

Town of Bassendean

**Bassendean Transport Study**

Phase 2 Local Integrated Transport  
Plan: A plan for the future

Phase 2

Issue version 8 | 22 November 2019

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 260965-00

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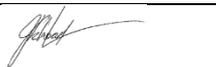
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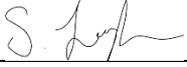
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## Abbreviations

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*CPTED* – Crime Prevention Through Environmental Design

*DDA* – Disability Discrimination Act

*FRH* – Functional Road Hierarchy

*HV* – Heavy Vehicles

*LATM* – Local Area Traffic Management

*LGA* – Local Government Authority

*LPS* – Local Planning Strategy

*MEL* – Morley-Ellenbrook Line

*MRS* - Metropolitan Region Scheme

*PRR* – Primary Regional Road

*PSP* – Principal Shared Path

*PTA* – Public Transport Authority

*RAV* – Restricted Access Vehicles

*ROM* – Regional Operations Model

*SWOT* – Strengths, Weaknesses, Opportunities and Threats

*TOD* – Transit-Oriented Development

*VPD* – Vehicles Per Day

*WAPC* – Western Australian Planning Commission

## Executive summary

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The Town of Bassendean engaged Arup to complete a holistic, multi-modal and integrated study of the movement network internal to and influencing Bassendean. The express purposes of the work include:

1. Informing a review of the Town of Bassendean's current 2015 Local Planning Strategy (LPS), particularly in respect to State directions to provide increased residential density development within identified core activity centres and along major transit corridors
2. Informing planning of Transit-Oriented Development (TOD) around the Ashfield, Bassendean and Success Hill train stations
3. Providing a platform for the development of subsequent and future transport strategies, policies and plans for the Bassendean Local Government Area.

The need for the plan was instigated by proposed infill targets to be met within Bassendean and a desire for future growth to support a growth in sustainable transport use. The Western Australian Planning Commission's (WAPC) planning framework for the Perth Peel Region (PPR) @ 3.5 Million sets an infill dwelling target of 4,200 additional dwellings to be developed within the Bassendean Local Government Area (LGA) by 2050. This is expected to result in a 70% increase in dwellings over current levels. Much of this projected population and dwelling increase is expected to be satisfied through a combination of higher residential densities and mixed used developments.

This local integrated transport plan (LITP) examines and defines a future transport plan to proactively plan for growth with a key focus of enhancing the Town's identity and character and providing for sustainable and resilient multimodality, which both avoids ingraining primacy of motor vehicle traffic within the town and integrates flexibility into the movement network given ongoing change within the transport sector.

This LITP has been developed in two phases with Phase 1 completed in 2018 which focussed on understanding the existing transport situation and future potential opportunities and challenges. This was informed in consultation with the Town, the local community, government agencies and adjacent local governments and also considered relevance and implications of external trends and influences such as automation of transport, population health and climate change and mobility-as-a-service (MaaS).

Overall, Phase 1 work found that Bassendean has a relatively good range of opportunities including an enviable level of access to public transport, which will almost certainly improve further. In contrast, it was found that there are relatively contained challenges and threats; which have been further addressed in Phase 2 of this study. These include as follows:

- Guildford Road design and operations (Guildford Road being a State Road presents a particular challenge)
- Cross-rail connectivity

- Accessibility to and around the southern half of the LGA
- Distillation of infill targets between all three station precincts and infrastructure improvement required in each location
- Cross-river connectivity in view of the tension between mitigating through-traffic in Bassendean, and the town's location within the broader metropolitan area and sub-regional function of major transport infrastructure.

Phase 2 of the study was an iterative process to define the LITP actions. A long list of actions was developed and workshopped with elected members and a shortlist was defined and then tabled with government agencies and adjacent local governments. This was an important step as a number of the actions will need to be driven by or delivered in partnership with government agencies. A second round of consultation was then undertaken to solicit community views on the shortlisted actions.

Through the consultation process the original long list of 26 actions was revised with some actions removed, reworded or new actions inserted. There are 22 actions for the Town to carry forward, either directly or as an advocate. The shortlisted actions are summarised in **Exec Summary Table 1**.

Through the engagement process it was decided that advocating for additional linkages over the Swan River for any vehicular based mode (public or private transport) was not supported by the Town due to concerns about the potential for non-local traffic being attracted through the southern areas of the Town. A potential link for pedestrians and cyclists was not seen as a high priority at this stage due to the high costs associated with creating additional bridge links, in favour for funding to be allocated to either lower cost improvements or improvements to support access to the rail stations.

The Town recognises that there is a strong need to take a proactive advocacy role regarding the future treatment of Guildford Road with a Main Roads WA proposal currently before the Western Australian Planning Commission for consideration. The Town opposes any treatment which seeks to increase traffic throughput with a number of environmental and social concerns to be resolved.

**Exec Summary Table 1**

	Proposal	Responsibility	Priority	
Parking	<b>P1</b>	Preparation of town-wide parking strategy to replace 2011 plan	Town of Bassendean	Short
	<b>P2</b>	Supply pilot electric vehicle recharging infrastructure	Town of Bassendean/Public Transport Authority	Short
Public Transport	<b>PT1</b>	Improve pedestrian and cyclist access to Success Hill train station	Town of Bassendean/Public Transport Authority/Main Roads WA	Medium
	<b>PT2</b>	Plan for extended platforms at Bassendean train station and potential active transport link aligned with Park Lane	Public Transport Authority/ Transperth	Medium

	<b>Proposal</b>		<b>Responsibility</b>	<b>Priority</b>
	<b>PT6</b>	Channelise Ivanhoe Street on approach to Morley Drive to mitigate delays for buses	Town of Bassendean	Medium
	<b>PT7</b>	Advocate for sinking of Midland line to facilitate at-grade connectivity and new development opportunities in the vicinity of Bassendean station	METRONET/Public Transport Authority/Town of Bassendean	Short (ongoing)
<b>Active Transport</b>	<b>AT1</b>	Design and deliver improved active transport link along Second Avenue between Railway Parade and Walter Road East, according with Town Bike Plan and Station Access Strategy intent	Town of Bassendean/Department of Transport	Short
	<b>AT2</b>	Advocate/support redesign of Ashfield and Success Hill pedestrian bridges to achieve DDA compliance	Public Transport Authority/Town of Bassendean	Medium
	<b>AT4</b>	Assess opportunity to improve current design of Wilson Street subway as a key north-south access for pedestrians and cyclists of all abilities	Public Transport Authority/ Department of Transport/ Town of Bassendean	Short
	<b>AT8</b>	Create Town of Bassendean micro-funding account for small active transport improvements	Town of Bassendean	Short
<b>Road network</b>	<b>RN1</b>	Advocate for an alternative treatment to MRWA's proposal for Guildford Road corridor ( <u>western Town boundary to West Road</u> ) to one which : <ul style="list-style-type: none"> <li>Balances local access needs and amenity, transit-oriented development, multimodal safety and comfort, and strategic network objectives</li> <li>Achieves signalisation of Colstoun Road/ Guildford Road intersection</li> <li>Retains key local street links under suitable traffic management</li> </ul>	WAPC/ Main Roads WA/Town of Bassendean	Short (ongoing advocacy)

	<b>Proposal</b>	<b>Responsibility</b>	<b>Priority</b>
	<p><b>RN2</b> Advocate for an alternative treatment for Guildford Road corridor (<u>West Road to Swan River</u>) to one which:</p> <ul style="list-style-type: none"> <li>• Balances local access needs (both in the Town and adjoining Guildford centre) and amenity, transit-oriented development, multimodal safety and comfort, and strategic network objectives</li> <li>• Achieves reasonable signal phasing at intersection of Guildford Road/West Road associated with Lord Street/ West Road bridge widening and anticipated intersection upgrade</li> <li>• Retains key local street links under suitable traffic management (in particular Guildford Road/North Road/Earlsferry Court)</li> </ul>	WAPC/ Main Roads WA/Town of Bassendean	Short
	<p><b>RN3</b> Convert Walter Road East from four travel lanes to two with median division</p>	Town of Bassendean/Department of Planning, Lands and Heritage	Medium
	<p><b>RN5</b> Advocate for traffic signal and boom gate synchronisation at Collier Road/Guildford Road</p>	Main Roads WA/Public Transport Authority	Short– interim measure ahead of more suitable grade-separation treatment as part of METRONET programme
	<p><b>RN6</b> Assess potential to signalise intersection of Railway Parade/Lord Street</p>	Town of Bassendean/Main Roads WA	Short – engineering feasibility and modelling required to ascertain impacts with a view to deciding whether this proposal should be adopted

	<b>Proposal</b>	<b>Responsibility</b>	<b>Priority</b>	
	<b>RN8</b>	Design and consult to further refine proposed conversion of Walter Road East/Lord Street/Seventh Avenue to four-way signalised intersection (and conversion of Success Road access to left-in/left-out)	Town of Bassendean/Main Roads WA	Short – engineering feasibility and modelling required to ascertain impacts with a view to deciding whether this proposal should be adopted
	<b>RN9</b>	Undertake further investigation to support alternative design concept (boulevard with central median) for Lord Street south of Morley Drive	Town of Bassendean/Department of Planning, Lands and Heritage	Short: planning studies and analysis Medium/ Long: implementation/works
	<b>RN10</b>	Create a pedestrian friendly town centre and community centres through implementing self explaining streets design and management principles to encourage slowing of vehicular traffic	Town of Bassendean	Short
	<b>RN11</b>	Review and update Town LATM and Bike Plans	Town of Bassendean	Short
<b>Land Development</b>	<b>LD1</b>	Focus development/ uplift around main transit assets including Ashfield, Bassendean and Success Hill train stations, and major bus routes including Ivanhoe Street and Walter Road East	Town of Bassendean/State Government	Short
	<b>LD2</b>	Investigate mixed-use redevelopment of the Bassendean park-and-ride site contingent on agreement with Public Transport Authority regarding possible reduction in park-and-ride demand associated with Morley-Ellenbrook	Public Transport Authority/Town of Bassendean	Medium
<b>Governance</b>	<b>GP1</b>	Establish new fleet procurement protocols in line with transport vision for Bassendean	Town of Bassendean	Short

# 1 Introduction

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The Town of Bassendean engaged Arup to complete a holistic and integrated study of the movement network internal to and influencing Bassendean. This Phase 2 report, the *Local Integrated Transport Plan* should be read in conjunction with the Phase 1 *Transport Assessment Report*. The Phase 1 report details background research and contextual analyses, outcomes from a first round of engagement with government stakeholders and the community, and a Strengths, Weaknesses, Opportunities and Threats (SWOT) review.

The express purposes of the overall study include:

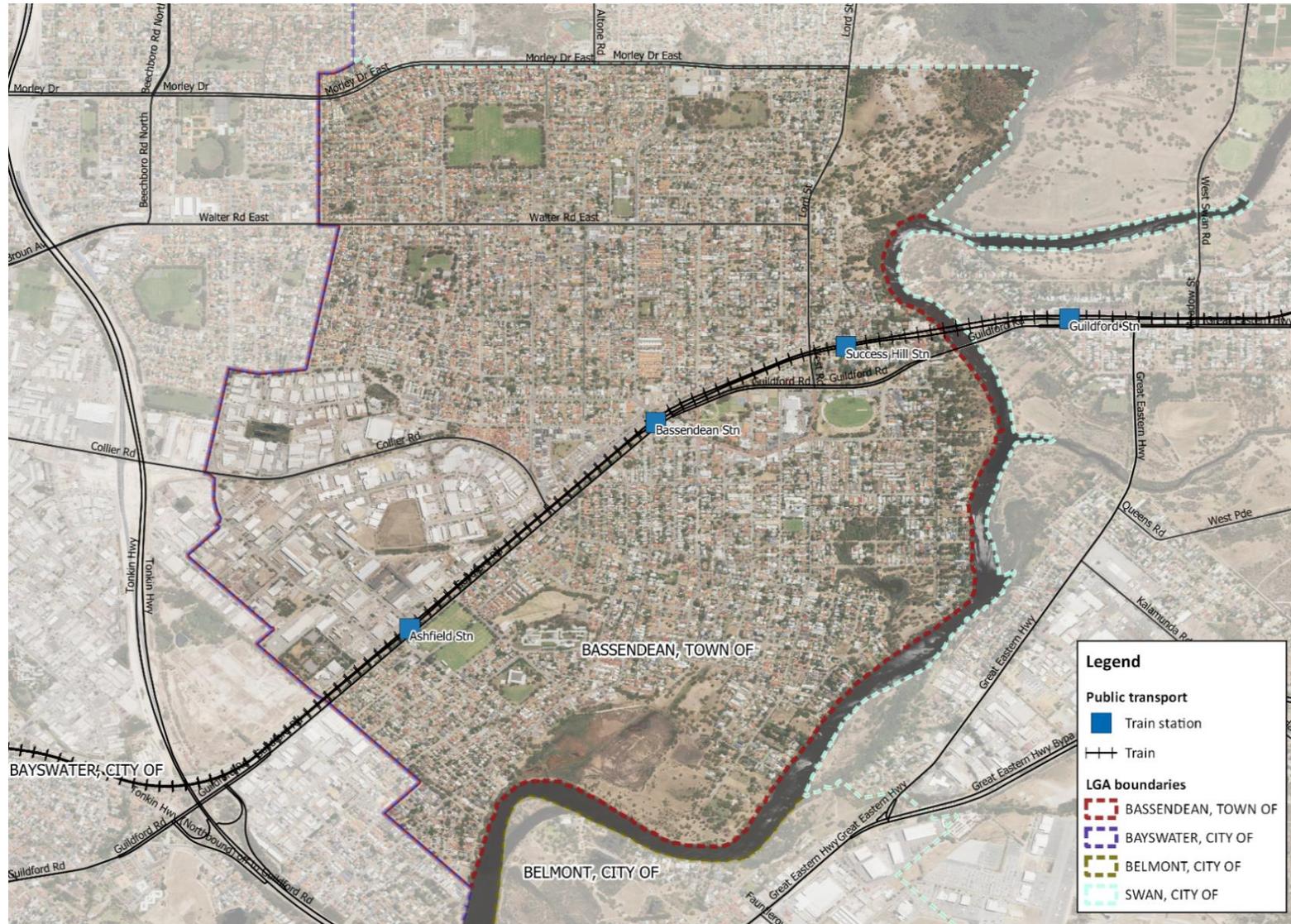
1. Informing a review of the Town of Bassendean's current Local Planning Strategy (LPS), particularly in respect to State directions to provide increased residential density development within identified core activity centres and along major transit corridors
2. Informing planning of Transit-Oriented Development (TOD) around the Ashfield, Bassendean and Success Hill train stations
3. Providing a platform for the development of subsequent and future transport strategies, policies and plans for the Bassendean Local Government Area (LGA).

