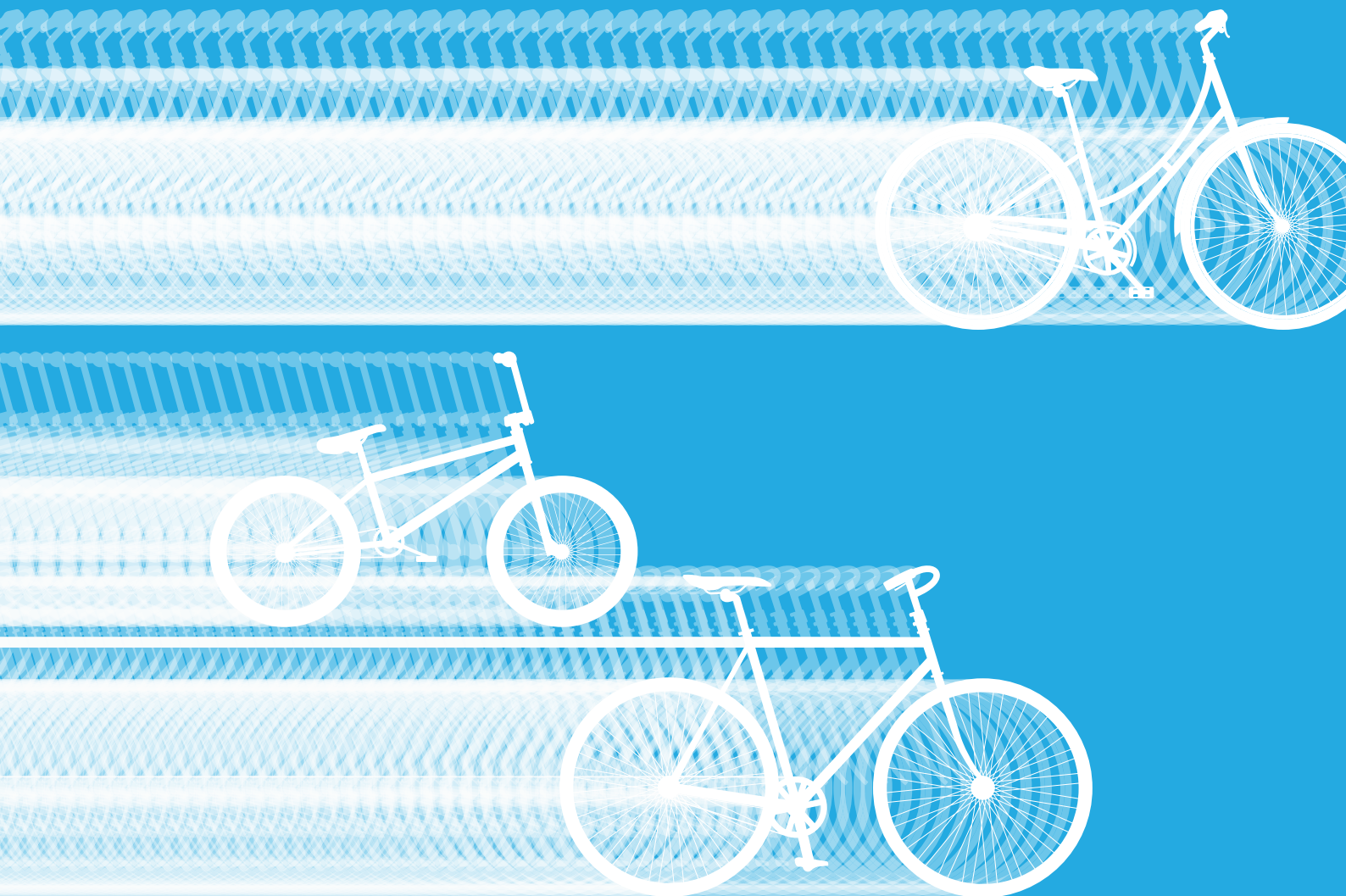


Greater Dublin Area  
**Cycle  
Network  
Plan**

SEA Environmental Report  
- Non-Technical Summary



# Cycle Network Plan for the Greater Dublin Area

## Non-Technical Summary

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## Non-Technical Summary

### 1.0 Introduction

It is the function of this report to summarise the Environmental Report which sets out how the Strategic Environmental Assessment was carried out for the Greater Dublin Area Cycle Network Plan. .

Strategic Environmental Assessment (SEA) is defined as a systematic process of predicting and evaluating the likely significant environmental effects of implementing a plan, in order to ensure that these effects are appropriately addressed at the earliest stage of decision-making on a par with economic and social considerations. An Environmental Report is a legal requirement of the SEA process and it provides key information on the process and its findings, such as the likely significant effects on the environment as a result of implementing a plan or programme.

During the methodical SEA process, as guided by EU and national legislation and guidance, any significant effects as a consequence of the Plan on the environment were identified and evaluated and appropriate mitigation measures were proposed to negate or reduce these effects. Additionally, environmental monitoring with reference to the environmental effects of the Plan is proposed.

### 2.0 The GDA Cycle Network Plan

#### 2.1 Overall Programme Approach

The National Transport Authority (NTA)'s principal function is to undertake strategic planning of transport whilst supporting and facilitating cycling and walking as a mode of transport. As a result of these principal functions a network of cycling in the Greater Dublin Area is being proposed. The NTA commissioned an SEA report on this project as it is subject to section 9 of the European Regulations 2004, which requires an environmental assessment on all transport plans and programmes.

