

# 5.0 Transport, waste and flood protection

## 5.1 Transport implications

### Introduction

The masterplan proposes to lower La Route de la Liberation, so that traffic will pass through an underground tunnel from Gloucester Street to the current eastern end of the existing underpass. This has the significant benefit of removing the current above ground dual carriageway and greatly improving pedestrian access between the waterfront and the original St Helier town area. At the same time it maximises development space. An underground roundabout will provide direct access from the new tunnel to underground parking, so reducing the need for vehicles to use the above ground road network.

The developer has been required to carry out a thorough Transport Assessment (TA) to identify how the proposed road network will perform and the effect that the generation of additional traffic will have both on the immediate road network and elsewhere throughout the island.

### Developing the Transport Assessment

The road design and TA has been carried out on behalf of the developer by their consultants Faber Maunsell in close liaison with Transport and Technical Services (TTS). The TA has been independently audited by Capita Symonds. This process directly influenced the size of development and led to the proposed road layout and level of parking provision. The TA included computer traffic modelling both at an Island wide level using the new (2007) TTS Island computer traffic model and at a more detailed local level using micro-simulation traffic models. Modelling work using the full Jersey Island model was carried out by Parsons Brinkerhoff using inputs from Faber Maunsell's TA. Models were constructed to analyse the morning and evening peak periods (the busiest periods of traffic movements in any typical day). The work has been audited by TTS and Capita Symonds who have concluded that the findings of the TA are acceptable.

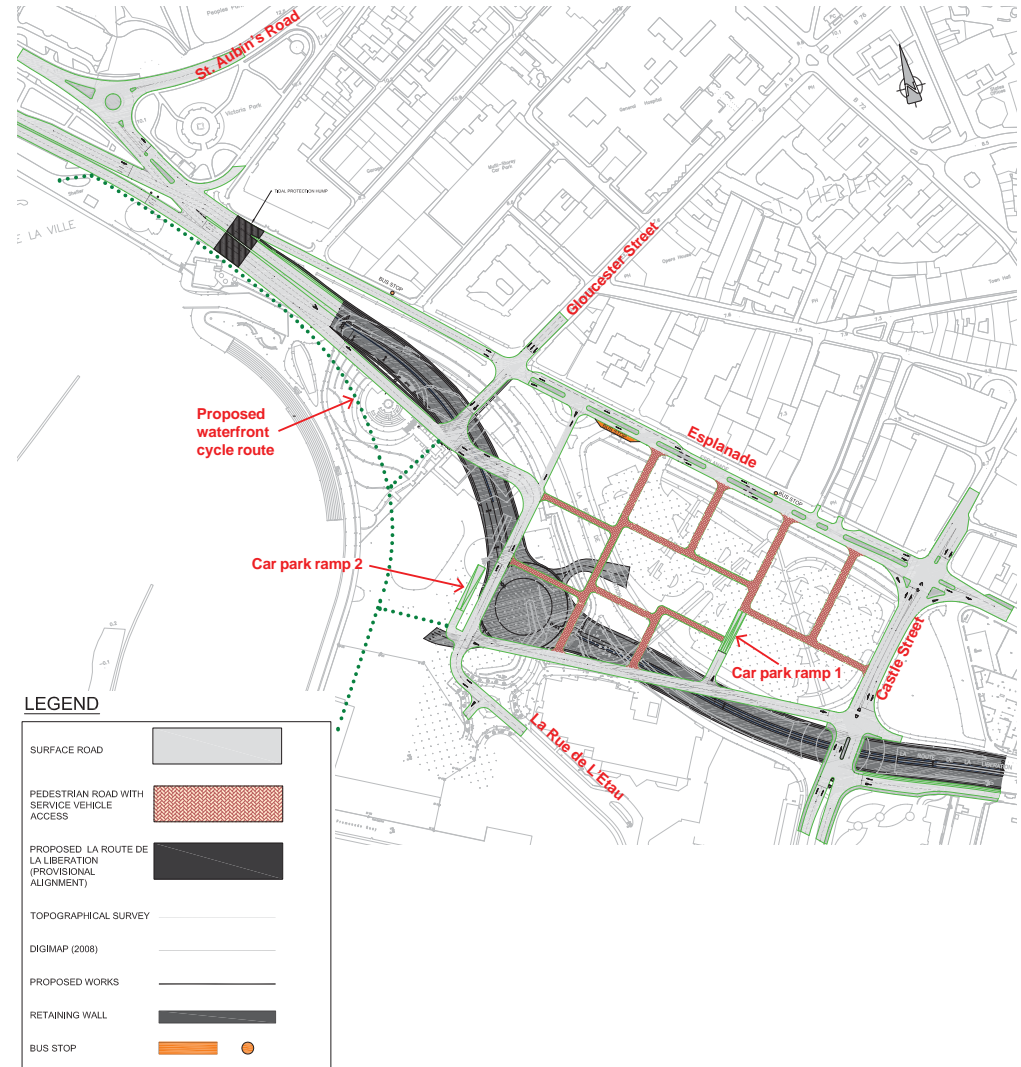
### Assumptions and conclusions of the transport assessment

