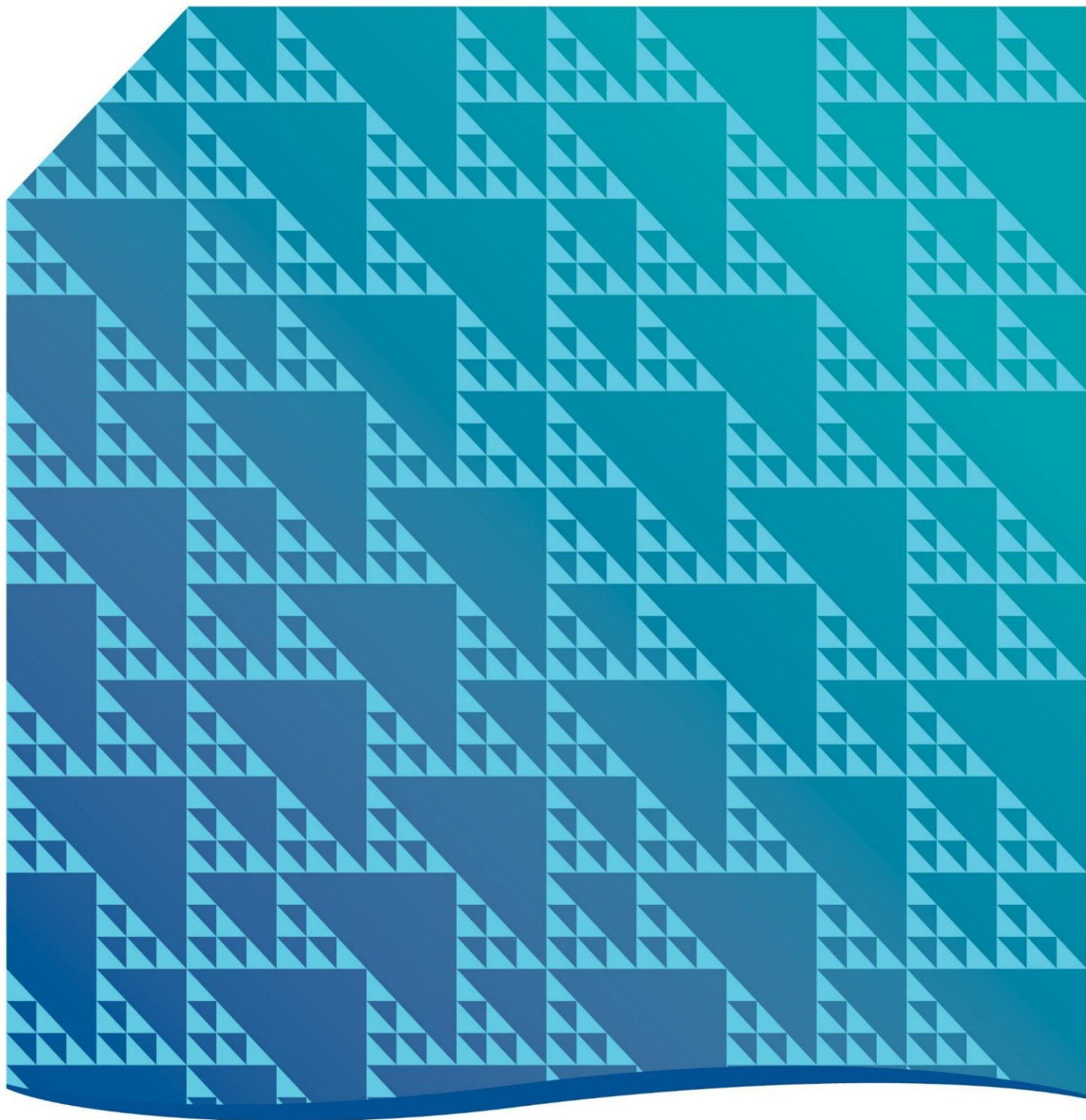


February 2022

West Tamar Highway Corridor Improvement Plan



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Executive Summary

The Study

The Department of State Growth (the Department) has completed a corridor study along the West Tamar Highway between McEwans Road (north of Legana) and Margaret Street in the Launceston CBD.

The purpose of this study was to identify corridor improvement projects to create a safer and more reliable road network leading to the development of a Corridor Improvement Plan.

The study was funded by the Tasmanian Government as part of the implementation of the Launceston and Tamar Valley Traffic Vision. The Launceston and Tamar Valley Traffic Vision aims to address congestion and improve safety and travel time reliability on the Launceston and Tamar Valley road network.

The study involved completing:

- identification of existing and emerging issues on the corridor
- establishment of long list options
- rapid multi-criteria analysis
- investment logic mapping
- shortlisting options
- option assessment.

The Corridor Improvement Plan

The Corridor Improvement Plan identifies a range of options for improving the safety, traffic efficiency and corridor accessibility of the West Tamar Highway between Launceston and Legana. The concepts were shortlisted as 13 improvement opportunities. During the course of the study and supported by consultation feedback, one improvement opportunity regarding bus services was separated into two, creating 14 improvement opportunities overall.

The opportunities are prioritised by the Department and cost estimates are developed by the Department for funding approval to guide investment over the next 20 years.

Key stakeholders and the public provided valuable input into the two project stages, and identified key issues on the corridor, which informed short-listing, as well as provided feedback on the proposed improvement opportunities. The Department used this feedback to inform the final Corridor Improvement Plan, and the outcomes will guide subsequent planning and design stages of this project.

The Corridor Improvement Plan identifies 14 proposed improvement opportunities packaged within eight projects focussed around achieving improved traffic flow, road safety outcomes and increased corridor accessibility for the West Tamar Highway Corridor. These improvements generally include:

- speed limit review
- duplication works for specific highway sections
- access and network connectivity improvements
- provision of additional cycling facilities
- alignment upgrades at key locations
- intersection upgrades including pedestrian safety measures
- traffic signal optimisation
- improvements to bus services.

The Corridor Improvement Plan, comprising the eight project packages, is shown on a map of the West Tamar Highway corridor in Figure 1.

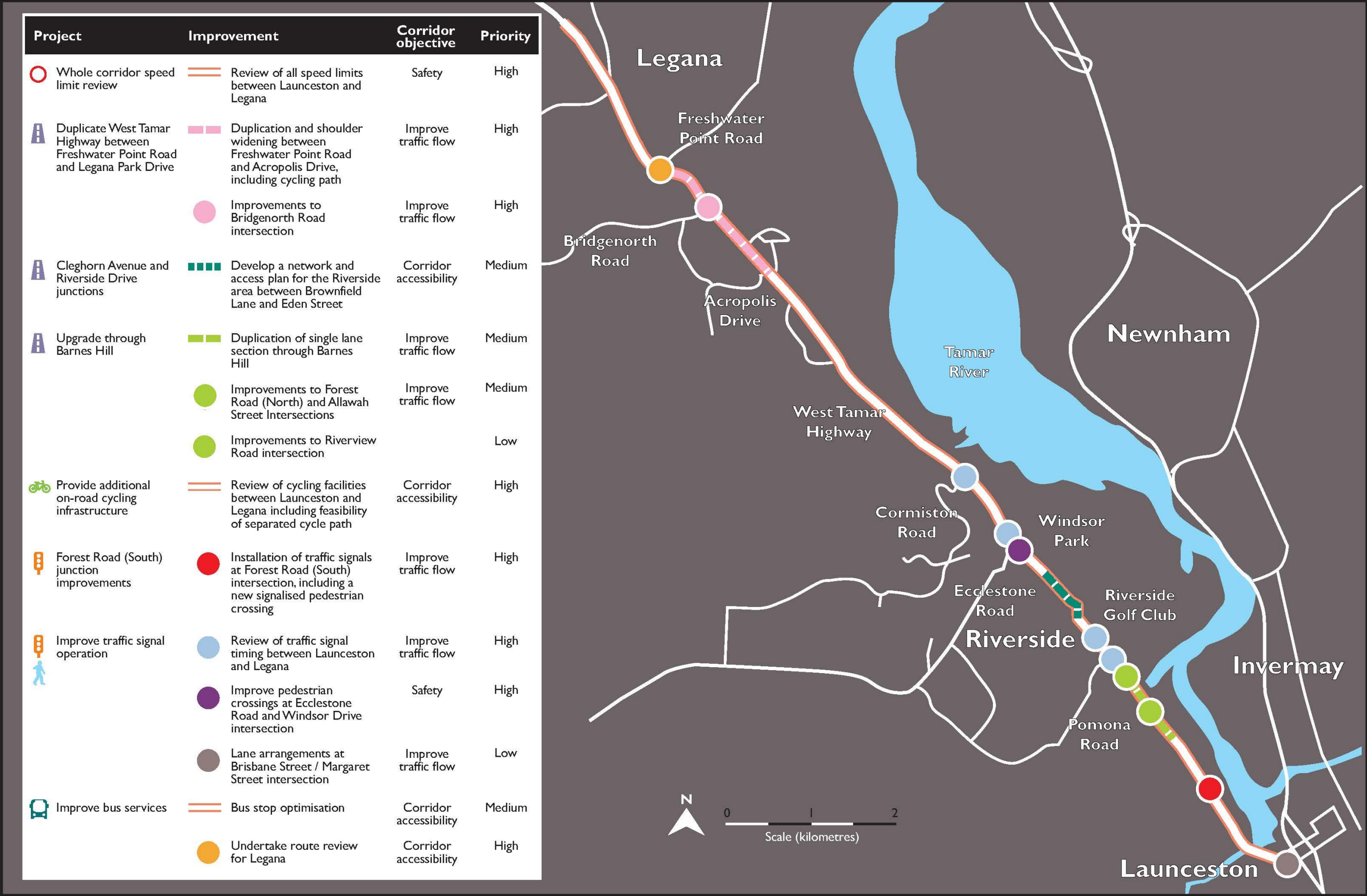


Figure 1 West Tamar Highway Corridor Improvement Plan

I Introduction

The Department of State Growth (the Department) has completed a corridor study along the West Tamar Highway between McEwans Road in the north and Margaret Street in the south, in the West Tamar and City of Launceston municipalities. The purpose of this study was to identify corridor improvement projects to create a safer and more reliable road network leading to the development of a Corridor Improvement Plan.

This Corridor Improvement Plan details the benefits and priorities of the selected corridor improvement projects. Prioritisation of options is based on an assessment of the benefits of the option compared with the cost and difficulty to implement. The Corridor Improvement Plan will enable the Department to make informed decisions on the feasibility of each of the options being considered.