#### 2.2 Main components of the Plan

The main objective for this plan stems from the National Cycle Policy Framework's commitment to ensuring that 10% of all journeys by 2020 will be by bicycle. This follows a concerted attempt by all government bodies and organisations to ensure that cycling as a transport mode is supported, enhanced and exploited, in order to achieve strategic objectives and reach national goals.

It is the goal of this study to assess the current cycling facilities in the GDA and from this to define a strategic cycle network. The cycle network will include three different types of routes:

- An Urban Cycle Network, these cater for the main cycle arteries within the city centre, link principle and local zones and cycle routes within the local zones (Primary - Red lines and Secondary – Dark blue lines on maps);
- The Inter-urban Cycle Network, connecting the urban cycle network routes (Light Blue lines on maps);
- The Green Route Network, these predominately along the tourist/recreation routes (Green lines on maps).

### **3.0 Integrated GDA Cycle Network Plan SEA: Process Overview and Progress to Date**

#### **3.1 SEA Screening**

Upon completion of the screening exercise it was concluded by the NTA that the Cycle Network Plan is likely to set a framework for the development consent of projects of a significant scale and is therefore likely to have significant environmental effects within the plan area. The NTA, therefore, made a determination that a full SEA of the proposed Plan is required in keeping with a purposive interpretation of the SEA Directive 2001/42/EC.

#### **3.2 SEA Scoping**

A Scoping Notification was circulated to the relevant designated environmental authorities in order to ensure that the SEA of the Plan was adequately scoped. In this case, the authorities comprised the Environmental Protection Agency (EPA), Department of the Environment, Community and Local Government (DECLG), Department of Arts, Heritage and the Gaeltacht (DAHG), Department of Agriculture, Food and the Marine (DAFM), and Department of Communications, Energy and Natural Resources (DCENR) so that they could make submissions on the scope of the SEA. Two submissions from the Environmental Authorities were received on this scoping report;

- DAHG received 31st July 2013;
- EPA received 2nd August 2013.

Both these have been taken fully into account in the Environmental Report.

#### **3.3 Environmental Assessment and Environmental Report**

A two-part assessment was undertaken by the NTA as follows, assessment of:

1. Alternatives Assessment; and
2. GDA Cycle Network Plan Assessment.

#### **3.4 Alternative Assessment**

Alternatives were derived on the basis of how different approaches could be taken to achieve the objectives of the Plan. The overarching consideration was that they must be reasonable and implementable. These alternatives were subject to environmental assessment and the results of this can be found in Chapter 8. These results led to the development of the GDA Cycle Network Plan.

#### **3.5 GDA Cycle Network Plan Assessment**

This stage involves the environmental assessment of cycle routes that are included in the GDA Cycle Network Plan. The full results of this assessment can be found in Chapter 9 of the Environmental Report.

#### **3.6 Habitats Directive Assessment (HDA)**

There is a requirement to undertake an assessment under the EU Habitats Directive (92/42/EEC) as the Plan may have the potential to significantly impact on the integrity of a Natura 2000 site within the GDA. This assessment has been carried out in the form of a Habitats Directive Assessment (HDA) screening report and any likely

significant impacts identified at screening stage were then examined in the Natura Impact Statement (NIS) that accompanies the main report.

### **3.7 Consultation**

Consultation on the Plan and the Environmental Report with the relevant designated environmental authorities and the public is required before the Plan can be approved by the National Transport Authority. Both the plan and the Environmental Report were made publicly available for comment. Comments and submissions were made on either or both documents by the designated environmental authorities and the public, including any public authority or body.

### **3.8 Consideration of Submissions**

It is a formal requirement of the SEA Directive that all consultation submissions received must be considered and the Plan amended, if deemed necessary. Any amendments to the Plan were screened in order to identify any additional significant environmental effects. Where such additional significant effects arose, additional mitigation measures were developed.

Following consideration of the consultation submissions received and associated amendments to the Plan, the formal plan adoption procedures commenced.

### **3.9 Preparation of the SEA Statement.**

Following the formal adoption of the plan by the NTA, the next stage in the SEA process is the preparation of the SEA Statement, which is a document summarising how environmental considerations have been integrated into the adoption of the plan. It also summarises how the consultation submissions were considered and if these resulted in the plan being amended. This statement accompanies the final Environmental Report.

### **3.10 Monitoring**

Monitoring of the implementation of the plan will be undertaken up until its review. The overall objective of this stage is to monitor the significant environmental effects of the implementation of the plan so as “to identify at an early stage unforeseen adverse effects and to be able to undertake appropriate remedial action” (Article 10/1; SEA Directive 2001/42/EC). The monitoring programme for the Plan can be found in Chapter 11.

## **4.0 Scope of the GDA Cycle Network Plan**

### **4.1 Overview of the Scoping Process for SEA**

The second stage in the SEA process is the determination of the key issues, which are to be addressed in the Environmental Report. Scoping ensures that the SEA is focused on the relevant environmental issues and examines issues at the appropriate level of detail.

To ensure that the SEA of the plan was adequately scoped, a Scoping Report was circulated to the relevant designated environmental authorities:

- Environmental Protection Agency (EPA);
- Department of the Environment, Community and Local Government (DECLG);

- Department of Arts, Heritage and the Gaeltacht (DAHG);
- Department of Agriculture, Food and Marine (DAFM);
- Department of Communications, Energy and Natural Resources (DCENR).

This scoping consultation enabled the authorities to make submissions on the scope of the SEA. Responses were received from two of the Environmental Authorities – EPA on 2nd August 2013 and DAHG on 31st July 2013.

