern Adelaide.	DTED
Housing	
Investigate with Developers, State Government and Council the feasibility of accessible and adaptable residences being a focus of developments.	
State government, Council, PIA and Peak Bodies to educate the market about the types of dwellings available and opportunities they provide.	
The Minister consider supporting future DPAs around TODs to get a policy framework to support the TODs in achieving their density targets and acknowledge that there will likely be the need for transition zones.	
Review the current definition of affordable housing and the model, to create a new rating that reflects upfront and lifecycle costs.	Housing SA
State government and Marion City Council to provide incentives to developers to increase percentage of affordable housing above 15%.	DFC
BDP modules	
BDP modules to include stronger policy on human scale, light, shade, renewable energy, housing diversity.	DPLG

Recommendations to City of Marion

Recommendations
Marion City Council to provide feedback to DPLG on their modules to support the importance of housing diversity.
Public Transport
Investigation of a new rail station being built as part of a City of Marion submission to the State Infrastructure Plan.
City of Marion and Onkaparinga to convene working group on joint issues (e.g. public transport) for TODs.
Urban structure and active transport
Marion Council to review existing bicycle and pedestrian pathways that connect (or need to connect) into the TOD and to allocate budget to create/enhance connections.
Liaise with the City of Mitcham to integrate cycle and pedestrian networks.
Ensure connections from the CPD site are made to venues in the wider TOD area, e.g. Edwardstown Oval, the Recreation Centre, Greenway via safe attractive walking and cycling paths. Consider traffic calming in Raglan Street.
City of Marion to develop a Traffic Management Plan that is inclusive of pedestrians and cyclists that incorporates traffic calming, way finding and signage.
Council to work with other interest groups to get the finalisation of the Design Criteria for 'Shared Zones', particularly the requirements for cyclists and pedestrians.
Encourage developer and their consultants to use streets for people compendium.
Developer and Marion City Council to review streetscape legibility and instinctive way finding within and into/out of the TOD. For access into/out of TOD particular focus was requested by the participants on the existing and proposed train stations, and across South Road.

Urban Structure and public realm
Develop a Maintenance Management Plan for the public realm.
Development of quality flexible spaces that support structured and semi-structured activities in the public realm and commercial areas.
Review development policy on existing residential areas for structure – human scale, coordination.
Engagement between Marion City Council and Developer to negotiate the development of community and civic space in the commercial area.
Provide developer the Council's Open Space Plan, Street Tree preferred list and street furniture list.
Negotiate with developer to give unique vision and feel.
Suggest Universal Access as a design principle for within the CPD site, for example for the vision impaired, wheelchair/push chair access, beyond minimum standards.
Provide space and amenity for a farmers market to operate, if requested by the community.
Ensure appropriate Adelaide City Council mixed use policy is adhered to, and go beyond this minima if required.
Ensure appropriate BDP high intensity mixed use draft policy is adhered to, and go beyond this minima if required.
Economic
Encourage developer (Colonial) to partner with other mixed used developers.
A market assessment of office accommodation in the region is needed.
Support and encourage local employment opportunities.
Monitor job numbers, sq metres of office space built, and number/type of residential units built.
Encourage the residential developments to be of high quality to attract all types of potential workers.
Marion Council to investigate whether businesses can provide a delivery service for those shoppers who walk or cycle.
Housing Affordability
Work with developers and Housing SA to identify appropriate percent of affordable housing for CPD and wider TOD.
State government and Marion City Council to provide incentives to developers to increase percentage of affordable housing above 15%.
Marion City Council and the developer to negotiate with DFC about interest in affordable housing within the CPD site and wider TOD site.
Consider investigation of incentives for affordable/community housing providers such as rates rebates.
Alternatively, negotiate with other affordable housing providers.
Housing Diversity
Investigate optimal housing tenure diversity and depending on the evidence examine policy that can support the desired outcome.
Consider investigation of Student Accommodation within the CPD site.
Housing Density
Council needs a broader DPA that reviews density around this TOD and others – may encourage differing densities and dwelling types.
City of Marion and the Developer to confirm density targets for the CPD site and wider TOD.
City of Marion and the Developer to investigate the appropriateness of row-dwellings on the ability to achieve residential density targets for the CPD site and beyond.

Housing Accessibility
Investigate with Developers, State Government and Council the feasibility of accessible and adaptable residences being a focus of developments.
Engagement Process with the Public
Holistic models of engagement to be investigated, agreement reached about a process for meaningful engagement agreed and resources to develop tools.
Develop a more extensive consultation plan at DPA and Structure Plan levels.
Resources and staff for consultation during DPA, Structure Plan and Precinct level needs to be adequate to undertake collaboration with stakeholders, and to upskill staff
Undertake a social audit/needs analysis to inform CPD site/TOD and what services are needed. Ensure these services are specifically included in the DPA. Conduct with developer. Check what existing data can be used before undertaking social audit/needs analysis.
Get information about needs of cyclists/pedestrians.
Adequate resourcing in Council to facilitate an expected increase in community activities.
Developers and Council to give consideration to the Arts Community as investors to encourage culture and community connectedness. Involvement of this community in structure and precinct planning required.
During the master planning stage, work with the developer to create a 'Crime prevention and safety Provision Plan'. Consult with Police's Community Crime Prevention Unit and the community about these issues.
Energy Efficiency
Understand developers ESD scale.
Work with developer to aim for higher energy efficiency ratings for commercial and residential buildings.
Investigate with developers the capture of energy and resources consumption across the TOD, for example with Lochiel Park.
Promote energy efficient buildings to public.
Water and Air
Include Castle Plaza site in 'Waterproofing Marion' and other water re-use investigations.
Investigate possibility of on- or near-site water capture and reuse, e.g. at Edwardstown Oval.
Request residential mains use data from State Government for similar sites (that could be used as a baseline).
That green spaces are included within the CPD site, and are maintained with non-mains water wherever possible.
Biodiversity
The City of Marion to investigate greenway corridors nearby. Ensure CPD site links to greenway corridors to support regional movement of biodiversity (plus local indigenous vegetation).
Healthy food
Develop a community garden policy.

Recommendations for the Developer

Recommendations
Urban Structure
The Developer asked to undertake a road safety audit that includes consideration of vehicle hierarchy.
Developer and consultants to use 'streets for people' compendium.
Ensure public/private outdoor spaces have provision for residential entertaining.
Use Universal Access as a design principle for within the CPD site, for example for the vision impaired, wheelchair/push chair access, beyond minimum standards.
Develop Maintenance Management Plan with Council for shared public realm.
Energy Efficiency
Work with Council to aim for higher building and residential energy efficiency ratings.
Use energy efficient street lighting.
Housing
City of Marion and the Developer to investigate the appropriateness of row-dwellings on the ability to achieve residential density targets for the CPD site and beyond.
Negotiate with DFC about interest in affordable housing in Castle Plaza TOD (alternatively other affordable housing providers).
Investigate with Developers, State Government and Council the feasibility of accessible and adaptable residences being a focus of developments.
Work with developers and Housing SA to identify appropriate percent of affordable housing for CPD and wider TOD.
Engagement with the Public
Undertake a social audit/needs analysis to inform CPD/TOD and what services are needed. Ensure these services are specifically included in the DPA. Conduct with Council.
Developer to consult with the local Police Community Crime Prevention Unit as part of the community consultation phase during Master Planning.
Developer to consult with the wider community about CPTED during the Master Planning stage.
Biodiversity
The Developer to support the regional movement of biodiversity through the use of local indigenous vegetation that connects to these corridors.
The developer to use local indigenous vegetation in landscaping.
The developer includes deep root zones in landscaping to allow tree planting for shade and cooling.
Economic
Ensure office floor plates are flexible enough to cope with a large employer should one be interested in the future.
Air and Water
To discuss with DPLG (Alison Collins) about the current drafting of the State Government specifications for building along main roads regarding air quality and noise.
If not covered by the building code, the development should take into account improving indoor air quality using non-mechanical means.
Push beyond legislated minimum water conservation measures in residential dwellings and develop innovative practice.
Consider Water Sustainable Urban Design technical manuals in design and built form.

