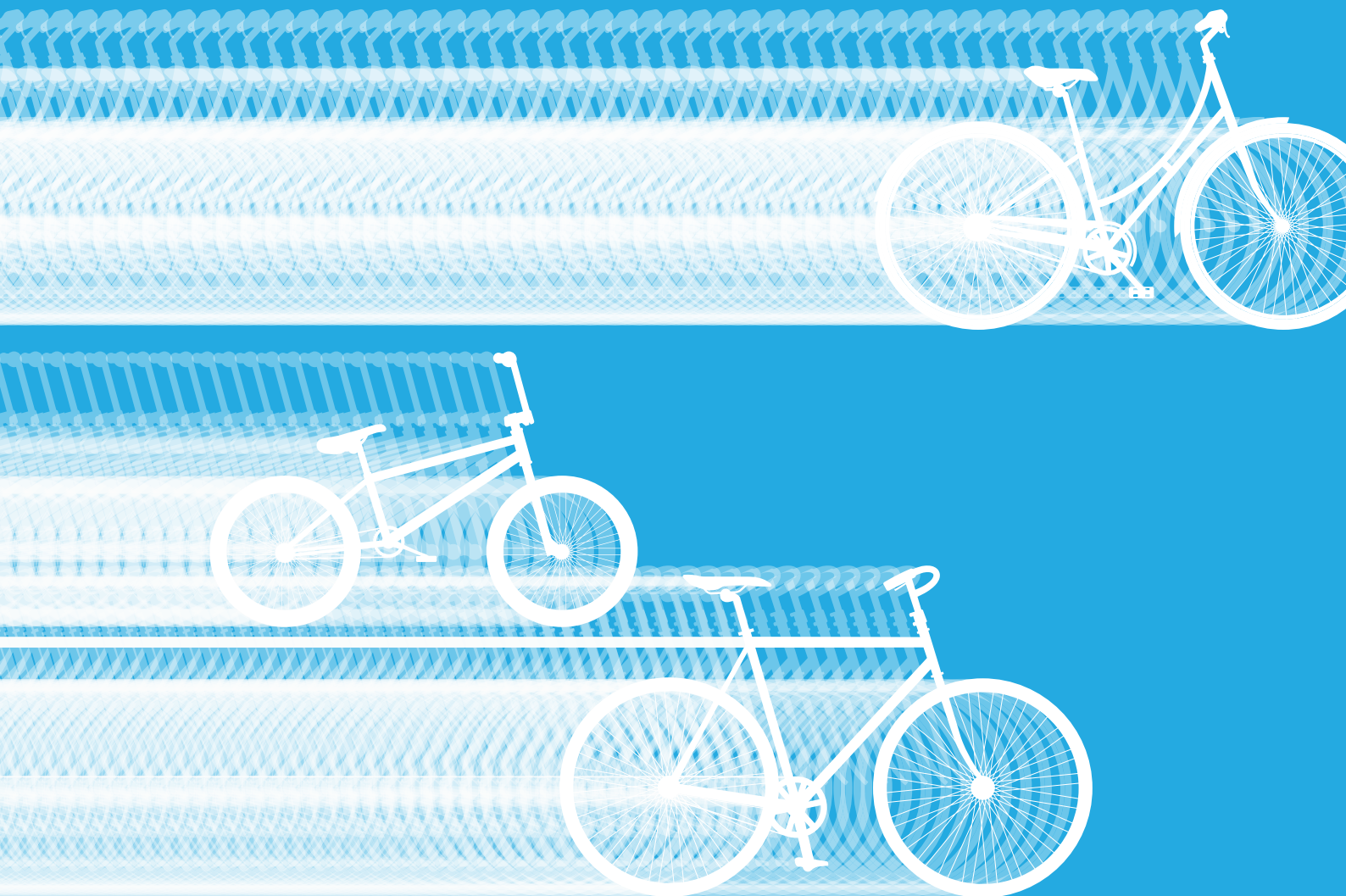


Greater Dublin Area
**Cycle
Network
Plan**

SEA Statement



Cycle Network Plan for the Greater Dublin Area

SEA Statement

January 2014

Contents

1.0 INTRODUCTION	1
1.1 Introduction to SEA and Legislative Context	1
1.2 Purpose of SEA Statement.....	2
1.3 Production of the SEA	2
2.0 SUMMARY OF HOW ENVIRONMENTAL CONSIDERATIONS AND THE ENVIRONMENTAL REPORT WERE INTEGRATED INTO THE PLAN ...	3
2.1 Scoping and Statutory Consultation	3
2.2 Preparation of Baseline and Environmental Report	3
2.3 SEA Objectives.....	7
2.4 Environmental Assessment.....	15
2.5 Mitigation Measures	15
2.6 Monitoring.....	19
3.0 SUMMARY OF HOW SUBMISSIONS/CONSULTATIONS WERE TAKEN INTO ACCOUNT	20
3.1 Scoping Consultation.....	20
3.2 Submissions and Observations on the Draft Plan and Environmental Report	25
4.0 REASONS FOR CHOOSING THE PLAN AS ADOPTED, IN LIGHT OF OTHER REASONABLE ALTERNATIVES CONSIDERED:	35
4.1 Alternatives Assessment	35
4.2 Alternative Options and Preferred Option.....	35
5.0 MONITORING MEASURES	40
5.1 Introduction.....	40
5.2 Monitoring Indicators	40
5.3 Monitoring Sources and Responsible Sections	40
5.4 Responsibility	41

1.0 INTRODUCTION

The Cycle Network Plan for the Greater Dublin Area (GDA) 2013 to 2021, was adopted by the National Transport Authority (NTA) on 13th December 2013. In accordance with S.I. No. 436 of 2004 Planning and Development (Strategic Environmental Assessment) Regulations 2004 (as amended), the Planning Authority is required to prepare an SEA Statement as soon as may be following the making of the Plan.

1.1 Introduction to SEA and Legislative Context

SEA is a formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme, before a decision is made to adopt the plan or programme. SEA in Ireland is based on *Directive 2001/42/EC (Assessment of the Effects of Certain Plans and Programmes on the Environment)*, more commonly known as the 'SEA Directive'. The main objective of the SEA Directive is to "provide for a high level of protection for the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development." The Directive requires all European Union Member States to systematically evaluate the likely significant effects of implementing a plan or programme prior to its adoption. Directive 2001/42/EC came into force in Ireland in 2004. The Directive has been transposed into Irish Law through two sets of Regulations as set out hereunder;

- *European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004); and*
- *Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. 436 of 2004).*

This Plan has been evaluated in accordance with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (as amended).

There are four main requirements of the SEA Regulations. These include:

1. The preparation of an Environmental Report, within which the likely significant environmental effects of the Plan are identified and evaluated. The Environmental Report is the key document in the SEA process and will summarise the likely significant environmental effects and mitigation measures to minimise any adverse impacts;
2. Consultation with the public, environmental authorities, and any EU Member State affected, on the Environmental Report and Draft Plan;
3. Consideration of the findings in the Environmental Report and the outcome of the consultations in deciding whether to adopt or modify the Draft Plan;
4. Publicising the decision on adoption of the Plan and how the SEA influenced the outcome.

On adoption of the Cycle Network Plan the authority is required under Section 13I of the Planning and Development (Strategic Environmental Assessment) Regulations

2004 (S.I. No. 436 of 2004) as amended to make this SEA Statement available to the environmental authorities and the public.

1.2 Purpose of SEA Statement

The main purpose of the SEA Statement is to document how environmental considerations, the views of statutory consultees and other submissions and observations received during the consultation phases have been taken into account during the preparation of the Plan and the arrangements put in place for monitoring.

The SEA Statement provides transparency and accountability, by informing the public of how environmental effects were considered in the decision-making process. The SEA Statement must be sent to the prescribed authorities with a copy of the Plan as adopted and be made available to the public. The SEA statement includes a summary of the following information:

1. How environmental considerations have been integrated into the Plan;
2. How the following have been taken into account during the preparation of the Plan:
 - (i) the Environmental Report prepared pursuant to article 13C;
 - (ii) submissions and observations made to the planning authority in response to a notice under section 12(1) or (7) of the Planning and Development Act 2000 as amended; and
 - (iii) any consultations under Article 13F;
3. The reasons for choosing the Plan as adopted, in the light of other reasonable alternatives dealt with;
4. The measures decided upon to monitor, in accordance with Article 13J, the significant environmental effects arising from the implementation of the plan.

1.3 Production of the SEA

The Strategic Environmental Assessment of the GDA Cycle Network Plan was undertaken by Roughan & O' Donovan Consulting Engineers SEA team who closely liaised with the Plan Team and the NTA during formulation of the plan.

2.0 SUMMARY OF HOW ENVIRONMENTAL CONSIDERATIONS AND THE ENVIRONMENTAL REPORT WERE INTEGRATED INTO THE PLAN

Environmental considerations were integrated into the Cycle Network Plan at a number of stages as a direct result of the SEA process i.e. the Scoping stage, at the Environmental Report stage and following the submissions and observations from the Environmental Authorities and the public.

2.1 Scoping and Statutory Consultation

Statutory scoping of the Cycle Network Plan was carried out in accordance with Article 5(4) of the SEA Directive (2001/42/EC). The principal purpose of the scoping stage is to decide upon the range of issues and level of detail to be included in the Environment Report. It helps the SEA to become focused upon the important issues such as those relating to existing environmental problems.

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); and
- Department of Communications, Energy and Natural Resources (DCENR).

This enabled the authorities to make submissions on the scope of the SEA. Responses were received from two of the Environmental Authorities:

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

The issues and associated responses are dealt with in greater detail in Section 3 of this document.

The issues that arose generally related to the management and potential effects of the development of the cycle network on Natura 2000 sites and also noted specific species, areas and sites of concern within the various Council areas. The submissions also recommended updated sources of information for use in the Environmental Report. A meeting between representatives of the NPWS and the Plan/SEA team was held in early September 2013. Although this meeting was organised mainly to discuss issues in relation to the Natura Impact Statement and Habitats Directive Assessment the information provided also proved helpful and was taken into account for the SEA process.

2.2 Preparation of Baseline and Environmental Report

Baseline data was collected from available and relevant data sources, based on the environmental topics described in the SEA Directive i.e. biodiversity, population, human health, fauna, flora, soil, water, air, climate factors, material assets, cultural heritage including architectural and archaeological heritage and landscape. The Directive requires that information be focused upon relevant aspects of the environmental characteristics of the area likely to be significantly affected by the plan and the likely change, in either positive or negative terms. The process allowed for

early identification of potential environmental issues/pressures requiring attention in the formulation of the Plan.

