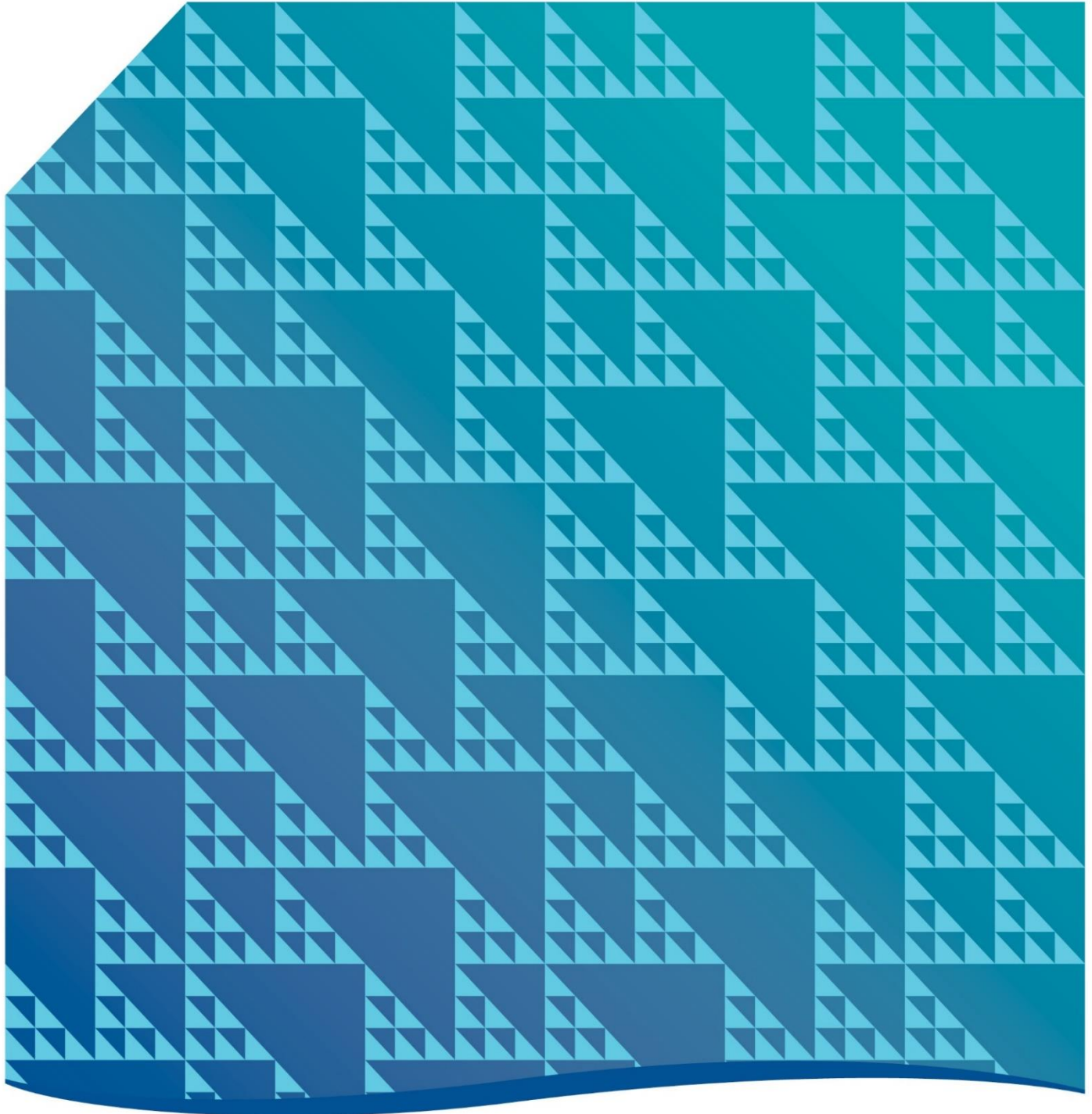


September/2020

# South Arm Road Rokeby Stage 3 Corridor Plan



Department of State Growth



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## Executive summary

The Department of State Growth undertook a planning study, funded by the Tasmanian State Government, along South Arm Road between Pass Road and Acton Road. The purpose of the study, titled the Rokeby Stage 3 Corridor Planning Study, was to identify future transport infrastructure needs to improve travel time reliability, safety, and encourage the use of active and public transport. Previous South Arm Highway upgrade projects were the widening to 4 lanes for the section between Shoreline Drive and Oceana Drive (Rokeby Stage 1) and then the section between Oceana Drive and Pass Road (Rokeby Stage 2). The Rokeby Stage 3 Corridor Planning study commenced in November 2019 and concluded in August 2020.

The result of this study is this Corridor Plan that identifies improvements and priority projects for future funding requests.

Traffic growth on South Arm Road has been in the order of 4% per annum in recent years, which is relatively high from a Tasmanian perspective. This growth is expected to continue due to the extent of planned residential and community development for the Clarence Plains area.

South Arm Road provides a critical transport link which services adjacent suburbs, as well as those further east. Along the section of South Arm Road between Pass Road and Oakdowns Parade, traffic growth from residential areas is contributing to congestion, particularly at the Hawthorn Place and Droughty Point Road intersections. This in turn is contributing to increasing travel times. Acton Road intersection experiences relatively long delays during the morning peak hour, due to its function as a local access road for both Lauderdale Primary School and residential properties.

Pedestrian, cycling and public transport infrastructure along the Corridor does not meet contemporary guidelines and standards. As South Arm Road bisects residential communities, there is a need to improve connectivity for pedestrians and cyclists, as well as provide improved amenity and travel time reliability for public transport.

Key stakeholders including Clarence City Council, Metro Tasmania and the Department of Education contributed to a working group that identified the future needs of the Corridor and reviewed proposed upgrade options to service those needs.

Early work on the study identified that upgrading South Arm Road to provide two traffic lanes in each direction can be predominantly achieved within the existing road corridor, except for the section through the Rokeby commercial area where widening of the road to four lanes would result in undesirable impacts on existing businesses. Consequently, the proposed plan for upgrading of the Corridor includes a realignment of South Arm Road to the south of the Rokeby commercial area, from north of Hawthorne Place, reconnecting to the existing road east of Horsham Road. This realignment essentially follows the southern portion of the future road corridor that was proclaimed 26 years ago.

