

MINT AND ARCHER STREET UPGRADE DESIGN PROJECT

People Focused Street Design

Town of Victoria Park
W182720



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INTRODUCTION

01

SCOPE

The primary imperative in Australia has been to improve and maintain throughput of motor vehicles, minimise congestion and keep journey times low. This is the idea of roads. As Australian cities grow and people transition from private cars to a variety of other modes, we need to rethink this attitude. A Street Design Upgrade for both Mint Street and Archer Street within the suburb of Carlisle will aim to provide a more people focused outcome through both Urban Planning and Transport outcomes.

Within the Draft *Local Planning Strategy*, the Corridor currently forms the western boundary of the Carlisle Station / Archer Street Precinct, which bleeds into the Oats Street Precinct. These Precincts are defined as 'activated, transit-orientated, mixed use areas that capitalise on their proximity to Perth and the Albany Highway Centre.'

A Healthy Streets assessment, paired with the Movement and Place approach has been undertaken to identify key roles of the street at different points along the corridor.

Figure 1: Study Area (Base map source: Nearmap)



THE MOVEMENT AND PLACE FRAMEWORK

Movement and Place is an alternative approach to transport planning that is gaining momentum and being implemented across Australian cities. It looks at land use, human activity and the idea of streets as opposed to roads; recognising the dual function of streets as both through corridors (for 'movement') and destinations in their own right (as 'places').

As a network management philosophy based on broader objectives, Movement and Place creates opportunities for more nuanced, equitable and balanced outcomes than the 'predict and provide' approach that underpins most road planning. It enables networks and corridors to be managed more coherently and for improvements to be planned more strategically. Similarly, it moves away from reactive responses to transport planning, for example, expanding roads to allow more throughput instead assessing the potential to reappropriating existing infrastructure to meet local needs. It is as applicable to congestion management as it is to giving greater priority to non-car modes and it is increasingly important in inner metro areas where it is impractical or inappropriate to build additional capacity.

The Movement and Place approach also acknowledges the role of streets where the emphasis between movement and place is equally balanced. This facilitates a more rational approach to planning that accepts the dual functionality of streets.

Figure 2: Street Type Matrix (Source: Transport for London 2016)



HEALTHY STREETS

Healthy Streets is an approach developed in the UK (by Lucy Saunders) through research into the health impacts of transport, public realm and urban planning. The approach recognises that the key elements necessary for public spaces to improve people’s health are the same as those needed to make urban places socially and economically vibrant and environmentally sustainable.

Healthy Streets assessment is distilled into 10 Healthy Street Indicators™. Focussed on the human experience, these indicators show what really matters on all streets, everywhere, for everyone.

Undertaking a Healthy Streets assessment on the exiting corridor and on the proposed design. This will allow for a comparison of the improvements associated with the design.

As part of this project, two Healthy Streets Assessments have been undertaken. One on the existing conditions (before) and one on the concept design, which allows for a comparison to demonstrate the enhancement achieved through this new design. These assessments are summarised in Chapter 3.

Figure 3: Healthy Streets Indicators (Source: Lucy Saunders)



Source: Lucy Saunders

THE SITE

Archer and Mint Street connects Orrong Road to Albany Highway and connects Carlisle Train Station to the key commercial precincts at Archer Street and the East Victoria Park Town Centre. The street experiences several major interruptions including at the railway level crossing and the Shepperton road intersection. Despite encompassing a local neighbourhood centre and connecting to a primary school and key commercial precincts, the current streetscape is neglected and does little to provide a welcoming environment for pedestrians.

The street changes in condition and design across its length. While the area around the Carlisle Town Centre maintains a median, formalised parking and many mature trees, several other sections of the street maintain a much wider carriageway, informal parking or no median.

Major government infrastructure projects will impact the street over the coming year including:

- the level crossing removal project at the rail line;
- the redevelopment and creation of a station precinct at Carlisle Train Station; and
- an upgrade to Orrong Road.

The Town's Draft Public Open Space Strategy identifies Archer Street as a future 'Active Park Street'.

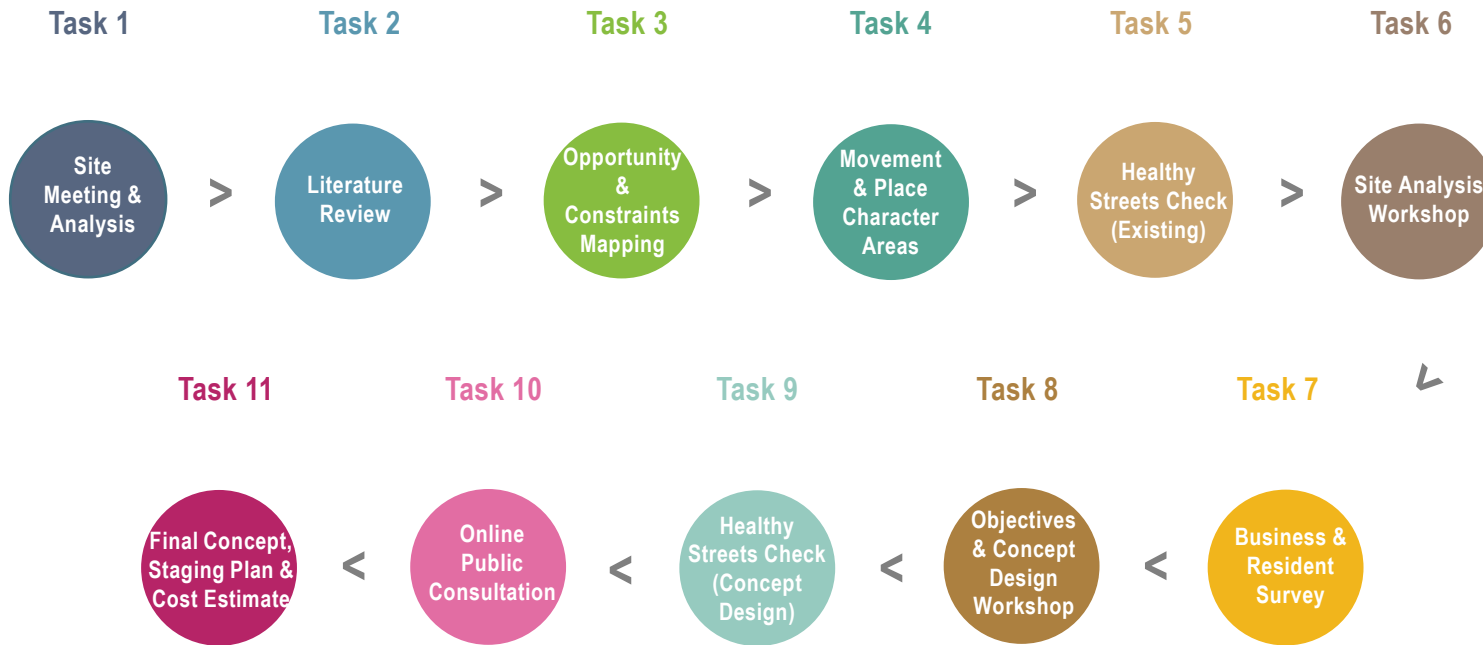
A Built Form Analysis is included at Appendix A.

Figure 4: Character Areas along the Corridor



METHODOLOGY

In preparing this design upgrade, an interdisciplinary team have provided input into the following tasks:



BACKGROUND

02

EXISTING SITUATION

The Mint Street and Archer Street corridor (the Corridor) is an important corridor connecting Orrong Road to the North East with Albany Highway to the South West. As such, the corridor is identified as a key movement corridor for all modes of transport. It is classified as a District Distributor B road by Main Roads WA, carrying between 8,000 13,000 vehicles per day approximately with average speeds ranging between 50km/h to 60km/h over the course of the day. In addition, the corridor carries four different bus routes along its length, with frequencies averaging 5 to 10 minutes during peak times and is also identified as a local cycle route within the Town's bike plan. Sections of the corridor also provide key pedestrian linkages connecting pedestrians to key destinations such as Carlisle Town Centre, Carlisle Train Station and East Victoria Park Town Centre.

As a result of the importance of this movement corridor and the interaction of different modes along the corridor through a number of intersections, this high level of exposure has led to a high number of crashes occurring at key intersections and mid-block locations.

Figure 5: High Level mapping of existing crash patterns along the Corridor



CRASH ANALYSIS

A high-level summary of the primary crashes at the key intersections with over 10 crashes recorded is summarised in the below and adjacent tables. The majority of these crashes were either rear end or when a vehicle was turning right or going straight through, highlighting the danger of some of these intersections.

In addition to these, it should be noted that a number of crashes involving vulnerable road users have occurred at Star Street (2 with a motorised wheelchair, 2 with cyclists and 1 with a pedestrian) and Rutland Avenue (2 with a motorcyclist and 2 with cyclists).

Pedestrians have also been involved in accidents at Apollo Way, Gemini Way, Star Street and Albany Highway. Cyclists have also been involved in accidents at Bishopsgate Street (1), Albany Highway (2), Rutland Ave (2), Shepperton Road (3), Carnarvon Street (1) and Beatty Avenue (1).

	Intersection of	Number of crashes	Most common crash
Mint Street	Albany Highway	24	Rear end (10) Same lane left rear (4) Opposite direction right through (4)
	Hubert Street	11	Through – through (10)
	Shepperton Road	104	Opposite: through – right (54) Same lane rear end (28) Same lane right rear (8)
Other	Leaving driveway	40	38 were on Archer St 2 on Mint St
	Parking related	20	6 on Mint St, 14 on Archer
	Path – car door open	2	

	Intersection of	Number of crashes	Most common crash
Archer Street	Carnarvon Street	14	Through – through (4) Opposite: through – right (2) Same direction same lane right rear (2)
	Beatty Avenue (school)	22	Through – through (12) Opposite: through – right (4) Same lane rear end (2) Same lane left rear (2) Same lane right rear (2)
	Rutland Avenue (railway)	32	Intersection through – through (14) Same lane rear end (10) Reversing in traffic (2) Same lane left rear (4) Through right (6) Pedestrian struck boarding / alighting (2)
	Bishopsgate Street	24	Intersection through – through (12) Same lane rear end (4) Off path on straight: Off right carriageway object (3)
	Planet Street	12	Intersection through – through (8) Same lane rear end (2)
	Star Street	42	Intersection through – through (10) Same lane rear end (10) Pedestrian struck boarding / alighting (2) Head on (2)
	Marchamley Street	17	Intersection through – through (10) Same lane rear end (10) Pedestrian struck boarding / alighting (2) Head on (2)
	Gemini Way (near merge point)	36	Intersection through – through (10) Same lane rear end (10) Pedestrian struck boarding / alighting (2) Head on (2)
	Orrong Road	213	Same lane rear end (114) Through right (32) Same lane right rear (16)

LITERATURE REVIEW

Town of Victoria Park Integrated Movement Network Strategy (2003)

The Town of Victoria Park’s Integrated Movement Network Strategy is a high-level framework providing guidance of the development of more detailed future action plans for delivering an efficient, safe, well-connected and sustainable transport system in the Town.

The Strategy has been prepared for the period between 2003 and 2031 and takes into consideration current and future transport and mobility needs.

The objectives of the Integrated Movement Network Strategy are particularly relevant to the Mint / Archer Street Design Project, and are:

- Support the Town’s Vision of “Victoria Park – Vibrant Lifestyle” and the objectives set out in the Town’s Strategic Plan “Plan for the Future 2011-2026”;
- Manage traffic congestion to facilitate ease for moving of goods and people by more efficient use of roadway space & capacity and better transport and land use integration;
- Enhance the urban environment and amenity with greater emphasis on provision for bicycle and pedestrian paths and connections to, and interchange with, public transport;
- Improve access to employment, entertainment, medical, education and community facilities, while considering the needs of people with mobility, visual or hearing impairment;
- Reduce transport cost for the community by providing better public transport services, improving pedestrian and cycling facilities and enhancing permeability throughout the Town;
- Improve transport links, connections and movements required to the regional and local transport network, based on existing land use patterns and future growth areas;
- Create a healthier and more accessible community through encouraging active travel such as cycling and walking;
- Improve environmental conditions through less reliance on private motor vehicle transport; and
- Provide a basis for the current and future management of, and provision for, parking on private and public land.

Key capital works projects also noted in the Strategy include the delivery of improved pedestrian facilities at key intersections including the Shepperton Road / Mint Street intersection and to deliver schemes that address pedestrian and cyclist safety issues at the Archer Street / Star Street intersection and the intersections along Archer Street between Star Street and Bishopsgate Street, respectively.

Additionally, the Strategy identifies the following actions relevant to the Mint and Archer Street project.

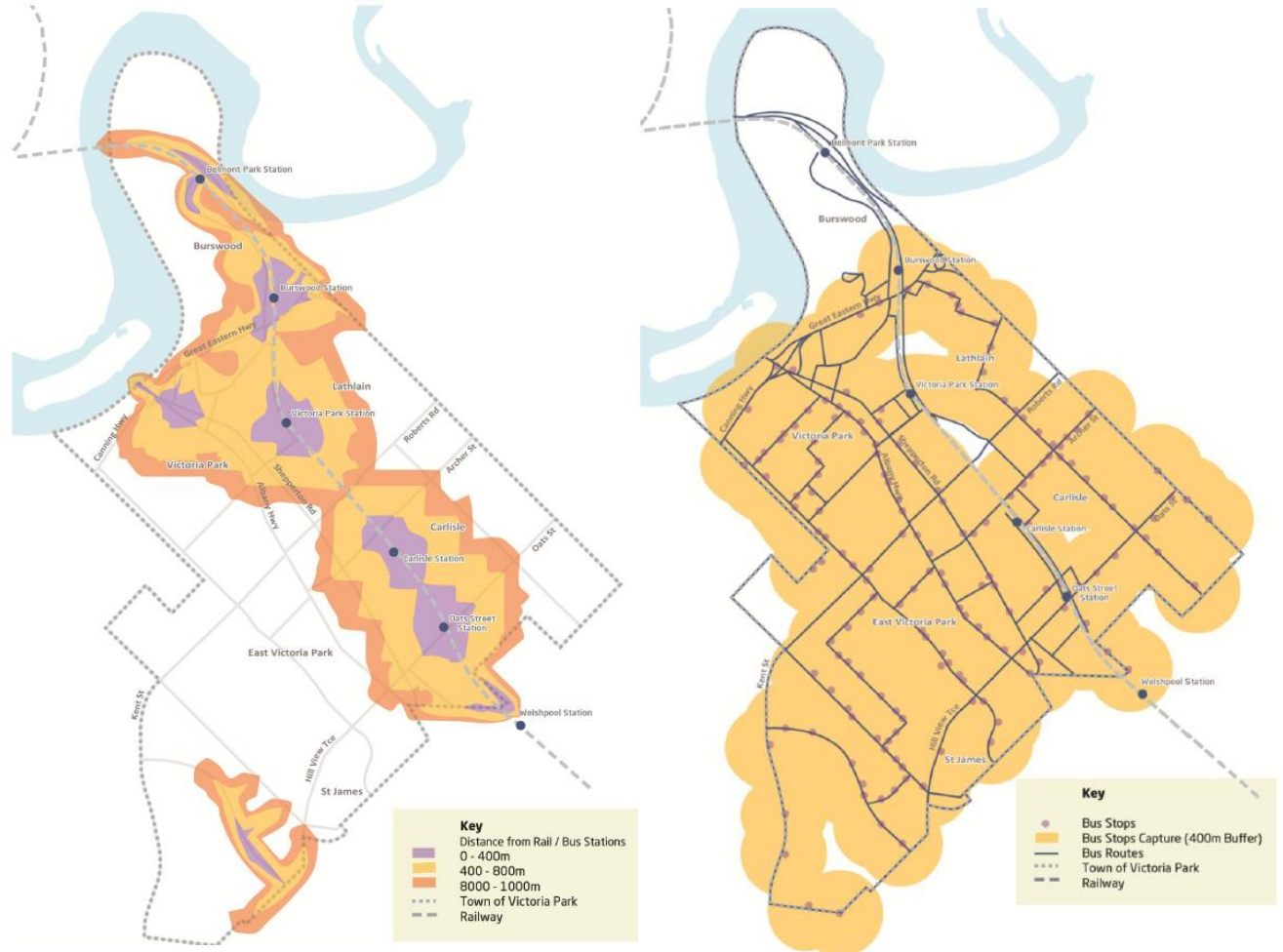
Strategy Element	Policy / Position	Action / Project
Safety	Contribute proactively to broader metropolitan and statewide road safety initiatives (actively support a Safe Systems approach).	Advocate for MRWA to deliver schemes to address safety issues at key intersections of state / local roads including Orrong Road / Archer Street
Level Crossings	Support longer term planning to replace vehicle level crossing points of the urban rail network in conjunction with rail network or station improvements.	Work with PTA to deliver grade-separation of Archer Street and the railway line.
Heavy Rail	Support the relocation and redevelopment of Oats Street, south of its existing location, and replacement of crossings with grade-separated of level crossings.	Work with PTA to deliver grade-separation of Archer Street and the railway line.
Activity Centres (on-road cycling)	Improve on-road cycle facilities along key corridors to Activity Centres.	Develop and deliver schemes to provide cycle lanes / shared paths on key routes to Activity Centres and stations including Archer Street.
Activity Centres (off-road cycling)	Support a significant increase in provision of off-road cycle facilities.	Develop schemes to provide cycle lanes / shared paths on key routes to Activity Centres and stations including Archer Street.
Operations	Focus funding opportunities on local cycle and pedestrian safety schemes.	Deliver schemes to address pedestrian safety issues at key locations, including the Archer Street / Star Street intersection.
		Deliver schemes to address cyclist safety issues at key locations / routes including Archer Street, particularly the intersections with Star Street and Bishopsgate Street.
Interaction	Prioritise localised pedestrian schemes to improve accessibility, safety and amenity.	Deliver schemes to address pedestrian safety issues at key locations Archer Street / Star Street intersection.