I.1 Strategic Context

In 2018 the Tasmanian Government committed to the implementation of the Launceston and Tamar Valley Traffic Vision to improve safety and travel time reliability and address congestion on the Launceston and Tamar Valley road network. The Vision includes a suite of projects to better connect people to work, school and community and to provide better freight routes. Within the Vision, Legana has been identified as the preferred major urban growth area and Riverside as the area for in-fill residential development.

In 2019 the Department commenced preparation of the West Tamar Highway Corridor Study and to undertake a feasibility assessment of a new crossing of the Tamar River. The inter-relationship of the two studies is where outcomes from the two studies affect the efficiency and reliability of the Greater Launceston road network, such that the outcomes from one study may influence the outcomes of the other. This overlap occurs where the various options and scenarios identified in each study result in changes to traffic volumes, mode choice, and traffic distributions. A common element to both the West Tamar Highway Corridor Study and the Tamar River Crossing Feasibility Assessment are the heavy vehicle movement trends, which will influence, and be influenced by, the outcome of both studies.

A strategic review of the West Tamar Highway corridor was undertaken in 2020, which identified the strategic context of the corridor with respect to local and state level planning and policy frameworks. The review also documented the existing and future performance with regard to land use patterns, vehicular traffic, public transport, active transport, and road safety. The final outcome from the analysis undertaken was a list of 62 options varying in nature from policy changes to large scale infrastructure improvements. These options were identified for further assessment, due to their perceived potential for improving the performance of the West Tamar Highway and their strategic alignment with existing plans and policies.

An options assessment report was completed in 2021 which set out the identification, assessment and short listing of options for the West Tamar Highway for inclusion in this Corridor Improvement Plan. This second stage commenced with the formation of a working group, consisting of the Department, City of Launceston and West Tamar Council representatives who assisted steering the options development, analysis and assessment. The final outcome from the analysis completed in this stage was a list of eight corridor improvement packages for inclusion in this Plan.

I.2 Improvement Plan Objectives

The objectives of the Improvement Plan are as follows:

- Identify corridor improvement projects to create a safer and more reliable road network
- detail the potential benefits of improvement opportunities

- detail the potential estimated cost of the proposed corridor improvement projects
- provide detail, including the scale, whether property acquisition is required, and priority of implementation, to allow informed decisions to be made on the feasibility of the options being considered.

2 Key Corridor Considerations

Key considerations for the corridor were identified as part of the strategic review of the West Tamar Highway corridor and through consultation with the community and stakeholders.

High level outcomes from the corridor assessment are provided below.

- Car dependency:
 - urban growth in the north of the West Tamar municipality is leading to increased congestion on the West Tamar Highway
 - there is a lack of alternative transport choices which is reinforcing high rates of car dependency. This is primarily driven by the provisions for public transport, cycling and walking falling short of aspirations from the relevant plans and strategies.
- How the West Tamar Highway should function:
 - the role of the West Tamar Highway within the greater Launceston road network needs to be better defined
 - there is a conflict between local and through movements on the West Tamar Highway, particularly at key activity centres (schools and shopping centre), which is leading to increased delays and safety risk
 - speed zones appear to conflict with the surrounding land use and need to be reviewed.

Utilising these key considerations, existing corridor issues were investigated further and used to inform the options development and analysis (Section 5.1 – Options Development and Analysis). These corridor issues correlate with the outcomes of the investment logic mapping (ILM) (Section 2.1.1).

2.1.1 Investment Logic Mapping

An ILM workshop was held at the start of the study to frame the problems associated with the West Tamar corridor and what outcomes and desired benefits are to be achieved.

ILM is a structured workshop that brings together key stakeholders to ensure there is early agreement on problems, outcomes and benefits before any investment decisions are made. It is an informed discussion based on sound investment management principles that will:

- give an opportunity for different perspectives to be shared and respectively challenged
- create an opportunity to draw links across organisations about what is known
- provide a clearer view of what we know from the people who know the most, and the quality of the evidence available which will underpin the discussion.

Key outcomes from the session included:

- the identification of car dependency due to urban growth and lack of alternative transport choices
- the need to define the role of the West Tamar Highway within the Greater Launceston network
- the identification of conflict between local and through movements and between speed zones and surrounding land uses.

A summary of the problems and benefits that were concluded from the ILM are detailed in **Error! Reference source not found..**

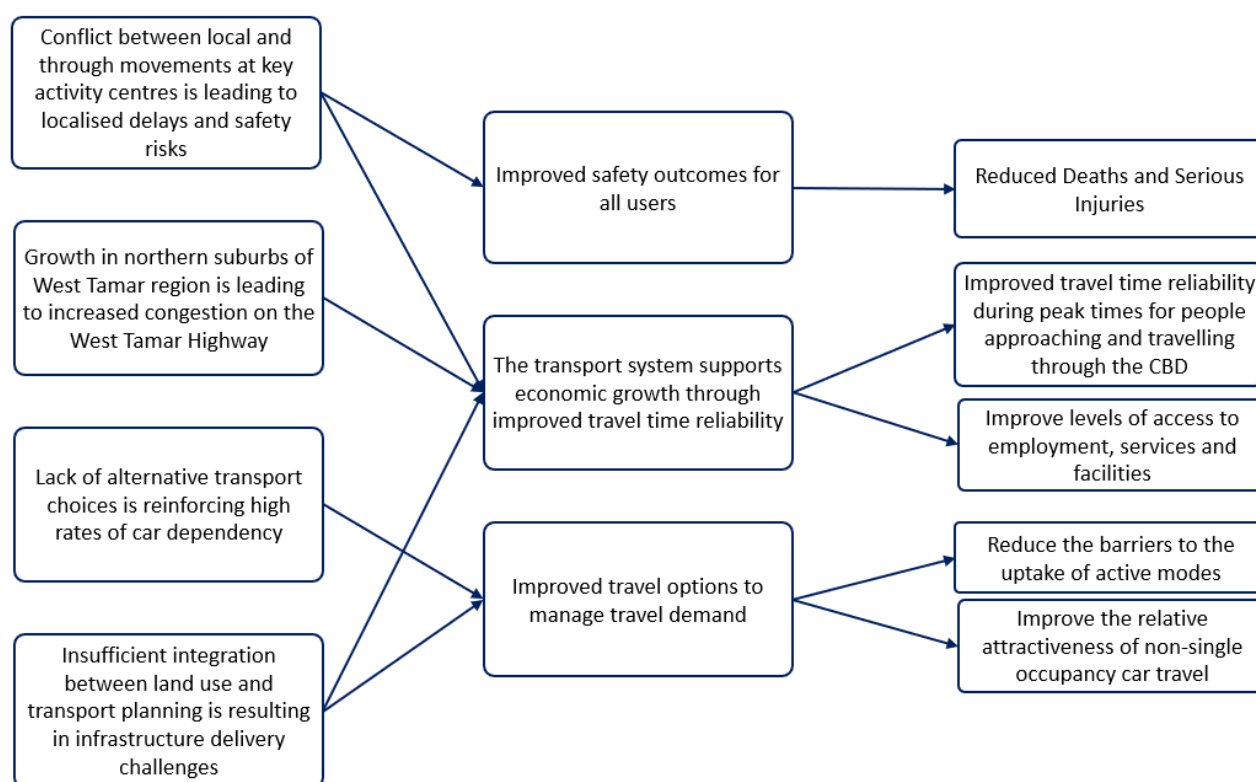


Figure 2 Investment logic mapping outcomes

2.2 Traffic Volumes and Corridor Performance

As part of the corridor performance assessment it was identified that a number of key areas could be addressed to improve the road safety, access and traffic efficiency along the corridor. Improvements to the capacity, intersection safety, general road safety, and increasing active and public transport.

The performance of the West Tamar Highway corridor under existing and future traffic volumes is a key consideration for the corridor. Several issues associated with traffic demand and corridor performance were identified as currently existing on the West Tamar Highway. These can be broken down into the following categories.

- Traffic efficiency – how well the highway can accommodate the current traffic volumes:
 - there are sharp peaks in traffic volumes correlating with travel to/from work and school. These peaks result in congestion experienced at key locations and increased travel times during the peaks
 - observations in travel time data suggest there is high variability in corridor travel times, indicating a potential vulnerability in the network to incidents/increases in volume
 - there are high volumes of side road traffic at the unsignalised intersection with Cleghorn Avenue, indicating that this intersection may require upgrading
 - there are high volumes of side road traffic at the roundabout controlled intersection with Freshwater Point Road, indicating that this intersection may require upgrading

- interaction at the Wellington/Bathurst couplet with the Brisbane/York (West Tamar) couplet, which prioritise Wellington Street and Bathurst Street, decreases the performance of the West Tamar Highway
- there is a conflict between local and through movements at key activity centres, leading to localised delays
- there is a lack of alternative transport choices available and associated infrastructure, reinforcing high rates of car dependency.
- Asset resilience – how well the corridor can cope with non-typical conditions:
 - there is a disconnect between land use growth and demand management. This could result in more vehicles attempting to access the corridor than the corridor can cope with
 - there are limited feasible options to cross the South Esk and Tamar rivers from West Tamar. A closure of the bridge across the South Esk River would result in significant inconvenience and detour distances to users.

2.3 Road Safety

Several road safety issues were identified on the West Tamar Highway. These can be considered as areas and conditions which may be unforgiving to motorist error, vulnerable road users including pedestrians and cyclists, or where there is conflict between highway functions, including the following:

- poor highway maintenance and lighting in some locations that may reduce a driver's ability to interpret the road conditions
- a number of intersections were identified as having poor safety outcomes
- speed limits being inconsistent with surrounding land use and road function
- a high number of uncontrolled property accesses
- limited connectivity and safety for pedestrians desiring to cross the highway and Tamar River
- limited dedicated cyclist facilities forcing cyclists into the general traffic lanes
- a conflict between through movements and local accesses
- a conflict between local and through movements at key activity centres.

2.4 Public Transport

The following public transport issues were identified:

- depending on where people live on the corridor there may be barriers to accessing public transport choices on the corridor, potentially reinforcing high rate of car dependency
- when compared with private vehicles, bus services on the West Tamar corridor can be perceived to provide a lesser comparative level of service, making them potentially unattractive to choice-users.

2.5 Active Transport

Several issues connected with active transport were identified as follows:

- there is a lack of suitable infrastructure available to support active transport users, reinforcing high rates of car dependency
- there is a discontinuous bicycle/pedestrian network, which limits the viability of active transport as a potential travel choice
- there is limited connectivity and safety for pedestrians desiring to cross the highway and Tamar River
- there are limited dedicated cyclist facilities forcing cyclists into the general traffic lanes.

