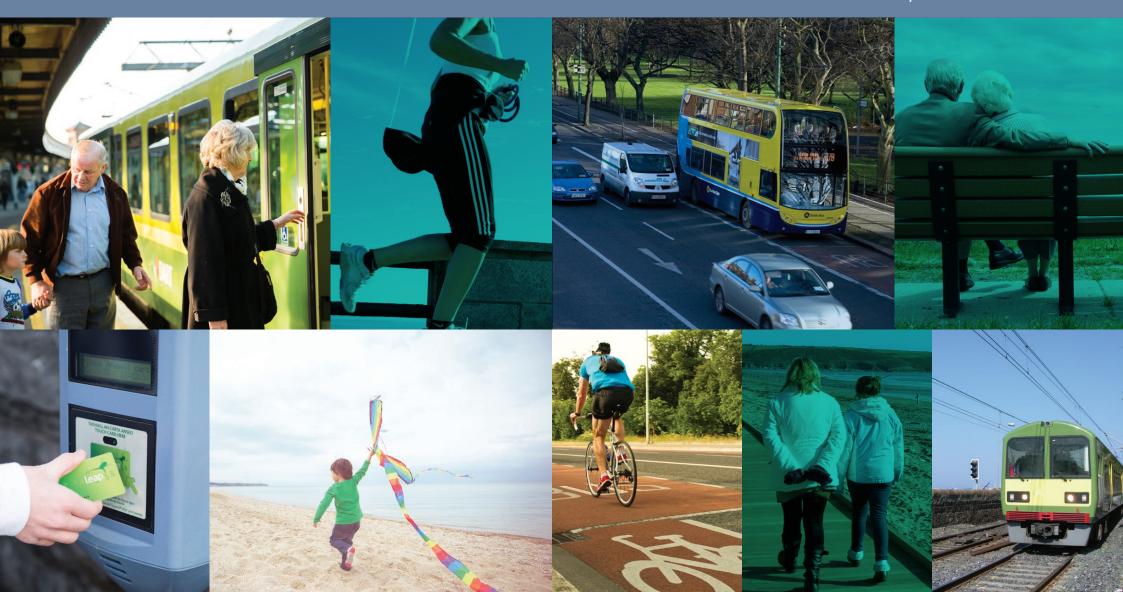




Sandymount / Merrion to Blackrock Corridor Study PUBLIC CONSULTATION DOCUMENT

"the proposed project would provide a high quality continuous pedestrian and cycle route extending from Irishtown to Seapoint"



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# **01:** INTRODUCTION

# 1.1 Background

It has been an objective for many years to develop a continuous coastal recreational promenade and cycleway from Sutton on the north side of Dublin to Sandycove on the south side. Significant sections of this route have been constructed, particularly along the northern portion of the corridor. However, despite several proposals being developed, there has been limited progress achieved on the delivery of the route on the south side of the city, due in large part to environmental and cost issues.

Previously referred to as the "Sutton to Sandycove (S2S) Promenade and Cycleway" scheme, this route has been incorporated into the Cycle Network Plan for the Greater Dublin Area as the "East Coast Trail".

The purpose of the Sandymount /Merrion to Blackrock Corridor Study is to provide a fresh assessment of the possible layouts for a cycleway and walking route around Dublin Bay south, and to re-evaluate the environmental issues and cost factors.

Because the route parallels closely, and effectively overlaps, the Rock Road and Merrion Road corridor between Blackrock and Merrion, this study also considers the transport needs along this road corridor – walking, cycling, public transport and traffic – in order to ensure a holistic approach to the development of an integrated transport proposal.

# 1.2 Public Consultation Document

This Public Consultation Document is intended to provide information on the recent work that has been carried out as part of the Sandymount /Merrion to Blackrock Corridor Study. The information in this document sets out, in summary form, the various options that have been examined, some of the significant environmental constraints associated with this project, and describes an "Emerging Preferred Option", which is the proposal identified as likely to be, subject to a public consultation process, the optimum scheme.

The information provided represents a summary of the work undertaken. Further details are available in the full "Feasibility Study and Options Assessment Report" prepared as part of the Sandymount /Merrion to Blackrock Corridor Study. That report is available on the website of the National Transport Authority – www.nationaltransport.ie.

# 1.3 Previous Studies

The most significant recent study was that carried out by Scott Wilson for Dublin City Council and Dun Laoghaire Rathdown County Council over the period 2006 to 2010. That study was carried out in two stages:

- Stage 1 A Feasibility Report identifying a number of options was completed in September 2007; and
- Stage 2 A Preliminary Design Report was completed in March 2010 providing a preliminary design for the proposed scheme.

The final Preliminary Report completed by Scott Wilson proposed a scheme extending from Sean Moore Park in Ringsend to the East Pier in Dun Laoghaire. The overall cost was estimated at €75 million (2010 prices). This includes 2.8 kilometres of a promenade and cycleway from Merrion Gates southwards to Blackrock, constructed by infilling adjacent to the railway line at a cost of €32.75 million.



However, in a final section titled "Recommendations", the report states:

"Following from advice from our specialist environmental sub-consultants Biosphere Environmental Services and also from meetings with the National Parks and Wildlife Section of the DEHLG and An Taisce, it is recommended that an inland route is further explored in parts of section B between, Merrion Gates and Seapoint Station. This would utilise the existing combined cycleway and footpath through Williamstown and Blackrock Parks which could be easily and cost effectively upgraded once practical access and egress points are identified."

## 1.4 Objectives

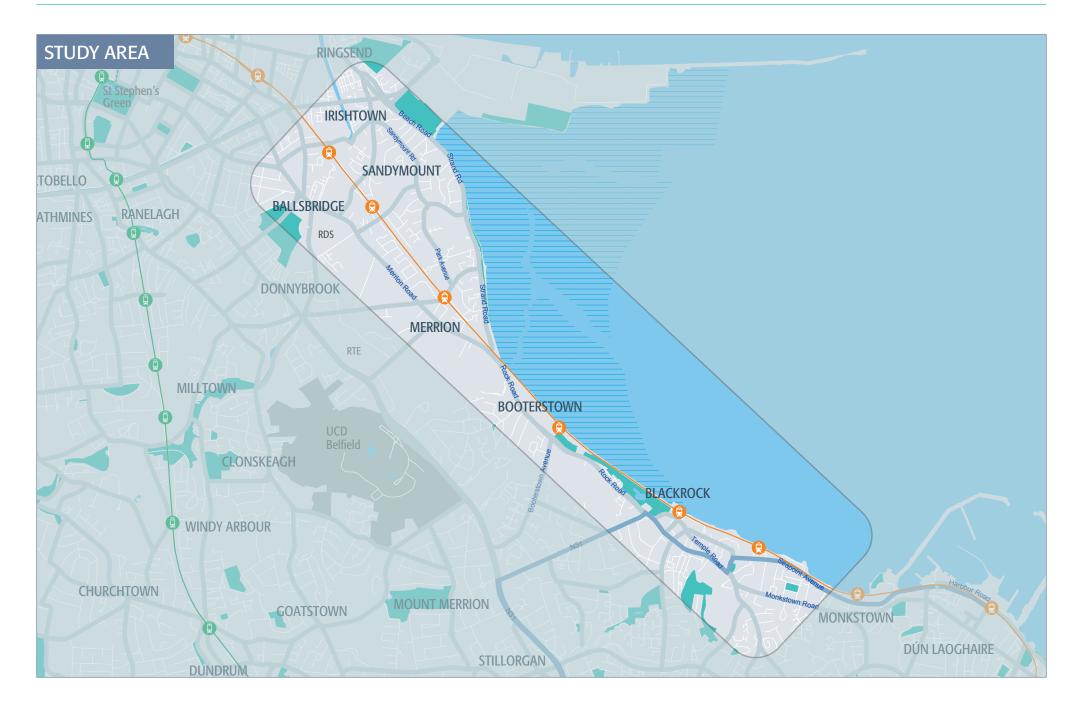
The intent of the Sandymount /Merrion to Blackrock Corridor Study is to identify an environmentally acceptable and cost effective scheme that delivers the objectives of the East Coast Trail (S2S) between Ringsend and Sandycove, while also addressing the overlapping transport needs of the parallel Rock Road and Merrion Road between Blackrock and Merrion.

There are two designated cycle routes within this overall transport corridor – the Blackrock to City Centre Cycle Route (Cycle Route 13 in the NTA's Cycle Network Plan for the Greater Dublin Area) and the East Coast Trail (route previously known as Sutton to Sandycove "S2S").

The Blackrock to City Centre Cycle Route starts south of Blackrock at Stradbrook Road, runs along the indicative corridor of Rock Road and Merrion Road, and finishes at the Grand Canal. The East Coast Trail (formerly the S2S route) runs, for the purposes of this study, from Brighton Vale near Seapoint DART Station to Sean Moore Road in Irishtown, along an indicative corridor adjoining the coastline.

# 1.5 Study Area

Because of the interaction between Strand Road and Merrion Road / Rock Road, the study area includes both corridors and extends from Seapoint at the south end, to Sean Moore Road and the junction of Merrion Road and Ailesbury Road at the north end. The relevant study area is shown in the map on the following page.



# **02:** ISSUES AND CHALLENGES

## 2.1 Current Arrangements

Currently Strand Road is a heavily trafficked route connecting the south city to Dublin Port, East Link Bridge and onwards to the Dublin Tunnel and the north city. Both Strand Road and Merrion Road also function as busy car commuter routes into and out of Dublin City Centre and the employment locations in the south-east business district.



Blackrock An Charraig Dhubh

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Along Strand Road, cycling facilities are limited and it does not adequately perform as either a commuter cycling route or as an amenity coastal cycling route.

Closures of the Merrion Gates level crossing impact fundamentally on how traffic movement functions in the area. Currently the railway gates at this crossing are down (closed) for approximately 20 minutes each hour at peak times. This road closure time is projected to rise considerably as the frequency of DART services increases.

Along the Merrion Road / Rock Road corridor, while there are a considerable number of cyclists using the route, the facilities to accommodate those cyclists are inadequate. Cyclists do not have a dedicated track or cycle lane along the corridor, and share the bus lane with buses where a bus lane exists. Even along these sections, the arrangements result in difficult conditions for both cyclists and bus/taxi drivers, with cyclists frequently impeding bus flow and bus/taxi drivers having to undertake awkward passing manoeuvres to pass cyclists.

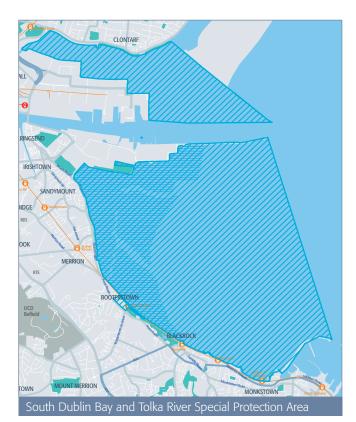
Bus priority along this section of Merrion Road / Rock Road is inadequate with major discontinuities in bus lane provision. The benefits gained from the existing sections of bus lanes are eroded by the absence of such lanes at other critical sections of the route.

# 2.2 Environmental Considerations

## 2.2.1 Special Protection Area

The areas of Dublin Bay and Booterstown Marsh are recognised as being of high environmental importance. Arising from this certain designations have been assigned to these areas in accordance with the relevant European directives.

The map along side shows the areas designated as the South Dublin Bay and Tolka River Estuary Special Protection Area. This designation, under the provisions of Council Directive 2009/147/EC on the conservation of wild birds (more commonly known as the "Birds Directive") provides for the protection of thirteen regularly occurring waterbird species as well as the wetland habitat that supports them. The area known as Booterstown Marsh also forms part of this Special Protection Area.





## 2.2.2 Special Area of Conservation

A broadly similar area of the southern part of Dublin Bay, but excluding Booterstown Marsh, has also been designated as a Special Area of Conservation (SAC) under the provisions of Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, more commonly known as the "Habitats Directive". A Special Area of Conservation is a prime wildlife conservation area, considered to be important on a European, as well as Irish, level.

South Dublin Bay Special Area of Conservation extends from the South Wall to the west pier at Dun Laoghaire and was selected in view of the importance of its "Tidal Mudflats and Sandflats" habitat. A map of the designated area is below.



## 2.2.3 Environmental Legislation

Both the Birds Directive and the Habitats Directive have been transposed into Irish legislation and constitute binding European law focussed on ensuring the protection and conservation of important habitats and wild bird species. Of particular relevance is the Habitats Directive (Directive 92/43/EEC). This sets out obligations on member states of the European Union to identify and designate sites of particular significance and to ensure the protection and conservation of such sites.