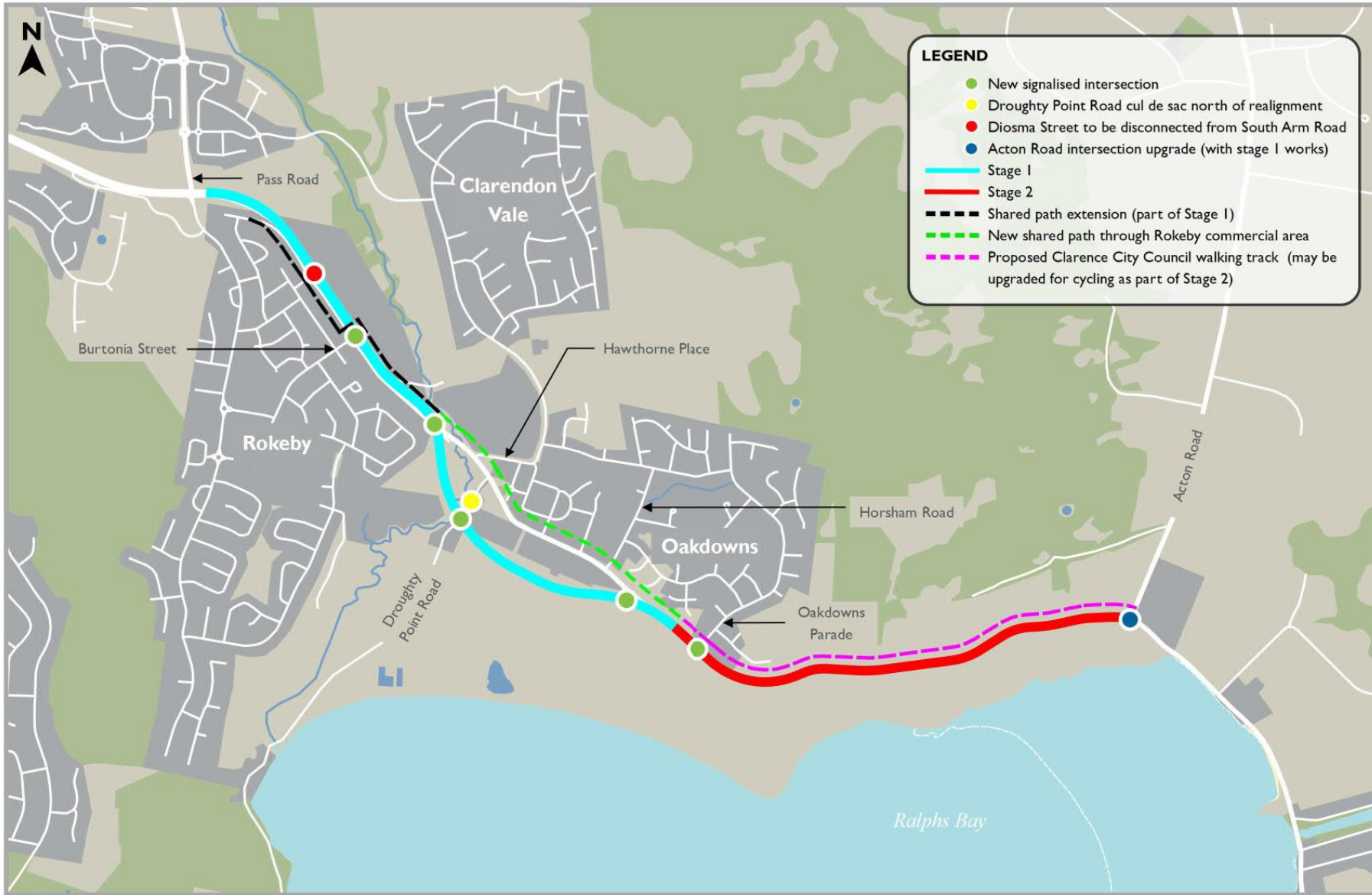
Having established the proposed future alignment for the road, connectivity options were considered, with traffic signals selected as the preferred intersection treatment, due to their ability to cater for peak period traffic volumes, as well as provide safe crossing locations for pedestrians and cyclists. The Corridor Plan also provides for closure of the existing Diosma Street and Grange Road East junctions, and connection of Grange Road East to Vivian Drive in Glebe Hill and to a new signalised intersection at Burtonia Street.

Informed by traffic modelling, proposed staging for the Corridor Plan was established. The staging focusses on the medium term needs to address congestion and safety issues at the Acton Road intersection and to address congestion at the Hawthorne Place and Droughty Point Road intersections. The traffic modelling indicates that the Oakdowns Parade roundabout and the section of Rokeby Road between Oakdowns Parade and Acton Road will continue to operate with a relatively high level of efficiency for the next 15 – 20 years. As a consequence, rather than immediately focusing on increasing the traffic carrying capacity in this section, it is recommended that a Road Safety Audit and detailed crash analysis be undertaken for this section of the road to identify medium term upgrades that can be undertaken to improve safety, such as shoulder widening.

Extension of the shared path (which currently terminates near Pass Road) to Hawthorn Place, should be undertaken in conjunction with upgrading of South Arm Road to four lanes, along with provision of new accessible (DDA compliant) bus stops at either side of Burtonia Street. Upgrading of the existing road between Pass Road and Hawthorne Place and establishment of the South Arm Road realignment would enable the existing northern footpath through the Rokeby commercial area to be upgraded to a shared path.

