Tasman Highway Intelligent Transport System

Submission to the Parliamentary Standing Committee on Public Works

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Document Development History

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Section Title	Section Number	Amendment Summary

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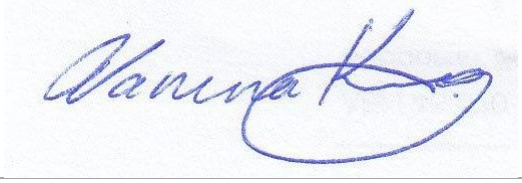
Authorised by:	Vanessa King		22 December 2020

1. Introduction

1.1. Project Name

Tasman Highway Intelligent Transport Systems.

1.2. Project Summary

Rational/objectives:
This project comprises two main components:

- An On-Road Traveller Information System (OTIS) at various locations around greater Hobart, including variable message signs and new traffic cameras
- A new Lane Use Management System (LUMS) for the Tasman Bridge

This project is aimed at improving travel times and delivering a more efficient and reliable network, as well as improving the work, health and safety outcomes of the use and management of traffic flow systems (including tidal flow transition). The project will make the network more resilient and able to accommodate changes in traffic conditions that may arise due to crashes, breakdowns or other unplanned events.

Location:
The project is located in Hobart, Tasmania. The new Lane Use Management System will apply to approximately 3 km of the Tasman Highway/Tasman Bridge. The new On-Road Traveller Information System will include signage at strategic locations around greater Hobart, including Kingston, Glenorchy, Lindisfarne and Mornington.

Key Benefits:
Variable Message Signs provided as part of the OTIS component of this project will deliver a more efficient and reliable network by allowing State Roads to convey messages to road users who are already on the road, advising of current traffic conditions and, in the event of an incident, give directions or advice to road users as appropriate. When not required for incident response, the VMS can display pre-approved road safety messages, or current travel times to key destinations as determined by the AddInsight travel time monitoring system.

Expanded traffic camera coverage will provide State Roads with a greater visibility of prevailing traffic conditions, and improve situational awareness that will allow Traffic Management Centre operators to adopt an appropriate response and monitoring of incidents (including advice to Tasmania Police and government towing services) and other events.

The new Lane Use Management System will replace the existing tidal flow Lane Control System, which has reached the end of its serviceable life. The new system will improve travel time prediction reliability and resilience, and provide greater operational flexibility to allow different responses to incidents and other events. The new LUMS will also improve Work Health and Safety outcomes, by providing a level of automation to the current tidal flow transition process, and reducing the need for workers to be positioned on the roadway.

Progress to Date:
In 2018, the Department of State Growth (State Growth) completed the Hobart Traffic Incident Management project which identified actions to improve the response to incidents and reduce traffic delays. A key outcome of the project was the need to provide improved traveller information, which is the objective of the OTIS component of this project.

In June 2020, draft locations for the installation of permanent variable message signs and closed circuit television cameras were identified for the OTIS component of the project. A Concept Design Report was prepared and concept plans were developed for the 13 proposed sites.

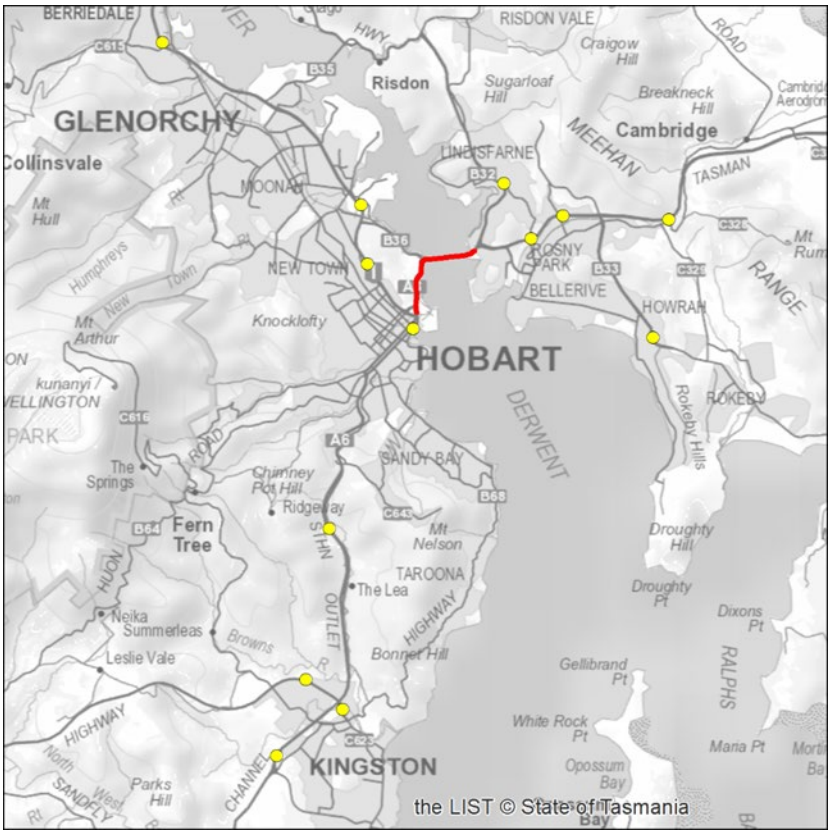
For the LUMS component, a concept scope has been prepared describing the intended functionality that is desired.