In addition to the Esplanade Quarter the traffic generated by other new developments in the area needed to be considered. Liberty Wharf, other developments on the waterfront, new office developments along the Esplanade and a new multi storey car park in Kensington Place all contribute to an increased traffic demand in the area. Traffic generation from these other developments has been accounted for in the TA.

It has been determined that the Esplanade Quarter development will provide office space for approximately 4,700 workers and that this space will be mostly taken up by relocation of existing businesses. Consistent with the States Strategic Plan of up to 1% employment growth per annum to 2011, the assessment assumes that only 645 jobs will be new. The remainder (4055 jobs) will relocate from existing offices within St Helier and these figures have been included in the TA. The proposed parking provision is discussed below. An assessment has also been carried out to test the proposed road network on the assumption that a significant proportion of vacated offices in St Helier would be reoccupied for commercial use with the remainder converting to residential accommodation.

The assessments concluded that based on these assumptions the proposed road network has sufficient capacity for the amount of traffic the rest of the island's road network can supply. A detailed audit of the TA by both TTS and Capita Symonds has confirmed that the proposed road system generally performs satisfactorily.

There are some journeys which will take longer in the future situation than currently. This is because the loss of the west facing slip roads at Castle Street roundabout means that some traffic, for example to the port or from Gloucester Street, can no longer gain access to La Route de la Liberation and uses the new road network at ground level including the Esplanade. These roads, some of which will be traffic calmed, have lower average speeds than on La Route de la Liberation. Although journey times increase from the current situation for these trips, the routes used are not congested and there are no unusual delays.



### Traffic implications of population growth

The TA has identified that the road network will cope satisfactorily with the predicted level of demand on the assumption that 86% of office workers at the Esplanade Quarter will be relocating from existing St Helier offices. In order to assess the network under a higher level of traffic loading, the TA has also tested the scenario whereby a significant proportion of vacated office space is reoccupied for commercial use, and the remainder redeveloped for residential use. This assumed the current balance of urban and rural housing densities. Whilst this assessment indicated that the immediate road network is able to cope satisfactorily, it also identified significant increases in delay at known congestion points throughout the Island.

In addition to the TA modelling work, further assessment has also been carried out using the full Jersey Island model, to understand the implications of reoccupation of vacated premises for commercial or residential use and location of potential new housing.

The initial assessments show the potential traffic growth and significant levels of congestion that the Island could suffer if that growth were to be uncontrolled. A more detailed and accurate analysis will be carried out as part of the Island Plan process when the relevant information is available. It also shows the benefit to traffic impact by providing housing in the town area rather than in more remote locations where high car use would be inevitable.

A policy which encourages urban living (achieved through the conversion of vacated office space to residential, community facilities and public amenities) will strengthen the ability of Jersey to support continued economic growth, without the negative side effects on road and transport infrastructure. Whilst limiting parking provision and improving public transport must be part of a more sustainable development of Jersey, by far the most effective means of car restraint will be through enabling an increased proportion of the public to choose to walk.

The proposed network at the Esplanade Quarter will have a capacity to match the wider road network. The higher projected traffic growth scenarios of uncontrolled development and car use would cause considerable congestion throughout the entire Island network. There would be no benefit in providing a higher capacity road system at the Esplanade unless the entire Island road network was also increased to an equivalent capacity.