In the shorter-term Clarence City Council is investigating the establishment of a walking track between Horsham Road and Acton Road to provide a pedestrian connection between Rokeby, Oakdowns and Lauderdale. In the long term this path should be upgraded to a shared path with an all-weather surface in parallel with duplication of South Arm Road between Oakdowns Parade and Acton Road.

The staging of the Corridor Plan is shown on a map of South Arm Road on the next page.



**ROKEBY STAGE 3 STAGING PLAN**

## I Introduction

The South Arm Highway is a key urban arterial highway serving the south-eastern suburbs of Hobart, on the eastern shore of the River Derwent. The Highway is one of the eastern shore's major transport corridors, facilitating the movement between the suburbs and satellite communities to the south-east with the Hobart City Centre and other major highways including the Tasman Highway.

The South Arm Highway is classified as a Department of State Growth Category 3 road, from Mornington to Pass Road, at which point the road continues as South Arm Secondary Road (also known as Rokeby Road). South Arm Secondary Road is classified as a Category 4 road between Pass Road and Acton Road. Beyond Acton Road, South Arm Secondary Road is classified as a Category 5 road.

The South Arm Highway and South Arm Secondary Road are primarily used by residents of adjacent suburbs including Rokeby, Clarendon Vale and Oakdowns, and by residents of communities located further south and east including Opossum Bay, South Arm, Sandford, Lauderdale and Roches Beach.

In 2015, Rokeby Stage 2 was completed on the South Arm Highway to upgrade the road corridor to a four-lane carriageway, between Oceana Drive in Howrah and Pass Road.

It is expected that traffic along South Arm Secondary Road will continue to increase, with significant growth areas of new subdivisions under development, approved or planned, on various greenfield sites in the vicinity of the road, as well as development on connecting local roads.

To cater for this growth and support access to Hobart from the eastern shore, the Tasmanian State Government has funded the early planning of Rokeby Stage 3 (this Planning Study) as part of the 2018 election commitments for State Road Upgrades – Southern Region. The Planning Study extents, also referred to as the Road Corridor, is shown on the map on the following page.



**ROKEBY STAGE 3 STUDY EXTENTS PLAN**

## 1.1 Strategic Context

Two previous planning studies, in 1988 and 2007, were conducted on the South Arm Road Corridor through Rokeby. The 1988 study identified future growth in the region and proclaimed a future corridor for a duplicated highway. The 2007 report took this work further to look at land use in Clarence Plains (Oakdowns, Rokeby and Clarendon Vale) and record community feedback on a bypass and the future route that a four-lane highway would take.

The Corridor Planning Study is aligned with the State Roads Infrastructure Service Policy which commits to provide efficient road infrastructure and services that:

- Are as safe as reasonably possible
- Support economic growth through responsible investment; and
- Enhance the travelling experience for road users.

The Service Policy and hence the Corridor Planning Study supports the Tasmanian Infrastructure Strategy's long-term vision for transport infrastructure, which includes:

- Coordinated land use and infrastructure planning
- Commercial delivery of road, rail and ports
- Infrastructure built in accordance with 'safe system' principles
- Sustainable funding
- Public transport system, a first-choice option providing a cost-effective alternative to more road infrastructure; and
- Integrated passenger transport system with appropriate services and concessions to alleviate social disadvantage.

## 1.2 Planning Study Objectives

The objectives of the Planning Study were to:

- Determine the current Level of Service and an acceptable Level of Service required for the study Corridor in peak times
- Develop a range of options that could be implemented to achieve the determined Level of Service, promote mode shift to public and active transport, improve safety and reliability during peak periods, and meet community expectations; and
- Assess the costs and benefits of all potential upgrade options identified as part of the Planning Study, to recommend an upgrade option which achieves the desired future Level of Service and improves the corridor's safety and travel time reliability.



## 2 Key Corridor Considerations

### 2.1 Traffic volumes and corridor performance

Annual Average Daily Traffic (AADT) volumes and traffic growth rates for the existing road are indicated below.