LITERATURE REVIEW

Town of Victoria Park Integrated Movement Network Strategy (2003) - continued

The Strategy also identifies walkable catchments around the rail stations and bus stations, as well as cycling & walking projects. Relevant walking and cycling projects include the need for cycle infrastructure improvements along Archer Street.

Figure 6: Extracts from the ToVP Integrated Movement Network Strategy (2003)



LITERATURE REVIEW

Prioritisation of Strategic Projects – Implementation Strategy (2017)

In 2017, the Town of Victoria Park prepared a strategic prioritisation framework to objectively prioritise the various transport-related initiatives contained within the Town's *Integrated Network Management Strategy*, which included a total of 228 initiatives, which were consolidated down to 183 initiatives, where actions were demonstrated to be repetitive, non-specific or irrelevant.

Of these, 15 of the highest priority projects were identified. Four projects were directly relevant to the Mint and Archer Street design project and are summarised below.

Project Categories	Project Type	IMNS Action & Projects List
Cycling and Walking	Physical infrastructure	Develop and deliver schemes to provide cycle lanes / shared paths on key routes to Activity Centres and stations including Archer Street
Cycling and Walking	Physical infrastructure	Deliver improved pedestrian facilities at key intersections and routes including: Shepperton Road / Mint Street.
Public Transport	Advocacy and liaison projects	Advocate for the retention of Carlisle Station and investigate TOD opportunities.
Cycling and Walking	Planning / feasibility studies	Deliver schemes to address cyclist safety issues at key locations / routes at: Archer Street, particularly the intersections with Star Street and Bishopsgate Street.

Town of Victoria Park Integrated Movement Network Strategy – Independent Review (2016)

An independent high-level review of the Town's Integrated Movement Network Strategy was undertaken in 2016, to evaluate the Strategy against the State Government's (then) Draft *Transport @3.5 million*.

This independent review notes that Transport @ 3.5 million does not detail any new railway stations, however does detail four heavy rail projects which are earmarked for the area, including:

- *“Extending the Thornlie line to Cockburn Central – by 2.7 million. Likely to generate an increase in the number of trains passing through the Town of Victoria Park’s five existing stations.*
- *Extension of Armadale line to Byford – by 3.5 million. Likely to generate an increase in passenger numbers passing through/accessing the Town of Victoria Park’s five existing stations.*
- *Extension of Thornlie Line to Forrestfield – beyond 3.5 million. Will provide residents of Perth’s south-eastern corridor an alternative means of accessing access the new Consolidated Airport Terminal.”*

The review also notes that Orrong Road is proposed to be upgraded to “expressway standard” by 3.5 million.

Level crossing removal is highlighted in this review of the two strategies, and states that Transport @ 3.5 million states *“Where possible, high risk level crossings will be progressively replaced by bridges or underpasses to make travel safer and more efficient for all road and rail users.”* however, there is no explicit mention of removing pedestrian crossing points.

The proposed walking and cycling network routes relevant to Mint and Archer Street includes identifying the need to complete the Perth – Armadale PSP (reflected in CW4 of the IMNS).

LITERATURE REVIEW

Town of Victoria Park's METRONET Advocacy Platform

This poster summarises the Town of Victoria Park's position on the State Government's major rail projects within the Town, including level crossing removal projects and the potential creation of transit-oriented precincts and redevelopment of Burswood, Carlisle and Oats Street Stations.

The Poster identifies the Town's vision to be:

"to create well connected and thriving places for people at Oats Street Station, Carlisle Station and Burswood Station for our existing and future community."

The desired outcomes to support the vision include:

- 1. Underground:** The rail corridor is underground and the land at ground level is available for other uses.
Undergrounding the rail line provides many opportunities to achieve great place outcomes and reconnect communities currently separated by the rail corridor.
- 2. Great Places:** Station Precincts are great places that provide obvious and lasting community benefits.
Taking a place first approach will focus project objectives toward creating great places to live, work and play.
- 3. All Stations Remain:** All existing stations in the Town must remain with only minor adjustments to their locations.
Train Stations within inner urban areas are crucial to the future of our city and local community as our population grows.
- 4. Sustainable Access:** Station Precincts promote and facilitate walking, cycling and public transport as the predominant choices for accessing each station.
The most convenient, safe and attractive option to access our train stations must be via sustainable modes of transport with walkability being the primary focus.

City of South Perth & Town of Victoria Park Joint Bike Plan (2018)

The *City of South Perth & Town of Victoria Park Joint Bike Plan* identifies Mint and Archer Streets as Local Routes as part of the aspirational network. Albany Highway, Bank Street and Mars Streets are also identified as Local Routes, whilst Orrong Road is identified as a Strategic Route and Rutland Avenue as a Principal Route. However, this route is not identified as a priority project in the Plan. These are the only higher order roads which were identified and reviewed in this network relevant to the Mint and Archer Street project. All other roads in the vicinity are identified as part of the local network.

The plan identifies that Mint and Archer Street carries over 10,000 vehicles per day (vpd), with Albany Highway carrying 12,000vpd, Shepperton Road carrying 30,000vpd, Rutland Avenue carrying 1,800vpd and Orrong Road carrying 50,000vpd. These key routes are all identified to be of an average standard. Recommendations for Archer Street (between Rutland Ave and Orrong Road) are listed in the table below.

Description	Comments / issues	Suggestions
On-Road (unmarked) Most of the road currently has no cycling facilities and is generally between 12.0 and 15.0m wide.	<ul style="list-style-type: none"> This provides part of an east west connection between Albany Highway and Orrong Road. This section also provides access to Carlisle Station the Archer Street shops. Existing traffic volumes along the road are approximately 14,000 vehicles per day and the speed limit is 50km/hr. This road is used by multiple bus services, which creates potential conflicts for on-road cyclists at bus stops. Red asphalt pavement and formalised parking is located along the section of road between Raleigh Street and Mars Street, at the local shops. The road is narrowed by a 1.6m to 1.8m painted/concrete median with tree plantings, which further reduces space for on-road cyclists. Currently, less confident cyclists will ride on the existing footpath which has multiple conflict points, including pedestrians, service infrastructure and outdoor dining areas (etc). 	<ul style="list-style-type: none"> This route is proposed to form part of the long-term strategic network as a local route. As part of the next road resurfacing, investigate the provision of 1.5m on-road cycle lanes with consideration of protection, plus off-road bypass paths on the Archer Street approaches and departures of the Bishopsgate Street, Star Street and Orrong Road intersections. The on-road cycle lanes must provide appropriate clearance from the door zone of the existing on-parking along Archer Street shops. In addition, green asphalt should be used for the cycle lanes across all side intersections. Where possible, the existing traffic lane width should be narrowed to the minimum possible to facilitate a wider cycle lane. With the above infrastructure, install wayfinding along the route particularly at Bishopsgate Street and Archer Street shops. This should form part of an overall wayfinding strategy (as outlined in Section 15.3.1).

Mint and Archer Street Upgrade Design Project

REV A-Dr // W182720 // 30 Jun 2020

LITERATURE REVIEW

Town of Victoria Park’s Public Open Space Strategy

The Public Open Space Strategy identifies Mint/Archer Street as a key east/west connector and also an ‘Active Park Street’. ‘Active Park Streets’ focus on the provision of amenity for pedestrians and increasing green infrastructure where possible.

‘Park Streets’ are identified due to the need to support the higher density of the Town. This is done through upgrading verges and providing connections to parks. These provided to accommodate the traditional use of parks and backyards including green relief, active and passive recreation, due to the loss of backyards associated with higher density.

The benefits of ‘Active Street Parks’ include:

- “Generating foot traffic past local business, improving economic activity;
- Encouraging visitors to stay longer,
- Improving aesthetics and increasing green amenity in highly urban precincts, and
- Providing activation and vibrancy to key community hubs.”

Recommended upgrades to Active Park Streets include:

- Integrated street furniture
- Shade trees
- Interpretive and interactive art and signage
- Integrated wayfinding
- Lighting to encourage extended use
- Links to key pedestrian connections.

The Strategy indicates the area is generally well serviced by public open space, however barriers to local use such as access and crossings may impact their use. The Strategy also recommends that the park at the corner of Shepperton Road and Mint Street is fully planted with endemic species. However, this should be reviewed and the park provides the opportunity to better supply local facilities, particularly given its strategic location along an Active Park Street.

Figure 7: Extract from the ToVP Public Open Space Strategy
2.8 Carlisle Implementation Actions



LITERATURE REVIEW

Town of Victoria Park's Urban Forest Implementation Action Plan 2019-2024

The Implementation Action Plan complements the Urban Forest Strategy (UFS) adopted by Council in September 2018. The UFS sets an ambitious tree canopy target to increase the Town's tree canopy cover from 10% to 20%, requiring the planting of around 256,000 trees over a 5 year period.

Maximising planting in all new projects on public land, Town-owned parks, verges and open spaces is a key Strategic Action of the Plan (under Strategic Outcome 1), including the planting of trees in the delivery of road infrastructure projects.

Under Strategic Outcome 6, the Plan promotes trialling of biophilic design elements, including planter boxes and parklets.

Funding for additional street trees, planter boxes, verge improvements, local water management and rain gardens, parklets, and eco-zoning may be available within the budget already established by Council under the UFS. The streetscape project represents an opportunity for the design to make a worthy contribution to the Town's objectives established by the Implementation Plan and UFS.

Town of Victoria Park Precinct Plans

The Town of Victoria Park Town Planning Scheme no. 1 splits the municipality into 13 precincts that all have individual Precinct Plans. The project area traverses 3 Precinct Areas, including:

- P8 Carlisle Precinct – north-east of the rail line to Oats Street;
- P10 Shepperton Precinct – between the rail and Iceworks Lane (near Albany Highway); and
- P11 Albany Highway Precinct – small portion between Iceworks Lane and Albany Highway.

Relevant to the project, the P8 Carlisle and P10 Shepperton Precincts are similar in their intent to accommodate medium density residential housing, with the existing local centre contained on Archer Street recognised as an important urban feature in serving the immediate needs of the locality.

The P11 Albany Highway Precinct aims to revitalise the urban/shopping commercial axis as a 'strip' of activity involving a wide range of uses serving local and regional populations. The statement of intent requires that distinctive edges are created between precincts and encourages 'strong gateways' to be established, as to identify the entrance and arrival into the retail-based precinct.

All Precinct Plans encourage safe accessible movement for people on foot, bicycles, users of public transport and vehicles through streetscape enhancement projects involving street tree planting.

LITERATURE REVIEW

Town of Victoria Park's Draft Local Planning Strategy

Town of Victoria Park is currently in the process of preparing an updated Local Planning Strategy.

Although not yet supported by Council in draft form, the intent is to establish a Precinct boundary for the Carlisle Town Centre that would extend along Archer to Apollo Way at its most north-eastern extent, and then south to Beatty Avenue (the first street back from Carlisle Station).

The Draft Strategy notes the Government commitment for over \$415 million (State and Federal funding) for the removal of level railway crossings, including the crossing at Mint and Archers Streets, as par to the State's METRONET programme. The project may include the redevelopment of the Carlisle Train Station and redevelopment of land around the station. METRONET are assessing options for the Mint Street crossing to prepare a business case for further funding from Infrastructure Australia.

The Carlisle Town Centre Precinct contains an estimated net residential density of around 18 dwellings per hectare. The Draft Strategy considers two key recommendations affecting the project first established in a separate study, the Draft Activity Centre Strategy (Planwest, 2017), which could create redevelopment opportunities along the street, including:

- consolidation of the commercial zones by introducing an R30/R60 split coding in the Activation Area with R60 subject to mixed use on ground floor, residential above and max. 4 stories height.
- removing the restriction on multiple dwellings (apartments) along Mint Street between the railway and Albany Highway.

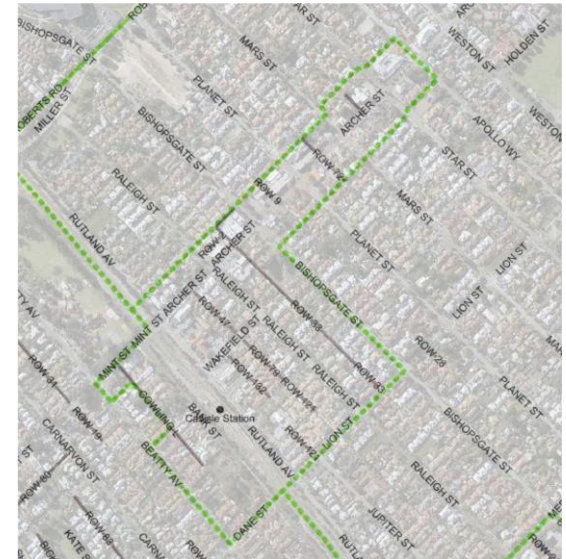
In addition, the proliferation of 'already developed' strata development in the Precinct creates little opportunity for wholesale redevelopment. The Draft Strategy recommends the establishment of a Strategic Investigation Area for more detailed precinct planning to identify redevelopment opportunities and changes to the planning framework.

The Draft Strategy recognises an opportunity for the Carlisle Town Centre to accommodate the creation of new parks or enhancements to drainage areas to provide additional passive recreation opportunities for residents in the area.

The streetscape enhancement project represents an opportunity to achieve key objective for the Carlisle Town Centre being pursued within the Draft Strategy, including;

1. enhancing the role of the local centre within the Precinct;
2. creating a stronger nexus between existing commercial activity and the Carlisle Train Station; and
3. accommodating safe, comfort and convenient movement of pedestrians and cyclists over the movement and parking of private vehicles, through enhancements to public realm with a focus on human-scaled, fine-grained character that express Carlisle's unique identity and sense of place.