Each of these particular purposes are considered integral to the Town ultimately achieving its key objective of **enhancing connectivity between places and people** (*cf.* Objective 3.2 - Strategic Community Plan 2017 – 2027).

Arup's objectives undertaking the study (study area shown in **Figure 1**) include:

- Assessing the existing movement network holistically identifying operational difficulties for all modes of transport by location and time-of-day (as applicable). This includes assessing options for:
  - Public Transport
  - Active Transport; walking and cycling amenity
  - Road Network
  - Parking.
- Identifying local network performance issues and whether these are associated with local government or State infrastructure
- Identifying cross-boundary network performance issues and the influences of land use and transport in adjacent LGAs (City of Bayswater and City of Swan, especially)
- Defining preferred future operating conditions for the Town of Bassendean's multimodal transport network, focusing on 2031 and trends towards Perth @ 3.5 million residents (notionally, 2050)
- Defining extraneous factors (wider State policy and mega-trends) that will influence transport and access within the town and exploring the nature of these impacts

- Identifying and addressing network and transport policy SWOT in view of the contextual analysis and influencing factors, to shape forward-facing transport and land use strategy.



**Figure 1 - Project study area: Town of Bassendean and surrounds**

The study is driven by the following, desirable outcomes that align with the Town's articulated purposes for the work:

- Enhancement of the town's identity and character
- Sustainable and resilient multimodality, which both avoids ingraining primacy of motor vehicle traffic within the town and integrates flexibility into the movement network given ongoing change within the transport sector.

The current report, which is the main deliverable for Phase 2 of work, includes:

- A recap of Phase 1 findings
- Overview of two transport projects in the Town that were not reviewed as part of Phase 1
- A long-list of potential strategies and actions for application in Bassendean conceived to respond to Phase 1 SWOT. These include strategies proposed by other government stakeholders
- Strategy development involving drafting of recommended high-level parking policy reform and provisional testing of key actions supported-in-principle by Council to test deliverability
- Completion of a Functional Road Hierarchy (FRH) review (addressing specific, potential strategies and actions as relevant). The review encompassed analysis of the form and function of collector and arterial roads in Bassendean, and assessed the merits of potential streetscape and capacity improvements, and reclassifications
- Findings from a second round of engagement with government stakeholders to table the short-listed strategies and actions for feedback
- Summary, proposed implementation programme and conclusions.

A second round of community consultation was completed to test views on the short-listed strategies and actions. This occurred in June 2019 following Council endorsement of this final draft report.

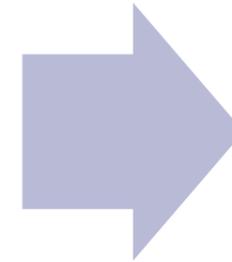
**Appendix A** features notes from meetings with external government stakeholders and **Appendix B**, the set of plans presented to the community during Phase 2 engagement. The following stakeholders have been engaged with during this process:

- Main Roads WA
- METRONET/ Public Transport Authority (PTA)
- Transperth
- City of Bayswater
- City of Swan
- Department of Planning, Lands and Heritage.

The following process flow-chart reflects the overall study design of Phase 2.

# Phase 1 - Transport Assessment

*Stakeholder engagement*  
*Community engagement*  
*Presentation to elected members*  
*SWOT/ contextual analyses*  
*Transport Assessment Report*



# Phase 2 - Local Integrated Transport Plan



## 2 Phase 1 Overview

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Phase 1 of the study included detailed review of multimodal transport, access and parking provisions across the town, featuring:

- Review of a broad range of relevant prior studies and strategic policy documents
- Analysis of data from various previous transport-related community engagement sessions supplied to Arup by the Town
- Several site visits
- Review of network data including public transport patronage and catchment information, patronage forecasting, road traffic counts, road network forecasts generated by Main Roads WA's Regional Operations Model (ROM), and crash data
- Consultation with external government stakeholders including:
  - Main Roads WA
  - METRONET
  - Public Transport Authority (PTA)
  - Transperth
  - City of Bayswater
  - City of Swan.
- A presentation to Council focusing on preliminary SWOT, and emerging transport trends that should be reflected (as relevant) in preferred strategies and actions
- Engagement with the Bassendean community using the *Your Say* on-line platform.

The main findings of Phase 1 were a set of SWOT variables, which are shown in **Table 1**.

**Table 1 – Summary SWOT variables**

<b>Strengths</b>	
Public transport	<ul style="list-style-type: none"> <li>• Three train stations in the town</li> <li>• Bus interchange, kiss-and-ride and park-and-ride provisions at Bassendean train station, providing for multimodal transfers</li> <li>• Delay to bus services owing to congestion on the road network is limited to the staggered junction of Altone Road, Morley Drive and Ivanhoe Street</li> </ul>
Active transport (cycling and walking)	<ul style="list-style-type: none"> <li>• Strong east-west link (Midland line Principal Shared Path [PSP]), which will shortly be completed</li> <li>• Much of the local street network is relatively quiet and comfortable for cycling</li> <li>• Old Perth Road environment has a distinct ‘main street’ feel</li> <li>• Delivery of Whitfield Street bicycle boulevard (may also be a threat as it will likely result in some redistribution of traffic)</li> </ul>
Road network	<ul style="list-style-type: none"> <li>• Grid network across much of the town, which provides a relatively high degree of connectivity and route choice</li> <li>• Relatively little peak-hour congestion across the network</li> <li>• Limited through-traffic because of natural connectivity breaks caused by Swan River</li> <li>• Restricted Access Vehicles (RAV) and a lot of Heavy Vehicle (HV) traffic assigns to Tonkin Highway rather than through Bassendean</li> </ul>
Parking	<ul style="list-style-type: none"> <li>• Relatively few parking problems in Bassendean at the current time</li> <li>• Relatively limited demand for on-street parking on local streets outside the Bassendean town centre (providing space for on-road cycling)</li> </ul>
<b>Weaknesses</b>	
Public transport	<ul style="list-style-type: none"> <li>• Road geometry at the staggered junction of Altone Road, Morley Drive and Ivanhoe Street causes delays for buses</li> <li>• Community views that bus and rail services should be better integrated at Bassendean train station</li> <li>• Limited bus service to the southern side of the LGA</li> <li>• Constrained southern catchment defined by Swan River, which limits bus routing options and service frequency</li> <li>• No vehicular rail crossings adjacent to Bassendean train station to improve access to the southern catchment and increase bus-train transfers</li> <li>• Low patronage at Success Hill (second lowest on network), walk-on catchment limited due to proximity to Swan River and overlapping catchment with Bassendean. Suboptimal cost versus benefit operating equation for PTA</li> </ul>
Active transport (cycling and walking)	<ul style="list-style-type: none"> <li>• Disability Discrimination Act (DDA) non-compliant overpasses at Ashfield and Success Hill train stations</li> <li>• Substandard cycling and walking facilities on south side of Midland line between Collier Road and Old Perth Road</li> <li>• Limited and poor crossing facilities along Guildford Road including traffic signal phasing that suits through-traffic movements</li> <li>• Desire line between Success Hill train station and Bassendean Oval not catered for</li> <li>• At-grade rail crossings contribute to vehicles queuing across PSP</li> <li>• Substandard lighting in the vicinity of Ashfield and Success Hill train stations</li> <li>• Poor crossing environment along Collier Road</li> <li>• Poor quality underpass below the Midland line with active transport users required to cross Guildford Road at-grade</li> <li>• Crossing facilities along Old Perth Road are less satisfactory east of James Street</li> <li>• Relatively poor connections to Sandy Beach Reserve</li> </ul>

Road network	<ul style="list-style-type: none"> <li>• Severance effects of Midland rail line</li> <li>• Limited access to Success Hill north and south precincts</li> <li>• Constrained intersection geometry at limited at-grade rail crossings</li> <li>• Suboptimal cross-section along Walter Road East (e.g. lack of median, geometric constraint at Iolanthe Road relative to midblock capacity)</li> <li>• Historical uncertainty regarding desired function of Walter Road East (potential transit corridor)</li> <li>• Unsuitable cross-section along Guildford Road including lack of Channelisation for right turns and medians</li> <li>• West Road and Guildford Road bridges function as network pinch-points</li> <li>• Suboptimal intersection treatments: especially at Guildford Road/Colstoun Road</li> <li>• Localised congestion associated with tidal commuter flows</li> <li>• Traffic queues associated with the Guildford/ Tonkin interchange extending back to Bassendean's boundary</li> <li>• Cul-de-sac treatments across local network that have addressed-rat-running issues but at the consequence of making private vehicle travel less direct</li> <li>•</li> </ul>
Parking	<ul style="list-style-type: none"> <li>• Lack of formal kiss-and-ride facilities at Ashfield train station</li> <li>• Parking supply at Bassendean Village includes facilities within the road reserve</li> <li>• Relative inflexibility in Scheme requirements for parking as well as over-specification of non-residential land use categories and definition of parking minima (but no maxima)</li> <li>• Lack of requirements in the Scheme for non-residential bicycle parking supply and end-of-trip facilities provisions</li> </ul>

## Opportunities

Public transport	<ul style="list-style-type: none"> <li>• Delivery of TOD along key bus corridors and in station catchments to satisfy Perth and Peel @3.5 million aspirations</li> <li>• Greatly improved train service associated with METRONET's 'full investment' planning (shorter operating headways and longer trainsets)</li> <li>• Improved cross-rail connectivity possible as an outcome of Midland line at-grade crossing removal program</li> <li>• Micro-transit service that improves bus-rail transfer from south of the rail line</li> <li>• Potential to downsize park-and-ride facilities at Bassendean train station giving rise to development opportunities within close proximity of the station</li> </ul>
Active transport (cycling and walking)	<ul style="list-style-type: none"> <li>• Delivery of strategic links north of Bassendean train station and along Walter Road East</li> <li>• New connection across Swan River between Sandy Beach Reserve and Max Hunt Reserve in Belmont</li> <li>• <u>Opportunity to improve wayfinding simultaneously with route upgrades</u></li> </ul>
Road network	<ul style="list-style-type: none"> <li>• Improvements to traffic flows and intersection operations at West Road/Guildford Road associated with Lord Street/ West Road bridge widening</li> <li>• Potential for better network connectivity associated with new Swan River crossings (also a threat, depending on where these are located)</li> <li>• Delivery of a new design for Walter Road East featuring reduced traffic lanes and improved walking and cycling infrastructure, and befitting TOD</li> <li>• An improved cross-section and intersection treatments along Guildford Road including channelisation and a median to assist two-stage turning manoeuvres and active transport crossings</li> <li>• Enhanced linkages deliverable as part of Midland line at-grade crossing removal program. Improved traffic safety and intersection operations associated with same</li> </ul>

