



PARLIAMENT OF TASMANIA

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Channel Highway, Kingston Bypass

Presented to His Excellency the Governor pursuant to the provisions of the Public Works Committee Act 1914.

MEMBERS OF THE COMMITTEE

Legislative Council

Mr *Harriss* (Chairman)
Mr *Hall*

House of Assembly

Mr *Best*
Mr *Green*
Mrs *Napier*

TABLE OF CONTENTS

INTRODUCTION	2
BACKGROUND.....	2
OBJECTIVES.....	2
PROJECT FEATURES	3
COMMUNITY CONSULTATION	4
THE EXISTING SITUATION	5
PROJECT JUSTIFICATION.....	8
THE PROJECT DESCRIPTION	9
EXISTING ENVIRONMENT	12
SOCIAL IMPLICATIONS	17
PLANNING APPROVAL.....	17
CONSTRUCTION PROGRAM AND COSTS.....	18
EVIDENCE	19
DOCUMENTS TAKEN INTO EVIDENCE	32
CONCLUSION AND RECOMMENDATION.....	32

INTRODUCTION

To His Excellency the Honourable Peter George Underwood, Officer of the Order of Australia, Governor in and over the State of Tasmania and its Dependencies in the Commonwealth of Australia.

MAY IT PLEASE YOUR EXCELLENCY

The Committee has investigated the following proposal: -

Channel Highway, Kingston Bypass

and now has the honour to present the Report to Your Excellency in accordance with the *Public Works Committee Act 1914*.

The submission of the Department of Infrastructure, Energy and Resources was as follows:-

BACKGROUND

In 2006 the Department of Infrastructure, Energy & Resources (DIER) completed the Kingston and Environs Transport Study (KETS) which investigated the performance of the existing road network in and around Kingston and developed possible options to address the identified deficiencies. A key conclusion from the investigations was that to reduce delays and improve safety on the Channel Highway, particularly during peak periods, a bypass of the existing Channel Highway between Summerleas Road and Algona Road should be constructed.

Based on the study recommendations the Kingston Bypass Project was initiated and a concept design for the Bypass was developed. The design has now progressed to an advanced stage with the preliminary design completed in March 2009 and the detailed design currently being undertaken.

The Figure below shows the Bypass layout and its location with respect to the existing road network.

OBJECTIVES

The objectives of the project include:

- Reduce congestion and travel times in Kingston.
- Reduce rat running on the local street network.
- Facilitate future development in Kingston including:
 - Further expansion of the Catholic Secondary School at Huntingfield.
 - Relocation of Kingston High School.
 - Expansion of the Kingborough Sports Centre, and
 - Development of Spring Farm.
- Listen to community needs, and

- Provide a value for money solution.

PROJECT FEATURES

The key features of the Bypass project include:

- A single carriageway with traffic lanes separated by a wire rope safety fence.
- A grade-separated interchange at Summerleas Road catering for all traffic movements.
- A five-legged roundabout at Algona Road which will incorporate Huntingfield Drive and a slip road for northbound traffic travelling from Margate towards Hobart.
- Construction of an overpass at Spring Farm Road to facilitate future connection to Kingston View Drive, and
- Pedestrian and cycling facilities including:
 - Extension of the pedestrian underpass adjacent to the existing Kingston High School.
 - Reinstatement of the shared path and footpath on Summerleas Road Overpass.
 - A 3.0 metre wide shared path on the northern side of Spring Farm Road and a 1.5 metre wide footpath on the southern side.
 - On road cycle lanes at the Algona Road roundabout.
 - Construction of a pedestrian underpass at Algona Road linking Huntingfield to the greater Kingston township, and
 - Extension of the Whitewater Creek Recreation trail from Summerleas Road to Spring Farm Road.



COMMUNITY CONSULTATION

Community Partnership Model

An important aspect of the design development for the Bypass has been consultation with the community and other project stakeholders. Figure 2 shows the community engagement model that has been developed for the project. This model has been implemented throughout the design process and will continue during construction.

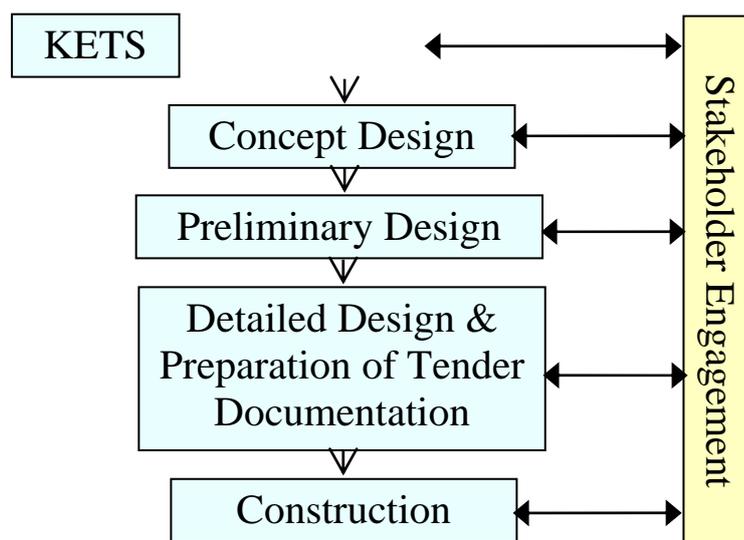


Figure 2 – Community Partnership Model

Kingston and Environs Transport Study

In October 2004 the Kingston Bypass Action Group (KBAG) hosted a public meeting to discuss traffic issues in Kingston. At this time the Minister for Infrastructure, Energy and Resources announced that a holistic approach to investigating traffic and transport issues would be adopted, and the Kingston and Environs Transport Study (KETS) was commissioned.

As part of the KETS a microsimulation model was developed for existing traffic conditions and options which would alleviate the identified deficiencies were developed. The findings of the KETS were used to initiate the concept design for the Bypass which commenced in mid 2006.

Public Display

In December 2008 a public display was held at the Channel Court Shopping Centre and at the Kingborough Council Offices. The display at the Channel Court Shopping Centre was available for viewing for a period of four days which included a Saturday. DIER and pitt&sherry staff were in attendance during the display to answer questions and also to encourage members of the public to submit comments about the project. The key messages received included:

- Provide for pedestrian and cyclist needs.
- Minimise environmental impact.

- Facilitate improved public transport, and
- Build the Bypass as soon as possible.

Community Groups

Throughout the design process DIER has actively consulted with the Kingston Bypass Action Group (KBAG) and Kingston Bicycle User Group (KBUG). Consultation with KBUG has resulted in the inclusion of many of the pedestrian and cyclist innovations in the design. Consultation with both groups will continue throughout the construction phase of the project.

Kingborough Council

The design for the Bypass has been developed in collaboration with the Kingborough Council. This process has ensured that the Bypass design will facilitate future development within Kingston in accordance with Council's master plan. The features of the project which will facilitate future development include:

- Construction of the Algona Road roundabout by the end of 2010 to allow further expansion of the Catholic Secondary School at Huntingfield.
- Construction of Spring Farm Road Overpass to improve traffic access to the new Kingston High School and Kingborough Sports Centre, and the proposed development of Spring Farm.
- Construction of a pedestrian underpass at Algona Road to provide access from Huntingfield to the greater Kingston township, and
- Extension of the Whitewater Creek Recreation Trail from Summerleas Road to Spring Farm Road.

Ongoing Engagement

Public Transport

During preparation of the design discussions were held with Metro regarding the provision of public transport services within Kingborough and the potential for a Park and Ride Facility to be constructed between Huntingfield Drive and the Channel Highway. Although Metro advised that they did not consider this to be a suitable location, DIER agreed to continue to work in conjunction with Metro to identify a more suitable location.

Department of Health and Human Services Huntingfield Housing Development

The Department of Health and Human Services (DHHS) owns approximately 75 hectares of land at Huntingfield which they are proposing to develop for housing. DHHS has recently engaged a consultant to develop a master plan for the development. An outcome of this process will be the identification of a suitable location for a second access to Huntingfield from the arterial road network. DIER is working in conjunction with DHHS and their consultant to assist in identifying a suitable location for the second access. The second access will be funded outside of the Bypass project.

THE EXISTING SITUATION

The Existing Channel Highway

The Channel Highway is the primary access to the D'Entrecataux Channel Area. At its northern end the Highway has a direct connection to the Southern Outlet Highway which is the primary access to the City of Hobart from the south.

In DIER's State Road Hierarchy the Channel Highway is classified as a Category 3 Regional Access Road recognising its importance in providing access to townships south of Hobart.

Through Kingston the Channel Highway passes through a predominantly residential and commercial area with a number of side roads connecting to the Highway. The Highway consists of a single lane in each direction with a central turn lane provided from Summerleas Road to Spring Farm Road to allow turning lanes prop safely clear of through traffic. There are on-road cycle lanes approximately 1.0 metre wide on both sides of the Highway and a footpath on the eastern side.