Figure 8: Carlisle Town Centre LPS Precinct



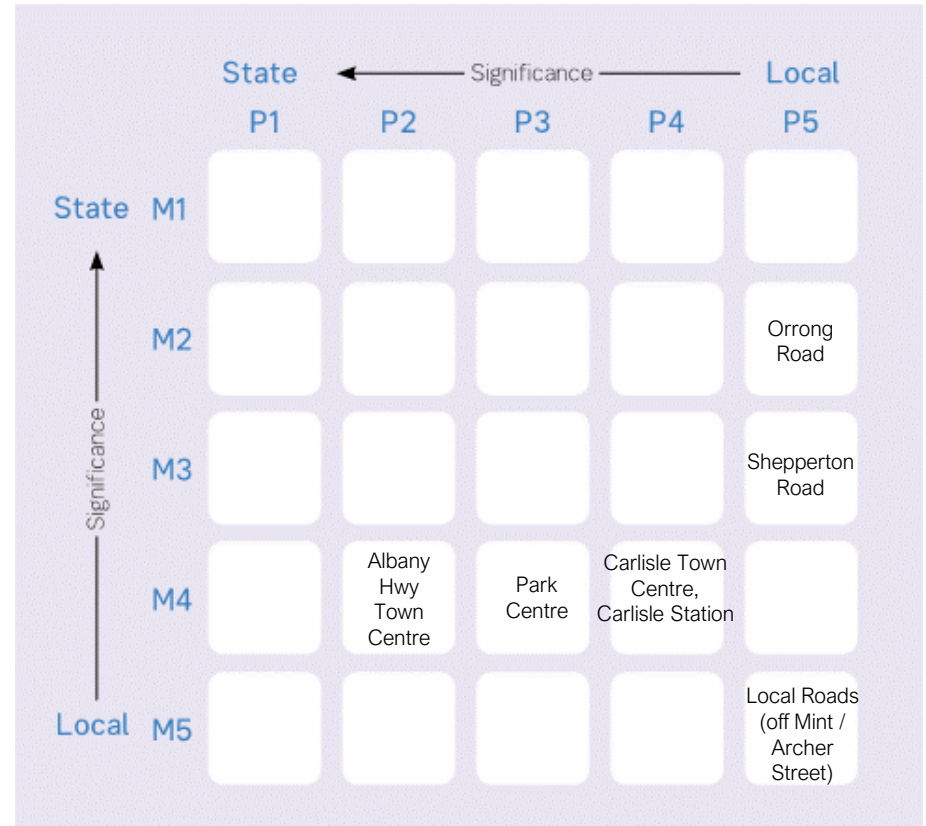
ASSESSMENT

03

MOVEMENT AND PLACE MATRIX AND DEFINITIONS

Classification	Definition
M1	Mass movement of people and/or goods on routes with a state or national-level movement function or provides primary access to state-level places.
M2	Significant movement of people and/or goods on routes connecting across multiple municipalities or provides primary access to regional-level places.
M3	Moderate movement of people and/or goods on routes connecting municipalities or provides primary access to municipal-level places.
M4	Movement of people and/or goods within a municipality.
M5	Local movement.

Classification	Definition
P1	Place of state or national significance.
P2	Place of regional significance.
P3	Place of municipal significance.
P4	Place of neighbourhood significance.
P5	Place of local significance.



MOVEMENT AND PLACE FRAMEWORK - MOVEMENT

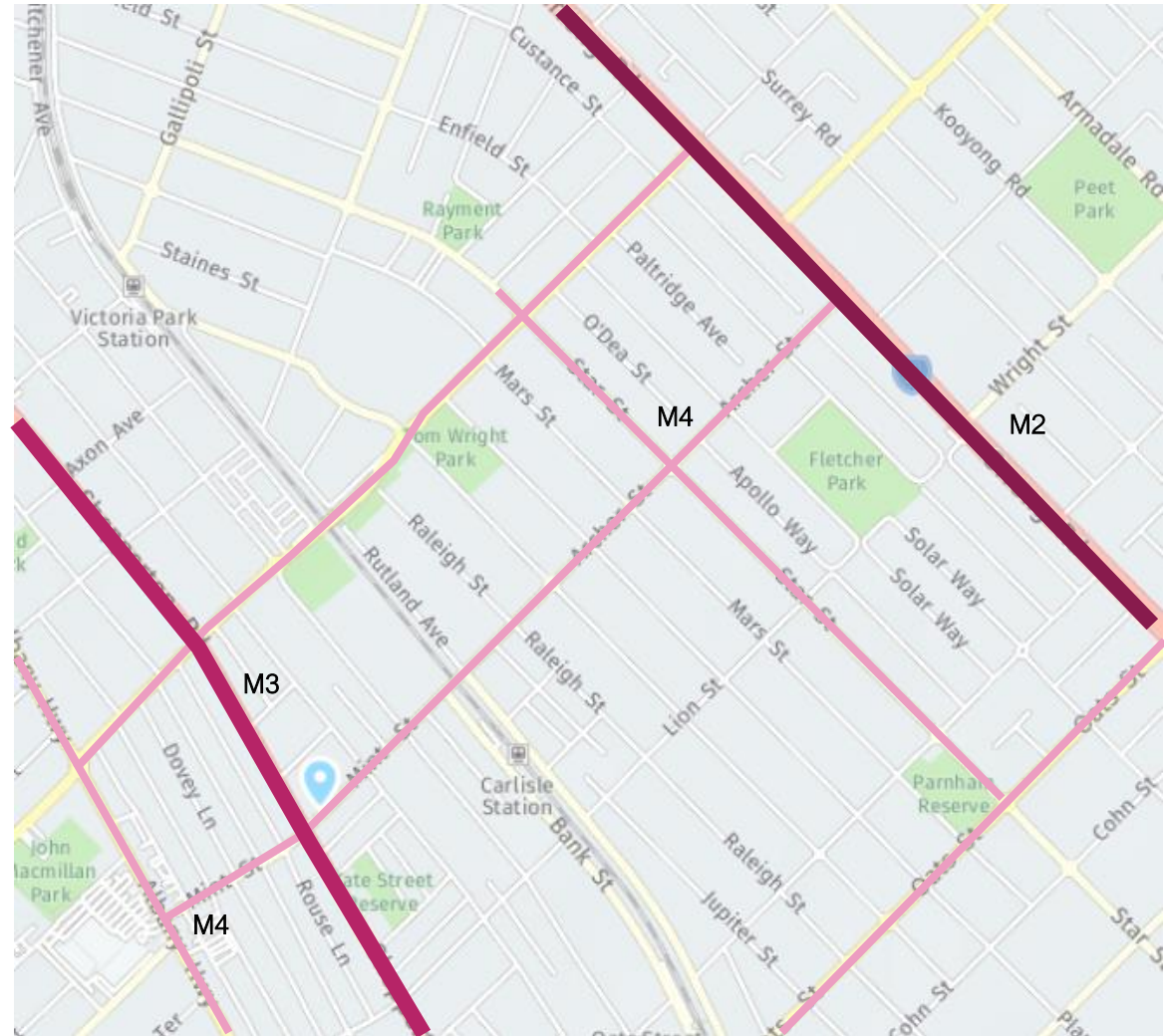
Albany Highway is an M4, despite being a “highway”. This section of Albany Highway has a lower movement function.

Shepperton Road is an M3, with a moderate movement function.

Side roads off Mint and Archer Street are M5 and have a local movement function.

Traffic Redistribution

Given the layout of the movement network, there will be minimal impact on the residential streets. Oats Street, Mint / Archer Streets and Roberts Road are the only routes that cross the railway line, and therefore these roads maintain their form and function as routes of a municipality significance.



MOVEMENT AND PLACE FRAMEWORK - PLACE

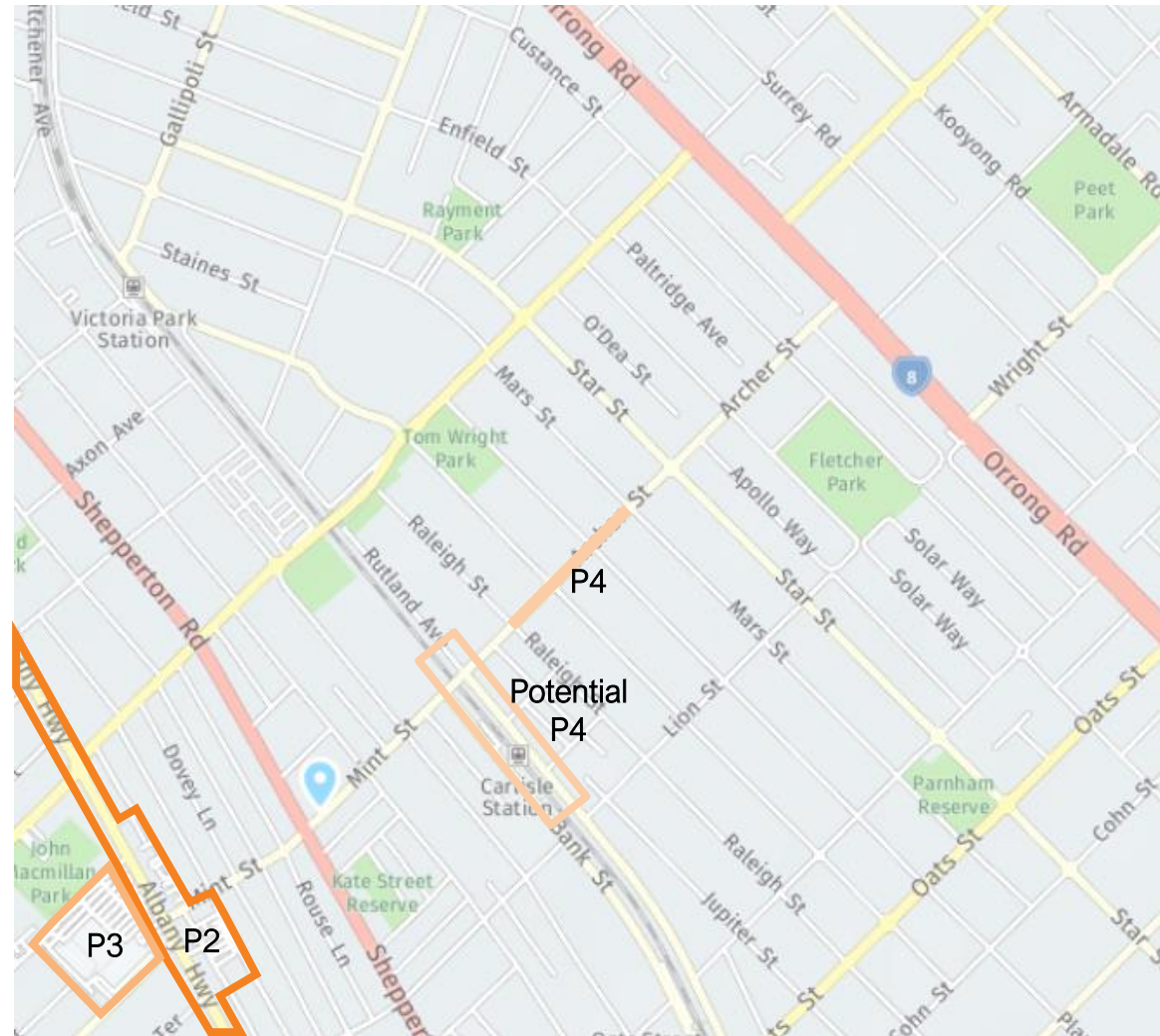
The **East Victoria Park Town Centre** which comprises of the **Albany Highway Café Strip** is a P3.

Carlisle Local Centre is a P4, however has the potential to be more significant.

Carlisle Station currently has low place significance, and is a P5. The redevelopment of the station presents an opportunity to enhance the place function of the station.

The commercial activity along **Archer Street between Gemini Way and Orrong Road** is a P4.

All other frontage to **Mint/Archer Street**, including the **lunch bar at Carnarvon Street** and **newsagent & post office at Star Street** is a P5.



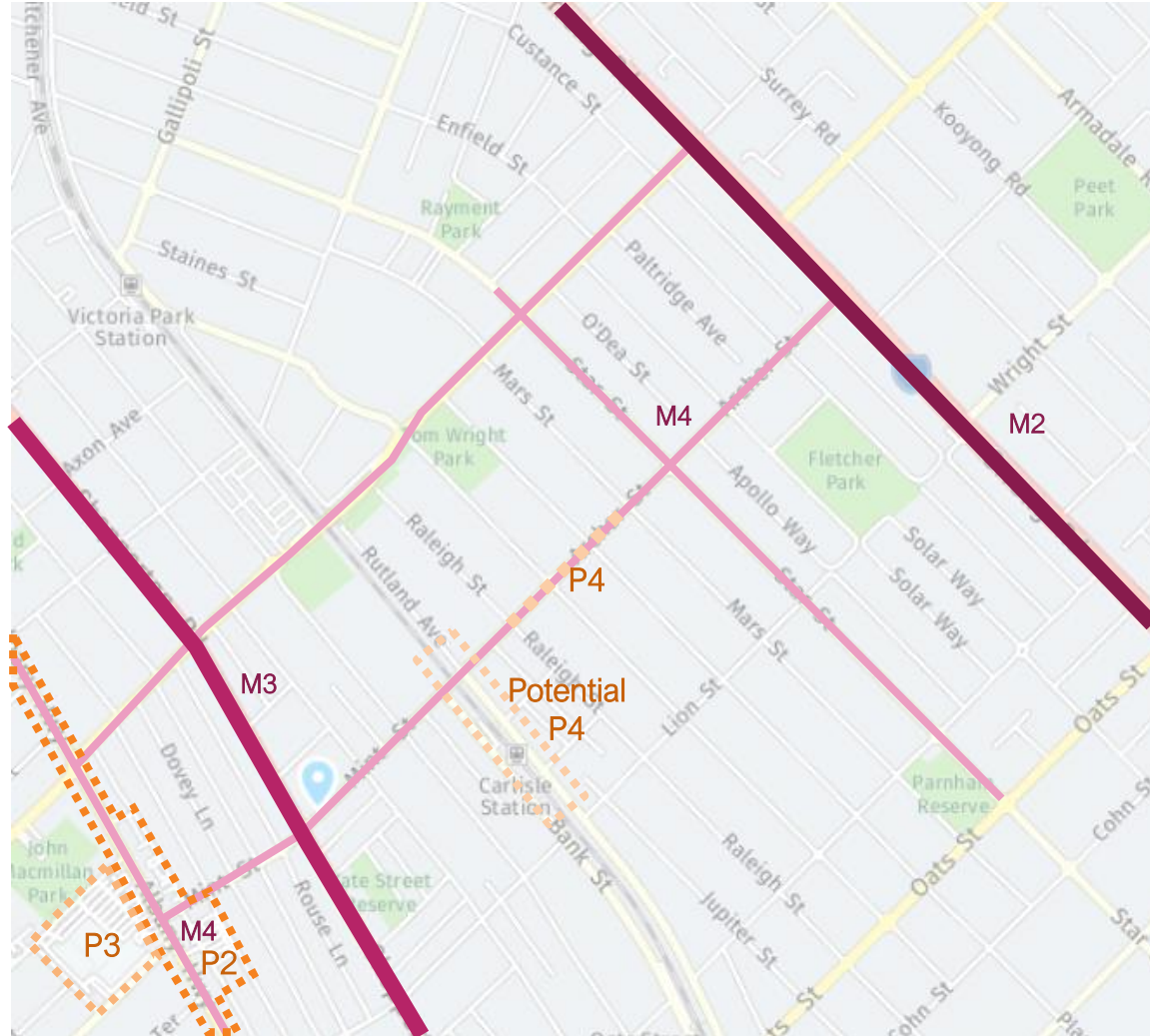
MOVEMENT AND PLACE FRAMEWORK

MOVEMENT

Albany Highway is an M4, despite being a “highway”. This section of Albany Highway has a lower movement function.

Shepperton Road is an M3, with a moderate movement function.

Side roads off Mint and Archer Street are M5, and have a local movement function.

**PLACE**

The **East Victoria Park Town Centre** which comprises of the **Albany Highway Café Strip** is a P3.