#### Article 6(3) of the Habitats Directive states:

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Recent judgements in the European Court of Justice (ECJ) have clarified the meaning and operation of the above provision. A major decision by the ECJ in 2013 in relation to the Galway Bypass project found that where a "plan or project will lead to the lasting and irreparable loss of the whole or part of a priority natural habitat type whose conservation was the objective that justified the designation of the site concerned as an SCI [site of Community importance], the view should be taken that such a plan or project will adversely affect the integrity of that site." This significance of this judgement is that it established that the loss of even part of a protected site precludes a development from being authorised except in very special cases. For those special cases to apply, there must be an "absence of alternative solutions" and the project must be "for imperative reasons of overriding public interest". These conditions mean that circumstances where a project involving any loss of a site designated under the Habitats Directive can be authorised are very limited.

# 2.3 Non-Environmental Considerations

As well as environmental considerations, there are a considerable number of non-environmental issues to be addressed and considered as part of the development of an optimal solution for this overall scheme. These issues include:

- a) Road width constraints on Strand Road along with significant traffic flows;
- b) The need to provide safer facilities for vulnerable road users – pedestrians and cyclists – along these routes;
- Safety issues at Merrion Gates, which has a record of numerous safety incidents, often adversely affecting DART services;

- d) The impact of higher DART frequencies on road closures at Merrion Gates junction;
- e) The need to improve bus movement along Rock Road and Merrion Road; and
- f) Impacts on parking provision on both Strand Road and Merrion Road.

These considerations, together with other relevant factors, have to be considered in determining the appropriate solution for these corridors.

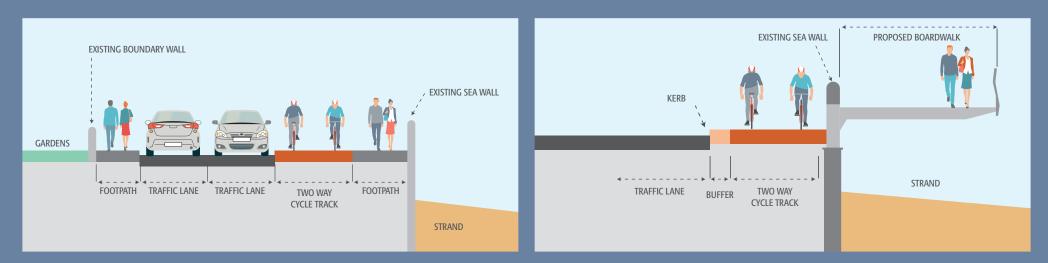
# **03:** OPTIONS CONSIDERED

# 3.1 Types of Options

In seeking to develop the optimal proposal, it was important that all viable alternatives were examined and assessed. The types of options that were considered along the coastal corridor were:

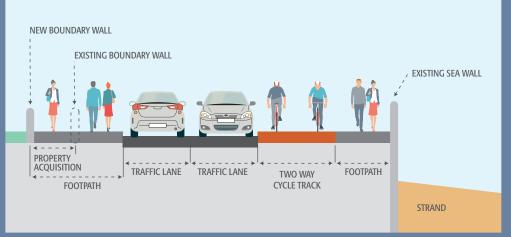
- Road layout revisions within the existing road corridors;
- Road layout revisions with widening of the road into 2: adjacent properties;
- 3: Construction of sections of boardwalk along the seafront;
- Construction of sections of infill along the seafront to create the walkway/cycleway;
- Closures of part of Strand Road; 5:
- The introduction of one-way traffic flows; and 6:
- 7: Separation of cycleway and walkway in constrained areas.

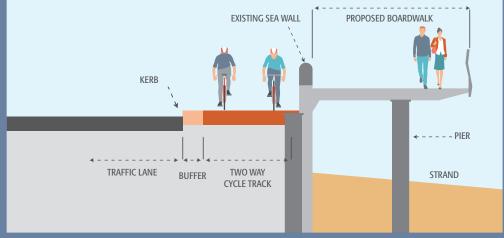
In relation to the Rock Road / Merrion Road corridor, the alternatives considered included different combinations of bus and cycling facilities as well as traffic lane layouts. Generic examples of some of these solution types are shown below.



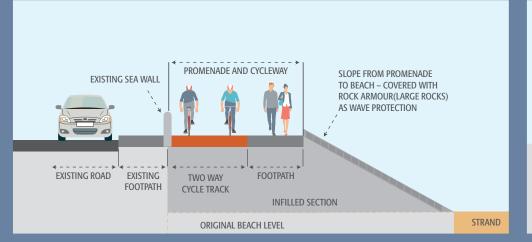


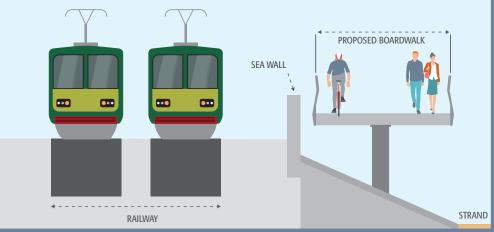
**Boardwalk – Cantilevered Type** 





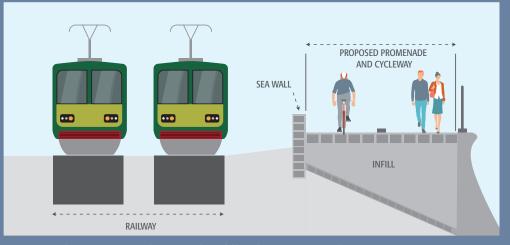
**Boardwalk – Pier Supports** 





Infill Promenade

Boardwalk on Piers Adjacent to Railway Line



Promenade constructed on Rock Infill Adjacent to Railway Line

# 3.2 East Coast Trail (S2S)

To develop design options each of the two corridors was separately assessed. This section considers the corridor for the East Coast Trail (S2S).

To assist the process of developing potential design solutions, this overall corridor was divided into six sections as set out in the map below.





Within each section, a careful examination was undertaken to establish the main feasible alternatives which could deliver the objectives of the project for that particular section. In many cases it was clear that there would be significant issues associated with particular options under consideration. However, for the completeness of the process, it was important that these options were also identified and brought forward for evaluation.

The main options examined in each section are set out below.

#### Section 1 – Irishtown to Sandymount Strand:

Five options were considered in detail. These are:

- a) Revised road layout with some property acquisition;
- Revised road layout with section of pedestrian boardwalk;
- c) Pedestrian boardwalk for full length;
- d) Widening of road corridor into Strand by infilling; and
- e) One-way traffic system on Strand Road to provide space for cycleway.

#### Section 2 – Sandymount Promenade:

Three options were considered in detail. These are:

- a) Cycleway adjoining existing promenade;
- b) Conversion of east footpath to cycleway; and
- c) One-way traffic system on Strand Road to provide space for cycleway.

#### Section 3 – Merrion Strand:

Five options were considered in detail. These are:

- a) Walkway and cycleway by infilling onto Strand;
- b) Boardwalk accommodating cycleway and walkway along edge of Strand;
- Widening of Strand Road by property acquisition to accommodate cycleway;
- d) One-way traffic system on Strand Road to provide space for cycleway; and
- e) Closure of Merrion Gates and construction of new link Merrion Bypass.

#### Section 4 – Merrion Gates to Booterstown:

Five options were considered in detail. These are:

- Coastal walkway and cycleway by infilling on seaward side of railway;
- Boardwalk accommodating cycleway and walkway on seaward side of railway;
- c) Boardwalk accommodating cycleway and walkway on inland side of railway;
- d) Cycleway and walkway along Rock Road; and
- e) Cycleway on Rock Road with coastal footpath.

#### Section 5 – Booterstown to Blackrock:

Four options were considered in detail. These are:

- Coastal walkway and cycleway by infilling adjacent to railway line;
- Boardwalk accommodating cycleway and walkway on seaward side of railway;
- c) Inland boardwalk alongside railway line;



- d) Cycleway and walkway through Blackrock Park; and
- e) Cycleway through Blackrock Park with coastal footpath.

#### Section 6 – Blackrock to Seapoint:

Five options were considered in detail. These are:

- a) Coastal walkway and cycleway Variant 1;
- b) Coastal walkway and cycleway Variant 2;
- C) One-way traffic system on Seapoint Avenue to provide space for two-way cycleway;
- d) One-way traffic system on Seapoint Avenue to provide space for two-way cycleway plus a coastal footpath route; and
- e) Widening of Seapoint Avenue to provide space for two-way cycleway plus a coastal footpath route.

# 3.3 Rock Road / Merrion Road Corridor

The objective for the Rock Road / Merrion Road corridor is to provide enhanced bus and cycling provision in addition to catering for traffic and pedestrian movements.

Six options were developed and assessed in detail. These options are:

- > Option 1: Retain existing road width and overall lane layout;
- > Option 2: Provide segregated cycle lanes along with inbound bus priority;
- > Option 3: Provide segregated cycle lanes with bus priority in both directions;
- Option 4: Provide segregated cycle lanes along with inbound bus priority and raised carriageway connections at side roads;

**Option 5:** Provide higher quality segregated cycle lanes and bus priority through additional land acquisition; and

)

**Option 6:** Provide segregated cycle lanes with bus priority in both directions plus accommodate the two-way cycle track of the East Coast Trail between Merrion Gates and Booterstown Park.

# 04: METHODOLOGY AND APPRAISAL

A process was undertaken to identify the option considered to be the best option for implementation. This involves a process of balancing various factors to determine which alternative, on balance, is the optimum solution to take forward.

A standardised process is used in transport assessment projects in Ireland, which considers relevant factors under five categories, which are:

- i) Economy;
- ii) Safety;
- iii) Environment;
- iv) Accessibility and Social Inclusion; and
- v) Integration.

Under those five main categories a number of subcriteria were identified against which various options were assessed. These included:

- Under "Economy", costs and the transport quality of service were considered;
- Under "Safety", pedestrian and cyclist safety were taken into account in addition to the road / rail safety issues at Merrion Gates;
- > Under "Environment", the various environmental impacts were carefully assessed including designation impacts; and
- > Under "integration", factors such as cycle network integration and displacement from a full coastal route for the East Coast Trail were considered.

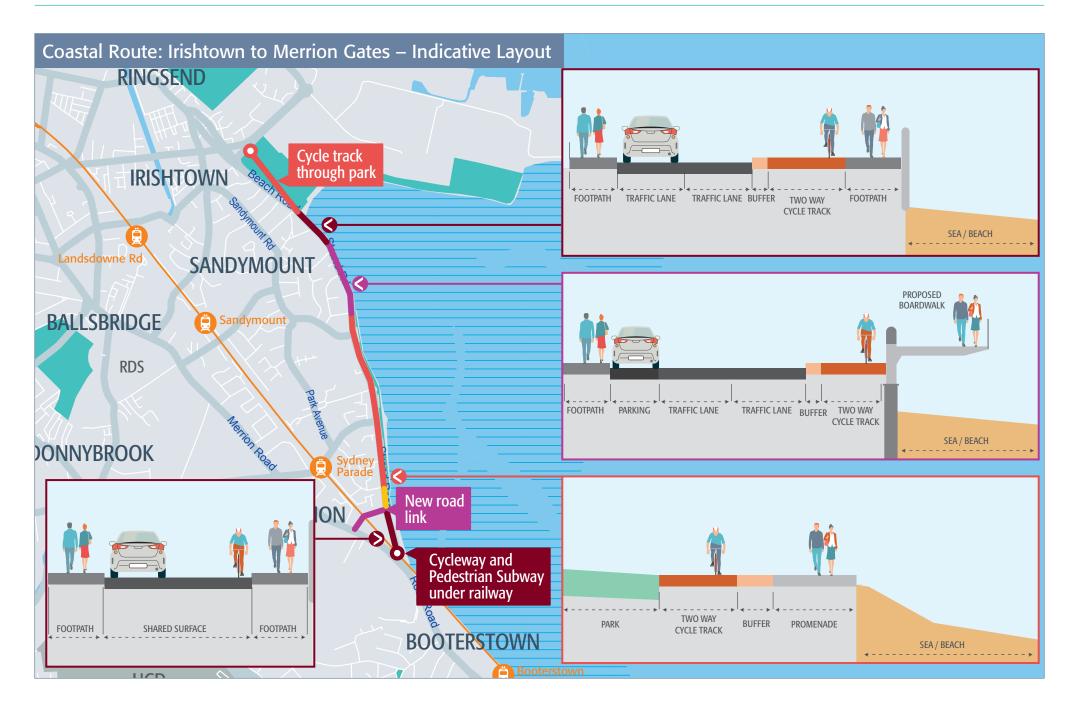
In relation to the standard assessment category of "Accessibility and Social Inclusion", there was no material differentiation between the options.