3 Future Needs

In order to create a safer and more reliable road network, the future needs of users of the corridor were considered. As part of the Stage 1 assessment, emerging issues relating to the key considerations (Section 2 – Key Corridor Considerations) were predicted.

Consideration of these issues, as well as the identified existing issues, is important in creating a Corridor Improvement Plan that will result in long-term improvements for road users. Thus, these emerging issues were used to inform the options development and analysis (Section 5.1 – Options Development and Analysis).

A summary of key considerations in respect to future needs are provided as follows.

- Traffic efficiency:
 - growth in the northern suburbs of the West Tamar region will lead to increased congestion on the West Tamar Highway
 - the efficiency of traffic signals will decrease over time unless cycle and phase times evolve with the changing traffic conditions
 - increase in cycling mode share is limited by poor cycling infrastructure
 - lack of priority for bus services limits the attractiveness of bus as a travel choice, and thus limits its potential growth.
- Safety:
 - it is predicted that, due to expected traffic volume increases, there will be a significant decrease in safety performance on West Tamar Highway between Ecclestone Road and Cormiston Road, as well as between Pomona Road and Cleghorn Avenue.
- Asset resilience:
 - infrastructure along the corridor is currently not maintained at a level that will be able to accommodate urban development growth and emerging transport trends
 - the readiness of the highway to accommodate the anticipated growth and emerging transport trends in its current configuration is limited.

3.1 Public Transport and Active Transport

Public transport and active transport are key considerations for the West Tamar Highway corridor and the surrounding community and are a key focus in the development of the Corridor Improvement Plan. As outlined in Section 2 and 3, there are several existing and emerging issues for active and public transport on the West Tamar Highway corridor including a lack of active and public transport choices available, a discontinuous active transport network, limited active transport connectivity and facilities, perceived low frequency bus services and a lack of priority.

Provision of adequate and safe cycling infrastructure was a key theme resulting from both stages of stakeholder and community consultation, as well as safe crossing opportunities of the highway for pedestrians, as summarised in Section 4. Improvements to public transport services and facilities were also strongly supported by key stakeholders and the community.

These issues were considered in the development and analysis of options for inclusion in the Corridor Improvement Plan. The corridor improvement projects included in the Corridor Improvement Plan include benefits to public and active transport, as detailed in Section 5.2.

Increasing modal options through active and public transport improvements is strongly aligned to existing strategies and policies within the Greater Launceston area and Tasmania more broadly. Namely the following

strategies seek to address the lack of active and public transport choices for the Launceston and West Tamar communities:

- *Greater Launceston Transport Vision 2020*
- *Launceston Network Operating Plan 2020*
- *Tasmanian Walking and Cycling for Active Transport Strategy*
- *Greater Launceston Metropolitan Passenger Transport Plan (2016)*
- *Transport Access Strategy*
- *Tasmanian Urban Passenger Transport Framework (2010)*
- *Draft West Tamar Trails Strategy (2021)*
- *Launceston Bike Strategy (2012)*
- *Legana Structure Plan (2014)*
- *Legana Town Centre Structure Plan (2014)*
- *Northern Tasmania Regional Land Use Strategy (2021).*

The Tasmanian Government's *Positive Provision Policy for Cycling Infrastructure* (2013) provides a tool for ensuring provision for cycling is considered and objectively evaluated at the commencement of the scoping of Tasmanian Government transport projects.

The Draft West Tamar Trails Strategy currently being developed by the West Tamar Council offers a useful opportunity to integrate cycling objectives between the two levels of government for this region. The strategy aims to provide strategic direction to guide the development of trails within the municipality towards a comprehensive trail network that is accessible for all and promotes active living, recreation and encourages tourism. For the Corridor Improvement Plan, it will be important to ensure any recommendations for cycling facilities is complementary to the strategy. A number of trails within the strategy fall within the study area of this Corridor Improvement Plan, which are as follows.

- **West Tamar Highway Cycling Trail** - a 76 km cycling trail along the West Tamar Highway between Launceston and Greens Beach. The strategy defines cycling trails as those trails that are unsuited to pedestrian use. Typically in this study this is because they are located on-road.
- **Western Tamar Valley Cycling Trail** – a proposed 53.1 km cycling trail along Bridgenorth, Notley Gorge, Frankford and Holwell Roads between Legana and Beaconsfield. A connection to the West Tamar Highway Cycling Trail proposed at Bridgenorth Road.
- **Legana Foreshore Trail** – a proposed 10.8 km shared trail along the Legana foreshore between Tamar Island and Rosevears Drive. The strategy defines shared trails as those designed to accommodate a range of recreational and commuter uses, including walking, cycling, running, non-motorised vehicle uses and horse riding in some cases. Typically the width of shared paths is 2.5-3 m, however in this study those paths that are intended for shared use or have the potential for shared use are included whether or not this width requirement is met.
- **Tamar Island Trail** – a proposed 7 km shared trail along the Tamar River foreshore from Tailrace Park to the Tamar Island Visitors Centre.
- **West Tamar Fitness Trail** – an existing 1.7 km shared trail between the West Tamar Highway and the foreshore, connecting Launceston and Tailrace Park.

4 Community Engagement

4.1 Engagement Summary

Throughout the corridor review and assessment process, engagement activities were undertaken with a range of stakeholders, including residents, road users, community groups and public transport service providers.

An Investment Logic Mapping workshop was held in September 2019 with representatives from the Department, City of Launceston, West Tamar Council, Bicycle Network and RACT. Meetings were also held with elected members from City of Launceston and West Tamar Council in December 2019, with an update to West Tamar Council elected members in July 2021.

During the Stage 1 consultation period in April/May 2020, the public and key stakeholders provided valuable input and suggested a range of possible improvements for the West Tamar Highway. A total of 576 pieces of feedback were received. Feedback was received via Social Pinpoint, Facebook, email, feedback forms and formal submissions. The feedback received during the Stage 1 consultation was used to inform the options development and analysis of the corridor (see Section 5.1 – Options Development and Analysis). This was to ensure stakeholder and community issues were included in the decision-making process. The full summary of feedback from Stage 1 is provided in *West Tamar Highway – Launceston to Legana Corridor Study Interim Community Consultation and Feedback Report 2020*.

Stage 1 feedback was collated with traffic data and assessed by the Department. Improvement opportunities were developed by the Department based upon criteria including safety, constructability, value for money and public interest.

The improvement opportunities were presented to the public and key stakeholders during the Stage 2 community engagement process. During the Stage 2 consultation period, a total of 344 pieces of feedback were received. Feedback was received via Social Pinpoint, Facebook, email, letters, feedback forms and formal submissions.

The feedback received was used to confirm the priority projects for the corridor (see Section 5.1.4 and 5.2.9). The full summary of feedback from Stage 2 is provided in *West Tamar Highway – Launceston to Legana Community Consultation and Feedback Report (2021)*.

4.2 Stage I Feedback Summary

A total of 576 pieces of feedback were received during the Stage I consultation between 22 April 2020 and 7 May 2020. Feedback was received through the following channels:

- 278 comments from 150 individuals via Social Pinpoint
- 182 comments over the two RoadsTas Facebook posts
- 90 feedback forms
- 26 direct emails and formal submissions.

The feedback themes were grouped into six key themes (of no particular order) as detailed in Table I below.

Table I Stage I feedback summary

Theme	Feedback
1. Cycling safety and infrastructure	A dedicated, well-lit cycleway/pathway is urgently needed along the whole corridor to improve safety for cyclists and pedestrians and to encourage increased participation in active transport.
	Cycling safety is a major concern on this section of the highway, both in terms of the condition and width of the road shoulders and driver and cyclist behaviour.
2. Congestion	There is congestion at Riverside High School with parental drop offs and school buses.
	There is significant congestion from the Legana roundabout on the single lane to the industrial park roundabout and from the South Esk Bridge to Margaret Street every weekday morning.
	Improvements need to be made to the road and lane design between Cormiston and Pomona Roads to alleviate congestion during school drop-off and pick-up periods.
3. Speed limits	Speed limits on the corridor are a concern. Suggestions have been made to decrease the speed limits in certain areas, and other suggestions have been made to raise the speed limits in certain areas.
4. Tamar River crossing	There is a high level of support for the Tamar River crossing, however there is debate about where this crossing should be located.
5. Public transport	Consideration should be given to the development of a park and ride facility in the West Tamar region to transport people to the Launceston CBD.
	The location of bus stops needs to be reviewed.
	Bus services on the corridor are infrequent.
6. Safety	The northern intersection of Forest Road is poorly aligned with Allawah Street, which increases the risk for traffic crossing the highway.
	Some side streets may need to be closed off from the highway in order to funnel traffic towards other, safer points to enter or exit the highway.
	There are few decelerating lanes available to allow traffic to slow down before turning into a side street.
	Pedestrian safety could be improved, as currently some sections of the highway do not have footpaths, or have dangerous footpaths, and additional pedestrian crossings are required.

4.3 Response to Stage I Feedback

The feedback received during Stage I was used to inform the options development and analysis for the corridor.

Following the assessment of the Stage I feedback, the Department developed 13 improvement opportunities based upon criteria including safety, constructability, value for money and public interest. The 13 improvement opportunities are below.



1. Review of all speed limits between Launceston and Legana



2. Consider options to improve pedestrian crossing between Ecclestone Road and Windsor Drive and across the left turn slip lane from West Tamar Highway to Ecclestone Road



3. Review of traffic signal timing between Launceston and Legana



4. Duplication and shoulder widening between Freshwater Point Road and Acropolis Drive



5. Duplication of single lane section through Barnes Hill



6. Improvements to Bridgenorth Road intersection



7. Improvements to Cleghorn Avenue and Riverside Drive intersections



8. Improvements to Forest Road (North) and Allawah Street intersections



9. Improvements to Riverview Road intersection



10. Installation of traffic signals at Forest Road (South) intersection, including a new signalised pedestrian crossing



11. Changes to lane arrangements at Brisbane Street/Margaret Street intersection



12. Review of on-road cycling facilities between Launceston and Cormiston Road



13. Review of bus services between Launceston and Legana (including frequency and bus stop locations)

4.4 Stage 2 Feedback Summary

Between 21 July 2021 and 18 August 2021, the identified improvement opportunities (Section 4.3) were shared with the public and key stakeholders during Stage 2 via an online interactive map, the Transport website and Facebook page and displayed at the West Tamar Council Riverside office.