Parking	<ul style="list-style-type: none"> <li>• TOD opportunity on the existing Wilson street public parking site</li> <li>• Potential for parking supply and management reform through Scheme revisions: especially in the town centre</li> <li>• Potential for future public parking stations in lieu of private, off-street parking. This can aid TOD</li> <li>• Morley-Ellenbrook Line (MEL) may create an opportunity to redevelop part of the existing Bassendean train station park-and-ride site</li> <li>• Incentivisation for WAFL patrons to choose other means to travel to the Oval on game-days</li> <li>• Supporting a multimodal, climate change management and population health agenda by including minimum non-residential bicycle parking and end-of-trip facilities requirements in an update to the Scheme</li> <li>• Including car share and ride-hailing parking provisions in local planning strategy and policy</li> <li>• Integrating modular and adaptable parking designs into new structures</li> <li>• Integrating criteria for electric vehicle recharging into development plans and new streetscape concepts</li> </ul>
<b>Threats</b>	
Public transport	<ul style="list-style-type: none"> <li>• Delivery of MEL may draw patrons away from the three stations in the town, reducing urgency of station area upgrades</li> <li>• In time, congestion on the road network may increase (if various road projects induce traffic), leading to delays for bus services</li> <li>• Uncertainty regarding timing of grade-separation of rail level crossings and impacts on surrounding land uses</li> <li>• Dilution of development potential and public transport patronage between all three stations, leading to suboptimal TOD outcomes</li> <li>• Platform proximity issues between Bassendean and Success Hill train stations associated with possible enablement works for six-car trainsets</li> <li>• Increased patronage on the Midland line from east of Bassendean (particularly from Midland), limiting capacity for growth (AM peak in the city-bound direction) at Success Hill, Bassendean and Ashfield train stations</li> </ul>
Active transport (cycling and walking)	<ul style="list-style-type: none"> <li>• Cadastral boundaries along the Swan River foreshore limit opportunity to deliver a foreshore path</li> <li>• Delivery of proposed cycling projects that are underutilised and have unintended effects on the local network</li> </ul>
Road network	<ul style="list-style-type: none"> <li>• Redesign of Guildford Road in a manner that induces traffic, adds to severance of active transport, limits access to side streets, requires removal of mature trees and impacts significantly on the banks of Swan River</li> <li>• Major road projects elsewhere in sub-region that induce traffic through Bassendean: e.g. Lord Street extension to Lockridge</li> <li>• Impact on Aboriginal heritage site adjacent to Swan River if Lord Street widening project is pursued</li> <li>• Future Local Area Traffic Management (LATM) projects undertaken without consideration of wider network effects</li> <li>• Traffic impacts associated with development of Lot 10 Railway Parade, which may not have been accounted for adequately</li> </ul>
Parking	<ul style="list-style-type: none"> <li>• Retaining current Scheme requirements leading to and increasing oversupply of parking and associated operational inefficiencies, as well as compromising multimodality objectives for Bassendean (especially station precincts and the town centre)</li> <li>• Ongoing overspill from Bassendean Oval on game-days that is not managed effectively</li> <li>• Ignoring the reasonably forecast implications of automation and electrification of vehicles, and growth of MaaS</li> </ul>

## 3 Additional Projects

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### 3.1 Bassendean Station Access Project – Broadway

The PTA engaged GTA Consultants to conduct a study defining the preferred treatment for a bicycle route via Broadway (Iolanthe Street to Railway Parade), as part of the Access to Stations initiative. Following an optioneering process, GTA Consultants recommended to PTA the delivery of on-street lanes with painted buffers separating them from general traffic lanes.

The study itself was supported-in-principle by the Bassendean Town Council at its Ordinary Council meeting held in March 2018.

The bicycle lanes, which have been funded by the PTA, have been provided on both sides of Broadway between Iolanthe Street and Railway Parade in accordance with the original GTA consultant's study.

Arup did not identify the route to be key as part of findings and recommendations during Phase 1 of this project; however, the proposition to improve cycling infrastructure in the town and station access in particular, is supported.

### 3.2 *Your Move Bassendean*

The *Your Move* behaviour change programme is conducted by the State Department of Transport and involves various community engagement techniques to encourage and facilitate more sustainable travel practices, such as replacing car trips with walking, cycling or public transport. While the programme will not have direct bearing on the findings and recommendations made by Arup relating to policy and infrastructure, it does have shared purpose: contributing to sustainable and resilient multimodality, which both avoids ingraining primacy of motor vehicle traffic within the town and integrates flexibility into the movement network given ongoing change within the transport sector. The Department of Transport commenced the programme in the second half of 2018.

## 4 Proposed Strategies and Actions, and Implementation Programme

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### 4.1 Summary of actions and strategies

**Table 2** includes the proposed actions and strategies arranged thematically, and responsible authority/ies. The thematic categories are:

- Parking (**P**)
- Public transport (**PT**)
- Active transport (**AT**)
- Road network (**RN**)
- Land development (**LD**)
- Government procurement (**GP**).

The table includes the broad response from Council for each action/ strategy along with qualification (if applicable). A number reference is provided for each action and the gaps in the numbering reflect the fact that a number of actions were not fully supported by elected members and have therefore been removed and will not be considered further.

Table 2 – Long-list transport variables

Proposal		Explanation	Responsible authority	Council response
<b>Parking</b>				
<b>P1</b>	Preparation of town-wide parking strategy to replace 2011 plan	As per Phase 1 report. Intent is for the Town's Local Planning Strategy and Local Planning Scheme to set criteria for efficient and effective supply and management of parking in the Town of Bassendean, especially in the town centre and surrounds, and in proximity to train stations.  Additionally, parking policy should reflect coming trends in transport, access and parking, providing where possible for flexibility in design and operations	Town of Bassendean	Supported
<b>P2</b>	Supply pilot electric vehicle recharging infrastructure	Supply kerbside Level 2 (fast AC) rechargers in at least one location along Old Perth Road and in consultation with Transperth, a Level 1 (basic AC) recharger located in the Bassendean station park-and-ride. Level 2 chargers can provide major battery recharge in 2-3 hours and Level 1, 6-7 hours	Town of Bassendean/Public Transport Authority	Supported
<b>Public transport</b>				
<b>PT1</b>	Improve pedestrian and cyclist access to Success Hill train station	The Town desires Success Hill train station retained to benefit the local community and for walking and cycling access to be improved. A grade-separated crossing of Guildford Road connecting Bassendean Oval with the southern catchment of the station is preferred. This could align at Lamb Street as an alternative to the at-grade crossing provided currently	Town of Bassendean/Public Transport Authority/Main Roads WA	Supported
<b>PT2</b>	Plan for extended platforms at Bassendean train station and potential active transport link aligned with Park Lane	Subject to geometric design considerations, lengthened platforms could open up opportunity for new active transport connections - especially to the south side of Guildford Road – better connecting the community to rail services	Public Transport Authority	Supported
<b>PT3</b>	Implement a micro-transit or mobility partnership trial in Bassendean with emphasis on southern catchment	The catchment south of the rail line is difficult to serve by conventional bus services because of severance issues, and Transperth's route 55 service provides only basic coverage. A micro-transit pilot or mobility partnership with a private operator could improve transit coverage and direct station access at a more reasonable price to the public sector	Public Transport Authority/Town of Bassendean	Limited support – financial implications for Town versus likely low utilisation of regular shuttle. Mobility partnership with private operator, supported by State government, may be supported

Proposal		Explanation	Responsible authority	Council response
<b>PT5</b>	Establish a mobility hub at junction of Kenny Street/Guildford Road	The draft Bassendean Station Access Strategy proposes kiss-and-ride bays at this junction. This 'hub' could integrate other facilities such as a potential shuttle stop (as applicable), bike facilities and extended pedestrian bridge from Bassendean station. Together, this infrastructure could encourage greater use of public transport; particularly, more boardings and alightings at Bassendean train station. Implementation of this proposal will depend on - among other things - land owner agreements as part of the identified site is held currently in freehold title	Town of Bassendean/Public Transport Authority	Limited support – land tenure and engineering feasibility of extending bridge
<b>PT6</b>	Channelise Ivanhoe Street on approach to Morley Drive to mitigate delays for buses	The approach features currently one stand-up lane. Transperth has reported some delays to buses in this location because of right-turning vehicles holding up left-turning buses in peak hours. Channelisation would split the approach into two lanes (one lane each for left and right-turning vehicles). Junction modelling would be required to test the effects of channelisation and help prove benefits versus costs	Town of Bassendean	Supportive – modelling of the junction will be considered as a future works programme. Council is supportive also of additional channelisation integrated with landscaped medians along Ivanhoe Street at intersecting streets
<b>PT7</b>	Advocate for sinking of Midland line to facilitate at-grade connectivity and new development opportunities in the vicinity of Bassendean station	The Midland line is subject to review in late 2018 as part of METRONET's rail/ road grade-separation programme.	METRONET/Public Transport Authority/Town of Bassendean	Supported
<b>Active transport</b>				
<b>AT1</b>	Design and deliver improved active transport link along Second Avenue between Railway Parade and Walter Road East, according with Town Bike Plan and Station Access Strategy intent	Link missing from strategic network (as proposed). While Second Avenue is a quiet/ local on-street route, it reflects a gap in existing/ proposed infrastructure. More formalised treatments could include a wider (shared) path or 'greenway' as per the Town's current Bike Plan and the draft Bassendean Station Access Strategy involving improved wayfinding and crossing facility at Walter Road East	Town of Bassendean/Department of Transport	Supported

Proposal		Explanation	Responsible authority	Council response
<b>AT2</b>	Advocate/support redesign of Ashfield and Success Hill pedestrian bridges to achieve DDA compliance	Current designs are non-compliant and require remediation	Public Transport Authority/Town of Bassendean	Supported
<b>AT3</b>	Extend Bassendean pedestrian bridge to Kenny Street mobility hub site	Implementation of the proposal will depend on - among things - land owner agreements as part of the identified mobility hub site is held currently in freehold title, and engineering feasibility. Current overpass lands on north side of Guildford Road, leaving pedestrians to cross Guildford Road at-grade. Path width on north side of Guildford Road is very constrained. Infrastructure would support development of a mobility hub at Kenny Street	Public Transport Authority/Town of Bassendean	Limited support – land tenure and engineering feasibility of extending bridge
<b>AT4</b>	Assess opportunity to improve current design of Wilson Street subway as a key north-south access for pedestrians and cyclists of all abilities	Existing subway is narrow and rates poorly from a Crime Prevention Through Environmental Design (CPTED) perspective. Furthermore, the path returns to the surface on the north side of Guildford Road, leaving active transport users to cross Guildford Road at-grade	Public Transport Authority/ Department of Transport/ Town of Bassendean	Supported
<b>AT5</b>	Deliver active transport route along Swan River between Guildford Road and Sandy Beach Reserve, tying in with potential bridge to City of Belmont	There is a desire line for recreational and utilitarian travel between the Midland PSP and a potential future Swan River crossing at Sandy Beach Reserve (or proximity). Deliverability is a challenge because of current land tenure along the Swan River foreshore	Town of Bassendean	Limited support – land tenure and design solution may be challenging to define and expensive to construct. May be considered as a longer-term strategy and would need further investigation to understand feasibility and cost.

Proposal		Explanation	Responsible authority	Council response
AT8	Create Town of Bassendean micro-funding account for small active transport improvements	Provide minor financial support for small businesses looking to improve their bicycle parking and end-of-trip facilities. Opportunities to link such a fund to State grants should be explored	Town of Bassendean	Supported

Proposal	Explanation	Responsible authority	Council response	
<b>Road network</b>				
<b>RN1</b>	Advocate for an alternative treatment to MRWA's proposal for Guildford Road corridor ( <u>western Town boundary to West Road</u> ) to one which : <ul style="list-style-type: none"> <li>• Balances local access needs and amenity, transit-oriented development, multimodal safety and comfort, and strategic network objectives</li> <li>• Achieves signalisation of Colstoun Road/ Guildford Road intersection</li> <li>• Retains key local street links under suitable traffic management</li> </ul>	<p>Main Roads WA has prepared draft concept for Guildford which is not supported by the Town and is under review by the Western Australian Planning Commission. The plan is as yet unfunded and MRWA has advised that it is envisaged that the need and extent of further stakeholder consultation, including the general community, will be determined as part of the Western Australian Planning Commission's consideration of the review that MRWA has undertaken.</p> <p>The Town needs to prepare alternative treatments (supported by traffic analysis) in consultation with the community.</p>	Main Roads WA/Town of Bassendean/ WAPC	<ul style="list-style-type: none"> <li>• <b>Council does not support the Main Roads WA concept.</b></li> <li>• <b>Council's preference is for a cross-section incorporating median and suitable channelisation that mitigates impacts on verge trees and potential for induced traffic, helps the Town deliver on infill targets and retains key local street access.</b></li> <li>• <b>Council's preference is for signalisation of Guildford Road/Colstoun Road including connection of the PSP to the south side of Guildford Road and the Ashfield bridge</b></li> </ul>

Proposal	Explanation	Responsible authority	Council response
<p><b>RN2</b> Advocate for an alternative treatment for Guildford Road corridor (<u>West Road to Swan River</u>) to one which:</p> <ul style="list-style-type: none"> <li>• Balances local access needs (both in the Town and adjoining Guildford centre) and amenity, transit-oriented development, multimodal safety and comfort, and strategic network objectives</li> <li>• Achieves reasonable signal phasing at intersection of Guildford Road/West Road associated with Lord Street/West Road bridge widening and anticipated intersection upgrade</li> <li>• Retains key local street links under suitable traffic management (in particular Guildford Road/North Road/Earlsferry Court)</li> </ul>	<p>See RN1</p>	<p>Main Roads WA/Town of Bassendean/ WAPC</p>	<ul style="list-style-type: none"> <li>• Council <b>does not support</b> the Main Roads WA concept.</li> <li>• Council's preference is for the Town to input to design for other road upgrades including bridge works and intersection treatment at Guildford Road/North Road/Earlsferry Court</li> </ul>
<p><b>RN3</b> Convert Walter Road East from four travel lanes to two with median division</p>	<p>Capacity along Walter Road East is constrained already by the single-lane roundabout at Iolanthe Street. Furthermore, Walter Road East terminates to the east at Lord Street and is not forecast by Main Roads WA's Regional Operations Model to accommodate significantly more traffic by 2031. In the interests of improving traffic conditions (e.g. introducing channelisation and median storage) and creating a safer, more efficient active transport linkage, Walter Road East should be converted to a two-lane street with median division to provide protected right-turns</p>	<p>Town of Bassendean/Department of Planning, Lands and Heritage</p>	<p>Supported - Council resolved in this respect at its Ordinary Council Meeting held on 28 August 2018. Implementation would require further design assessment and modelling in consultation with Department of Planning, Lands and Heritage (Walter Road East is an Other Regional Road reserved in the Metropolitan Region Scheme)</p>