The preparation of an Environmental Report on the likely significant effects on the environment of implementing the Plan included documenting the following:

- An outline of the contents and main objectives of the Plan, and of its relationship with other relevant plans and programmes;
- A description of relevant aspects of the current state of the environment and the evolution of the environment without implementation of the Plan;
- A description of the environmental characteristics of areas likely to be significantly affected;
- Identification of any existing environmental problems which are relevant to the Plan, particularly those relating to European protected sites;
- A list of the environmental protection objectives at international, EU and national level, which are relevant to the Plan and a description of how they have been taken into account in the formulation of the Plan;
- A description of the likely significant effects on the environment (biodiversity, human health, cultural heritage, air, soil, water etc.);
- Mitigation measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment caused by implementing the Plan;
- An outline of the reasons for selecting the alternatives considered and a description of how the assessment was undertaken, including any difficulties encountered in compiling the required information;
- A description of proposed monitoring measures;
- A non-technical summary of the above information.

The purpose of the Environmental Report is to document the likely environmental implications or consequences of the decision to develop the cycle network in the plan area. The Environmental Report is presented as a separate document to the Cycle Network Plan.

Table 2.1 below presents a summary of the environmental issues/problems that were identified for each of the topics at Scoping stage. These issues were then carried forward for further assessment at Environmental Report stage.

Table 2.1 - 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 & 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>
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>

Environmental topic	Potential effects
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 CO₂ 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>
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>

Key issues were identified in the Environmental Report across each of the environmental areas. These were largely based on the key environmental factors as identified at the scoping stage. The full review of key issues is set out in Section 4 of the Environmental Report. The SEA Environmental Report and Appropriate Assessment Screening Report were used to evaluate the policies and objectives formulated to address the issues identified at the scoping stage. This helped to maximise potential positive impacts and reduce potential negative impacts on the environment.

2.3 SEA Objectives

The Environmental Report includes a set of SEA Objectives which were developed from international, national and regional policies which generally govern environmental protection and also using the environmental topics that were highlighted at Scoping stage. The SEA Objectives (detailed in Table 2.2 below) were used as standards against which the policies, objectives and specific cycle routes included in the Plan were evaluated in order to highlight those with the potential for environmental impact.

The SEA Objectives take account of the key environmental issues outlined in the scoping notification under the table headed 'Potential issues to be considered in the GDA Cycle Network Plan SEA' (see Table 2.1 above) and their relevance to the specific scope and influence of the Plan. The comments received from the environmental authorities at scoping stage were also incorporated into the SEA Objectives and minor changes were made to ensure they were focussed and they remained measureable through appropriate indicators.

Table 2.2 - Final SEA Objectives

SEA Topic	Proposed SEA Objective	Comments	Potential Indicators
<p>Biodiversity, Flora and Fauna</p>	<p>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.</p> <p>2. To support the strategic objectives of the National Biodiversity Plan.</p>	<p>This objective is focused on the protection of Natura 2000 sites (SACs and SPAs). The focus is on significant impacts, as this is the threshold used in the Habitats Directive with regards to European-designated ecological sites and also on the species protected under the EU Legislation including;</p> <ul style="list-style-type: none"> • Habitats listed on Annex I of the Habitats Directive, • Species listed on Annexes II and IV of the Habitats Directive, • Habitats important for birds, • Birds listed on Annex I of the EC Birds Directive, Red Data List Species • Species protected under the Wildlife Acts including protected flora and also NHAs and the species and habitats they contain. <p>The strategic objectives are to mainstream biodiversity in the decision making process; to substantially strengthen the knowledge base for conservation, management and sustainable use of biodiversity; to increase awareness and appreciation of biodiversity and ecosystem services; to conserve and restore biodiversity and ecosystem services in the wider countryside; to conserve and restore biodiversity and ecosystem services in the marine environment; to expand and improve on the management of protected areas and legally protected species; to substantially strengthen the effectiveness of international governance for biodiversity and ecosystem services.</p>	<p>Number of designated sites likely to be affected by the Plan strategies and the change in the condition of their notified features through monitoring results derived from GIS analysis.</p> <p>Qualitative assessment against overall goal and key objectives in the National Biodiversity Plan.</p>

SEA Topic	Proposed SEA Objective	Comments	Potential Indicators
	<p>3. To minimise impacts on locally important biodiversity in the Greater Dublin Area.</p> <p>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.</p> <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>	<p>The focus for this Objective is local-level biodiversity. The basis for this Objective is that ecological sites can still be of value, even if they are not designated.</p> <p>Alien invasive species such as Japanese Knotweed and Giant Hogweed are extremely easy to spread and can be damaging to local biodiversity and can be costly to address.</p> <p>Negative impacts on biodiversity and designated sites, particularly in the mountains, by the coast and along rivers, can occur as a result of development such as walking routes, cycleways, seating, lighting, loss of riparian zone and mowing of riparian zone, and can lead to erosion and added disturbance by humans and dogs. Such developments along waterways for example could impact on species such as Otters Bats and Kingfishers.</p> <p>Hedgerows form important wildlife corridors and provide areas for birds to nest in and in addition, Badger setts may be present. If suitable trees are present, bats may roost there and they use hedgerows as flight routes. Hedges also provide a habitat for woodland flora.</p> <p>Where a hedgerow forms a townland or other historical boundary it generally is an old hedgerow. Such hedges will contain more biodiversity than a younger hedge. Hedgerows should be maintained where possible. Where trees or hedges have to be</p>	<p>Qualitative assessment of effects on wider biodiversity.</p> <p>Qualitative assessment of recorded alien invasive species along or in close proximity to cycle routes. There should be no overall increase in these numbers due to development of the cycle network.</p> <p>Area of these aforementioned zones that have been negatively affected by the cycle network development.</p> <p>Ensure records are kept of the time of year that any works to hedgerows is carried out (with March 1st to 31st August avoided). No. of derogation licences approved for bats and also disturbance to nesting birds under the Wildlife Acts of 1976 to 2010.</p>

SEA Topic	Proposed SEA Objective	Comments	Potential Indicators
		removed there should be suitable planting of native species in mitigation. Where possible hedges and trees should not be removed during the nesting season (i.e. March 1st to August 31st).	
Landscape	<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>	<p>This Objective is focused on the protection of designated and protected landscapes and landscape features such as Natural Heritage Areas. Also included are Conservation Areas, primarily in urban or townscape settings.</p> <p>This Objective addresses the various undesignated landscape features and areas, which make up the majority of the GDA.</p>	<p>Proximity to and land take from designated landscapes and related features - derived from GIS analysis.</p> <p>Qualitative assessment on undesignated landscapes and features.</p>
Population	<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>	<p>This Objective is focused on increasing access to employment opportunities, especially for those who are physically, economically or socially disadvantaged.</p> <p>The purpose of this Objective is to increase accessibility to the full range of education facilities, health and medical care facilities and services, public offices and community facilities, professional services, cultural and leisure facilities and retail and service areas.</p>	<p>A qualitative assessment of the likely potential impacts arising from changes to the transport network in the GDA through the creation of the cycle network.</p> <p>A qualitative assessment of the likely potential impacts arising from the introduction of the GDA cycle network.</p>
Human Health	<p>11. To contribute to improvements to transport-related aspects of quality of life for residents, workers and visitors to the</p>	<p>This Objective is concerned with the relevant aspects of quality of life (QoL) of the residents, workers and visitors in the GDA.</p>	<p>A qualitative assessment of the likely potential impacts arising from the introduction of the GDA cycle</p>

SEA Topic	Proposed SEA Objective	Comments	Potential Indicators
	<p>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>	<p>Potential positive impacts include reduced travel times; more attractive and pleasant journeys through reduced overcrowding and delays and reducing travel/commuting stress.</p> <p>The overall objective of this Directive is to provide a basis for developing EU-wide measures to reduce noise emitted by the major sources of noise, in particular road and rail vehicles and infrastructure. The introduction of the GDA cycle network would help achieve this reduction in noise.</p> <p>This Objective is designed to address the risks to human safety and health from transport activities and infrastructure. This relates primarily to road traffic Accidents.</p> <p>This Objective is focused on potential health improvement and benefits, which could arise from transport-related activities, principally promoting and encouraging greater uptake of cycling.</p>	<p>network..</p> <p>A qualitative assessment of the likely potential impacts arising from the introduction of the GDA cycle network.</p> <p>A qualitative assessment of the likely potential impacts arising from the introduction of the GDA cycle network.</p> <p>A qualitative assessment of the likely potential impacts from the introduction of the GDA cycle network.</p>
Water	<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>The fundamental objective of the WFD aims at maintaining 'high status' of waters where it exists, preventing any deterioration in the existing status of waters and achieving at least 'good status' in relation to all waters by 2015.</p> <p>The aim of this Objective is to minimise impacts to surface water systems and resources, such as rivers, streams, lakes and surface water abstraction points.</p> <p>The purpose of this Objective is to minimise impacts to groundwater systems and</p>	<p>Qualitative assessment of likely conflicts with relevant elements of RBMPs and POMs.</p> <p>Qualitative assessment of potential effects on surface water resources.</p> <p>Qualitative assessment of potential effects on groundwater resources.</p>

SEA Topic	Proposed SEA Objective	Comments	Potential Indicators
	<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>	<p>resources, such as vulnerable aquifers and groundwater abstraction points.</p> <p>The purpose of this Objective is to minimise impacts to coastal systems and resources.</p> <p>The purpose of this Objective is to minimise impacts to transitional systems and resources, such as estuarine and wetland systems.</p> <p>This Objective is focused on minimising the risk of flooding.</p>	<p>Qualitative assessment of potential effects on coastal resources.</p> <p>Qualitative assessment of potential effects on transitional resources.</p> <p>Qualitative assessment of potential effects on flood risk.</p>
Air	<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>	<p>The focus of this Objective is on reducing negative air quality impacts from transport-related emissions, such as traffic emissions (e.g. PM_{10s}, NO₂, etc.) and protect and improve on areas with already good standards of air quality.</p> <p>This Objective is focused on the EU Air Quality Directives, which set down air quality standards in Ireland and the other member states for a wide variety of pollutants. The various thresholds in the Directives have been transposed into Irish Law via appropriate Irish Regulations.</p>	<p>A qualitative assessment of the likely potential impacts arising from changes to transport provision.</p> <p>A qualitative assessment of the likely potential impacts arising from transport improvements.</p>
Climatic factors & climate change	<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>The overall purpose of this Objective is to reduce the production of greenhouse gas emissions arising from transport-related activities and to reduce the overall carbon footprint of transport in the GDA. The Objective is focused on the fact that all forms of mechanised transport produce greenhouse gases and consume fossil fuels either directly or indirectly. Where there is a need to travel, the Plan will seek to cater for this need in an</p>	<p>A qualitative assessment of the likely potential impacts.</p> <p>% of persons cycling to work/leisure activities/education</p> <p>% of transport related CO2 emissions.</p>