### The road network

The proposed road network includes the following:

Lowering of La Route de la Liberation between the existing underpass at Castle Street roundabout and west of the Gloucester Street junction. Lowering is achieved by reducing the level of the road by approximately 6m along this full length. This will involve:

- The closure of the west facing slip roads of the Castle Street roundabout (above the existing underpass), and their replacement with west facing slip roads at the western end of the new alignment close to Kensington Place. The east facing slip roads of Castle Street roundabout are unaffected;
- The conversion of the Castle Street roundabout to a signalised junction which better accommodates pedestrian movement, requires less road space, and is a more appropriate junction design given the removal of the west facing slip roads;
- The creation of a new two way link road, running along the southern and western boundary of the site, and connecting the reconfigured Castle Street roundabout junction with the Esplanade. This route would be designed to ensure slower speeds and modest traffic volumes. It would also form a junction with Rue de l'Etau. This road is referred to as the southern link road;
- Construction of an underground roundabout on La Route de la Liberation to provide the main access to underground parking at the development. Additional surface access will be achieved from the southern link road;
- Reconfiguration of the Victoria Avenue and St. Aubin's Road junction at West Park to provide additional capacity;
- Implementation of a computer controlled traffic signal and pelican crossing linking system on La Route du Fort to optimise capacity through the tunnel under Fort Regent to Georgetown;

- Conversion of the existing zebra crossings to the East of Green Street roundabout to Pelicans, to enable them to become part of the above linked signal system, and maximise capacity at Green Street roundabout.

The proposal to lower 360m of La Route de Liberation will provide easier pedestrian access above ground, and provide access to what will be the Island's largest car park via a roundabout below ground. This will have significant benefits in reducing the impact of traffic in the area. The significant difference to the movement of traffic through the area arises through the loss of the slip lanes to the west of the existing underpass which previously enabled traffic to and from Elizabeth Harbour, and the town centre to access La Route de La Liberation, and the lack of direct access from Gloucester Street onto the new tunnel. In the proposed scheme, traffic which previously used those routes will have the choice of using either the Esplanade or the new southern link road.

### Vehicular access to the proposed development

The main access into the development will be via a new roundabout located on La Route de la Liberation below the new development. Traffic wishing to access the basement car parks will enter the tunnel from the east or west and use the roundabout to enter the lower basement levels. Once inside the lower basement vehicles can access the upper basement level via internal ramps. There will also be two other accesses from the surface road network for traffic arriving from the Waterfront, the town centre and Gloucester Street, where access to the pro-posed tunnel is not readily achievable. An access ramp into the main car park is proposed from the surface level road network via the southern link road. This allows direct access between the car park and St Helier town centre. The ramp from surface level provides access to/from the upper basement level while internal ramps provide access to the lower basement level and subsequent access to La Route de la Liberation. A further ramp will be provided at surface level to access the smaller car park on the southern side of La Route de la Liberation. This access is provided as a one-way ramp taking traffic down from surface level. Egress from this car park is via the proposed roundabout on La Route de la Liberation.

### Port traffic

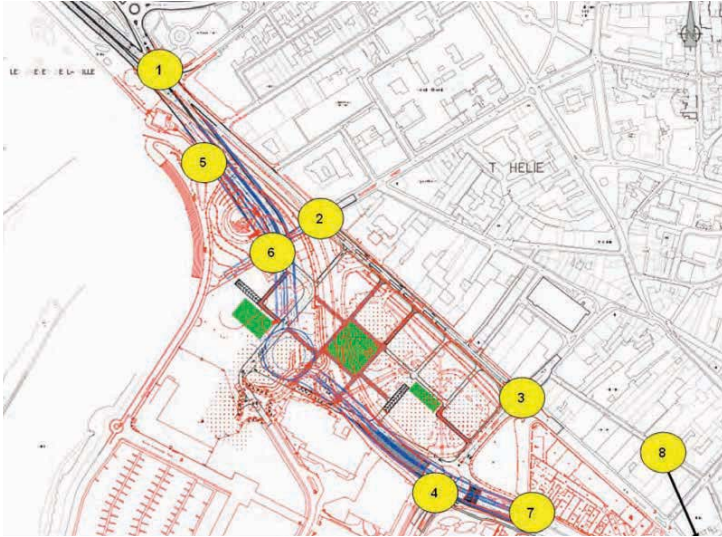
Port traffic from Elizabeth Harbour to and from the east will be unaffected. Port traffic heading to and from the west will be able to use the new southern link road, the Esplanade or Rue de L'Etau.