Carlisle Local Centre is a P4, however has the potential to be more significant.

Carlisle Station currently has low place significance and is a P5. The redevelopment of the station presents an opportunity to enhance the place function of the station.

The commercial activity along **Archer Street between Gemini Way and Orrong Road** is a P4.

All other frontage to Mint/Archer Street, including the **lunch bar at Carnarvon Street** and **newsagent & post office at Star Street** is a P5.

CHARACTER AREA DEFINITION

As part of the literature review, site assessment and site analysis workshop, the following Character Areas have been defined. They are summarised as below.



East Victoria Park Town Centre

This section of Mint Street includes some commercial frontages and on street parking, and is a gateway into the East Victoria Park Town Centre along Albany Highway.

Residential

This section is largely residential, although there are also supporting land uses such as a primary school and corner store. The area is also divided by Shepperton Road.

Carlisle Local Centre

This section includes the Carlisle Station Precinct and Carlisle Local Centre. There are a few residential lots between the railway line and the town centre, however the area as a place would benefit from the extension of these two centres.

Residential

This residential section is slightly different to the other residential section, and includes aged care, a newsagent and deli, as well as two petrol stations. Traffic volumes also increase towards Orrong Road.

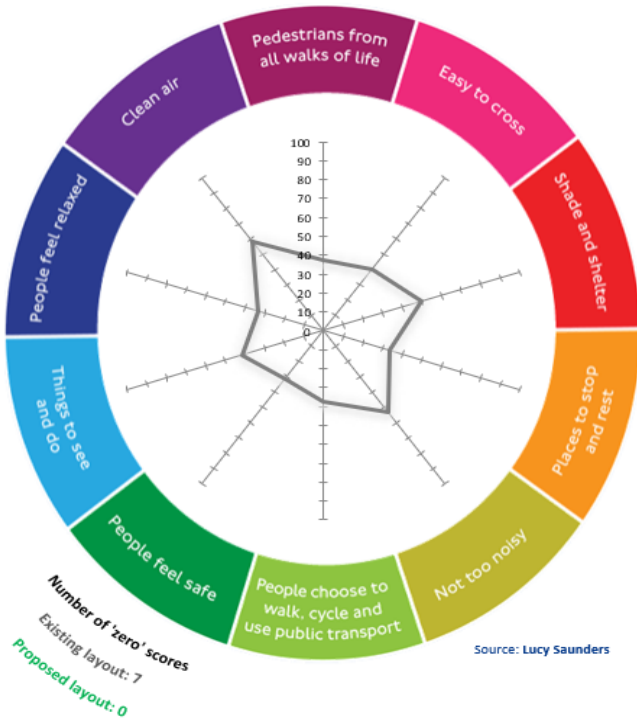
HEALTHY STREETS ASSESSMENT – EXISTING DESIGN

A Healthy Streets Assessment has been taken utilising selected sections between Albany Highway and Orrong Road. These four sections all have distinct features and characteristics, and each section has a key intersection which has been assessed against the Healthy Streets Framework.



HEALTHY STREETS ASSESSMENT – EXISTING DESIGN

Section 1: Albany Highway to Swansea Street



Source: Lucy Saunders

Healthy Streets Indicator scores (%)
(Results will only display once all metrics have been scored)

	Existing layout	Proposed layout
Pedestrians from all walks of life	37	TBC
Easy to cross	40	TBC
Shade and shelter	50	TBC
Places to stop and rest	33	TBC
Not too noisy	53	TBC
People choose to walk, cycle and use public	37	TBC
People feel safe	32	TBC
Things to see and do	42	TBC
People feel relaxed	33	TBC
Clean air	58	TBC
Overall Healthy Streets Check score	37	0
Number of 'zero' scores	7	0

Weaknesses (Score 1 or 0)

- Interaction between large vehicles and people cycling
- Speed of motorised traffic
- Traffic noise based on peak hour motorised traffic volumes
- Reducing private car use
- Ease of crossing side roads for people walking
- Surveillance of public spaces
- Lighting
- Sharing of footway with people cycling
- Collision risk between people cycling and turning motor vehicles
- Provision of cycle parking
- Planting at footway level
- Walking distance between resting points
- Width of clear continuous walking space
- Effective width for cycling
- Quality of footway surface
- Quality of carriageway surface
- Impact of kerbside activity on cycling

Strengths (Score 3)

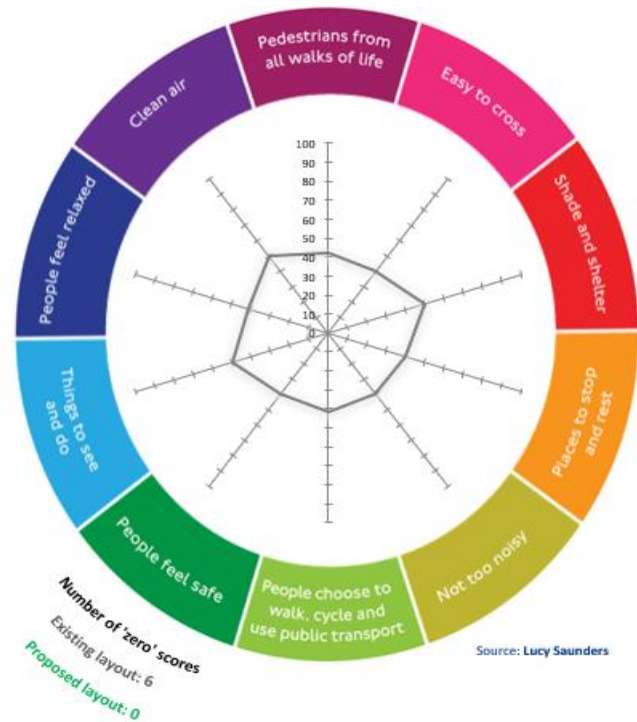
- Noise from large vehicles

Acceptable (Score 2)

- Total volume of two-way motorised traffic
- Mid-link crossings to meet pedestrian desire lines
- Type and suitability of pedestrian crossings away from junctions
- Technology to optimise efficiency of movement
- Additional features to support people using controlled crossings
- Street trees

HEALTHY STREETS ASSESSMENT – EXISTING DESIGN

Section 2: Shepperton Road to Beatty Avenue



Healthy Streets Indicator scores (%)
(Results will only display once all metrics have been scored)

	Existing layout	Proposed layout
Pedestrians from all walks of life	42	TBC
Easy to cross	40	TBC
Shade and shelter	50	TBC
Places to stop and rest	40	TBC
Not too noisy	40	TBC
People choose to walk, cycle and use public	42	TBC
People feel safe	39	TBC
Things to see and do	50	TBC
People feel relaxed	41	TBC
Clean air	50	TBC
Overall Healthy Streets Check score	42	0
Number of 'zero' scores	6	0

Strengths (Score 3)

- Noise from HV

Weaknesses (Score 1 or 0)

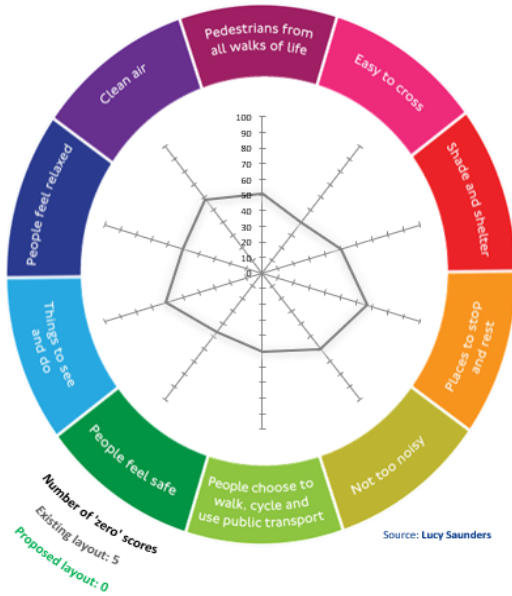
- interaction between large vehicles and people cycling
- Speed of motorised traffic
- Reducing private care use
- Ease of crossing side roads for people walking
- Width of clear continuous walking space
- Sharing of footpath with people cycling
- Collision risk between people cycling and turning motor vehicles
- Quality of footway surface
- Surveillance of public spaces
- Lighting
- Provision of cycle parking
- Planting along footway
- Walking distance between resting points and sheltered areas protecting from rain

Acceptable (Score 2)

- Total volume of two way motorised traffic
- Traffic noise based on peak hour motorised traffic volumes
- Mid-link crossings to meet pedestrian desire lines
- Type and suitability of pedestrian crossings away from junctions
- Technology to optimise efficiency of movement
- Additional features to support people using controlled crossings
- Street trees

HEALTHY STREETS ASSESSMENT – EXISTING DESIGN

Section 3: Raleigh Street to Planet Street



Healthy Streets Indicator scores (%)
(Results will only display once all metrics have been scored)

	Existing layout	Proposed layout
Pedestrians from all walks of life	51	TBC
Easy to cross	40	TBC
Shade and shelter	50	TBC
Places to stop and rest	67	TBC
Not too noisy	60	TBC
People choose to walk, cycle and use public	51	TBC
People feel safe	47	TBC
Things to see and do	61	TBC
People feel relaxed	51	TBC
Clean air	58	TBC
Overall Healthy Streets Check score	51	0
Number of 'zero' scores	5	0

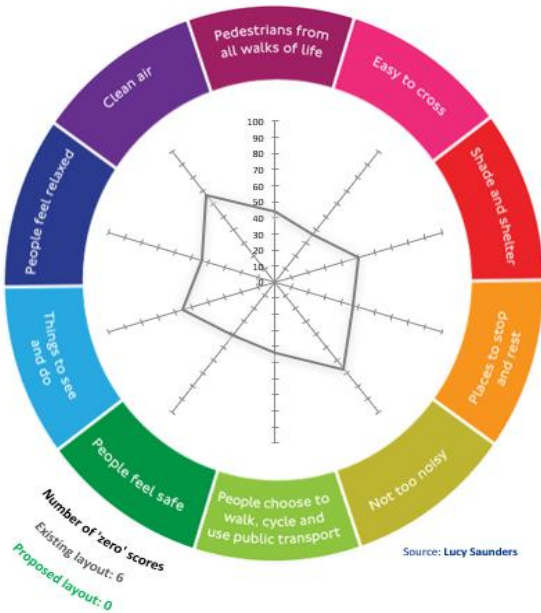
- **Weaknesses (Score 1 or 0)**
- Total volume of two way motorised traffic
- Interaction between large vehicles and people cycling
- Speed of motorised traffic
- Traffic noise based on peak hour motorised traffic volumes
- Reducing private car use
- East of crossing side roads
- Mid link crossings to meet pedestrian desire lines
- Type and suitability of pedestrian crossings away from junctions
- Technology to optimise efficiency of movement
- Width of clear continuous walking space
- Collision risk between people cycling and turning motor vehicles
- Impact of kerbside activity on cycling
- Provision of cycling parking
- Walking distance between shelters
- Bus stop connectivity to other public transport services
- Support for interchange between cycling and rail

- **Strengths (Score 3)**
- Noise from large vehicles
- Quality of carriageway surface
- Quality of footway surface
- Surveillance of public spaces
- Lights
- Bus stop accessibility
- Street to station step free access

- **Acceptable (Score 2)**
- Additional features to support people using controlled crossings
- Sharing of footway with people cycling
- Street trees
- Planting at footway level
- Walking distance between resting points
- Factors influencing bus passenger journey time

HEALTHY STREETS ASSESSMENT – EXISTING DESIGN

Section 4: Weston Street to Gemini Way



Healthy Streets Indicator scores (%)
(Results will only display once all metrics have been scored)

	Existing layout	Proposed layout
Pedestrians from all walks of life	44	TBC
Easy to cross	37	TBC
Shade and shelter	50	TBC
Places to stop and rest	47	TBC
Not too noisy	67	TBC
People choose to walk, cycle and use public transport	44	TBC
People feel safe	41	TBC
Things to see and do	56	TBC
People feel relaxed	44	TBC
Clean air	67	TBC
Overall Healthy Streets Check score	45	0
Number of 'zero' scores	6	0

- **Weaknesses (Score 1 or 0)**
- Total volume of two way motorised traffic
- Interaction between large vehicles and people cycling
- Speed of motorised traffic
- Traffic noise based on peak hour motorised traffic volumes
- Noise from large vehicles
- East of crossing side roads
- Type and suitability of pedestrian crossings away from junctions
- Technology to optimise efficiency of movement
- Additional features to support people using controlled crossings
- Width of clear continuous walking space
- Sharing of footway with people cycling
- Collision risk between people cycling and turning motor vehicles
- Effective width for cycling
- Provision of cycling parking
- Walking distance between resting points
- Walking distance between shelters
- Factors influencing bus passenger journey time
- Bus stop connectivity to other public transport services
- Support for interchange between cycling and rail

- **Strengths (Score 3)**
- Quality of footway surface
- Bus stop accessibility
- Street to station step free access

- **Acceptable (Score 2)**
- Reducing private car use
- Mid link crossings to meet pedestrian desire lines
- Quality of carriageway surface
- Surveillance of public spaces
- Lights
- Street trees
- Planting at footway level

EXISTING CAR PARKING ASSESSMENT

There are a number of existing marked on-street parking available, and these are listed below.



East Victoria Park Town Centre

6 bays – 1P
 8.30am-5.30pm (Mon-Fri)
 8am – 12pm (Sat)

160 bays – Hubert Street Car Park

Residential

No marked bays, however there are opportunities to park on the road, unless otherwise signposted.

Carlsile Local Centre

3 bays – 1/4P
 5 bays – 1P
 24 bays– 1/2P
 3 bays – unlimited
 8.30am-5.30pm (Mon-Fri)
 8am – 12pm (Sat)

Residential

2 bays –1/4P
 8.30am-5.30pm (Mon-Fri)
 8am – 12pm (Sat)