State Growth has engaged a consultant to undertake preliminary assessments and planning works for both components of the project, including preparing a framework for the project Request for Tender package from which the design and construct contractor for the project will be procured.

1.3. Project Location

The project is located in Hobart, Tasmania.

The new On-Road Traveller Information System will include signage at various locations around greater Hobart as shown in yellow in the figure below.



Map data source: State Growth, VMS locations, 2020; DPIPWE, topographic base map, 2020.

Geographical coordinates for the proposed locations are provided in the table below.

Draft VMS Locations (OTIS)
Huon Highway North Bound west of Southern Outlet
Kingston Bypass North Bound near Spring Farm Road
Beach Road North Bound south of Southern Outlet
Southern Outlet North Bound south of Olinda Grove
Davey Street South Bound east of Argyle Street
Brooker Avenue North Bound north of Federal Street
Brooker Highway South Bound north of Domain Highway
Brooker Highway South Bound north of Berriedale Road
East Derwent Highway South Bound north of Gordons Hill Road
Tasman Highway East Bound east of Gordons Hill Road
Tasman Hwy West Bound at Dampier Street

Draft VMS Locations (OTIS)
Tasman Highway West Bound east of Mornington interchange
South Arm Highway West Bound east of Shoreline Drive

The new Lane Use Management System will apply to approximately 3 km of the Tasman Highway/Tasman Bridge, as shown in the figure below.

Map data source: State Growth, VMS locations, 2020; DPIPWE, topographic base map, 2020.

Within this 3 km section of roadway are thirteen gantries that could be utilised as part of the LUMS.

1.4. Related Projects and Strategic Context

Traffic Incident Management Plan

The Traffic Incident Management Plan ("the Plan") completed in 2019 identified actions to improve the response to incidents and reduce traffic delays. Key elements of the Plan include:

- Improved communication between Tasmania Police and the Traffic Operations team within State Growth, both during an incident and at other times
- Early initiation of a strategic traffic management response where this is required
- Improved traveller information in order to manage expectations of the general public and assist them to make better travel choices
- Monitoring of performance, and setting targets for improvement

The OTIS component of this project will address the need to provide improved traveller information and camera coverage.

Operations Management and Control System (OMCS)

The OMCS used by State Growth is based on the Transmax STREAMS product. Transmax has recently been appointed for a 3+2 year period to supply, deploy and provide system maintenance and support for the new OMCS software application and system.

The OMCS has the capability to integrate with various systems currently used and other systems in the future. State Growth has taken the approach to deploy the first part of the works, i.e. an OMCS that meets the current requirements baseline and is compatible with the future capability that will be deployed over time.

The OMCS will serve as the central control system for the OTIS and LUMS components.

Inner Hobart Network Operations Planning (NOP)

State Growth is currently developing a Network Operations Framework for inner Hobart, which will define the overall objectives for how the network should operate and provide a structure around how decisions about the network's operation and management can be made. It will define measures of success and how and when they will be measured.