Proposal		Explanation	Responsible authority	Council response
<b>RN5</b>	Advocate for traffic signal and boom gate synchronisation at Collier Road/Guildford Road	The Midland PSP connection across Collier Road is blocked often when vehicles queue waiting to turn from Collier Road on to Guildford Road and northbound on Collier Road when the rail boomgates are lowered. Boomgate and traffic signal operations should be synchronised to permit queues to clear and reduce incidences of this blocking	Main Roads WA/Public Transport Authority	Supported – interim measure ahead of more suitable grade-separation treatment as part of METRONET programme
<b>RN6</b>	Assess potential to signalise intersection of Railway Parade/Lord Street	Main Roads WA has advised the Town previously that this intersection is not suitable for signalisation because of proximity to the West Road/Guildford Road intersection; however, this should be revisited because of potential local network permeability and operational benefits, and feasibility of signalling infrastructure such as gantry arms and/ or advanced warning flashing lights on approach to address sight line issues	Town of Bassendean/Main Roads WA	Limited support – engineering feasibility and modelling required to ascertain impacts. Consideration will be given to modelling the impacts as part of a future works package
<b>RN8</b>	Design and consult to further refine proposed conversion of Walter Road East/Lord Street/Seventh Avenue to four-way signalised intersection (and conversion of Success Road access to left-in/left-out)	<p>The Town has engaged with the local community and SHAG re improving access to the urban cell north of Success Hill train station, which is limited to one vehicular access point (all movements, unsignalised access at Success Road/Lord Street). Some residents have raised concerns about peak hour delays at this location.</p> <p>Signals at Walter Road East/Lord Street/Seventh Avenue would yield several benefits:</p> <ul style="list-style-type: none"> <li>• Deliverability of an east-west walking and cycling connection between the Success Hill precinct and Walter Road East</li> <li>• Improved road access to the Success Hill precinct, which is also important for emergency ingress/egress</li> <li>• Controlled traffic turning manoeuvres</li> <li>• Reduced vehicular conflicts at Lord Street/Success Road, which could be converted to left-in/left-out</li> <li>• Gaps in traffic travelling southbound along Lord Street, which may improve peak hour operation at Railway Parade/Lord Street</li> <li>• Low likelihood of additional traffic infiltration through Success Hill because there are no through routes.</li> </ul> <p>A local traffic modelling study would be required to resolve the merits of this proposal and should include development of concept plans for consultation.</p>	Town of Bassendean/Main Roads WA	Limited support -modelling required to ascertain impacts and test alternative configurations; concerns relating to redistribution of traffic and compromise of plans for alternative cross-section for Lord Street (RN9). Consideration will be given to modelling the impacts as part of a future works package

Proposal		Explanation	Responsible authority	Council response
<b>RN9</b>	Undertake further investigation to support alternative design concept (boulevard with central median) for Lord Street south of Morley Drive	Despite property acquisitions by WAPC, and preferences of City of Swan and Main Roads WA to convert Lord Street to two lanes each way over this segment, heritage issues and outcomes preferred for the local community may mean that such infrastructure is not constructed. Rather, the Town should consider an alternative design for Lord Street introducing a boulevard treatment to support two-stage crossings by active transport users and more amenity for property owners, without reduced capacity compared to status quo. Provisions could be retained through the design process for future addition of infrastructure such as bus priority measures, noting that Lord Street is identified as a high frequency transit corridor in Perth and Peel @3.5M. Further investigation would involve traffic analysis (testing local access requirements/ implications, capacity and journey times), preparation of concept plans (long sections, cross sections and perspective visualisations) and consultation with residents, community and government stakeholders.	Town of Bassendean/Department of Planning, Lands and Heritage	Supported - Council resolved in this respect at its Ordinary Council Meeting held on 28 August 2018. Implementation would require further design assessment and modelling in consultation with Department of Planning, Lands and Heritage (Walter Road East is an Other Regional Road reserved in the Metropolitan Region Scheme)
<b>RN10</b>	Create a pedestrian friendly town centre and community centres through implementing self explaining streets design and management principles to encourage slowing of vehicular traffic	Speed limits of 50 km/h or higher can contribute to less use of streets by pedestrians and cyclists, and present safety risks that are not present at lower speed limits. Lower speed limits have merit in centres and on local roads befitting their function. Adopting self-explaining street design and management principles would be necessary to be effective.	Town of Bassendean/Main Roads WA	Supported
<b>RN11</b>	Review and update Town LATM and Bike Plans	These existing plans are six years old and require refresh. Updated reports should integrate self-explaining streets, and movement and place concepts. As part of the review of the LATM Plan, the continued role of cul-de-sac treatments strategically across the network should be considered given their impact on local accessibility.	Town of Bassendean	Supported
<b>Land development</b>				
<b>LD1</b>	Focus development/ uplift around main transit assets including Ashfield, Bassendean and Success Hill train stations, and major bus routes including Ivanhoe Street and Walter Road East	This proposal is being considered through the Town's current review of its 2015 Local Planning Strategy, which is being aligned with the State's Perth and Peel @3.5 Million planning framework. Delivery of infill as transit-oriented development requires a supportive movement network, which prioritises active transport modes and access to public transport services. Planning for the Morley to Ellenbrook rail line is being undertaken by METRONET. The effects of the new line and station catchments on rail	Town of Bassendean/State Government	Supported

Proposal		Explanation	Responsible authority	Council response
<b>LD2</b>	Investigate mixed-use redevelopment of the Bassendean park-and-ride site contingent on agreement with Public Transport Authority regarding possible reduction in park-and-ride demand associated with Morley- Ellenbrook	stations in the Town of Bassendean are yet to be fully identified. As a temporary measure, it will see increased park and ride supply and demand at Ashfield station which would need to be considered as part of any short to medium term development planning around that station.	Public Transport Authority/Town of Bassendean	Supported
<b>Government procurement</b>				
<b>GP1</b>	Establish new fleet procurement protocols in line with transport vision for Bassendean	Vehicle procurement should be limited to (subject to achieving Council's minimum ANCAP rating specifications): <ul style="list-style-type: none"> <li>• Electric or hybrid vehicles</li> <li>• LNG vehicles</li> <li>• Other low emissions vehicles according with the Australian Green Vehicle Guide<sup>1</sup>.</li> </ul>	Town of Bassendean	Supported

<sup>1</sup> <http://www.greenvehicleguide.gov.au/pages/Information/RankingAndMeasurement>

## 4.2 Strategy development

A range of preliminary analyses were conducted within the scope of the project<sup>2</sup> to develop key strategies further and test deliverability. Furthermore, several proposed strategies and actions were analysed as part of a review of the FRH in Bassendean (collector and arterial roads), including:

- **PT6** – Channelise Ivanhoe Street on approach to Morley Drive to mitigate delays for buses
- **RN3** - Convert Walter Road East from four travel lanes to two with median division
- **RN9** - Undertake further investigation to support alternative design concept (boulevard with central median) for Lord Street south of Morley Drive.

The FRH review is included in **Section 4.3**.

### 4.2.1 Parking (P)

#### **P1: Preparation of town-wide parking strategy to replace 2011 draft**

Arup reviewed parking issues and opportunities in Bassendean at a high level. This is in the absence of recent parking data (utilisation, duration-of-stay), or a detailed parking inventory being available for review<sup>3</sup>.

In 2011, the Bassendean Town Council adopted its current Parking Strategy. Being eight years old, the strategy does not reflect the current metropolitan or local planning frameworks (e.g. Perth and Peel @3.5M, the Town's Strategic Community Plan 2017 – 2027) and needs to be reviewed. An overarching recommendation from this Local Integrated Transport Plan is that a new town-wide parking strategy be prepared to provide a framework for parking provision addressing:

- Provision of bicycle parking and end-of-trip facilities
- Regime for service/ commercial vehicle parking in activity centres and mixed use precincts
- Optimising parking supply by providing for parking on a precinct basis at key locations (Bassendean Town Centre, Bassendean Oval and Ashfield Town Centre). This allows for reciprocal parking, provides a mechanism for collection of cash-in-lieu and involves identifying new sites for public parking stations
- Adapting parking enforcement methods to utilise smart technologies.

Increased residential density and mixed use development in Bassendean will lead to stronger demand for on- and off- street parking. Locations where residential

<sup>2</sup> Project limitations are addressed in Section 6.1 of the report. In particular, the scope did not include local network traffic modelling. Selected engineering feasibility assessments were of a provisional, high-level nature, only.

<sup>3</sup> It is anticipated that such data will be collected as part of the 2011 strategy update, which Arup understands that the Town will be initiating in the current financial year.

density is proposed include rail station precincts, key bus corridors and the Bassendean Town Centre. A balance needs to be achieved between supplying parking to meet reasonable demands while also acknowledging that an oversupply of parking will compromise the Town's TOD objectives.

Key parking-related challenges and opportunities for Bassendean, as it develops with more density and greater mix of land uses, are likely to include:

- Changes in travel patterns and rail station patronage at Ashfield and Bassendean stations arising from the Morley-to-Ellenbrook rail project, noting that (as a temporary measure to offset a loss in parking supply at Bayswater Station) the park and ride supply at Ashfield Station is to increase.
- Parking overspill from rail stations into adjacent activity centres and residential areas
- Oversupply of parking in activity centres particularly if parking is only considered for individual developments rather than on a precinct-level basis (common user facilities)
- Onerous and inflexible parking standards stifling new development
- Poor urban-design outcomes where parking dominates streets and detracts from pedestrian amenity and/or heritage character.

These issues are the primary focus of this plan and explored under the following themes:

- Key strategy update criteria
- Rail station/ TOD precincts
- Residential areas and heritage precincts.

Arup anticipates the aforementioned themes informing the 2011 Strategy update.

### Key strategy update criteria

The 2011 Draft Strategy was never finalised and while many of the recommendations are consistent with TOD objectives it appears that a number of the policy changes recommended were not implemented. A new strategy should (*inter alia*):

- Review the 2011 Strategy to determine the status of recommendations and their ongoing relevancy
- Establish baseline parking supply and demand through surveys and development of a parking inventory
- Review the balance between supply and demand to determine the need for changes to time restrictions and understand locations where parking overspill is occurring (and problematic)
- Identify new parking provision standards (maximums rather than minimum rates) for a more streamlined list of land uses through:
  - Identifying capacity of the network to absorb additional traffic

- Benchmarking against successful TODs (as relevant) with similar characteristics

New parking rates were not defined in the 2011 Draft Strategy but this was a key recommendation.

- Developing a suite of policy reform – applicable to the Town’s Local Planning Scheme and/or supporting local planning policy – including:
  - Prescribing maximum parking provision rates for non-residential uses based on analysis and evaluation as described above. Different rates may apply depending on proximity to rail stations
  - Reducing land use categories for simplicity and to support changes in use without a need to revisit parking requirements
  - Providing greater clarity on grounds when cash-in-lieu will be accepted and consider extending the timeframe for holding funds (currently 18 months) to allow time for business case preparation, funding to be sourced, design and construction
  - Introducing a clause(s) for bicycle parking including minimum rates for non-residential developments and requirements for end-of-trip facilities
  - Establishing criteria for adaptive reuse, provision of electric vehicle recharging facilities and pick-up/set-down provisions.
- Identifying a site for development of a common user parking facility in the Town Centre (which may be funded or part-funded via cash-in-lieu) and prepare a business case
- Developing a regime for monitoring and enforcing parking, which uses appropriate parking technologies.

## Rail station/TOD precincts

Parking at rail stations is managed and controlled by the PTA. The Town is responsible for managing parking around stations (including street parking). Delivery of the Morley-to-Ellenbrook rail line will change travel patterns in Bassendean and station catchments, and these changes are likely to impact both demand for formal station facilities and non-station parking assets.

The route and station locations are being evaluated currently as part of planning and engineering feasibility works. New stations will be located to the west and north of the Town of Bassendean and may lead to reduced patronage and park-and-ride demand at Bassendean station. A reduction in parking demand could provide opportunities for existing park-and-ride to be redeveloped partially as TOD helping the Town to meet infill targets (see **LD2**).

This redevelopment opportunity was explored as part of the draft Station Access Strategy for Bassendean; particularly in the context of the Morley-to-Ellenbrook rail project. The preferred strategy involved retaining current park-and-ride supply and supplementing this with use of parking south of Guildford Road (e.g. the Wilson Street car park). The use of free, all-day parking in this location by rail station patrons was recommended in the 2011 Draft Parking Strategy recommended; however, Arup believes that this should be discouraged due to

impacts on local businesses, the accessibility of the Town Centre and potential for redevelopment of these parking sites in future as TOD.