9 bays + ACROD
 35 spaces– in shoulder

28+1 ACROD – Unlimited Car Park

2 bays – Loading bays
 Mint and Archer Street Upgrade Design Project

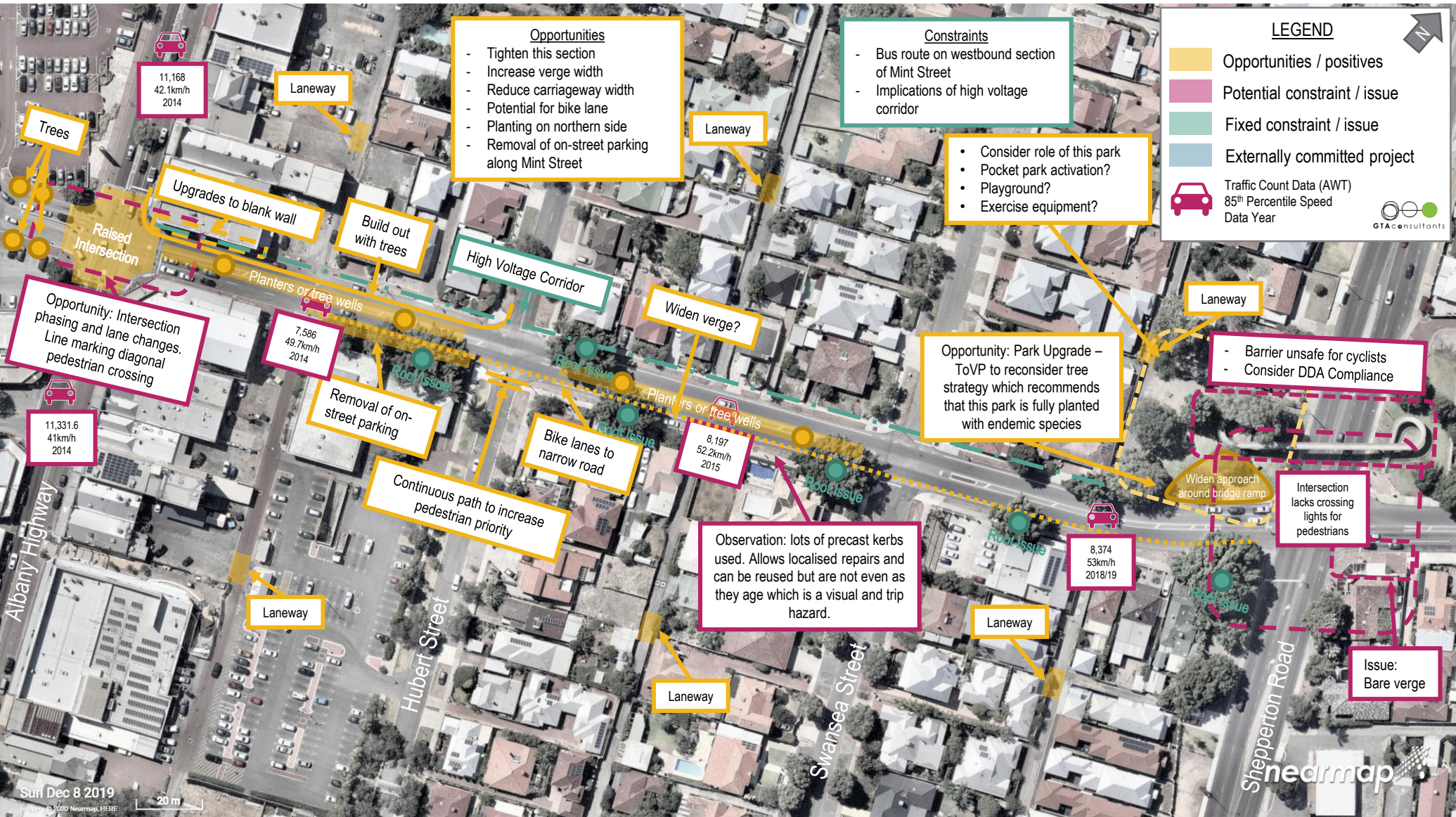
OPPORTUNITY AND CONSTRAINTS

Opportunities

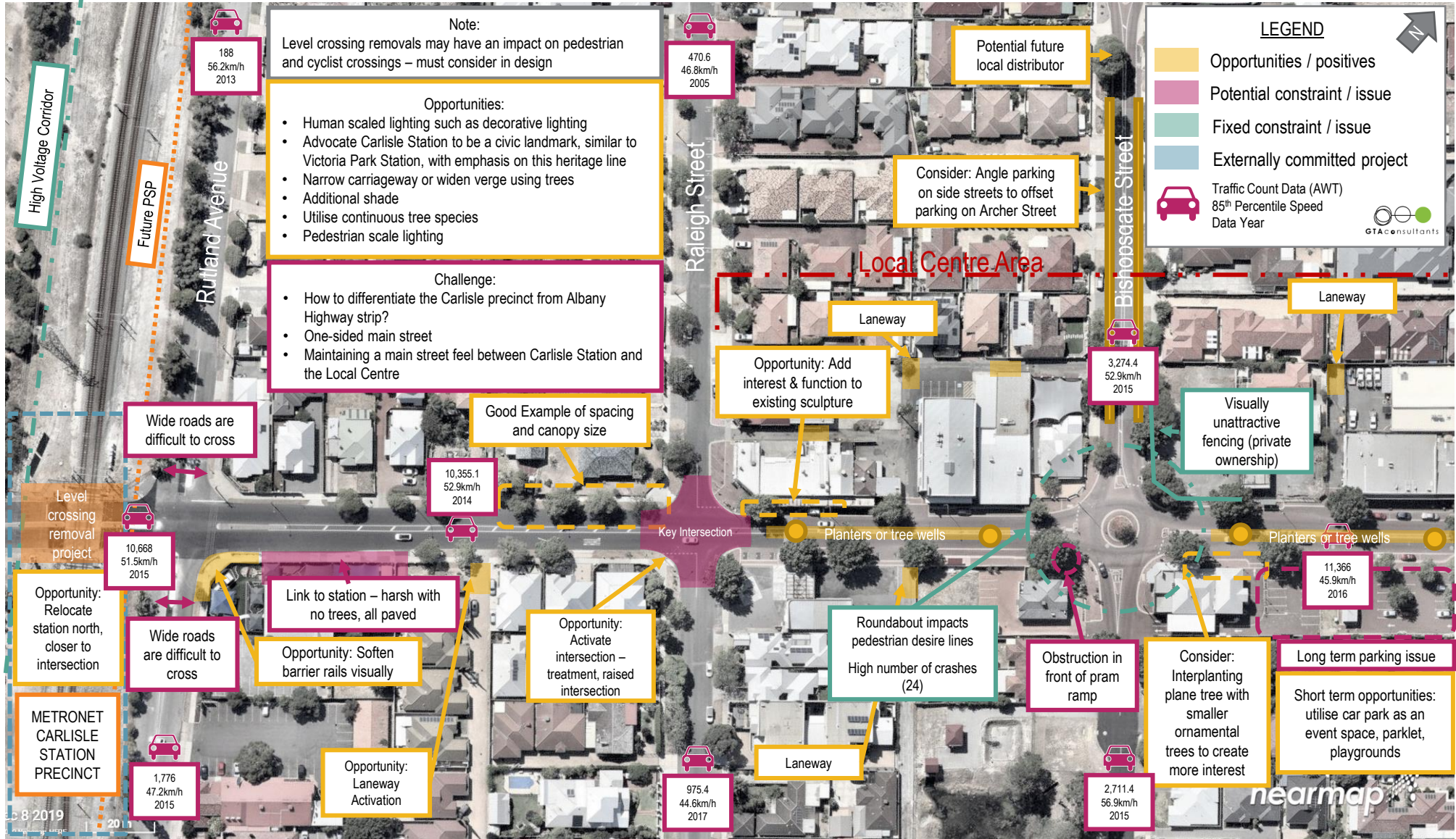
- Bike lanes
- Planters or tree wells
- Raised intersections at key intersections
- Verge upgrades
- Link to station
- Tighter intersection radii to reduce crossing distance
- Parklet treatments to reduce width or visibility of road
- Shade along paths, particularly near the Carlisle Station precinct
- Laneway and PAW activation
- Utilisation and connectivity with parks
- Public Art
- Mint Street is a could be a good walking corridor between the East Victoria Park Town Centre and Carlisle Station
- Reorganisation of car parking
- Only three routes across the railway line, therefore minimal impact on the adjacent north/south streets.

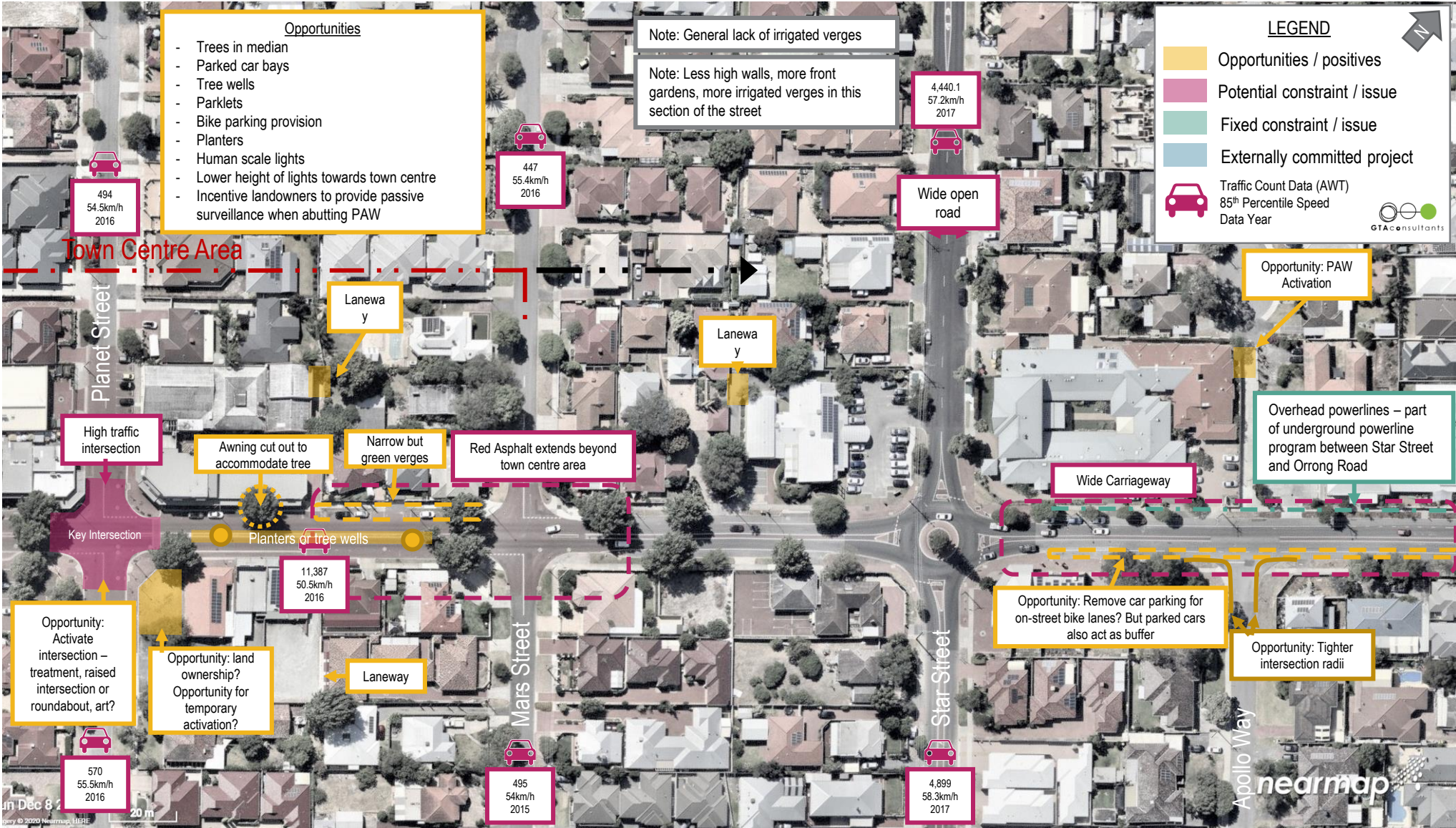
Issues & Constraints

- High voltage corridor
- Crossing at the intersection of Shepperton Road
- Creating an identity for the Carlisle Town Centre
- Wide carriageways
- Lack of dedicated cycling facilities
- Lack of shade for pedestrians
- Wide open roads
- Tree spacing – between 10m and over 100m
- High speeds (85th percentile speed over 50km/h) along north / south routes including Rutland Avenue, Bishopsgate Street, Planet Street, Mars Street, Star Street, Marchamley Street









Opportunities

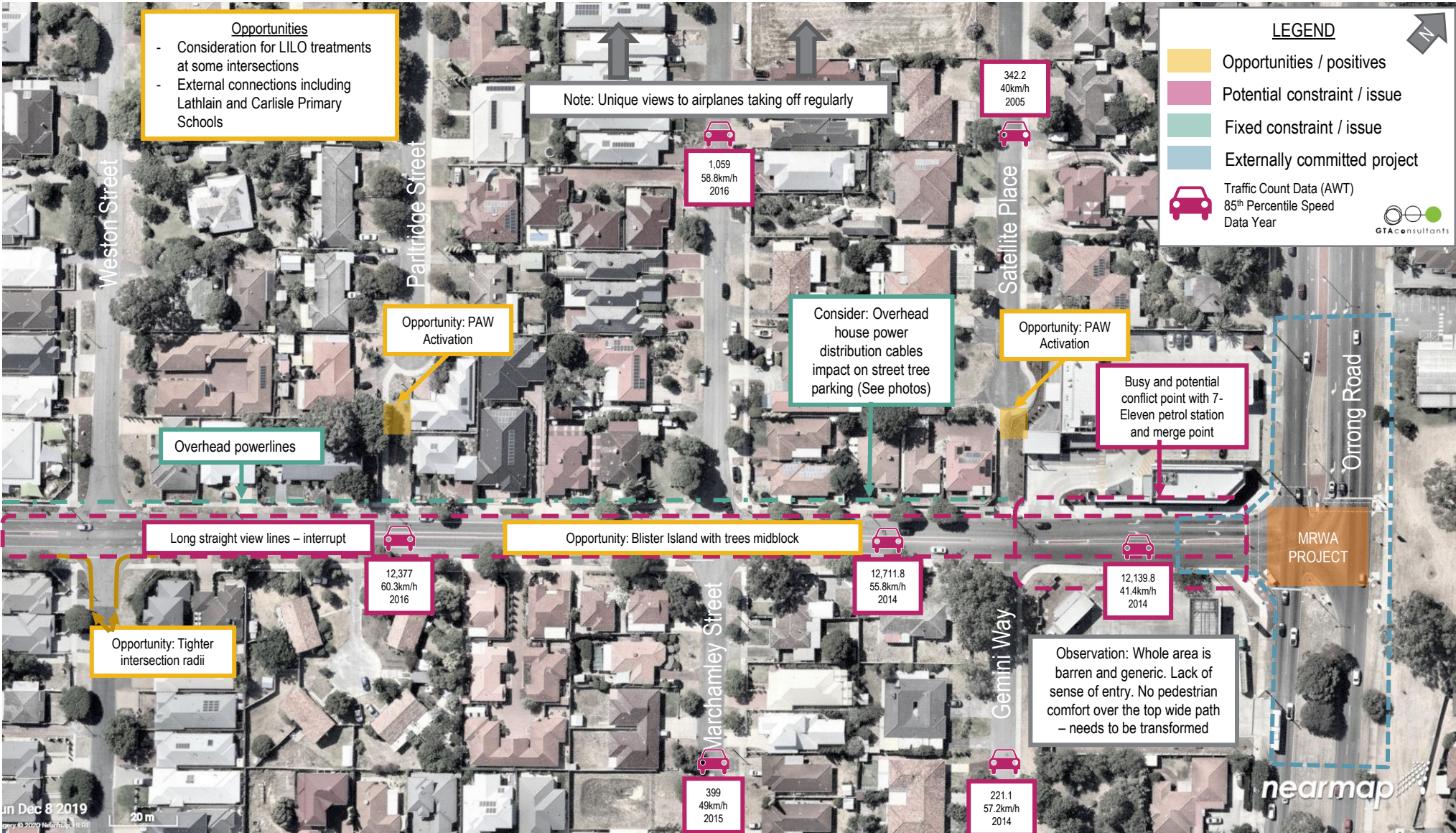
- Consideration for LILLO treatments at some intersections
- External connections including Lathlain and Carlisle Primary Schools

Note: Unique views to airplanes taking off regularly

LEGEND

- Opportunities / positives
- Potential constraint / issue
- Fixed constraint / issue
- Externally committed project