The spatial scope of the plan corresponds to the jurisdictions of the 7 Local Authorities of the Greater Dublin Area:

- Dublin City;
- South Dublin;
- Dún Laoghaire-Rathdown;
- Fingal;
- Meath;
- Kildare; and
- Wicklow.

Approximately 40% of the population of Ireland live within the GDA. It is also the location of a range of services of national importance including a major port and airport, the seat of central government and a number of universities. Given the potential for impacts beyond the boundary of the GDA, the spatial scope of the SEA will take into account the area of influence of the plan. As such, the effects of the plan on the environment outside the boundary of the GDA will be highlighted where relevant.

The temporal scope of the assessment will be from 2013 to 2021.

In relation to the technical issues that will be considered by the SEA and included in the environmental report, the range of environmental headings considered was based on the list of environmental topics as specified in S.I. 435 of 2004. These are as follows:

- Biodiversity, flora & fauna;
- Landscape;
- Population;
- Human health;
- Water;
- Air quality;
- Climatic factors & climate change;
- Soil & geology;
- Material assets;
- Cultural heritage (incl. architectural and archaeological heritage), and
- The inter-relationships between the above.

In identifying the likely significant effects on the environment of the GDA Cycle Network Plan, the SEA will address both positive and negative effects; direct and indirect effects; temporary and permanent effects; short, medium and long-term effects; and secondary, cumulative and synergistic effects.

The table below provides an overview of the potential environmental issues which are typically relevant to the development of a short term transport plan. It is these types of potential environmental issues that will require consideration in undertaking the SEA of the GDA Cycle Network Plan. This helps to set a context for the identification of baseline environmental issues, the consideration of the interactions with other plans and programmes and the formulation of SEA Objectives.

**Table 4.1 Potential issues to be considered in the GDA Cycle Network Plan SEA as presented in the Scoping Report.**

Environmental topic	Potential effects
Biodiversity, flora & fauna	<p>Potential adverse effects on the integrity of designated sites and on flora &amp; fauna due to land take for new or improved transport infrastructure.</p> <p>Potential effects on sensitive habitats from transport emissions.</p> <p>Potential beneficial effects through ecological enhancement interventions along new and existing transport corridors.</p> <p>Potential risk of disturbance to sensitive species due to noise and lighting along transport corridors.</p> <p>Potential effects on vegetation from transport emissions arising from increases and reductions in traffic flows.</p>
Landscape	<p>Potential adverse effects on the integrity of designated sites and landscape character due to land take for new or improved transport infrastructure.</p> <p>Potential beneficial effects on landscape and amenity arising from reductions in the presence of heavy traffic flows.</p> <p>Potential adverse effects arising from increases in traffic flows.</p> <p>Potential beneficial effects on townscape and amenity arising from reductions in traffic flows</p> <p>Potential beneficial effects through landscape enhancement interventions along new and existing transport corridors (these measures can be combined with ecological enhancement measures).</p>
Population	<p>Potential effects on the access to employment/economic, social and educational opportunities from transport projects and policy recommendations.</p> <p>Potential effects on people with physical mobility limitations from transport projects and policy recommendations.</p> <p>Potential community severance.</p>



Environmental topic	Potential effects
Human health	<p>Effects arising from changes in physical fitness and the extent to which people are encouraged to walk and cycle on a regular basis.</p> <p>Effects arising from changes in transport-related accidents.</p> <p>Effects arising from changes in accessibility to employment/economic, social and educational opportunities which are key determinants of health.</p> <p>Potential effects on the quality of life arising from the GDA Cycle Network Plan.</p>
Water	<p>Effects on surface water, groundwater, coastal and transitional systems from transport interventions.</p> <p>Potential compatibilities and conflicts with the policies and programmes in relevant River Basin Management Plans (RBMPs) under the Water Framework Directive (WFD) from transport projects and policy recommendations.</p> <p>Changes in the risk of flooding</p>
Air quality	<p>Potential beneficial effects on air quality arising from reductions in motorised traffic flows.</p> <p>Potential adverse effects may arise in areas where there are any traffic flows increases.</p> <p>Potential effects on vegetation from transport emissions arising from increases and reductions in traffic flows.</p>
Climatic factors & climate change	<p>Potential reductions in CO<sub>2</sub> from reductions in motorised traffic flows</p> <p>Potential adverse effects may arise in areas where there are any traffic increases.</p>
Soil & geology	<p>Potential negative effects due to developments on important and vulnerable soil resources</p> <p>Potential adverse effects on the integrity of designated geological and geomorphological sites due to land take for new or improved transport infrastructure.</p> <p>Potential for increases in coastal erosion due to measures in the GDA Cycle Network Plan.</p> <p>Potential positive impact on coastal protection.</p>
Material assets	<p>Potential positive and negative effects on public assets</p> <p>Potential positive effects regarding greater reuse of brownfield sites for development</p> <p>Potential reductions in fuel consumption from reductions in motorised traffic flows contributing to an improved fuel security position.</p>

Environmental topic	Potential effects
Cultural heritage (incl. architectural and archaeological heritage)	<p>Potential adverse effects on designated and important sites from land take for new or improved transport infrastructure.</p> <p>Potential beneficial effects on setting of cultural heritage features (townscapes, Conservation Areas, heritage buildings etc.) arising from reductions in the presence of heavy traffic flows. Potential adverse effects may arise should traffic flows increase.</p>

It can be seen from Table 4.1 that there is potential for likely significant effects of both a positive and negative nature in relation to all of the environmental topics listed in the SEA Directive when developing the NTA GDA Cycle Network Plan. On this basis, it was decided not to scope out any environmental topics at scoping stage and that all the environmental topics set out in the table above would be covered in the SEA.