Further consultation should be undertaken with METRONET as the route definition and business case for the Morley-to-Ellenbrook project progress. Any option that reduces the catchment of Bassendean station should be seen as an opportunity to release parking areas for redevelopment and impetus for TOD.

Ashfield attracts very little park-and-ride or kiss-and-ride traffic, featuring no formal parking facilities. The draft Ashfield Station Access Strategy considered a future scenario involving an increase in demand for informal parking through use of on-street bays on surrounding streets. The associated amenity and parking availability issues for surrounding residences and businesses were highlighted as key issues why such patterns of use should not be encouraged. Significantly, such patterns of use could eventuate anyway and accordingly, the new Parking Strategy should define a parking management regime to mitigate such risks.

Success Hill station experiences the second lowest level of patronage on the metropolitan network. This is a product of many factors including the limited and constrained catchment, low dwelling densities, some walking and cycling accessibility issues, proximity of other stations and lack of vehicular arrival facilities (bus stands and park-and-ride/ kiss-and-ride).

The Town's elected members have stressed the importance of enhancing accessibility to and boardings at Success Hill station. Elsewhere on the rail network, a common strategy to increase boardings has been to add vehicular arrival facilities. In this case, there is limited access to the external road network, and minimal support from elected members and the wider community to improve access to the station other than for walking and cycling modes. Furthermore, there are space constraints limiting opportunities for new arrival facilities such as parking.

For these reasons, Arup does not recommend consideration of park-and-ride and kiss-and-ride at Success Hill. Rather, active transport accessibility should be improved (see **AT1**). This is consistent with the draft Station Access Strategy recommendations.

## Residential areas and heritage precincts

Under the Town's Local Planning Scheme No. 10, residential parking provisions are prescribed by the Residential Design Codes of Western Australia (R Codes). The R Codes specify parking maximums, applying lower maximums in locations close to rail stations. The R Codes provide a reasonable basis to guide future parking provision in the Town as it works to fulfil density targets. Planning reform should consider introducing opportunities for proponents to unbundle parking from the sale of units so that the take-up of parking is a conscious choice and the costs associated with that choice are clear.

Use of informal/street parking around train stations was acknowledged in the Station Access Strategies. Parking around the stations should be monitored and enforced, and a regime for management should be developed where parking overspill is creating amenity issues or a parking shortfall in residential neighbourhoods.

Design guidance should be developed for the provision of parking to ensure that it is provided in a manner sympathetic to built form and character in the Town's heritage precincts. The guidance should include advice to developers/ planners on grounds for cash-in-lieu where there are limitations to supplying parking because of heritage issues.

## 4.2.2 Public Transport (PT)

### **PT1: Improve pedestrian and cyclist access to Success Hill train station**

Providing an improved active transport connection between Success Hill train station and Bassendean Oval is an important objective of the Town. This connection is envisaged to improve the walkability of the station catchment. Presently, the pedestrian access is via Thompson Road and Lamb Street, and an at-grade crossing of Guildford Road via the traffic signals at Lord Street/West Road/Guildford Road. This crossing requires pedestrians to cross two left-turn slip lanes and actuate the pedestrian crossing lantern.

An alternative proposal is a grade-separated crossing facility. Arup conducted a preliminary investigation of an overpass. An underpass was not considered for comparative cost and engineering feasibility reasons. The provisional analysis (**Figure 2**) shows two potential span options. Option 1 involves an overpass located immediately north of the current car park at Bassendean Oval while Option 2 is an overpass close to the intersection with West Road.

Option 2 is significantly space-constrained, requiring a less efficient design and is located very close to the existing at-grade crossing location. Option 1 is comparatively more feasible, spanning between land zoned residential (land tenure not reviewed) on the north side of Guildford Road and land to the south reserved Primary Regional Road (PRR) under the Metropolitan Region Scheme (MRS). Overhead power lines are constraints requiring remedial action should this or a similar scheme be pursued.

The overpass proposal represents a more significant investment proposition compared to the recommendations in AECOM's draft Station Access Strategy for Success Hill, which included route upgrades via Thompson Road and Lamb Street including improved lighting.



OPTION 1



OPTION 2

**NOTE:**

- 1) THE OPTIONS PROVIDED WITHIN ARE CONCEPTUAL AND HAVE BEEN DEVELOPED FOR DISCUSSION PURPOSES ONLY.
- 2) TECHNICAL CRITERIA:
  - VERTICAL CLEARANCE REQUIRED: 5.2m
  - GRADE TOLERANCE: 1 in 14 – 1 in 20
  - MINIMUM RAMP LENGTH: 73m
  - RAMP/OVERPASS WIDTH: 15m MINIMUM
- 3) EXISTING OVERHEAD POWER LINES WITHIN THE NORTH AND SOUTH VERGES OF GUILDFORD ROAD WHICH IMPACT PROPOSED OVERPASS ALIGNMENTS.
- 4) CONCEPTUAL OPTIONS DO NOT TAKE INTO ACCOUNT THE LOCATION OF UNDERGROUND SERVICES AND RELOCATION OF SERVICES WHICH MAY BE REQUIRED TO SUPPORT STRUCTURAL ELEMENTS AND ASSOCIATED INFRASTRUCTURE.

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DRG TITLE <b>GUILDFORD ROAD PEDESTRIAN OVERPASS</b>			
DRN BY J VAN VOGELPOEL	DATE 07 09 2018	SCALE N.T.S.	REV <b>A</b>
<b>SK001</b>			

**Figure 2 – Success Hill-Bassendean Oval overpass options (provisional feasibility analyses)**

## **PT2: Plan for extended platforms at Bassendean train station and active transport link aligned with Park Lane**

Other consultants completing studies on behalf of the Town of Bassendean have recommended active transport connections over Guildford Road aligned with Park Lane. The benefits of such a connection include a grade-separated crossing facility of Guildford Road (not provided presently at nearby Old Perth Road), and in future, more direct connectivity to the Wilson Street parking area, which is under Council ownership and favoured for redevelopment.

An overpass connection, preferred compared to an underpass for cost and engineering feasibility reasons, would need to tie into extended platforms at Bassendean train station. Platform extensions are likely anyway as part of the State Government's METRONET programme, to support longer trainsets operating on the Midland line. In Arup's view, while such an overpass would provide improved access directly to the station platforms, the project should be considered as an alternative (not in addition) to an extension of the existing train station overpass across Guildford Road (discussed below under **PT5**), at least, for the medium-term.

A provisional engineering analysis (**Figure 3**) shows a range of potential span options. The work demonstrates that a span could be delivered but further engineering and cost investigations are required, as is consultation with the Public Transport Authority.



OPTION 1



OPTION 2



OPTION 3



OPTION 4

**NOTE:**

- 1) THE OPTIONS PROVIDED WITHIN ARE CONCEPTUAL AND HAVE BEEN DEVELOPED FOR DISCUSSION PURPOSES ONLY.
- 2) THE FOLLOWING OPTIONS HAVE BEEN PREPARED IN ACCORDANCE WITH THE PLANNING AND DESIGNING FOR PEDESTRIAN GUIDELINES DOCUMENT VERSION 6.
- 3) TECHNICAL CRITERIA:
  - VERTICAL CLEARANCE REQUIRED: 5.2m
  - GRADE TOLERANCE: 1 in 14 - 1 in 20
  - LANDINGS: 9m - 15m SPACING MINIMUM
  - RAMP/OVERPASS WIDTH: 1.5m MINIMUM
- 4) CONCEPTUAL OPTIONS DO NOT TAKE INTO ACCOUNT THE LOCATION OF UNDERGROUND SERVICES AND RELOCATION OF SERVICES WHICH MAY BE REQUIRED TO SUPPORT STRUCTURAL ELEMENTS AND ASSOCIATED INFRASTRUCTURE.

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PROJECT TITLE: <b>BASSEDEAN TRANSPORT STUDY</b>			
DRG TITLE: <b>BASSEDEAN TRAIN STATION PEDESTRIAN OVERPASS</b>			
DRAWN BY: J. VAN VOGELPOEL	DATE: 04.09.2018	SCALE: N.T.S.	REV: A
DRG NUMBER: <b>SK001</b>			

**Figure 3 – Park Lane-Bassendean train station overpass options (provisional feasibility analyses)**

### **PT3: Implement a micro-transit or mobility partnership trial in Bassendean with emphasis on southern catchment**

Council has limited appetite for improved public transport accessibility to the southern catchment of the town despite the low level-of-service provided by the 55 route, currently (**Figure 4** and **Table 3**). This is because:

- The catchment size and immediate-to-medium-term ridership potential is limited, meaning any traditional Transperth or micro-transit service would require considerable subsidy to provide a reasonable level-of-service
- While bridge connections to Belmont may provide context for through-running Transperth services, the bridge and approaches would impact on the Swan River foreshore environment and affect the amenity of residents on quiet residential streets.

Alternatively, Council is willing to consider exploring a mobility partnership approach with support of the Department of Transport. Such schemes, which have been piloted in various international contexts, may include government subsidy of trips operated by private rail-hailing service providers originating at or destined for train stations within the town.

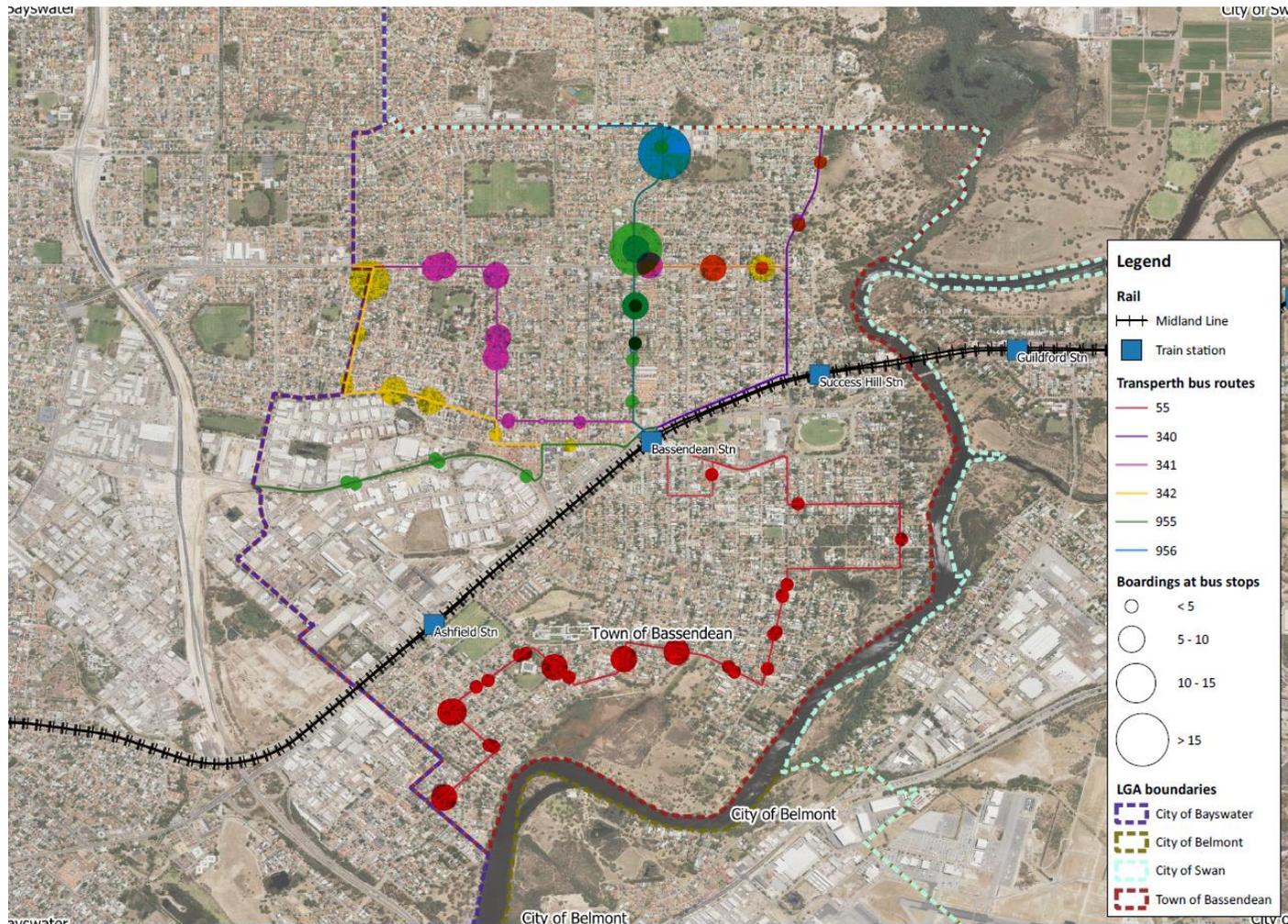


Figure 4 – Bus route/stop utilisation in Town of Bassendean (March 2017)