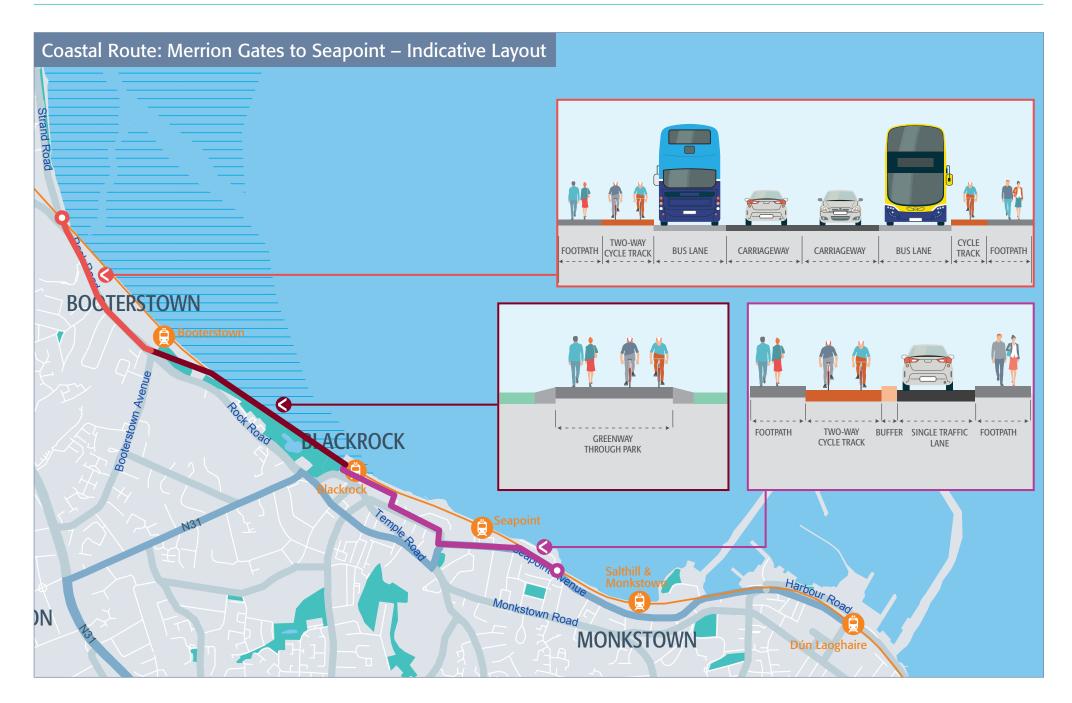
The application of the above evaluation process to the various scheme options has identified a proposed scheme which is considered likely to be, subject to a public consultation process, the optimum scheme – the "Emerging Preferred Scheme". The details of this Emerging Preferred Scheme are set out in the next section.

# **05:** EMERGING PREFERRED SCHEME – EAST COAST TRAIL

## 5.1 Description

Having undertaken a comprehensive assessment of the various options, the scheme that has been identified, for the purposes of a public consultation process, as the Emerging Preferred Scheme for the East Coast Trail section of the project is set out in indicative form on the following two pages.







Existing Strand Road at Merrion Gates

# 5.2 Commentary on Emerging **Preferred Option**

Some significant features of this emerging preferred route for the East Coast Trail include:

- The construction of a boardwalk for pedestrians > along approximately 250 metres of Strand Road between its junction with Newgrove Avenue and its junction with Gilford Avenue;
- The provision of a new road link between Strand > Road and Merrion Road north of the existing Merrion Gates junction which would cross over the railway line and would be unaffected by train movements;
- The closure of the Merrion Gates level crossing and > the conversion of the south end of Strand Road into a cul-de-sac;
- The provision of an underpass for pedestrians and > cyclists under the railway line at Merrion Gates;

- The creation of a section of coastal walking route between Blackrock and Seapoint on the seaward side of the railway line; and
- The provision of safe two-way cycling facilities on > Seapoint Avenue through the introduction of a oneway traffic system along this road.

At certain locations along the corridor, some land and property acquisition would be required in order to deliver the required road layout. In addition, existing on-street parking in certain areas would have to be removed because of space constraints.

# 5.3 Environmental Considerations

>

The identification of this option as the preferred option takes into account the environmental constraints associated with the South Dublin Bay Special Area of Conservation plus the South Dublin Bay and Tolka River Estuary Special Protection Area.

Several of the options involved direct intrusion into these designated areas. As identified earlier, recent European case law has clarified the position regarding development in Special Areas of Conservation. Those judgements have clarified that the loss of even part of a protected site precludes a development from being authorised except in very special, and very limited, cases.

Several of the options identified, particularly for the sections extending from the southern end of Strand Road to Blackrock, involve some level of intrusion into the South Dublin Bay Special Area of Conservation. This is particularly the case for the infill proposals to create a cycleway and walkway, but also applies in the case of other proposals such as the boardwalk adjoining the railway line incorporating a cycleway and walkway. The environmental impacts of these proposals, taken together with the recent European Court of Justice decisions, has meant that these proposals have not been recommended for inclusion in the emerging preferred option.



Instead, the section from Merrion Gates to Booterstown proposes to utilise a short section of "inland" route, along Merrion Road and Rock Road, before entering Blackrock Park at the southern end. This provides full route continuity while avoiding intrusion into the specially designated areas. Careful design of this section of the route will ensure that the high amenity value of the corridor will be maintained.

## 5.4 Merrion Bypass

One of the key features of this proposal is the provision of the "Merrion Bypass". This is a short road link connecting the southern end of Strand Road to Merrion Road north of the existing Merrion Gates junction. It would pass through the grounds of Merrion Hall off Strand Road and the car park area of Our Lady Queen of Peace Church on Merrion Road. By incorporating a bridge over the DART railway line, the proposal would provide a road line that would be unaffected by train movements and would be available on a continuous basis. Aside from the transport connectivity benefits that this brings, it would allow the closure of the Merrion Gates level crossing, removing a major source of traffic delay and resolving existing safety risks at this location.

"One of the key features of this proposal is the provision of the "Merrion Bypass". This is a short road link connecting the southern end of Strand Road to Merrion Road north of the existing Merrion Gates junction."

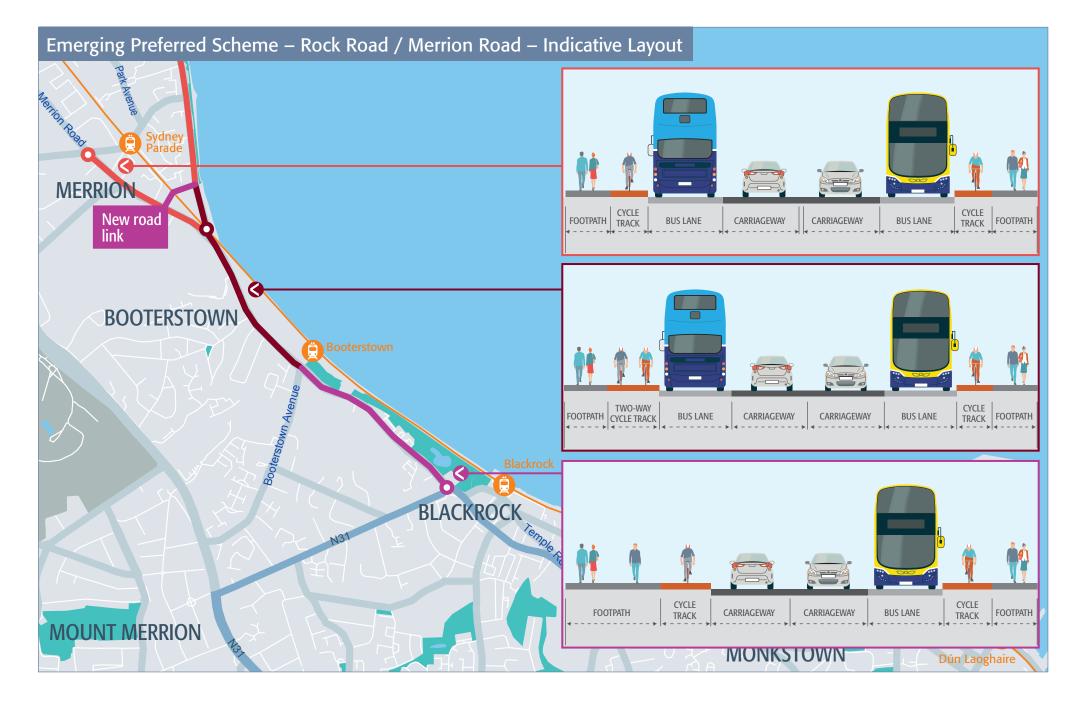
# **06:** EMERGING PREFERRED SCHEME – ROCK ROAD / MERRION ROAD

## 6.1 Description

Having undertaken a comprehensive assessment of the various options, the scheme that has been identified, for the purposes of a public consultation process, as the Emerging Preferred Scheme for the Rock Road/Merrion Road section of the project, is set out in indicative form on the following page.









Existing layout at Merrion Gates



Existing church car park



Proposed layout at Merrion Gates



6.2 Commentary on Emerging Preferred Option

Some significant features of this emerging preferred option for the Merrion Road / Rock Road:

- It provides continuous cycle facilities along this corridor, either fully segregated from vehicular traffic or on a dedicated cycle lane on the road carriageway;
- > It provides largely continuous bus lanes along this important bus corridor; and
- > The Merrion Gates junction is removed and a new road link is provided a short distance further north which bridges over the railway line and removes all interactions between road and rail movements.

At certain locations along the corridor, some land and property acquisition would be required in order to deliver the required road layout. In addition, existing on-street parking in certain areas would have to be removed because of space constraints. Several mature trees plus other vegetation would also require removal to enable the necessary road widening to be provided. Where feasible, replacement planting would be provided as part of the development of the scheme.

# 07: BENEFITS AND COSTS

# 7.1 Benefits

The implementation of the proposed project would deliver the following benefits:

- It would provide a high quality continuous pedestrian and cycle route extending from Irishtown to Seapoint, achieving the elements of the long-held objective to provide an recreational promenade and cycleway from Sutton on the north side of Dublin to Sandycove on the south side;
- It would resolve a major safety risk through the closure of the Merrion Gates level crossing, removing the road and rail conflicts and eliminating a problematic road junction;
- Through the provision of the new road link connecting Strand Road and Merrion Road and the closure of the Merrion Gates level crossing, it would address the traffic delay issues arising from increasing train frequencies and longer road closure periods at Merrion Gates junction;

- > It would deliver safe segregated cycle facilities along the busy Rock Road / Merrion Road;
- > It would provide fast and reliable bus movement in both directions along the sections of Rock Road and Merrion Road within the scheme ambit; and
- It would deliver a fully renewed road corridor along Merrion Road / Rock Road, with new road surfacing, lane markings, footpaths, pedestrian crossings and signage, benefiting all road users including car traffic.

# 7.2 Costs

The estimated cost of the coastal scheme, inclusive of the new road link bypassing Merrion Gates, is in the range €22 million to €26 million.

The estimated cost of the Rock Road / Merrion Road scheme is in the range  $\in$  18 million to  $\in$  22 million.

# **08:** POSSIBLE IMPLEMENTATION

If following the public consultation process, it is determined that the scheme should proceed to implementation, either in the form presented in this Public Consultation Document or in an amended form, the National Transport Authority would work in collaboration with Dublin City Council and Dun Laoghaire County Council to secure its implementation. While certain projects can be approved for development by the elected members of local authorities, given the scale and level of impacts of this proposed scheme it is likely that an Environmental Impact Statement would be required to be prepared for the project and that development consent would be required to be obtained from An Bord Pleanála.

Prior to the submission of an application for development consent to An Bord Pleanála, additional design and planning work would be undertaken, encompassing mapping surveys, environmental studies, various ground and other investigations plus further design development.

# **09:** PUBLIC CONSULTATION

The National Transport Authority invites submissions in relation to the proposals set out in this Public Consultation Document.

Written submissions and observations may be made by:

#### **On-line:**

Through the on-line form in the "Public Consultations" section of our website at www.nationaltransport.ie

#### Or by Email to:

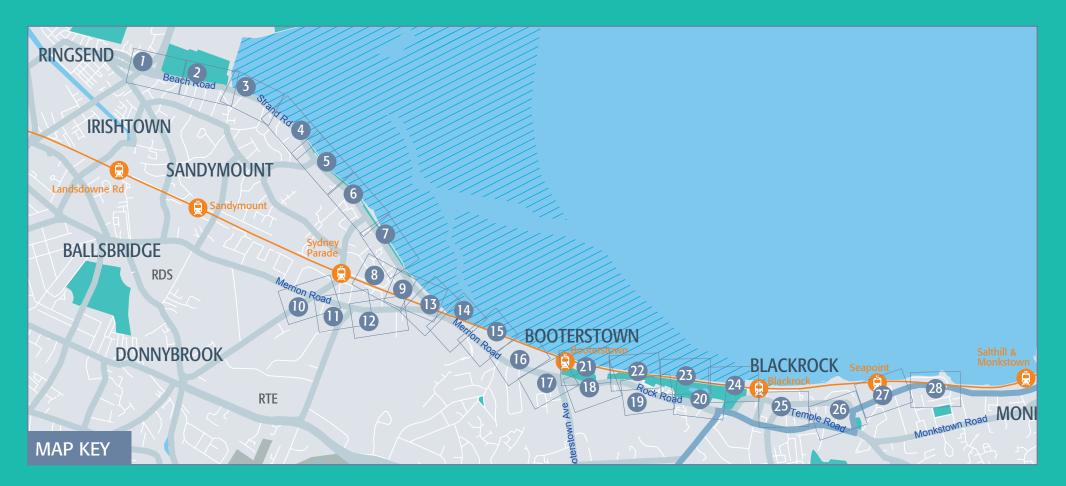
Eastcoast@nationaltransport.ie

#### Or by post to:

East Coast Consultation, National Transport Authority, Dún Scéine, Iveagh Court, Harcourt Lane, Dublin 2, D02 WT20. The closing date for receipt of submissions and observations is set out in the "Public Consultations" section of our website.