5. Findings – Scoring of Castle Plaza Development Plan Amendment

The following section provides discussion around the scoring of the Castle Plaza DPA against the assessment criteria and the development of the recommendations. It should be noted a number of the recommendations highlighted in this section are outside the scope of the DPA, rather they are directed at Marion City Council, state government agencies and the developers.

The principal criteria have been reported in the same order in which they were assessed in the workshop, as described in Section 2.

Workplace Access and Amenity

Employment and economic diversification (31) and Diversity of type and size of businesses (33).

Criterion			Description	Moderate negative impact -1	Neutral impact -0	Moderate Positive impact +1	Strong positive impact +2	Positive impact beyond TOD area +3
J. Workplace access and amenity	31	Employment and economic diversification	Enables establishment of diverse economic activities providing up to 3000 new jobs	Less than 250 new jobs accommodated on Castle Plaza site	Less than 500 new jobs accommodated on Castle Plaza site	At least 1000 new jobs	At least 2000 new jobs AND local hiring policy	At least 3000 new jobs AND local hiring policy AND sustainable workplace travel policy

Criterion			Description	Moderate negative impact -1	Neutral impact -0	Moderate Positive impact +1	Strong positive impact +2	Positive impact beyond TOD area +3
	33	Diverse type and size of businesses	Development is flexible enough to accommodate diverse businesses that are consistent with objectives of the DPA	Undesirable land uses	Under-utilised land	DPA articulates a range of compliant developments consistent with the objectives of the development.	Large commercial and retail floor plates adaptable for small and large tenancies	Not applicable

Discussion

These criteria were scored against the DPA, and for 31, just scored against the jobs (not the local hiring policy). Participants knew the retail development would generate an additional 740 jobs and a further 1800 other jobs calculated from the 30,000 square metres of office space to be developed. The Developer stated that office space development is unlikely to be undertaken by the developer without commitment from a long-term large tenant. Participants believed there was a substantial risk that the office development therefore may not go ahead in the short-medium term. This has the potential to undermine a substantial component of the TOD concept if employment relies solely on retail development (approximately 740 additional jobs).

The nature of the TOD was believed by the participants to encourage both local employment and local residential development. Participants believed that the current local skill base was more likely to match the retail jobs that are expected to be created, but are less likely to match the office jobs. In support of the job creation prospects, the Economic Development Plan and City of Marion Strategic Plan both describe that diversity of jobs is needed (retail and office, small and large employers). There is a lack of large employers within the City of Marion at present.

At present there is a good understanding of the current level of jobs in the City of Marion, and the sectors/size of businesses present. This provides a solid baseline for future monitoring of changes in job numbers. Participants noted that it would be important to monitor the amount of square metres of office space built, and the number/type of residential units built.

The local hiring policy generated substantial debate amongst participants. That such a policy could not be foisted on businesses, or that such a policy could be incentivized by Council rather than dictated to. It was noted that Davoren Park Development has a local hire policy. It was agreed that some of the positive outcomes expected from the Castle Plaza Development relied

on local hiring, and while some were happy to leave this to the market, others noted situations where this had not worked and argued for modest Council intervention.

What recommendations can we make to support a healthy Castle Plaza Development, and who are they directed at?

- City of Marion to strongly encourage the developers to partner with other mixed-use developers, particularly for office and residential.
- Ensure office floor plates are flexible enough to cope with a large employer should one be interested in the future.
- DTED consider the Castle Plaza Development a centre for developing service industries in Southern Adelaide.
- Monitor job numbers, square metres of office space developed, and number/type of residential units developed.
- A market assessment of office accommodation in the region is needed.
- Encourage the residential developments to be of high quality to attract all types of potential workers.

Access to education and training services via public or active transport (32)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
J. Workplace access and amenity	32	Education and training services	Access to all levels of education and training services (via public or active transport)	Poor public transport services to training / education sites	Frequent public transport only available during peak periods to training / education sites	Frequent public transport available within 800 metres of TOD during extended periods to training / education sites	Frequent public transport available within 400 metres of TOD during extended periods to training / education sites	2+ AND Light and heavy rail to range of CBD and metro education facilities. When scored anticipating new rail station

Discussion

Participants acknowledged that the scope of the DPA cannot influence frequency of public transport services, however it can influence location. It was acknowledged by participants that the Castle Plaza DPA site was less likely to have substantial new educational facilities included, and therefore good access to nearby sites was required, by foot/cycle, or by public transport. However, participants did note that education services was a potential gap in the DPA as it is seldom mentioned. The current score of +2 envisages no new rail station, and the score would change to +3 if that occurred.

Locations of training and education providers are known, but access to them by foot/cycle or public transport, destinations/origins is unknown. How much the Castle Plaza development will contribute to such access is also unknown. An assessment of how the Castle Plaza DPA might impact on these transport options would be useful, and that could inform a Transition Transport Plan (if required).

If a new station was constructed for the Castle Plaza site it would be likely that other nearby station(s) would close. Heavy rail requirements for station distances also exist. Participants believed the Castle Plaza train station, that could potentially be the tram/train interchange, would ultimately increase the catchment for people using public transport and that it would link well to existing bus routes. It is important to better understand the above blocks/promoters to constructing/consolidating Edwardstown and Woodlands public transport hubs to Castle Plaza.

Recommendations

- Investigation of a new rail station being built as part of a City of Marion submission to the State Infrastructure Plan.
- Joint DTEI/ City of Marion investigation into better characterisation of public transport demand and opportunities with a view to develop a public transport plan for Castle Plaza and environs.
- City of Marion recommends to DTEI that extension of public transport service frequencies and hours of operation be investigated.
- City of Marion and Onkaparinga to convene a working group on joint issues (for example, public transport) for TODS.

Broadband access (37)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
J. Workplace Access and Amenity	37	Broadband access		Broadband not accessible from all buildings on the site	Broadband access in all buildings on the site	High speed broadband available to office and retail tenants on the site.	Ubiquitous high speed broadband access.	N/A

Discussion

This criteria was scored against the DPA. Participants acknowledged that broadband access was now a core utility for economic performance, and for accessing social networks, and health and social information. Participants noted that the current DPA did not mention broadband access, and believed that specific mention was needed.

Recommendations

- DPA specify adequate utilities and services for the site, including high speed broadband.

Healthy Environments

Water use (17)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
E. Healthy Environments	17	Water use	Reduction in levels of mains water use (for residential only)	No reduction in mains water use by land use	<10% reduction in mains water use by land use	10% reduction in mains water use by land use	20% reduction in mains water use by land use	30% reduction in mains water use by land use

Discussion

This criteria was scored against the wider TOD area and used the existing knowledge of the participants. Participants believed that the scale needed to reflect residential mains water use when compared against comparable land uses, rather than against existing residential mains use, as there is no residential use on the CPD site at present.