The Network Operations Plan will guide the operation and development of the Inner Hobart transport network, and provide a basis for decision making that reflects the competing demands on the transport network relating to functions of Movement and Place for various user groups, at different times of the day / week / year,

2. Project Scope

2.1. Problem/ Opportunity Statement

The Tasman Bridge is one of the most critical roads in Tasmania and carries the highest daily volumes of any road in the State (~70,000 vehicles per day). The current Lane Control System on the Tasman Bridge, used to manage the contraflow lane, has passed its serviceable life and requires urgent replacement. It is reducing network reliability and is posing a serious safety and operational risk. In addition, the existing method of transitioning between the morning peak and "normal" configuration of the Tasman Bridge and Tasman Highway is cumbersome, time consuming and requires significant manual intervention by ground crews, which poses a potential safety risk.

A new method utilising supporting infrastructure and removing manual intervention by road crews is required. The LUMS component of the project will involve the transition to an automated system providing substantial safety and efficiency benefits.

In recent years Hobart has experienced unprecedented growth and greater economic activity. Traffic congestion and reliable travel time predictions are growing issues. To reduce delays it is important to advise motorists of the condition of the network to allow users to make more informed decisions.

Currently information about traffic conditions is provided through regular timetabled morning radio announcements, supported by available from CCTV footage and AddInsight, a program that measures travel time, in real-time. There is no Advanced Traveller Information System in Hobart, available to the general public. This is inhibiting efficient travel for commuters across the Greater Hobart area, with compounding economic impacts. The OTIS component of the project will address this problem by providing real time traffic information displayed on Variable Message Signs (VMS) at key locations around Hobart.

2.2. Options Evaluation

On-Road Traveller Information System (OTIS)

A number of options were considered for the OTIS component of this project including:

1. VMS and cameras installed as component of major road projects only (no specific roll-out program)
2. A small number of VMS and additional camera sites (generally one sign on each arterial route inbound, plus one on each of Macquarie Street and Davey Street) for a total of approximately 5 locations
3. VMS and cameras located across the arterial network at strategic locations (inbound and outbound) for a total of 13 locations
4. A large number of VMS and cameras (multiple locations on each arterial route, both inbound and outbound) for a total of over 60 locations

Only a small number of major road projects are planned in the Hobart area over the next couple of years. Installation of VMS and cameras associated with these projects would result in some areas having good coverage, while others would have no coverage. Importantly, the location of major road upgrades are unlikely to correspond with locations on the network where a VMS would provide the most strategic advantage. Consequently Option 1 is not preferred.

Option 2 represents a minimum provision of VMS (beyond Option 1). A single VMS on each arterial route would allow messages to be provided to drivers as they approach the sections of the road network that are typically most congested and where traffic obstructions due to an incident are more likely. However, depending on the placement of the sign along the route, there will either be incidents that occur upstream of the VMS (making the VMS redundant for that incident), or drivers joining the route downstream of the VMS but upstream of the incident (i.e. those drivers will not have seen the VMS).

While full CCTV coverage would be ideal (Option 4), if VMS are too frequent, then there is a risk that drivers will become less sensitive to their content, and may not notice specific messages that may change from one sign to the next. Also relevant is the significant cost of installing and maintaining VMS and cameras (whole of life costs), considering that there are over 60 mid-block road segments on the major arterial roads between Kingston, Hobart Airport and Berriedale.

Strategic deployment of VMS and cameras (Option 3) is therefore the proposed solution. There is still the potential for incidents to occur upstream of a VMS, or for drivers to join a route downstream of a VMS but upstream of an incident, but these can be minimised through strategies including:

- Installing VMS on routes leading towards limited-access corridors
- Providing VMS for inbound traffic in outer areas
- Providing VMS upstream of major interchanges / junctions with alternative routes
- Providing multiple VMS on each arterial route

The proposed option also significantly improves the CCTV visibility of the road network.

The proposed option includes 13 variable message signs at strategic locations around greater Hobart. In each of these locations, various options for locating the signs were reviewed for constructability and a preferred option identified. Constraints and opportunities were considered when determining preferred positioning including:

- Containment of the design within the existing road reserve/boundary, where possible, to avoid land acquisition requirements.
- Consideration of a parking area to allow safe and efficient maintenance of each VMS installation.
- Provision of sufficient clear zone, sight distance, and clearance to decision point and existing directional sign to proposed VMS sign.
- Truck stopping sight distances, based on Austroads Guide to Road Design, Part 3 – Geometric Design.
- Clear Zone distances from edge of through travelled way are based on Austroads Guide to Road Design, Part 6 – Roadside Design, Safety and Barriers.
- Protection of VMS infrastructure from impact by errant traffic.
- Telecommunication and electrical (power pole or low voltage line) asset connection. Existing service connections may need to be realigned as required.
- Existing underground and overhead utilities in the area (based on DBYD).
- Protection of existing services. The proposed sites aimed to avoid relocation of utilities as much as possible.
- Proximity to existing power poles while considering zone of influence and stability of the pole. Protection to TasNetworks assets during excavation work will be completed by the Contractor, who will provide a Construction Methodology
- Clearance requirements and safe approach distances to overhead power lines. Clearance distances vary depending on a range of factors including span lengths, conductor tension, mounting heights and the characteristics of the structures proposed in close proximity.
- Easements and clearance requirements should be confirmed with utility owners.
- Communication asset connection for approval by Telstra.
- Electrical asset connection for approval by TasNetworks.

Lane Use Management System (LUMS)

As detailed earlier, the current Lane Control System on the Tasman Bridge, used to manage the contraflow lane, has passed its serviceable life and requires urgent replacement as it is having a negative impact on network reliability.

In July 2020, a traffic assessment was undertaken to assist in determining whether a physical barrier is required to separate opposing traffic streams in the contraflow lane during tidal flow operation, and whether any barrier could be in place on a full-time basis (avoiding the need for deployment of the barrier each day). It was recommended that a movable permeable barrier be implemented, with lane widths as close as practical to 3.5 m wide.

There are a number of core elements associated with the LUMS, which include:

- Integration of the LUMS into the Operations Management and Control System (OMCS).
- Automation of the lane closure system for tidal flow lane changes.
- Full integration of the systems into the OMCS in State Growth's Traffic Management Centre (TMC).
- Remote access capability for secure disaster management operations system to be accessible from outside of the TMC if needed.
- Decommission and removal of the old tidal flow system from the Tasman Bridge.
- Replacement of the old, tidal flow reversible lane change dynamic systems, overhead lane delineation signs and overhead gantry information signs.
- Installation of in-ground lane delineation where necessary.
- Installation and automation of moveable median barriers and boom barriers.
- Install bridge structural integrity monitoring and auto shutdown facility if bridge structure is compromised.

A number of potential options for delivering the LUMS component of this project include:

- Replacement or extension of gantries 4, 5, 6 and 7 to enable the serving of both inbound and outbound lanes.
- Extend LUMS onto the Domain Highway approaches to the Tasman Bridge.
- Extending the LUMS onto the pedestrian overpass east of Gantry 14.
- Installation of new VMSs in key locations.
- Installation of Freeway Ramp Signals on East Derwent Highway / Tasman Highway, Rosny Hill Road / Tasman Highway.
- Install additional Bluetooth Travel Time capture stations.
- Install new travel time displays - VMS.
- Install freeway condition signs - linked to VMS.
- Install additional CCTV cameras for Tasman Bridge tidal flow, and general traffic, monitoring (to be monitored by existing staff as an extension of current practices).
- Integrate existing communication networks onto redundant paths and the corporate ITS networks.
- Install automatic incident detection systems on key locations, with video monitoring.
- Provide access for the TasPorts Control Room to remotely access signs to enable closure for shipping.

These options will be considered during the next phase of the project.

3. Project Cost

3.1. Overall Project Cost Summary Table

	P50 ($m AUD)	P90 ($m AUD)
Base Cost Estimate	20.3161	20.3161
Contingency	1.07885	2.42435
Total Project Cost Estimate	21.39495	22.74045
Escalation	0.22505	0.25955
Total Outturn Cost Estimate	21.62	23.00

3.2. Budget profile for the Project

Financial Year Forecast Milestone Requirement *

P50 Outturn (or Actual as appropriate)		FY20 ($m)	FY21 ($m)	FY22 ($m)	FY ($m)	FY ($m)	Balance of Commitment** ($m)
	Australian Government contribution	0	7.500	3.310	0	0	0.69
	State Government contribution	0	5.118	5.692	0	0	0.69
	Other contribution (provide detail)	0	0	0	0	0	0
	Total	0	12.618	9.003			1.38

*Payment of Australian Government funding will be subject to the achievement of Project milestones determined in consultation between Commonwealth and state officials.
**To be made available on demonstrated need.