All submissions must include the full name and address of the person making the submission and where relevant the name of the body or organisation represented. Please note that submissions are subject to Freedom of Information Act. Submissions may be published in full on the website of the National Transport Authority.

# APPENDIX

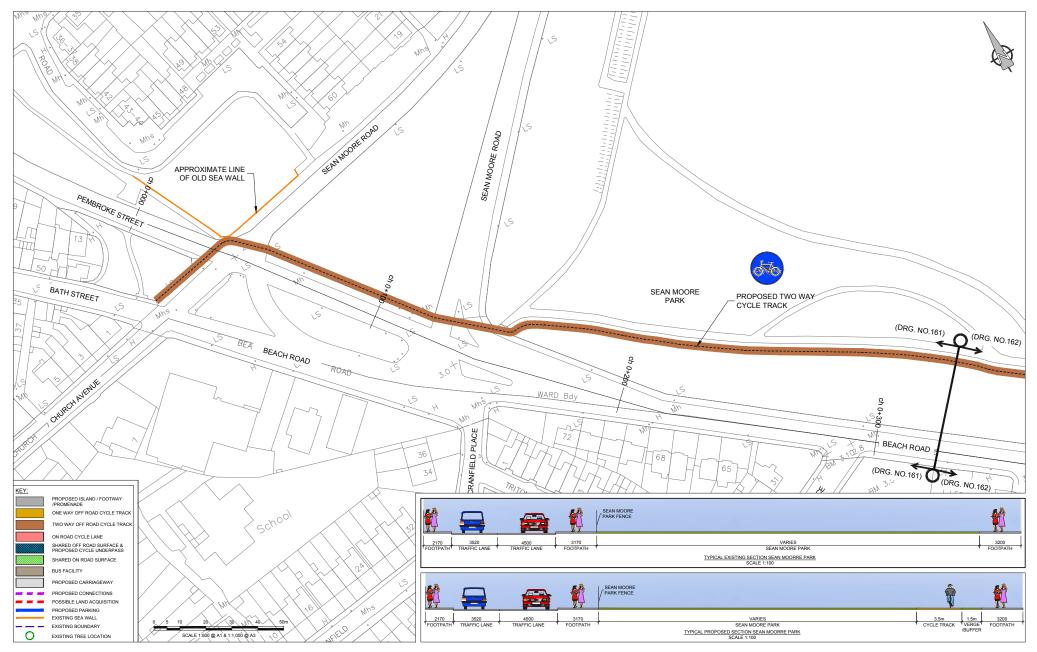


NOTE: The Emerging Preferred Route shown on the following drawings is indicative only and is subject to change following consultation and as part of the design development process.

#### EMERGING PREFERRED ROUTE OPTION SECTION 1 – IRISHTOWN TO SANDYMOUNT PROMENADE

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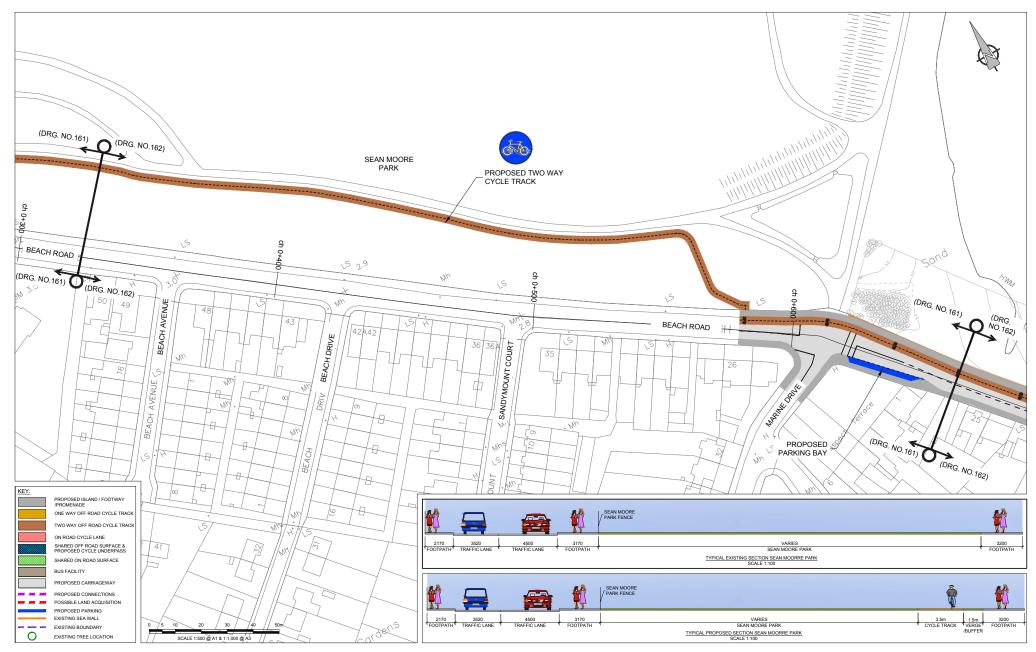
#### MAP 1