Traffic growth rates on Tasmanian roads are generally in the order of 2% per annum. As a result of significant land development in the Clarence Plains area, the traffic growth rates being experienced along South Arm Road are significantly higher than most Tasmanian roads.

Table 1: AADT and traffic growth rates

Location on the South Arm Road Corridor	2019 Annual Average Daily Traffic (AADT)	Existing Annual Growth Rate
East of Oceana Drive	22,250	3.8%
West of Hawthorne Place	16,900	4.6%
East of Hawthorne Place	14,560	No data
West of Oakdowns Parade	13,000	7.8%
Lauderdale	7,900	3.2%

Intersection turning count surveys and traffic modelling has been undertaken to assess the performance of the existing intersections along the length of the corridor with the results presented below. The intersection performance is based on vehicle delay and the corresponding Level of Service (LOS). The table below shows the Level of Service criteria. Road authorities, including State Roads, generally consider that LOS D or better at peak travel times is an acceptable Level of Service. Continually aiming for a LOS better than LOS D at peak travel times can lead to roads being built with more capacity than is needed.

Table 2: Level of Service criteria

Level of Service	Delay per Vehicle (secs)
A	10 or less
B	10 to 20
C	20 to 35
D	35 to 55
E	55 to 80
F	Greater than 80

Table 3: AM peak hour existing operation

Intersection	Flow (veh/h)	LOS
Pass Road	2,221	B
Diosma Street	1,652	A
Burtonia Street	1,752	B
Hawthorne Place	1,678	F
Droughty Point Road	1,538	C
Oakdowns Parade	1,512	B
Acton Road	1,521	D

Table 4: PM peak hour existing operation

Intersection	Flow (veh/h)	LOS
Pass Road	2,331	B
Diosma Street	1,711	A
Burtonia Street	1,824	A
Hawthorne Place	1,702	B
Droughty Point Road	1,525	B
Oakdowns Parade	1,386	A
Acton Road	1,560	B

Results of traffic modelling for the existing intersections in the morning peak hour are shown in Table 3 and indicate that the Hawthorne Place intersection is at capacity (LOS F) and the Acton Road intersection is close to capacity (LOS D). The modelling results for the afternoon peak hour shown in Table 4, indicate that all the intersections are operating efficiently.

The study has investigated the travel time along the road under existing and future conditions, based on the predicted growth in traffic volumes. The analysis shows that westbound traffic in the morning peak is the most sensitive to traffic growth on the network. For the existing road, if no improvements are made, traffic modelling shows that the westbound travel time between Acton Road and Pass Road will increase by 60% from almost 6 minutes now to almost 10 minutes in 2029.

## 2.2 Road Safety

The Department of State Growth operates a database of all reported incidents on Tasmanian Roads. By reviewing the crash history for the study area, it is possible to see trends which can identify specific road safety issues on the existing roadway that may need to be addressed.

A review of the crash history within the study area for the previous ten years, between November 2009 and November 2019, found a total of 152 crashes reported along South Arm Road between Pass Road and Acton Road.

Crash patterns identified along the corridor included:

- A high proportion of crashes between Oakdowns Parade and Acton Road were off-curve or associated with overtaking, indicating an issue with the road alignment through this section. It is noted that the speed limit on this section of road has recently been reduced from 80km/h to 70km/h
- A high number of low impact crashes through the Rokeby Commercial Zone, associated with turning into and out of accesses; and
- The Burtonia Street intersection had a relatively high crash rate for right turning vehicles.

## 2.3 Public Transport

Metro Tasmania operates 8 bus routes that utilise South Arm Road, including several express routes. Residential areas in Rokeby, Oakdowns and Clarendon Vale are also serviced with circular routes providing stops near properties.

Metro have indicated that currently buses are finding it difficult to access back onto South Arm Road within Rokeby during peak hours, due to the significant traffic volumes experienced on the road.

A review of 16 bus stops along South Arm Road has found that the level of amenity provided by the existing public transport infrastructure on the express routes is low. Generally, bus stops do not provide infrastructure such as a sealed pull in area for buses, basic Disability Discrimination Act (DDA) compliance, connection to pedestrian footpaths, or shelters and seats for waiting passengers.