SEA Topic	Proposed SEA Objective	Comments	Potential Indicators
	<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>	<p>environmentally optimal manner. This would imply a higher percentage use of cycling in the GDA. This is a more sustainable form of travel with no greenhouse gas production.</p> <p>Where cycle routes are proposed in coastal areas that may be susceptible to flooding due to sea level rise or increased storm occurrence which may result in coastal erosion, the design of the cycle route will take these issues into consideration.</p>	<p>Number of occurrences of coastal flooding in areas where coastal routes are proposed. Monitor level of coastal erosion.</p>
<p>Soils and Geology</p>	<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 if 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>	<p>This Objective is focused on the conservation of important and vulnerable soils which are used for agricultural production.</p> <p>This Objective is designed to reduce the overall need for new construction materials and to reduce the generation of construction wastes as part of the construction of transport infrastructure projects. Ways to achieve this Objective include greater reuse of demolition and construction materials reuse and recycling.</p> <p>Where excavation of soils is considered to facilitate cycle route construction, measures should be included to address remediation of any potential contaminated lands identified</p> <p>The focus of this Objective is to minimise impacts to protected and designated geological and geomorphological sites, which may arise as a result of transport infrastructure projects.</p>	<p>Qualitative assessment of effects on important agricultural soil resources.</p> <p>Qualitative assessment of construction resources saved due to recycling and reuse.</p> <p>Qualitative assessment of the amount of contaminated soil removed as part of the development of the cycle network.</p> <p>Proximity to and land take from designated sites.</p>
<p>Material assets</p>	<p>29. To protect public assets and infrastructure.</p>	<p>This Objective covers a wide-range of 'on the ground' resources, such as public open spaces, parks and recreational areas; public</p>	<p>Qualitative assessment of effects on important material assets.</p>

SEA Topic	Proposed SEA Objective	Comments	Potential Indicators
	<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>	<p>buildings and services; utility infrastructure (electricity, gas, telecommunications, water supply, wastewater infrastructure etc.). These may be impacted by the development of future cycle routes in some areas.</p> <p>This Objective is focused on the rising demand for fossil fuels for transport-related proposals and activities. Fossil fuels are an important non-renewable asset from an economic, environmental and social point of view for the State. Reducing fossil fuel consumption will make a contribution to addressing the issue of fuel security, a significant issue as Ireland is heavily dependent on the importation of fossil fuels.</p> <p>The basis for this Objective is to promote the reuse and regeneration of previously developed brownfield sites instead of undeveloped greenfield sites, especially those close to key transport corridors and large centres of population in the GDA.</p>	<p>A qualitative assessment of the likely potential impacts from changes in travel behaviour.</p> <p>Qualitative assessment on the potential to increase brownfield reuse.</p>
<p>Cultural heritage (architectural and archaeological heritage)</p>	<p>32. To avoid or, where infeasible, minimise impacts to designated cultural, architectural and archaeological resources.</p>	<p>This Objective is focused on minimising impacts to designated cultural, architectural and archaeological resources which include Architectural Conservation Areas (ACAs), Protected Structures and structures and zones of archaeological interest listed on the Record of Monuments and Places (RMPs) which may be affected by transport infrastructure projects or policy recommendations in the Plan.</p>	<p>Proximity to and land take from designated sites, protected structures, ACAs or RMPs.</p>

2.4 Environmental Assessment

The environmental effects of the Preferred Option were subsequently assessed against the SEA Objectives, which can be found in Chapters 9 of the SEA Environmental Report (ER).

Information on the environmental assessment methodology and the actual use of the SEA Objectives is provided in Chapter 5 of the Environmental Report. The assessment consisted of two main elements:

1. An assessment of 'The Urban Cycle Network' and 'The Inter-Urban Cycle Network'. As these routes are primarily to be located on existing routeways, the impacts were generally found to be minor or neutral. However where routes included in these two networks had a minor variation off existing carriageways, these were highlighted and assessed in more detail separately under Table 9.1 of the ER.
2. Table 9.2 of the ER includes an assessment of all the Greenway routes within the GDA. The more detailed assessment of these routes was required due to the increased likelihood of potential impacts on the environment.

The greenway cycle routes which involved new off route tracks were assessed against the SEA Objectives at a number of stages during the process. This allowed for early identification and mitigation of environmental conflicts. All the cycle routes were also assessed for secondary, cumulative, synergistic, short, medium, and long term, permanent and temporary, positive, neutral and negative effects as required under the SEA Directive. Any negative impacts highlighted as a result of this assessment were then considered and appropriate mitigation measures for each negatively impacted route area was then presented in Chapter 10.

2.5 Mitigation Measures

Chapter 10 of the ER contains the mitigation measures that were incorporated into the Plan and the measures introduced to specific cycle routes where this was necessary to counteract the impact on the environment. This involved amendments to existing cycle routes, the addition of environmentally beneficial mitigation measures and the removal of cycle routes with significant negative effects.

As no significant adverse impacts were 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. Instead mitigation focuses on those elements where the most potential impacts have been identified, i.e. the routes making up the greenway network. General mitigation measures which apply to all the greenway routes were included in section 10.2 of the ER. Where moderate and major significant impacts were identified as part of the assessment then more specific mitigation measures relevant to the particular impact along the route was added. For example as a result of the negative impacts predicted on the Pollardstown Fen SAC, greenway route K12 was amended, with the removal of the section which originally ran through the fen to ensure no significant environmental impacts on the fen habitat.

Table 2.3 below lists the routes which required specific mitigation in order to address the negative environmental issues that were raised at assessment stage in the ER. Column 2 of the table details the specific issues that needed addressing. Full details of the mitigation measures can be found in section 10.3 of the SEA ER.

Table 2.3 - Specific Mitigation Measures in relation to the Greenway routes

Route No. / Name/ Type	Mitigation Measures derived from SEA ER – detailed in Section 10.3 (Page no. Included)	European Designated Site concerned (Site name/SAC/SPA)		
P1 Baldoyle to Malahide, Eastern Greenway/	Designated sites (Page139)	Baldoyle Bay	SAC 000199	SPA 004016
1A/N5 East Coast Trail Howth/ Portmarnock/Malahide Greenway/Radial Route/Dublin secondary	Designated sites & Landscape (Page 137)	Baldoyle Bay	SAC 000199	SPA 004016
		Howth Head	SAC 000202	
		North Dublin Bay	SAC 000206	
		North Bull Island		SPA 004006
Santry River Greenway	Designated sites, Invasive species & Landscape (page 137)	North Dublin Bay	SAC 000206	
		North Bull Island		SPA 004006
RU2 – Rush town route	Designated site (page 139)	Rogerstown Estuary	SAC 000208	SPA 004015
13E (Blackrock to Dalkey) & 14 East Coast Trail South & Dublin secondary	Designated sites, landscape & Cultural Heritage (Page 137&138)	South Dublin Bay	SAC 000210	
		South Dublin Bay and River Tolka Estuary		SPA 004024
Dodder Greenway	Designated sites, Invasive species, Landscape, Water, Soil & Cultural Heritage (page 133&134)	Glenasmole Valley	SAC 001209	
D3 Dublin City– Inter-urban				
D6 Saggart to Brittas merging with D5	Designated site, landscape & Cultural Heritage (Page 139)			
Route No. 9 - Ormond Quay to River Poddle Greenway	Water & Cultural Heritage (page 139&140)			
River Camac Greenway	Biodiversity, Invasive species, Water (Page 134)			
Grand Canal Greenway	Biodiversity, Invasive species, Water, Landscape, Cultural Heritage (page 134 & 135)			
Royal Canal Greenway				
Poddle Greenway	Biodiversity (page 135)			
Carrickmines Greenway	Biodiversity & Landscape (Page 135&136)			
Liffey Valley Greenway	Biodiversity, Landscape & Cultural Heritage (Page 136)			

NO6 Greenway	Biodiversity & Water (Page 136)			
Tolka Greenway	Designated sites, Invasive species & Landscape (Page 136 & 137)	South Dublin Bay and River Tolka Estuary		SPA 004024
L1 primary	Designated Sites & Biodiversity (Page 101)	Rye Water Valley / Carton	SAC 001398	
C7 Lusk to Rush secondary feeder				
FG1/N5 Baldoyle to Malahide	Designated sites, Landscape, Water, Material Assets & Cultural Heritage (Page 131 & 132)	Malahide Estuary	SAC 000205	SPA 004025
		Rogerstown Estuary	SAC 000208	SPA 004015
		Baldoyle Bay	SAC 000199	SPA 004016
FG3 via Swords	Biodiversity, Water & Cultural Heritage (Page 133)			
FG4 Malahide to Swords Eastern Greenway	Designated sites, Landscape, Water & Soil (Page 133)	Malahide Estuary	SAC 000205	SPA 004025
M1/N5 Balbriggan to Drogheda East Coast Trail	Designated Sites, Landscape, Water, Soil, Cultural Heritage (Page 124 & 125)	Boyne Coast and Estuary	SAC 001957	
		Boyne Estuary		SPA 004080
		River Nanny Estuary and Shore		SPA 004158
M2 Malahide Inter urban route	Proposed route on existing road	River Nanny Estuary and Shore		SPA 004158
M4 Duleek to Laytown Inter urban route	Proposed route on existing road			
M5 Boyne Greenway Drogheda to Trim (via Navan)	Designated sites, Invasive species, Landscape, Water, Soil & Cultural Heritage (Page 125 & 126)	Boyne Estuary		SPA 004080
		River Boyne and River Blackwater	SAC 002299	SPA 004235
		Boyne Coast and Estuary	SAC 001957	
M6 - Navan to Kingscourt	Biodiversity & Cultural Heritage (Page 126)			
K10/N10 Hazelhatch to Edenderry	Biodiversity, Invasive species, Landscape, Water & Cultural Heritage (Page 127 & 128)			
K11/N10 Barrow Canal Greenway, West of Robertstown to Athy	Designated sites, Biodiversity, Invasive Species, Landscape, Water & Cultural Heritage (Page 128 & 129)	River Barrow and River Nore	SAC 002162	
K15 Naas to Monesterevin inter urban route	Proposed route on existing road			
K20 Celbridge to Clane inter urban route	Proposed route on existing road			
K12 South of Allenwood to Kildare/Newbridge (Pollardstown Feeder Greenway)	Biodiversity, Invasive species, Landscape, Water & Cultural Heritage (Page 129)			

K13 Sallins (via Naas) to east of Newbridge	Biodiversity, Invasive Species, Water & Cultural Heritage (Page 129)			
K17 Naas to north of Baltinglass	Invasive species (Page 130)			
W2 Bray - Glencree - Inter-Urban	Designated sites (Page 139)	Ballyman Glen	SAC 000713	
		Wicklow Mountains		SPA 004040
W4 Bray to Wicklow Inter-Urban	Proposed route on existing road	Bray Head	SAC 000714	
		The Murrough Wetlands	SAC 002249	
W6 South Dublin to Laragh	Proposed route on existing road	Wicklow Mountains		SPA 004040
W7 Roundwood to Blessington				
W8 Roundwood to Laragh				
W10 Laragh/Glendalough to Blessington	Proposed route on existing road	Poulaphouca Reservoir		SPA 004063
		Wicklow Mountains		SPA 004040
W11/N5 Bray Greenway Routes, Inter-urban (on road section)	Designated sites, Landscape & Soil (page 130)	Bray Head	SAC 000714	
		Buckronev-Brittas Dunes and Fen	SAC 000729	
		Kilpatrick Sandhills	SAC 001742	
		Magherabeg Dunes	SAC 001766	
		The Murrough Wetlands	SAC 002249	
		The Murrough	SPA 004186	
W13 Laragh to Rathdrum Inter-urban	Designated site, Biodiversity, Water, Landscape, & Soil (Page 139)	Vale of Clara (Rathdrum Wood)	SAC 000733	
W14 Laragh to Hollywood Inter-urban	Designated sites & Biodiversity (page 101)	Slaney River Valley	SAC 000781	
		Wicklow Mountains	SPA 004040	
W15 Aughavanagh to Auhrim to Baltinglass Inter-urban	Designated sites & Biodiversity (Page 101)	Slaney River Valley	SAC 000781	
W16 Auhrim Railway Line Woodenbridge to Auhrim Greenway	Designated sites & water (Page 131)			
W17 Baltinglass to Blessington Inter-urban	Proposed route on existing road			

2.6 Monitoring

Monitoring of the implementation of the Cycle Network Plan will be undertaken during the lifetime of the Plan. The overall objective of this stage of the SEA process is to monitor the significant environmental effects during 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) of the SEA Directive 2001/42/EC). See Section 5 of this SEA Statement for the monitoring indicators and targets.