During the peak periods vehicles experience lengthy delays at the Summerleas Road roundabout and at side roads which connect to the Highway. These delays have resulted in an increase in rat running on the local street network potentially increasing crash potential. The main rat running routes are Roslyn Avenue and Maranoa Road.

The intersection of Algona Road and the Channel Highway is controlled by a three legged roundabout with a single circulating lane. Approximately 70 metres south of the roundabout Huntingfield Drive connects to the Channel Highway via an at grade junction with a designated right turn lane. During the peak periods vehicles turning right out of Huntingfield Drive onto the Channel Highway experience lengthy delays. Strong development growth in Huntingfield is increasing congestion at the junction.

The Bypass Corridor

The Bypass corridor is located to the west of the existing Channel Highway. Acquisition of the land required for the Bypass was commenced in 1983.

In the vicinity of Moir Road residential properties abut the road reservation on both sides. Properties on the western side are separated from the Bypass by Whitewater Creek. Further south commercial properties which access onto Mertonvale Circuit are located immediately adjacent to the road reservation on the eastern side. Land on the western side is predominantly used for rural purposes, although it is known that the property owner is currently undertaking planning work to develop the land into residential and commercial lots. South of Spring Farm Road the land is used for rural purposes. This land also has long term development potential.

Traffic Operation

In 2006 approximately 18,000 vehicles per day were using the Channel Highway with traffic volumes increasing at between 3% and 4% compound per year. This growth is significantly more than most other roads on the Tasmanian State Road Network which experience growth of between 1% and 2%. This sustained growth has resulted in increased congestion on both the arterial and local road networks in Kingston.

During the KETS a microsimulation model was developed for the existing road network. Development of this model was the foundation for investigating potential options to address traffic congestion issues.

Table 1 indicates the calculated queue lengths at the Summerleas Road under existing conditions for each of the approaches. From the table it can be seen that queue

lengths in a northbound direction in the morning and in a southbound direction in the evening are more than a kilometre long.

Table 1.
Summerleas Road Roundabout – Existing Queues

Intersection	AM Peak (metres)	PM Peak (metres)
Southern Outlet Northern Approach	34	1,020
Summerleas Road	289	85
Channel Highway Southern Approach	1,151	131
Channel Highway Eastern Approach	32	96

Table 2 shows the expected queue lengths under existing conditions at both the Algona Road roundabout and the Huntingfield Drive junction. From the table it can be seen that queues on the southern and northern approaches to the roundabout are quite long during the morning and afternoon peak hours respectively. Queues on the southern approach during the morning peak hour extend beyond the Huntingfield Drive junction. Considerable queues occur on Huntingfield Drive during both peak periods.

Table 2.
Algona Road Roundabout & Huntingfield Drive Junction– Existing Queues

Intersection	AM Peak (metres)	PM Peak (metres)
Algona Road Roundabout		
Channel Highway Northern Approach	47	199
Algona Road	85	44
Channel Highway Southern Approach	201	45
Huntingfield Drive Junction		
Huntingfield Drive	208	328

Road Crashes

Between the end of 2003 and 2008 there were 100 recorded crashes on the existing Channel Highway between Summerleas Road and Maddocks Road. Of these crashes 37 occurred at side road junctions with give-way controls and 27 at roundabouts. Of

the side road junction crashes seven resulted in first aid needing to be administered and one accident required a person involved in the crash needing to be taken to hospital.

Twenty three crashes were recorded at the Summerleas Road roundabout with the most common crash type being a side swipe or rear end collision. Four crashes were recorded at the Algona Road roundabout. The majority of crashes resulted in property damage only.

Thirty six non-intersection related crashes were recorded between Summerleas Road and Maddocks Road. The majority of these crashes were rear end collisions and only resulted in property damage.

PROJECT JUSTIFICATION

The justification for this project derives from the traffic operation improvements to both the arterial and local road networks and the associated potential improvements in safety at the side road junctions on the existing Channel Highway. The Bypass will also facilitate future development in Kingston in accordance with the Kingborough Council's master plan.

The main justifications for the project are discussed below.

Traffic Operation

Construction of the Bypass will reduce traffic volumes on the existing Channel Highway from 18,000 vehicles per day to between 6,000 and 8,000 vehicles per day. The Bypass will prevent the need for commuters travelling from south of Algona Road to travel through the Summerleas Road Roundabout resulting in a significant reduction in travel times, especially during the peak periods.

The reduction in traffic volumes on the existing Channel Highway will also improve the operation of the side junctions by creating more gaps in the traffic stream.

Connection of Huntingfield Drive to the new Algona Road roundabout will improve egress from Huntingfield in the short to medium term. As mentioned previously, DIER is currently working in conjunction with DHHS to identify a suitable location for another connection from Huntingfield onto the arterial road network.

The tables provided in Appendix B show the existing and future queue lengths at the Summerleas Road roundabout and Algona Road roundabout. It can be seen from the tables that construction of the Bypass will result in a significant reduction in queuing at both roundabouts.

Safety Benefits

It is possible that the reduction in traffic volumes on the existing Channel Highway will result in an improvement in crash performance. In particular, crash performance at the side road junctions is expected to improve due to the increased gaps between vehicles allowing vehicles turning onto the Highway from connecting side roads to accept longer gaps.

The reduction in traffic volumes on the existing Channel Highway may also improve safety for pedestrians and cyclists.

A wire rope safety barrier is to be provided between opposing directions of traffic on the Bypass. The safety barrier will reduce the potential for head on collisions.

Facilitation of Future Development

Construction of the Bypass will facilitate future development within Kingston through:

Connection of Huntingfield Drive to the new Algona Road roundabout and DIER's commitment to construct the roundabout first to allow the recently established Catholic School to continue its expansion, and

Construction of an overpass at Spring Farm Road to enable future connection of Spring Farm Road to Kingston View Drive providing more efficient access to the new Kingston High School and the Kingborough Sports Centre. This inturn will facilitate development of Spring Farm.

Maintenance Cost Savings

It is anticipated that the maintenance responsibility for the existing Channel Highway will be transferred to Kingborough Council following the construction of the Bypass. DIER has been consulting with Kingborough Council to confirm details regarding the handover. Once the Bypass is complete maintenance requirements on the existing Channel Highway are expected to reduce significantly due to a reduction in the number of heavy vehicles using the road.

The Bypass will significantly reduce the recurrent pavement maintenance costs compared to the existing Channel Highway through:

- Improved pavement strength,
- The application of dense graded asphalt surfacing,
- Installation of an efficient pavement drainage system reducing the rate of pavement deterioration, and
- Construction of wide sealed shoulders to reduce road edge maintenance.

Road User Benefits

The main benefits for road users include:

- A reduction in travel times between Summerleas Road and Algona Road.
- A reduction in delays at the Summerleas Road roundabout, and
- Improved egress from side roads connecting to the existing Channel Highway.

THE PROJECT DESCRIPTION

Road Works

The Bypass commences south of Kingston Interchange and is located on the western side of the existing Channel Highway. At the southern end, the Bypass connects to a new roundabout at Algona Road which will have five approach roads. The roundabout will be the largest in Tasmania.

At Summerleas Road a grade separated interchange will be provided with both north and south bound on and off ramps. The Bypass passes underneath Summerleas Road at a depth of approximately 7 metres.

The Bypass will predominantly consist of a single carriageway with a single lane in each direction separated by a wire rope safety fence. At Summerleas Road the north and south bound lanes have been positioned on opposite sides of the central pier of the Summerleas Road Overpass to minimise the length of the overpass.

The cutting at Summerleas Road will generate excess excavation material. This material will be used to place the foundation material for the future second carriageway. Whilst the expected traffic volumes do not justify construction of a dual carriageway bypass now, there are significant future cost savings by reusing the excavated material rather than importing other material in the future.

At Spring Farm Road an overpass and road approaches will be constructed. The link across the Bypass will facilitate the future connection of a local road to Kingston View Drive which is the primary access to the Kingborough Sports Centre and the new Kingston High School.

The new Algona Road roundabout will have five approach roads including:

- The existing Channel Highway from the north.
- Algona Road
- Huntingfield Drive
- The existing Channel from the south, and
- The Bypass.

A slip road will be provided between the existing Channel Highway from the south and the Bypass to prevent the need for northbound vehicles to negotiate the roundabout.

The geometry of the roundabout has been designed to facilitate the future construction of a grade separated interchange. This will involve the connection of a sixth leg to the roundabout with two of the current approaches becoming one-way.

South of the Algona Road roundabout the Channel Highway will be lowered to improve sight distance. This will result in the construction of a retaining wall on the eastern side of the road. Works terminate at the Maddocks Road junction.