A total of 344 pieces of feedback were received through the following channels:




- 231 comments from 117 individuals via the Social Pinpoint interactive map
- 89 comments over two RoadsTas Facebook posts
- 11 feedback forms and letters
- 13 emails and formal submissions.






The improvement opportunities presented during Stage 2 are provided in Table 2 below including a summary of the feedback received.



Note: As the feedback received was qualitative, where possible the feedback has been interpreted based upon sentiment, for example, the overt support or opposition to each improvement opportunity presented. Some feedback received did not relate to any of the improvement opportunities presented.

Table 2 Stage 2 feedback

Improvement Opportunity (with Social Pinpoint description)	Feedback Themes
 <p>1. Review of all speed limits between Launceston and Legana. <i>The intention of this review is to better match speed limits to standards as well as driver expectations and the current road environment. The final decision in relation to the speed limits will need to go through a formal review process.</i></p>	<p>Twenty-two pieces of feedback were received on this improvement opportunity. A review of speed limits was supported by respondents. Of the feedback received, 18 were in support and two were in opposition. The feedback had differing opinions regarding what the reviewed speed limits should be.</p>
 <p>2. Consider options to improve pedestrian crossing between Ecclestone Road and Windsor Drive and across the left turn slip lane from West Tamar Highway to Ecclestone Road. <i>Upgrades are proposed to increase the level of safety for pedestrians crossing. Upgrades might include the formalisation of the pedestrian crossing of the left turn slip lane from West Tamar Highway to Ecclestone Road with a zebra crossing and signage or similar and a review of signal operation and crossing layout of the northern crossing point between Ecclestone Road and Windsor Drive.</i></p>	<p>Eight pieces of feedback were received on this improvement opportunity. Of the feedback received, four respondents were in support and four were in opposition. Four respondents requested either an underpass or overpass of the pedestrian crossing between Ecclestone Road and Windsor Drive.</p>
 <p>3. Review of traffic signal timing between Launceston and Legana. <i>Review traffic signal timing and coordination to improve traffic efficiency, including pedestrian signalised crossings. Intersections considered include Cormiston Road, Ecclestone Road, Riverside Drive, Pomona Road and Margaret Street.</i></p>	<p>Fifteen pieces of feedback were received on this improvement opportunity. Of the feedback received, 13 were in support and no respondents indicated opposition. Seven respondents supported the synchronisation of signals along the entire section of highway, especially during peak times.</p>

Improvement Opportunity (with Social Pinpoint description)	Feedback Themes
 <p>4. Duplication and shoulder widening between Freshwater Point Road and Acropolis Drive. <i>This improvement would duplicate the existing single carriageway between Freshwater Point Road and Acropolis Drive to improve traffic efficiency and cater for expected growth and widen the road to provide southbound sealed shoulders between Bridgenorth Road and Legana Park Drive to improve safety for vehicles and cyclists.</i></p>	<p>Thirty-seven pieces of feedback were received on this improvement opportunity. Of the feedback received, 28 were in support and one respondent indicated opposition to the proposal. Eight respondents were concerned about the impact the proposed school would have on this section of road, especially during school drop-off and pick up. Six respondents suggested the roundabouts at Freshwater Point Road and Acropolis Drive be upgraded to dual lanes.</p>
 <p>5. Duplication of single lane section through Barnes Hill. <i>We are currently looking at options to duplicate the single lane section of Barnes Hill to include two traffic lanes and a cycle lane in the northbound direction. This area is highly constrained, and consideration will need to be made to the impacts to property accesses and parking, as well as accommodation of large vehicles.</i></p>	<p>Forty-six pieces of feedback were received on this improvement opportunity. Of the feedback received, 17 were in support and 25 were in opposition. Seven respondents raised concerns about the need for property acquisition and the impact this would have on the property owners. Twenty-one respondents either wanted an alternative solution or suggested alternative solutions. The alternative solutions included:</p> <ul style="list-style-type: none"> • a slip or merge lane • a speed reduction • traffic signals at Forest Road (South) intersection • removal of the bike lane to make up the space required for duplication • a service lane off Deans Lane for safer residential access • grade separation of the section of highway between Deans Lane to Allawah Street • the construction of a new Tamar River crossing or a Riverside bypass. <p>Eight respondents indicated they were directly impacted residents and were concerned the duplication of the highway in this area would make it dangerous for residents and pedestrians.</p>
 <p>6. Improvements to Bridgenorth Road intersection. <i>We are currently looking at upgrade options to improve the intersection at Bridgenorth Road. This upgrade may include an uncontrolled intersection with acceleration lanes, installation of traffic signals or a roundabout.</i></p>	<p>Twenty-one pieces of feedback were received on this improvement opportunity. Of the feedback received, 19 were in support and one respondent indicated opposition to the proposal. Sixteen pieces of feedback were supportive of a roundabout and five pieces of feedback were supportive of traffic signals. Two respondents raised concerns about pedestrian safety, regardless of the improvement solution. Five respondents highlighted the need to consider the entry to the new proposed school and how this could be provided through improvement to the Bridgenorth Road intersection.</p>

Improvement Opportunity (with Social Pinpoint description)	Feedback Themes
 <p>7. Improvements to Cleghorn Avenue and Riverside Drive intersections. <i>There is potential to improve the access and egress arrangements for the intersections of Cleghorn Avenue, Riverside Drive and Brownfield Lane with the West Tamar Highway, which would improve performance and safety.</i></p>	<p>Nineteen pieces of feedback were received on this improvement opportunity. Of the feedback received, 13 were in support and two were in opposition. Seven respondents suggested improved access to Riverside High School. Three respondents were in support of traffic signals at Brownfield Lane and two respondents in support of a roundabout at Brownfield Lane. Five respondents suggested having more visible signage of the 50km speed limit in the vicinity of the schools. Two respondents queried the need to drive through a car park to access the area.</p>
 <p>8. Improvements to Forest Road (North) and Allawah Street intersections. <i>There is potential for improvements to the alignment and line marking of the Allawah Street intersection and improved access from Forest Road (North).</i></p>	<p>Ten pieces of feedback were received on this improvement opportunity. Of the feedback received, nine were in support. No respondents indicated opposition of this proposal. Five respondents suggested specific improvements. The improvements included:</p> <ul style="list-style-type: none"> • a merge lane onto the highway • synchronisation of traffic lights • if dual lanes were constructed (see Duplication of single lane section through Barnes Hill improvement opportunity #5), then a barrier between the two lanes so that traffic is unable to cross, creating a safer exit from Forest Road (North). <p>Four respondents indicated improvement to safely accessing Allawah Street was needed.</p>
 <p>9. Improvements to Riverview Road intersection. <i>Potential improvement options include creating a new right turn lane in the southbound direction, extending the existing northbound right turn lane and improving line marking.</i></p>	<p>Five pieces of feedback were received on this improvement opportunity. Of the feedback received, two were in support and three were in opposition. Two respondents suggested traffic signals at this intersection, rather than lane or line marking changes.</p>
 <p>10. Installation of traffic signals at Forest Road (South) intersection, including a new signalised pedestrian crossing. <i>This improvement would install traffic signals at the Forest Road (South) intersection, including a new signalised pedestrian crossing. This upgrade will improve access and egress for traffic from Forest Road onto the highway and improve safety for pedestrians crossing the highway to access the West Tamar Trail.</i></p>	<p>Twenty-five pieces of feedback were received on this improvement opportunity. Of the feedback received, 15 were in support and nine were in opposition. Five respondents raised the need to increase pedestrian safety in this area. Two submissions suggested a roundabout, one a slip lane and one respondent suggested a new Tamar River crossing.</p>
 <p>11. Changes to lane arrangements at Brisbane Street/Margaret Street intersection. <i>Review the lane arrangement at Margaret Street junction to potentially increase the number of through lanes on the West Tamar</i></p>	<p>Eight pieces of feedback were received on this improvement opportunity. Of the feedback received, four were in support and two were in opposition. Three respondents suggested moving the bus stop which can block the left lane of the intersection and</p>

Improvement Opportunity (with Social Pinpoint description)	Feedback Themes
<p><i>Highway approach and increase the length of the left and right turn lanes.</i></p>	<p>is considered an unsafe location for children crossing the street in this area.</p>
<p> I2. Review of on-road cycling facilities between Launceston and Cormiston Road. <i>This option would review the gaps in current and newly built cycling facilities to greatly improve safety for bike riders and improve the performance and reliability of travel along the corridor. Further impacts on parking and access will need to be considered.</i></p>	<p>Twenty-eight pieces of feedback were received on this improvement opportunity, including three formal submissions from RACT, Bicycle Network and Tamar Bicycle Users Group. Of the feedback received, 24 indicated support for the proposal and two were in opposition. Seventeen respondents, including Bicycle Network and Tamar Bicycle Users Group, suggested the construction of an off-road shared path between Launceston and Legana instead of concentrating on just on-road facilities. Nine respondents recommended the review include the entire length of the West Tamar Highway rather than only between Launceston and Cormiston Road.</p> <p>RACT also suggested measures such as:</p> <ul style="list-style-type: none"> • an on-road separated cycleway between Riverside and Launceston for commuter cyclists • extension of the shared path beyond the Tailrace Centre at Riverside through to the Tamar Island wetlands and Legana • provision of recreational cycling facilities between Legana and Riverside. <p>Bicycle Network commented that off-road shared paths will encourage a much wider group of cyclists and noted the proposed school at Legana will increase demand for off-road cycling. Six respondents, including Bicycle Network and Tamar Bicycle Users Group, suggested there is a need to ensure paths are sealed, well-lit and free of material that cause hazard to cyclists, such as rubbish and loose debris.</p>
<p> I3. Review of bus services between Launceston and Legana (including frequency and bus stop locations). <i>The review of bus services along the West Tamar Highway corridor could include more direct routes via the West Tamar Highway, an increase in bus frequency and rationalisation of bus stops to provide more efficient spacing.</i></p>	<p>Twelve pieces of feedback were received on this improvement opportunity, including a formal submission from RACT. Of the feedback, all were in support. Seven respondents requested more frequent buses, especially at peak times. Three respondents requested an extension of the Metro Tasmania bus network past Legana and improved bus stop signage. Two respondents suggested a park and ride facility at Riverside. RACT suggested any works should consider prioritisation measures for buses and the development of dedicated infrastructure could incentivise public transport and help to alleviate congestion, particularly if implemented between Riverside and Launceston.</p>

4.5 Response to Stage 2 Feedback

The feedback received during the Stage 2 consultation was used to confirm the priority projects for the corridor. The engagement conclusions and community sentiment are presented in Table 3 Section 5.1.4 as part of the Options Assessment discussion. As part of this assessment an additional improvement option was identified relating to bus services, resulting in 14 improvement options being recommended as part of the corridor improvement plan.