Participants acknowledged the importance of water reuse for two reasons. Firstly, to reduce the water footprint of the CPD site and secondly, to acknowledge that water use (from any source) is critical for maintaining any developed greenspaces. This was especially true for the CPD site as any residential housing is unlikely to have any/substantial personal greenspaces attached to their dwellings. Participants cited literature studies showing strong evidence between greenspaces being protective and supportive of mental wellbeing.

Recommendations

- That any developer includes water conservation measures in the residential dwellings that go beyond state minimum requirements and represent innovative practice.
- That greenspaces are included within the CPD site, and are maintained with non-mains water wherever possible.
- Data about residential mains use from similar sites (that could be used as a baseline) should be requested from State Government.

Water sensitive urban design (18)

Criterion			Description	Moderate negative impact -1	Neutral impact -0	Moderate Positive impact +1	Strong positive impact +2	Positive impact beyond TOD area +3
E. Healthy Environments	18	Water sensitive urban design	Water run-off sustainably managed and water quality maximised	Increased flows or pollutants enter water	Water quality and flows remain at pre-development levels	20% water reuse, e.g. permeable paving, rainwater tanks,	Above 50% water reuse, e.g. underground water storage and swales,	2+ Above 80% water reuse, e.g. regional connection through purple pipes, green roofs and living walls,

Discussion

This criteria was scored against the DPA. Participants noted that the current DPA did discuss 'provide for water sensitive urban design measures' in public open spaces – but no other mentions were made. For example water reuse targets, capture or reuse, or private spaces were not described. Recommendations for the DPA are in Section 4.

Recommendations

- The City of Marion includes the Castle Plaza site in investigations about water re-use and 'Waterproofing Marion'.
- The developer and the City of Marion to investigate the probability of on-site or near-site (e.g. Edwardstown Oval) water capture and reuse.
- The developer to consider use of Water Sensitive Urban Design technical manuals for design and built form.
- The developer includes deep root zones in landscaping to allow tree planting for shade and cooling.

Reduce greenhouse gas emissions by land use effects on trip generation (19)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
E. Healthy Environments	19	Greenhouse gas emissions	Reduce greenhouse gas emissions by land use effects on trip generation	Emissions by land use equivalent to current emission levels	Emission levels reduced by <10%	Emission levels reduced by 10% by 2020 and 20% by 2050	Emission levels reduced by 20% by 2020 and 40% by 2050	Emission levels reduced by 40% by 2020 and 60% by 2050

Discussion

Participants noted that other indicators, such as travel modes, and energy efficiency are relevant to this. Participants were unable to judge emission reductions and scored this criteria based on their existing knowledge. Participants believed that further information was required around current greenhouse gas emissions baseline and emissions from current trips.

It was also noted by participants that while apartments have higher energy use than low density dwellings, that this is offset by mixed land use, close proximity to services and public transport, walkability and overcoming private vehicle dependence. Street lighting was considered an important land use effect, and participants made a recommendation relevant to that.

Recommendations

- As per recommendations relating to travel modes.
- Developers consider use of energy efficient street lighting.

Outdoor air quality (20)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
E. Healthy Environments	20	Outdoor air quality	Urban design and siting to minimise impact of poor air quality	Design and siting does not consider poor air quality	Design and siting recognises impact of South Road corridor and industrial areas	Design and siting has low level mitigation of South Road corridor and industrial areas	Design and siting has high level mitigation of South Road corridor and industrial areas	Design and siting improves air quality in Castle Plaza

Discussion

This criteria was scored based on the DPA. This was scored +1 on the basis of the removal of the intersection on South Road, which alone was believed by participants to substantially improve air quality around that area. Commercial-only uses along South Road, the set-back of residential dwellings were believed to be good mitigations to reduce the number of people exposed to the lower air quality of South Road. Participants also believed that electrification of the rail may improve air quality near that area. This good design was believed to be somewhat offset by the new east-west road (and subsequent flow of vehicles) through what is planned to be a high density residential area. Green roofs and additions of trees/plantings to the site would also help. Detailed recommendations to the DPA are contained in Section 4 of this report.

Recommendations

- The City of Marion supports the electrification of the rail corridor on the basis of improved air quality.
- The developer to discuss with DPLG about the current drafting of the State Government specifications for building along main roads regarding air quality and noise.
- DPA adapt design guidance for construction along main roads currently being developed by State Government.

Indoor air quality (20a)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
E. Healthy Environments	20a	Indoor air quality	Urban design and siting to enhance or improve air quality	Does not meet minimum requirements of EPA and/or building code	Meets minimum requirements of EPA and building code	Improves air quality with minimal use of mechanical means	Improves air quality using non-mechanical means	Not applicable

Discussion

This criteria was scored based on the DPA. Participants were unsure if the air quality in the indoor shopping centre was being monitored, but that data would be required as a baseline for this criteria. The +1 and +2 scores were based on the assumption that outdoor ambient air quality was acceptable (met EPA requirements), as outdoor air quality is known to substantially impact on indoor air quality. Participants were unsure whether indoor air quality was covered by the building code, but if not, believed some action was required. Mechanical air conditioning was considered normal practice by participants, but in conjunction with reducing energy use, participants queried there could be use of non-mechanical means to maintain indoor air quality.

Recommendations

- If not covered by the building code, the DPA should recommend the development take into account improving indoor air quality using non-mechanical means.

Noise – outdoor in the public realm (21)

Criterion			Description	Moderate negative impact -1	Neutral impact -0	Moderate Positive impact +1	Strong positive impact +2	Positive impact beyond TOD area +3
E. Healthy Environments	21	Noise – outdoor in the public realm	Siting and location of public realm to mitigate noise impact	Siting and design of public realm does not respond to noise impacts	Siting recognises noise impacts	Siting and design responds to minimise noise impacts	Siting and design responds to minimise noise impacts and significantly mitigates noise impacts	Not applicable

Discussion

This criteria was scored based on the DPA. Regarding the wording of the scale: Participants noted that ‘mitigates’ implies a measurable outcome whereas responds means an intention is featured in the design.

Participants believed commercial-only uses along South Road and the set-back of residential dwellings to reduce the number of people exposed to the noise levels from South Road were good recognition of the impact of noise. However, this was offset by location of the residential area next to the rail corridor and neighbouring industrial area, and by the new east-west road (and subsequent flow of vehicles) through what is planned to be a high density residential area. Participants described that the siting of the mixed use zone next to the residential dwellings will also require substantial noise mitigation, especially use of public and private outdoor spaces. Use of public and private outdoor spaces for entertaining was encouraged by participants, but such activities had to be planned for in the DPA, including from a noise mitigation perspective. Detail of recommendations to the DPA are in Section 4 of this report.

Recommendations

- DPA should require that the design considers noise from both South Road, rail, industrial, mixed use (especially public and private outdoor spaces) and internal roads.
- Developer to ensure public/private outdoor spaces have provision for residential entertaining.
- Ensure appropriate BDP high intensity mixed use draft policy is adhered to, and goes beyond this minima if required.

Enhance biodiversity (36)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
L. Biodiversity	36	Enhance biodiversity	Soft landscaping that enhances biodiversity	Loss of significant trees and biodiversity	Retention of existing vegetation and significant trees	30% of new plantings locally native	80% of plantings locally native	100% of plantings locally native with connection through greenways (biodiversity corridors)

Discussion

This was scored based on the DPA. Participants believed this was a substantial gap in the Development Plan and DPA, and that planning for biodiversity and significant trees in the future is required. At present the DPA specifies the retention of some of the existing mature stand of trees on the Hills site, which was considered a good start.