### EMERGING PREFERRED ROUTE OPTION

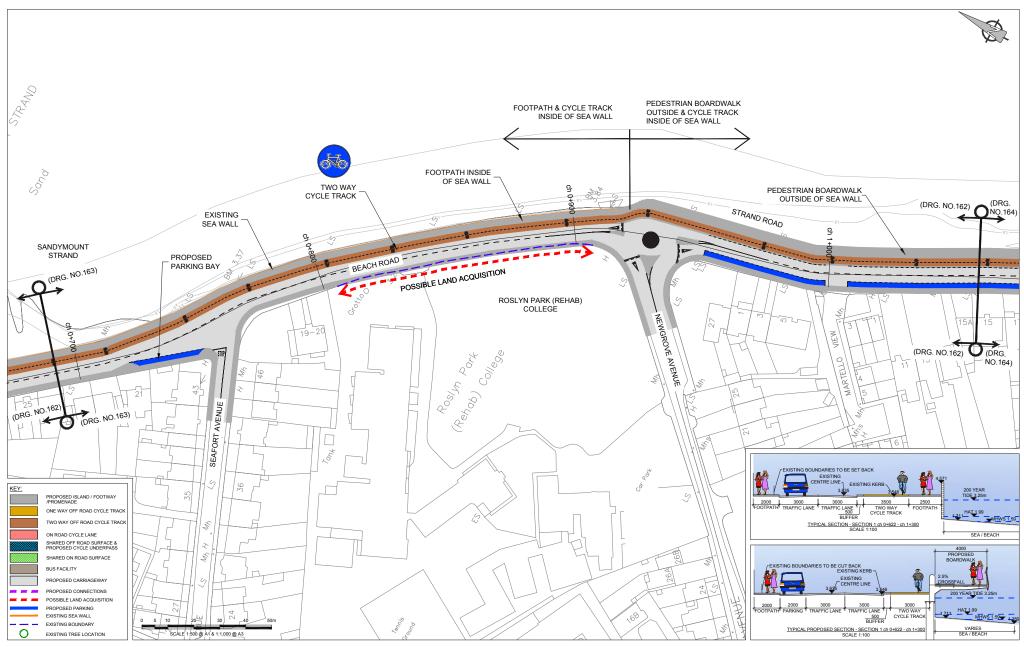
SECTION 1 – IRISHTOWN TO SANDYMOUNT PROMENADE





#### EMERGING PREFERRED ROUTE OPTION SECTION 1 – IRISHTOWN TO SANDYMOUNT PROMENADE

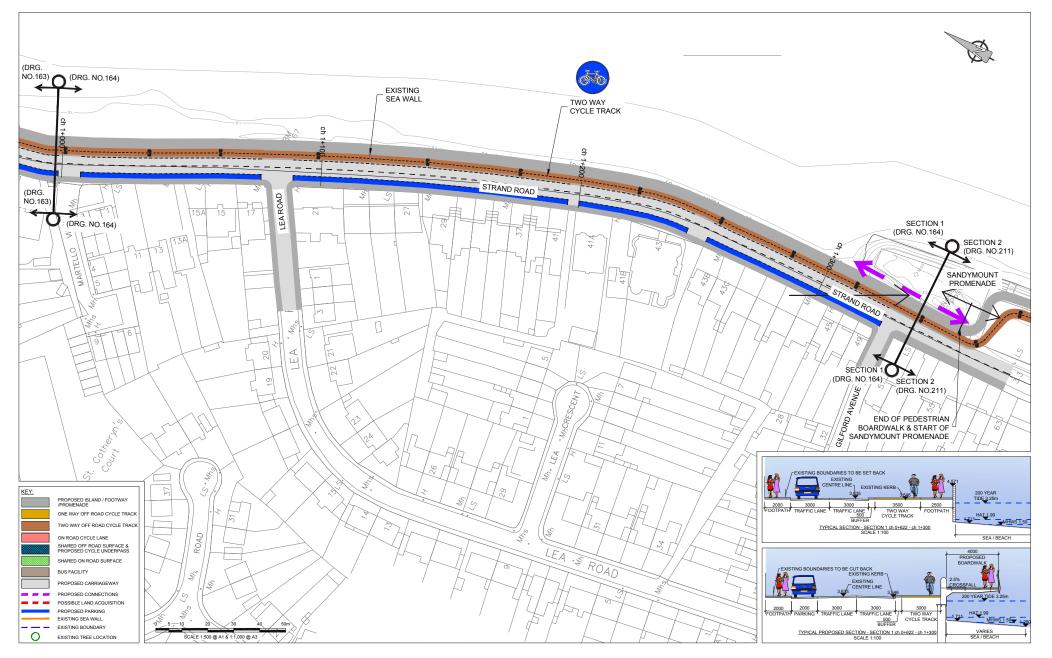




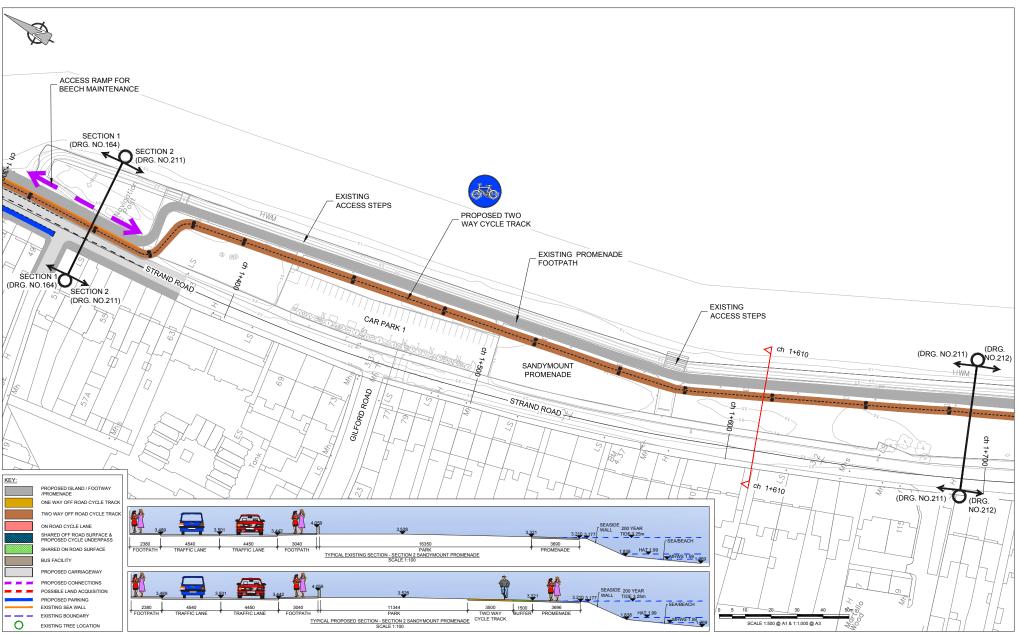
#### EMERGING PREFERRED ROUTE OPTION

SECTION 1 – IRISHTOWN TO SANDYMOUNT PROMENADE

#### MAP 4



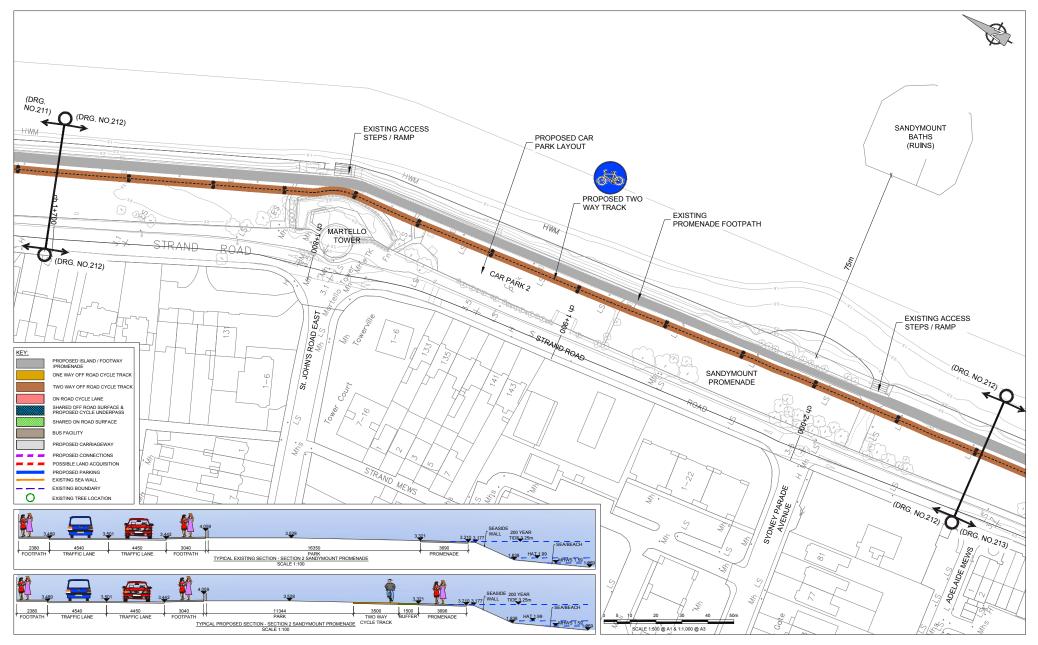




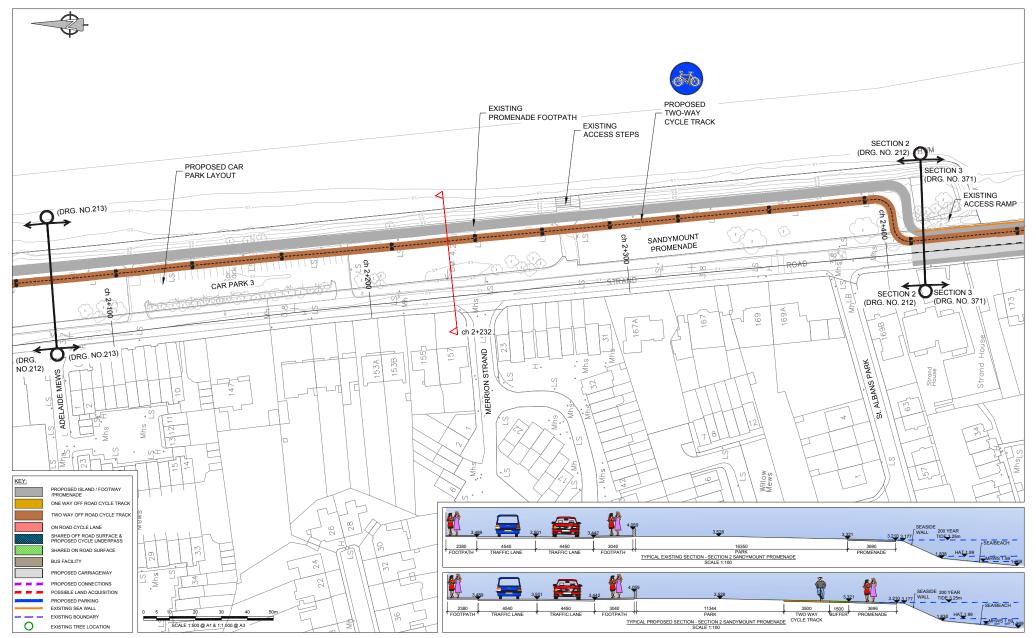
### EMERGING PREFERRED ROUTE OPTION

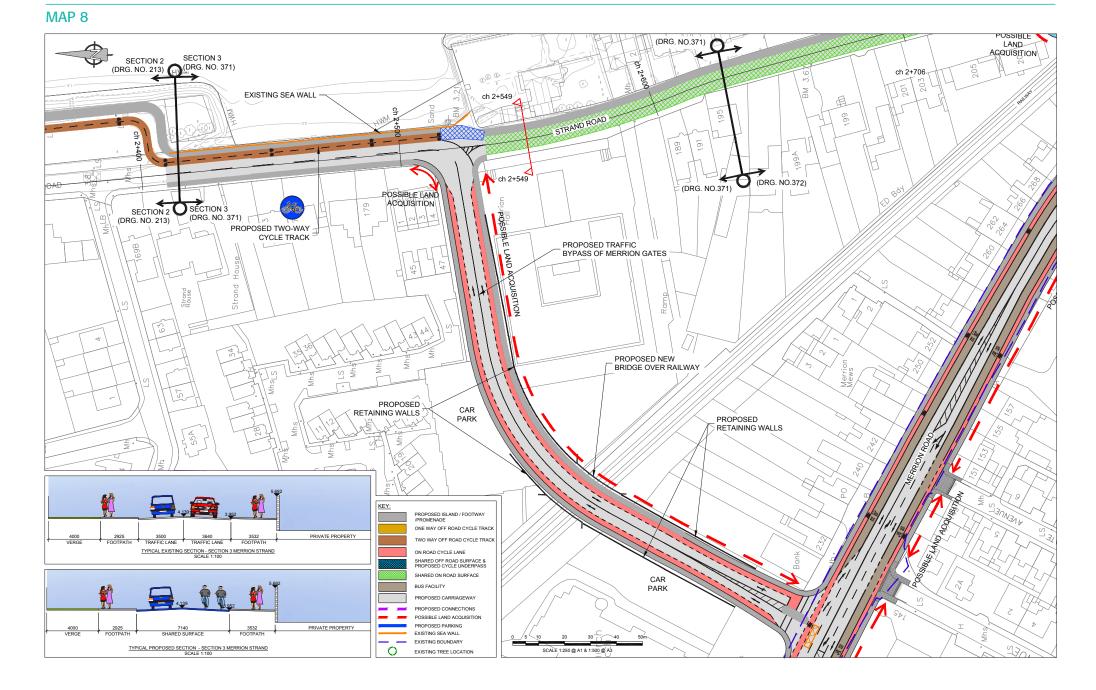