## 4.2 Habitats Directive Assessment

An article 6 Screening assessment of the GDA Cycle Network has been undertaken. This screening assessment considered if potential significant effects are likely on any of the European Sites in/adjoining or which have a link to the plan area. The screening assessment concluded that significant effects on the integrity of Natura 2000 sites are likely, and therefore a full Article 6 Assessment was undertaken for each significantly affected site. The assessment process included consultation with the National Parks and Wildlife Service and the results have been made available to the public in the accompanying Natura Impact Statement.

## 4.3 SEA Objectives

The SEA of the GDA Cycle Network is primarily an objective-led exercise. The SEA Objectives are used in the environmental assessment of the GDA Cycle Network. The final SEA objectives can be found in Table 4.2 of the Environmental Report (ER).

Information on the environmental assessment methodology and the actual use of the SEA Objectives is provided in Chapter 5 of the ER.

SEA Topic	Proposed SEA Objective
<b>Biodiversity, Flora and Fauna</b>	<ol style="list-style-type: none"> <li>1. To avoid impacts on the integrity of European Conservation Sites (SACs and SPAs) and nationally designated sites (NHAs), which includes taking account of protected species or qualifying interests that may occur/use areas outside designated sites including those protected under the Wildlife Acts.</li> <li>2. To support the strategic objectives of the National Biodiversity Plan.</li> <li>3. To minimise impacts on locally-important biodiversity in the Greater Dublin Area, including any known green networks or ecological corridors.</li> <li>4. To protect against the accidental introduction of alien plant species such as Japanese Knotweed and Giant Hogweed during the development and maintenance of the cycling network.</li> </ol>

	<p>5. To ensure suitable buffer zones are in place on any proposed routes that may be likely to have a significant environmental impact on habitats or species along rivers, riparian areas, coastal areas or mountain paths.</p> <p>6. To protect existing hedgerows against unnecessary damage during the development of the cycle network.</p>
<b>Landscape</b>	<p>7. To avoid or, where infeasible, minimise impacts on designated and protected landscapes and conservation areas.</p> <p>8. To minimise impacts on undesignated landscape resources (townscapes, seascapes, riverscapes, general landscapes) and also consider protected views and scenic areas within the Plan area, and where possible create an improved sense of place through appropriate design and development of the cycle network.</p>
<b>Population</b>	<p>9. To increase accessibility to economic and employment opportunities through the cycle network, in particular for those who are physically, economically or socially disadvantaged within the GDA.</p> <p>10. To increase accessibility to public, cultural and community services through use of the cycle network, in particular, for those who are physically, economically or socially disadvantaged within the GDA.</p>
<b>Human Health</b>	<p>11. To contribute to improvements to transport-related aspects of quality of life for residents, workers and visitors to the GDA through utilization of the cycle network</p> <p>12. To support the objectives of the Environmental Noise Directive in relation to transport-related noise.</p> <p>13. To minimise safety risks to human health arising from transport related activity.</p> <p>14. To support health improvements and benefits from a modal shift to cycling related transport options.</p>
<b>Water</b>	<p>15. To support the forthcoming River Basin Management Plans (RBMP) and Programme of Measures (POM). Where these are not available, the objective is to support the aims and objectives of the Water Framework Directive (WFD).</p> <p>16. To minimise impacts to surface water systems and resources.</p> <p>17. To minimise impacts to groundwater systems and resources.</p> <p>18. To minimise impacts to coastal systems and resources.</p> <p>19. To minimise impacts to transitional systems and resources.</p> <p>20. To minimise the risk of flooding.</p>

<b>Air</b>	<p>21. To protect and improve air quality in the GDA to create conditions to improve the health of the population and to reduce negative air quality impacts arising from transport-related emissions.</p> <p>22. To ensure compliance with the Air Framework Directive and associated daughter Directives (and the transposing Regulations in Ireland).</p>
<b>Climatic factors &amp; climate change</b>	<p>23. To contribute to the reduction of greenhouse gas emissions arising from transport-related activities and to promote sustainable, useable cycle routes in the GDA.</p> <p>24. Ensure that any new development along coastal areas takes into account the impacts of sea level rise/increased storm occurrence and coastal erosion</p>
<b>Soils and Geology</b>	<p>25. To minimise negative impacts on important and vulnerable soils resources used for agricultural purposes.</p> <p>26. To reduce consumption of construction material and generation of construction waste as part of the development of the cycle network.</p> <p>27. Ensure the remediation of contaminated soils removed as part of any cycle route</p> <p>28. To avoid or, where infeasible, minimise impacts to protected and designated geological and geomorphological sites.</p>
<b>Material assets</b>	<p>29. To protect public assets and infrastructure.</p> <p>30. To reduce the fossil fuel demand by the transport sector.</p> <p>31. To assist with the reuse and regeneration of brownfield sites.</p>
<b>Cultural heritage (architectural and archaeological heritage)</b>	<p>32. To avoid or, where infeasible, minimise impacts to designated cultural, architectural and archaeological resources.</p>

## 5.0 SEA Methodology

### 5.1 Overall Approach and SEA Methodology

This SEA uses an 'objective-led' approach. The four alternatives were assessed using the SEA objectives and the results are summarised in Chapter 8 of the ER. The environmental assessment of the alternatives is focused on the performance differences between each of the options, so that the various advantages and disadvantages of each can be highlighted and then considered in the development of the Cycle Network Plan.

The SEA Objectives were then used to assess the likely significant effects on the environment of the Plan. Following the identification and assessment of the likely

significant effects on the environment (Chapter 9), mitigation measures were developed and these are reported in Chapter 10 of this Environmental Report.