4. Project Benefits

4.1. Expected positive outcomes and benefits to be delivered by the Project

The expected positive outcomes and benefits to be delivered by the On-Road Traveller Information System (OTIS) and Tasman Bridge Lane Use Management System (LUMS) are summarised below:

On-Road Traveller Information System (OTIS)

- Improve network reliability by conveying messages to road users who are already on the road, advising of current traffic conditions and, in the event of an incident, give directions or advice to road users as appropriate
- Improving travel time estimates once on the road, where incidences may increase the expected travel time of road users, allowing users to better manage than their estimated time of arrival, or make detours as required
- Improving travel times by displaying pre-approved road safety messages, or current travel times to key destinations
- Improve network efficiency through an expanded traffic camera coverage, providing greater visibility of prevailing traffic conditions, and improve situational awareness that will allow Traffic Management Centre operators to adopt an appropriate response and monitoring of incidents and other events
- The ability to limit the use of their mobile phones to obtain traffic updates whilst driving, decreasing the potential for all crashes, and subsequently decreasing the risk of increased congestion.

Lane Use Management System (LUMS)

- Improved travel time prediction reliability and resilience, and provide greater operational flexibility to allow different responses to incidents and other events
- Improved vehicle travel time during the lane changeover periods, through increased efficiency
- Expanded traffic camera coverage providing greater visibility of prevailing traffic conditions, and improve situational awareness that will allow Traffic Management Centre operators to adopt an appropriate response and monitoring of incidents and other events
- Improved messaging to motorists through additional electronic signage
- Improved road user safety, by providing a level of automation to the current tidal flow transition process, and improved messaging to motorists
- Improved Work Health and Safety outcomes, by providing a level of automation to the current tidal flow transition process, and reducing the need for workers to be positioned on the roadway
- Mitigated safety risks for those workers positioned on the roadway being struck by vehicles, decreasing the likelihood of a fatal or serious injury to workers
- Increased employee productivity, with employees currently completing the manual components of the tidal flow transition process being able to be deployed to other areas

Other anticipated benefits

- Improved road network management system integration
- Enhanced corridor management capability
- Enhanced travel time prediction reliability
- Enhanced traffic throughput
- Enhanced traffic safety
- Reduced vehicle emissions
- Enhanced traveller decision making opportunities
- Enhanced accountability for the TMC operators and the incident management teams

5. Finance and Procurement

5.1. Preferred procurement method for the Project

A single Design and Construct contractor will be engaged via a Request for Tender process for the delivery of both the LUMS and OTIS components of the Project. The contractor will be responsible for detailed design, acquisition of equipment, construction, installation, testing, commissioning and delivery of the final works and products to deliver the Project.

5.2. Project Timeline

Activity	Timeline
Commencement of Contract with Consultant under Contract No. 3154 for planning works	24 March 2020
Pre-procurement industry consultation plan	15 May 2020
Request for Tender No. 3190 for design and construction issued	December 2020
Request for Tender No. 3190 submission closing date	March 2021
Construction contract awarded, subject to PSCPW approval	March 2021
Practical completion	June 2022

6. Risk

6.1. Major risks, and proposed mitigation strategies

The table below outlines the major risks and proposed mitigation strategies identified during a Risk Workshop. Only risks deemed to have a significant impact on the project cost have been included in the estimate. Smaller risks have been accommodated in the contingent risk item "Unidentified Risks".

Note that the risks outlined below are delivery risks rather than reputational or stakeholder risks that may arise if the project does not meet the objectives or is opposed by the community or local councils due to their actual or perceived impacts, or lack of community or council support.

Major Risk Identified	***Proposed Mitigation***

• Poorly defined ITS Framework resulting in a poor outcome
• Lack of stakeholder support
• Risk associated with COVID-19
  ○ Limited interest due to travel restrictions
  ○ Contractor unable to travel to Tasmania
  ○ Change in deployment time due to travel restrictions or Government economic stimulus
  ○ Insolvency of Contractor
• Defective products and/or installation
• Unidentified risks
	• Development of a Concept of Operations report, and undertaking a Concept of Operations workshop to ensure the project outcomes are delivered with the appropriate technology and operational procedures
	• Early engagement with affected stakeholders
	• Procurement strategy to address contractor and market risk
	• The provision of a defects and warranty period
	• Unidentified risks to be addressed as they arise using standard project management methods (risk & issues management)
	• Ensure all State and Federal COVID-19 guidance is adhered to

6.2. Major dis-benefits including likely impacts to the community and environment

There a no major dis-benefits identified.