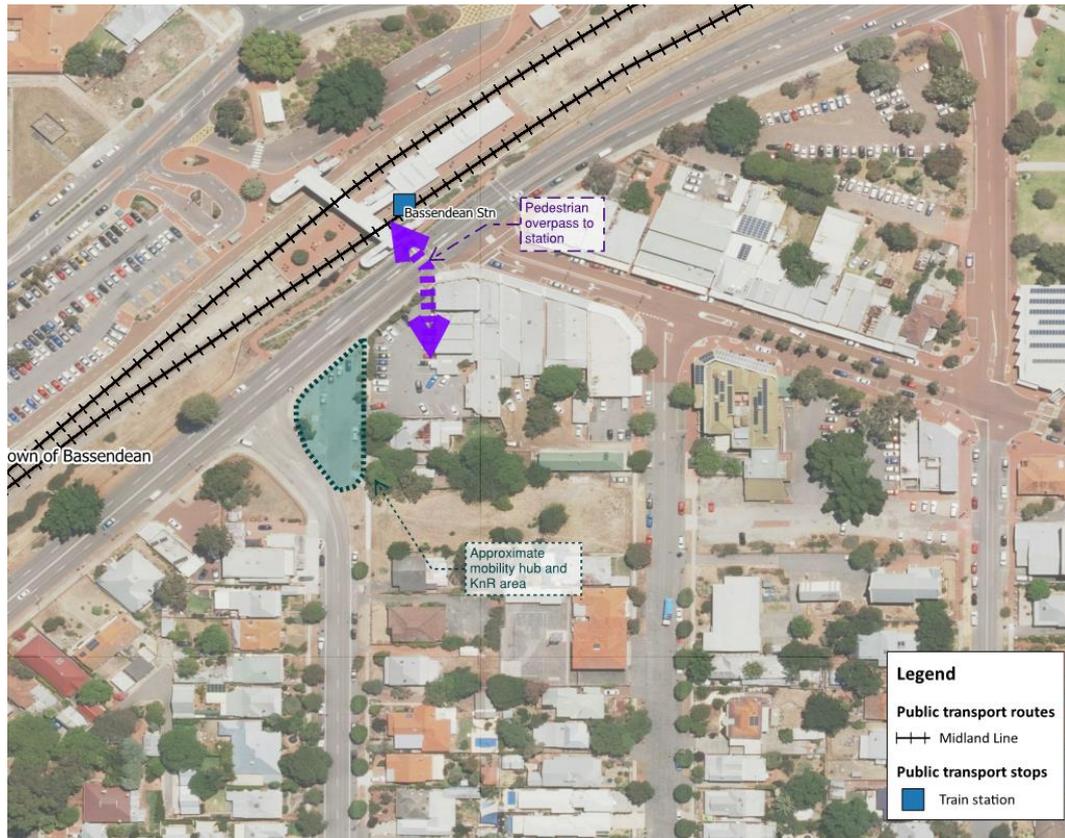
**Table 3 – Comparative weekday boarding and alighting (March 2017)**

Catchment	Route	Stops	Boardings	Alightings
North	340	At Bassendean Stn	132	141
		Not at Bassendean Stn	5	5
		<b>Total</b>	<b>136</b>	<b>146</b>
	341	At Bassendean Stn	171	175
		Not at Bassendean Stn	77	106
		<b>Total</b>	<b>248</b>	<b>281</b>
	342	At Bassendean Stn	128	130
		Not at Bassendean Stn	83	86
		<b>Total</b>	<b>211</b>	<b>216</b>
	955	At Bassendean Stn	412	393
Not at Bassendean Stn		82	90	
<b>Total</b>		<b>494</b>	<b>483</b>	
956	At Bassendean Stn	395	500	
	Not at Bassendean Stn	43	40	
	<b>Total</b>	<b>438</b>	<b>540</b>	
South	55	<b>Total</b>	<b>137</b>	<b>122</b>

**PT5: Establish a mobility hub at junction of Kenny Street/Guildford Road**

Elected members supported the proposition to construct kiss-and-ride bays on the southern side of Guildford Road at the intersection with Kenny Street, where there is Council land that can be utilised for this purpose (**Figure 5**). This is consistent broadly with AECOM's recommended provision for Bassendean train station as part of the relevant Draft Station Access Strategy.

There was less support for development of a more comprehensive mobility hub in this location, which could include shuttle stops, bicycle lockers, an expanded pick-up/set-down area for taxis/ride-hailing services and a new landing for the station overpass. Shuttle stops are not required absent a micro-transit shuttle service (**PT3**) while the latter two are difficult to facilitate owing to space constraints and current land tenure; however, they may be retained as longer-term aspirations (see also **PT2**).



**Figure 5 – Revised Kenny Street mobility hub concept**

**PT6 (and RN3 and RN9): Channelise Ivanhoe Street on approach to Morley Drive to mitigate delays for buses**

The proposal was supported in-principle by elected members; however, particular needs will be subject to future study including traffic analyses/modelling. In contrast, there was strong support for an assessment of the feasibility of re-treating Ivanhoe Street (Broadway to Morley Drive), Walter Road East (Beechboro Road to Lord Street) and Lord Street (Morley Drive to Anzac Terrace) as two-lane, median-divided (and tree-lined) boulevards with improved pedestrian, cycling and vehicle turning facilities. These re-treatments are analysed further in **Section 4.3** as part of the FRH review.

Various examples of similar such treatments include Cinnabar Drive in Eglinton, WA (**Figure 6**), Scarborough Beach Road in Mount Hawthorn, WA (**Figure 7**) and Englorie Park Drive in Glen Alpine, NSW (**Figure 8**). In 2015/2016, Scarborough Beach Road east of Main Street, for example, accommodated average weekday traffic of 14,300 vehicles.



**Figure 6 – Cinnabar Drive, Eglinton, WA**



**Figure 7 – Scarborough Beach Road, Mount Hawthorn, WA**



**Figure 8 – Englorie Park Drive, Glen Alpine, NSW**

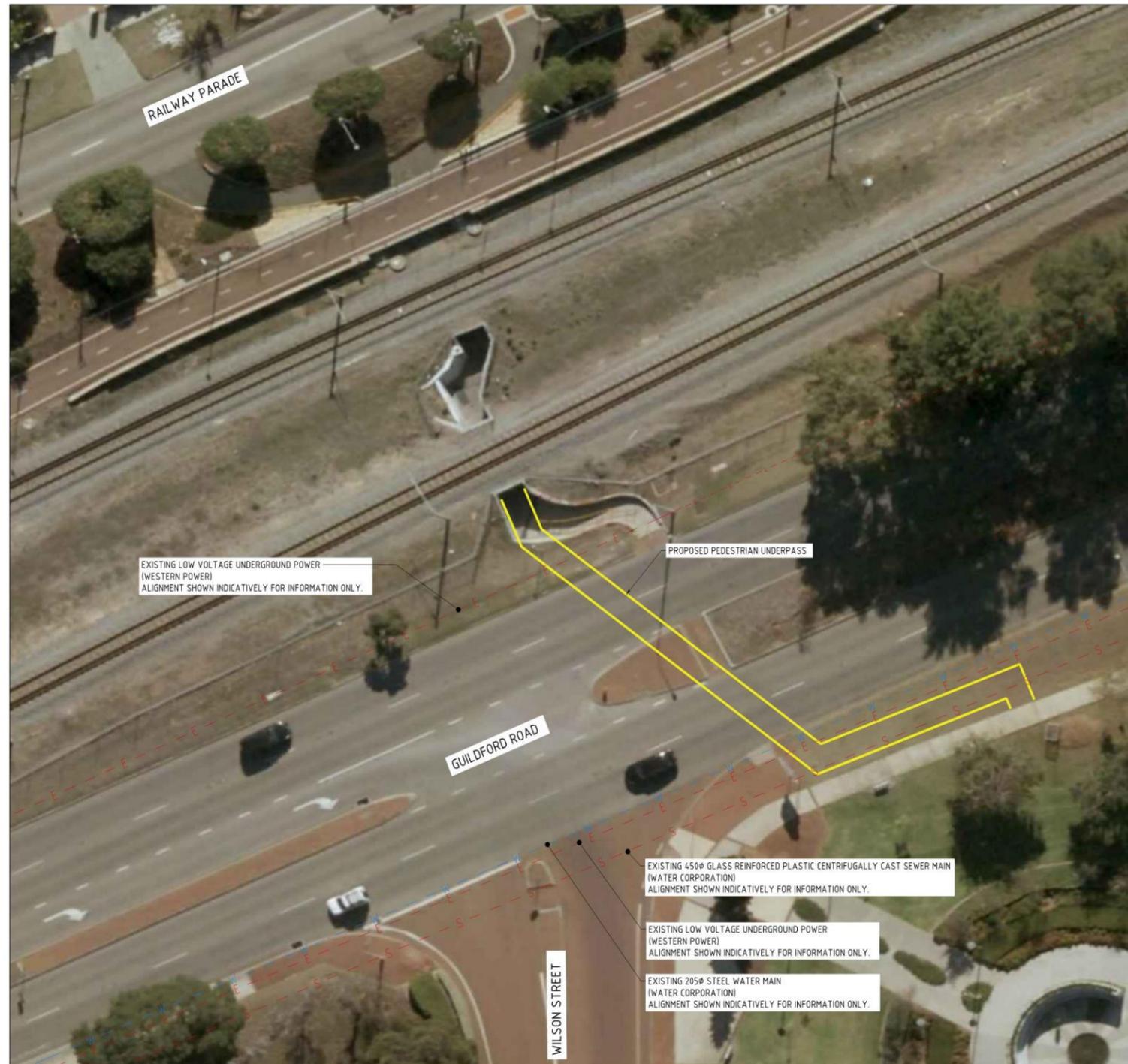
### 4.2.3 Active Transport (AT)

#### **AT4: Assess opportunity to improve current design of Wilson Street subway as a key north-south access for pedestrians and cyclists of all abilities**

The existing Wilson Street subway provides an active transport connection between Second Avenue and Wilson Street; however, it requires users to cross Guildford Road at-grade. While there is a median refuge for two-stage crossings, the crossing itself is uncontrolled. The nearest alternative crossing locations are at Bassendean train station (requiring also a crossing of Guildford Road at-grade via signals at Old Perth Road) and Lord Street (signalised crossing).

A preliminary review of feasibility of extending the subway shows a long tunnel and ramping structure, as well as relocation of utilities would be required (**Figure 9**). The resulting tunnel would also be uncomfortable for users and present CPTED issues. A wider tunnel (including widening of the existing subway) may address CPTED concerns in-part, but at significant cost.

The difficulty of extending the tunnel and opportunity to install a grade-separated crossing at Park Lane (**PT2**), mean that an improvement of the Wilson Street crossing should be limited to minor design upgrades of the at-grade facility.



**NOTE:**

- 1) THE SKETCH PROVIDED IS CONCEPTUAL AND HAS BEEN DEVELOPED FOR DISCUSSION PURPOSES ONLY.
- 2) THE DESIGN IS SUBJECT TO REVIEW AND CONFIRMATION OF EXISTING UNDERPASS LEVELS, DIMENSIONS AND LOCATION OF ALL EXISTING UTILITY INFRASTRUCTURE WITHIN THE PROPOSED WORKS AREA.
- 3) EXISTING WATER CORPORATION ASSETS INCLUDING SEWER AND WATER RETICULATION ARE LOCATED WITHIN THE SOUTHERN VERGE OF GUILDFORD ROAD. THE ALIGNMENT OF THE PROPOSED UNDERPASS WILL REQUIRE THESE ASSETS TO BE RELOCATED.
- 4) THE LOCATION AND ALIGNMENT OF EXISTING STORMWATER DRAINAGE AND COMMUNICATION INFRASTRUCTURE WITHIN GUILDFORD ROAD HAS NOT BEEN CONSIDERED OR DOCUMENTED AS DBYO INFORMATION WITH RESPECT TO THESE SERVICES IS NOT CONSIDERED TO BE ACCURATE.
- 5) BARRIERS ARE REQUIRED TO BE INSTALLED ALONG THE NORTHERN AND SOUTHERN VERGES OF GUILDFORD ROAD ON THE APPROACH LEGS TO THE PROPOSED UNDERPASS.
- 6) TECHNICAL CRITERIA:
  - VERTICAL CLEARANCE REQUIRED: 2.0m
  - GRADE TOLERANCE: 1 in 14 - 1 in 20
  - MINIMUM RAMP LENGTH: 28m
  - RAMP/UNDERPASS WIDTH: 15m MINIMUM

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DRG TITLE: <b>GUILDFORD ROAD PEDESTRIAN UNDERPASS</b>			
DRW BY: J. VOGELPOEL	DATE: 06/09/2019	SCALE: N.T.S.	REV: <b>A</b>
DRG NUMBER: <b>SK001</b>			

**Figure 9 – Wilson Street subway extension (preliminary concept)**

### AT6: Convert water pipe over Swan River north of Guildford Road to active transport crossing

A community member proposed during Phase 1 of the current project that the existing water pipe, aligned between River Street in Bassendean and Swan Street in Guildford, could have a pathway installed on its top. The proposition requires further feasibility analysis in consultation with Water Corporation; however, the alignment would suit active transport trips across the river with relatively minimal investment in new pathway infrastructure (**Figure 10**). Nonetheless, Arup considers this to be a low priority given the proximity of the Midland PSP.



Figure 10 – Proposed water pipe pathway alignment

## 4.2.4 Road Network (RN)

### RN1 and RN2: Guildford Road Corridor

**Figure 11** shows the particular sections of and locations along Guildford Road where local access, amenity and active transport connectivity should be addressed in new concept designs, and treated by Council as priorities.