Recommendations

- The City of Marion to investigate greenway corridors nearby.
- The Developer to support the regional movement of biodiversity through the use of local indigenous vegetation that connects to these corridors.
- The developer to use local indigenous vegetation in landscaping.
- The developer includes deep root zones in landscaping to allow tree planting for shade and cooling.

Physical Activity

Permeable neighbourhoods linking with surrounding areas (14)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
D. Physical activity	14	Permeable neighbourhoods – linking with surrounding areas	Creation of a permeable neighbourhood that promotes walking cycling and incidental activity	Street pattern and public realm is impermeable or has minimal permeability	Street pattern encourages walking/cycling within CPD	Street pattern and public realm encourages walking/cycling within CPD AND has some connection to surrounding area transit stations	1+ AND strong pedestrian/cycling connections to surrounding area and transit stations	1+ AND seamless integration of pedestrian/cycling connections to surrounding area and transit stations (grade separated from vehicles on South Road)

Discussion

This criteria was scored against the DPA. Participants noted that the concept plan showed pedestrian and cycling linkages within the CPD site, but it did not show a two way flow in/out of the site. To facilitate linkages out of the CPD site and to deal with the expected increase in demand of pedestrians accessing the CPD site (due to the development), participants believed a pedestrian crossing was required at Raglan Avenue, across South Road. Without this additional pedestrian access participants believed that further community severance would occur, and people may react to this by driving the short distance to the CPD site from their nearby homes. Those households without two cars may not access the site as often as they would want to. Any groups that do not have good access will have reduced access to any social activities and economic activities.

Dedicated cycle ways and existing routes/roads used by cyclists were not identified in the surrounding areas, and connections to these were not identified. For example there is a proposed dedicated cycle lane along the other side of the rail line. Linking these into the site will increase the likelihood of incidental physical activity.

Recommendations

- DTEI to provide access to the Castle Plaza site from the proposed cycleway along the rail line.
- DTEI to provide pedestrian crossing across South Road at Raglan Avenue, coordinated with the adjacent intersection crossings.
- City of Marion to develop a Traffic Management/Sustainable Transport Plan that is inclusive of pedestrians and cyclists that incorporates traffic calming, way finding and signage.

Connectedness – destinations within the CPD (15)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
	15	Connectedness-destinations within the CPD	Proximity to services and facilities	Loss of connections between residences, services, PT, workplaces and open spaces.	Lack of connections between residences, services, PT, workplaces and open spaces maintained.	Most major services required are within 800m of origin and destination within CPD	Most major and minor services required are within 800m of origin and destination within CPD	All major and minor services required are within 400m of origin and destination within CPD.

Discussion

This criteria was scored against the DPA. Participants acknowledged that further work on the definitions of origin and destination were required for this criteria. For example, do the criteria relate to:

- distance from every potential origin (such as a residence) to every potential service destination
- distance from every potential origin (such as a residence) to a transit point
- distance from a transit point to every potential service destination.

Notwithstanding this, the physical size of the CPD site allowed the participants to score the DPA as a +1, as 800m was about the full length of the site. Participants were unsure of the services that should be included when considering such a measure, leading to substantial discussion about the need to know more about social services actually required. For example, the criteria did not list children's play areas as a necessary destination, though participants believed such areas were essential. Participants also discussed the importance that the CPD site should not 'suck-in' all of the existing social services in the wider TOD and surrounding area, and instead should support those services by making movement between them as easy as possible. Participants were pleased to see that the DPA desired character statement reinforced the strong links with existing services that surrounded the wider TOD area.

Recommendations

- Undertake a social audit/needs analysis to inform CPD/TOD and what services are needed. Ensure these services are specifically included in the DPA. Conduct alongside the developer.

Active transport (16)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
	16	Active transport	Pedestrians and cyclists to be highest priority in road hierarchy in CPD	Road layout and design accommodates cars over pedestrians/cyclists		Low speed residential streets within CPD that have equal priority for all users	Low speed residential streets and high place value within CPD that have equal priority for all users	Substantial car free precincts where pedestrians and cyclists have full priority

Discussion

This criteria was scored against the DPA. Participants did not specify a neutral impact. The DPA scored -1 because of its lack of discussion about prioritisation of transport modes. Participants also noted that there was no discussion in the DPA about active transport beyond the CPD site into and from the wider TOD area. Participants noted that the DPA maintained existing vehicle movement hierarchies, that would reduce the likelihood of achieving the desired active movement space discussed in the DPA. Active transport was noted for its positive impacts on multiple health and social outcomes, such as cardiovascular health and social inclusion. By changing the vehicle hierarchy the participants believed they could maximise the use of public realm spaces by people, and improve road safety outcomes. Participants were interested in the design of shared zones/naked streets, possibly within a Concept Plan.

Recommendations

- Council to work with other interest groups to get the finalisation of the Design Criteria for 'Shared Zones', particularly the requirements for cyclists and pedestrians.
- The Developer be asked to undertake a road safety audit that includes consideration of vehicle hierarchy.
- The City of Marion informs the Developer and the Developer's traffic consultants of the Streets For People Compendium currently being developed by the SA Active Living Coalition.
- City of Marion to construct a shared zone concept for use in the CPD site (in conjunction with DTEI) if the Streets For People Compendium is not finalised.

Sustainability and Vibrancy

Integration – mix of land uses (1)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
A. Sustainability and Vibrancy	1	Integration	Mix of land uses integrates work, education, home, retail and recreation space to meet daily/weekly needs	Development does not incorporate mix	Development incorporates horizontal mix at ground level	Development incorporates vertical mix adjacent to public transport station/stops	Development incorporates vertical mix adjacent to public transport station/stops/destinations and in area beyond	Not applicable

Discussion

This criteria was scored against the DPA. Participants noted that the CPD site was designed for vertical mix adjacent to public transport stops. Users discussed that the mix of land uses was the critical aspect to achieving the desired social, economic and health outcomes. At present the participants were unsure what mix was needed on the CPD site and beyond, as a social audit/needs analysis had not yet been undertaken. Participants were also wary of specifying that all buildings be prescribed to have a mix of vertical uses, particularly those away from the heart of the TOD and in the transition areas. A discussion about the appropriateness, or not, of row-dwellings next to the heart of the CPD-site occurred. Those in favour of row-dwellings suggested density could be met, and that there is a firm market for such properties; and development could start immediately; whereas those less in favour believed that density might be compromised, compromising the TOD concept. Consensus was not reached.

Connections to land uses on the border of the TOD, such as Edwardstown Oval and the Recreation Centre were also considered important.

Participants noted that if mixed use with appropriate residential density could be achieved, where residents and workers were able to meet their daily and weekly needs onsite, then outcomes such as improved wellbeing, high quality of life, access to healthy foods and decreased car dependence might occur.

Recommendations

- Undertake a social audit/needs analysis to inform CPD/TOD of required services. Ensure these services are specifically included in the DPA. Conduct alongside the developer.
- City of Marion and the Developer to investigate the appropriateness of row-dwellings on the ability to achieve residential density targets for the CPD site and beyond.
- Ensure connections from the CPD site are well made to venues in the wider TOD area, e.g. Edwardstown Oval and the Recreation Centre.