3.0 SUMMARY OF HOW SUBMISSIONS/CONSULTATIONS WERE TAKEN INTO ACCOUNT

The following section details the significant issues which were raised prior to, during and after the preparation of the draft Cycle Network Plan and the accompanying Environmental Report and how these were incorporated into the Plan. The submissions range from the initial scoping responses on environmental issues from the Statutory Authorities (July/August 2013) to submissions on the Draft Plan and Environmental Report received from the Environmental Authorities and general public (October 2013). The comments submitted are listed in detail in Appendix C of the SEA ER. A response on how it was proposed to address each of these comments was also included i.e. through amendments to the Plan, cycle routes or additional mitigation where required.

3.1 Scoping Consultation

The Strategic Environmental Assessment Scoping Report was sent to 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 the Department of Communications, Energy and Natural Resources (DCENR).

This enabled the authorities to make submissions on the scope of the SEA. Responses were received from two of the Environmental Authorities:

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

A sample of the comments/concerns received from each of the Environmental Authorities/Public and the actions proposed as a result in order to address these issues are outlined in Table 3.1 below:

Table 3.1 - Feedback on Scoping Report from relevant Environmental Authorities and resultant Action Proposed

Environmental Authority	Issue	Concern/Comments	Action Proposed
DAHG	Plan and SEA context - legislation	With regard to legislation the Plan and SEA should take account of the Biodiversity Convention, the Ramsar Convention, the Birds and Habitats Directives, the Wildlife Acts of 1976 to 2010, and the European Communities (Natural Habitats) Regulations, 1997 (SI No 94 of 1997) and its amendments.	These have been taken into account
DAHG	Plan context	The proposed Plan should recognise that protected species also occur outside designated sites and should take note of the National Biodiversity Plan, County Biodiversity Action Plans and the need to protect biodiversity.	In order to address this comment additional text was added to SEA Objective No. 1 which included the need to assess the impact the plan may have on protected species out with designated areas.
DAHG	Plan content	Alien invasive species such as Japanese Knotweed and Giant Hogweed can be damaging to local biodiversity and a policy is needed in the Plan to protect against the accidental introduction of such species during development of the cycling network.	Where invasive species were raised as an issue on any route, a specific mitigation measure was included for that route to ensure any risk of introduction or spreading was addressed.
DAHG	Baseline Data	Examples of protected species include protected plants listed in SI 94 of 1999, mammals such as Badgers (<i>Meles meles</i>) and the Irish Hare (<i>Lepus timidus hibernicus</i>), protected under the Wildlife Acts and listed on Appendix III of the Berne Convention, and Bat species and Otters, protected under the Wildlife Acts and listed on Annex IV of the Habitats Directive. All birds are protected under the Wildlife Acts and some, such as the Peregrine Falcon (<i>Falco peregrinus</i>) and Kingfisher (<i>Alcedo atthis</i>), are listed on Annex I of the Birds Directive (Council Directive 79/409 EEC). With regard to the scope of baseline data for flora and fauna in the SEA, in addition to any County records, the Department advises consulting the data of the National Parks and Wildlife Service (NPWS) at www.npws.ie and the data of the National Biodiversity Data Centre at http://www.biodiversityireland.ie/	This additional information was noted and incorporated into the baseline information listed in the ER.
DAHG	Scope/ Biodiversity	Negative impacts on biodiversity and designated sites, particularly in the mountains, by the coast and along rivers, can occur as a result of development such as walking routes, cycleways, seating, lighting, loss of riparian zone and mowing of riparian zone, and can lead to erosion and added disturbance by humans and dogs. Such developments along waterways for example could impact on species such as Otters Bats and Kingfishers. Care therefore needs to be taken to ensure any proposed routes along rivers are located a suitable distance from the waters edge.	This issue was noted and reflected in SEA Objective 5.

Environmental Authority	Issue	Concern/Comments	Action Proposed
DAHG	Biodiversity	<p>Hedgerows form important wildlife corridors and provide areas for birds to nest in and in addition, Badger setts may be present. If suitable trees are present, bats may roost there and they use hedgerows as flight routes. Hedges also provide a habitat for woodland flora. Where a hedgerow forms a townland or other historical boundary it generally is an old hedgerow. Such hedges will contain more biodiversity than a younger hedge. Hedgerows should be maintained where possible. Where trees or hedges have to be removed there should be suitable planting of native species in mitigation. Where possible hedges and trees should not be removed during the nesting season (i.e. March 1st to August 31st).</p> <p>Birds nests can only be intentionally destroyed under licence issued under the Wildlife Acts of 1976 and 2000. Bat roosts may be present in trees, buildings and bridges. Bat roosts can only be destroyed under licence under the Wildlife Acts and a derogation under the Habitats Regulations and such a licence would only be given if suitable mitigation measures were implemented. It is important that the proposed Plan should recognise the importance of linear features such as hedgerows and waterways.</p>	<p>These issues was noted and addressed in SEA Objective 6.</p>
DAHG	Biodiversity/ Water Flooding	<p>Wetland habitats such as rivers are an important source of biodiversity and contain species such as Otters (<i>Lutra lutra</i>), Salmon in freshwater (<i>Salmo salar</i>), Kingfishers (<i>Alcedo atthis</i>), Crayfish (<i>Austropotamobius pallipes</i>) and Lamprey species, all protected under the Wildlife Acts of 1976 to 2010 and/or listed on the annexes of the EC Habitats Directive and Birds Directive. It is important that the proposed Plan should recognise the importance of wetland habitats including rivers and canals and ensure that such sites are not negatively impacted.</p> <p>In addition, flood plains, if present, should be identified in the Plans and left undeveloped to allow for the protection of these valuable habitats and provide areas for flood water retention. The plan should take account of the guidelines for Planning Authorities entitled "The Planning System and Flood Risk Management" and published by the Department of the Environment, Heritage and Local Government in November 2009.</p>	<p>Noted and the importance of the protected species has been included in SEA Objective 1.</p> <p>The issue of flooding was included in Section 7.7 and also addressed within the SEA Objective 20 for Water. SUDS were also incorporated as a means of addressing this issue in the mitigation measures listed in the ER and Plan itself.</p>
DAHG	Water	<p>With regard to the SEOs for Water in the SEA, it is important that the needs of protected species such as crayfish, salmon and lamprey species, which are listed on annex II of the Habitats Directive, are considered in relation to water quality. The SEOs and targets should be also compatible with the relevant River Basin Management Plans.</p>	<p>The needs of protected species was addressed in the Biodiversity SEO and also in the Water SEO. Compliance with the RBMP has been addressed in SEA Objective 15.</p>
EPA	Plan content/Biodiversity/	<p>The Plan should also ensure the protection of ecological linkages / corridors and also seek to avoid disturbance to protected habitats and species. In proposing new cycle routes, the assessment of alternative route corridors should take into account the potential for likely significant effects and integrate the recommendations of the NPWS in the siting, construction</p>	<p>The protection of ecological linkages and corridors was taken into account when formulating the plan. The SEO on biodiversity address the issues</p>

Environmental Authority	Issue	Concern/Comments	Action Proposed
	Alternatives	and maintenance aspects of cycling networks adjacent to designated European or National conservation sites (i.e. Natura 2000 sites, Natural Heritage Areas).	<p>regarding the protection of protected species and habitats and these in turn are reflected in the plan.</p> <p>An assessment of alternative cycle routes has been carried out and is discussed in Section 8 of the Cycle Network Plan.</p>
EPA	Biodiversity/ Flora and Fauna	<p>Biodiversity Flora & Fauna</p> <p>First bullet point – Route Maintenance activities should also be considered.</p> <p>Second bullet point – This issue (transport emission effects on biodiversity) may not be relevant to the Plan in terms of a potential issue, as the Plan relates to cycling, rather than to motorised transport. It is useful, however, to highlight the benefits of the Plan in terms of being a significant positive effect.</p> <p>Consideration should also be given to taking the following into account in terms of potential effects on:</p> <ul style="list-style-type: none"> - Protection of existing ecological linkages/ corridors/riparian areas - Provision of adequate and appropriate buffer zones from cycle routes and designated EU and national conservation sites - Ensure commitments to require AA/EIA are included where appropriate and relevant. - Potential for Spread of Invasive Species – construction of new routes and maintenance of existing routes would need to carefully consider invasive species management. 	<p>Route Maintenance has now been included as a consideration.</p> <p>Noted – the significant positive effects of transport emission reductions have been highlighted in the plan.</p> <p>Noted and Included in SEA Objective 5</p> <p>Noted and Included in SEA Objective 5</p> <p>Noted and included in Section 10. Of the ER.</p> <p>Noted and addressed in SEA Objective 4</p>
EPA	Landscape	<p>Landscape</p> <ul style="list-style-type: none"> - First bullet point relating to designated sites / landscape character areas, should also consider protected views and scenic areas. In protecting landscape character areas, this should also cover coastscape, riverscape etc. aspects where relevant. - In the third bullet point relating to potential adverse effects which may arise should traffic flows increase, what aspects of this are to be considered in the Plan and how this aspect will influence landscape character should be described. The Plan should describe how it proposes to reduce 	<p>Noted and addressed in SEA Objective 8.</p> <p>It is the intention of the Plan to encourage a modal shift to cycling through the establishment of new route networks. Therefore a reduction in</p>

Environmental Authority	Issue	Concern/Comments	Action Proposed
		<p>vehicular traffic and associated emissions.</p> <p>- Consideration should be given to including an additional bullet relating to “Increased awareness and appreciation of landscape/ seascape/ coastscape –increased sense of place”</p>	<p>vehicular traffic is expected over time.</p> <p>Noted and addressed in SEA Objective 8</p>
EPA	Water	<p>Water</p> <p>Any developments/activities proposed with potential to impact on or be impacted by water quality or flood risk should be described in the Plan. This may include issues such as siting/construction materials used/maintenance of cycle routes and waste management should all be considered.</p> <p>Where any new pedestrian/cycle routes are proposed to be developed alongside or adjacent to waterways, the potential for flood risk and impacts on water quality should also be considered.</p>	<p>All the routes were assessed as part of the SEA for flooding risk and water quality impacts and any issues with particular routes have been highlighted for further assessment at project level.</p> <p>Mitigation has been included where appropriate at this strategic level.</p>
EPA	Soil	<p>Soils & Geology</p> <p>- Where excavation of soils is considered to facilitate cycle route construction, measures should be included to address remediation of any potential contaminated lands identified.</p>	<p>This issue was highlighted in the SEA and is addressed in Section 10 and SEA Objective 27.</p>

3.2 Submissions and Observations on the Draft Plan and Environmental Report

In total 4 written submissions were received in response to the consultation on the draft SEA ER following the public display period (10th September to 14th October 2013). One response with 15 separate comments was received from the NPWS, one with 20 individual comments from the EPA, one from Fingal County Council and one with 2 separate comments from the Association of Architectural Conservation Officers. The table overleaf contains a sample of the comments received from the Environmental Authorities (NPWS & EPA) on the Draft SEA Environmental Report and the actions proposed to address these issues. The comments received from Fingal County Council and the Association of Architectural Conservation Officers have also been included. For a full account of all the submissions received please see Appendix C of the SEA Environmental Report.