### Effect on the Esplanade

Although the scheme will have noticeable benefits through tunnelling a significant section of La Route de la Liberation, it will produce increases in traffic flows on the Esplanade between Gloucester Street and Castle Street, particularly in the morning peak period when traffic from the west will use it to access the town centre. At other times increases will be much less noticeable. The 8 to 9 am period is predicted to increase from the current 615 vehicles to 1170, and the evening peak 5 to 6 pm from 280 to 640. Although these changes are significant, they are considered manageable as the road has adequate traffic capacity and ample space for central refuges to enable pedestrians to cross the road one half at a time. (To put these vehicle numbers into context, the current flow on the Esplanade in front of the new Liberation Station is 770 in the morning peak hour and 890 in the evening.)

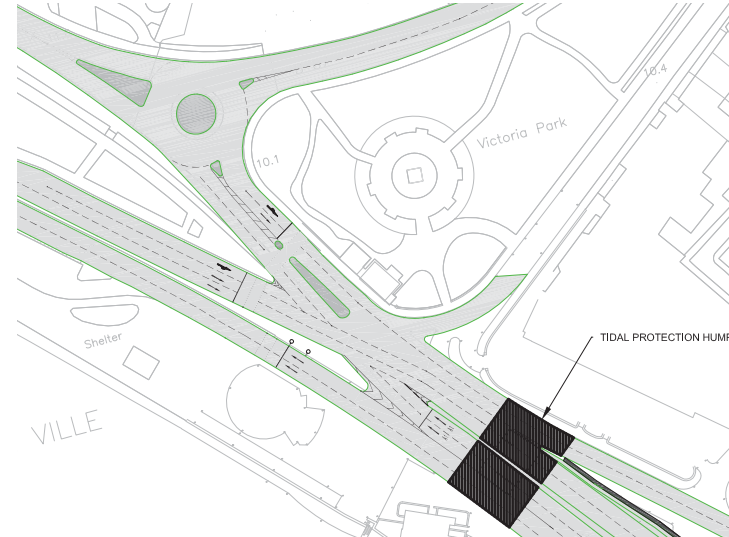
### Southern link road

The proposed route through the site immediately to the north of Cineworld will provide relief for the Esplanade by enabling traffic to dissipate onto a choice of routes. It will also provide the above ground access to the underground parking at the development. It will be designed to ensure slower speeds and modest traffic volumes and will form a junction with La Rue de L'Etau and carry a low volume of traffic to the east of that junction and a moderate volume to the west of it.



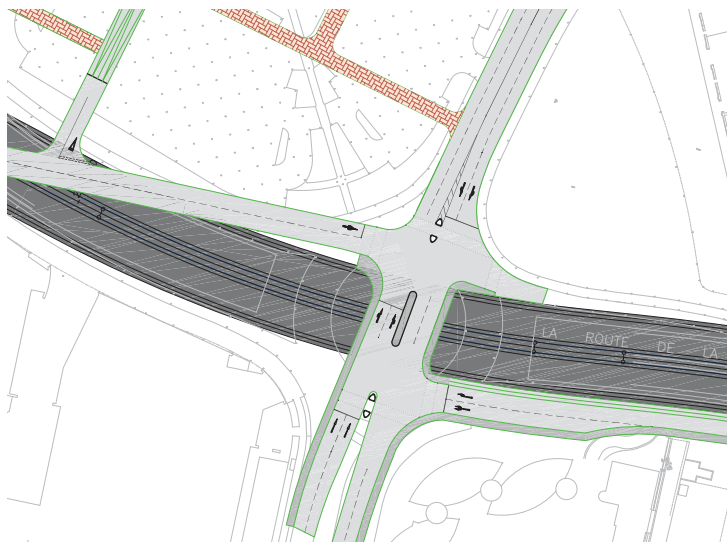
#### Junction details

Detailed design and analysis has been carried out for all the key junctions through the network. With the exception of the underground roundabout, all key junctions will be controlled by traffic signals as indicated on the plan above. A brief description of those key junctions follows.