Cross Section

Traffic lanes on the Bypass will be 3.5 metres wide. The sealed median between the traffic lanes containing the wire rope safety fence will be 1.8 metres wide.

For the entire length of the Bypass 2.0 metre wide sealed shoulders will be provided on the left hand side of the traffic lanes. This will reduce the likelihood of broken down vehicles preventing the thoroughfare of other vehicles.

A single 3.0 metre wide lane in each direction with 1.0 metre shoulders will be provided on Summerleas Road and Spring Farm Road.

Alignment

To provide for the future duplication of the highway and provide an alignment consistent with the adjoining Hobart Southern Outlet the geometric alignment of the Bypass has been developed in accordance with relevant design guidelines for a design

speed of 100km/h. It is anticipated that the posted speed limit on the Bypass will be 80km/h.

Pedestrians and Cyclists

As mentioned previously the project includes a number of facilities for pedestrians and cyclists. The main facilities are as follows:

- Extension of the pedestrian underpass near Kingston High School.
- Reinstatement of the shared path and footpath on Summerleas Road.
- Provision of a shared path and footpath on Spring Farm Road for future connection to Kingston View Drive.
- Extension of the Whitewater Creek Recreation Trail from Summerleas Road to Spring Farm Road.
- On-road cycle lanes at the Algona Road roundabout, and
- Provision of an underpass at Algona Road to provide pedestrian access between Huntingfield and the greater Kingston township.

Extension of the Whitewater Recreation Trail from Summerleas Road to Spring Farm Road delivers a critical link in the Kingborough Bicycle Plan. The trail will initially be located on the western side of Whitewater Creek before crossing to the eastern side south of Spring Farm. The trail will then be located on the western side of the Bypass corridor before being connected to the shared path being provided on the northern side of the Spring Farm Road.

The on-road cycle lanes at Algona Road roundabout will be 1.5 metres wide. In the vicinity of the roundabout the lanes will be painted green to increase the awareness of drivers to the presence of cyclists. The roundabout will be the first in the state to have cycle lanes on all approaches to the roundabout and a circulating roadway.

The pedestrian underpass at Algona Road will be constructed adjacent to Coffee Creek. A path of similar standard to the Whitewater Recreation Trail will be constructed from the Algona Road roundabout to the underpass and then to Patriarch Drive providing a link to the Peter Murrell Conservation Area.

Water Sensitive Urban Design

Where feasible Water Sensitive Urban Design (WSUD) treatments will be implemented to treat road run off which could potentially contain contaminants and to control the discharge from impervious areas so that erosion of waterways is prevented. The likely locations of the treatments include Summerleas Road interchange, in the vicinity of Moir Road and at the Algona Road roundabout.

Public Transport

There are three existing bus stops on the Channel Highway south of the Algona Road roundabout. These bus stops do not have sufficient pedestrian crossing sight distance and there are no formalised pedestrian paths to provide access to them. Consequently these bus stops will not be reinstated on the Highway but will be relocated to the area of land between the Huntingfield Drive and Channel Highway approaches to the Algona Road roundabout. A circulating road will be constructed on the site to enable buses to enter, pick up or drop off passengers and then return to the road network. Shelters will be provided to protect passengers from the weather and a limited amount of parking will also be made available.

The layout of the bus stops has been designed so that the site can be expanded in the future if necessary.

Public Utilities

The project requires extensive relocation of public utilities including:

- Telecommunications cables and pits.
- High and low voltage overhead and underground power.
- Trunk and reticulated water mains, and
- Gravity sewer mains.

The owners of the public utilities have been consulted throughout the development of the design and the required modifications have been designed to minimise interruptions to users of the public utilities during construction.

Bridges

The project requires the construction of two grade separation structures, Summerleas Road Overpass and Spring Farm Road Overpass. In addition, the existing Kingston Pedestrian Underpass near Kingston High School is to be extended and a new pedestrian underpass is to be constructed at Algona Road near Coffee Creek.

Both Summerleas Road Overpass and Spring Farm Road Overpass will be constructed to facilitate future duplication of the Bypass. Therefore both structures will have two spans and a central pier. The structures will be constructed using pretensioned open topped Super-T beams with cast in-situ deck slabs above.

Due to the proximity of the Summerleas Road Overpass to take away food outlets at Westside Circle transparent screens will be fitted to the outside of the overpass. These screens will reduce the likelihood of objects being thrown from Summerleas Road down onto the Bypass. The overpass will be the first structure to have screens of this type fitted in Tasmania.

Safety Review

Following completion of the project a review will be undertaken to ensure that the safety objectives of the project have been met. This review will include an audit of the completed construction works to ensure that the safety features incorporated in the design have been implemented appropriately.

EXISTING ENVIRONMENT

The following background surveys were undertaken for the project:

- A Vegetation Survey and Fauna Habitat Assessment¹;
- An Aboriginal cultural heritage survey²;
- An historic heritage survey³; and
- A Land Capability Survey⁴.

¹ Northbarker Ecosystem Services 2007: Channel Highway Kingston Bypass – Vegetation Survey and Fauna Habitat Assessment.

² Stanton, S. 2006. *Aboriginal cultural heritage assessment- proposed Kingston Bypass*.

³ Austral Archaeology. 2007. *Kingston Bypass, Historic Heritage Assessment*.

Flora

Vegetation

The study area supports four native plant communities attributable to TASVEG mapping units, of which two communities are considered to be of high conservation significance:

- (Eucalyptus ovata) forest and woodland – endangered.
- (Eucalyptus amygdalina) forest on sandstone – vulnerable.

Two flora species listed as rare under the Threatened Species Protection Act 1995 occur within the corridor and are likely to be affected:

- Brock knawel (*Scleranthus brockiei*) – 160 plants; and
- Gentle rush (*Juncus amabilis*) – approximately 1300 plants.

A Permit to Take, pursuant to the Threatened Species Protection Act 1995, has been received from the Conservation Assessment Branch of the Department of Primary Industries and Water.

The area is heavily infested with a large number of weeds. Eight ‘declared weeds’ as listed on the Tasmanian Weed Management Act 1999, were recorded from the study area:

- Blackberry (*Rubus fruticosus*)
- Boneseed (*Chrysanthemoides monilifera*)
- Gorse (*Ulex europaeus*)
- Montpellier Broom (*Genista monspessulana*)
- English Broom (*Cytisus scoparius*)
- Wild Fennel (*Foeniculum vulgare*)
- Spanish Heath (*Erica lusitanica*)
- Pampas Grass (*Cortaderia seloana*).

Hawthorn, Sweet Briar and Cotoneaster are also present. These are not listed under the Weed Management Act but are considered to be weeds of concern due to their capacity to naturalise in native bush.

Weed management will be an integral part of the project.

Fauna

Within the survey area stands of black gum (*Eucalyptus ovata*) and the occasional blue gums (*Eucalyptus globulus*) provides a foraging resource for the swift parrot (*Lathamus discolor*), listed as endangered under both Threatened Species Protection Act 1995 and the Environment Protection Biodiversity Conservation Act 1999 (EPBC Act).

A referral has been made to the Department of Environment, Water, Heritage and the Arts (DEWHA) for the clearance of the trees necessary to construct the Bypass. The clearance was deemed a controlled action, therefore requiring assessment and approval under the EPBC Act. The assessment is occurring on preliminary documentation – meaning it is based on the information contained in the original referral and further information requested on the impacts and mitigation strategies.

⁴ Stevenson, G. 2008. Land Capability Survey Kingston Bypass.

A comprehensive offset package has been prepared which involves the following components:

- The establishment of a perpetual conservation covenant on private land applying to 12 ha of *Eucalyptus ovata* in the South East Bioregion;
- Rehabilitation and covenanting of existing stands of *Eucalyptus ovata* on public land with and adjacent the project area (approx 2.7 ha);
- The contribution of some seed funding in order to assist the Kingborough Council in the implementation of the Regional Council Offsets Project.

The Conservation Assessment Branch of DPIW and the Kingborough Council has endorsed the measures in principle. DEWHA is currently assessing the information provided regarding the offset package.

The chaostola skipper (*Antipodia chaostola*), listed as endangered under the Threatened Species Protection Act 1995, is a small and rarely seen butterfly. There are few records of it in the project area. The original fauna habitat assessment and a follow up survey failed to find any evidence of the butterfly, despite significant areas of suitable habitat containing a high density of its larval stage food plant the thatch saw sedge (*Gahnia radula*) being identified. Because the species was not found no further direct action is required.

Aboriginal Cultural Heritage

No sites of Aboriginal cultural heritage value have been identified in the project area.