SECTION 2 – SANDYMOUNT PROMENADE

#### MAP 6



### MAP 7

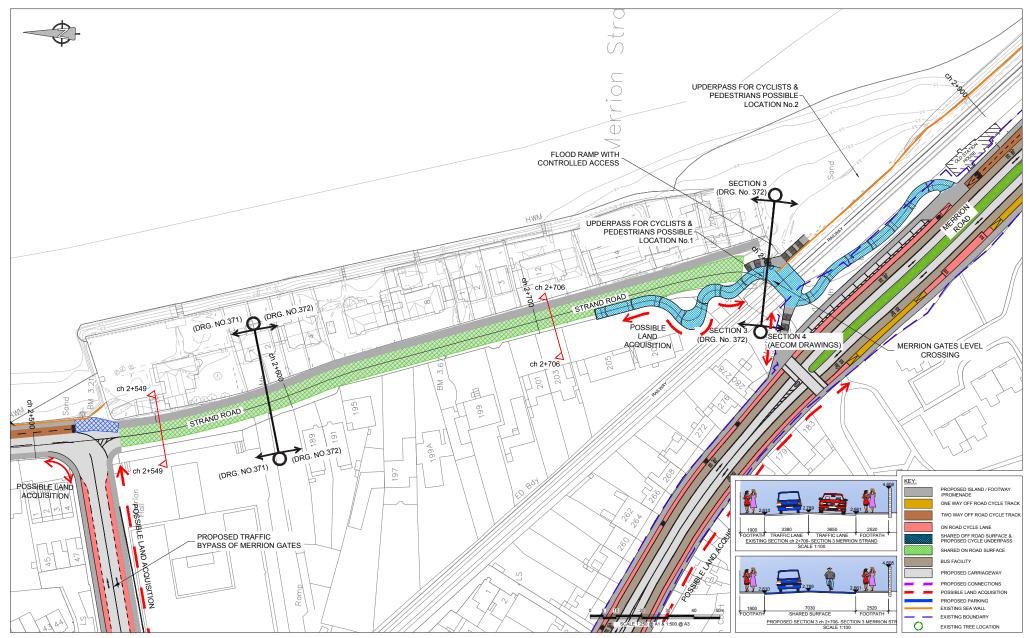




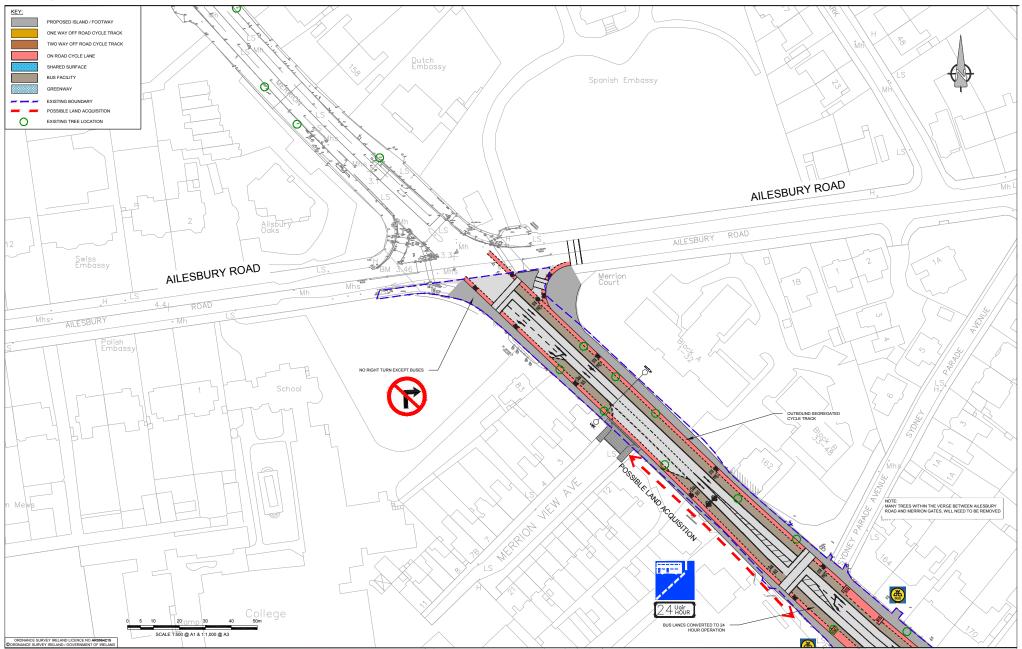
EMERGING PREFERRED ROUTE OPTION SECTION 3 – MERRION STRAND

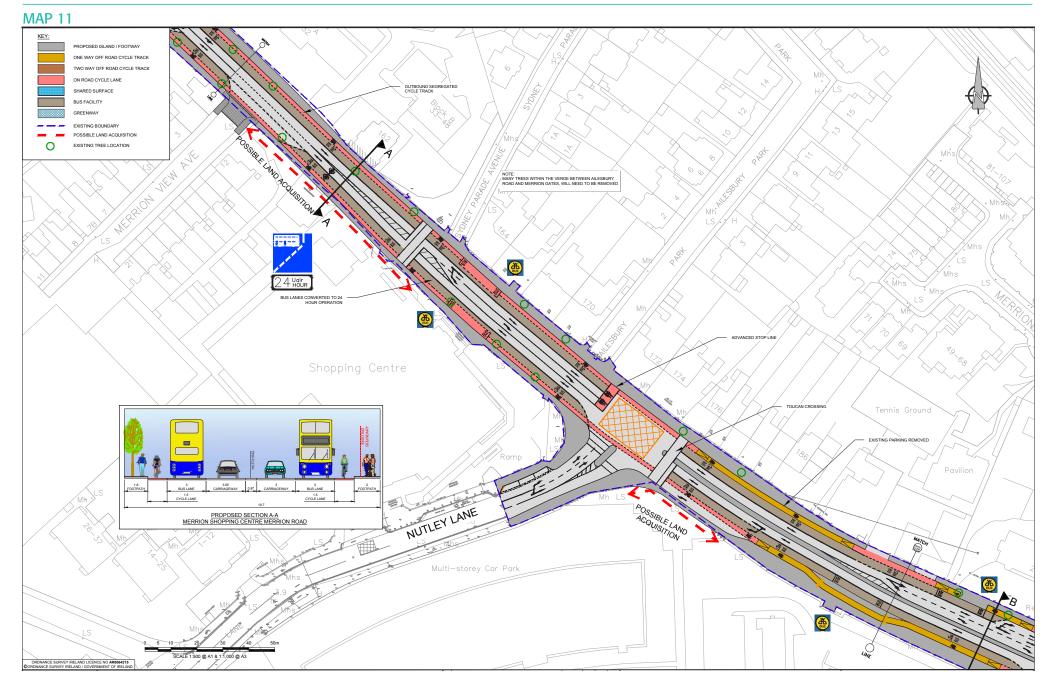




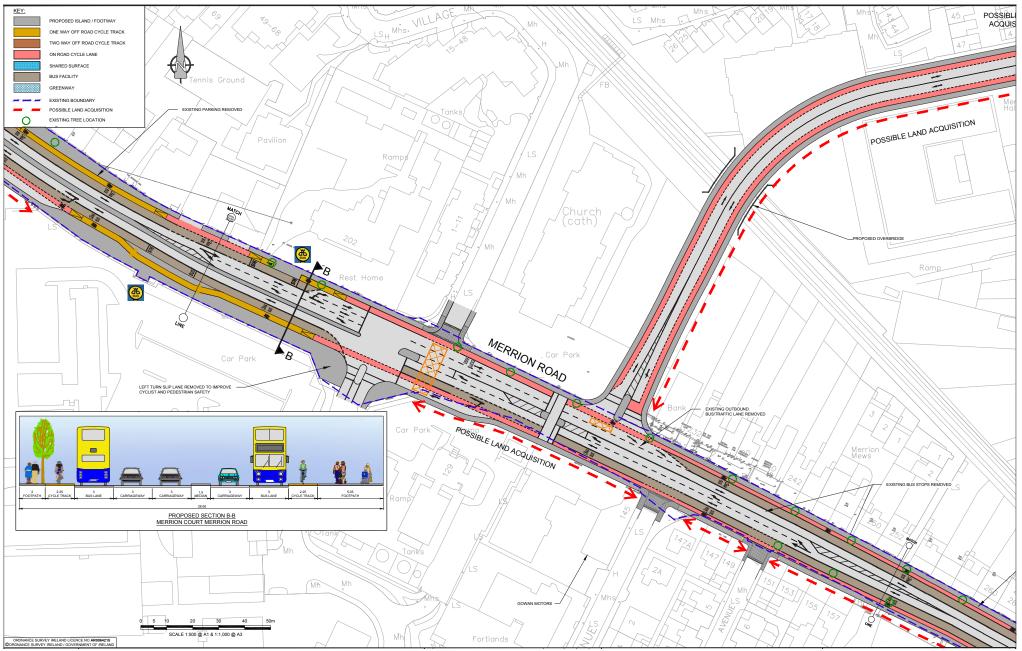


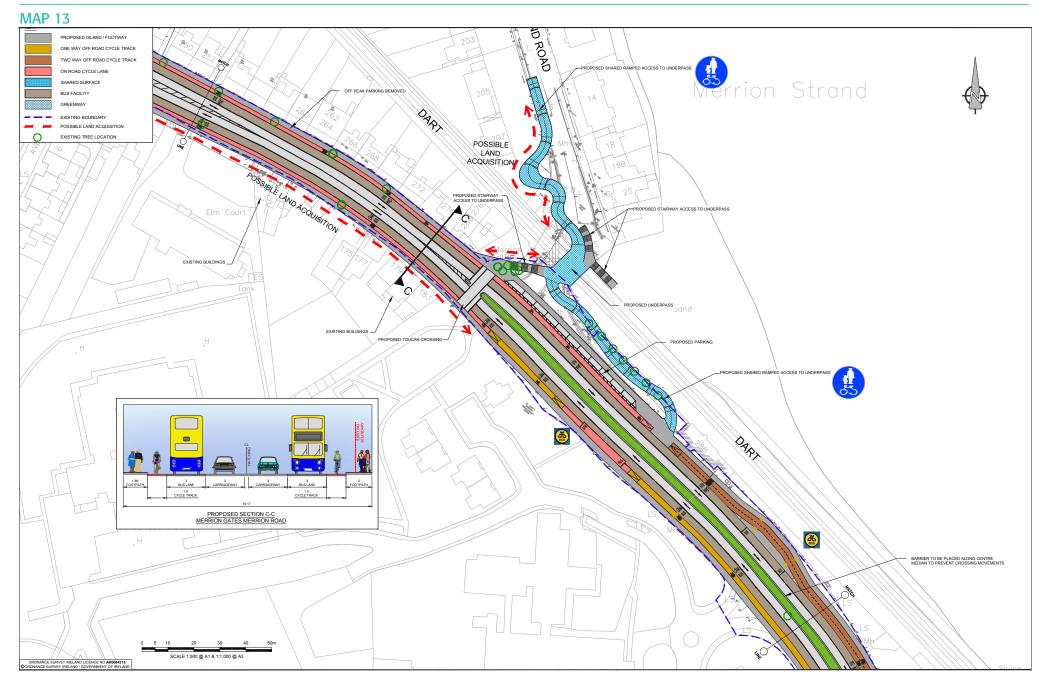








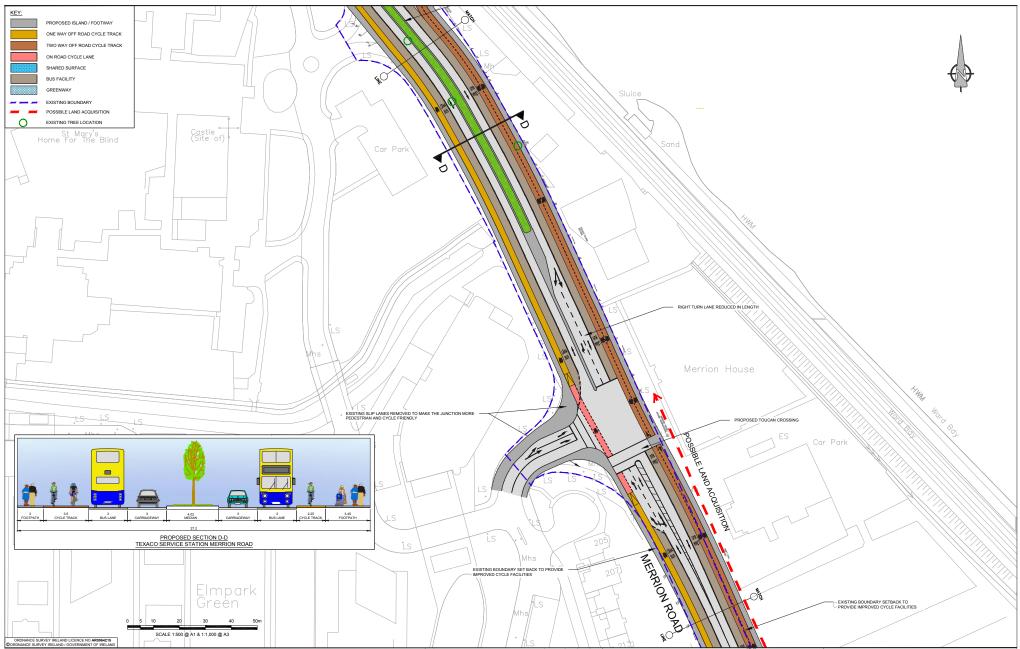


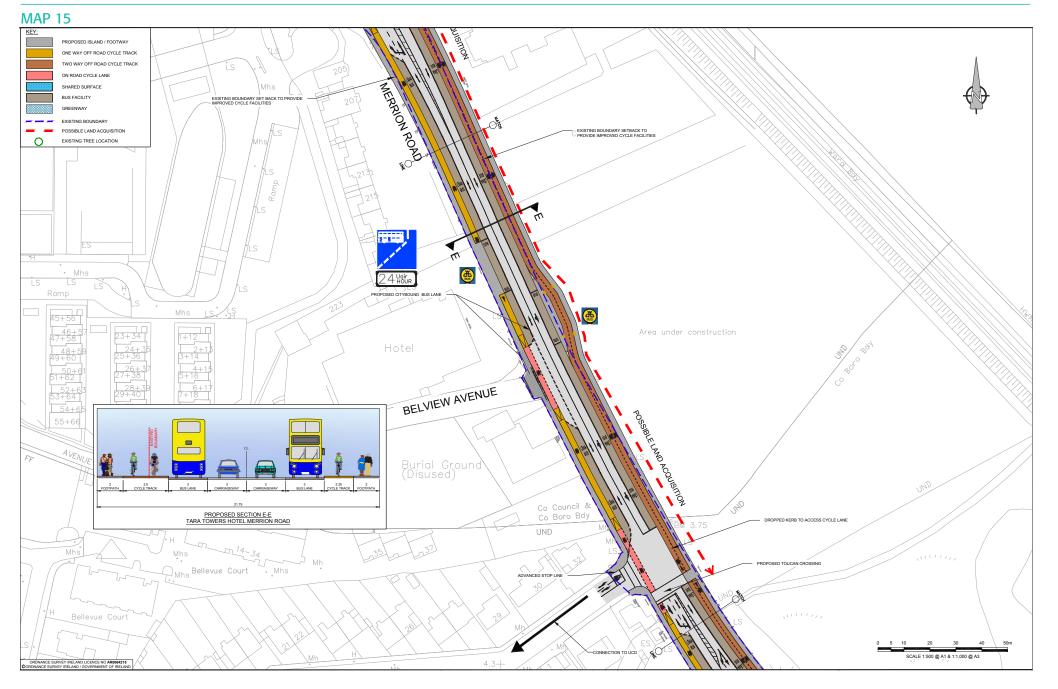


## EMERGING PREFERRED ROUTE OPTION

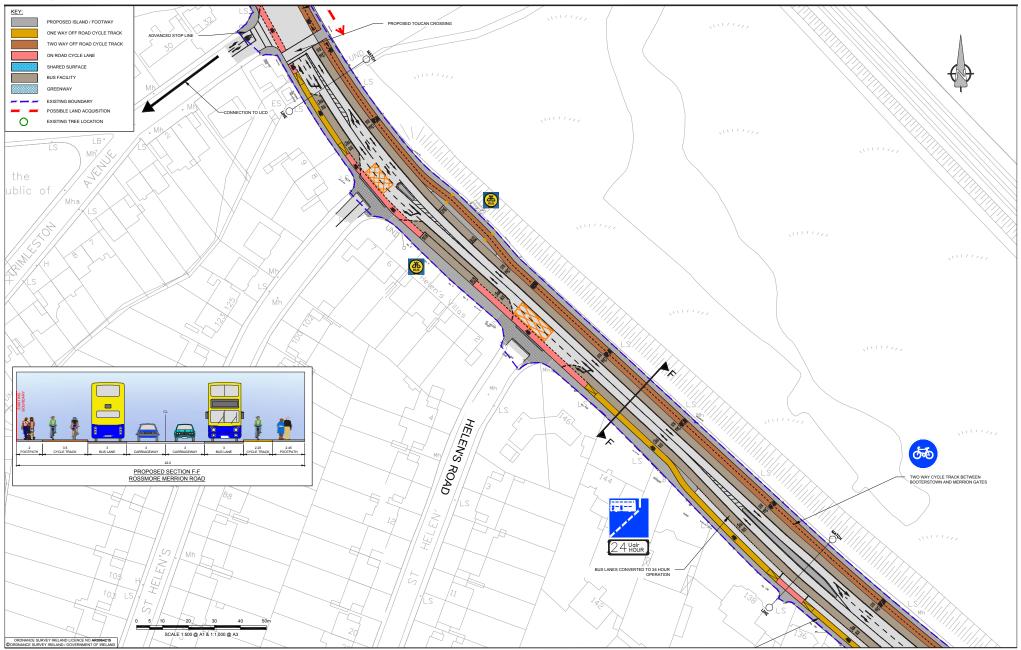