#### 1) Victoria Avenue/Esplanade (West Park)

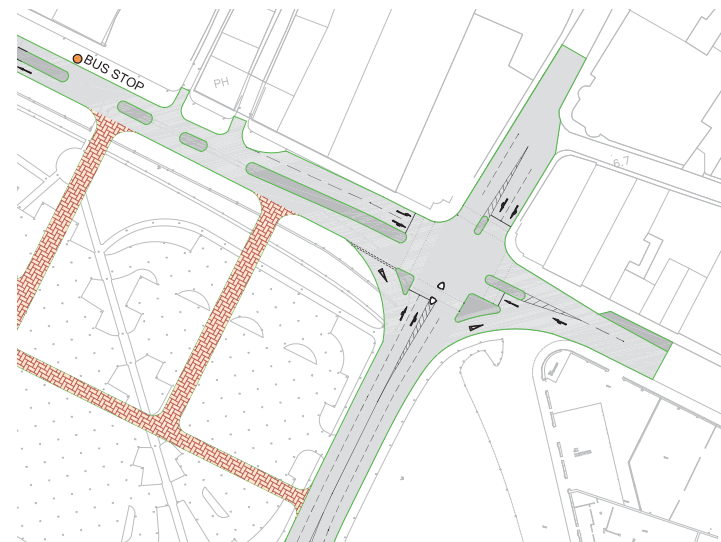
Improvements are proposed at West Park to enable the junction to cope with the additional development traffic and vehicles which will no longer be able to turn right into Kensington Place. Capacity will be improved by prohibiting the right turn into Peirson Road, so removing an inefficient stage of the signals, and widening of the road between the signals and the roundabout on St Aubin's Inner Road to provide an additional lane for traffic from the Esplanade onto St Aubin's Road.



#### 4) Castle Street roundabout

The roundabout at Castle Street above the existing underpass will be converted to a staggered cross roads controlled by traffic signals with pedestrian crossings. As part of this reconfiguration to the junction the following is proposed:

- Widen the westbound off-slip from La Route de la Liberation to two lanes on the approach to the junction to increase capacity along the off-slip;
- Connection to a new two-way southern link road.
- Reconstruct the junction as a signalised junction. This can be achieved by filling in the central opening of the roundabout to take traffic movements.
- Provide pedestrian crossings at Castle Street, the southern link road and La Route du Port Elizabeth.



#### 3) Castle Street/Esplanade

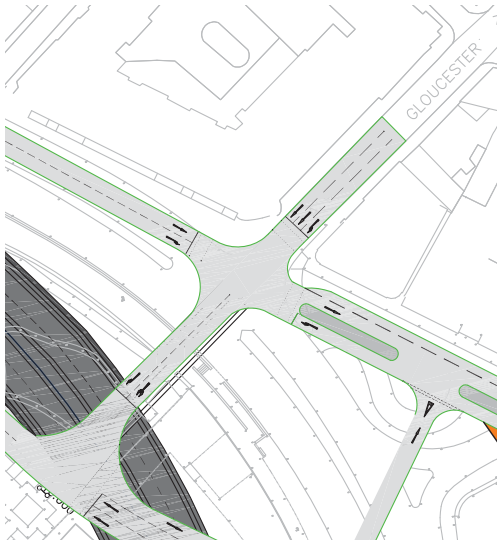
The proposed reconstruction of the Castle Street roundabout will lead to a shift in the pattern of traffic through the area. In addition, the introduction of traffic associated with the Esplanade Quarter development will lead to an increase in traffic along the Esplanade. Both these effects suggest that some improvements are required at the Esplanade/Castle Street junction to cater for the increase in traffic flow.

It is therefore proposed to increase the length of flare on the approach to the junction from the Esplanade (west), and to provide an additional left-turn slip for traffic approaching from Castle Street (south). Pedestrian facilities will again be incorporated into the upgrade of the junction, which will link up with Castle Street junction to provide a high quality network of pedestrian facilities between St Helier town centre and the waterfront via the Esplanade and Castle Street. Castle Street will be widened to four lanes between the Esplanade and the new junction to the south.

Eastbound slip lane onto La Route de la Liberation from Castle Street

It is proposed to introduce traffic signals at the junction of the eastbound slip lane onto La Route de la Liberation from Castle Street in order to provide a safe junction with traffic from the new tunnel and enable traffic flows to be linked with the Pelican crossings and signals junction by Liberation Square and the Weighbridge.