Traffic Count Data (AWT)
85th Percentile Speed
Data Year



1,059
58.8km/h
2016

342.2
40km/h
2005

12,377
60.3km/h
2016

12,711.8
55.8km/h
2014

12,139.8
41.4km/h
2014







399
49km/h
2015

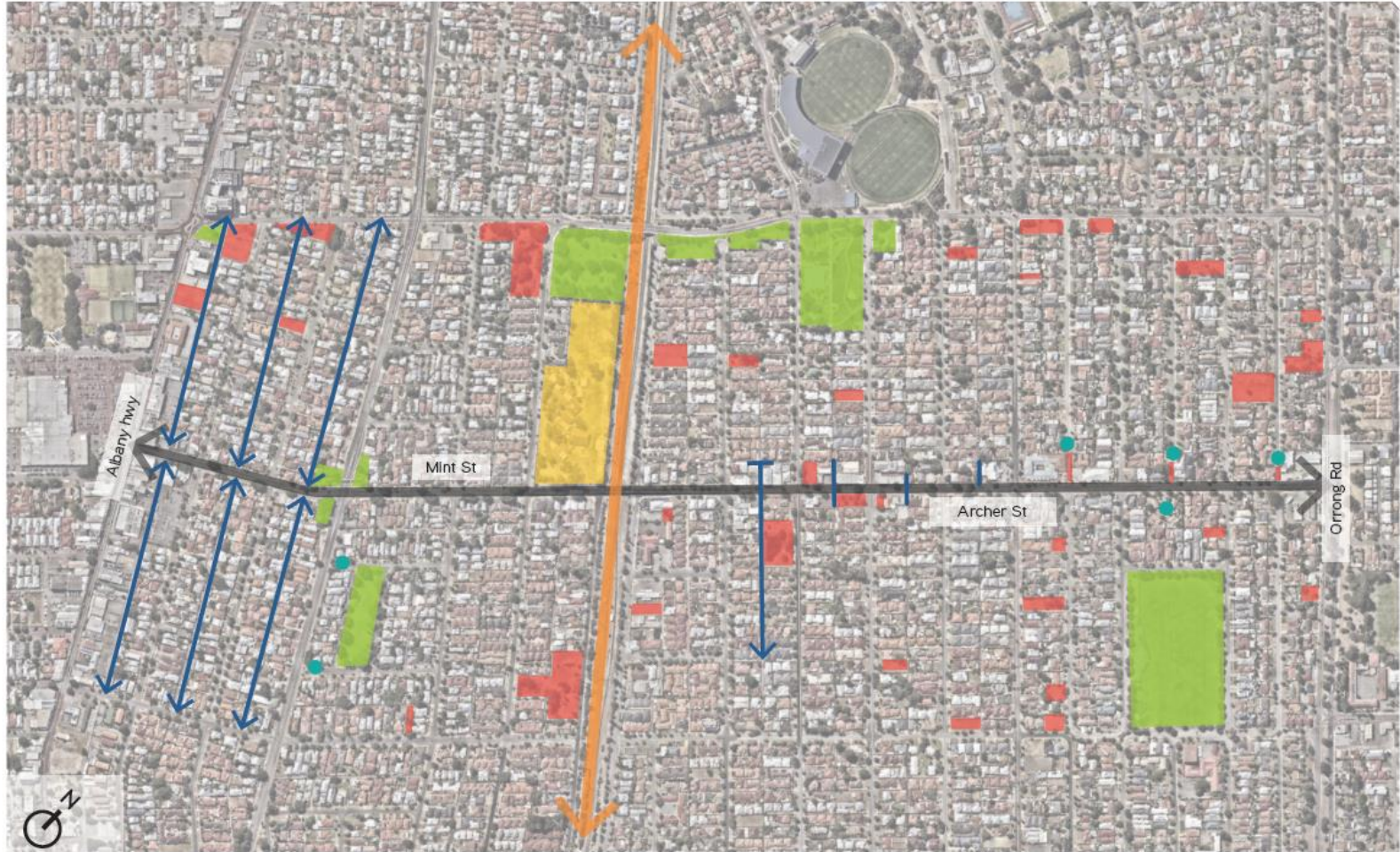
221.1
57.2km/h
2014

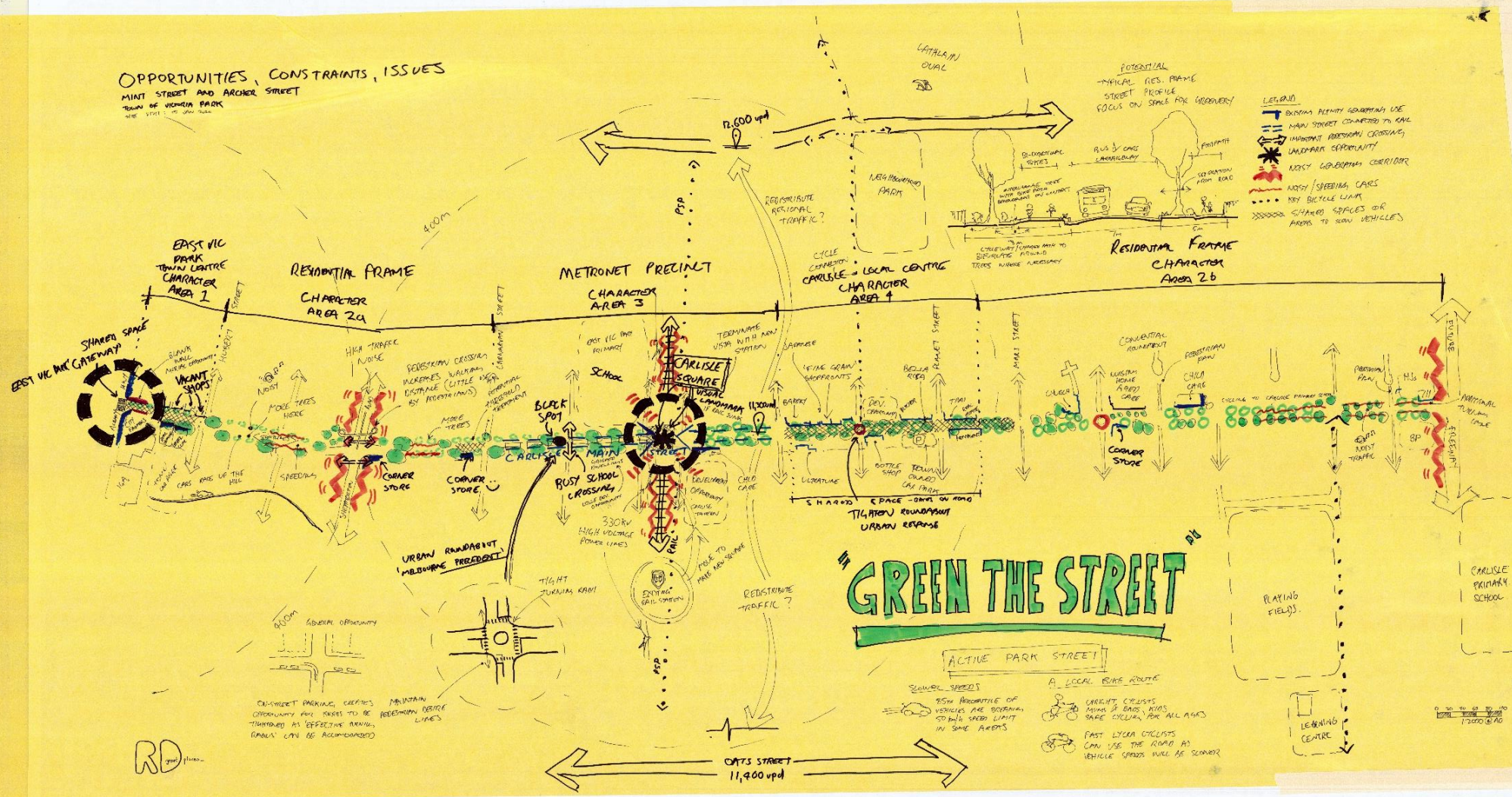
in Dec 8 2019

MINT / ARCHER ST - OPEN SPACE OPPORTUNITIES (400M CATCHMENT)

LEGEND

-  Existing Cul-de-sac
-  Existing vacant land, PAW, public carparks, sump
-  Existing green space
-  Existing lanes
-  Existing school
-  Rail/PSP corridor





CARLISLE STATION CATCHMENT

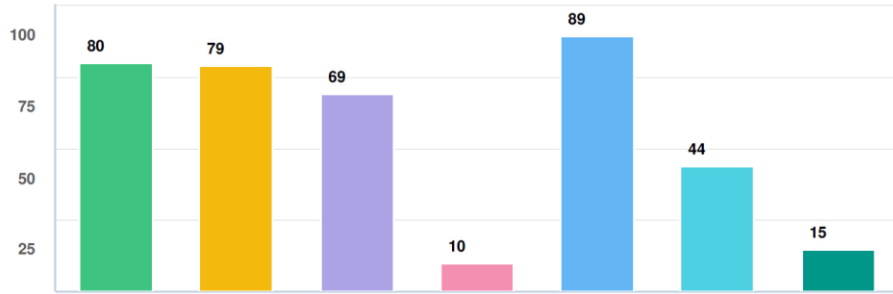


COMMUNITY SURVEY AND
WORKSHOP 2

04

SURVEY RESPONSES - SUMMARY

Q6 How do you use the street? Tick all that apply

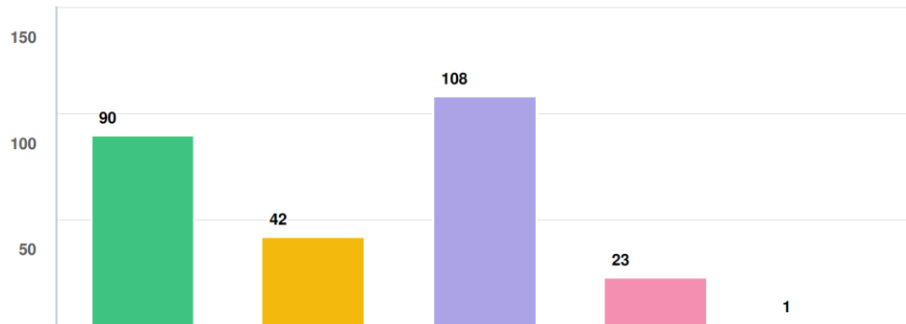


Question options

- Just passing through
- Shopping on the street
- Getting to shops near the street
- Work nearby
- Going out for lunch/dinner
- Getting to/from the train/bus
- School pick up/drop off

Optional question (116 responses, 0 skipped)

Q7 What modes of transport do you use to get to/from the street?



Question options

- Walking
- Bicycle
- Car
- Public transport
- Other

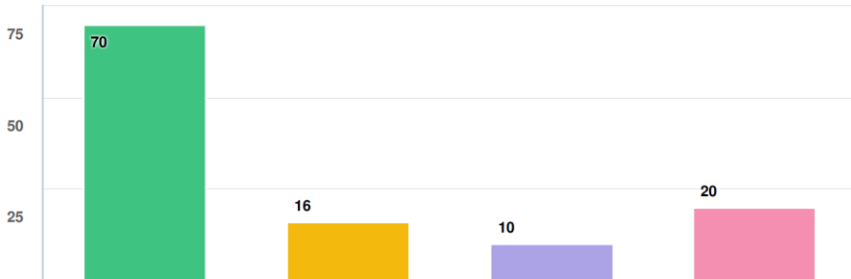
Optional question (116 responses, 0 skipped)

The Current Street

- Run down and poor introduction to the Town (especially from Orrong Road).
- Mint Street could be refreshed
- Car-centric design, unsafe to visit by bike
- Raleigh Street to Star Street – good
- Railway to Albany Highway needs an upgrade
- Bridge over Shepparton is difficult with a pram and child on scooter
- Narrow at intersections on a bike
- Lights on Archer Street (are to a highway standard) don't match the street form of a high street
- Area is dimly lit at night
- Mint street – road is too wide, paths too narrow
- Mint Street between Albany and Shepparton need a refresh
- Section between Bishopsgate and Planet is unfriendly to cyclists
- Intersection of Planet Street and Archer Street is getting dangerous
- Consider loading bays (for uber eats drivers?)
- Speeding drivers
- On-street parking in Town centre obstructs driver sightlines
- Suggests temporary events in the car park
- Signposting the 50kmh speed limit?
- Outside of local centre, poor pedestrian movement and amenity.
- Revisit parking timing limitations
- Parking along Planet street could be limited to one side to help crossing
- Intersection near Orrong Road / BP and Hungry Jacks is dangerous
- Footpaths need to be upgraded
- Trees near railway
- Informal merges are not good
- Lacking green space and active space
- Traffic too fast for pedestrians
- Lacks a playground in the area
- Desire for an IGA type supermarket
- Poor visibility

SURVEY RESPONSES - SUMMARY

Q10 Have you noticed the street change in the last 10 years?



Question options

- Yes, the area has improved
- No, the street has not changed much
- Yes, the area is worse now than 10 years ago
- Unsure

(116 responses, 0 skipped)

Q13 From the list below, rank what you think would be most effective in improving the street. Rank your highest priority with 1...

OPTIONS	AVG. RANK
More high quality businesses attracting people and vibrancy to the street	2.86
Being nicer and safer place to walk	3.39
More trees and vegetation for shading	3.66
More parks and green spaces to hang out	4.23
Slower traffic speeds and safer driving	4.75
Being a nicer and safer street to ride my bike	5.05
Less congestion and more free flowing traffic	5.82
More car parking	5.98

Optional question (116 responses, 0 skipped)

In 10 years..

- Vibrant, lots of businesses, more shops, maybe a bar or two, residential above businesses (mixed use)
- Retain fiscus cnr Mint / Shepparton
- Higher density
- Opportunities to sit and socialise
- Community hub and facilities – library, gym
- IGA
- Railway above or sunken
- Cycle path, safe for kids to ride
- More consistent streetscape – fences, no rubbish
- More lighting
- Wider verges along Mint St
- Consider natives such as Jarrah where Fiscus have been removed
- Pedestrian focus on Mint due to school, park centre and Carlisle station connection
- Water park?
- On-street parking removed further from corners / intersections
- More apartments with shops at street level
- Slower speeds between Raleigh and Star Streets
- 30km/h speed limit?
- Wider footpaths
- carriageway should be narrowed through the local centre of Archer Street with the kerb line flush to the footpath, remove on street parking and wider median strip to actively slow vehicle traffic through the area
- Improved left turning lane onto Orrong Road
- Solar lighting set into the footpath
- More public art / murals
- Become a mini high street
- Consider impact on Albany Highway businesses when promoting Carlisle businesses
- Road surface upgrade
- More security
- Review PT stops

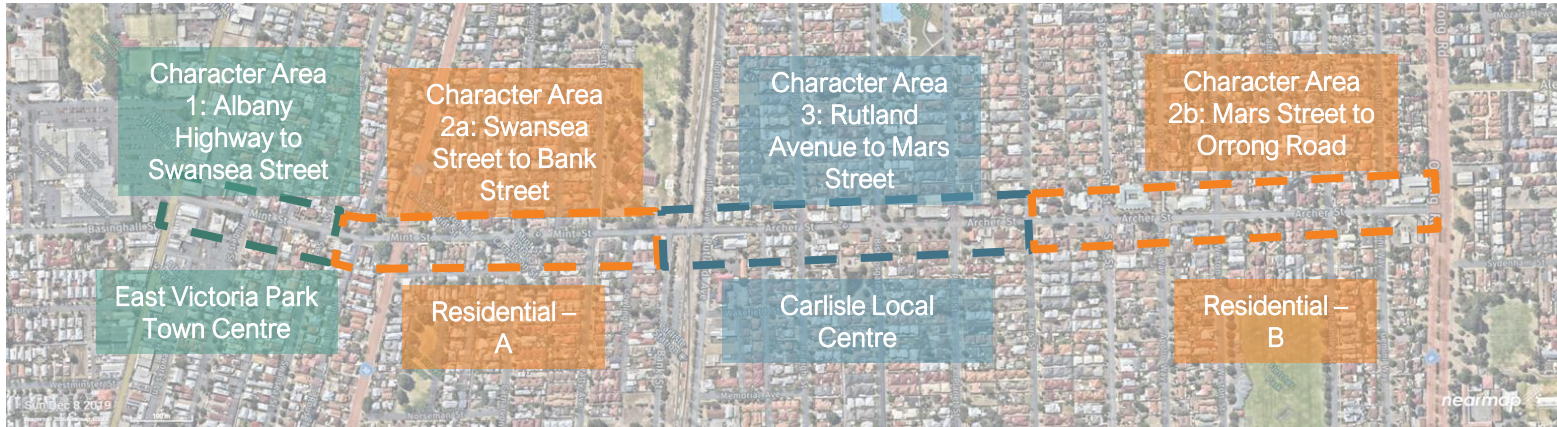
SURVEY RESPONSES - SUMMARY

New design should include..