The table below outlines identified minor dis-benefits and impacts to the community and environment for the project:

Dis-benefits and/or Community and Environmental Impacts
• Traffic disruption during construction • Changes to driving conditions requiring driver re-education • Size of VMS could create a negative visual impact

7. Stakeholder Engagement

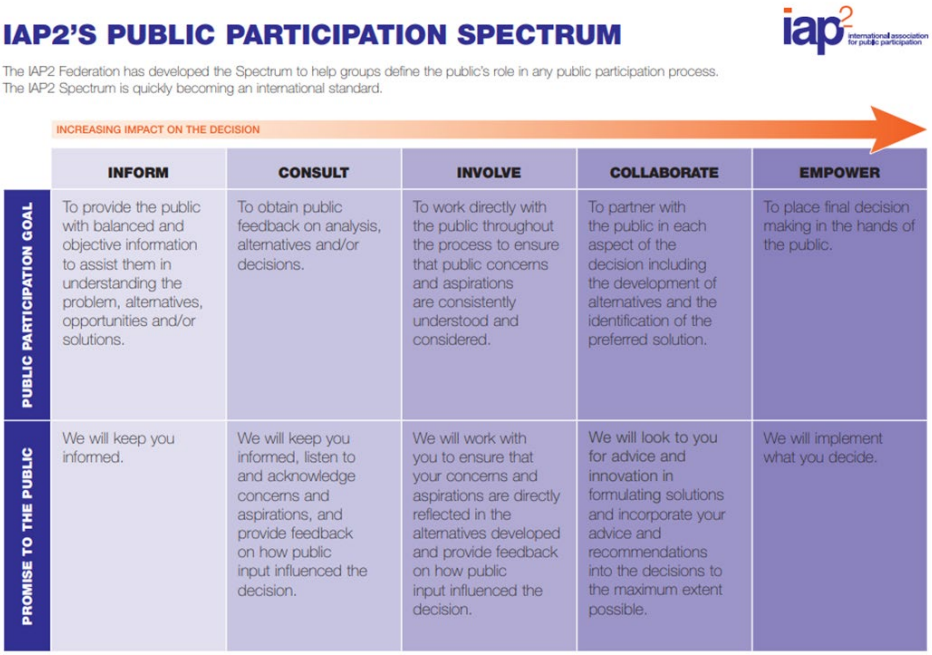
7.1. Public and Stakeholder participation and consultation

The engagement objectives for the Development Phase of the OTIS and LUMS project are:

- To identify and engage productively with all impacted and interested stakeholders to design a fit for service product with understood and planned-for impacts, while following the relevant Austroads, and Australian Road Rules guidelines where applicable.
- To provide regular updates to key stakeholders to maintain an open and ongoing relationship.

The International Association of Public Participation (IAP2) has developed an internationally recognised Public Participation Spectrum. This Spectrum allows an appropriate level of engagement to be tailored to a stakeholder group based on the outcome desired. The stakeholder engagement objectives for this project focus on the Inform and Consult ranges of the Spectrum.

A Stakeholder and Community Engagement Plan (refer Appendix A) has been developed during the Development Phase of the project. This will be updated before the project progresses to the Delivery Phase so the successful contractor can carry out the activities it describes.



IAP2'S PUBLIC PARTICIPATION SPECTRUM

The IAP2 Federation has developed the Spectrum to help groups define the public's role in any public participation process. The IAP2 Spectrum is quickly becoming an international standard.

INCREASING IMPACT ON THE DECISION

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

Tools and methods

The purpose of involving the local community members is to build trust and promote positive reputations and relationships with all stakeholders to ensure 'no surprises' and to enable the smooth delivery of the project.

Community involvement will include opportunities to engage the project team in dialogue about issues, challenges and opportunities and to provide feedback that will be considered, on balance, as part of the decision-making process. Involvement will be encouraged through, but not limited to, the following methods and channels. Channels may need to be modified given the current impact of COVID-19 on community contact.