5 The Corridor Improvement Plan

The following process was used to assess the information collected from stakeholders and as part of the technical assessments. This process was used to develop the prioritised improvement plan.

5.1 Options Development and Analysis

Based on the key corridor considerations, future needs of the corridor and issues identified by key stakeholders and the community outlined in Sections 2, 3 and 4 respectively, an options development and analysis process were completed. This process consisted of the establishment of project outcomes and desired benefits through an investment logic mapping workshop, identifying long list options, a rapid multi-criteria (MCA) options analysis, establishment of short list options and an options assessment, which are summarised in the following sections.

To develop a priority list of improvement options, the factors listed above were used in conjunction with stakeholder feedback and technical information about the current performance of the corridor. The options assessment process detailed in the following sections was used to identify and prioritise options that would improve the corridor to meet the key corridor objectives.

5.1.1 Long List Options

Based on the existing and emerging issues identified for the corridor, key opportunities for addressing these issues in relation to traffic efficiency, safety and asset resilience were proposed. From these opportunities a total of 62 options were identified for the study area. The 62 long list options were subject to a multi-criteria analysis (MCA) process to rank the options from most feasible to least feasible for pursuing. The MCA process is detailed below in Section 5.1.2

5.1.2 Rapid Multi-Criteria Analysis

A rapid MCA process which included a workshop attended by the Department, City of Launceston and West Tamar Council representatives, was applied to the long-listed options. An MCA process is about determining how effective an option is at achieving the desired objectives, identifying areas of opportunity, prioritising the options, clarifying the differences between options, and helping stakeholders to understand the situation better.

A list of criteria and their relative importance were agreed through consultation between members of the working group to form a ranking system. The three elements of the ranking system, being the theme, criteria and weighting, were considered to ensure all aspects of the design process were included, all stakeholders were considered and the core objectives of a safer and more reliable network were considered in the analysis of each option.

During the MCA workshop, each of the long list options was given a score between one and five against each of the criteria. A rating scale for the scoring was developed to ensure consistency in scoring each of the options to enable meaningful comparison between options.

5.1.3 Short List Options

The results of the MCA, ILM and community consultation was used to inform the shortlisting of options based on review of the long list options with regard to operation, constructability and associated feasibility.

Some options with low MCA rankings were included as part of the short list options where they could easily be packaged with high-ranking options, they had high public interest or were identified as outcomes of the ILM and project objectives. From this process, a short list of eight projects were developed to enable a more detailed

assessment. The projects and their respective packaged improvement opportunities, as detailed in Section 4.3, are provided below.

Project 1: Whole corridor speed limit review

- review of all speed limits between Launceston and Legana (improvement opportunity 1).

Project 2: Duplicate West Tamar Highway between Freshwater Point Road and Legana Park Drive

- duplication and shoulder widening between Freshwater Point Road and Acropolis Drive (improvement opportunity 4)
- improvements to Bridgenorth Road intersection (improvement opportunity 6).

Project 3: Upgrade Cleghorn Avenue and Riverside Drive junctions

- improvements to Cleghorn Avenue and Riverside Drive intersections (improvement opportunity 7).

Project 4: Upgrade Alignment through Barnes Hill

- duplication of single lane section through Barnes Hill (improvement opportunity 5)
- improvements to Forest Road (North) and Allawah Street intersections (improvement opportunity 8)
- improvements to Riverview Road intersection (improvement opportunity 9).

Project 5: Provide additional cycling lanes

- review of on-road cycling facilities between Launceston and Cormiston Road (improvement opportunity 12).

Project 6: Signalise Forest Road (south) Junction and Provide Pedestrian Crossing Facilities

- installation of traffic signals at Forest Road (South) intersection, including a new signalised pedestrian crossing (improvement opportunity 10).

Project 7: Improve Traffic Signal Operation

- review of traffic signal timing between Launceston and Legana (improvement opportunity 3)
- consider options to improve pedestrian crossing between Ecclestone Road and Windsor Drive and across the left turn slip lane from West Tamar Highway to Ecclestone Road (improvement opportunity 2)
- changes to lane arrangements at Brisbane Street/Margaret Street intersection (improvement opportunity 11).

Project 8: Improve Bus Services

- review of bus services between Launceston and Legana including frequency and bus stop locations (improvement opportunity 13).

5.1.4 Options Assessment

The selected eight projects were subject to a more detailed assessment of their traffic performance, road safety performance and impacts on travel reliability. The options assessment process analysed the performance of the eight independent projects and one combination of the eight projects. The performance of each was reviewed against how well they improved travel performance, reliability and safety, alignment with the ILM, community sentiment and cost.

Where applicable, the projects were subject to an initial assessment of their traffic performance, and travel time reliability. Assessment of the performance of the West Tamar Highway corridor overall was based on Level of Service (LOS) and network statistics including vehicle kilometres travelled, vehicle hours travelled and average network speed.

Where a project has included a proposed change to the corridor alignment and associated infrastructure, a concept design was developed. The purpose of the concept designs was to provide a visual representation of a proposed project, as well as to inform the development of a traffic model to assess the likely performance of the project. The concept designs were developed based on georeferenced aerial photographs. Assumptions around layouts and configurations were made, therefore the concept designs do not necessarily reflect the final design. Solutions will be further refined through consultation, such as the geometry, alignments, and associated infrastructure elements, and confirmed in the preliminary and detailed design phases.

The outcomes of the additional assessment combined with the outcomes from the community consultation have been tabled in Table 3 to allow for the prioritisation for specific improvement projects and to determine their 'readiness' to move into delivery. Other community impacts and considerations have been included to highlight any overlap with other improvements options, or recent land use or transport network changes and plans. Further detail is provided in Section 5.2.

Table 3 Improvement Options – summary of benefits and impacts

Project	Improvement Option	Summary of Benefits	Community Impact and Sentiment
Project 1: Whole corridor speed limit review	1. Review of all speed limits between Launceston and Legana	<ul style="list-style-type: none"> • Alignment of speed limits with <i>Tasmanian Speed Zoning Guidelines</i> • Alignment of speed limits with driver expectations • Alignment with the current road environment • Improvements to the safety of pedestrians and other vulnerable road users • Potential reduction in crashes by up to 7.4 crashes per year (30%) • Improvement to overall corridor level of service • Potential to improve transport reliability • Increase in travel time predictability as traffic volumes increase 	<p>Support for a review of speed limits</p> <p>Further engagement is recommended once revised speed limits are determined</p>
Project 2: Duplicate West Tamar Highway between Freshwater Point Road and Legana Park Drive	4. Duplication and shoulder widening between Freshwater Point Road and Acropolis Drive	<ul style="list-style-type: none"> • Improvement in corridor level of service • Improvements of travel times • Increased capacity and overtaking opportunities • Improve transport reliability due to extra road capacity and overtaking opportunities • Increase in the resilience of the corridor to crashes and lower the severity and impact of crashes on travel time performance 	<p>Strong support for duplication and shoulder widening</p> <p>Amendments to property boundaries may be required</p> <p>Need for coordination of design with Legana Masterplan and proposed new school</p> <p>Alignment with Positive Provision Policy for Cycling requires cycle path to be considered as part of duplication</p>
	6. Improvements to Bridgenorth Road intersection	<ul style="list-style-type: none"> • Improved performance of the Bridgenorth Road / West Tamar Highway intersection • Improved pedestrian safety at Bridgenorth Road intersection 	<p>Strong support for a controlled intersection at this location</p> <p>Consultation feedback to be taken into consideration in the assessment of intersection treatment options, however safety performance will likely dictate option selected</p>

Project	Improvement Option	Summary of Benefits	Community Impact and Sentiment
			Further project phases to consider the entry to the proposed school
Project 3: Upgrade Cleghorn Avenue and Riverside Drive junctions	7. Improvements to Cleghorn Avenue and Riverside Drive intersections	<ul style="list-style-type: none"> Increased resilience of the intersections to crashes Lowered severity and impact of crashes on travel time performance Improvements in accessing and egressing the West Tamar Highway, between Brownfield Lane and Riverside Drive Minimal impact on corridor performance as a result of new controlled intersections 	<p>Support for improvements to the intersections and Riverside High School access</p> <p>Further consultation required with the public and key stakeholders for the design</p>
Project 4: Upgrade Alignment through Barnes Hill	5. Duplication of single lane section through Barnes Hill	<ul style="list-style-type: none"> Improvements to the transport reliability of the section Potential reduction in crashes by 2.44 crashes per year (18%) on the West Tamar Highway Increase in the reliability of the section to crashes and lower the severity and impact of crashes on travel time performance Reduction in heavy vehicle impacts on the traffic stream 	<p>Feedback relating to this opportunity was mixed</p> <p>Further consultation required with the community and key stakeholders before progressing to the next phase of the project, particularly to understand the impacts and concerns of property owners in the area</p>
	8. Improvements to Forest Road (North) and Allawah Street intersections	<ul style="list-style-type: none"> Improvements to pedestrian reliability and accessibility at the Allawah Street junction Elimination of 'rat running' along and consequent improvement in amenity of Forest Road Improvements to Allawah Street junction legibility Potential reduction in crashes by 0.04 crashes per year (9%) on Forest Road 	<p>Support for improvements to the intersections</p> <p>Consideration to be given to this intersection as part of Barnes Hill duplication (item 5)</p>
	9. Improvements to Riverview Road intersection	<ul style="list-style-type: none"> Potential reduction in crashes by 0.07 crashes per year (23%) on Riverview Road 	<p>Improvements to this intersection were generally supported, however not the proposed changes</p> <p>Further consultation required with the public and key stakeholders before progressing to the next phase of the project</p>