- Big trees, existing trees
- IGA, doctors
- No on-street parking on side streets (Planet, Forster Ave etc)
- Traffic fumes, noise doesn't support alfresco seating
- The London Planes/Ficus and heritage buildings/corner shops
- Sink the rail, build a bridge
- Street art
- Benches / seating
- Keep the small business feel
- More native trees, not European or eastern state trees
- Bakery and post office
- Compulsory acquisition of the corner of properties situated adjacent to roundabouts so that cycling lanes can continue through roundabouts. Alternately, continue cycling lanes and give priority to cyclists over cars through roundabouts. Dedicated cycling lanes on both sides of the street. Higher development in town centre to get people living there. Extend the length of the shopping area.
- Archer sculpture
- Trees in middle of road
- Security
- Dog friendly
- Bring more black cockatoos back into the area



CHARACTER AREA OBJECTIVES



Objective	Character Area			
	1	2a	3	2b
1 Improve pedestrian and cycling accessibility and safety for people of all abilities, (especially primary school students).	✓	✓	✓	✓
2 Calms traffic and facilitates the safe and appropriate movement of all users of the street.	✓	✓	✓	✓
3 Encourages vibrancy and economic development on the street and in the precincts surrounding the site.	✓		✓	
4 Encourage the use of Carlisle Station by creating a pedestrian friendly environment between the train line and the Carlisle Town Centre.		✓	✓	
5 Improve pedestrian connectivity between Carlisle Station and the East Victoria Park Town Centre.	✓	✓	✓	
6 Maintains or improves any impact on the adjacent streets to ensure minimal impact to those members of the community.	✓	✓	✓	✓
7 Increase the tree canopy along the corridor as per the Towns Urban Forest Strategy.	✓	✓	✓	✓

CHARACTER AREA ANALYSIS



- Very vehicle dominated, wide, crossovers and parking
- Enable transition of residential character from 2a to EVP town centre – make it a place with more greening and comfort
- Movement to place
- Gateway into EVP town centre
- More space to pedestrians
- Edges on southern side are open – trees? buildings?
- Hill = speed = noise
- Higher density mixed use (apartments and retail) developments

- More greening required
- Shifts from a town centre into a residential / more green space
- Respect and retain ficus trees
- Green parks near Shepperton road are half way between the station – Potential for a resting spot
- Opportunity to encourage cycling to school and Carlisle station
- Support access to the local deli – bike racks, alfresco dining?
- Human scale lighting

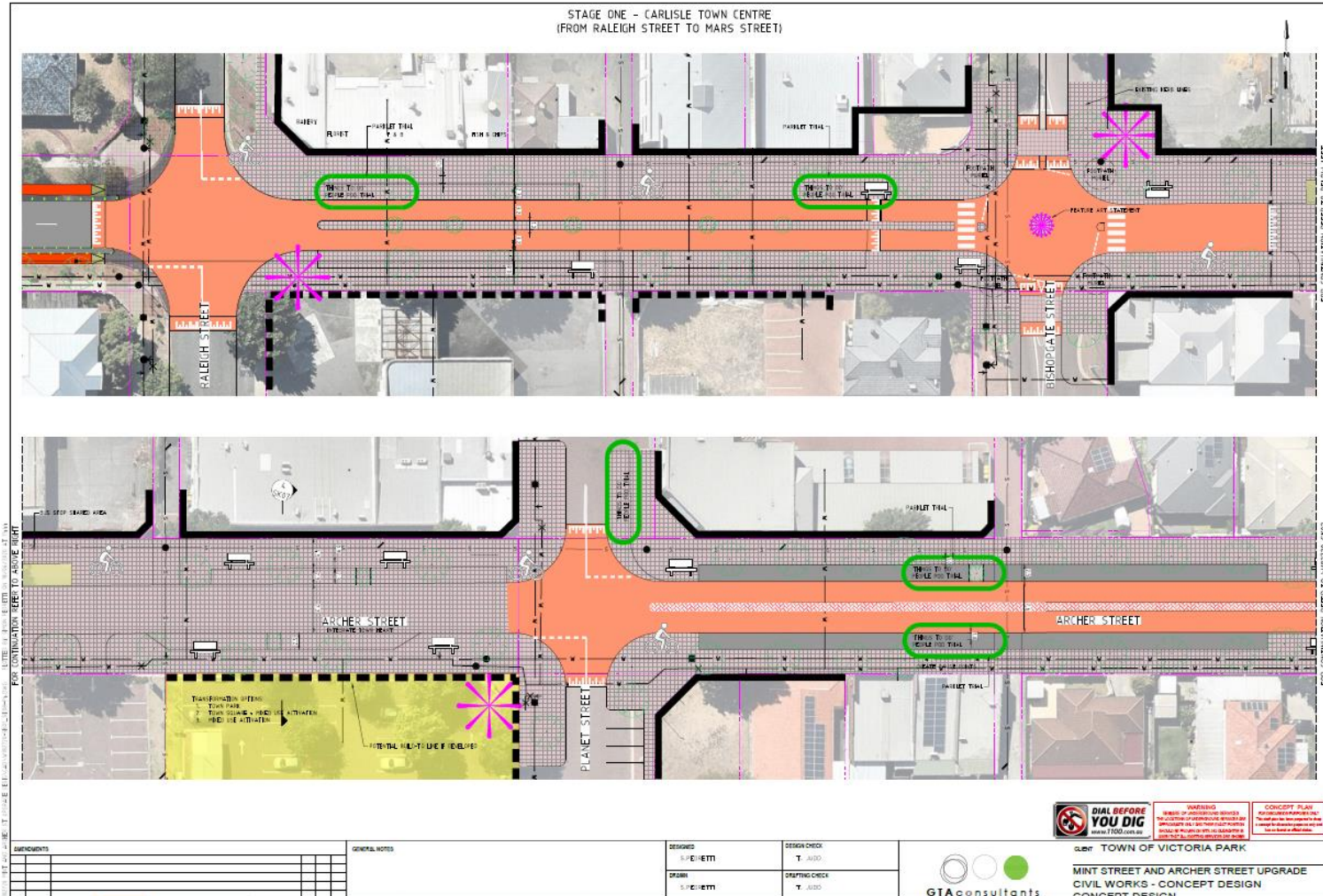
- Cohesion and consolidation
- Access between station and town centre
- Local centre, on street parking, allows for pockets of interaction
- Vibrancy improvements to increase economic impact
- Perception of vehicle speeds – slower speeds, more human comfort
- More and safer crossing opportunities
- Pedestrian and cyclist friendly area
- Town centre is important meeting place for people
- Trees in the centre of the road within the town centre
- Higher density mixed use (apartments and retail) developments

- Opportunity for a cycle link to Orrong Road (inc future PSP) and Carlisle train station
- Traffic calming can reduce noise
- Increase pleasance to walk to Carlisle Town Centre and station
- Reduce speeds of roads heading to the Town Centre, particularly the north/south routes
- Consider a staged design approach

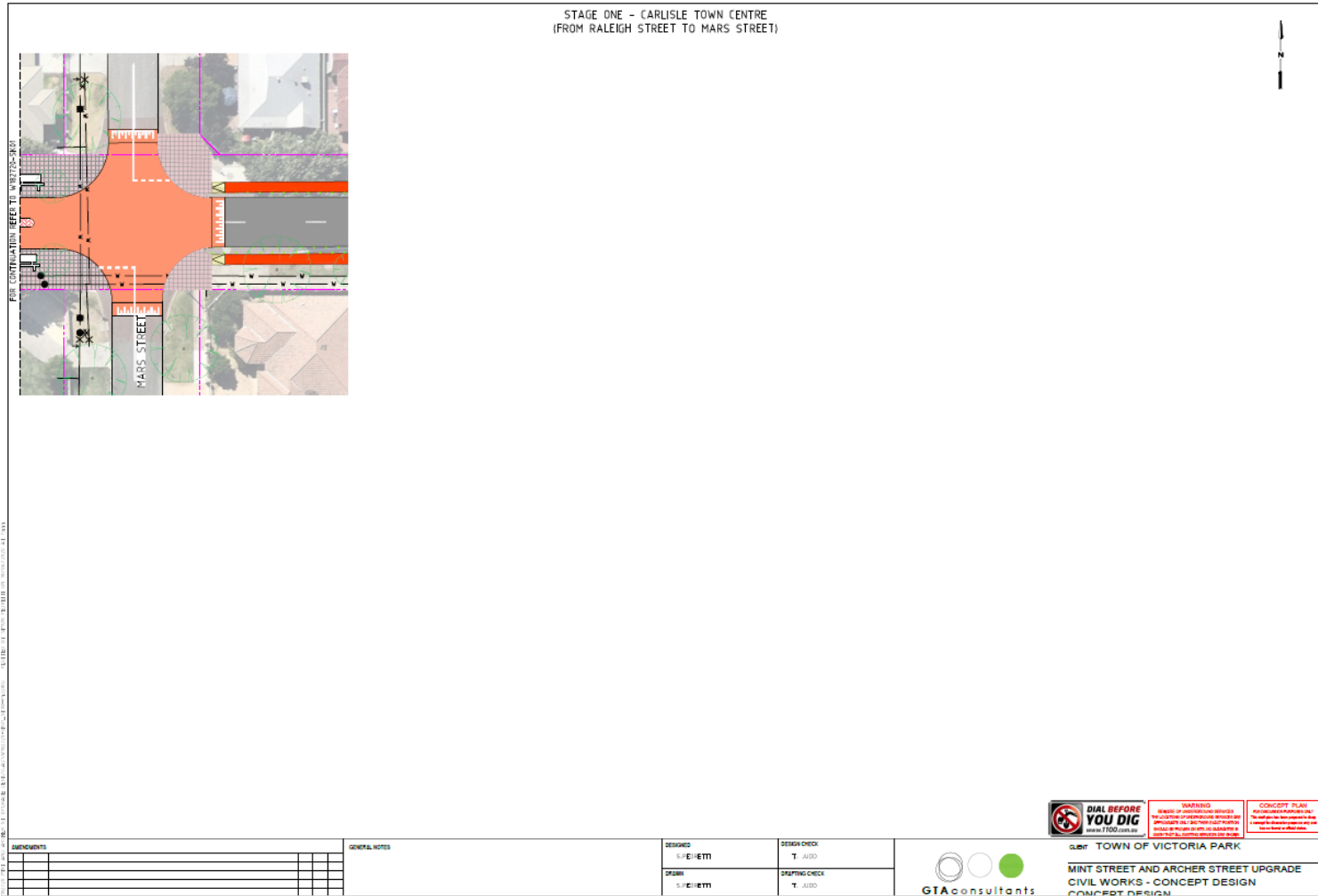
05

CONCEPT DESIGN DRAWINGS

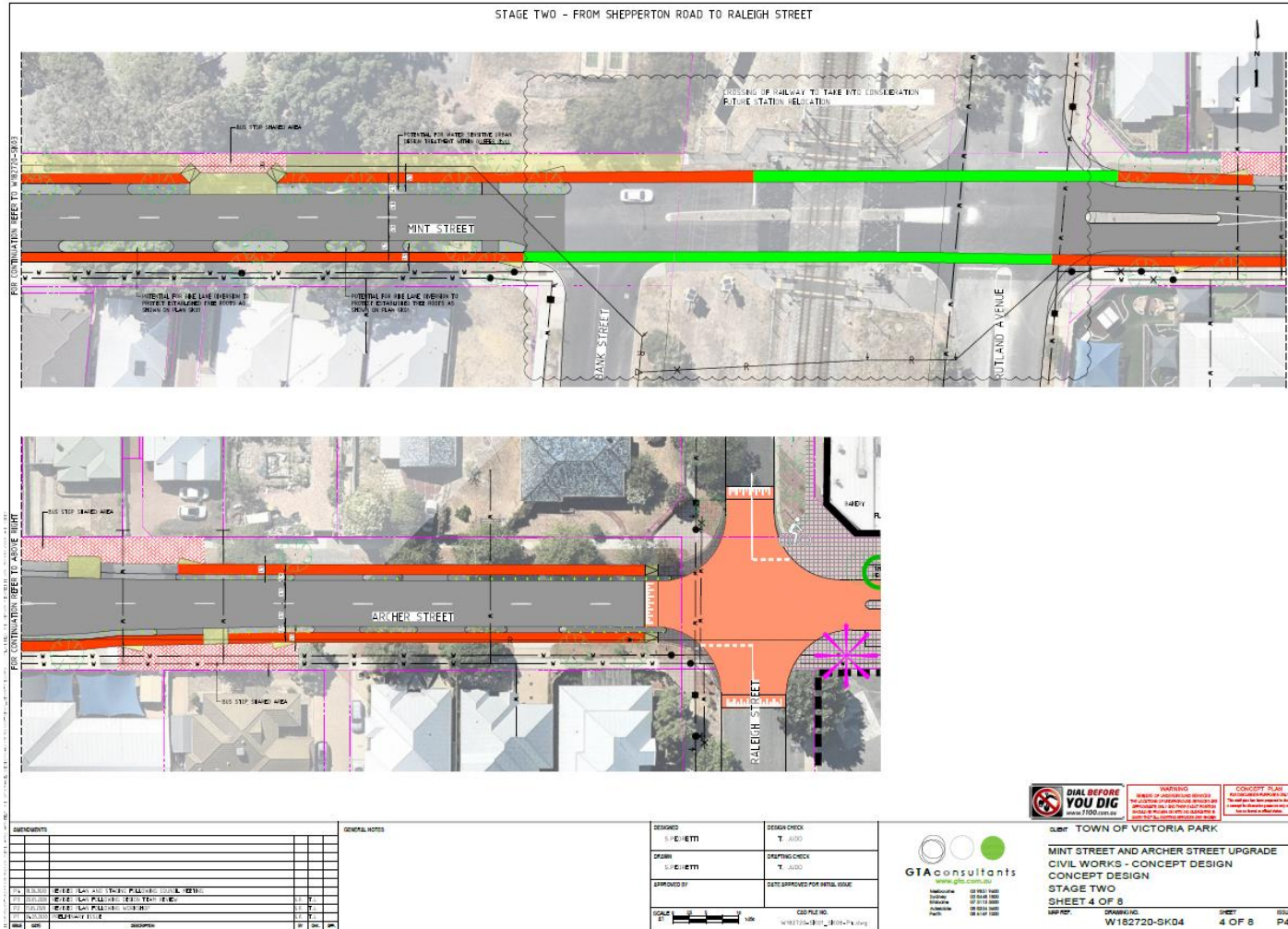
A concept design has been prepared based on the previous workshop outcomes, consultation and site visit observations. These have been separated into four stages.