There are limited suitable pedestrian crossing facilities to provide safe access to and from bus stops along South Arm Road.

## 2.4 Active Transport

The overall existing level of service for pedestrians and cyclists along the Road Corridor is relatively low.

To the west of the study area, a separated shared path has been constructed to connect Pass Road to Oceana Drive, and onto the Shoreline Shopping Complex and Clarence Street. The path currently terminates at the northern end of Grange Road West and as result there is no shared path facility for most of the length of the Corridor.

Near Bayview Secondary College, close to Hawthorne Place, there is a school pedestrian crossing, operated by a School Crossing Patrol Officer in the morning and afternoon to enable children to cross the road safely. However, many children also cross South Arm Road further west, closer to Burtonia Street where there are no safety measures.

Through the Rokeby commercial area there are footpaths on either side of South Arm Road. The footpath on the southern side is connected to Grange Road West, whereas the northern side terminates at the western end of the commercial zone. Neither footpath continues past the eastern end of the commercial zone. There are several pedestrian refuge islands located through the commercial area to assist pedestrians to cross South Arm Road Road.

To encourage greater use of active transport in the area there is a need to extend the existing shared path from east of Pass Road to Hawthorne Parade and then through the commercial zone to Horsham Road. There is also a need to provide improved road crossing opportunities.

Clarence City Council are currently investigating the provision of a walking track to be located on the northern side of South Arm Road, between Horsham Road and Acton Road.

### 3 Future Needs

Significant land development is underway within the vicinity of South Arm Road, with more planned.

Traffic growth on the network is expected to increase at high rates, with the estimated release of over 3,000 residential lots expected in the foreseeable future. These include:

- The continuation of the Glebe Hill subdivision resulting in an additional 98 lots
- 1,771 lots from the Droughty Point Masterplan development
- 592 lots from expansion of Clarendon Vale and Oakdowns
- 350 lots in the North Bay Estate on Droughty Point
- Up to 600 lots from a proposed development north of Clarendon Vale
- 48 lot infill in Burtonia Street, Rokeby; and
- Expected further infill of Acton Park and South Arm Peninsula rural living properties.

A review of future developments has been undertaken in consultation with Clarence City Council to establish the likely timing for these developments to proceed. The timing information along with the nature of the developments has been used to inform traffic growth estimates along the Corridor.

The Department of Education and Clarence City Council are planning to establish a sports precinct at Bayview Secondary College. The facilities will provide for the school during school days and serve the growing Clarence Plains community after school hours.

The traffic generation of the residential developments and the Bayview Secondary College Sports Precinct have been a key input to establishing the future transport infrastructure requirements of the Corridor.

Review of the current public and active transport provisions along the Corridor has identified that there is a need to provide improved facilities. These facilities need to be integrated with upgrades to the road infrastructure to provide appropriate connectivity.

## 4 Consultation

To inform the Corridor Plan a Working Group was established to facilitate input from key stakeholders. The Working Group included representation from the following organisations:

- Clarence City Council
- Metro Tasmania
- Department of Education
- Department of State Growth Network Planning; and
- Department of State Growth Passenger Transport Branch.

The Working Group took part in five workshops to help develop the Corridor Plan. The workshops were as follows:

- Workshop 1 – Identification of road corridor issues and future needs
- Workshop 2: – Consultant presentation of the developed upgrade options
- Workshop 3 – Proposed assessment criteria for options analysis
- Workshop 4 – Conduct Multi-criteria Assessment; and
- Workshop 5 – Review of planning study outcomes.

Workshop 1 played a key role in identifying the key transport issues that needed to be considered in development of the Corridor Plan. The Workshop identified the following needs for the Corridor Plan:

- Accommodation of the proposed future residential developments
- Accommodation of the Bayview College Sports Precinct Development
- Improvement of pedestrian and cyclist connectivity along the Corridor
- Improvement of public transport infrastructure; and
- Improvement of travel time reliability through reducing congestion.