Project	Improvement Option	Summary of Benefits	Community Impact and Sentiment
			Consideration to be given to this intersection as part of Barnes Hill duplication (item 5)
Project 5: Provide additional cycling lanes	12. Review of on-road cycling facilities between Launceston and Cormiston Road	<ul style="list-style-type: none"> Significant improvements in the performance and reliability of travel along the corridor both for motorised travel and active travel via bicycle 	<p>Strong support for improved cycling facilities along this corridor in this option. Given the support from RACT, Bicycle Network and Tamar Bicycle Users Group and other stakeholders for a separated off-road cycle path the whole length of the West Tamar Highway to Legana, this alternative option needs further consideration, both in concept design and further stakeholder engagement</p> <p>On-road cycle paths will significantly reduce parking and flexibility in relation to access and egress from driveways where shoulders and parking has been removed</p> <p>Extent of boundary adjustments and acquisition unknown until further design is completed</p>
Project 6: Signalise Forest Road (south) Junction and Provide Pedestrian Crossing Facilities	10. Installation of traffic signals at Forest Road (South) intersection, including a new signalised pedestrian crossing	<ul style="list-style-type: none"> Improvement in level of service performance of the Forest Road approach Potential reduction in crashes by 0.66 crashes per year (60%) Improvement for all traffic from Forest Road Increase in the resilience of the intersection to crashes and lower the severity and impact of crashes on travel time performance Stakeholder and community feedback indicates a level of support for the changes 	<p>Support for improvements to the intersection and pedestrian crossing</p> <p>Consultation during the next phase to especially seek to understand the impacts and concerns of property owners in the area and the options to improve pedestrian safety</p>
Project 7: Improve Traffic Signal Operation	3. Review of traffic signal timing between Launceston and Legana	<ul style="list-style-type: none"> Significant improvements in travel times along the corridor, with a reduction in travel time of up to 110 seconds Potential minor decrease in rear end crashes Improved transport reliability 	Support for a review of traffic signal timings

Project	Improvement Option	Summary of Benefits	Community Impact and Sentiment
	2. Improve pedestrian crossing between Ecclestone Road and Windsor Drive and across the left turn slip lane from West Tamar Highway to Ecclestone Road	<ul style="list-style-type: none"> Improvement to pedestrian safety at the Ecclestone Road junction, particularly for vulnerable users Decrease in pedestrian waiting times at the Ecclestone Road junction Increase connectivity to schools 	Further consultation required with the public and key stakeholders during the next phase of the project, particularly investigation of pedestrian crossing alternatives
	11. Changes to lane arrangements at Brisbane Street/Margaret Street intersection	<ul style="list-style-type: none"> Improved traffic efficiency at this intersection, with increased vehicle throughput 	Support for improvements to the intersections Consultation feedback relating to the design will need to be included
Project 8: Improve Bus Services	13. Review of bus services between Launceston and Legana (including frequency and bus stop locations)	<ul style="list-style-type: none"> Increase attractiveness of timetable to choice-users, particularly in Trevallyn and Legana Reduction in travel time difference between car and bus trips from Legana Opportunity to influence a mode shift to public transport Increased in attractiveness of bus travel to part-time and shift worker commuters Faster journey times 	Support for a review of bus services The repositioning of existing and installation of new stops will require communication with affected landowners Further investigation required in conjunction with key stakeholders prior to undertaking route review

5.2 Corridor Improvement Plan

The Corridor Improvement Plan as detailed in Table 3 above consists of eight corridor improvement projects, as outlined in the following sections. These projects are recommended on traffic efficiency, corridor accessibility and safety grounds.

A high-level summary of each option is provided below as well as considerations for further planning investigations, or for design and delivery of the improvement.

5.2.1 Whole Corridor Speed Limit Review

This project involves a review of the speed limits along the West Tamar corridor. While the final decision in relation to the speed limits will need to go through a formal review process and ultimately require approval by the Commissioner for Transport, the following locations and associated speed zoning options have been identified:

- Between Margaret Street and Deans Lane: install variable speed limit signage with a default of 70 km/h to reduce speeds in peak times to 60 km/h.
- Between Deans Lane and Cormiston Road: reduce the speed limit to 60 km/h.
- Between Cormiston Road and Bridgenorth Road: there are several competing environmental conditions, as such two potential options have been considered. Option 1 prioritises providing better opportunities for pedestrians crossing the highway, while Option 2 prioritises the through function of the road.
 - Option 1: reduce the speed limit to 90 km/h between Cormiston Road and Tamar Island Wetland Centre, reduce the speed limit to 80 km/h between Tamar Island Wetland Centre and Bridgenorth Road, and reduce the speed limit to 60 km/h on approach Acropolis Drive / Legana Park Drive roundabout.
 - Option 2: reduce the speed limit to 60 km/h on approach Acropolis Drive / Legana Park Drive roundabout and otherwise maintain the existing speed limits.
- Between Bridgenorth Road and Bindaree Road: reduce the speed limit to 60 km/h.
- Between Bindaree Road and McEwans Road: reduce the speed limit to 80 km/h.

The locations of the speed zones are provided in Figure 3 for Option 1, and Figure 4 for Option 2.

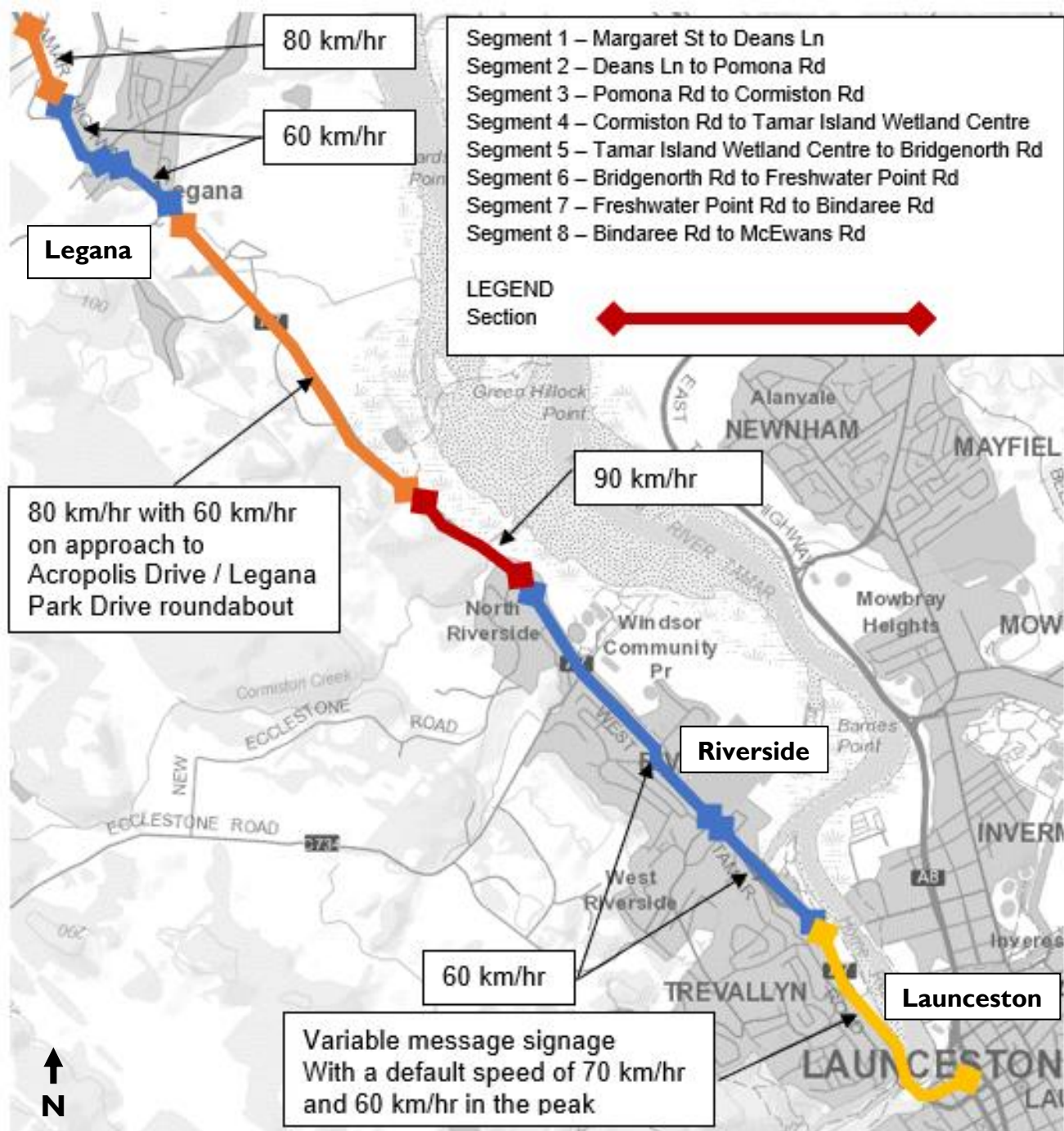


Figure 3 Speed limit sections for review – Option 1. Base map from TheLIST © State of Tasmania