Table 3.2 – Selection of responses received from DAHG - NPWS on Draft Cycle Network Plan and Actions proposed to address issues

Environmental Authority	Comments relate to:	Concern/Comments	Action Proposed
DAHG - NPWS	Draft Plan	It is stated in the Draft Greater Dublin Area Cycle Network Plan that there was a scoping study for the National Cycle Network (NCN) in August 2010 which stated “Special attention should be given to the opportunities of using both the disused rail network and canal/river towpath networks/walking routes.” The NTA should note that such locations function as important ecological corridors as envisaged under article 10 of the Habitats Directive (Council Directive 92/42/EEC). As such they may feature in Local Authority Plans including Biodiversity Action Plans for protection of biodiversity. If the existing width of any tracks in these areas is not adequate for a cycle track, and/or there is a proposal to use them as commuter routes with lighting, such development may have negative impacts on protected species and habitats resulting in a loss of biodiversity.	The existing BAPs for the area were revisited and where issues in relation to ecological corridors (as implied by Article 10 of the Habitats Directive) were referenced in the BAPs these were then included in Section 7.2.10 ‘Biodiversity Action Plans’ of the SEA Environmental Report. Where issues arose out of these BAPs that were not addressed already in the mitigation measures then these issues were subsequently inserted into this section.
DAHG - NPWS	Draft Plan	The draft Plan describes routes which are also shown on accompanying maps. The maps have some dashed green lines on greenway routes to indicate that where sensitive locations are traversed the routes are indicative only and that alternative routes may have to be found. In addition, for other greenway routes it is stated in the text of the Plan that alternatives may need to be found on local roads. Also it is stated in the first paragraph of Section 4 of the NIS that all proposed routes are indicative only. It is the view of the Department therefore that there is an inconsistency and that there should be dashed lines on the maps for all greenway routes. The Department recommends that the maps are amended.	The dashed green lines were replaced with continuous green lines for the green routes in the GDA. All of the routes included in the plan are indicative only and are subject to change at project level. An explanation of this was inserted into each of the documents Plan, SEA and AA. Other routes, primary, secondary and feeder are also indicative and not set in stone but merely a plan for the future development of these routes.
DAHG - NPWS	Draft Plan	The SEA, AA and EIA processes should establish if a route is feasible ecologically, as well as from an engineering point of view, before committing to a definite route at either Plan or project level. It is noted that it is stated in section 2.4 of the Plan that at project stage there will be environmental appraisal, Habitats Directive Assessment and EIA where appropriate. We request early consultation with this Department in advance of the selection of final routes at project stage. This Department	A new statement was inserted into the plan as follows: <i>‘in advance of any project work on greenway routes, the National Parks and Wildlife Service (NPWS) will be consulted and at a minimum an ecological survey and ecological impact assessment (EclA) will be carried out in advance of final route selection to ensure the proposed route is ecologically feasible before continuing further. Projects will also</i>

DAHG - NPWS	Draft Plan	<p>The SEA, AA and EIA processes should establish if a route is feasible ecologically, as well as from an engineering point of view, before committing to a definite route at either Plan or project level. It is noted that it is stated in section 2.4 of the Plan that at project stage there will be environmental appraisal, Habitats Directive Assessment and EIA where appropriate. We request early consultation with this Department in advance of the selection of final routes at project stage. This Department requests that the Plan states that in advance of any project work on greenway routes that the National Parks and Wildlife Service (NPWS) will be consulted and that at a minimum an ecological survey and ecological impact assessment (EclA) will be carried out in advance of final route selection to ensure the proposed route is ecologically feasible before continuing further. Projects will also need to be screened for appropriate assessment requirements and their impacts considered cumulatively. At project level, the overall context will have to be kept in view to avoid the construction of an element of the network before it is clear that connecting elements to that element are ecologically possible within the legal requirements of the Birds and Habitats Directives and the Wildlife Acts. The NPWS of this Department should be consulted regarding the scope for an EclA.</p>	<p>A new statement was inserted into the plan as follows: <i>'in advance of any project work on greenway routes, the National Parks and Wildlife Service (NPWS) will be consulted and at a minimum an ecological survey and ecological impact assessment (EclA) will be carried out in advance of final route selection to ensure the proposed route is ecologically feasible before continuing further. Projects will also need to be screened for appropriate assessment requirements and their impacts considered cumulatively'</i>.</p> <p>The key purpose of the Plan is to ensure that when any of the individual elements (routes) of the cycle network are developed they are done so within the context of the overall plan. Any development of future routes will have to demonstrate at project level that connectivity to other elements of the network has considered ecological issues and where an EclA is required its scope will be agreed with the NPWS.</p>
DAHG - NPWS	Draft Plan	<p>Routes along any ecological corridor as envisaged under Article 10 of the Habitats Directive also have the potential to have a negative impact on biodiversity. This includes proposed routes along waterways, some of which are designated as SACs or SPAs such as the River Barrow and River Boyne, and disused railway lines. Such ecological corridors provide pathways for the dispersal and genetic exchange of species. These sites can contain species such as otters (protected under the Wildlife Acts and listed on Annexes II and IV of the Habitats Directive), bats (protected under the Wildlife Acts and listed on Annex II of the Habitats Directive), kingfishers (protected under the Wildlife Acts and listed under Annex I of the Birds Directive (Directive 2009/147 EC)) plants protected under the Wildlife Acts, red-listed species and habitats listed</p>	<p>Where it was not already stated clearly any proposed greenway routes along ecological corridors that include waterways and disused railway lines now contain additional mitigation measures where needed to ensure that consideration is given to the protection of otters (protected under the Wildlife Acts and listed on Annexes II and IV of the Habitats Directive), bats (protected under the Wildlife Acts and listed on Annex II of the Habitats Directive), kingfishers (protected under the Wildlife Acts and listed under Annex I of the Birds Directive (Directive 2009/147 EC)) plants protected under the Wildlife Acts, red-listed species and habitats listed on annex II of the Habitats Directive as well as other habitats of</p>

DAHG - NPWS	SEA	<p>SEA Objectives</p> <p>Objective 1 needs some modification. For instance, the objective includes SACs, SPAs, NHAs, protected species and qualifying interests that occur inside and outside of designated sites but the comments suggest a misunderstanding, i.e. that species protected under the Wildlife Acts and red data listed species are protected under EU legislation, which is not the case. Protection under the Birds and Habitats Directives is additional to protection afforded by the Wildlife Acts. In addition, the potential indicator only concerns designated sites. Meanwhile, the assessment in Table 9.1 and the monitoring in Table 11.1 have only considered Natura 2000 sites for this objective. This needs to be amended. Thus, the Department recommends that objective 1, in particular its comments and potential indicators, are reworded to include habitats and species outside of designated sites including those species protected under the Wildlife Acts.</p>	<p>It was agreed that the wording of this SEA objective as it previously stood was confusing, it was originally intended that in addition to European designated sites, the objective contain those species listed under the Wildlife Act and the Red Data Book species but these were not included. The wording of SEA Objective 1 as listed in the SEA Environmental Report was amended to include habitats and species outside of designated sites including those species protected under the Wildlife Acts. The potential indicator associated with this objective was also amended to include Red Data List Species and species protected under the Wildlife Acts. Table 9.1 and Table 11.1 were then reassessed to ensure that all those species and habitats that were not previously assessed for significant impacts were then considered.</p>
DAHG - NPWS	SEA	<p>It is not clear why table 7.10 shows no interaction between population and biodiversity flora and fauna. It would be expected that an increase in population would lead to impacts on biodiversity flora and fauna.</p>	<p>Table 7.10 was amended to include the interaction between population and biodiversity, flora and fauna. Interactions identified are discussed in the section that follows.</p>
DAHG - NPWS	SEA	<p>Examination of alternatives</p> <p>The SEA has examined 4 main alternatives. However within the chosen alternative, while it is mentioned that some greenway routes may need to be amended to go on roads, it is not clear if other alternative greenway routes, such as through agricultural land, were considered. Thus it is unclear if the examination of alternatives is sufficient.</p>	<p>Response to the NPWS stated that in certain circumstances alternative greenway routes, such as through agricultural land, were considered. For example with regard to the River Boyne Greenway page 20 of the main plan text states '<i>Further upstream the route may follow suitable local roads as an interim measure pending an off-road route across agricultural lands along the river bank</i>'. Agricultural land therefore was an alternative greenway route option and the wording of Alternative no. 4 was amended to highlight this.</p>
DAHG - NPWS	SEA	<p>Table 9.2 shows many of the greenway routes rate a negative value against the biodiversity flora, and fauna objectives. Mitigation measures for greenways are dealt with in Table 10.1</p>	<p>The mitigation measure for the Grand Canal as highlighted by the NPWS were included as a mitigation measure within the plan under the section</p>

DAHG - NPWS	SEA	Table 9.2 shows many of the greenway routes rate a negative value against the biodiversity flora, and fauna objectives. Mitigation measures for greenways are dealt with in Table 10.1 of the SEA. For example the mitigation measure for the Grand Canal greenway is that <i>“The greenway route along the canal should be investigated prior to development to ensure any sensitive habitats or species present are not impacted on”</i> This has been listed as a mitigatory measure for a number of sites and the Department recommends it should be listed as a mitigatory measure for all greenway sites as it is a fundamental requirement that you know what is there before deciding if the project is feasible ecologically or not. It should also be stressed in table 10.1 that AA and EIA will be required at the project level.	The mitigation measure for the Grand Canal as highlighted by the NPWS were included as a mitigation measure within the plan under the section title ‘General Mitigation Measures for all Greenway Routes’. Table 10.1 was also amended to include the requirement for AA and EIA at project level where required.
DAHG - NPWS	SEA	This Department recommends the SEA environmental report is amended to take account of the above comments, and the draft Plan accordingly.	All the comments submitted on the SEA ER by the DAHG NPWS were considered and where the NTA considered that amendments to the SEA ER were required these were made. Justification has been