Historic Heritage

There will be some impact on the following features of potential historic heritage in the area:

- “Whitewater” House & Environs:
- Former clay pits
- Ray Free’s former 1940s slaughterhouse.
- Concrete cricket pitch.
- Area of Potential Sensitivity – Former Church of England Glebe.
- Three mature trees (two Blue Gums and a Maritime Pine), thought to represent plantings associated with the “Huntingfield” property.
- Remnants of an earlier section of the Channel Highway extending between Huntingfield Avenue and Algona Road on the southern side of the Channel Highway, made redundant when the highway was realigned.

Whitewater House & Environs

The Whitewater property is not heritage listed, however the assessment determined that it would, in all probability, satisfy the requirements for entry in all authoritative heritage registers up to and including State level (i.e. the Tasmanian Heritage Register) if it were nominated.

In designing the Kingston Bypass, every effort has been made to achieve as much separation as possible between the new highway and the historic Whitewater house (including the site of the former stables).

The objective is to provide a meaningful curtilage for the historic property that preserves as much of the setting as possible.

A building inspection of Whitewater house will be carried out prior to commencement of construction to assess whether there are likely to be any threats to the surviving integrity of the historic structure as a consequence of vibration arising from either construction activities or anticipated future use of the Bypass. Active measures will be put in place to address any such impacts in the event that, upon inspection, vibration is identified as a risk to the building.

Area of Potential Sensitivity – Former Church of England Glebe

The proposed bypass corridor crosses the site of the former Church of England Glebe, originally 10 acres in extent. The locality in question is presently part of a suburban residential development with the remainder comprising the bushland environs of Whitewater Creek. No evidence of any historic structures were identified during field inspection.

Reconciliation of the archival source material, with the current mapping and extent of residential development in the vicinity indicated that there was potential for archaeological evidence to remain. An archaeological testing strategy was prepared⁵ in consultation with Heritage Tasmania. The purpose of which was to assess the archaeological potential of the subject area and to provide a basis for achieving protection of significant features and/or deposits.

The program of archaeological testing and salvage confirmed the historic occupation of the area and supported the historically recorded presence of a schoolhouse. On the basis of the results no further investigations were recommended and there are no further historical archaeological impediments to the construction of the Kingston Bypass in this area.

Visual impact

Construction of the Bypass will have a significant impact on the visual appeal of the area as a result of:

- Removal of the very large, visually prominent trees on the southern side of the Channel Highway between Algona Road and Huntingfield Avenue, in the vicinity of the proposed Algona Road roundabout.
- Clearing of a significant portion of the extensive areas of Eucalypt forest that occur along the proposed corridor south of Summerleas Road.

A comprehensive landscaping design is being developed to minimise the visual impact of the Bypass for residential developments adjacent to the Bypass corridor.

Noise

Existing and future traffic noise has been modelled using the SoundPLAN software package by applying the CoRTN (Calculation of Road Traffic Noise) algorithms.

In accordance with DIER's current traffic noise policy, a traffic noise protection target was set as LA10(18-hour)⁶ = 63 dB(A), one metre in front of the most exposed façade of dwellings adjacent to the Bypass corridor.

⁵ In accordance with the processes outlined in Tasmanian Heritage Council Archaeological Practice Note No. 2 and implemented well in advance of any construction contract.

⁶ Defined as the noise level exceeded for 10 % of the 18-hour period from 6AM until midnight.

Without noise mitigation approximately 17 dwellings in the vicinity of Summerleas Road, White Water Crescent, Lester Crescent and Breeza Court could be expected to experience noise levels in excess of the target 63 dB(A).

So that the noise expected at these 17 properties is within the parameters of DIER's current traffic noise policy SoundPLAN was used to calculate the optimal height and length of roadside noise barriers. This resulted in the inclusion of two noise walls in the project.

Environmental Safeguards

Proposed Management Regime

In order to limit the impact on the environmental values identified the following processes and actions will be incorporated into the project:

- The amount of land that will need to be acquired for completion of the works has been kept to the minimum practicable level required by good road design.
- All weed areas will be clearly identified and requirements for treatment of the various declared weeds included in the tender documents. Control measures will be in accordance with statutory weed management plans.
- The need for clearance of vegetation and removal of visually prominent trees has been kept to the minimum practicable level consistent with good road design and safety.
- Rehabilitation following construction will aim to improve visual amenity along the Bypass corridor over time, thereby lessening the impacts associated with construction.
- A significant offset package for the impact on Black gum (*Eucalyptus ovata*) has been developed in consultation with DPIW and Kingborough Council.
- As much separation as is possible has been established between the new highway and the historic house (Whitewater) and stables to provide a meaningful curtilage for the historic property that preserves as much of the setting as possible.
- A structural assessment of Whitewater will be undertaken prior to commencement of construction, in line with DIER standard practice. Specific mention of this requirement will be included in the tender documents. Appropriate measures will be put in place to address any such impacts in the event that, upon inspection, vibration is identified as a risk to the building.
- A program of archaeological testing and salvage has been undertaken at the Glebe Church site and a report provided to Heritage Tasmania.

Environmental Approvals Required

Two environmental approvals are required for the project. The first is a Permit to Take, pursuant to the Threatened Species Protection Act 1995 from the Conservation Assessment Section of DPIW. This permit has been issued. The second is an approval under the Environment Protection Biodiversity Conservation Act 1999 from the Commonwealth Department of Environment, Water, Heritage, and the Arts. The assessment application has been lodged and discussions with officers of DEWHA indicate that approval will be granted.

SOCIAL IMPLICATIONS

Potential social and economic impacts as a result of the proposed works will be positive, as the aim of the works is to improve the operation of the road network in Kingston by decreasing travel times, improving accessibility and modifying driver route choice to remove commuter vehicles from local streets.

The Bypass will facilitate future development within Kingston that will provide facilities to be used by the community.

There will be some short-term social impacts arising from inconvenience associated with the road construction activities. Appropriate requirements will be included in the contract documents to minimise disruption to the travelling public and adjacent property owners.

Property Impacts

The majority of the land required to construct the Bypass has already been acquired. The remaining areas will be acquired during the remainder of the detailed design phase. Landowners from whom land still needs to be acquired have been advised of the impacts.

The works will require modification to fencing and property access arrangements for several properties. Initial discussions have been held with each of the owners and the accommodation works to be undertaken are currently being agreed.

Construction of the Summerleas Road Overpass will require a temporary detour of Summerleas Road to be constructed over private land. The affected owner has been consulted and DIER has initiated the necessary processes to determine a rental arrangement for the time during which the temporary detour will be in place.

The new alignment for Spring Farm Road requires land to be acquired from the Kingborough Council Works Depot. This land is currently used for parking by Council staff and for the stockpiling of materials. DIER has been working with Council to ensure efficient access and egress to the Works Depot is maintained and that the impact on car parking is minimised.

Construction of the Bypass will sever the Whitewater property located in Spring Farm Road. Consultation with the owners has been on going during the development of the design. The main priority of the owners is ensuring that construction of the Bypass will not prevent them from developing the property in the future. DIER has agreed to assist the owners to amalgamate their existing property titles to provide more suitable land parcels which will improve the development potential of the property.

PLANNING APPROVAL

The proposed works are located within the Kingborough Municipality. All works must be undertaken in accordance with the Kingborough Planning Scheme 2000.

Road works undertaken by the road authority are generally exempt from planning approval in Kingborough pursuant to clause 4.1(d) of the Kingborough Planning Scheme 2000.

However, this project involves clearing vegetation identified in Schedule 10 (Protected Vegetation Schedule) as high priority vegetation types, namely:

- Eucalyptus ovata woodland and forest;
- Eucalyptus amygdalina forest and woodland on sandstone.

Consequently, the discretionary provisions of the planning scheme are triggered and as such the development will be subject to a statutory exhibition period of at least 14 days prior to Council's decision.

State Policies

State Coastal Policy

The Tasmanian State Coastal Policy 1996 is applicable to all land within a distance of one kilometre from the high-water mark. The proposed development is not within one kilometre of the high water mark and, accordingly, the State Coastal Policy 1996 does not apply.

State Policy on the Protection of Agricultural Land

The State Policy on the Protection of Agricultural Land 2000 provides for sustainable agriculture on the State's prime agricultural land. It goes further to protect prime agricultural land (defined as Class 1, 2 or 3 land) from conversion to non-agricultural use and development.

The Derwent Report of the Land Capability Survey of Tasmania has mapped the majority of the project area as Class 5 and 6 land.

A Land Capability Assessment was undertaken for the area between Algona Road and Maddocks Road. There is a small area around Maddocks Road that is Class 3 (prime agricultural land) affected by the works. The development application will identify the prime agricultural land and demonstrate the community benefit of the proposed works and that no other suitable sites are available.

State Policy on Water Quality Management

In accordance with Section 35.1 of The State Policy on Water Quality Management 1997, all road construction works must employ measures consistent with best practice environmental management to prevent erosion and the pollution of streams and waterways by runoff from sites of road construction.