Open space (2)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
A. Sustainability and Vibrancy	2	Open space	Creation of public open spaces (for water conservation, mental health, social cohesion, incidental activity and recreation)	Open spaces are inaccessible AND with low amenity value	Open spaces are not functional	Functional open spaces in accessible locations	Functional open spaces in accessible locations that meet the needs of different population groups	2+ AND attract users from outside the CPD

Discussion

This criteria was scored against the DPA. Participants discussed the need to focus on those open spaces within the CPD site, and access to open spaces within the wider TOD. Strengthening the links to the Edwardstown Oval via safe and attractive walking and cycling paths were considered important. Participants noted that the open spaces being described in the DPA made no mention of the type of open space, or how it might be used. Participants noted that many of the benefits of open spaces were known to derive from greenspaces, soft surfaces and play spaces, and these were not specifically mentioned in the DPA. Similarly, active use of open space versus passive use of open space were discussed as important concepts to consider when designing the open spaces. Benefits from getting the open spaces 'right' were potential improvements in social capital, contribution to physical activity, contribution to SASP Healthy Weight targets, and assisting dealing with heat island effects. Participants noted that greenspaces appealed to all demographics of people and would be important for attracting businesses to the area.

Participants noted that the SA Active Living Coalition's Literature Review on Open Spaces, *'Creating Active Communities: How can open and public spaces in urban and suburban environments support active living?'* (UniSA, 2009) could be a resource for designers to consider. Recommendations that support fully functional open spaces link to the 30-Year Plan and to greenway strategies.

Recommendations

- Marion City Council and the Developer work collaboratively with the Council to define open space, preferred street trees, and furniture. Marion Council work with the developer to develop a unique vision and feel for the site.
- Marion City Council work to link the Edwardstown Oval to the Greenway.
- Marion City Council strengthen the integration between the Castle Plaza TOD with the Edwardstown Oval through safe and attractive walkway and cycle paths, with potential consideration of traffic calming in Raglan Street.
- Marion City Council and the Developer develop a 'Maintenance Management Plan' for the public realm.

Net housing density and diversity (9)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
A. Sustainability and vibrancy	9	Net housing density	Net housing density that promotes inclusivity, diversity and mixed communities	Development achieves 25 dwellings per hectare	Development achieves 35 dwellings per hectare	Development achieves 50 dwellings per hectare	Development achieves 70 dwellings per hectare	Not applicable

Discussion

The criteria was assessed against the DPA. The criteria described not just residential density, but also alluded to aspects of dwelling type diversity. Participants noted that both were important, and a mix of dwelling types for different size family units, ethnic groups and ages were needed. Participants described an ideal situation where a person can grow up in this area, passing through each stage of life, and finding the right type of accommodation at each life stage. Participants described that getting the right mix of dwelling types and density was critical to achieving the desired outcomes for a TOD, such as contributions to social capital, economic growth, income, access to services, social interaction, and reduced anxiety/depression. Participants were interested in having a definition of 'diversity of housing types/building type' being explicitly described.

Some participants did not believe that a density of 70 dwellings per hectare would be possible on the CPD site given the already large footprint of retail (and proposed additional retail and offices), but may be achievable within the wider area. Participants wanted to see more detail into where and how the residential density target for the CPD site could be met.

Participants described that the 30-Year Plan sets out the desire for 70 dwellings per hectare.

Recommendations

- Marion City Council and the developer to negotiate with DFC about interest in affordable housing within the CPD site and wider TOD site.
- Alternatively, negotiate with other affordable housing providers.
- Consider investigation of incentives for affordable housing providers such as rates rebates.
- Consider investigation of Student Accommodation within the CPD site.
- City of Marion and the Developer to confirm density targets for the CPD site and wider TOD.

Mental Health and Wellbeing

High amenity streetscapes (23)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
F. Mental health and wellbeing	23	Streetscapes	Safe, attractive, green, high amenity streetscapes and pedestrian/cyclist areas that encourage social interaction	Low quality streetscapes which are not well activated with adjacent development	Standard streetscapes which are not well activated with adjacent development	High quality streetscapes which are activated with adjacent development	Very high quality streetscapes which are activated with adjacent development	2+ and encourages pedestrians and cyclists from beyond the TOD AND encourages street life

Discussion

This criteria was scored against the DPA. Participants determined the character statement required additional description of the type of streetscape if the desired outcomes were to be guaranteed. For example, footpaths on both sides of the street, or naked streets, inclusion of street trees, street furniture, lighting and signage to help people find their way and signage to contribute to a sense of place.

Recommendations

Recommendations were made for the DPA only, have been presented in Section 4.

Crime Prevention Through Environmental Design (CPTED) (24)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
F. Mental health and wellbeing	24	CPTED design including passive surveillance	CPTED used in public space design and building design	Limited use of CPTED principles or passive surveillance	CPTED principles including passive surveillance used in major public spaces of Castle TOD	CPTED and passive surveillance used in open spaces, streetscapes and public transport areas	CPTED and passive surveillance used in open spaces, streetscapes, public transport areas and through active frontages in private development	2+ AND TOD is recognised as a safe and inviting place - day and night

Discussion

Participants described that the application of CPTED to the design would increase the likelihood of residents and workers feeling secure, and a perception of safety is important for reducing the likelihood of anxiety. It would also ensure there are not isolated areas.

Participants noted that the development of a master plan could be dependent upon another developer being engaged and seeking a master planned approach due to the limitations of Colonial First State's company structure to undertake different forms of development.

Recommendations

- Marion City Council and Developer to develop a Crime Prevention and Safety Provision Plan during the master planning stage.
- Developer to consult with the local Police Community Crime Prevention Unit as part of the community consultation phase during master planning .
- Developer to consult with the wider community about CPTED during the Master Planning stage.

Sense of Place

Streetscape legibility (28)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
1. Sense of place	28	Streetscape legibility for both pedestrians and vehicles	Street design creates clarity and ease of interpretation of surrounds and direction of movement within and outside the retail/residential area	Difficult to interpret locality and key destinations	Ability to interpret location of key destinations	Ease of way finding throughout the TOD	Ease of way finding throughout the TOD through good design and key destinations highlighted	2 plus - and adjacent areas

Discussion

This criteria was scored against the Development Plan and the DPA. Participants noted that limitations on instinctive wayfinding were presented by the road and rail corridors, and therefore any design solutions needed to work within the current environment. Participants questioned whether legibility was being decreased by redesigning Raglan Avenue into a street with a bend in it.

Participants noted that for instinctive wayfinding to become a reality, that integrated actions would be needed between the Developer, Council and DTEI. The Healthy TODs guidelines have evidence about the importance of connectedness on businesses.

Recommendations

- Marion Council, Developer and DTEI to identify ways to connect the existing community to the CPD site across South Road.
- Developer and Marion City Council to review streetscape legibility and instinctive way finding within and into/out of the TOD. For access into/out of TOD particular focus was requested by the participants on the existing and proposed train stations, and across South Road.
- Consider the redevelopment of South Road. Consider a new railway station for the CPD site.

Structure - Street connectedness (29)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
I. Sense of Place	29	Structure – street connectedness	New building height and designs that facilitate a sense of connection with the street	New building height and designs for human scale that facilitate a connection with the street not used in Castle TOD	New building height and designs for human scale used in all major roads of the Castle TOD	New building height and designs for human scale used in all major roads of the Castle TOD AND 50% of Castle TOD area (other thoroughfares)	New building height and designs for human scale used in all major roads of the Castle TOD AND 90% of Castle TOD area (other thoroughfares)	2+ AND experience is shared and work programme is expanded into surrounding suburbs

Discussion

This criteria was scored against the DPA. The participants agreed that the criteria should apply to all roads and thoroughfares, though exact percentages were a guide only. Participants questioned whether the criteria should be measured against existing structures/streets in the CPD site.