Table 3.3 – Selection of responses received from EPA on Draft Cycle Network Plan and Actions proposed to address issues

Environmental Authority	Comments relate to:	Concern/Comments	Action Proposed
EPA	Plan	<p>The level of detail provided in relation to the various existing cycle network and proposed additional routes both within the rural, urban and inter-urban areas within the Plan area is noted. Consideration should, however, be given to clarifying how the SEA and Habitats Directives have been taken into account in the Plan. The SEA accompanying the Plan contains significant information on the environmental sensitivities within and adjacent to the Plan area including (Designated National / European Conservation sites, WFD Register of Protected Areas, landscape character areas etc.), however it is unclear to the extent which the Plan protects these sensitivities.</p> <p>In this regard consideration should be given to summarising the environmental sensitivities and the proposed key mitigation</p>	<p>The finalised version of the plan contains a summary of the environmental sensitivities and the proposed key mitigation measures for each sector of the Plan. Reference is made where necessary to the specific mitigation measures listed within Section 10. of the SEA Environmental Report where these need to be highlighted as part of any future projects. This then addresses the environmental sensitivities within and adjacent to the Plan area.</p> <p>The environmental monitoring of the plan is discussed in Section 11 with a detailed account of the SEA monitoring programme for the plan set-out in Table 11.1 of the Environmental Report.</p>

Environmental Authority	Comments relate to:	Concern/Comments	Action Proposed
		measures for each sector of the Plan. There would also be merits in describing the environmental monitoring to be carried out in implementing the Plan.	
EPA	Plan	<p>Given that the greater potential for likely significant effects has been identified as being associated with the Green Routes, consideration should be given to carrying out a separate more focused assessment (including SEA and AA) for the development of these Green routes within the Plan area. Such an approach would provide for a proper assessment of the potential route selection options and associated alternatives in a consistent and coordinated manner. It would also provide for a more detailed assessment of potential cumulative effects.</p>	<p>A detailed assessment for each of the greenway routes was carried out as part of the SEA Environmental Report. Specific mitigation measures were formulated as part of this assessment to address any likely significant impacts on the environmental topics as a result of each route. These mitigation measures are listed in Section 10.3 of the report, with general mitigation measures to also apply as listed in Section 10.2.</p> <p>The AA NIS also examined the impacts of the proposed greenway routes on the various European designated sites that may be impacted upon. Mitigation measures in relation to each site have been outlined in Section 4.1. All those mitigation measures listed for the proposed greenway routes as outlined in the AA NIS and SEA ER are incorporated into the finalised version of the Plan either through a list of general mitigation measures that will apply across the board or reference to more specific mitigation measures for individual routes. This ensures that when any of the routes go forward to project stage that the mitigation measures outlined at plan stage are taken into account.</p>
EPA	Plan	<p>It should be clarified whether the alternative development scenarios (in the SEA Environmental Report) and in particular those related to the route corridors for the green routes have been adequately assessed and preferred approaches selected adequately justified.</p> <p>The selection of the preferred development scenario should also describe how the route selection for the various green routes highlighted in the maps has been decided upon. Where individual preferred routes have not been selected, the route</p>	<p>A detailed assessment of the alternative development scenarios was carried out in Section 8.1 of the SEA ER. The routes proposed for the new greenway cycleways have been assessed fully in Table 9.2 of the SEA ER. The impacts expected by these routes are highlighted here and the proposed mitigation measures to address these conflicts have been presented in Section 10.3. The majority of the greenway routes propose travel through areas of</p>

Environmental Authority	Comments relate to:	Concern/Comments	Action Proposed
		<p>selection process should take into account the environmental issues identified in the SEA. The potential for cumulative / in-combination effects should also be considered and described. Where individual green route selection (including Bray to Wicklow coastal route, route crossing of Malahide and Rogerstown Estuaries and the Sutton to Sandymount - South) has not been finalised, provisional/suggested routes should be appropriately highlighted on the various maps.</p>	<p>scenic landscape and may encounter greater environmental sensitivities in certain areas than other more urban routes. When selecting the greenway routes a variety of options were examined e.g. in certain circumstances alternative greenway routes, such as through agricultural land, were considered. For example with regard to the River Boyne Greenway page 20 of the main plan text states <i>'Further upstream the route may follow suitable local roads as an interim measure pending an off-road route across agricultural lands along the river bank'</i>. This may not have been made clear in the SEA ER and therefore the wording of Alternative no. 4 was amended to highlight this. It is stated in the plan that where it is determined that a greenway route is not feasible at project stage then alternative diversion to on road connections will be provided. All the proposed on road connections are displayed clearly on the maps included in the plan, as Primary, Secondary, Inter-urban or urban/town network routes.</p>
EPA	SEA	<p>Biodiversity There would be merits in including a map in the Plan and SEA ER of the existing "green infrastructure" network comprising ecological corridors and linkages within the Plan area. The Plan should refer to the existing green infrastructure strategies for County Meath, and for Fingal and a need to protect and appropriately manage development which may impact upon the integrity of this network.</p>	<p>Several of the greenway routes follow areas already outlined in the relevant County Development Plans as green infrastructure networks. When assessing any future greenway routes at project level the green infrastructure strategies included in the relevant County Development Plan will have to be taken into account. In particular the Fingal County Development Plan contains a dedicated chapter to green infrastructure and its BAP provides locational mapping for each of these green networks. A statement was inserted into the Plan that highlighted the work that the GDA Councils have put into developing green networks and that where possible the proposed greenway routes should seek to enhance these assets through additional connection and integration, which would encourage an increase in biodiversity in the areas. The statement also states</p>

Environmental Authority	Comments relate to:	Concern/Comments	Action Proposed
			that these areas need to be managed appropriately to ensure that the greenway routes would not result in any negative impact on the integrity of the network.
EPA	SEA	It is noted that the Plan identifies the potential for significant effects to be most likely to occur as a result of the proposed additional green routes within the Plan area. In light of this fact, while the inclusion of <i>Table 9.2 Assessment of Greenway Routes against SEA Objectives</i> is acknowledged, clarification should be provided as to how the information in this table has been taken into account in the Plan.	The environmental impacts that have been highlighted as a result of Table 9.2 were examined and appropriate mitigation measures for each of the greenway routes were then presented in Table 10.1. The mitigation measures listed in this table were incorporated into the finalised plan to ensure that any likely significant effects were addressed sufficiently. This was done either through general mitigation measures or by reference to the specific individual mitigation measures for each route in table 10.1 of the SEA ER.
EPA	SEA	The commitments <i>included Section 10.2 General Mitigation points to be noted are acknowledged</i> , however these commitments should be reflected in the Plan as specific relevant objectives.	The general mitigation measures included in Section 10.2 were also included in the finalised plan.

Table 3.4 – Response received from Fingal Co. Co. on Draft Cycle Network Plan and Actions proposed to address issues

Fingal County Council	Comments relate to:	Concern/Comments	Action Proposed
Senior Executive Planner (SEP)	SEA	One of the aims of the SEA process is to provide a high level of protection for the environment. It is not clear that the proposed plan and in particular the routes chosen have been informed by a detailed analysis of issues like biodiversity, landscape or cultural heritage. The plan appears to rely on future project level analysis of each proposal at which point environmental issues will be addressed. There is the potential that this approach will not properly assess the environmental impacts of the routes, their cumulative impact and their interactions with other plans.	The SEA ER has carried out a detailed assessment of all the routes present in Fingal. Where likely significant effects have been identified appropriate mitigation measures are identified in Table 10.1 and Section 10.2 of the SEA ER. These mitigation measures have been integrated into the final version of the plan to ensure that any of the routes developed will not have a significant impact on the environment in the area, nor a cumulative impact on the surrounding area e.g. pollution to river catchment.

Table 3.5 – Responses received from AACO on Draft Cycle Network Plan and Actions proposed to address issues

AACO	Comments relate to:	Concern/Comments	Action Proposed
Conservation Officer ¹ (Association of Architectural Conservation Officers)	Plan and SEA	The majority of images shown of cycleways within the draft plan are of standard design with tarmacadamed surface, road markings and lighting. AACO believes it is important that if interventions proposed within historic environments that they should be carefully appraised first of the appropriateness of inserting them in that location and where it is acceptable that there is a sensitivity to the design and amount of additional elements and is not comparable with what is acceptable and expected of cycleways along a modern urban street.	Noted – The design of the proposed new cycleway routes will have to be cognisant of the surrounding environment when there is a historical element e.g. ACA, Protected Structure or RMPs. To ensure this issue is highlighted within the Plan, an additional general mitigation measure has been inserted into Section 10.2 of the revised SEA ER and also in the revised plan. This ensures that all these elements will be taken further into account at project stage.
	SEA	In the table of the proposed SEA objectives and within Cultural Heritage Section (Section 7.12) reference is not made to all the statutory designations (RMPs, Protected Structures, ACAs). There are no formal or statutory designations known as Areas of Architectural Heritage or Areas of High Architectural Potential. The Department of Arts, Heritage and the Gaeltacht is the relevant government department not DEHLG or DECLG. It is not clear what is meant by properties managed by cultural	Section 7.12 of the SEA ER was amended to include all the statutory designations present including RMPs, Protected Structures and ACAs. Reference to the DEHLG was changed to DAHG. The wording of the comments column of SEA Objectives Table 4.2 in relation to the Cultural Heritage was then amended to include ' <i>archaeological resources which include Architectural Conservation Areas (ACAs), Protected Structures and structures and zones of archaeological interest listed on the Record of Monuments and Places (RMPs)</i> '. In response to the comment regarding the analysis of the potential impact of the routes on the cultural heritage in Fingal, the NTA state that the locations of all ACA's (30 locations) and Protected Structures (800 structures) as well as the RMPs were examined when assessing each of the proposed routes. This is a strategic level plan, and even though proposed routes are identified,

¹ Helena Bergin, Chairperson, Association of Architectural Conservation Officers (AACO) – Fingal County Council

		<p>heritage groups. A thorough analysis of the potential impacts on the cultural heritage is not provided.</p>	<p>the more detailed assessment of impacts on cultural heritage will be carried out at project level. At this level the measures taken to protect cultural heritage have been addressed through the insertion of mitigation measures for the proposed new greenway routes. In order to address the AACOs concerns with regard to the lack of protection provided to ACAs and RMPs, the Cultural Heritage mitigation measures listed in Table 10.1 have been amended to include reference to ACAs, Protected Structures and RMPs. This will ensure all aspects of the cultural heritage environment are considered when the routes progress to project level.</p>
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To Note: Amendments to the Draft Plan

Where amendments to the Plan were made, these were screened for likely significant effects in accordance with the criteria as set out in Schedule 1 of the SEA Regulations 2004 and were subject to the same method of assessment applied in the “environmental assessment” of the Draft Plan.

4.0 REASONS FOR CHOOSING THE PLAN AS ADOPTED, IN LIGHT OF OTHER REASONABLE ALTERNATIVES CONSIDERED:

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 of the SEA ER. The results of this assessment led to the development of the GDA Cycle Network Plan.