The outcomes from Workshop 1 provided the foundation for establishing the form of the Corridor Plan. Input from the Working Group continued throughout the Corridor Plan development process to ensure that the identified needs were addressed.

## 5 A Vision for the future – the corridor plan

### 5.1 Options development & analysis

Early work on the study identified that upgrading of South Arm Road to provide two traffic lanes in each direction can be predominantly achieved within the existing Road Corridor, except for the section through the Rokeby commercial area where widening of the road to four lanes would result in undesirable impacts on existing businesses. Consequently, the proposed plan for upgrading of the Corridor includes realignment of South Arm Road to the south of the Rokeby commercial area, from west of Hawthorne Place, reconnecting to the existing road, east of Horsham Road. This realignment essentially follows the southern portion of the future road corridor that was proclaimed 26 years ago following the 1988 planning study.

Having established the proposed future alignment for the road, the options analysis process then focussed on connectivity. Connectivity options (such as traffic signals and roundabouts) were assessed using a Multi-criteria Assessment with the preferred treatments shown in Table 5 and on the Corridor Plan map on the following pages.

A key driver in the selection of traffic signals for the intersections was the ability to provide safe crossing opportunities for pedestrians, whilst achieving Level of Service targets for private and public transport vehicles.

Table 5: Preferred connectivity arrangement

<b>Location</b>	<b>Description</b>
Diosma Street	Remove connection to South Arm Road
Grange Road East	Provide a connection at the northwest end to Vivian Drive (Glebe Hill)
Grange Road East	Remove current junction and connect to a new signalised intersection at Burtonia Street
Burtonia Street	Provide a new signalised intersection incorporating Grange Road East
Hawthorne Place and Droughty Point Road	Provided staggered signalised T-intersections and a cul-de-sac for Droughty Point Road on the northern side of the new alignment for South Arm Road
Connection of existing South Arm Road to southern end of the new realignment	Provide a signalised T-intersection
Oakdowns Parade	Provide a signalised intersection
Acton Road	Provide a signalised T-intersection



**ROKEBY STAGE 3 CORRIDOR PLAN**

## 5.2 Active Transport

To improve active transport uptake, it is recommended that the shared path constructed at Tollard Drive be continued along the Corridor. This would improve the uptake of cycling by inexperienced and less confident cyclists. The suggested route for the shared path would be:

- From Tollard Drive to Burtonia Street, located between Grange Road West and South Arm Road
- From Burtonia Street to Hawthorne Place along the northern side of South Arm Road; and
- From Hawthorne Place to Acton Road along the northern side of South Arm Road, through the Rokeby Commercial Zone, to Oakdowns Parade.

The proposed shared path route aligns with Clarence City Council plans to construct an unsealed walking track between Oakdowns Parade and Acton Road. Ultimately Council's unsealed walking track would be upgraded to a wider shared path with an all-weather surface at the time the section between Oakdowns Parade and Acton Road is duplicated.

In addition to the construction of a new shared path, existing footpaths are proposed to be connected to the new signalised pedestrian crossings to improve pedestrian connectivity.

To accommodate experienced cyclists, who are unlikely to use a shared path, it is recommended that sealed shoulders suitable for use by cyclists are included along the full length of the Corridor.

## 5.3 Public Transport

The installation of signalised intersection treatments and the associated improved pedestrian crossing facilities will provide the opportunity to optimise and improve public transport facilities.

It is proposed to construct sealed indented bus bays downstream of the traffic signals at Burtonia Street and Oakdowns Parade, for both eastbound and westbound traffic. These bus bays would be connected to the new signalised crossings at the intersections, providing safe crossing opportunities for pedestrians.

The bus stops would be constructed to comply with Metro Tasmania DDA standards. Shelters and seating would be provided for the westbound bus stops for improved passenger amenity. The improved facilities and connectivity are expected to encourage the use of public transport.