## 5.2 SEA Objectives

Chapter 4 reports on the scope of the SEA, including the 32 SEA Objectives. In order to undertake the assessment, some of these objectives will rely on qualitative assessment data, and some on GIS-based data.

To assist with the clarity of reporting, a seven-point rating scale is used at all levels of the assessment:

+ 3	Major positive impacts
+ 2	Moderate Positive impacts
+ 1	Minor positive impacts
0	Neutral
- 1	Minor negative impacts
- 2	Moderate negative impacts
- 3	Major negative impacts

In addition to the rating scale, commentary text has also been provided, highlighting the key conclusions to emerge from the application of the SEA Objectives. This commentary will also outline the full range of effects i.e. if they are short-term, long-term, cumulative or in-combination.

## 5.3 Assessment of GDA Cycle Network Plan Alternative

Each of the Plan Alternatives is assessed as a stand-alone set of proposals against the 32 individual SEA Objectives. The assessment provides an overall rating on the - 3 to + 3 scale as outlined in Section 5.3 of the ER for each of the Alternatives under each of the SEA Objectives. This approach allows the key performance differences (positive and negative) between the four alternatives to be highlighted.

## 5.4 Assessment of GDA Cycle Network Plan

The Cycle Network Plan itself is also assessed using the SEA Objectives in Chapter 9 of the ER. The focus of this stage of the environmental assessment is on the identification of likely significant effects on the environment of implementing the Plan against a Do-Nothing Scenario.

The full range of likely significant effects on the environment of the Cycle Network Plan are identified. This is one of the key requirements of an Environmental Report. Mitigation measures are then developed and presented in Chapter 10 to address the identified likely significant effects and these mitigation measures are integrated into the iterative process of plan refinement.

## 6.0 Baseline

Chapter 7 of the ER presents the baseline information. For each environmental element, a general description of the existing environment is given with respect to;

- Biodiversity (including flora and fauna);
- Population, human health;
- Soils (and geology);
- Water (surface freshwater, coastal, transitional, groundwater and bathing);
- Air (including noise);
- Climatic factors (including flooding);
- Material assets (transport infrastructure, waste management and infrastructure, drinking water and infrastructure, waste water infrastructure, energy, forestry and fisheries);
- Cultural heritage (including architectural and archaeological heritage); and
- Landscape.

The interrelationships between these factors were noted and any existing problems relevant to the GDA Cycle Network Plan were identified at this baseline stage. The examination of the baseline environment served to establish the location of sensitive or vulnerable areas. This ensured they will be avoided completely by development or protected / conserved where appropriate. Baseline environmental data was also required to provide a dataset against which future datasets can be measured following and during monitoring programmes established during the SEA process. Details of this information can be found in section 7.14 of the ER.

### 6.1 Evolution of the GDA area in the absence of the Cycle Network Plan

In the absence of the Cycle Network Plan the likely significant impacts expected as a result of the various cycle routes would not be assessed to an appropriate level of detail. The CNP ensures that each route is appropriately assessed for its individual environmental effects and that mitigation measures are provided where necessary to address any impacts envisaged. The CNP also ensures that prior consultation with the public, the local authorities and the statutory environmental consultation authorities occurs as a part of an overall strategic process and that where amendments to routes are necessary these can be incorporated into the plan prior to adoption e.g. in the case of K12, route was amended as a result of consultation with NPWS.

In the absence of the GDA CNP the area would be without the overall strategic guidance necessary to ensure future project level developments have taken on board environmental considerations. The Plan ensures the development of a network of inter-connectable routes that will ensure maximum use in an environmentally sensitive way. A detailed account of the evolution of the GDA in the absence of this Plan for each of the environmental topics involved is provided in Section 7 of the Environmental Report.

## 7.0 Alternatives Assessment

### 7.1 Overview of the Alternative Options

The alternatives derived for this SEA are as follows:

1. Option 1 - Do-Nothing;
2. Option 2 - Development of additional on street cycle lanes and retrofitting of existing cycle lanes on the Urban Cycle Network and Inter-Urban Cycle Networks;
3. Option 3 - Development of the Green Route Network only;
4. Option 4 - A combination of on road, segregated and green routes.

These Alternatives are summarised in the sections below.

### 7.2 Option 1 – Do-Nothing

The Do Nothing Option assumes that no GDA Cycle Network Plan will be implemented and therefore no further cycle routes will be realised. In the consideration of the baseline environment (presented in Chapter 7 of the ER) it is clear there are a number of issues which will affect the GDA whether the Cycle Network Plan is in place or not.

In the absence of the Cycle Network Plan traffic volumes are likely to continue to increase, and this increase is expected to mainly consist of private car traffic. A series of detrimental effects will accompany this increase in the number of private cars, such as:

- A decrease in air quality;
- Increased congestion;
- Impact on the health of the increasing population;
- Increased noise levels; and
- Damage of the cultural heritage due to an increase in air pollution.

### 7.3 Option 2 - Development of additional on street cycle lanes and retrofitting of existing cycle lanes on Urban Cycle Network and Inter-Urban Cycle Networks.

The predominant provision for cycling in the GDA area is by means of either on street cycle lanes (both advisory and mandatory) bus lanes or retrofitted cycle lanes. Retrofitted cycle lanes are generally on road cycle lanes or have been provided in place of the existing verge area.