Guildford Road is a Primary Regional Road (PRR) reserved in the Metropolitan Region Scheme (MRS) under care-and-control of Main Roads WA. Main Roads WA has developed a conceptual design treatment for the corridor that is not supported by the Town. It includes:

- Two through traffic lanes in each direction and a protected right turn pocket in strategic locations
- Some widening (and therefore amendment to the Metropolitan Region Scheme)

- Channelisation at intersections
- Removal of mature trees along Guildford Road
- Construction of a median west of West Road
- Some intersection modifications including some closures
- Construction of a new bridge over Swan River (four lanes)
- Upgrade of Guildford Road to four lanes through to the Guildford Town Centre
- Installation of a dual-lane roundabout at Guildford Road/ North Road/ Earlsferry Court.

The plans have not addressed design treatments through the Guildford town centre, east of the Swan River crossing.

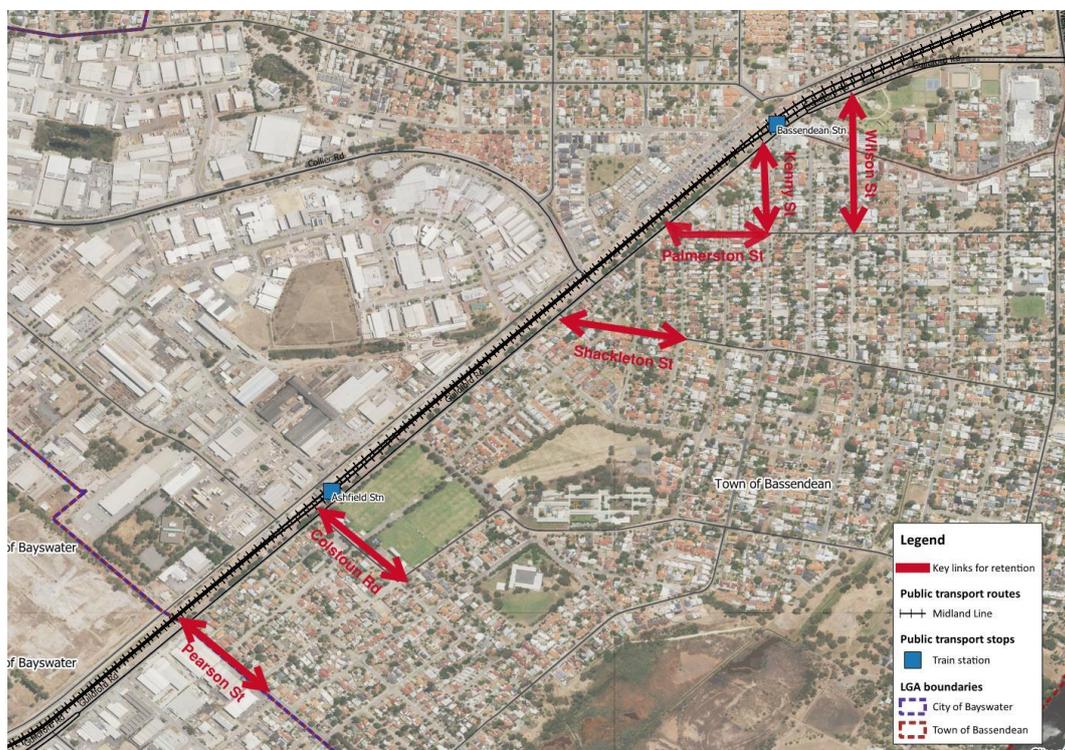
It is understood that WAPC is currently reviewing the conceptual corridor plans developed by Main Roads WA, but the works are yet unfunded. It is strongly recommended that the Town engages with WAPC to proactively make sure that the following key issues are addressed:

- Guildford Road west of Lord Street has an existing, inefficient four-lane undivided cross-section. Performance improvements are likely following installation of a median and turning channels. It is in the Town's interests to see local network access retained in key locations including Pearson Street, Colstoun Road, Shackleton Street, Bridson Street and Kenny Street
- Guildford Road east of Lord Street is part of a strategic district road connection including Lord Street and Great Eastern Highway identified by both City of Swan and Main Roads WA. Nonetheless, this entire corridor is constrained by the limited capacity along Lord Street and through Guildford Town Centre, and the indirectness of the link (requiring turns at Guildford Road and Great Eastern Highway). Other sub-regional road links are more efficient and programmed for upgrades; particularly, Tonkin Highway and Great Eastern Highway Bypass
- Upgrades to Guildford Road may induce sub-regional traffic through Bassendean, compromise opportunities for transit-oriented development, which are intended to deliver on the Town's infill targets as per Perth @3.5 million, and impact on local accessibility and amenity including a large number of mature trees.

Development of a preferred, alternative concept scheme in collaboration with Main Roads WA is outside of the scope of this study but is recommended as priority for the Town. Furthermore, the Town is recommended to review the data and analyses underpinning the current concept for Guildford Road, including:

- Land use assumptions including preservation and enhancement of access to Ashfield, Bassendean and Success Hill train stations commensurate with Bassendean's infill program
- Assumptions regarding public transport supply including Morley-Ellenbrook Line, Forrestfield Airport Link, station locations, patronage, and park-and-ride provisions

- Mode share assumptions
- Other network assumptions (e.g. upgrades to other strategic road infrastructure such as Guildford Road through Guildford Town Centre and the proposed Benara Road connection across Swan River supported by City of Swan)
- Calibration of ROM forecasts including with forecasts generated by STEM, which is being used to assess impacts associated with other major transport projects including MEL
- Micro-simulation and/or other tools used to assess the function of Guildford Road
- Assessment of alternative treatments for Guildford Road.



**Figure 11 – Guildford Road corridor key locations and sections**

**RN10: Create a pedestrian friendly town centre and community centres through implementing self explaining streets design and management principles to encourage slowing of vehicular traffic**

Various research projects have demonstrated road safety benefits associated with speed limit reductions in urban contexts and concluded that such reductions tend to have marginal impacts on travel times. In particular, 30-40 km/h speed limits on local streets have strong support in the literature and professionals in Perth are advocating for these lower limits based on sound engineering and road safety practice<sup>4</sup>.

<sup>4</sup> Archer J., Fotheringham N., Symmons M. and Corben B. (2008) *The Impact of Lowered Speed Limits in Urban and Metropolitan Areas*, Monash University Accident Research Centre, January;

Nevertheless, speed limits under 50 km/h remain uncommon; even in urbanised areas. The 40 km/h speed limit on select streets in Perth CBD is one of the limited examples across the Perth metropolitan area.

Arup recommends that the Town of Bassendean identifies priority locations (the Bassendean Town Centre plus select community hubs) where self explaining street designs and management will be implemented aimed at reducing vehicular speeds and giving pedestrians priority. The Town will need to develop and implement guidelines but also assess the specific needs of locations. A pilot study could be carried out where baseline traffic conditions are recorded before and after interventions are trialled to identify which measures are effective and undertake a basic cost-benefit analysis. This would be done before rolling out interventions more widely through the Town.

### **LD2: Investigate redevelopment of the Bassendean park-and-ride site**

The Town is committed to facilitating increased activity intensities in close proximity to the three train stations. Presently, the Bassendean station park-and-ride facility, provided at-grade, occupies prime land to the north of the station/Midland line.

Arup conducted a first-principles assessment of potential park-and-ride demand reassignment from Bassendean station to new stations on the Morley-Ellenbrook Line as part of Phase 1 of the current project, based on the Minister's preferred alignment (actual alignment still to be resolved). While some reassigned demand could be replaced by future infill development in Bassendean, demand for park-and-ride bays at Bassendean station may reduce by up to 70% based on these calculations.

Part of the site (the northeast portion) is reserved Railway in the Metropolitan Region Scheme while the balance is zoned Urban. It is shown in the Bassendean Town Planning Scheme as road reserve. **Figure 15** shows the potential site area available for redevelopment if this scale of reduction eventuates. This does not allow for any modular or other structured parking solution in future, which could reduce park-and-ride land take as well.

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<http://vtpi.org/tdm/tdm105.htm>; <https://www.perthnow.com.au/news/traffic/30kmh-limit-will-save-lives-ng-b88906633z>



**Figure 15 – Bassendean train station park-and-ride redevelopment option**

### 4.3 Functional Road Hierarchy review

The review encompassed analyses of the form and function of collector and arterial roads (excepting Guildford Road – see **RN1** and **RN2**) in Bassendean, and assessed the merits of potential streetscape and capacity improvements, and reclassifications. The roads included in the review were (**Figure 16**):

#### Local Distributor

- Old Perth Road (Guildford Road to West Road)
- Wilson Street (Guildford Road to Old Perth Road)
- Palmerston Street
- Shackleton Street/Bridson Street
- West Road (north of Reid Street)
- Hardy Road
- Reid Street/Haig Street/Colstoun Road
- Ivanhoe Street
- Iolanthe Street (south of Walter Road East)

#### Distributor (A)

- Collier Road

- Morley Drive
- Lord Street
- Walter Road East

Existing street cross-sections, functional dynamics (based on Movement and Place principles<sup>5</sup>), and speed limits were compared to observed Vehicles Per Day (VPD), modelled base VPD generated by Main Roads WA's Regional Operations Model (ROM), and future (years 2021 and 2031) ROM forecasts. Furthermore, these data were compared to:

- FRH descriptive information
- Equivalent classifications and associated principles, and design and operational criteria in Liveable Neighbourhoods.

The full results of the analyses are shown in **Appendix C** and a summary of findings in **Figure 17**. In particular, the analysis provides support for re-treatment of Walter Road East and Lord Street south of Morley Drive (**RN3** and **RN9**), subject to more detailed traffic assessment and modelling, and supporting concept design.

Of the Local Distributor streets reviewed, only Iolanthe and Ivanhoe Streets are recommended for moderate improvement (where feasible, given road reserve constraints (see Figure 17 and Appendix C). The other Local Distributors, all located south of the railway line, have forms and functions consistent generally with the relevant criteria in the FRH.

They all (excepting Old Perth Road), feature two-lane, undivided cross-sections and direct property access. Furthermore, they provide limited through-traffic functions because of constraints imposed by Guildford Road and the Midland line, and Swan River, meaning they are unlikely to attract significant additional traffic volumes in future.

Old Perth Road has a median-divided two-lane cross-section and features embayed parking. It works well as a town centre street with its current design.

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<sup>5</sup> Movement and Place principles relate to balancing street treatments and modal priorities based on mobility (e.g. through-traffic) and access (e.g. lot access for vehicles, plus walkability and cycling safety and amenity, and public transport provisions). More information is available through VicRoads: <https://www.vicroads.vic.gov.au/traffic-and-road-use/traffic-management/smartroads>.



**Figure 16 – Current road hierarchy: Town of Bassendean**

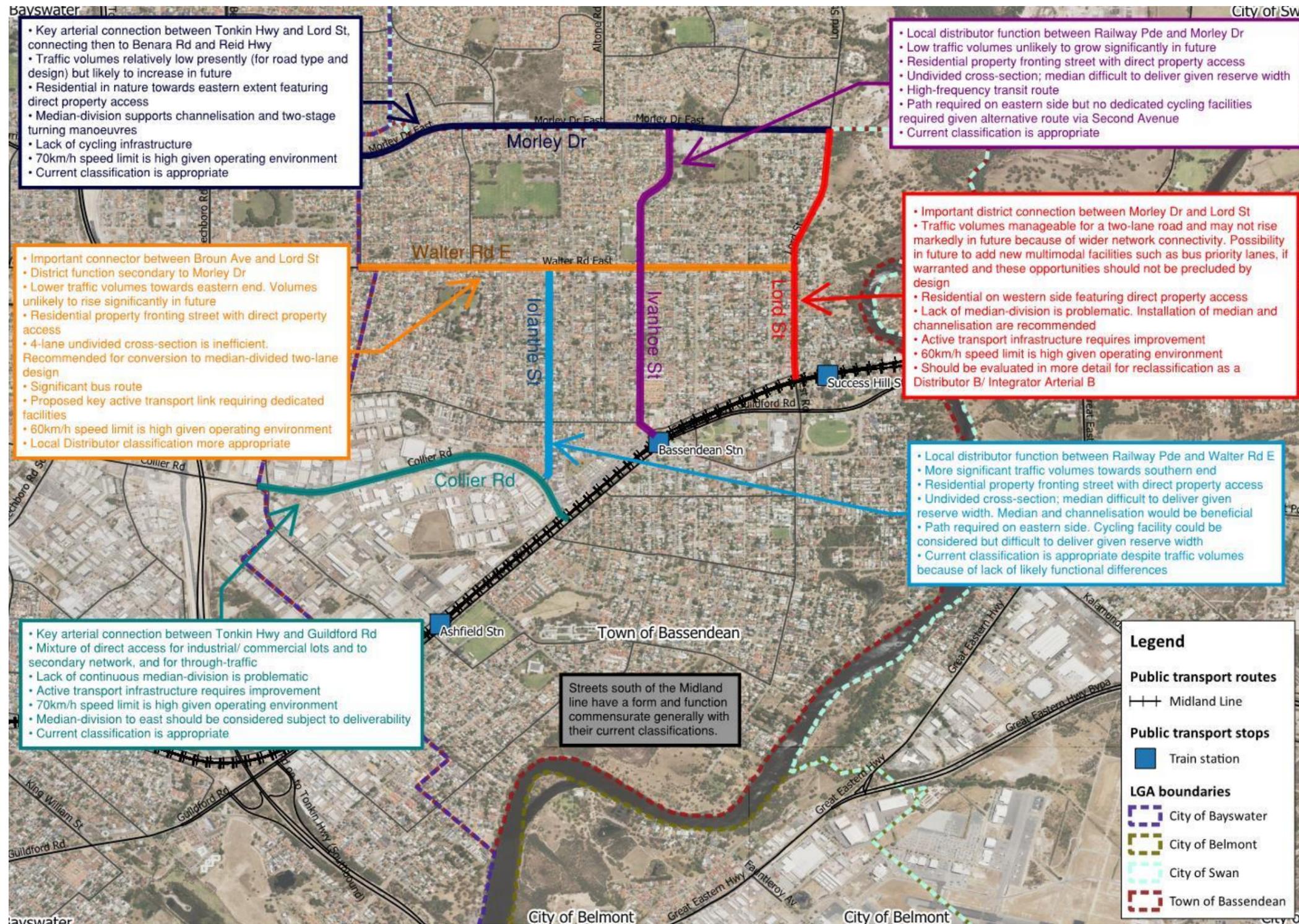


Figure 17 - Summary of FRH review

## 5 Phase 2 Consultation Summary

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### 5.1 External government stakeholders

A second round of consultation with key stakeholders took place in late 2018. The purpose of these discussions was to provide an overview of the information that was collated as part of Phase 1 of the study but principally to solicit feedback (and get buy-in) on objectives, targets and draft actions. A summary of the key consultation outcomes are provided below.