4.1 Alternatives Assessment

Chapter 8 of the Environmental Report summarises the environmental assessment of the plan alternatives. Under Schedule 2 of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004, part (h) it is stated that the following should be included in an environmental report of this nature:

“an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information”

As a mechanism of measuring the effects of each alternative on the environment, the alternatives were tested against the SEA Objectives outlined in the previous section.

The general basis of the alternatives assessment consisted of a comparison of the environmental effects that each alternative option had. An assessment rating from –3 (major negative) to +3 (major positive) and associated text commentary was provided for the entire assessment against each of the individual SEA Objectives.

4.2 Alternative Options and Preferred Option

The alternatives derived for the SEA were 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.

Option 1 – Do-Nothing

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

In the absence of the Cycle Network Plan traffic volumes were likely to continue to increase, and this increase was expected to mainly consist of private car traffic. A series of detrimental effects could then accompany this increase in the number of private cars, which may have included:

- 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.

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 has other disadvantages which included:

- 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 may force traffic to encroach into cycle lanes increasing the risk of collisions with cyclists.

However, an increase in these type of facilities also had 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; and
- The air quality of these areas could be significantly improved due to the decrease in private car use as a result of the increased preference of bicycle over the car.

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 were many significant advantages to this option. They included:

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

However it was also considered that 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 could 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 could increase the amount of surface water and potentially cause local flooding in the absence of mitigation.

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

This option allowed for a greater degree of flexibility when delivering the GDA Cycle Network. A combination of the previous 3 route options could be applied where needed to suit the different environments present at each location. This option was chosen over the others 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.

Each of the Alternative Options was evaluated using the SEA Objectives and the baseline information. The full description of the impacts of implementing the differing development alternatives on the receiving environment is contained within Chapter 8 of the Environmental Report. A summary evaluation table assessing the alternatives against the Strategic Environmental Assessment Objectives (SEOs) is set out below;

Table 4.1 – Summary of likely significant impacts that each option may have on the SEA Objectives

	Likely to Improve status of SEA Obj.	No likely Interaction - Neutral	Likely to have negative impact
Option 1		B1-6, L8, W16-20, C24, S25-28, M29, M31, CH32	L7, P9, P10, H11-14, W15, A21, A22, C23, M30
Option 2	P9, P10, H11, H12, H13, H14, W15, W16, A21, A22, C23, M29-31	B1-3, L7, L8, W17-20, C24, SG25-28, CH32	B4, B5, B6
Option 3	P9, P10, H11-14, W15, A21, A22, C23, M29, M30	W16, W17, W20, SG27, SG28, M31	B1-6, L7, L8, W18, W19, C24, SG25, SG26, CH32
Option 4	B3, P9, P10, H11, H12, H13, H14, W15, A21, A22, A23	W16, W17, SG27, SG28	B1, B2, B4, B5, B6, L7, L8, W18, W19, A24, SG25, SG26, CH32

Table 4.2 – Synopsis of SEA Objectives

Biodiversity	
B1	Avoid impacts on SACs, SPAs, NHAs & all protected species/habitats
B2	Support the strategic objectives of the National Biodiversity Plan
B3	Minimise impacts on locally-important biodiversity in the GDA
B4	Protect against the accidental introduction of alien plant species such as Japanese Knotweed and Giant Hogweed during development
B5	Ensure suitable buffer zones are in place along rivers, riparian areas, coastal areas or mountain paths
B6	Protect existing hedgerows against unnecessary damage
Landscape	
L7	Minimise impacts on designated and protected landscapes and conservation areas.
L8	Minimise impacts on undesignated landscape resources
Population	
P9	Increase accessibility to economic and employment opportunities through the cycle network
P10	To increase accessibility to public, cultural and community services through use of the cycle network
Human Health	
H11	Contribute to improvements to transport-related aspects of quality of life for residents, workers and visitors
H12	Support the objectives of the Environmental Noise Directive in relation to transport-related noise
H13	Minimise safety risks to human health
H14	Support health improvements and benefits from a modal shift to cycling
Water	
W15	Support the forthcoming River Basin Management Plans (RBMP) and Programme of Measures (POM)
W16	Minimise impacts to surfacewater systems and resources.
W17	Minimise impacts to groundwater systems and resources
W18	Minimise impacts to coastal systems and resources
W19	Minimise impacts to transitional systems and resources
W20	Minimise the risk of flooding
Air	
A21	Protect and improve air quality in the GDA
A22	Ensure compliance with the Air Framework Directive
Climatic Factors	
C23	Contribute to the reduction of greenhouse gas emissions
C24	Any new development along coastal areas takes into account the impacts of sea level rise/increased storm occurrence and coastal erosion
Soils & Geology	
SG25	Minimise negative impacts on important and vulnerable soils resources used for agricultural purposes.
SG26	Reduce consumption of construction material and generation of construction waste
SG27	Ensure the remediation of contaminated soils removed as part of any cycle route
SG28	Avoid or, where infeasible, minimise impacts to protected and designated geological and geomorphological sites
Material Assets	
M29	Protect public assets and infrastructure
M30	Reduce the fossil fuel demand by the transport sector
M31	Assist with the reuse and regeneration of brownfield sites
Cultural Heritage	
CH32	Avoid or, where infeasible, minimise impacts to designated cultural, architectural and archaeological resources.

Based on the results of the assessment (shown in Table 8.1 of the ER) the option which demonstrates the highest major positive impacts and lowest possible negative impacts on the environment was chosen as the preferred option. This emerged as Option 4. When looking at Table 4.1 above it has to be borne in mind that even though Option 4 may have a lower number of positive impacts than other options, these positive impacts are moderate to major in nature and no major negative impacts were recorded.

Following the determination that Option 4 was the least likely option to have major negative impacts on the environment, this option was then carried forward to the next stage of assessment and its individual elements were examined in the Chapter 9 of the ER. This chapter sets out, in greater detail, the environmental impacts both positive and negative of Option 4. Where any negative impacts as a result of this option were identified these were discussed in Chapter 10 of the ER and appropriate mitigation measures were introduced where needed². These mitigation measures are discussed further in Section 2.5 of this statement.

² It can be derived from table 9 that in terms of the comparison of the four options, the do-minimum, while neutral in a lot of cases, does not emerge as a preferred approach as it has less positive impacts than the other three and does not envisage any positive impacts on the SEA objectives.

5.0 MONITORING MEASURES

5.1 Introduction

Article 10 of the SEA Directive, requires that monitoring be carried out in order to identify at an early stage any unforeseen adverse effects due to the implementation of the Plan and to be able to undertake appropriate remedial action. Monitoring is a key element of the effective implementation of the Cycle Network Plan. Its purpose is to cross check significant effects which arise during the implementation stage of the Plan against those predicted during the plan preparation stage. Monitoring shall be based on the environmental objectives, target and indicators.

The SEA monitoring programme for the plan is set-out below in Table 5.1. Both the positive and negative effects of the plan on the environment are to be considered in the monitoring programme and recorded for all 32 SEA Objectives. The future monitoring process will be undertaken with a view to better understand 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 biennial 'Monitoring Report' is prepared to report on the progress of the SEA monitoring programme and that a summary of key actions required to address both predicted and also unforeseen significant environmental effects be 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.

5.2 Monitoring Indicators

The purpose of indicators is to monitor the effectiveness of the Plan in meeting the environmental objectives and targets identified in this Report. The methodology for the development and selection of the SEA indicators for the Cycle Network Plan has been informed by the scoping process, the baseline assessment and the identification of existing environmental problems.

Table 5.1 lists indicators and targets which may be amended during the life of the Plan, subject to the availability of resources, data and relevance of the indicators to monitor the environmental baseline. The indicators allow quantitative measures of trends and progress over time relating to the SEOs used in the evaluation. Focus is given to indicators which are relevant to the likely significant environmental effects of implementing the Plan and existing monitoring arrangements shall be used in order to monitor the selected indicators where possible.

5.3 Monitoring Sources and Responsible Sections

CSO – Central Statistics Office

DoECLG – Department of Environment, Community and Local Government

EPA – Environmental Protection Agency

HSE – Health Service Executive

Local Authorities – Greater Dublin Area Local Authorities

NBDC – National Biodiversity data centre

NPWS – National Parks and Wildlife Service

NRA – National Roads Authority

NTA – National Transport Authority

OPW – Office of Public Works

RSA – Road Safety Authority

WI – Waterways Ireland

5.4 Responsibility

The NTA are responsible for gathering the monitored data, the preparation of the interim report associated with biennial reports and the implementation of corrective actions, where necessary.

Table 5.1 – Monitoring Targets and Indicators for GDA Cycle Network Plan

SEA Objective	Targets	SEA Monitoring Indicator	Source	Authority
Biodiversity				
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.	No reduction in habitat diversity or loss of species in non-designated sites.	<ul style="list-style-type: none"> Area of direct impacts on Natura 2000 network affected by implementation of Plan. Number of licenses applied for works that may affect European Protected Species as a result of the GDA CNP. 	<ul style="list-style-type: none"> Project level HDA (where applicable for projects) NPWS Reporting County and City Development Plan Reporting (relevant to Natura 2000 Network) 	<ul style="list-style-type: none"> Local Authorities National Parks and Wildlife Service
2. To support the strategic objectives of the National Biodiversity Plan(NBP).	Comply with the strategic objectives of the NBP	<ul style="list-style-type: none"> Key findings and reporting of the National Biodiversity Plan 	<ul style="list-style-type: none"> Updates and Reviews of National Biodiversity Plan 	<ul style="list-style-type: none"> Department of Environment, Community and Local Government
3. To minimise impacts on locally-important biodiversity in the Greater Dublin Area.	No significant impacts on locally important biodiversity in GDA	<ul style="list-style-type: none"> Impact on biodiversity from Plan cycling schemes; Area of greenfield land zoned for development; Region-wide biodiversity impacts 	<ul style="list-style-type: none"> Project level EIA County and City Development Plan Reporting (relevant to biodiversity); Biodiversity Action Plan Reporting 	<ul style="list-style-type: none"> NRA Local Authorities
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.	Prevent introduction of new invasive species. Control or manage current invasive species to prevent a spread in their distribution.	<ul style="list-style-type: none"> Any new records of invasive species reported 	<ul style="list-style-type: none"> Local Authority or NBDC NPWS reporting Project level HDA or EIA 	<ul style="list-style-type: none"> Local Authorities NRA NTA NPWS