Appropriate silt control and sedimentation measures will be put in place to protect the surrounding waterways and prevent potential soil erosion on site.

CONSTRUCTION PROGRAM AND COSTS

Construction of the project is expected to commence late in 2009 and be complete by mid 2012. The key dates are shown in Table 3.

Table 3.
Program

Project Phase	Start Date	End Date
Design development	May 2008	July 2009
PSCPW Approval	June 2009	August 2009
Tendering and tender assessment	late August 2009	October 2009
Construction	November 2009	June 2012

The major project components and estimated costs are shown in Table 4. A detailed cost estimate is provided in Appendix C.

Table 4.
Cost Estimate

Cost Item	Estimated Cost Including Contingency (\$M)
Project Specific	3.11
Earthworks	6.28
Drainage	3.02
Pavement	2.60
Bituminous Surfacing	1.83
Traffic Facilities	1.73
Landscaping	1.40
Miscellaneous	3.46
Bridges	5.14
Additional Items	6.48
Overheads	6.49
TOTAL PROJECT COST	41.50

EVIDENCE

The Committee commenced its inquiry on Wednesday, 29 July last with an inspection of the site of the proposed works. The Committee then returned to Parliament House whereupon the following witnesses appeared, made the Statutory Declaration and were examined by the Committee in public:-

- Gunadasa Ginneliya – Project Manager – Department of Infrastructure, Energy & Resources
- Ross Mannering – Design Manager, Pitt & Sherry
- Dion Lester – Planner, Pitt & Sherry
- Mathew Brooks – Traffic Modeller, GHD
- June Walker, Resident, Municipality of Kingborough

Background

Mr Ginneliya provided the Committee with the following overview of the project:-

The history of the Kingston bypass rose as far back as 1983. That was the time that the department declared the corridor and the proclamation was made under the Roads and Jetties Act. Since that time there has been some initial thought and work but no major activities. The department has done some safety improvements on the Channel Highway under the Black Spot program, but nothing major came of it.

As you are aware, since the late 1990s, Kingborough municipality has shown tremendous significant potential and commercial growth and as a consequence of that, traffic volumes on the Channel Highway and other arterial roads have been growing at a very high rate. Close to 4 per cent traffic growth has been experienced in the last 10 to 15 years. The Summerleas Road roundabout was carrying about 18 000 vehicles a day in 2006, which is a fairly high number in the Tasmanian context.

This growth led to major traffic and safety problems in Kingston. The major issues are the delays and safety concerns for traffic turning into the highway from local streets and accesses. There were long queues and delays around Summerleas Road roundabout during morning and afternoon peaks. Similarly, there were long delays and queues on Huntingfield Drive. In addition, there were rat runs through local streets such Maranoa Road to avoid the Channel Highway section between Algona Road and Summerleas Road. So that led to other problems as well. Though there are not serious accidents, there were a large number of accidents on this section of the Channel Highway as well.

As you may be aware, in 2004 some community members got together and formed a group called the Kingston Bypass Action Group - they are commonly known as KBAG. They called a public meeting and more than 200 people attended they then went to the media and petitioned the department. At that time, the minister for infrastructure, Bryan Green, announced that major works were needed in Kingston and a major traffic study would be undertaken. So it was announced that instead of looking at the problem in a piecemeal way we would look holistically at the whole of Kingston, covering the area of 16 kilometres. That study was known as the Kingston and Environs Transport Study, KETS. A steering committee was formed to oversee the project and that steering committee consisted of officials from the department, council, the community groups and a consultant who did the traffic modelling. They looked at more than 20 options, I am told, some with a bypass option and some without. They looked at predicted traffic growth over 10 to 15 years and how it affected our model. The report was produced in March 2007 and was re-analysed again in August 2007. I can provide a copy of the latest report to this committee.

The second report, done in August 2007, recommended that the department look at a staged development rather than doing everything at one go. So the department developed a concept design for stage 1 which you have been shown at the site and we also did the concept plan for stage 2 which has not been shown to you. Possibly I can table that at the meeting today. This includes duplication of the highway into a four-lane configuration and provides an interchange at Algona Road roundabout and also another off-ramp to the Huon Highway. That is stage 2 which is at concept stage at the moment, but we have plans to consider that. As traffic modelling dictates, I am now leading to 2027 and we need to seriously move to get option 2.

... since Labor came into power we did a project planning report for them. That was our submission to Canberra, the Channel Highway project proposal report which we called PPR. They accepted to fund to an upper limit of \$15 million. Although our estimates have gone up from \$30 million to \$41.5 million, they said they were not going to give us more than \$15 million. So we got that approval from the Australian Government to a limit of \$15 million and the State Government has to fund the balance.

At the moment most of the design works are detailed design works in progress. There was a major public consultation process undertaken, not only during case study and the design stage which happened in the December-January period. We have had numerous meetings with various community groups, such as Kingston Bypass Action Group, KBUG - which is Kingston Bicycle User Group, Cycling South and various business owners who are affected. A development application was submitted to the council on 15 June, which is being assessed at the moment. Our approximate timetable, subject to getting various approvals: we are planning to go to tender if not late September then early October. Contract awarding is expected in December, possibly with sod turning before Christmas. Construction goes up to mid-2012. That is a brief overview of the project.

Environmental and planning issues

Mr Lester provided the following detail of the environmental and planning issues addressed in the development:-

The road project went through the typical DIER background surveys: Aboriginal heritage, European heritage and flora and fauna. The Aboriginal heritage survey didn't discover any Aboriginal sites. The European heritage survey didn't discover any listed sites. There were some areas of sensitivity that have subsequently been investigated and determined not to be of any concern. The flora and fauna study found two threatened species, which we have subsequently got permits for from DIPWE. The main issue as far as the environment aspects has been the presence of four hectares of ovata through the bypass corridor. It is fairly degraded. There's a method of rating ovata depending on how good or bad it is and it works out that it is 2.32 habitat hectares of ovata, which means it is equivalent to 2.32 hectares of good-quality ovata. That is an issue because it is swift parrot habitat so that triggered that EPBC Act, which we have done. We have made a submission or a referral to them and they've determined it a controlled action so we are discussing an offset and mitigation strategy with DEWHA in Canberra. In essence, what it involves is 1.9 hectares of rehabilitation, which I pointed out on the plan - on the plan in the submission it is the blue area. That's adjacent to the corridor. It's full of weeds but it is good ovata habitat so DIER is going to rehabilitate that. In addition to that, there will be an offset of 1:5. So based on the 2.32 hectares DIER is going to offset a minimum of 12 hectares somewhere else in the south-east bioregion. That is finding a patch of existing good-quality ovata and reserving it. At the moment we are in discussions with a land-holder on the east coast and that looks quite positive. There will be 20 hectares of ovata forest there.

The third thing is we have provided some seed funding for an offset strategy for the 12 southern Tasmania councils which Kingborough Council will run. So the ovata strategy has three prongs. On ground rehab adjacent to the corridor, minimum 12 hectares somewhere in the south east bioregion offset and some seed funding to get this ovata offset strategy developed, which Kingborough Council will run, but it will be developed for the 12 councils.

That is all travelling relatively smoothly. We are in the process of advertising the referral information. It finishes, I think, in another week for the EPBC guys but they are comfortable with that offset strategy and it seems to be all falling into place.

The DA was submitted in mid-June. The major issues as far as the development application is concerned, or the main considerations that council are taking into account are offset strategies because ovata is a trigger in their scheme. But, again, we work fairly closely with the vegetation management officers, very closely in fact, so they are heavily involved in the development of that and just getting the noise mitigation right.

Regarding the noise, there was background noise modelling taken at 14 locations off hand along the highway route or the proposed route. When built or at ten years post being built so 2022 it was projected to exceed DIER's code of practice which is 63 dBA at 17 locations, 17 houses, and that is one metre from the façade of a house. So some noise mitigation was necessary and as we pointed out on site there are two noise (affected areas) Effectively one at Moira Road and one Lester Crescent. They are up to four metres high. The noise mitigation drops the number of houses that exceed DIER's code of practice down to eight houses. So eight still exceed 63 dBA but they only exceed it by basically 1 dBA so they are all below 64 and the human ear cannot perceive somewhere between 2 and 3 dBA difference. So for all intents and purposes it meets their code of practice.

The Committee questioned Mr Lester as to whether the residents were content with the expected noise levels. Mr Lester responded:-

We have not had any concerns raised. The application has to be advertised by council so there is still another public process, but there has been none through the other submissions in the public displays at the council and also at the shopping centres. No-one has raised any major concerns or any concerns, in fact, with noise.

The Committee questioned the witnesses as to whether the 17 dwellings identified as being affected by the proposed works had been notified of the noise testing being undertaken one metre from their respective boundaries. Mr Lester responded:-

The model is generated one metre from the exposed façade so it is not testing. The testing is background testing across various locations and that happened many, many months ago so they were notified of the placement of the reading devices.