#### 5.1.1 Main Roads WA

Consultation included a session where Arup tabled the draft actions from the LITP for feedback and a session where representatives from MRWA briefed the Town on the Guildford Road planning review that they have undertaken.

MRWA did not provide support for any alternative to their own proposal for Guildford Road which comprises a five lane cross section (two lanes in each direction with right turn pockets at strategic locations). The cross section is largely consistent with the Metropolitan Region Scheme amendment adopted in the 1990s. A briefing was subsequently set up for the Town to gain a more fulsome understanding of the MRWA proposal for Guildford Road including a basis of their design and the process that would be followed should the plan be implemented. The plan is as yet unfunded and MRWA has advised that it is envisaged that the need and extent of further stakeholder consultation, including the general community, will be determined as part of the Western Australian Planning Commission's consideration of the review that MRWA has undertaken.

Other points of discussion with MRWA the form and function of Lord Street.

#### 5.1.2 City of Swan

The City was generally supportive of the proposals tabled but clarified the following:

- Possible implications of RN1 Guildford Road on the Guildford Town Centre would be a sensitive community issue and community views have not yet been sought
- Noted Bassendean Council resolution in August 2018 that Lord Street (south of Morley Drive) will be retained as two lanes with median division. Noted that network design and operations (arterial links, particularly), need to balance local requirements with district and sub-regional functionality.

#### 5.1.3 City of Bayswater

Consultation with the City of Bayswater primarily focused on the future form and function of Guildford Road (RN1 treatment). Their sentiment was that further

consideration should be given to additional channelisation at intersections and construction of a central median.

They outlined concerns regarding the impacts of the Tonkin Gap project (now a MRWA committed project) on the performance of the Guildford Road/ Tonkin Highway interchange. The City also noted the uncertainty regarding timing of level crossing removals and the final configuration of grade-separations. It was also acknowledged that heavy vehicle access and traffic impacts associated with Tonkin Highway Industrial Estate may need further consideration jointly between the City and the Town.

#### 5.1.4 Department of Planning, Lands and Heritage

The Department provided some feedback in relation to the provisional concepts for Lord Street (south of Morley Drive) and Walter Road East that were tabled. Specific feedback provided by officers was as follows:

- The reservation for Lord Street has been planned to accommodate a dual lane-dual carriageway road (4 lanes plus median) since the 1970s
- The City of Swan has planned it to this standard up to Morley Drive
- The WAPC has already acquired the land for the widening of ORR Lord Street (except for Lot 115 & Lot 41 Lord St and corner truncations on the western side at lots 14 Railway Pde, 23 & 53 Anzac Tce)
- Lord Street (Railway Parade to Morley Drive) is identified as a High priority transit route in the *Perth and Peel @3.5million Central regional planning framework*
- Lord Street (north of Morley Drive) is identified as a high frequency transit route in the *Perth and Peel @3.5million North-East sub-regional planning framework*
- We support and have provided sufficient width for the provision of trees within the road reserve
- We requested that the road is constructed to meet the Other Regional Road function
- The Town should consider the needs of all road users when constructing the road.

DPLH is of the view that detailed modelling and design assessments are required to test these concepts further, and that the needs of all road users (and potential future-proofing requirements), must be included in these assessments. Such assessments may be contemplated as steps following the Bassendean LITP.

#### 5.1.5 PTA/ METRONET

A summary of the key outcomes from discussions with PTA/ METRONET is as follows:

- Success Hill station: acknowledged the Town’s position to support the station (despite the low patronage levels) and that any investigations/plans to improve access to the station should be done collaboratively with PTA/ METRONET
- Plan for extended platforms at Bassendean train station and potential active transport link aligned with Park Lane: General concept is supported. Metronet is looking at platform extensions as part of line upgrades, supporting longer train sets and all-stops operations. Potential option for a second passenger entrance to the station noted. Future work will need to include consideration of station operations, particularly the “closed” (i.e. SmartRider fare-gated) platforms and associated infrastructure and staffing costs etc
- Park-and-ride supply (LD2) needs protection based on requirements for the network. The MEL project may create opportunities for some site redevelopment in an integrated way and PTA/ Metronet is willing to work with the Town to contemplate these
- The PTA will be considering potential treatment of the rail line at Collier Road in the next 12 months as part of its planning for removing level crossings on the network. This will consider a range of treatments (raising/ lowering rail or a hybrid solution).

### 5.1.6 Transperth

Transperth advised that it supports future work initiated by the Town that assesses intersection performance at Morley Drive/ Ivanhoe Street, but it is not considered a high priority. Transperth is generally supportive of transit-oriented development and willing to consider a development option integrating structured parking solutions but notes that the impacts of the MEL project on park and ride demand are yet unknown and demand is likely to remain unchanged for the short to medium term.

Difficulties in providing more direct access to Bassendean train station because of infrastructure constraints were acknowledged; however, Transperth generally supports improvements to pedestrians and cyclist infrastructure connecting from the southern side of the rail.

## 5.2 Bassendean community

A second round of community consultation was completed mid-year 2019 to test views on the the short-listed strategies and actions. While the strategies and actions were informed by the first round of consultation with the community they have also been shaped by the technical analysis, engagement with stakeholders and feedback from elected members at the Town. It was important to understand community views before this strategy is adopted by the Town.

The Town undertook consultation as part of the Local Planning Strategy and while transport views could be raised through this process, it was not the intention that this consultation tested the specific transport strategies and action. Accordingly, the second round of engagement comprised of:

- Setting up the ‘Your Say’ online engagement tool on the Council’s website so that the draft strategy (including executive summary and implementation plan) could be viewed and commented on.
- Hosting a two-day community information display where the community dropped in to view a display of plans and provide feedback. This took place on Friday 26<sup>th</sup> and Saturday 27<sup>th</sup> July 2019.

Following receipt of comments, the plan was finalised and endorsed by the Town.

## 6 Summary, Implementation Programme and Conclusions

The following recommended actions are as follows, and once adopted by Council, the Town of Bassendean can pursue implementation.

	Proposal		Responsibility	Priority
Parking	P1	Preparation of town-wide parking strategy to replace 2011 plan	Town of Bassendean	Short
	P2	Supply pilot electric vehicle recharging infrastructure	Town of Bassendean/Public Transport Authority	Short
Public Transport	PT1	Improve pedestrian and cyclist access to Success Hill train station	Town of Bassendean/Public Transport Authority/Main Roads WA	Medium
	PT2	Plan for extended platforms at Bassendean train station and potential active transport link aligned with Park Lane	Public Transport Authority/ Transperth	Medium
	PT6	Channelise Ivanhoe Street on approach to Morley Drive to mitigate delays for buses	Town of Bassendean	Medium
	PT7	Advocate for sinking of Midland line to facilitate at-grade connectivity and new development opportunities in the vicinity of Bassendean station	METRONET/Public Transport Authority/Town of Bassendean	Short (ongoing)
Active Transport	AT1	Design and deliver improved active transport link along Second Avenue between Railway Parade and Walter Road East, according with Town Bike Plan and Station Access Strategy intent	Town of Bassendean/Department of Transport	Short
	AT2	Advocate/support redesign of Ashfield and Success Hill pedestrian bridges to achieve DDA compliance	Public Transport Authority/Town of Bassendean	Medium
	AT4	Assess opportunity to improve current design of Wilson Street subway as a key north-south access for pedestrians and cyclists of all abilities	Public Transport Authority/ Department of Transport/ Town of Bassendean	Short
	AT8	Create Town of Bassendean micro-funding account for small active transport improvements	Town of Bassendean	Short

	<b>Proposal</b>	<b>Responsibility</b>	<b>Priority</b>	
<b>Road network</b>	<b>RN1</b>	Advocate for an alternative treatment to MRWA's proposal for Guildford Road corridor ( <u>western Town boundary to West Road</u> ) to one which : <ul style="list-style-type: none"> <li>• Balances local access needs and amenity, transit-oriented development, multimodal safety and comfort, and strategic network objectives</li> <li>• Achieves signalisation of Colstoun Road/ Guildford Road intersection</li> <li>• Retains key local street links under suitable traffic management</li> </ul>	WAPC/ Main Roads WA/Town of Bassendean	Short (ongoing advocacy)
	<b>RN2</b>	Advocate for an alternative treatment for Guildford Road corridor ( <u>West Road to Swan River</u> ) to one which: <ul style="list-style-type: none"> <li>• Balances local access needs (both in the Town and adjoining Guildford centre) and amenity, transit-oriented development, multimodal safety and comfort, and strategic network objectives</li> <li>• Achieves reasonable signal phasing at intersection of Guildford Road/West Road associated with Lord Street/ West Road bridge widening and anticipated intersection upgrade</li> <li>• Retains key local street links under suitable traffic management (in particular Guildford Road/North Road/Earlsferry Court)</li> </ul>	WAPC/ Main Roads WA/Town of Bassendean	Short
	<b>RN3</b>	Convert Walter Road East from four travel lanes to two with median division	Town of Bassendean/Department of Planning, Lands and Heritage	Medium
	<b>RN5</b>	Advocate for traffic signal and boom gate synchronisation at Collier Road/Guildford Road	Main Roads WA/Public Transport Authority	Short– interim measure ahead of more suitable grade-separation treatment as part of METRONET programme

	Proposal	Responsibility	Priority
	<b>RN6</b> Assess potential to signalise intersection of Railway Parade/Lord Street	Town of Bassendean/Main Roads WA	Short – engineering feasibility and modelling required to ascertain impacts with a view to deciding whether this proposal should be adopted
	<b>RN8</b> Design and consult to further refine proposed conversion of Walter Road East/Lord Street/Seventh Avenue to four-way signalised intersection (and conversion of Success Road access to left-in/left-out)	Town of Bassendean/Main Roads WA	Short – engineering feasibility and modelling required to ascertain impacts with a view to deciding whether this proposal should be adopted
	<b>RN9</b> Undertake further investigation to support alternative design concept (boulevard with central median) for Lord Street south of Morley Drive	Town of Bassendean/Department of Planning, Lands and Heritage	Short: planning studies and analysis Medium/ Long: implementation/works
	<b>RN10</b> Create a pedestrian friendly town centre and community centres through implementing self explaining streets design and management principles to encourage slowing of vehicular traffic	Town of Bassendean	Short
	<b>RN11</b> Review and update Town LATM and Bike Plans	Town of Bassendean	Short
<b>Land Development</b>	<b>LD1</b> Focus development/ uplift around main transit assets including Ashfield, Bassendean and Success Hill train stations, and major bus routes including Ivanhoe Street and Walter Road East	Town of Bassendean/State Government	Short
	<b>LD2</b> Investigate mixed-use redevelopment of the Bassendean park-and-ride site contingent on agreement with Public Transport Authority regarding possible reduction in park-and-ride demand associated with Morley-Ellenbrook	Public Transport Authority/Town of Bassendean	Medium

	Proposal		Responsibility	Priority
Governme	GP1	Establish new fleet procurement protocols in line with transport vision for Bassendean	Town of Bassendean	Short

## 6.1 Limitations

The Bassendean Transport Study was commissioned as a strategic review of the existing multimodal transport and access, and parking context in the LGA and across boundaries to identify SWOT, and define thereafter strategic actions and priorities to support the aims of the project (see **Section 1**). Project scope did not include traffic modelling excepting review of base year network metrics (calibration data, traffic forecasts and volume-to-capacity ratios) and base case forecasts for 2021 and 2031 produced by ROM. Provision was made for scenario-testing in ROM but the long- and short-listing process of strategies and actions did not identify any variables suitable to evaluate at this resolution.

In addition, scope did not include provision for engineering feasibility assessments, full concept designs or cost estimation. These are activities pending to advance project recommendations from proposal to delivery.