The above facilities, in many cases, offer a low 'Quality of Service' (QoS) mainly due to the lack of width for cyclists and the discomfort caused by large volumes of vehicular traffic sharing the road space. This option carries its own disadvantages too:

- Decrease in human health due to increased stress levels of users;
- Increased noise and air pollution due to the location near busy transport corridors;
- High competition for street space in the city centre;
- Narrower traffic lanes forces traffic to encroach into cycle lanes increasing the risk of collisions with cyclists.
- However, an increase in these type facilities also has potential advantages:

- An increase in cycle lanes can potentially increase the number of cyclists in the GDA;
- It has a positive impact on human health by increasing the percentage of people exercising regularly through cycling;
- The air quality of these areas can be significantly increased due to the decrease in private car use as a result of the increased preference of bicycle over the car.

#### **7.4 Option 3 - Development of the Green Route Network only**

The green route network consists of routes developed predominantly for tourists, recreational and leisure purposes, though regular commuters may also use the routes.

There are many significant advantages to this option. They include:

- Significant positive impacts on human health due to the segregation from traffic and limited conflicts;
- They are a more attractive route to cyclists therefore increasing the number of cyclists and decreasing the number of other road users.

Green routes may also have negative impacts on the environment, such as:

- New routes require land take which can interfere with the biodiversity, flora and fauna of the surrounding area;
- Increased noise and lighting can cause disturbance to various species such as bats;
- The local landscape and historical environment may be effected by the required land take;
- Material assets may also be significantly affected where the new routes require land take from agricultural or greenfield land; and
- Increased artificially surfaced areas can increase the amount of surface water and could potentially cause local flooding in the absence of mitigation.

#### **7.5 Option 4 – A combination of on road, segregated and green routes**

This option allows for a greater degree of flexibility when delivering the GDA Cycle Network. A combination of the 3 above route options can be applied where needed to suit the different environments present at each location. This option was chosen over the other options as the preferred option due to the fact that it will work more towards minimising the effects on the environment, while still ensuring delivery of the cycle network.

#### **7.6 Summary of Alternatives Results**

The options considered are as follows:

1. Option 1 - Do-Nothing.
2. Option 2 - Development of additional on street cycle lanes and retrofitting existing cycle lanes on Urban Cycle Network and Inter-Urban Cycle Networks.
3. Option 3 - Development of the Green Route Network only.
4. Option 4 - A combination of on road, segregated and green routes.

Looking at the results presented in Section 8.3 of the plan assessment of the 4 alternative options above, it can be seen that all except Option 1 have both positive and negative elements when assessed against the 32 SEA objectives. The 'Do-



Nothing' option has mainly resulted in neutral impacts, with some minor negative impacts due to the fact that no foreseen improvements for example in air quality, fossil fuel demand, accessibility for all levels of population can be expected.

When assessing the other three options, a mixture of results can be seen when each of the SEA objectives are examined. However by studying the assessment table it can be seen that only Option 4 has resulted in 'Major positive impacts' on the SEA objectives, with 2 in total.

According to the assessment table the preferred option is Option 4, which seeks to use a combination of both Options 2 and 3 to form a network that is both practical for the users and also takes into account environmental sensitivities by allowing alternative routes to be considered where required. Though some negative impacts have been recorded for this option (e.g. impacts on designated landscapes or biodiversity interests) the choice is available in this option to avoid conflict by using the alternatives within the option, for example, use of existing cycle routes along transport corridors where conflict in other areas exists.

## **7.7 Development of Preferred GDA Cycle Network Plan.**

It can be concluded from the assessment above that Option 4 is the preferred option due to its limited negative impacts on the environment and its major positive impacts on the SEA objectives presented. The main aim of the GDA Cycle Network Plan is to ensure that cycling as a transport mode is supported, enhanced and exploited, in order to achieve strategic objectives and reach the national goals set out by the Irish Government, the NTA, various State Agencies and in particular the objectives and actions set out in the National Cycle Policy Framework (NCPF). The information that is outlined in the Plan will allow cycle infrastructure projects to be prioritised in terms of the importance to the strategic network. The Chapter 9 of the ER sets out, in greater detail, the environmental impacts of the Preferred Option 4.

## **8.0 Environmental Assessment of GDA Cycle Network Plan**

### **8.1 Introduction**

Chapter 9 presents the results of the environmental assessment of the GDA Cycle Network Plan routes. As mentioned previously one of the GDA Cycle Network Plan's main objectives was to identify the existing cycle network in the GDA, its quality of service and gaps in the network that needed addressing.

The Plan outlines the following three types of cycle provisions in the GDA as follows:

- An Urban Cycle Network, these cater for the main cycle arteries within the city centre, link principle and local zones and cycle routes within the local zones (Primary - Red lines and Secondary – Dark blue lines on maps);
- The Inter-urban Cycle Network, connecting the urban cycle network routes (Light Blue lines on maps);
- The Green Route Network, these predominately along the tourist/recreation routes (Green lines on maps).

The routes mentioned above are denoted on the various maps included in the Plan itself and also focussed greenway route maps in Appendix E of the ER. The environmental impacts of the proposed routes above have all been assessed in

Chapter 9 using the ratings which were presented previously in section 5.2 of this report.

Table 9.1 assesses the impacts on the Urban Cycle network and the Inter-Urban Cycle Network and table 9.2 assesses the impacts on each of the greenway routes in the plan. A summary of these tables showing the rating of the Plan against the SEA objectives is presented below.

Any negative impacts that have been highlighted as a result of this assessment have been considered and appropriate plan level mitigation measures for each negatively impacted route area are presented in Chapter 10.