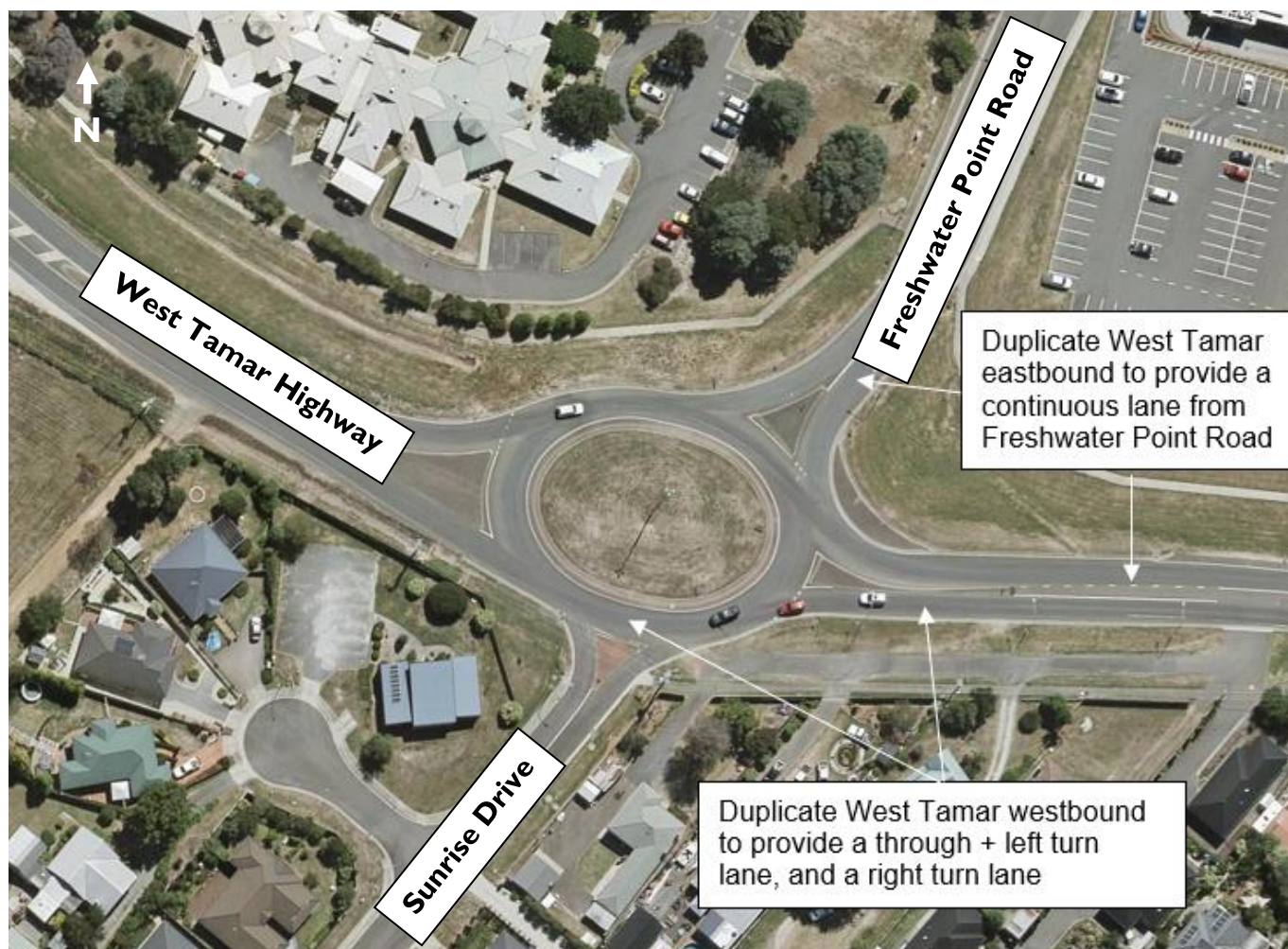


Figure 5 Freshwater Point Road proposed upgrade. Base map from TheLIST © State of Tasmania

Legana Park Drive/Acropolis Drive

- At the intersection of Legana Park Drive the duplication of the highway will continue through the intersection, matching into the existing 4 lane, 2-way section located approximately 200 m south of the intersection.

Bridgenorth Road

- Several configurations were considered for the intersection of Bridgenorth Road and West Tamar Highway. The most feasible option was deemed to be full signalisation of the junction, particularly considering the proposed land use changes in the vicinity and potentially unbalanced traffic flows on each leg.
- Due to a number of unknown development proposals and land use changes at the time of completing the option analysis for this junction, it is recommended that further investigation be undertaken of this intersection to identify the most suitable treatment and access arrangements for planned developments.

Further Considerations

- Duplication of highway and intersection configuration to consider Legana Masterplan and proposed access plan. It is recommended that further detailed analysis be undertaken between Freshwater Point Road and Legana Park Drive, inclusive to determine suitable intersection treatments and whole network arrangement.
- Intersection investigation for Bridgenorth Road to consider planned Legana school and United service station proposed for development.
- Final location of proposed new highway pedestrian crossing points to be determined through next design stage.

- Duplication works to consider the Draft West Tamar Trails Strategy which identifies a proposed cycling trail adjacent to the highway within this section of the corridor, and for the entirety of the West Tamar Highway.
- Duplication works to be progressed in alignment with the Positive Provision Policy for cycling.
- Formalised parking on the existing service road at and adjoining 620 West Tamar Highway be examined.
- Further design of the Bridgenorth Road intersection with the highway shall consider the proposed Western Tamar Valley Cycling Trail as identified in the Draft West Tamar Trails Strategy and any associated crossing facilities on the highway.

5.2.3 Upgrade Cleghorn Avenue and Riverside Drive junctions

This project is aimed at improving the access and egress arrangements for the intersections of Cleghorn Avenue, Riverside Drive, and Brownfield Lane with the West Tamar Highway, to improve performance and safety. Two options were considered:

- option 1 – realign Riverside Drive to Cleghorn Avenue
- option 2 – West Tamar Highway upgrades:
 - upgrade Cleghorn Avenue and Riverside Drive junctions
 - traffic signals at Brownfield Lane intersection.

Investigations indicate that benefits for traffic performance and safety of all users within this section of highway can be realised with a reconfiguration of accesses and intersections treatments. Further investigation, undertaken in conjunction with the community, landowners and key stakeholders is required to work through the complexities of this segment of highway.

It is recommended this project focusses on the development of a network and access management plan for the Riverside area between Brownfield Lane and Eden Street.

Further Considerations

- There is opportunity to improve overall network connectivity on the river side of the highway by connecting Brownfield Lane with Barwing Crescent. This would reduce the use of eastern leg of the Riverside Drive and West Tamar Highway intersection.
- Undertake traffic surveys (including pedestrian movements) at the intersection of Brownfield Lane and West Tamar Highway, to understand the movements associated with Riverside High School.
- Undertake weekend surveys at Cleghorn Avenue, Riverside Drive, and Eden Street to understand the movements associated with Riverside Plaza shopping centre.
- Undertake a review of the queue storage lengths at the proposed signalised intersections, as well as lane configuration between and at key intersections.

5.2.4 Upgrade Alignment through Barnes Hill

This project consists of several upgrades to be completed together through the Barnes Hill section of the West Tamar Highway.

- A speed reduction to 60 km/hr between Pomona Road and Deans Lane (as per Project 1 – Whole Corridor Speed Limit Review).
- Duplication of the one-lane section of the West Tamar Highway (see Figure 6).
- Upgrade of the intersection of Forest Road and the West Tamar Highway to improve sight distances (see Figure 7).
- Improvement of pedestrian facilities at the intersection of Forest Road / Allawah Street and West Tamar Highway (see Figure 7).

- Upgrade of the intersection of Riverview Road and West Tamar Highway to improve safety. Three options were considered, however further design work required in conjunction with community to identify suitable treatment at this location.



Figure 6 Proposed Barnes Hill duplication. Base map from TheLIST © State of Tasmania



Figure 7 Proposed intersection layout – Allawah Street and Forest Road. Base map from TheLIST © State of Tasmania

The following concessions were applied in order to duplicate the one-lane section of the West Tamar Highway:

- To fit within the road corridor, and to minimise property acquisition, the radii of the bends are too tight for a 25 m semi-trailer vehicle, or larger, to navigate with the current prevailing speed limit without personal traffic control conditions in place.
- A 25 m semi-trailer could be accommodated through this section of the West Tamar Highway if speeds were reduced to 60 km/hr and the vehicle restricted to the left-most lane.
- Any vehicle larger than a 25 m semi-trailer, cannot be accommodated under normal traffic conditions and would require traffic control in place.

There is strong support generally from the community and key stakeholders for traffic performance and safety improvements within this section of the highway, however it is clear from the consultation phases and potential landowner impacts that further investigation is required before proceeding to final design stages.

Further Considerations

- There is potential for the duplication of the one-lane section of the West Tamar Highway to be implemented in conjunction with on-road bicycle lanes (see Section 5.2.5 for more details) which will require further concession to be made. These considerations include the potential for greater land acquisition and impacts on property access.
- A suitable off-road bicycle lane may necessitate the need for on-road cycle lanes through this section of highway.
- The Forest Road/Allawah Street intersections are within the area proposed for duplication, which in itself is likely to change the current sight lines and intersection visibility. Therefore sight distance should be addressed during further design stages of the duplication, when final layouts are determined.

- Upgrades for the Forest Road/Allawah Street intersection should include improved pedestrian movements, particularly to and from the bus stop.
- The duplication will reduce parking and flexibility in relation to access and egress from driveways on the northbound carriageway. Further acquisition of properties may be required if driveway grades and turning radii cannot be provided.

5.2.5 Provide Additional Cycling Lanes

This project consists of providing additional cycling lanes along the West Tamar Highway corridor. Table 4 provides the cycle lane widths adopted to provide a dedicated northbound cycling lane on the West Tamar Highway between Margaret Street and Pomona Road and both a northbound and southbound cycling lanes between Pomona Road to Cormiston Road.

Table 4 Cycle lane warrants

Posted Speed Limit (km/hr)	Required Width (m)	Desirable Minimum
60	1.2 m - 2.5 m	1.5 m
80	1.8 m - 2.7 m	2.0 m

A 1.5 m width for the cycling lane was adopted for the design. This width was able to be achieved for the required length except for one location in Barnes Hill. Through Barnes Hill there is a right turn with a tight radii immediately before the intersection with Forest Road (north). Initial investigations indicate a cycling lane may not be possible without further land acquisition, due to the required lane width to accommodate a semi-trailer swept path.

To reduce impact on adjacent landowners, the road width could be increased to the minimal standard width for a shared lane, and as such improving the safety for cyclists in this section, however, this would make the cycleway discontinuous.

While there are several performance and reliability improvements, provision of a bike lane will significantly reduce parking and flexibility in relation to access and egress from driveways where shoulders and parking has been removed. Currently residents utilise the wide shoulder to access and egress their driveways, utilising 2-point manoeuvres, this will not be achievable with the cycle lane.

This improvement is strongly aligned to the Draft West Tamar Trails Strategy being developed by the West Tamar Council which identifies a 76 km long cycling trail along the highway between Launceston and Greens Beach. This improvement would contribute to a considerable section of the overall West Tamar Highway Cycling Trail; however this is opportunity to undertake these improvements in a more integrated way with West Tamar Council to ensure the whole corridor as well as side trails are incorporated into the upgrade plan. Further work needs to be undertaken on the exact path for cycling and shared trails.

The provision of additional cycling lanes extends upon work completed by the Department for the West Tamar Cycleway Safety Improvements - Launceston to Legana project (the Cycling Safety Improvements project). The Cycling Safety Improvements project is primarily utilising the existing road space to provide additional shoulder width, through reducing the width of the trafficable lanes and/or removing parking, and other associated side road uses, for a 10 km section of the West Tamar Highway between Margaret Street, Launceston and Legana Park Road, Legana.

5.2.6 Signalise Forest Road (South) Junction and Provide Pedestrian Crossing Facilities

This project consists of the upgrade of the intersection of Forest Road (South) and the West Tamar Highway, including provisions for additional pedestrian crossing facilities along the West Tamar Highway in Trevallyn. Provision has been made for a two-stage crossing of the West Tamar Highway for pedestrians (plus an additional footpath to the existing off-road walkway), a slip lane from Forest Road, and U-turns (see Figure 8). The design can accommodate both bus and semi-trailer movements.

Additional uncontrolled pedestrian crossing facilities with pedestrian refuges and other supporting infrastructure are proposed in Trevallyn adjacent to the existing bus stop locations where there are no acceleration or deceleration lanes and potentially adjacent to the Kings Bridge track and the Tamar Rowing Club subject to further investigation.