Recommendations

- Council to review the Development Policy on existing residential areas.
- Department of Planning and Local Government BDP modules have the potential to have a stronger policy focus on building design and siting in relation to human scale, light and shade, etc.

After hours use of sites (30)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
I. Sense of Place	30	Afterhours use of sites (including malls, greenspaces)	Afterhours use of sites encouraged	Minimal after hours activities	After hours use of sites occurs in external mall area	After hours use of sites occurs in external mall area and adjacent to open space	After hours use of sites occurs in external mall area, adjacent to open space and train station precinct	2, plus Castle Plaza TOD recognised as inviting area with a range of out of hours activities

Discussion

This criteria was scored against the DPA. Participants described that after hours use of the site should contribute to a sense of safety (linking to CPTED) and a sense of quality. Use of the site should include a mix of activity types, such as structured, semi-structured and unstructured; and of both commercial and public realm areas. Participants were clear that anti-social after hours use of the site is undesirable, and questioned the appropriateness of after hours use of the train station precinct. This provoked discussion about noise issues in particular.

Participants were unsure of the types of spaces needed for potential afterhours use. However a lively use of community space was considered important by participants, and that spaces should be provided that are high quality, and flexible for multiple uses. To further encourage the use of spaces once they were built, participants described the need for suitable resources to drive activities and work with communities in those spaces. Participants described the desire for artist/studio type development to promote the arts, though were unsure if 'the market' would provide such an opportunity.

Adelaide City Council, SA Policy, economic data and demographic data were considered potential sources of evidence or investigation.

Recommendations

- Development of quality flexible spaces that support structured and semi-structured activities in the public realm and commercial areas.
- Developers and Council to give consideration to the Arts Community as investors to encourage culture and community connectedness. Involvement of this community in structure and precinct planning required.
- Adequate resourcing in Council to facilitate an expected increase in community activities.
- Understand the community profile and possible needs via a Social audit/Needs analysis.

Community and civic space in commercial areas (30a)

Criterion		Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
			-1	-0	+1	+2	+3
I. Sense of Place		Community/civic space in commercial area	No space available	External space only	External + indoor facility	Multi-use community facility	

Discussion

This criteria was scored against the DPA. Participants described the need for spaces for art and celebration of the community's identity and culture to be explicitly created; and that the spaces needed to be highly functional and flexible. Participants noted that the DPA spoke mostly about community spaces in the public realm, but were very interested in similar spaces within the commercial area – bringing these two spheres of life together. Again, participants discussed the need to understand exactly what the community needed with respect to community and civic spaces.

The area beyond the TOD should be investigated for existing facilities, and areas in the City of Mitcham should also be acknowledged. Participants described that Noarlunga and Rose Hill (NSW) as areas worth investigating to contribute information to this criteria. The Marion City Council Community Services Review would also be useful.

Recommendations

- Engagement between Marion City Council and Developer to negotiate the development of community and civic space in the commercial area.
- Undertake a Community Social audit/Needs analysis as part of the DPA process – consider undertaking alongside Mitcham City.
- Council to identify its needs and clearly communicate those to the developer.

Social Inclusion and Cohesion

Building design flexibility (10)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
C. Social inclusion and cohesion	10	Building design flexibility	Accessible building design and adaptable for life stages (Housing SA criteria, not necessarily class C, but with some components, e.g. step-less entry)	Less than 10% of residences accessible/capable of adapting	Less than 20% of residences accessible /capable of adapting	More than 50% of residences accessible /capable of adapting	More than 90% of residences accessible /capable of adapting	Not applicable

Discussion

Participants were unable to score this criteria due to insufficient detail in the DPA. Participants questioned whether such issues were covered under the Building Code, but it was felt that while some would likely be covered, others would not. Accessibility was considered very important by participants, as that increases the likelihood that the dwelling can be used across life stages. Participants described how internal adaptation (size) and the possibility for mixed use (work/retail) could also be explored. Housing SA was noted as an organisation that may be able to assist with information on this topic. Other sources of evidence were: Charles Landry; Fred Hansen and Laura Lee from the Adelaide Thinkers in Residence; the COAG Report on Australian Cities; and the Universal Housing Design Guidelines.

Recommendations

- Marion Council, State Government and Developers to investigate the feasibility of accessible/adaptable residences to be the focus of developments.

Affordable housing (11)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
C. Social inclusion and cohesion	11	Affordable housing	Provision of affordable housing	Less than 15% of housing meets the Government definition of affordable housing	15% of new housing is affordable (that includes 5% for high needs rental housing)	Greater than 15% and less than 30% of new housing is affordable (that includes 5% for high needs rental housing)	Greater than 30% of new housing is affordable (that includes 5% for high needs rental housing)	Not applicable

Discussion

This criteria was scored against the DPA and the Development Plan. Participants did not believe affordable housing was available outside of the TOD. Housing cooperatives were discussed and it was queried where they fitted into this development and into the TOD. Participants believed that relationships between State Government, LGA and the Developers were required to achieve the desired increase in proportion of affordable housing. Participants acknowledged that 'the market' demand would be a potential inhibitor, as would be buy-in from developers and the State Government. Recognition of the cost of the property over its life was needed to avoid affordable houses becoming unaffordable once on-sold. There was believed to be considerable community support for affordable housing.

Investigation of current development and economic models, such as Housing SA's City Development was recommended. Also, whether any areas had provided >15% of affordable housing in the past, and confirmation of what the outcomes of affordable housing have been for communities.

Participants described that monitoring of this criteria could be undertaken by counting the number of affordable houses built; and evaluating current projects and their compliance, e.g. Light Square in Adelaide and Lightview.

Recommendations

- State Government to review the definition of affordable housing and model to create a rating that reflects upfront and lifecycle costs.
- Marion City Council, State Government and Developers to work together to identify the appropriate percentage of affordable housing within the CPD site and that in the wider TOD.
- Marion City Council and State Government to provide incentives to Developers to increase the proportion of affordable housing.
- Marion City Council to provide feedback to DPLG on their modules to support the importance of housing diversity.
- State government, Councils, Planning Institute of Australia and Peak Bodies to educate the market about the types of dwellings available and opportunities they provide.

Housing tenure (12)

C. Social inclusion and cohesion	12	Housing tenure	Security of tenure for various household types (given). Diversity of tenure types (rental, owning). Maintenance of affordable housing	75% of housing is rental	50:50 rental and ownership (rental includes supported accommodation for aged, mental health and people with disabilities)	75% housing is ownership (rental includes supported accommodation for aged, mental health and people with disabilities)	Not Applicable	Contribute to housing diversity (e.g. providing accommodation options previously not available in the region)
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Discussion

Housing tenure was considered to be outside of the scope of the DPA and was therefore not scored. Further, it was considered difficult to regulate. Participants were well aware of the importance of housing tenure in contributing to the diversity of housing options available to local people. Participants also believed there was an opportunity to provide accommodation options that have previously not been available in the region, such as 10-year leases. Investigation into the proportions of rental vs ownership that are optimal was suggested. Participants believed that Housing SA may have investigated other Housing SA projects in terms of tenure diversity, ratios and outcomes for the community.