Mr Mannering added:-

When we started doing the preliminary design for the project every land owner adjacent to the bypass corridor got a letter advising them that investigations for the bypass were going to commence. When we put the meters in to measure the existing background noise we measured them a lot closer to the property boundary but we did not step over the fence. None of the land owners would have ended up with us putting a meter in their backyard but they would have ended up with us putting a few in strategic locations pretty close to their boundaries.

... There has been no specific letter that says that we are doing the noise testing. Probably the thing that has happened after that process that has given them the best opportunity to find out about that was when we did the public display in December. Each one of those landowners got a letter again saying that the public display was on, there are going to be

plans showing what is going on, giving them the opportunity to come and have a look at the plans and then make a submission, so through that process they have had the opportunity. Also at that they were made aware of the plans being on DIER's web site so they could get on there and have a closer look. There were brochures available there at the time, both about the project and about the noise modelling process that we had been through. Out of that process I think one person might have asked a question about noise but no significant influx of people were too interested in it.

Mr Lester added:-

The key to the background testing is that is there to basically validate the model. The model on its own can predict the noise and can understand the background but to confirm it works and that it is valid we need to undertake those spot background measurements and the background measurements through the 14 and 35 range from 35 dBA through to 67. So that particularly those houses at the southern end of Lester Crescent are already experiencing in excess of DIER's code of practice so through the bypass they will get a noise level that it should be a little bit quieter for them.

Mr Ginneliya concluded:-

Just to add to that, they will get two more chances. The council is going to advertise again within another fortnight for the public to come and view their backyard and front yard and how it will influence them and then we will forward them consultation before we go to tender. We will be door-knocking individuals who are affected by noise after the test.

Noise attenuation

The Committee questioned the witnesses as to whether noise attenuation measures were able to be installed at the site. Mr Lester responded:-

There is no impediment in most cases to establishing attenuation. Into the future it is always a cost-benefit analysis and so you will not perceive the difference between the 63 and 63.8 or a 64 or even a 64.5 but -

... it is (at the top end) and there is no getting away from the fact that aspects of those properties back onto a quiet rural environment and are going to be altered as a result. The key thing with the 63 dBA is that it is not that level. DIER's code of practise actually talks about it being the sound level that is exceeded 10 per cent of the time over an 18-hour period. That means that those properties that trickle over the 63 or are at 63 are ticking over 63 for 10 per cent of the time from 6 a.m. until midnight, so you will see fluctuations in the intensity and duration of the noise. They will notice a difference through there, there is no doubt about that.

... There may be people who raise the issue of the noise tomorrow; there may be people who raise the issue of the noise when it's built. There is always an opportunity in the future for DIER to assess those issues and act on them at the time. I think Shoreline Drive is probably a good example where there's been some issues raised about noise with some of the residents - in fact the opposite. They want the removal of the noise walls and DIER is undertaking that work.

At the moment we have a model that has been validated and it is an acceptable solution as far as the planning scheme is concerned and DIER's code of practice. Whether every single person along that route will be happy with it or not, it is impossible to say until it is built.

... there's going to be consultation throughout the construction period as well. We are at a point in time where we have done extensive consultation but, you are right, there is still a lot of consultation to occur.

Heritage matters

The Committee questioned the witnesses as to what measures were proposed to ensure the protection of Whitewater House. Mr Lester responded:-

The Whitewater property is ... not currently listed at any statutory level but it's a pretty impressive property so we have to make sure we don't cause any structural damage.

Mr Mannering added:-

...there will be enough contingency to allow for that. As part of DIER's standard process before they start letting construction works happen on site, we go through a process of working out which properties we want to do structural inspections on. Our organisation has done that before. We go out and do a survey of the existing buildings, look at any cracks or any existing problems, take photographs of all of that and prepare a report. If we get anything back during the construction period we can go back and examine those things again to see whether there is any change. It gives us a starting point to compare to. The Whitewater property will definitely be done prior to any construction work starting.

Traffic modeling

Mr Brooks provided the following detail of the modeling work performed for the proposed works:-

As part of the traffic modelling for the Kingston bypass, GHD produced three major reports. First of all was the Kingston and Environs Transport Study modelling which Guna mentioned before, which is called KETS. The second was a Kingston bypass traffic analysis update which Guna also mentioned, and he has a copy there. The third was the Kingston Bypass Traffic Assessment which formed part of the DA application to Kingborough Council.

The Kingston Environs Transport Study was commissioned out of the Kingston Bypass Action Group, as Guna mentioned before, in October 2004. The objective of the Kingston Environs Transport Study was to model traffic solutions with State and local road networks and improve transport efficiency on the approaches to and within the Kingston central area, through a consultation process directed by the KETS steering committee.

The main traffic related issues raised repeatedly through the consultation included travel delays on the Channel Highway, unnecessary through traffic, rat-running along Maranoa Road and Lawson Avenue, access issues from driveways and side roads along the Channel Highway and access from Summerleas Road to the Channel Highway. A technical group was established by the steering committee to develop options to address the issues and 22 options were put forward and formally tested to determine their effectiveness under morning and

afternoon peak periods as well as under estimated future traffic conditions. The option testing was undertaken using the traffic microsimulation software as this software is able to replicate the interactions between vehicles in a complex traffic system such as the Kingston area.

To start with, we produced two base models to replicate as closely as possible the existing conditions that were experienced in Kingston during the a.m. and p.m. peak periods. The base models were then subjected to a calibration and validation process to ensure a closeness of fit between what was modelled and the observed conditions of the Kingston road network. We did approximately 280 calibration runs and subsequent modifications to the models before the base models were deemed to be closely representing existing conditions. These base models will then form the starting point for all the options we test in the future. These models are used and modifications to the transport network and traffic demands were made to simulate the various options that were put forward.

Of the 22 options formally tested, 11 were without a bypass, 10 were with a two-lane, two-way bypass and one option was just a model estimating future traffic conditions if no improvements to the network were undertaken. Each of these options was tested using current traffic conditions and estimated future traffic conditions estimated to occur in 10 years' time, which at that stage was 2016. Some of the non-bypass options were also testing using five-year conditions, which would have been 2011. Future conditions were estimated using data from the Australian Bureau of Statistics, historical traffic rates sourced from DIER and known or assumed land-use development. The modelling indicated that non-bypass solutions did not provide substantial improvements to the Kingston road network under future traffic conditions, although some improvements can be gained through modification to the Summerleas Road and Channel Highway roundabout.

A two-lane bypass was the most effective method to address the capacity issues associated with the Channel Highway through Kingston. The interchange arrangements at Summerleas Road and ultimately at Algona Road are critical to providing a long-term solution.

The bypass option labelled BP10, which was the provision of a dedicated left-turn slip lane from the Channel Highway to the bypass south of Algona Road, was considered to be a very good lower-cost option for the short and medium term up to five years. It is similar to what is there now but not. It has been updated since then. The bypass option BP8 which was the extension of the Channel Highway to form a new bypass with Algona Road meeting the new bypass at the interchange with on and off ramps at Summerleas roundabout was going to be the best performing of all these options coming out of KETS.

After KETS then came the Kingston bypass traffic analysis update. In 2007 the update was commissioned due to the substantial development in terms of the road network and land-use changes that had occurred within the Kingston area. The objectives of this commission were as follows: model future traffic flows based on predicted growth rates from Kingston taking into account the proposed relocation of the Kingston High School; future residential growth within Kingston and the completion of the BigW shopping complex which is now called Channel Court; and define access and junction requirements to the State road networks, including the proposed Kingston bypass, to support these developments.

The traffic volumes within the existing KETS model were factored up to reflect the 2007 traffic volumes based on historic traffic volume growth rates supplied by DIER. For this update five options were tested. What options were tested were agreed upon during a meeting

between DIER, Pitt & Sherry, and GHD. Each of the options investigated a different stage of the bypass development, which is what Guna mentioned earlier.

The first of the options was the initial upgrade of Algona roundabout, which Ross mentioned on site this morning, for 2017 and 2027 estimated traffic volumes. The next three models were stage 1 that you see before you in this plan here. These models had different, varying traffic conditions based on the location of the Kingston High School for 2017 and 2027 traffic volumes once again. The last of the models was the development of stage 2 which is the option that Guna tabled earlier where the Algona interchange down the south is converted into a grade separated interchange with an additional grade separator interchange at Huon Highway for 2027 traffic volumes.

As part of this modelling, a capacity analysis was also undertaken on the two-lane, two-way bypass based on traffic volumes predicted during 2027. The capacity analysis indicated that the proposed configuration of the bypass will cope with peak hour volumes and that a four-lane bypass is not likely to be warranted until beyond 2027, which at the time of this report was outside the forecasting range of the project and also outside the range of land-use planning information that was provided by Kingborough Council.