Figure 8 Proposed Forest Road junction upgrades. Base map from TheLIST © State of Tasmania

There is support for improvements to this intersection to accommodate turning into and from Forest Road, as well as providing safer crossing of the highway by pedestrians and cyclists, however there were concerns raised regarding the installation of signals. A signalised intersection would provide for a greater level of safety for vulnerable road users, however other options should be considered in the detailed planning of this option.

Further Considerations

- A high-quality crossing of the highway at Forest Road (south) would align strongly with the Draft West Tamar Trails Strategy by connecting existing trails with the catchment area of Trevallyn.

5.2.7 Improve Traffic Signal Operation

This project involves making minor adjustments to signal phasing and signal timing to the following five intersections:

- West Tamar Highway / Cormiston Road
- West Tamar Highway / Ecclestone Road
- West Tamar Highway / Riverside Drive
- West Tamar Highway / Pomona Road
- West Tamar Highway / Margaret Street.

The project also considers minor changes to the intersection arrangements at the junctions of West Tamar Highway with Ecclestone Road and Margaret Street.

Margaret Street

The adjustments to signal phasing and signal timing at the West Tamar Highway / Margaret Street intersection, also includes changes to the available lane movements. On the York Street approach to the West Tamar Highway / Margaret Street intersection both kerb-side lanes are proposed to be modified to allow for both through and turn movements. While this option improves vehicle throughput and performance of the intersection, there is potential for an increased crash risk associated with conflicts between the through and turning traffic.

Ecclestone Road

The adjustments to the West Tamar Highway / Ecclestone Road intersection, includes improvements to the pedestrian crossing facilities. A zebra crossing has been including to assist pedestrians crossing the northbound left turn slip lane, and the existing two-stage crossing on the southbound approach to the intersection has been upgraded to meet the recommendations detailed in the Austroads Guidelines.

The proposed changes to these intersections are shown in Figure 9 and Figure 10.



Figure 9 Proposed Margaret Street junction upgrades. Base map from TheLIST © State of Tasmania



Figure 10 Proposed Ecclestone Road junction upgrades. Base map from TheLIST © State of Tasmania

5.2.8 Improve Bus Services

This project improving bus services along the West Tamar Corridor through the following improvement areas:

- provide more direct routes between Legana and the Launceston CBD utilising only the West Tamar Highway
- increased bus frequencies during and outside of peak hours
- rationalise bus stops to provide a more efficient spacing and improve travel times between Riverside and the Launceston CBD.

A revisit of the proposed improvements and priorities would be warranted given public transport to Legana was significantly improved in January 2020, including provision of new weekday and weekend services, as well as increases to service frequencies. Public transport to Trevallyn also improved in January 2020, including a slight frequency increase and changes to the route to make it simpler and more direct to reduce travel times.

The implementation of additional bus services needs to be undertaken in conjunction with the broader network program within Launceston and with consideration to the Tasmanian general access service standards should be considered in assessment of service levels.

It is recommended that bus stop rationalisation be undertaken and improvements made where possible, ensuring that existing 400/800m patronage catchments are maintained. The 400/800m patronage catchments are the areas within 400m or 800m of a bus stop to and from which it is expected that bus patrons would be willing to walk to access bus services. It is to be noted that relocation of bus stops can be met with community concerns, therefore the repositioning of existing and installation of new stops will require communication with affected landowners. A detailed analysis of patronage per stop, walking catchments, safe pedestrian crossings and service of attractors along the corridor needs to be undertaken prior to any rationalisation or relocation of stops. Disability

Discrimination Act (DDA) compliant infrastructure is required for all new or refurbished bus stops and will have to be considered in the design and costing of any relocation of or modification to bus stops.

It is also recommended a simpler and more direct route to Legana be explored, starting with a route review based on patronage data by stops and walking catchments to bus stops and also how land use in Legana as part of masterplan.

With regards to the above, it is recommended the improvement option 13 listed in Table 3 Section 5.1.3 be modified as part of the Corridor Improvement Plan to include two parts, thus creating 14 improvement options:

- bus stop optimisation
- undertake route review for Legana.

5.2.9 Prioritisation

The performance of the projects align with the ILM and project objectives in that they improve the local function of the corridor, including improvements to public and active transport. While the reduction in speeds and inclusion of additional signalised intersections reduce the average speed along the West Tamar Highway for through traffic, this is offset by improved accessibility for side road traffic, as well as improved safety for all users, and the reliability of travel along the corridor.

Table 3 in the Options Assessment (Section 5.1.4) provides a summary of each of the proposed projects in the Corridor Improvement Plan based on evaluation of their benefits and difficulty of implementation relating to community impact. This provided guidance relating to the overall prioritisation of projects, which is shown in Table 5 below.

Table 5 Proposed project prioritisation

Proposed Project	Improvement	Scale	Property Acquisition Required	Cost Estimate*	Priority
Whole corridor speed limit review	Review of all speed limits between Launceston and Legana (improvement opportunity 1)	Medium	No	\$420,000	High
Duplicate West Tamar Highway between Freshwater Point Road and Legana Park Drive	Duplication and shoulder widening between Freshwater Point Road and Acropolis Drive, including cycling path (improvement opportunity 4)	Large	Yes	\$6,200,000 (excl. cycle path)	High
	Improvements to Bridgenorth Road intersection (improvement opportunity 6)	Medium	TBD	TBD	High
Cleghorn Avenue and Riverside Drive junctions	Develop a network and access plan for the Riverside area between Brownfield Lane and Eden Street (improvement opportunity 7)	Large	TBD	TBD	Medium

Proposed Project	Improvement	Scale	Property Acquisition Required	Cost Estimate*	Priority
Upgrade through Barnes Hill	Duplication of single lane section through Barnes Hill (improvement opportunity 5)	Large	Yes	\$1,600,000	Medium
	Improvements to Forest Road (North) and Allawah Street intersections (improvement opportunity 8)	Medium	No	(included above)	Medium
	Improvements to Riverview Road intersection (improvement opportunity 9)	Small	No	\$150,000	Low
Provide additional on road cycling infrastructure	Review of cycling facilities between Launceston and Legana including feasibility for off road trail (improvement opportunity 12)	Large	No (excl. Barnes Hill section)	\$1,700,000 (on road only)	High
Forest Road (South) Junction improvements	Installation of traffic signals at Forest Road (South) intersection, including a new signalised pedestrian crossing (improvement opportunity 10)	Medium	No	\$600,000	High
Improve traffic signal operation	Review of traffic signal timing between Launceston and Legana (improvement opportunity 3)	Small	No	Nil (operating expense only)	High
	Improve pedestrian crossings Ecclestone Road and Windsor Drive intersection (improvement opportunity 2)	Medium	No	\$50,000	High
	Lane arrangements at Brisbane Street/Margaret Street intersection (improvement opportunity 11)	Small	No	\$10,000	Low
Improve bus services	Bus stop optimisation (improvement opportunity 13)	Small	No	TBD	Medium

Proposed Project	Improvement	Scale	Property Acquisition Required	Cost Estimate*	Priority
	Undertake route review for Legana (improvement opportunity 14)	Small	No	TBD	High

*These estimates have been sourced from *West Tamar Highway Corridor Study – West Tamar Highway Options Assessment Report* (GHD, 2021). Some adjustments have been made to round out estimates as these are to be used as a guide only. The estimate does not include costs to the Department associated with Scoping Phase, Development Phase, Delivery Phase, or property acquisition except where specified as being required. The cost estimates are at 2020 dollars, and as such may vary based on market fluctuations and do not include contingency sums.

5.2.10 Action Plan

The proposed improvements sorted by priority are included in Table 6, including the proposed action for the next phase of the project.

Table 6 Action plan for prioritised projects

Priority	Proposed Project	Improvement	Action
High	Whole corridor speed limit review	Review of all speed limits between Launceston and Legana (improvement opportunity 1)	Commence delivery
High	Duplicate West Tamar Highway between Freshwater Point Road and Legana Park Drive	Duplication and shoulder widening between Freshwater Point Road and Acropolis Drive including cycling facilities (improvement opportunity 4)	Commence detailed design and delivery
High	Duplicate West Tamar Highway between Freshwater Point Road and Legana Park Drive	Improvements to Bridgenorth Road intersection (improvement opportunity 6)	Commence detailed design and delivery
High	Provide additional on road cycling infrastructure	Review of cycling facilities between Launceston and Legana including feasibility for off road trail (improvement opportunity 12)	Undertake further planning and design work
High	Forest Road (South) Junction improvements	Installation of traffic signals at Forest Road (South) intersection, including a new signalised pedestrian crossing (improvement opportunity 10)	Undertake further planning and design work
High	Improve traffic signal operation	Review of traffic signal timing between Launceston and Legana (improvement opportunity 3)	Commence delivery
High	Improve traffic signal operation	Improve pedestrian crossings Ecclestone Road and Windsor Drive intersection (improvement opportunity 2)	Commence detailed design and delivery

Priority	Proposed Project	Improvement	Action
High	Improve bus services	Undertake route review for Legana (improvement opportunity 14)	Commence delivery
Medium	Cleghorn Avenue and Riverside Drive junctions	Develop a network and access plan for the Riverside area between Brownfield Lane and Eden Street (improvement opportunity 7)	Commence delivery
Medium	Upgrade through Barnes Hill	Duplication of single lane section through Barnes Hill (improvement opportunity 5)	Undertake further planning and design work
Medium	Upgrade through Barnes Hill	Improvements to Forest Road (North) and Allawah Street intersections (improvement opportunity 8)	Undertake further planning and design work (as part of Barnes Hill duplication)
Medium	Improve bus services	Bus stop optimisation (improvement opportunity 13)	Commence delivery
Low	Upgrade through Barnes Hill	Improvements to Riverview Road intersection (improvement opportunity 9)	Undertake further planning and design work (as part of Barnes Hill duplication)
Low	Improve traffic signal operation	Lane arrangements at Brisbane Street/Margaret Street intersection (improvement opportunity 11)	Undertake further planning and design work

6 Next Steps

The Department will make informed decisions on the feasibility of the options presented in this report. Further analysis and design of the projects identified will be required to enable funding applications to be developed.

This Corridor Improvement Plan provides a list of prioritised infrastructure solutions to alleviate the current safety, congestion and travel time reliability issues experienced along the West Tamar Highway corridor and to manage demands on this corridor in the future.

There is no commitment to, or funding for, the solutions identified in this Plan. The Plan will be used as a basis for prioritising which projects proceed through to delivery immediately versus the projects requiring more detailed planning and design work, with any future commitments to these solutions being subject to whole of network priority upgrades and funding availability.



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