Recommendations

- Investigate optimal housing tenure diversity and depending on the evidence, examine policy that can support the desired outcome.

Inclusive design process (13)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
C. Social inclusion and cohesion	13	Inclusive design - process	Public areas and facilities (open space, buildings, community spaces within retail areas that are all-weather) designed with input from diverse groups (culture, stage of life, ability)	Public areas and facilities designed without input from diverse groups	Public areas and facility designs are consulted with the public via usual means	Public areas and facilities are designed with very early input from the public and inclusion throughout	Public areas and facilities are designed with very early and targeted input from vulnerable groups and inclusion throughout	2+ AND design approach is used beyond the Castle TOD

Discussion

Participants acknowledged that an inclusive design process results from stakeholders' willingness to work collaboratively rather than from a policy prescription. Council community engagement frameworks, Government Acts and regulations were seen as the minimum standard for an inclusive design process, but it was acknowledged that this could be met without undertaking good engagement. Participants noted that the Council and the Developer could initiate an inclusive design process along with the community. Issues raised elsewhere such as CPTED, affordable housing, accessible and functional diversity of public and commercial spaces could all be explored in such a process.

Participants questioned whether the public areas and facilities should be examined separately, and whether the outcomes of that should influence the development approval process. A further benefit of an inclusive design process would be the bringing together of multiple stakeholders, such as DPLG, the Developer, DTEI, Council, SA Health, NGO's, business groups, traders groups, multicultural SA and community groups.

Projects for Public Space (USA), Village well, IAP2 Public Participation Spectrum, Portland Office for Neighbourhoods. Participants queried whether it would be useful to approach the State Government's Integrated Design Commission. The social audit/needs analysis would also form a component of the engagement needed.

The Council, as custodians of the public space, were seen as a critical partner to the State government for driving effective consultation.

Recommendations

- Resources and staff for consultation during DPA, Structure Plan and Precinct level needs to be adequate to undertake collaboration with stakeholders, and to upskill staff.
- Holistic models of engagement to be investigated and agreement reached about a process for meaningful engagement agreed.

Accessible public transport

Public transport access (4) and Travel modes (5)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
B. Accessible public transport	4	Public transport access	Improved access for more people to PT network	Access is not improved by the TOD	All developments are within 800m walking of PT stop	All developments within 600m walking of PT stop	All developments within 400m walking of PT stop	2+ AND good walking and cycling connections to surrounds

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
B. Accessible public transport	5	Travel modes	Greater range of travel modes available and used	No bicycle paths or poor pedestrian environment	New movement network maintains existing standards	Well integrate pedestrian and cycling throughout TOD	Integrated network that connects to the PT stops/network	2+ AND connects with other networks outside the TOD

Discussion

These criteria were compiled by the participants and scored against the Development Plan Amendment. It was noted that the public transport access criteria did not capture the disability-friendly design connotations of public transport access, and that this should not be forgotten. Similarly the importance of facilities to promote inter-modal trips, such as bike-storage facilities was described. Participants discussed factors that would inhibit achieving the outcomes for these criteria, and identified the following: the state government not viewing transport as separate from land use issues; budget constraints from local and state governments; and Rail Safety Act restrictions. In contrast, the links to state and federal policy and a willing developer with land use in single ownership were enablers to achieving the outcomes for these criteria. Also, other parts of the DPA supported both criteria, such as the reduction of car parks.

The 30-Year Plan for Adelaide supports the achievement of both the public transport access and travel modes criteria via the targets for population density and increased calls for sustainability. Similarly, South Australia's Strategic Plan aligns well with both criteria, via the healthy weight target and the desire for an increase in public transport use. The Healthy TODs principles, the Healthy Environment Plan, Healthy cities, City of Marion Strategic Plan, Physical Activity Strategy, State Cycling Strategy, and the Department of Health's Obesity Prevention and Lifestyle (OPAL) project would all be supported by these criteria being achieved.

Participants noted that the current DPA did not show the footpath or cycling paths through the CPD site or beyond, and participants were particularly interested in seeing connections made beyond the CPD site.

Monitoring the progress of both criteria was discussed, and participants described the use of a network analysis tool, the patronage counts of public transport modes, the location of public transport stops within the built form, and distance cycled/walked as potential tools/measures.

Recommendations

- To relevant Ministers that the train station is located at Castle Plaza.
- Work with Public Transport Services Division of DTEI to ensure bus routes service the TOD and connect with rail.
- Marion Council to review existing bicycle and pedestrian pathways that connect (or need to connect) into the TOD and to allocate budget to create/enhance connections.
- Liaise with the City of Mitcham to integrate local bike and pedestrian networks.
- Request DTEI to establish appropriate pedestrian crossings across the rail corridor.
- Request DTEI maintain or improve appropriate pedestrian access across South Road.
- Suggest Universal Access as a design principle for within the CPD site, for example for the vision impaired, wheelchair/push chair access, beyond minimum standards.

Car parking – residential, retail, office (6, 7, 8)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
B. Accessible public transport	6	Residential car parking	Reduce private car parking requirements	Ratio of car parks per dwelling is higher than current Development Plan requirements	Ratio of car parks is same as current Development Plan requirements	Car park ratio decreases by 25%	Car park ratio decreases by 50%	Car park ratio decreases by 60%
B. Accessible public transport	7	Retail car parking	Reduce public car park requirements to service retail area	Ratio of car parks is higher than current Development Plan requirements	Ratio of car parks is same as current Development Plan requirements	Car park ratio decreases by 10%	Car park ratio decreases by 20%	Car park ratio decreases by 30%
B. Accessible public transport	8	Office car parking	Reduce car parking for office accommodation	Ratio of car parks is higher than current Development Plan requirements	Ratio of car parks is same as current Development Plan requirements	Car park ratio decreases by 10%	Car park ratio decreases by 30%	Car park ratio decreases by 50%

Discussion

These criteria were scored against the DPA. Participants calculated the approximate decrease in the DPA from usual car parking policy and calculated a decrease of 50% for residential, 18% for retail and 37.5% for office car parking. The 'market' tolerance for residential, retail and office space with reduced car parking is a potential inhibitor of meeting this criteria. For the developer, there is a substantial cost in providing car parking, so reductions in car parks may mean lower costs. Similarly, space not used for car parking can be used as open space to reduce the heat island effect, or provide a public space. Participants believed that reduced car parking supported use of other sustainable forms of transport such as public transport, walking and cycling. These forms of transport are also known to have other benefits such as improved health outcomes and improved safety.

Participants were interested in whether such criteria might have impacts beyond the TOD, where a reduced ability to park in the TOD affected City of Mitcham residents for example.

Residential car parking may be able to be decreased further if student housing or other forms of development are proposed where car parking would be less justified. Also, there was a suggestion that services in the local area could support those who do not have a car, for example grocery delivery.

State Government targets for reducing the carbon footprint (SASP) and the Council's Healthy Environment Plan would both be supported by meeting this criteria. Progress on monitoring these three criteria could be by counting the number of car parks approved for each category of built form; by tracking mode of transport via census data, by traffic volumes on local roads, trip origin and destination surveys, DTEI patronage data on walk up/kiss and drop/ park and ride usage at stations.

Recommendations

- Marion Council to encourage and support local employment opportunities.
- State and local government to pursue the delivery of 3000 jobs as per the 30-Year Plan for Greater Adelaide.
- State/Public Transport providers deliver clean, affordable, efficient and safe public transport to reduce private vehicle use.
- Government Ministers support a new train station (and inter-modal facilities such as bike parking) at Castle Plaza site to support the reduced car park ratios.