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.	Suitable buffer zones in place where required	<ul style="list-style-type: none"> Impact of biodiversity from Plan cycle schemes Area of greenfield land zoned for development; Region-wide biodiversity impacts Biodiversity impacts on locally known species 	<ul style="list-style-type: none"> NPWS NBDC Project level HDA or EIA 	<ul style="list-style-type: none"> Local Authorities Waterways Ireland NPWS
6. To protect existing hedgerows against unnecessary damage during the development of the cycle network.	No unnecessary impacts on existing hedgerows. Where required replacement hedgerow will be planted.	<ul style="list-style-type: none"> Impact of biodiversity from Plan cycle schemes Biodiversity impacts on locally known species 	<ul style="list-style-type: none"> NPWS NBDC Project level HDA or EIA Local Authority 	<ul style="list-style-type: none"> Local Authority NTA
Landscape				
7. To avoid or, where infeasible, minimise impacts on designated and protected landscapes and conservation areas.	No diminution in the quality of important landscapes	<ul style="list-style-type: none"> Impacts on designated landscapes from Plan 	<ul style="list-style-type: none"> Local Authority Project level EIA where relevant 	<ul style="list-style-type: none"> Local Authorities
8. To minimise impacts on undesignated landscape resources (townscapes, seascapes, riverscapes, general landscapes).	No diminution in the quality of important landscapes	<ul style="list-style-type: none"> Localised landscape impacts 	<ul style="list-style-type: none"> Project level EIA 	<ul style="list-style-type: none"> NTA Local Authorities
Population				
9. To increase accessibility to economic and employment opportunities, in particular for those who are physically, economically or socially disadvantaged within the GDA.	Increases and improvements in quality of services, amenities and accessible cycle routes available to the public.	<ul style="list-style-type: none"> Time taken to travel to work, including for disadvantaged Rates of Unemployment by ED in GDA Specific monitoring of accessibility (travel times, frequency of PT, alternative PT options etc.) 	<ul style="list-style-type: none"> Analysis of Censuses of Population Live Register Quarterly National Household Survey NTA specialist monitoring 	<ul style="list-style-type: none"> Central Statistics Office NTA

<p>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.</p>		<ul style="list-style-type: none"> • Time taken to travel to schools, colleges, retail, cultural facilities and services, including for disadvantaged • Specific monitoring of accessibility (travel times, frequency of PT, alternative PT options etc.) 	<ul style="list-style-type: none"> • Analysis of Censuses of Population • NTA Household Surveys • NTA specialist monitoring 	<ul style="list-style-type: none"> • Central Statistics Office • NTA
Human Health				
<p>11. To contribute to improvements to transport-related aspects of quality of life for residents, workers and visitors to the GDA.</p>	<p>Improvement in access and availability of cycle routes within GDA.</p>	<ul style="list-style-type: none"> • Transport mode split • Extent of walking/cycling networks delivered (km) • Mean Travel Times • User satisfaction surveys 	<ul style="list-style-type: none"> • Analysis of Censuses of Population • NTA Travel and Household Surveys • Dublin City Canal Cordon Counts 	<ul style="list-style-type: none"> • Central Statistics Office • NTA • Dublin City Council
<p>12. To support the objectives of the Environmental Noise Directive in relation to transport-related noise.</p>	<p>Reduction in overall noise levels in areas of high traffic.</p>	<ul style="list-style-type: none"> • Monitoring and reporting associated with the Noise Action Plan 	<ul style="list-style-type: none"> • Noise Action Plan Monitoring and Implementation 	<ul style="list-style-type: none"> • Local Authorities
<p>13. To minimise safety risks to human health arising from transport related activity.</p>	<p>Reduction in number of cycling accidents within GDA.</p>	<ul style="list-style-type: none"> • Number Injured and killed in the GDA in Road Accidents 	<ul style="list-style-type: none"> • Annual Road Collision Handbook 	<ul style="list-style-type: none"> • Road Safety Authority
<p>14. To support health improvements and benefits from a modal shift to cycling related transport options.</p>	<p>Increased numbers of cyclists in GDA.</p>	<ul style="list-style-type: none"> • Mode split for cycling and walking • Incidence or prevalence of heart disease or obesity • Self-reported health statistics 	<ul style="list-style-type: none"> • Health Atlas • Analysis of Censuses of Population • Dublin City Canal Cordon Counts • NTA Household Survey 	<ul style="list-style-type: none"> • Health Service Executive • Dublin City Council • Central Statistics Office

Water				
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)	Improve water quality standards in GDA. Reduction in run-off pollution from motorised vehicles.	<ul style="list-style-type: none"> • Direct and indirect impacts on POMs • Applicable monitoring data 	<ul style="list-style-type: none"> • WFD monitoring programme reports 	<ul style="list-style-type: none"> • Relevant River Basin Districts • EPA
16. To minimise impacts to surface water systems and resources.	No reduction in surface water quality standards.	<ul style="list-style-type: none"> • Extent of surface water bodies directly affected by implementation of Plan 	<ul style="list-style-type: none"> • Project level EIA • Development Plans • WFD monitoring programme reports 	<ul style="list-style-type: none"> • NTA • Local Authorities • EPA
17. To minimise impacts to groundwater systems and resources.	No reduction in groundwater quality standards.	<ul style="list-style-type: none"> • Extent of groundwater bodies directly affected by implementation of Plan 	<ul style="list-style-type: none"> • Project level EIA • Development Plans (incl. SEA monitoring) • WFD monitoring programme reports 	<ul style="list-style-type: none"> • NTA • Local Authorities • EPA
18. To minimise impacts to coastal systems and resources.	No increase in coastal pollution.	<ul style="list-style-type: none"> • Extent of coastal systems directly affected by implementation of Plan 	<ul style="list-style-type: none"> • Project level EIA • Development Plans (incl. SEA monitoring) • WFD monitoring programme reports 	<ul style="list-style-type: none"> • NTA • Local Authorities • EPA
19. To minimise impacts to transitional systems and resources.	No additional recorded occurrences of impacts on transitional systems as a result of the cycle network plan	<ul style="list-style-type: none"> • Extent of transitional systems directly affected by implementation of Plan 	<ul style="list-style-type: none"> • Project level EIA • Development Plans (incl. SEA monitoring) • WFD monitoring programme reports 	<ul style="list-style-type: none"> • NTA • Local Authorities • EPA

<p>20. To minimise the risk of flooding.</p>	<p>No additional recorded occurrences of flooding as a result of the cycle network plan. In accordance with OPW/ DEHLG Risk Assessment, require all applications within designated Flood Risk zones A and B to undertake a flood risk assessment as part of the planning application where necessary.</p>	<ul style="list-style-type: none"> • Flood risk • Number, extent and location of flood events in the GDA 	<ul style="list-style-type: none"> • Project level EIA • Flood Mapping 	<ul style="list-style-type: none"> • NTA • Local Authorities • Office of Public Works
Air				
<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>20% reduction in greenhouse gas emissions from 1990 levels by 2020. Increase investment in cycle-ways and footpaths</p>	<ul style="list-style-type: none"> • Air quality monitoring reports 	<ul style="list-style-type: none"> • EPA Air Quality Reports • Local Authority Annual Reports 	<ul style="list-style-type: none"> • EPA • Local Authorities
<p>22. To ensure compliance with the Air Framework Directive and associated daughter Directives (and the transposing Regulations in Ireland).</p>		<ul style="list-style-type: none"> • Air quality monitoring reports 	<ul style="list-style-type: none"> • EPA Air Quality Reports • Local Authority Annual Reports 	<ul style="list-style-type: none"> • EPA • Local Authorities
Climatic Factors				
<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>20% reduction in greenhouse gas emissions from 1990 levels by 2020. Increase investment in cycle-ways and footpaths</p>	<ul style="list-style-type: none"> • Sectoral GHG emissions • Atmospheric Carbon Dioxide Levels 	<ul style="list-style-type: none"> • EPA Reporting (Indicators) 	<ul style="list-style-type: none"> • EPA

<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>	<p>No vulnerable development in flood risk or areas risk of coastal flooding.</p>	<ul style="list-style-type: none"> • Sea level rise 	<ul style="list-style-type: none"> • Local Authority data on local monitoring • International sea level station monitoring facility 	<ul style="list-style-type: none"> • Department of Communications, Marine and Natural Resources • NPWS
<p>Soils & Geology</p>				
<p>25. To minimise negative impacts on important and vulnerable soil resources used for agricultural purposes.</p>	<p>Maintenance and conservation of soil quality, especially in regard to organic matter content.</p>	<ul style="list-style-type: none"> • Land cover changes in the GDA 	<ul style="list-style-type: none"> • CORINE Land Cover data chances • Development Plan data (incl. SEA monitoring) 	<ul style="list-style-type: none"> • EPA • Local Authorities
<p>26. To reduce consumption of construction material and generation of construction waste as part of the development of the cycle network.</p>	<p>Where possible reuse construction materials taken from areas along cycleway.</p>	<ul style="list-style-type: none"> • Estimated level of construction waste recovered during major transport schemes 	<ul style="list-style-type: none"> • Information on Major Transport Infrastructure Projects 	<ul style="list-style-type: none"> • NTA
<p>27. Ensure the remediation of contaminated soils removed as part of any cycle route.</p>	<p>Any contaminated soils removed from site during construction will be treated accordingly and not reused in other area.</p>	<ul style="list-style-type: none"> • Volume of contaminated soil encountered during projects • Volume of contaminated soil removed during project work 	<ul style="list-style-type: none"> • Local Authority • EPA 	<ul style="list-style-type: none"> • NTA • EPA
<p>28. To avoid or, where infeasible, minimise impacts to protected and designated geological and geomorphological sites.</p>	<p>Retain or increase the conservation status of important geological sites throughout the county.</p>	<ul style="list-style-type: none"> • Impacts on designated geological and geomorphological sites (when/if developed) by Cycle Network Plan. 	<ul style="list-style-type: none"> • Project level EIA • NPWS Reporting 	<ul style="list-style-type: none"> • NTA • NPWS • Local Authorities

Material Assets				
29. To protect public assets and infrastructure.	No damage to existing public assets and infrastructure.	<ul style="list-style-type: none"> Public transport use and modal share Condition of existing cycle network infrastructure and Quality of Services Condition of public assets such as parks and recreational assets Road, Footpath and Cycle Facility Maintenance Budget 	<ul style="list-style-type: none"> Public Transport Statistics (all modes of transport) Census data (transport info) Surveys 	<ul style="list-style-type: none"> NTA Central Statistics Office Local planning authorities Department of Transport
30. To reduce the fossil fuel demand by the transport sector.	Increased numbers of cyclists in GDA.	<ul style="list-style-type: none"> Number of people now using bicycles are their main source of transport Sales of Petrol and Diesel 	<ul style="list-style-type: none"> Public Transport Statistics (all modes of transport) Census data (transport info) Revenue returns 	<ul style="list-style-type: none"> Central Statistics Office Revenue
31. To assist with the reuse and regeneration of brownfield sites.	Develop as many derelict, disused and infill sites as appropriate and possible.	<ul style="list-style-type: none"> Proportion of development occurring on brownfield sites 	<ul style="list-style-type: none"> Development Plans Local Area Plans Analysis of Planning Permissions and Local Authority Projects Geo-Directory 	<ul style="list-style-type: none"> Local Authorities An Post Central Statistics Office
Cultural Heritage				
32. To avoid or, where infeasible, minimise impacts to designated cultural, architectural and archaeological resources.	No damage occurring to structures or monuments due to development. Maintain and increase the number of archaeological features recorded and protected.	<ul style="list-style-type: none"> Sites affected by implementation of the plan. 	<ul style="list-style-type: none"> Project level EIA 	<ul style="list-style-type: none"> NTA Local Authorities