### Assessment of the Urban Cycle Network and Inter-Urban Cycle Network

SEA Objective	Rating
<b>Biodiversity</b>	
1. To avoid impacts on the integrity of European Conservation Sites (SACs and SPAs) and nationally designated sites (NHAs), which includes taking account of protected species or qualifying interests that may occur/use areas outside designated sites, including those protected under the Wildlife Acts	0
2. To support the strategic objectives of the National Biodiversity Plan	0
3. To minimise impacts on locally-important biodiversity in the Greater Dublin Area, including any known green networks or ecological corridors.	0
4. To protect against the accidental introduction of alien plant species such as Japanese Knotweed and Giant Hogweed during the development and maintenance of the cycling network.	
5. To ensure suitable buffer zones are in place on any proposed routes that may be likely to have a significant environmental impact on habitats or species along rivers, riparian areas, coastal areas or mountain paths	0
6. To protect existing hedgerows against unnecessary damage during the development of the cycle network.	0
<b>Landscape</b>	
7. To avoid or, where infeasible, minimise impacts on designated and protected landscapes and conservation areas.	+1
8. To minimise impacts on undesignated landscape resources (townscapes, seascapes, riverscapes, general landscapes).	+1
<b>Population</b>	
9. To increase accessibility to economic and employment opportunities, in particular for those who are physically, economically or socially disadvantaged within the GDA.	+1
10. To increase accessibility to quality public, cultural and community services, in particular, for those who are physically, economically or socially disadvantaged within the GDA.	+1

<b>Human Health</b>	
11. To contribute to improvements to transport-related aspects of quality of life for residents, workers and visitors to the GDA.	+2
12. To support the objectives of the Environmental Noise Directive in relation to transport-related noise.	+1
13. To minimise safety risks to human health arising from transport related activity.	+1
14. To support health improvements and benefits from transport-related activities.	+1
<b>Water</b>	
15. To support the forthcoming River Basin Management Plans (RBMP) and Programme of Measures (POM). Where these are not available, the objective is to support the aims and objectives of the Water Framework Directive (WFD)	0
16. To minimise impacts to surface water systems and resources.	0
17. To minimise impacts to groundwater systems and resources.	0
18. To minimise impacts to coastal systems and resources.	0
19. To minimise impacts to transitional systems and resources.	0
20. To minimise the risk of flooding.	0
<b>Air</b>	
21. To reduce negative air quality impacts arising from transport-related emissions.	+1
22. To ensure compliance with the Air Framework Directive and associated daughter Directives (and the transposing Regulations in Ireland).	+1
<b>Climatic Factors</b>	
23. To contribute to the reduction of greenhouse gas emissions arising from transport-related activities.	+1
24. Ensure that any new development along coastal areas takes into account the impacts of sea level rise/increased storm occurrence and coastal erosion	0
<b>Soils &amp; Geology</b>	
25. To minimise negative impacts on important and vulnerable soils resources used for agricultural purposes.	0
26. To reduce consumption of construction material and generation of construction waste as part of the cycle network development.	0

27. Ensure the remediation of contaminated soils removed as part of any cycle route	0
28. To avoid or, where infeasible, minimise impacts to protected and designated geological and geomorphological sites.	0
<b>Material Assets</b>	
29. To protect public assets and infrastructure.	+1
30. To reduce the fossil fuel demand by the transport sector.	+1
31. To assist with the reuse and regeneration of brownfield sites.	+1
<b>Cultural Heritage</b>	
32. To avoid or, where infeasible, minimise impacts to designated cultural, architectural and archaeological resources.	0
<b>Cumulative impacts and impact interactions</b>	0

### Assessment of Greenway Routes against SEA Objectives

#### Cycle Greenway Route Ref - M1/N5 – Balbriggan to Drogheda

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
M1	-3	-2	+2	+2	-1	+2	+2	-1	0	-3

#### Cycle Greenway Route Ref - M5/N13 – Drogheda to Trim (via Navan)

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
M5	-3	-2	+2	+2	-1	+2	+2	-1	0	-3

#### Cycle Greenway Route Ref – M6 –Navan to Kingscourt

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
M6	-1	0	+2	+1	0	+1	+1	0	0	-1

**Cycle Greenway Route Ref – M8a – Navan to Kells**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
M8a	0	0	+1	+1	0	+1	+1	0	+1	0

**Cycle Greenway Route Ref – K1/N2 – Lexlip to Mullingar**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
K1	-2	-1	+2	+2	-1	+1	+1	0	0	-1

**Cycle Greenway Route Ref – K8 – West of Enfield to Edenderry**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
K8	-1	0	+2	+2	0	+1	+1	-1	0	0

**Cycle Greenway Route Ref – K10/N10 – Hazelhatch to Robertstown – K10 to Edenderry**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
K10	-2	-1	+2	+2	-1	+1	+1	0	0	-1

**Cycle Greenway Route Ref – K11/N10 – West of Robertstown to Athy**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
K11	-2	-1	+2	+2	-1	+1	+1	0	0	-1

**Cycle Greenway Route Ref – K12 – South of Allenwood to Kildare/Newbridge (Pollardstown Feeder Greenway)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
K12	-1	-2	+1	+1	-1	+1	+1	0	0	-1

**Cycle Greenway Route Ref – K13 – Sallins (via Naas) to east of Newbridge**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
K13	-2	0	+2	+2	-1	+1	+1	0	0	-1

**Cycle Greenway Route Ref – K17 – Naas to north of Baltinglass**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
K17	-1	0	+1	+1	0	+1	+1	0	0	0

**Cycle Greenway Route Ref – W11/N5 – Bray to Wicklow (Indicative Route)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
W11	-2	-2	+1	+1	-1	+1	+1	-1	0	0