Climate Change Mitigation

Energy efficient commercial building design (34), Energy efficient residential building design (34a) and Use of renewable energy (35)

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
K. Climate Change mitigation	34	Energy efficient commercial building design (NABERS Rating)	Commercial buildings are energy efficient and accredited (using the NABERS environmental rating scheme)	Some new commercial buildings achieve less than 3.5 star rating	All new commercial buildings achieve 3.5 star rating	All new commercial buildings achieve 4 star rating	All new commercial buildings achieve 5 star rating	All new commercial buildings achieve greater than 5 star rating
	34 a	Energy efficient residential building design (BCA Rating)	Residential buildings are energy efficient and accredited (using an environmental rating scheme)		All new residential buildings achieve less than 6 star rating	All new residential buildings achieve 6 star rating	All new residential buildings achieve 7 star rating	All new residential buildings achieve 7+ star rating
	35	Use of renewable energy (non carbon based power)	Non carbon based power such as solar electricity and wind power are used extensively			Rating to be developed		

Discussion

Participants did not have enough information available to rate the energy efficiency of commercial building design. Energy efficient residential building design was scored using the general knowledge of participants, and use of renewable energy was scored against the Development Plan.

Participants noted that the star ratings can change over time, so the criteria for 34 and 34a would need to change to match. The new Building Code of Australia (BCA) requirement for commercial buildings had a different star rating system and participants suggested use of this new system. It was acknowledged that the affordability of the development may be an issue when meeting energy efficiency ratings, however such ratings are also likely to make the buildings more attractive to future users. Such ratings strongly support Federal, State and Local Government policies, such as the State Strategic Plan (SASP), the Council's Strategic Plan, the Council's Healthy Environment Plan, the Council's Development Plan, and the BCA. The developer described that energy efficiency was a key consideration in funding a new building due to the high desirability that tenants had regarding lower running costs.

Energy and water consumption could be used to track future building performance.

Use of renewable energy was discussed as worth exploring, despite a scale not being available. Given the lack of focus on this, participants scored this criteria as 'business as usual', and so a neutral impact. Participants suggested non-renewable energy ties in to public lighting, and also into adaptation measures for flood risk and heat island effects. Participants queried what Colonial First State's ESD Scale/measure was.

Recommendations

- Marion Council to understand the Developer's ESD scale.

- Marion City Council to work with Developer to aim for higher 'star' ratings on developments.
- Council and State Government to promote energy efficient buildings to community.
- DPLG to have greater emphasis on non-carbon based power in the BDP.
- Marion Council to investigate with the Developer the potential to capture energy and resource consumption across the TOD, for example with Lochiel Park could be used as a source of information.
- Marion Council and DPLG to investigate policy options form climate change adaptation to be included in DP and DPA.

Access to healthy food

Criterion			Description	Moderate negative impact	Neutral impact	Moderate Positive impact	Strong positive impact	Positive impact beyond TOD area
				-1	-0	+1	+2	+3
G. Access to healthy food	27	Access to a range of healthy food (including supermarkets, farmers markets, community gardens, cafes and restaurants)	Healthy, affordable, fresh food options within walking distance	Less than 500 residents within walkable (800m) of healthy affordable fresh food choices	1000 residents within walkable distance (800m) of healthy affordable, fresh food choices	1500 residents within walkable distance (800m) of healthy affordable, fresh food	2000 residents within walkable distance (800m) of healthy affordable, fresh food	2,000 plus residents within walkable distance (800m) of healthy affordable, fresh food

Discussion

This criteria was scored against the DPA. It was considered a fundamental requirement to have access to a supermarket, whereas participants thought other food outlets were less critical. Non-outlet food access was discussed substantially, such as farmers markets, community gardens, co-operatives. Minimising fast food options was also discussed.

Participants were unsure of the demand for such non-outlet food options, and suggested these be included as components of a social audit/needs analysis. If such components are used, way-finding with signage was noted as a potential promoter to their use. Council's Community Bus was known to be used by people with reduced mobility to access the supermarket.

OPAL data and information was seen as a potential source of information and advice for this criteria. Other information sources were the Heart Foundation's Healthy by Design Guidelines, Illona Kickbusch's Thinker in Residence work, and Healthy Spaces and Places website <http://www.healthyplaces.org.au/site/>.

Recommendations

- Marion Council to develop a Community Garden Policy.
- Provide space and amenity for a farmers market to operate, if requested by the community.
- Marion Council to investigate businesses to provide delivery service for those shoppers who walk or cycle.

6. Further work

A small number of the criteria could not be scored due to insufficient information:

- 10 - Accessible building design and adaptable for life stages
- 12 - Security of tenure for various household types
- 20a - Urban design and siting to enhance or improve air quality
- 34 - Commercial buildings are energy efficient and accredited

The group also identified three other criteria that needed further development into a scale, scoring and subsequent discussion/recommendations. They were:

- Housing diversity
- Inclusive design (outputs) - Public areas and facilities (open space, buildings, community spaces within retail areas that are all-weather) for diverse groups (culture, stage of life, ability). Participants believed that the outputs of design, such as layout, flexibility of space, provision of community services (libraries, special needs, health, etc), shopping, dwelling types, office scale and type is required. For example, participants suggested a minimum floor area be given over to community space along the same lines as the 12% open space provision.
- Indoor air quality

It is recommended that further work is undertaken on these criteria to complete the assessment. This will depend on the available resources at Marion City and Department of Health, especially regarding these criteria's relative importance to the overall wellbeing assessment.

7. Next Steps

The following steps were identified by the Castle Plaza Partner Group :

- Finalise and distribute the Castle Plaza Wellbeing Assessment 3-day workshop report
- City of Marion/Department of Health develop a project proposal and brief for presentation to Colonial First State for a jointly funded Social Plan (referred to in report as a social audit/needs analysis)
- Scope and develop a Social Plan
- Finalise list of recommendations from workshop and distribute to nominated agencies
- Department of Health and City of Marion project group to continue to meet to oversee implementation/communication of workshop outcomes

8. Conclusions

Figures 1 and 2 below show a summary table of the workshop outcomes. These include the agreed assessment criteria, the agreed upper and lower bounds for each criteria and the scores given to each criteria for the Castle Plaza DPA. Additional detail on each of these is provided in Appendix 3. While a scale was not developed for criteria 35 - Use of renewable energy; and criteria 33 - Diversity of size and types of businesses; the group was still able to score the DPA. Developing a scale for these criteria was considered useful.

Of the 33 assessment criteria that were scored:

- 1 met the upper bound
- 12 scored above the lower bound but did not reach the upper bound
- 8 scored on the lower bound
- 10 scored below the lower bound
- 2 were scored but upper and lower bounds were not set.

The best performing Criteria (those scoring predominantly above the lower bound) were Workplace Access and Amenity, and Accessible Public Transport. The domain where all assessment criteria at least met the lower bounds (or better) was Mental Health and Wellbeing. The remaining Criteria all had one or more assessment criteria below the lower bound: Physical Activity; Healthy Environments; Sustainability and Vibrancy; Climate Change Mitigation; Access to Healthy Food; Social Inclusion and Cohesion; Sense of Place; Biodiversity.

For those assessment criteria scored below the lower bound, participants were able to make a number of helpful recommendations about how to improve the score. Those specifically directed to the DPA are in Section 4, and those recommendations with a wider brief than the DPA follow in Section 5.