## SECTION 4 – MERRION GATES TO BOOTERSTOWN

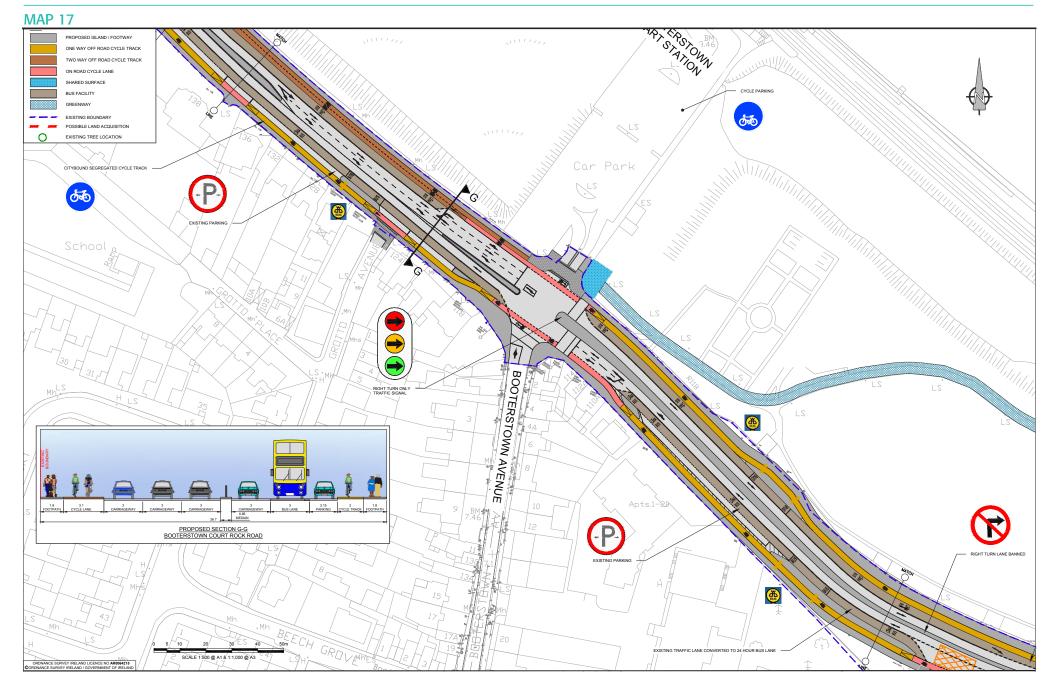
# **MAP 14**



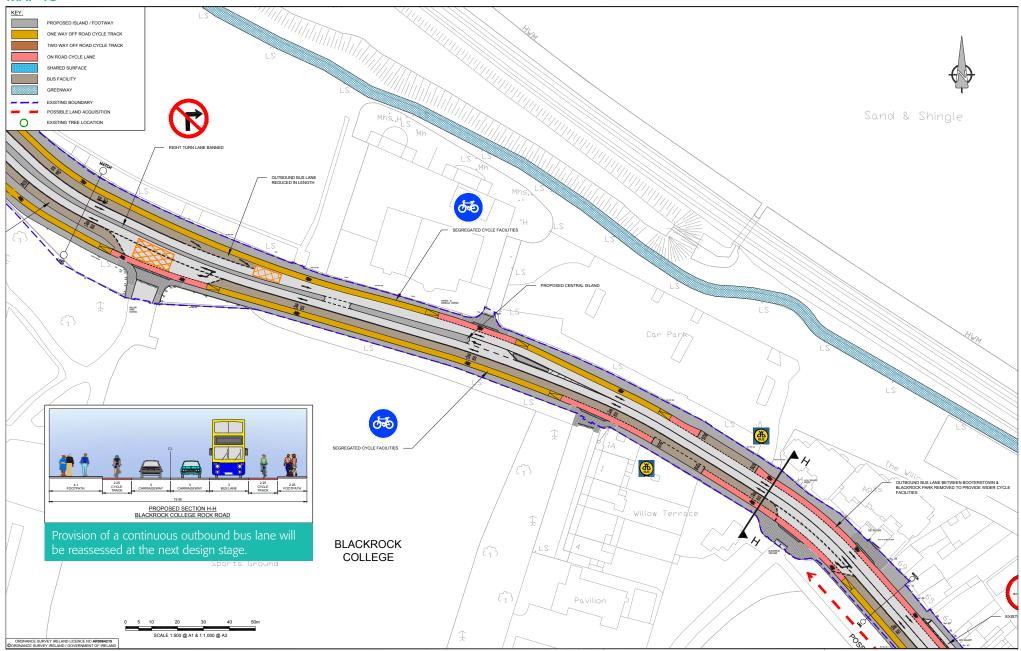


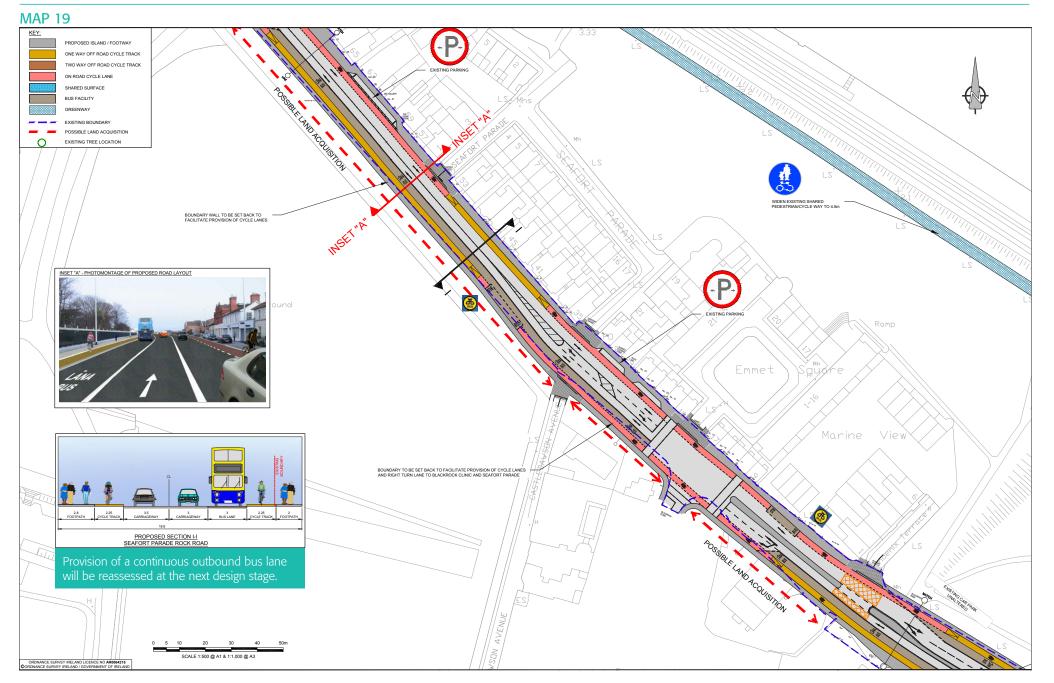




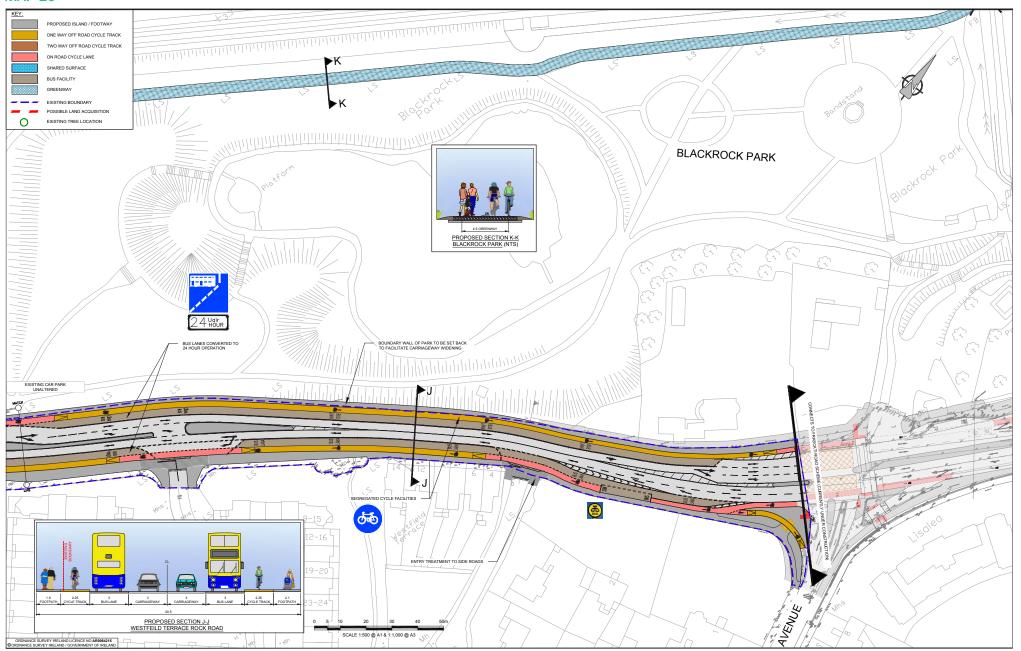


## **MAP 18**



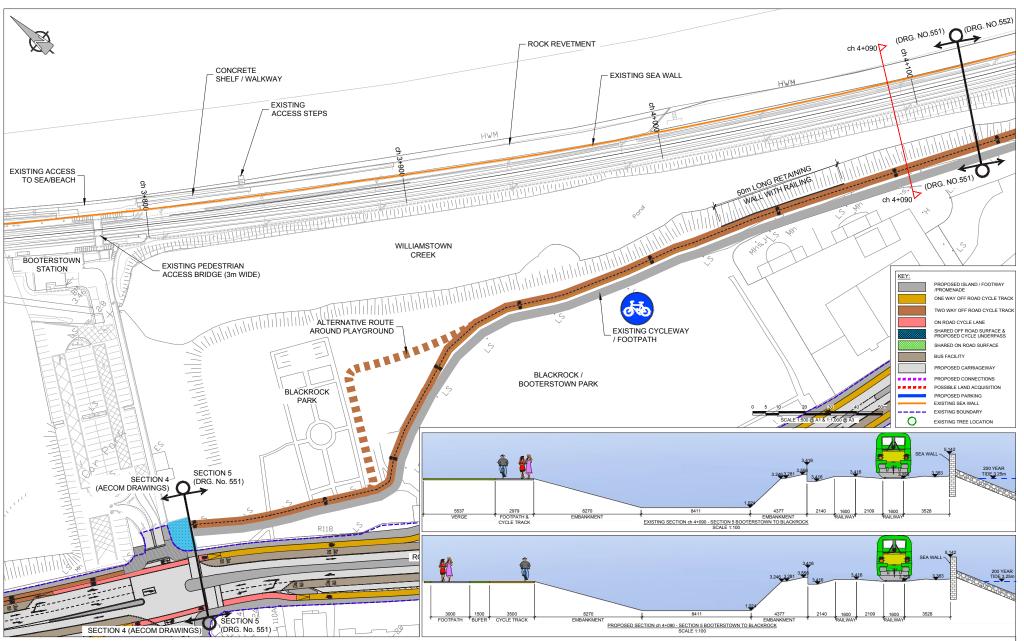


**MAP 20** 



# EMERGING PREFERRED ROUTE OPTION SECTION 5 – BOOTERSTOWN TO BLACKROCK

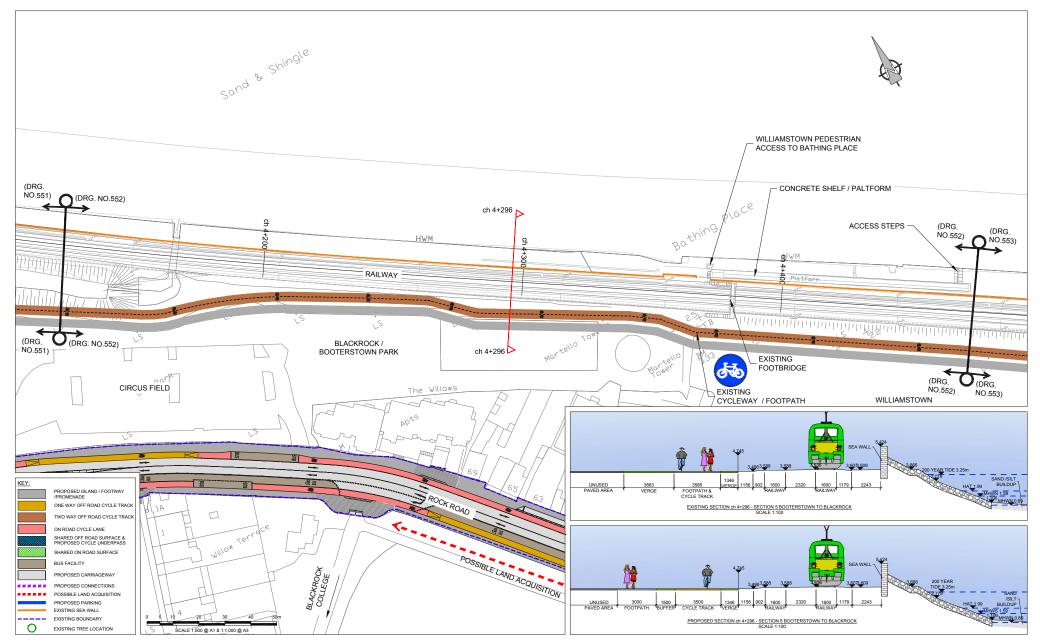
**MAP 21** 



## EMERGING PREFERRED ROUTE OPTION

SECTION 5 – BOOTERSTOWN TO BLACKROCK

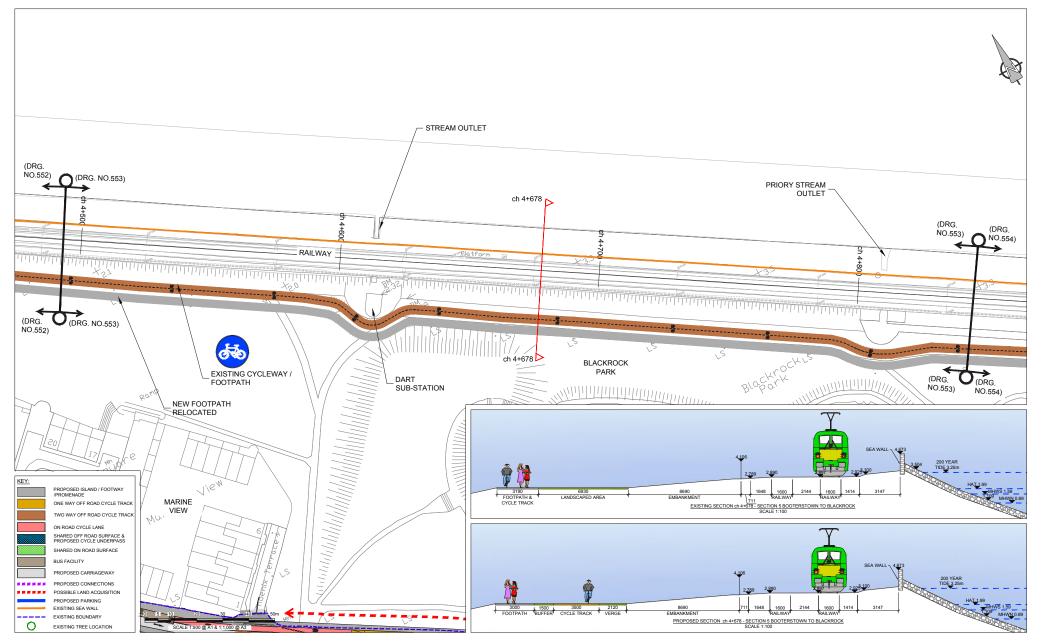