**Cycle Greenway Route Ref – W13 – Avoca to Arklow**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
W13	-1	-1	+2	+2	-1	+1	+1	-1	+1	0

**Cycle Greenway Route Ref – W16 – Woodenbridge to Shilelagh**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
W16	-1	0	+1	+1	-1	+1	+1	0	0	0

**Cycle Greenway Route Ref – FG1/N5 – Portmarnock to north of Balbriggan**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
FG1	-3	-2	+2	+2	-1	+1	+1	0	-1	-1



**Cycle Greenway Route Ref – FG2 – North Swords**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
FG2	-2	-2	+1	+1	-1	+1	+1	-1	0	-1

**Cycle Greenway Route Ref – FG3 – via Swords**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
FG3	-1	0	+1	+1	-1	+1	+1	0	0	-1

**Cycle Greenway Route Ref – FG4 – Malahide to Swords**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
FG4	-2	-2	+1	+1	-1	+1	+1	-1	0	0

**Cycle Greenway Route Ref – Dodder Greenway (DG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
DG	-2	-1	+1	+1	-1	+1	+1	-1	0	-1

**Cycle Greenway Route Ref – River Camac (RC)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
RC	-1	0	+1	+1	-1	+1	+1	0	0	0

**Cycle Greenway Route Ref – Grand Canal Greenway (GCG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
GCG	-2	-1	+1	+1	-1	+1	+1	0	0	-1

**Cycle Greenway Route Ref – Royal Canal**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
Royal Canal	-2	-1	+1	+1	-1	+1	+1	0	0	-1

**Cycle Greenway Route Ref – Western Parkway Greenway (WPG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
WPG	0	0	+1	+1	0	+1	+1	0	0	0

**Cycle Greenway Route Ref – Poddle Greenway (PG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
PG	0	0	+1	+1	0	+1	+1	0	0	0

**Cycle Greenway Route Ref – Slang River Greenway (SLG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
SRG	0	0	+1	+1	0	+1	+1	0	0	0

**Cycle Greenway Route Ref – Kilbogget River Greenway (KRG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
KRG	0	0	+1	+1	0	+1	+1	0	0	0

**Cycle Greenway Route Ref –Carrickmines Greenway (CRG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
CRG	-2	-2	+1	+1	0	+1	+1	0	0	0

**Cycle Greenway Route Ref – Liffey Greenway (LG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
LG	-2	-1	+1	+1	0	+1	+1	0	0	-1

**Cycle Greenway Route Ref – NO6 Greenway – Islandbridge to Ashtown (via Phoenix Park)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
NO6	0	0	+1	+1	0	+1	+1	0	0	0

**Cycle Greenway Route Ref – Tolka Greenway (TG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
TG	-1	-1	+1	+1	0	+1	+1	0	0	0

**Cycle Greenway Route Ref – Santry River Greenway (SRG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
SRG	-2	-1	+1	+1	0	+1	+1	0	0	0

**Cycle Greenway Route Ref – East Coast Trail North Greenway (ECTNG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
<b>ECTNG</b>	-2	-2	+1	+1	0	+1	+1	0	0	0

**Cycle Greenway Route Ref – East Coast Trail South Greenway (ECTSG)**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
<b>SCTG</b>	-2	-2	+1	+1	0	+1	+1	0	0	-1

**Cycle Greenway Route Ref – D6 – Saggart to Brittas merging with D5**

Cycle Route Ref.	Biodiversity Obj. no. 1,2,3,4,5,6	Landscape Obj. no. 7,8	Population Obj. 9,10	Human Health Obj. 11,12,13,14	Water Obj. 15,16,17,18,19,20	Air Obj. 21,22	Climatic Obj. 23,24	Soils Obj. 25,26,27,28	Material Assets Obj. 29,30,31	Cultural Heritage Obj. 32
<b>D6</b>	-1	-1	+1	+1	0	+1	+1	0	0	-1

## **9.0 Mitigation Measures**

### **9.1 Introduction**

Chapter 10 of the ER discusses the mitigation measures identified as necessary for the plan to address its potential negative impacts and also to enhance some of the positive impacts.

An integral part of the SEA assessment is the requirement for the identification of measures to prevent or reduce any significant adverse effects which are likely to occur as a result of implementing the Cycle Network Plan. Similarly it is also imperative that performance in terms of sustainability is maximised. These measures are known as mitigation measures.

Good construction practice and appropriate mitigation can avoid or reduce any temporary effects that may occur during construction. These measures can insure no long lasting impacts will occur as a result of the Cycle Network Plan.

As no significant adverse impacts have been identified for the Urban Cycle Network and Inter-Urban Cycle Network through the SEA process, it was not necessary to derive a comprehensive set of individual mitigation measures for each of these routes. However, a comprehensive list was devised for the greenway routes and is presented in Table 10.1 of the ER.

### **9.2 SEA Monitoring**

Monitoring has been proposed for all 32 SEA Objectives and is not limited to topics for which more significant effects are predicted. This was undertaken with a view to better understanding the effects of the Plan's implementation across all environmental topics.

The intention when developing the monitoring programme was to build upon the existing data collected by the NTA and the other agencies in the Greater Dublin Area.

It is recommended that a bi-annual Monitoring Report is prepared to report on the progress of the SEA monitoring programme and that a summary of key actions required addressing both predicted and also unforeseen significant environmental effects is included.

If monitoring identifies a regular frequency of a negative significant environmental effect, then more frequent monitoring and reporting may be required to determine if remedial action is effective in addressing the negative effect.