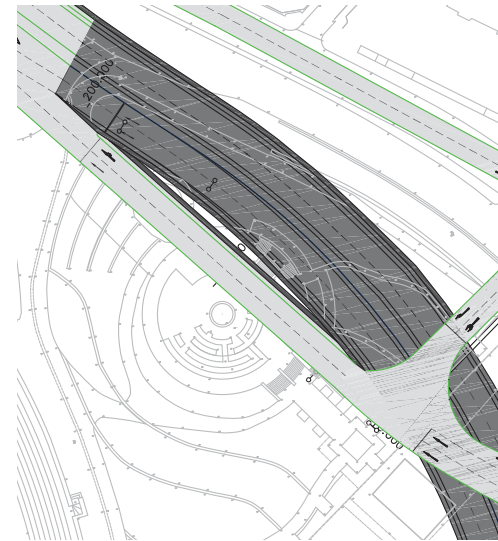
## 2) Gloucester Street/Esplanade/La Route de la Liberation

The junction of Gloucester Street/Esplanade/La Route de la Liberation is currently one of the busiest junctions in the area during the morning and afternoon peak hours, with high traffic and pedestrian demand. The lowering of La Route de la Liberation will remove all mainline east-west traffic from this junction, thereby significantly improving the capacity for traffic to exit Gloucester Street. The removal of La Route de la Liberation arm and extension to Gloucester Street will also, however, lead to the design of two new junctions. These are:

- Gloucester Street/Esplanade junction
- Gloucester Street/southern link road junction

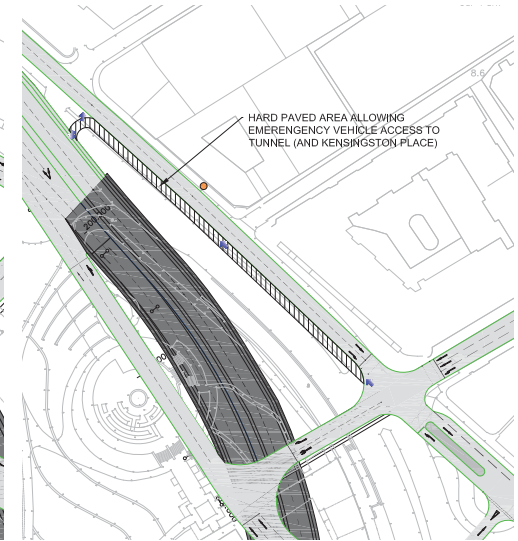
Both these junctions will be 4-arm signalised junctions, tying into the new west-facing slip roads carrying traffic to/from the new alignment of La Route de la Liberation. Three lanes will remain on Gloucester Street, with two lanes continuing further south to connect with the westbound on-slip and the southern link road.

There will be a high traffic demand through this junction as traffic moves between Gloucester Street and La Route de la Liberation, and along the Esplanade towards the town centre. As such, the operation of these junctions are paramount to the operation of the Waterfront road network.



## 6) Westbound Slip Road to La Route de la Liberation

As stated previously this westbound slip from the junction of Gloucester Street and the southern link road will provide the main access for westbound traffic onto La Route de la Liberation. Westbound traffic from St Helier town centre can access the slip via The Esplanade, while westbound traffic from the Waterfront can use the southern link road to access the slip. The merging of the slip road with La Route de la Liberation is in reasonable proximity to the downstream West Park junction. As such, there is limited opportunity for merging vehicles to cross the mainline carriageway to access the right turn lanes onto St Aubin's Road. In order to better facilitate this manoeuvre, and to improve the safety for such vehicles, it is proposed to introduce traffic signals at the bottom of the slip road, which will stop traffic on the main line whilst traffic from the slip road enters Route de la Liberation. This junction is predicted to perform well at most times however detailed analysis of the transport assessment has shown that this junction may be over capacity during the evening peak hour and that some local widening at the junction in addition to the developer's proposals is recommended to increase capacity.



## Emergency services routing

The Emergency services will, as at present, have remote control priority green light facilities at all necessary signals. The route to the west of the Island will be unaffected. Although the eastbound route will involve the use of the Esplanade and Castle Street and as such will be less direct than at present, the green light system will ensure a swift passage along the route.

Access into the tunnel from Gloucester Street will be obtained by the creation of an emergency services access route over a hard paved area on the triangular section of land between the Esplanade and the eastern approach to the new tunnel. This route will run westwards on a landscaped area parallel to the Esplanade and turn left into the eastbound tunnel approach. It will also provide a direct route to Patriotic Street and Kensington Place.

The roundabout within the new tunnel will enable emergency vehicles to access the opposite side of the tunnel if necessary. The emergency services have confirmed their support for these proposals.