The conclusions that arose out of that Kingston bypass traffic analysis update concluded that there would be benefits in regards to accessibility of Huntingfield area by constructing a five-leg roundabout at the interchange of Channel Highway and Algona Road. This staged approach to the southern interchange for the bypass also allows for site access during construction of the bypass. The stage 1 bypass will adequately cater for 2017 volumes regardless of the location of the Kingston High School. At some time leading up to 2027 the stage 1 southern interchange configuration, which is Algona Road roundabout, will reach capacity and the stage 2 interchange configuration will be sufficient for expected traffic volumes in 2027 and the grade-separated interchange at Algona Road should be investigated prior to this point.

GHD was approached by DIER and Pitt and Sherry in April of this year to provide further advice on a bypass model to form part of the DA to be submitted to the Kingborough Council. The information that we subsequently provided was the operation of the Summerleas Road interchange and, in particular, the northbound on-ramp merge, the level of service that would be experienced on the bypass in comparison to the Channel Highway, the inclusion of the proposed St Aloysius High School in Huntingfield Avenue, and the inclusion of a proposed residential release in Huntingfield. GHD was also requested to detail expected delays and queuing at each of the on and off ramps on the bypass for 2012 - the expected year of opening - and for 10 years beyond that. GHD updated the model for these years by interpolating 2012 and 2022 volumes from the original 2017 and 2027 volumes of the previous study. The existing models were also required to be modified to take into account slight variations in the design prepared by Pitt and Sherry from the original traffic modelling.

Based on the current design, GHD undertook further capacity analysis for the bypass. The capacity analysis showed that in 2022 traffic in the peak direction will be approaching the nominal capacity, however speeds are expected to remain relatively high, indicating that the level of service for a two-lane, two-way bypass will be acceptable. Beyond 2022, growth in peak-hour traffic may require a review of the capacity provided on the bypass. However, the report also stated that it is likely that as peak-hour volumes increase relative to capacity, peak spreading will see traffic in the adjacent hours increase relative to the peak hour,

increasing the time over which capacity is reached. This means that instead of all the traffic approaching the bypass between 8 a.m. and 9 a.m. it will spread out between 7 a.m. and 10 a.m., for example. So there will be more traffic but over a longer period of time.

The capacity analysis of both the Algona interchange and the Summerleas interchange were also assessed using aaSIDRA - intersection analysis software. The analysis of the Algona interchange found that peak-hour performance on most approaches will remain within acceptable limits, whereas during 2022 the Algona Road and Channel Highway northbound approaches are likely to be operating at capacity in the a.m. peak. This confirms the previous modelling work done by GHD that a grade-separating interchange be investigated in the period leading up to 2027.

The analysis of the Summerleas interchange found that the interchange is expected to operate with minimal delays in the future, with maximum average delays of 27 seconds under estimated 2022 traffic conditions. The conclusions arising from this additional advice indicate that a two-lane, two-way bypass with a five-leg roundabout at its southern end and a grade-separating interchange at Summerleas Road will provide an adequate level of service up to 2022.

The Committee questioned the witnesses as to what factors had been included in modeling processes. Mr Brooks responded:-

The initial modelling made an allowance for 430 dwellings in residential subdivisions and the new St Aloysius School catering for 400 students. The most recent modelling we did was in the order of 600 dwellings but the school will cater for only 310 students. In regard to the housing development, we also undertook a sensitivity analysis to see how many developments could go ahead before the roundabout gets to capacity and I believe it was 100 units without an additional exit from the Huntingfield area.

Mr Mannering added:-

Peter Eldridge's property is on the western side of the bypass and he has plans for about 440 lots and that is probably a medium-term development. Kingborough Council also has in its long-term vision the development of the Whitewater property which is very much a long-term thing and certainly not on the radar of the owners at the moment. They do not want to limit their future development potential but they are certainly not looking to subdividing any time soon and the council would not support it until this land has been developed to its full potential.

Dual carriageway

The Committee questioned the witnesses as to what, if any, estimate had been made of providing a dual carriageway for the entire bypass. Mr Mannering responded:-

... we haven't put a number on a dual carriageway for probably three years now, I suppose. Back at the time when the bypass was costing substantially less than it is costing now, that was, I think, a 55-type number; given some of the things that have crept into this job through the community consultation we have been doing, to add that on to what we have now it is at least a 60-plus number, substantially more than anyone would have dreamed coming into this project.

There are a couple of things that we're doing (in anticipation of a future dual carriageway). As we have mentioned, there are two major bridges on the project: one at Summerleas Road and one at Spring Farm Road. Both those bridges will be built to facilitate the bypass being duplicated, so they will be built with two spans. When the traffic volumes get to a point where it does warrant being duplicated we won't have built two bridges that need to be thrown away, so that's a good thing. The other thing we are doing at Summerleas Road, because we are in so much cut there we generate a lot of excess material and rather than throw that away and then when the bypass has to be duplicated have to go and find it from somewhere off-site, which has a substantial cost associated with it, we are using that material to place the foundation for the second carriageway behind Maranoa Road. Through that area the bypass corridor has quite a lot of cross-slope on it so we are in a little bit of a cut on the top side but a heap of fill on the bottom side, so to avoid having to find a lot of material later on we're going to place that there as part of this project.

Algona Road

The Committee questioned the witnesses regarding the submission of Mrs Walker and in particular her reference to the KETS finding that a non-grade separation at Algona Road would only be satisfactory for five years in 2006. Mr Brooke responded:-

That was not what was specifically said. It said that one option that I mentioned, was a good short to medium term, would be good for about five years. However, this design, which is current, was not one of the designs in the initial KETS. There has been a lot of work done since KETS to produce this and a lot of extra modelling done that has changed the configuration priorities at the roundabout itself. I think I have a picture of the one you mentioned. That is the option that was given as about a five-year option. It is similar in that there is a slip-lane but the priority is for Algona, not Channel Highway, in that option. In this option, obviously the Channel Highway has precedence over the Algona Road.

The Committee questioned the witnesses as to what research, if any, caused the underpass to be provided at the eastern end of the Australian Antarctic Division, under Algona Road, rather than a providing better pedestrian access into the housing subdivision area. Mr Mannering responded:-

When we started having a look and through the consultation that we have done with Kingborough Council, the Kingston Bicycle User Group and Cycling South, they raised pedestrian connectivity issues between Huntingfield and the rest of the Kingston township as one of the things they were particularly interested in. At the moment, when you go across Algona Road roundabout, it is a grade separated crossing, so there is a pedestrian crossing and a kerb on either side and then there is a split in the island. There may even be ramps on either side so you can cross in a staged manner. At that time, it was really only our intention to provide that as part of that status quo, if we were not changing anything in terms of how it works now. Through the consultation we did, they were pretty keen for some grade crossing to go in. So the department asked us to have a look at what we could do to get something in at the roundabout. We looked critically at trying to provide a pedestrian underpass there and we also looked at providing a pedestrian overpass. The main difficulty that we have is the pedestrian overpass and you can probably work out why no-one likes that in a minute.

... The big constraints we have at Algona Road are the proximity of the property boundaries on either side and also the number of services that run through there. Trunk water runs

through there. There is high voltage electricity as well as Telstra. There is local water for council. If you dug a hole in the ground there is a fair chance you would hit something. So the underpass went out the window fairly early on.

We had a look at the overpass and, as Dion mentioned, we required or the department would like any overpass that goes in or even the underpass to be DDA compliant. The footprint of what you can see on there is what it would take to get a structure that was DDA compliant, to get 5.5 metres clearance over the top of Algona Road. That was met with a fair bit of resistance because it was probably going to create the potential for people trying to rush across the road anyway so we were going to build probably a \$2.5 million structure that people did not want to use.

We then went back to the people whom we had been talking to and said that this is difficulty we have. They were still pretty keen and then we came to what is the best alternative we can come up, which is how we got to the pedestrian underpass on Algona Road. Admittedly it is not where we want it. We would prefer it to be up at the roundabout but it does provide some good connectivity. Just where the yellow line ends as it joins onto Patriarch Drive, that is right at the point where you can get into the Peter Murrell Reserve so it provides really good connectivity down to there. It is also a short walk from there back up to Huntingfield Drive to continue across into the main residential area.

The other thing that pedestrian underpass probably does provide in the future is that the property adjacent to the Antarctic Division opposite where Spring Farm Road will come out has future development and commercial potential. Mr Rockefeller has that property. Through that pedestrian underpass there is a chance, as part of that development, that the pedestrian path could be connected through into that development and then back onto the Channel Highway. It is not what we would really like but it is the best alternative we can get with the constraints we have.

Mr Ginneliya concluded:-

...And the groups are reasonably happy and we also checked the council master plan on cycling and pedestrians. It blended with that path, as is shown in the master plan. Both parties are reasonably happy at the end of the day if we provide this and it will link with the master plan for the future.