Key aspects of the stakeholder engagement are outlined below:

Item	*Description*	*Responsibility/approval*	*Stakeholder(s)*
Issues brief	Issues brief will be developed at key milestones during project	State Growth Project Manager	Tasmanian Government

Item	*Description*	*Responsibility/approval*	*Stakeholder(s)*
Online meeting	Meetings to discuss project and in particular, planning relating to location of VMS and/or CCTV (and also Gantry 2 for the City of Hobart), impacts for use of Tasman Bridge	Consultant Stakeholder Engagement Officer to develop information, attend meetings Consultant Project Manager to attend meetings State Growth Project Manager to attend meetings	City of Hobart City of Clarence Glenorchy City Council Kingborough Council TasPorts Tasmania Police
Website	Project information and key messaging will be published to website	Consultant Stakeholder Engagement Officer to develop information State Growth Senior Stakeholder Engagement Officer - Hobart Transport Vision to review, approve and publish	All
Consultation and Feedback Report	A summary of engagement feedback	Consultant Stakeholder Engagement Officer to develop State Growth Senior Stakeholder Engagement Officer - Hobart Transport Vision to review and approve	Tasmanian Government

7.2. Record of Stakeholder Consultation

Date	*Type of Consultation (stakeholders invited i.e. industry, community)*	*Issues raised*	*Management plan*
13 May 2020	Issues brief – Tasmanian Government	N/A	
17 June 2020	Website update – all stakeholders	N/A	
30 June-23 July 2020	Individual online meeting with stakeholders - City of Hobart, City of Clarence, Glenorchy City Council, Kingborough Council, Tasmania Police, TasPorts	Planning relating to location of VMS and/or CCTV (City of Hobart) Road authority for the section of Liverpool Street on which Gantry 2 is located	Allow stakeholders to provide input into the development of framework and establish point of contact for the delivery phase of project, as councils in particular share the same project goals of a reliable road network. Feedback will be recorded in a Consultation and Feedback Report presented to the Tasmanian Government.

Date	*Type of Consultation (stakeholders invited i.e. industry, community)*	*Issues raised*	*Management plan*
TBC/October 2020	Consultation and Feedback Report - Tasmanian Government - A summary of engagement feedback	N/A	
TBC/October 2020	Website updated to reflect tender announcement – all stakeholders	None raised	

7.3. Directly affected land owners and property acquisition

It is not likely that the project will directly impact private landowners or require property acquisition. This will be confirmed by the Contractor during the detailed design.

The Contractor will undertake stakeholder activities in accordance with the Framework, including the preparation and implementation of a Stakeholder and Community Engagement Plan.

8. Compliance

8.1. List Commonwealth or State legislation triggered by the Project

The On-Road Traveller Information System (OTIS) and Tasman Bridge Lane Use Management System (LUMS) project forms part of the Hobart City Deal, the implementation of which is led by the *Greater Hobart Act 2019*. The project also triggers the *National Land Transport Act 2014*.

8.2. Noise

The project area comprises an existing highway. The proposed work will improve the safety and efficiency of the network, and it is not expected to increase traffic generation. It is unlikely that noise mitigation will be required, as per the recommendations outlined in the *Tasmanian State Road Traffic Noise Management Guidelines (State Growth, 2015)*. This will be confirmed by the Contractor prior to works commencing.

8.3. Environment (flora, fauna, landscaping and visual amenity)

It is not likely that this project will require any permits relating to flora and fauna as the proposed project area comprises an existing highway. This will be confirmed by the Contractor prior to works commencing.

All work under the Contract shall comply with the following requirements:

- avoid, minimise and offset (where appropriate) the removal of native vegetation during construction
- avoid injury to fauna or damage to protected vegetation or habitat
- protect significant flora and fauna sites, species or habitat not previously identified.

The Contractor shall undertake their design to avoid, mitigate and minimise impacts on trees as reasonably practicable.

8.4. Heritage (Aboriginal and Historic)

It is not expected that this project will impact on Aboriginal and Historic heritage values as the proposed project area comprises an existing highway. This will be confirmed by the Contractor prior to works commencing.

The Contractor will prepare an Unanticipated Discovery Plan to ensure appropriate response in the event that an item, site or object of Aboriginal Cultural Heritage is discovered that could not have otherwise been anticipated.

8.5. Planning Approvals

It is expected that this project will be exempt from the need for planning permits. This will be confirmed by the Contractor prior to works commencing.