## **MAP 22**



# EMERGING PREFERRED ROUTE OPTION SECTION 5 – BOOTERSTOWN TO BLACKROCK

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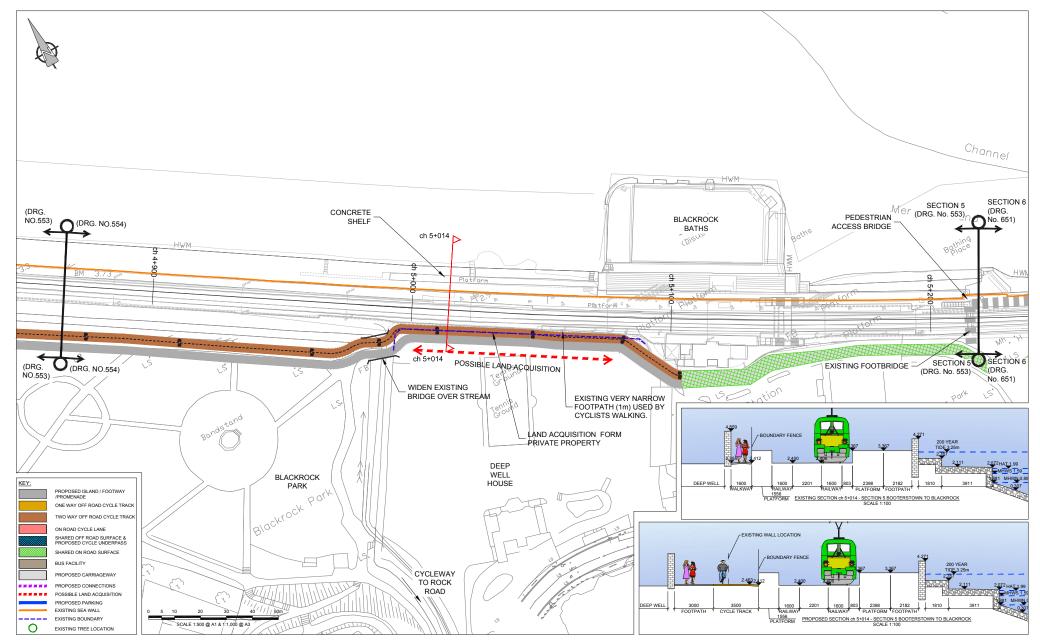
# **MAP 23**



#### EMERGING PREFERRED ROUTE OPTION

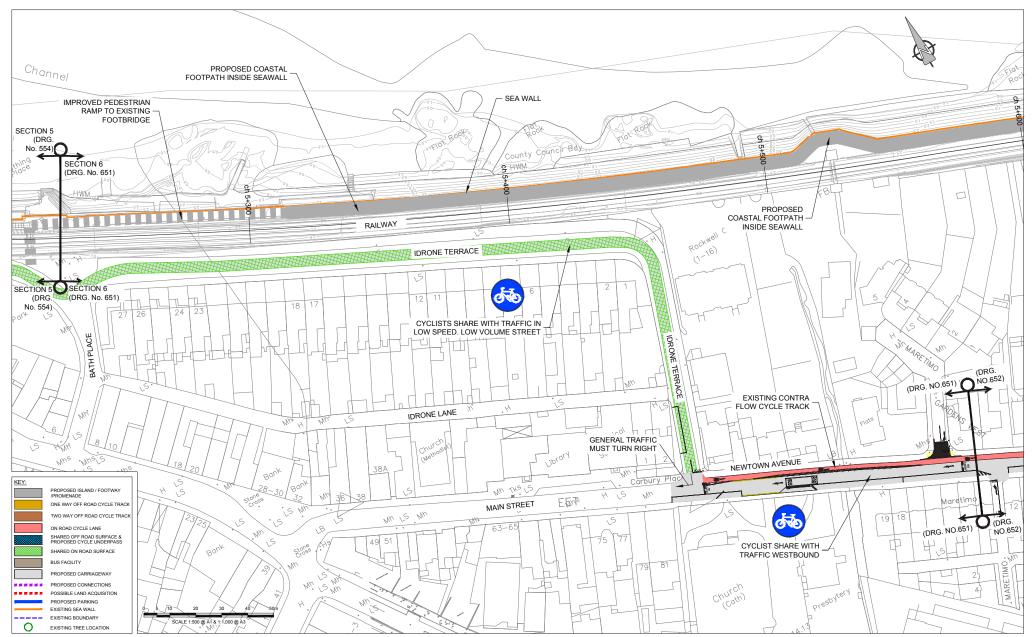
## SECTION 5 – BOOTERSTOWN TO BLACKROCK

### **MAP 24**

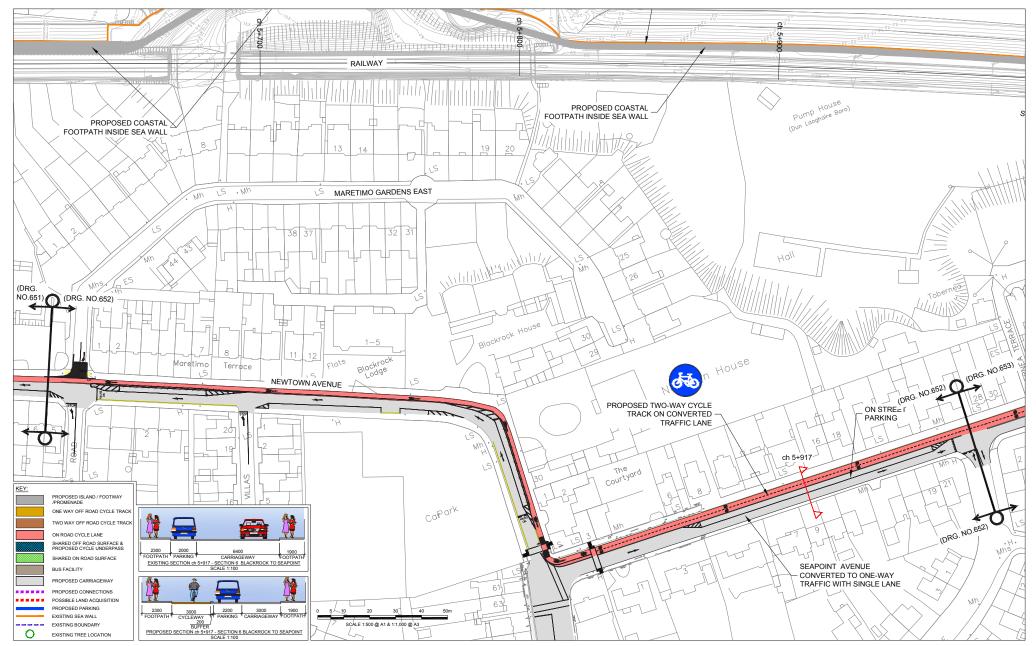


53

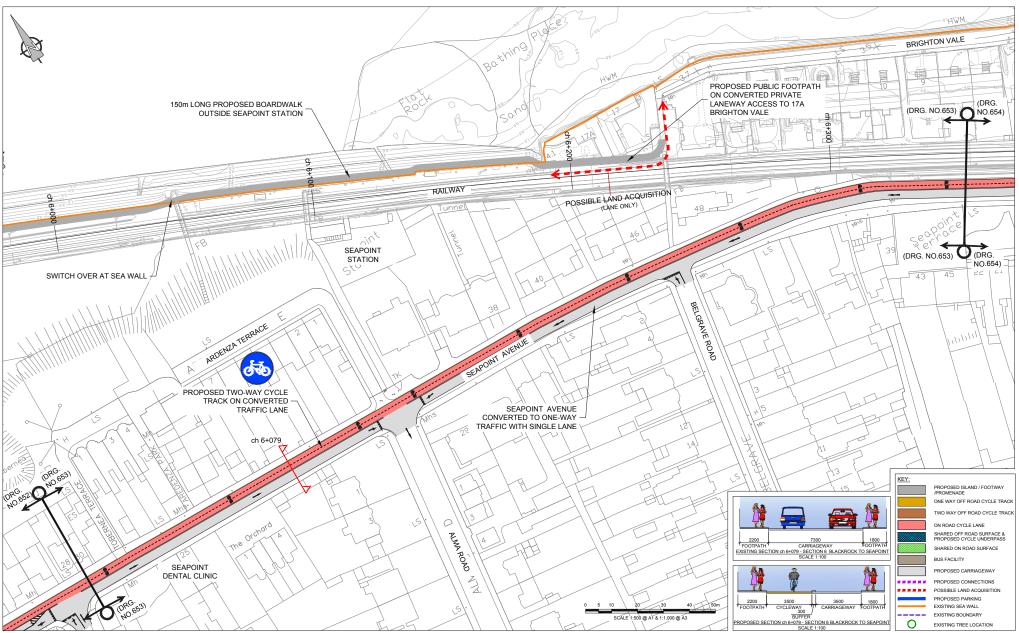
# **MAP 25**



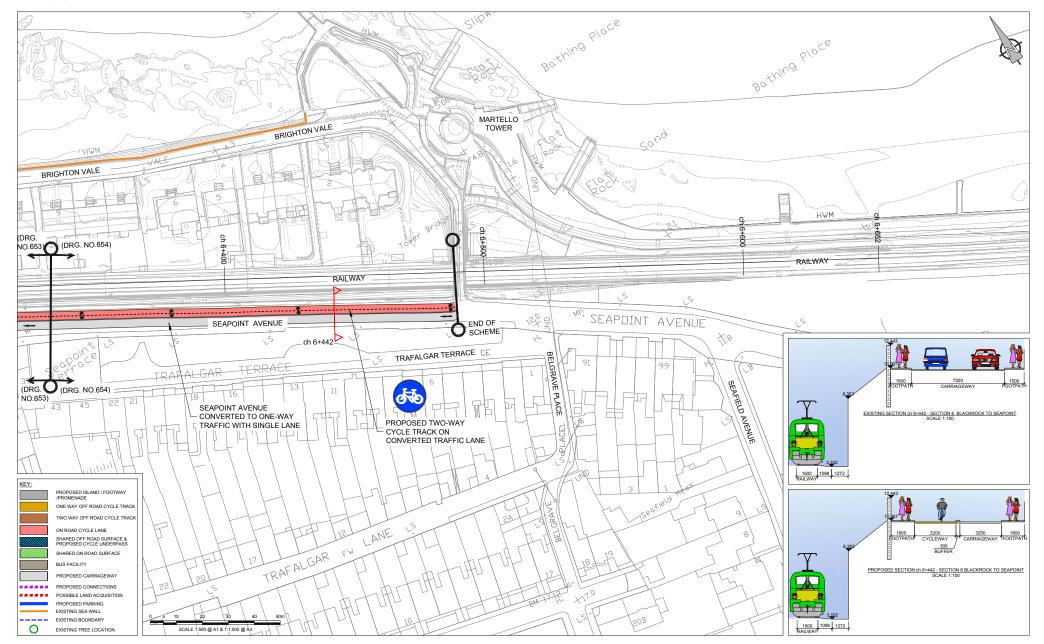
## **MAP 26**







#### **MAP 28**





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signed by **CATALYSTO**