Development in the Kingborough Municipality

The Committee questioned the witnesses as to the principal advantages of the proposed works given the anticipated expansion within the region. Mr Mannering responded:-

The real thing the bypass is going to deliver, apart from the reduction in traffic congestion on the existing Channel Highway and improved access out of Redwood Drive, is that there are a lot of developments going on down in Kingborough that the bypass is going to provide a lot of benefit for. As we indicated down on site, expansion of the St Aloysius school, and DIER agreeing to build the Algona Road roundabout first in part of the construction process, allows them to continue developing the school. It provides no impediment to them, whereas if the project did not proceed, council would not allow them to complete their development.

The connectivity of Spring Farm Road over the top of the bypass is very much an opportune thing. If you wanted to come back later and try to build a bridge over the top of the road that you already had 18 000 vehicles a day running down, that would be a very difficult thing the longer you leave it. Then you have to force them back onto the existing Channel Highway and there would obviously be some issues associated with that. So that Spring Farm Road provision is a really good thing. Relocation of the high school, expansion of the sports centre, development of Peter Eldridge's property and facilitating further residential growth in Kingston, there are a lot of benefits that the project provides apart from just reducing traffic congestion and improving safety on some of the local roads. So that is the key thing that the bypass delivers, apart from the obvious thing when you look on the plan.

Approach Algona Road roundabout

The Committee sought clarification of what is intended to be provided at the approach to the Algona Road roundabout. Mr Mannering responded:-

There are two things that we have going in at the roundabout. There is not only the pavement marking but there is direction signage on all of the approaches. Over the last couple of months we have been working really closely with DIER to work out what direction signage we are providing on the approaches to the roundabout to help people choose which lane they want to be in before they get to the roundabout. Then, as they get closer, there is obviously the pavement marking to help them decide which lane they need to be in.

We were talking before about the existing Channel Highway and the lanes there. So there is a designated left-turn lane for people coming out of the existing Channel Highway and heading down Algona Road. That left-turn lane will have a left-turn only arrow in it and there will be signage also indicating that.

The right-hand lane there does not get any pavement marking in it because you can choose any other leg. So you could turn left down Algona Road, you could go through to Huntingfield, you could go further down the Channel Highway to the south or you could go around the roundabout and onto the bypass.

The Algona Road approach is pretty much a conventional two-lane approach to a roundabout. Although this roundabout has two circulating lanes in places, and one across in a couple of places, it is very much a conventional approach. So there should not be any problem with that, and the same with the Huntingfield Drive approach. The approach from the Channel Highway to the south is only a single lane so, again, very straightforward and you can choose to go where ever you really want to go.

The bypass one is an interesting one. Because there are five legs there is always going to be a little bit of thought that the driver is going to have to put in to negotiating the roundabout to get where they want to go. Obviously the direction signage before they get there gives them the best opportunity to work that out. So the left-hand lane approaching the roundabout allows a through or a left movement and that through movement is through to Algona Road. So Algona Road has two lanes on the departure. So you could be in either lane and go down to Algona Road. If you are in the left lane you could turn onto the existing Channel Highway and head back into Kingston and if you are in the right lane you could go through to Algona Road, turn right and go around to Huntingfield or you could continue south along the existing Channel Highway.

Public consultation

The Committee questioned the witnesses as to whether the Department of Infrastructure, Energy & Resources acknowledged receipt of public submissions on projects. Mr Ginneliya responded:-

... In general the practice in DIER is that we do not respond to each and every person who makes a submission because it will open a trail of correspondence and we had more than 100 submissions not only for this project but any project. We openly acknowledge that we do a media release and thank them and take the issues on board and wherever possible we try to incorporate it in the design but we do not usually acknowledge every time unless somebody specifically asks us. It does not happen and that is not the practice.

... (with) over 100 submissions ... we cannot correspond individually to everybody. It is an enormous task. It is not just one issue, each correspondent has several issues and if we respond it would come to an argument and a long chain of correspondence between DIER and the various residents, so we do not generally do not that kind of response.

Cycle lane

The Committee questioned the witnesses as to what provision was proposed to be made for cyclists. Mr Mannering responded:-

Basically we have the cycle lanes of 1.5 metres wide going around the roundabout. The reason you can see the green bit shown only in parts, around the roundabout and on part of the slip road, is that DIER has established - and I am not sure whether it is a formal policy - that they only really want to put the green markings down in points where there is potential for conflict between cyclists and cars. So rather than set a precedent of putting the green pavement marking everywhere we have cycle lanes. The existing cycle lanes on the Channel Highway between there and Summerleas Road, if we were to put them everywhere, we would have to go back and mark all of those in green. The cycle lanes are intended to be marked in green where there is potential for conflict with other vehicles to really alert drivers coming into the roundabout that there are cyclists there. There will also be some signage as well to alert the drivers to their presence.

The cycle lanes around the roundabout operate basically so that cyclists are no different to the cars in that they have to give way to traffic departing from the roundabout, so you give way to people on your right, but once they are in the roundabout and circulating you can see that the green traffic markings go across the front of all the approaches. So as vehicles pull up to give way to any other vehicle on the roundabout they are alerted to the fact that there are cyclists by seeing that green pavement marking in front of them at the hold line. That is really how that is intended to work. It is a treatment that is adopted by the RTA and by VicRoads. It is a fairly new thing for Tasmania. I think the Midland-Lyell Highway junction upgrade has a cycle lane part way around it and most of you probably would have seen recently the cycle lanes in Argyle Street and Campbell Street. This is really one of the first locations in Tasmania where cycle lanes are provided right around the roundabout, so it is certainly a new concept from that point of view.

With the slip road, I agree with June. When you are heading north from the existing Channel Highway and you are going through onto the bypass, you will diverge off into the slip road. You will then travel along, bypassing the roundabout. At the same time as you are doing that there is potential for vehicles coming from any of those other legs at the roundabout to come

onto the bypass. As you depart the roundabout there are two lanes heading north and those lanes then drop from two back into one so the vehicles merge into a single lane. There is then a bit over 200 metres separation between where that merge point ends and the slip road connects back onto the bypass. At that point vehicles which are in the slip road on the Channel Highway would be required to merge with the vehicles that have departed the roundabout heading along the bypass.

... it is all designed in accordance with Austroads guidelines which give us the distances that you need to merge and the speed that we expect it to operate at. The reason we have pushed the slip road down, which is why it is a little different to the original KETS modelling, is that we have pushed the slip road down as far away from the roundabout as we can to give vehicles coming out of the roundabout more opportunity to get up to the 80 kph speed that we expect vehicles coming north on the Channel Highway to be travelling at. We have basically run that merge down until you get to almost the Spring Farm Road bridge.

DOCUMENTS TAKEN INTO EVIDENCE

The following document was taken into evidence and considered by the Committee:

- Channel Highway, Kingston Bypass - Submission to the Parliamentary Standing Committee on Public Works – Department of Infrastructure, Energy & Resources – June 2009;
- John Maddock, Submission dated 24 July 2009;
- Doug Duthoit, Submission dated 22 July 2009;
- Rod Finlayson, Submission undated;
- June Walker, Submission dated 24 July 2009.

CONCLUSION AND RECOMMENDATION

The Committee is satisfied that on the evidence received the design for the proposed Kingston Bypass has been carried out in accordance with appropriate design standards and guidelines and will provide significant benefit to the Kingborough community. Once complete, the works will provide the following benefits:

- reduced congestion on the existing Channel Highway;
- improved access and egress for streets that connect to the existing Channel Highway;
- decreased travel times between Algona Road and Summerleas Road;
- potentially improvement of the crash performance of side roads that connect to the existing Channel Highway;
- reduced 'rat running' on local streets;
- improved connectivity for pedestrians and cyclists; and
- future development within Kingston facilitated.

The Committee was concerned at the evidence received regarding the procedures of the Department of Infrastructure, Energy & Resources relating to its relationship with the public. The Committee heard that despite encouraging members of the public to make submissions on a project, it was not the practice for such Department to acknowledge receipt of any such submissions ; and there was a lack of relevant information published to fully inform the public of this project. The Committee is firmly of the view that the receipt of all submissions from members of the public

should be acknowledged by the Department in writing. The Committee is further of the view that all documents relevant to a proposed work should be published on the web site of the Department.

The Committee notes that the consultative process regarding noise attenuation is ongoing and further notes the evidence of Mr Ginneliya where he agreed to ensure full consultation with residents on noise measurement and proposed noise attenuation measures.

Accordingly, the Committee recommends the project, in accordance with the documentation submitted, at an estimated total cost of \$41,500,000.

Parliament House
Hobart
8 September 2009

Hon. G. R. Hall M.L.C.
Acting Chairman