The existing bus stops, located between Oakdowns Parade and Acton Road, provide a low level of service. Given that duplication of the road between Oakdowns Parade and Acton Road will not be required for some time, it is recommended that as an interim measure the pavement at existing bus stops be sealed to enable buses to safely pull off and onto the road. Rationalisation of bus stops along this section should be considered in consultation with Metro Tasmania as part of further planning.

## 5.4 Staged Upgrade Program

Traffic modelling to assess the performance of existing road infrastructure under predicted traffic growth conditions indicates that there will be a need to address the performance of the Hawthorne Place and Droughty Point Road intersections in the medium term.



Informed by the traffic modelling, a staged upgrade program is needed for the Road Corridor. To improve performance of the Hawthorne Place and Droughty Point Road intersections it is necessary to provide the extra capacity of an additional two lanes by realigning South Arm Road to the south of the Rokeby commercial area where there is space for this widening. As the realignment would be constructed to provide four lanes (two in each direction), construction of the realignment section in isolation would result in a 1km section of the existing road between Pass Road and Hawthorne Place remaining as a two-lane two-way road. As a result, it is recommended that the first stage (Stage 1) of the Corridor Upgrade involve widening of the existing road from Pass Road to west of Hawthorne Place, to provide four lanes and establishment of a four-lane realignment from west of Hawthorne Place to east of Horsham Road. Implementation of these upgrade works will result in a travel time savings of approximately 2 minutes in the year 2039 relative to not implementing the upgrade works.

The traffic modelling indicates that the Oakdowns Parade intersection and the section of South Arm Road, between Oakdowns Parade and Acton Road, will continue to operate with a relatively high level of efficiency for the next 15-20 years. However, the Acton Road intersection requires upgrading in the medium term to address congestion and resulting safety issues. To improve traffic operation and safety at the Acton Road intersection, until duplication between Oakdowns Parade and Acton Road is warranted, it is recommended that this intersection be upgraded at the same time as the Stage 1 works.

As the need to provide four lanes on South Arm Road between Oakdowns Road and Acton Road (Stage 2) will not arise for some time, it is recommended that a Road Safety Audit and detailed crash analysis be undertaken for this section of the road to identify medium term upgrades that can be undertaken to improve safety, such as shoulder widening.

Extension of the existing shared path from Pass Road to Hawthorne Place should be undertaken in conjunction with the Stage 1 duplication of the existing road to four lanes, along with provision of new accessible (DDA compliant) bus stops at Burtonia Street. Upgrading of the existing road between Pass Road and Hawthorne Place and establishment of the South Arm Road realignment would enable the existing northern footpath through the Rokeby commercial area to be upgraded to a shared path.

In the short-term Clarence City Council are investigating the establishment of a walking track between Horsham Road and Acton Road. In the long term this path would be upgraded to a shared path with an all-weather surface, in parallel with the Stage 2 duplication of South Arm Road between Oakdowns Parade and Acton Road.

A map showing the staging of the Corridor Plan described above is shown on page 5 as part of the Executive Summary.

## 6 Next Steps

This Corridor Plan (as shown on the map on page 16) outlines the prioritised infrastructure solutions needed to support the predicted traffic growth and improve safety along the Corridor.

On the basis of the Planning Study, the Department of State Growth intends to recommend that the upper, northern leg of the future road corridor proclaimed 26 years ago be revoked. This will facilitate the Department of Education and Clarence City Council's plans for a sporting development at Bayview Secondary College and better connectivity for pedestrians between Bayview Secondary College and the existing Clarendon Vale oval. There is no commitment to, or funding for, the solutions identified in this Plan. The Plan will be used as a basis for securing funding. Once funding is secured, the work to be undertaken over the next few years includes:

- Seeking community feedback on the Corridor Plan
- Further planning for the Stage 1 upgrade works from Pass Road to west of Oakdowns Parade
- Road Safety Audit and crash analysis of the existing road between Oakdowns Parade and Acton Road to identify safety issues and develop mitigation strategies; and
- Design of an upgraded intersection to replace the existing South Arm Road / Acton Road intersection.



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