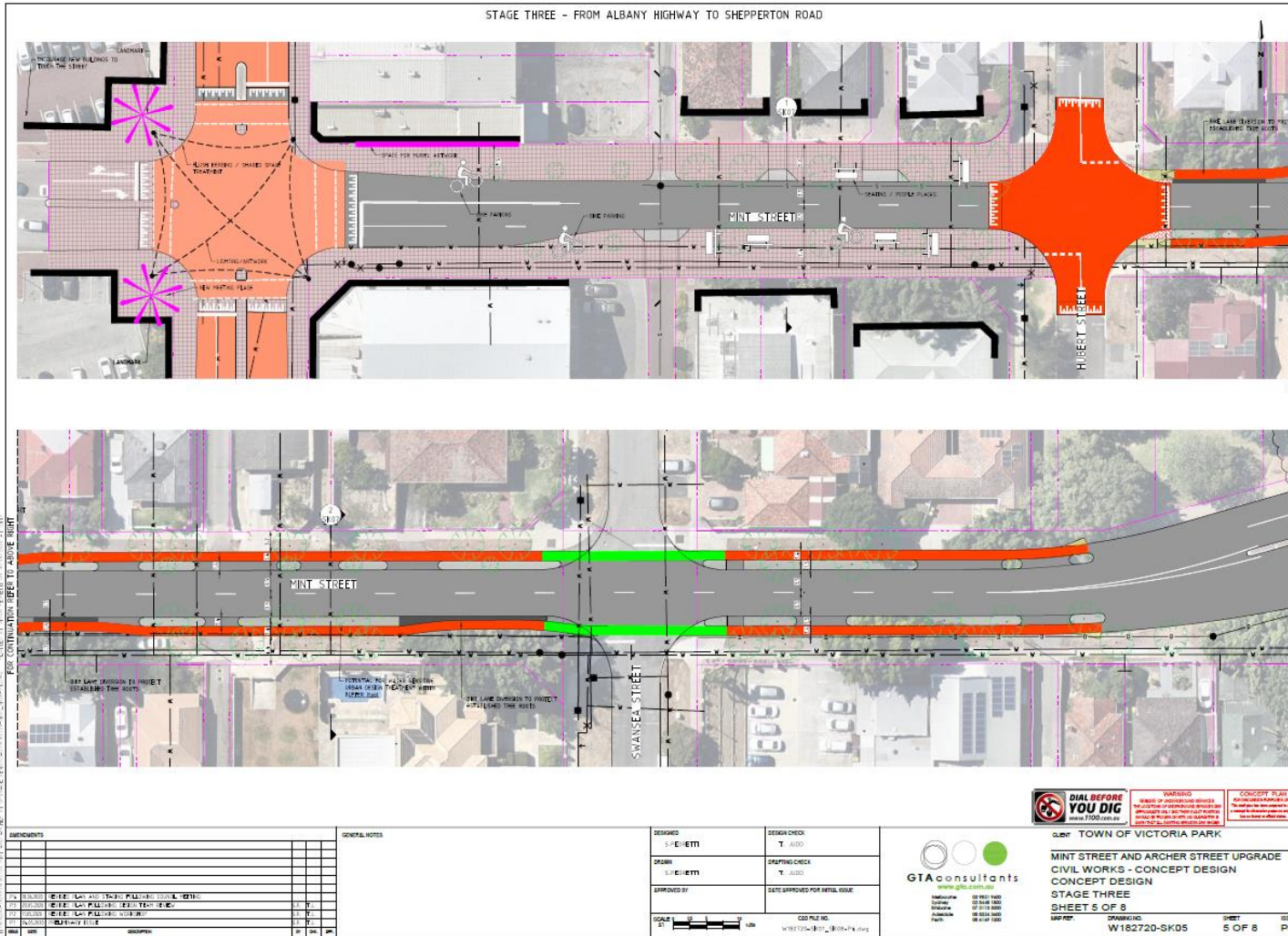
CONCEPT DESIGN DRAWINGS



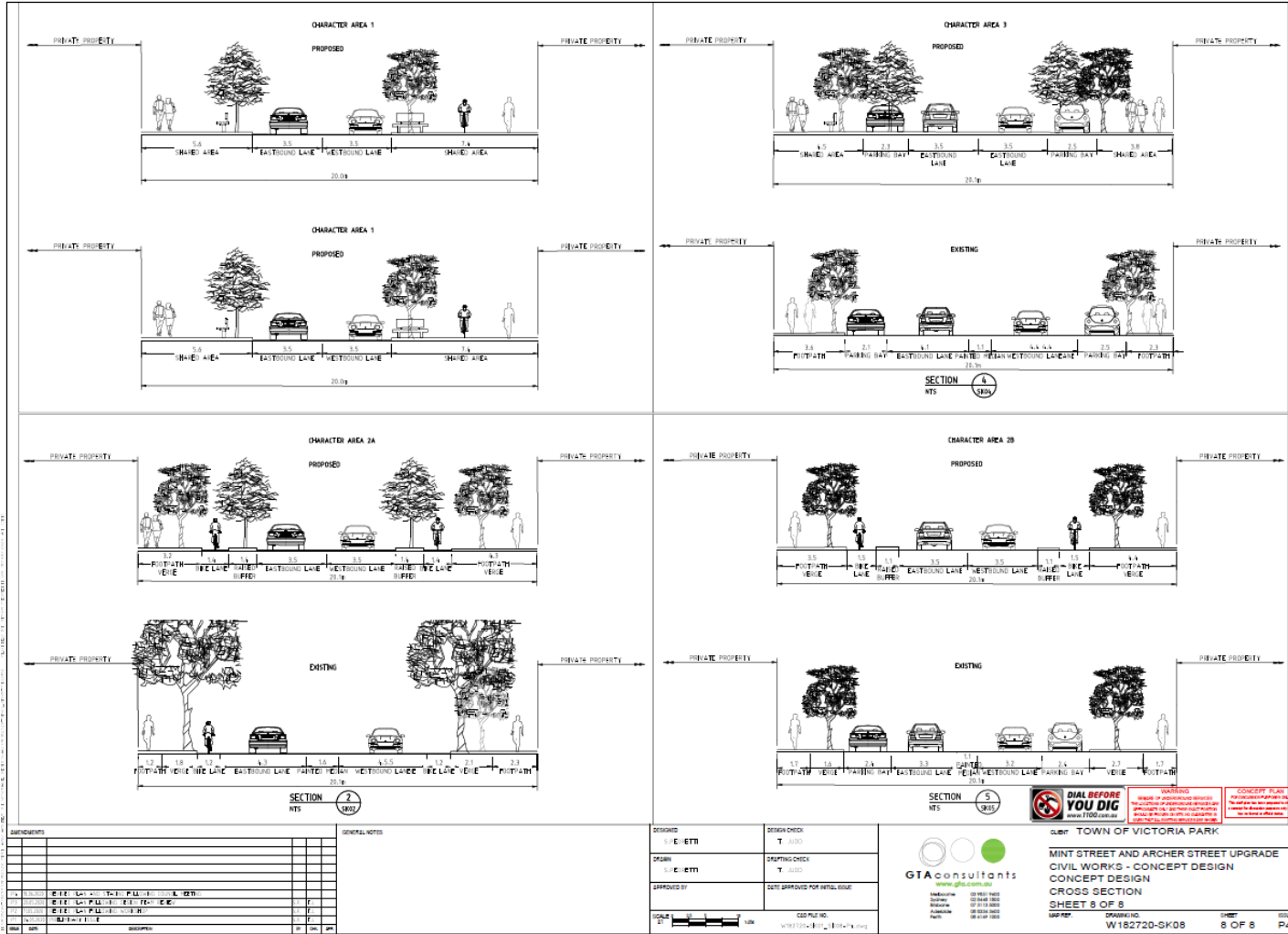
CONCEPT DESIGN DRAWINGS



CONCEPT DESIGN DRAWINGS



CONCEPT DESIGN – CROSS SECTIONS



HEALTHY STREETS ASSESSMENT – CONCEPT DESIGN

A comparison of the Healthy Street Assessments for the Existing and Concept design show that the concept design provides an enhancement on all aspects of Section 1, 2 and 4 and the majority of Section 3.

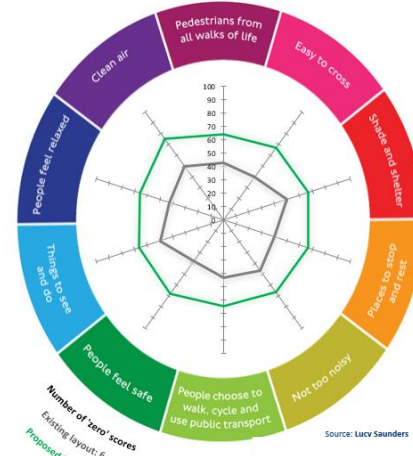
Section 1 – Albany Hwy to Swansea St



Healthy Streets Indicator scores (%)
(Results will only display once all metrics have been scored)

	Existing layout	Proposed layout
Pedestrians from all walks of life	37	68
Easy to cross	37	67
Shade and shelter	50	67
Places to stop and rest	33	93
Not too noisy	53	73
People choose to walk, cycle and use	37	68
People feel safe	33	68
Things to see and do	42	83
People feel relaxed	35	68
Clean air	50	75
Overall Healthy Streets Check score	37	70
Number of 'zero' scores	6	1

Section 2 – Shepperton Rd to Beatty Ave



Healthy Streets Indicator scores (%)
(Results will only display once all metrics have been scored)

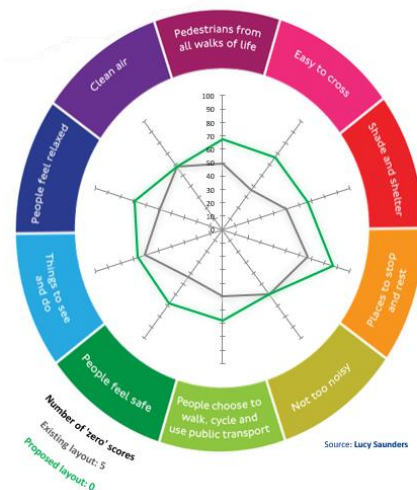
	Existing layout	Proposed layout
Pedestrians from all walks of life	43	65
Easy to cross	40	67
Shade and shelter	50	67
Places to stop and rest	40	67
Not too noisy	47	67
People choose to walk, cycle and use public	43	65
People feel safe	38	68
Things to see and do	50	67
People feel relaxed	43	66
Clean air	50	75
Overall Healthy Streets Check score	43	66
Number of 'zero' scores	6	2

Healthy Streets Indicator scores (%)
(Results will only display once all metrics have been scored)

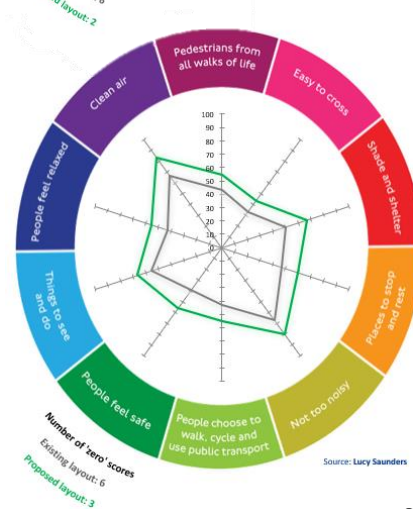
	Existing layout	Proposed layout
Pedestrians from all walks of life	49	68
Easy to cross	37	67
Shade and shelter	50	67
Places to stop and rest	67	87
Not too noisy	60	60
People choose to walk, cycle and use public transport	49	68
People feel safe	44	68
Things to see and do	61	67
People feel relaxed	49	69
Clean air	58	58
Overall Healthy Streets Check score	49	68
Number of 'zero' scores	5	0

Healthy Streets Indicator scores (%)
(Results will only display once all metrics have been scored)

	Existing layout	Proposed layout
Pedestrians from all walks of life	43	55
Easy to cross	33	43
Shade and shelter	50	67
Places to stop and rest	47	60
Not too noisy	67	80
People choose to walk, cycle and use public transport	43	55
People feel safe	39	56
Things to see and do	56	67
People feel relaxed	43	55
Clean air	67	83
Overall Healthy Streets Check score	44	57
Number of 'zero' scores	6	3

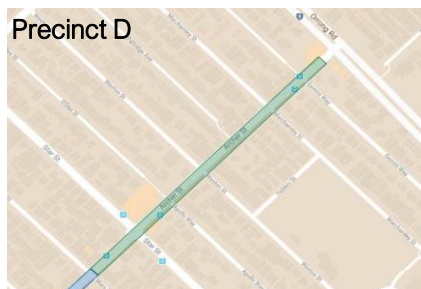


Section 3 – Raleigh St to Planet St



Section 4 – Weston St to Gemini Wy

COST ESTIMATE - SUMMARY



A summary of the Cost Estimate prepared for this project is included in this slide, with a copy of the full Cost Estimate provided to the Town.

Notes:

- 1 This cost estimate is based on the concept plan provided by GTA dated 21/5/2020
- 2 This OPC is preliminary and is not based on detailed design
- 3 Construction rates are based on similar road upgrade works within Perth Metropolitan - north west corridor carried out in March 2019.
- The following allowances have been made;
- 4 Full re-sheet only to areas with proposed asphalt. Assume existing sub-base is in good condition
- 5 Removal of pavement to areas with proposed brick paving and concrete footpath
- 6 New kerbs to areas abutting brick paved areas and provision to replace 50% of other existing kerbs. An extra over line item to replace all kerbs is included.
- 7 New drainage pits to suit new kerb lines where required. Existing pits will be cut down and capped with lids.
- 8 Allowance for \$16,000/week for traffic management. Total \$672,000 over four Precincts. Assume no night shifts, weekend works and traffic barriers required.
- 9 Strata-vault tree pits at \$3,500 each per town centre tree for tree root protection
- 10 Dust fencing throughout
- 11 Semi-mountable kerb around landscaping areas
- 12 A Provisional allowance for new street signage
- 13 Bollards in corners of new raised intersection
- 14 Full pavement reconstruction near fig trees
- 15 Upgrade traffic signals at Albany Highway at \$500,000
- 16 Relocation of existing street lights to suit new design where affected at \$10,000 per streetlight
- The following has not been included in this cost estimate;
- 17 No allowance for underground service relocations - apart from drainage pit relocations, no further relocations expected to be required based on current concept design
- 18 No allowance for landscaping and existing tree pruning and protection during construction
- 19 No allowance for earthworks - not anticipated to be required
- 20 No allowance for underground existing overhead powerlines and streetlights

PROJECT: MINT AND ARCHER STREET UPGRADE
 DESCRIPTION: COST ESTIMATE
 REVISION: Rev A



30/06/2020

ITEM	PRECINCT A SUMMARY (ABANY H.WAY - SHEPPERTON RD)	PRECINCT A SUMMARY (ABANY H.WAY - SHEPPERTON RD)	PRECINCT B SUMMARY (SHEPPERTON RD - RALEIGH ST)	PRECINCT C SUMMARY (CARLISLE TOWN CENTRE: RALEIGH ST - MARS ST)	PRECINCT D SUMMARY (MARS ST - ORRONG RD)
1.0	Siteworks & Preliminaries (including traffic management)	\$ 312,114.50	\$ 330,785.00	\$ 347,577.00	\$ 325,038.50
2.0	Roadworks & Footpaths	\$ 1,127,152.10	\$ 755,359.22	\$ 1,030,844.92	\$ 660,831.74
3.0	Stormwater Drainage	\$ 48,124.75	\$ -	\$ -	\$ -
4.0	Street Lighting and Cable Installation for URD	\$ 20,000.00	\$ 20,000.00	\$ -	\$ -

Total \$ 1,507,391.35 \$ 1,106,144.22 \$ 1,378,421.92 \$ 985,870.24
 Grand Total Ex GST \$ 4,977,827.73

SUMMARY

06

SUMMARY

A concept design has been prepared based on the previous workshop outcomes, consultation and site visit observations. This new concept design includes features such as:

- Staging of the upgrades into four stages
- Parklets trials
- 'Things to do' POD trails
- Bike lanes with green treatments at potential conflict points such as intersections
- Raised pedestrian (and bike) crossing near East Victoria Park Primary School
- Retention of on-street car parking through the Carlisle Town Centre.
- Seating opportunities through the Town Centre
- Raised intersection plateaus
- Suggested transformation options for the Town's Car Park in the Carlisle Town Centre including:
 - Town Park
 - Town Square and mixed use activation
 - Mixed use activation
- Feature art statements at major roundabouts
- Retention of existing significant trees as a key priority including provisions such as bike-lane diversions to minimise disruption to tree roots
- Opportunities for water sensitive urban design treatment within buffers
- Reduced carriageway width
- Identified locations for street art and lighting artwork
- Bike parking
- Pedestrian crossings at the Star Street roundabout
- Identification of the appropriate location for blister island treatment with landscaping.

In addition to these features, the corridor is expected to undergo a number of other significant changes. These changes will be proposed and implemented by State Government, with the Public Transport Authority having jurisdiction over the future of the Carlisle Station including the form of redevelopment or relocation and the road impacts. Main Roads WA has jurisdiction over Orrong Road, including any changes proposed to the Orrong Road intersection.

QUALITY RECORD

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A-Dr	30/06/2020	Draft	A. Zhang	T. Judd	T. Judd	
A-F	03/07/2020	Final	A. Zhang	T. Judd	T. Judd	

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