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National Roads 2040

Strategic Environmental Assessment Statement
of the National Roads 2040 Strategy

April 2023



Tionscadal Éireann
Project Ireland
2040



FIROD
FOURHAN & O'DONOVAN

AECOM

NR2040

SEA Statement

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LIST OF ACRONYMS

AA	Appropriate Assessment
ACA	Architectural Conservation Area
App	Application - online
BAU	Business as Usual
BOS	Biofuels Obligation Scheme
BRT	Bus Rapid Transit
C&D	Construction and Demolition
CAFÉ	Clean Air for Europe
CO	Carbon Monoxide
CSO	Central Statistics Office
DAFM	Department of the Agriculture, Food & Marine
DAERA	Department of Agriculture, Environment and Rural Affairs (NI)
DCCAE	Department of Communication, Climate Action and Environment
DECC	Department of the Environment, Climate and Communications
DoT	Department of Transport
DHLGH	Department of Housing Local Government and Heritage
DTTaS	Department of Transport, Tourism and Sport
EC	European Commission
EEA	European Environment Agency
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPO	Environmental Protection Objective
ESB	Electricity Supply Board
ETS	Emissions Trading System
EU	European Union
EV	Electric Vehicle
FRA	Flood Risk Assessment
FRA	Flood Risk Assessment
GHG	Green-house Gas
GHG	Greenhouse gas
GI	Green Infrastructure
GSI	Geological Survey of Ireland
HDA	Habitats Directive Assessment
HSA	Health and Safety Authority
IFI	Inland Fisheries Ireland
ITM	Irish Transverse Mercator

ITS	Intelligent Transport System
IUCN	International Union for Conservation of Nature
Mt	Metric tonne
NATURA 2000	Network of SPAs and SACs
NCCAF	National Climate Change Adaptation Framework
NDP	National Development Plan
NEC	National Emissions Ceiling
NGO	Non-Governmental Organisation
NH ₃	ammonia
NHA/ pNHA	Natural Heritage Area/ proposed Natural Heritage Area
NIA	Natura Impact Assessment
NIAH	National Inventory of Architectural Heritage
NIFTI	National Investment Framework for Transport in Ireland
NIR	Natura Impact Report
NIS	Natura Impact Statement
NMP	National Mitigation Plan
NMVOC	Non-methane volatile organic compounds
NO _x	Nitrogen Dioxide
NPF	National Planning Framework
NPWS	National Parks & Wildlife Service
NSS	National Spatial Strategy
O ₃	ground level ozone
OECD	Organisation for Economic Co-operation and Development
OPW	Office of Public Works
PAHs	Polycyclic aromatic hydrocarbons
PDA 2000	Planning and Development Act 2000, as amended (No. 30 of 2000)
PM ¹⁰ and PM ^{2.5}	Particulate matter
PM _{2.5}	Fine particulate matter
RA	Regional Authority or Regional Assembly
RBD	River Basin District
RBMP	River Basin Management Plan
RES-T	Renewable Energy Share – Transport
RFRA	Regional Flood Risk Appraisal
RMP	Record of Monuments and Places
RPGs	Regional Planning Guidelines
RPS	Record of Protected Structures
RSES	Regional Spatial and Economic Strategy
S.I.	Statutory Instrument
SAC/cSAC	Special Area of Conservation (designated by EU Habitats Directive)/ candidate)

SEA	Strategic Environmental Assessment
SEO	Strategic Environmental Objective
SFRA	Strategic Flood Risk Assessment
SO ₂	Sulphur Dioxide
SPA/pSPA	Special Protection Area (designated under EU Birds Directive)/ proposed
TII	Transport Infrastructure Ireland
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UWWT	Urban Waste Water Treatment
VOCs	Volatile Organic Compounds
VRT	Vehicle Registration Tax
WFD	Water Framework Directive
WHO	World Health Organisation

Units of Measure

ktoe	kilo-tonnes of oil equivalent
Ktonnes	kilotonnes
Mt CO ₂ eq	Metric tons of carbon dioxide equivalent
µm	micrometre

GLOSSARY OF KEY TERMS

Appropriate Assessment	The obligation to undertake Appropriate Assessment derives from Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC. AA is a focused and detailed impact assessment of the implications of a strategic action (such as a plan or programme) or project, alone and in combination with other strategic actions and projects, on the integrity of a European Site in view of its conservation objectives. An AA can consist of two Stages: Stage 1 AA Screening and depending on the result of Stage one a Stage 2 Natura Impact Statement may be required.
Mitigation Measures	Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing a human action, be it a plan, programme or project. Mitigation involves ameliorating significant negative effects. Where there are significant negative effects, consideration should be given in the first instance to preventing such effects or, where this is not possible, to lessening or offsetting those effects. Mitigation measures can be roughly divided into those that: avoid effects; reduce the magnitude or extent, probability and/or severity of effects; repair effects after they have occurred; and compensate for effects, balancing out negative impacts with other positive ones.
Strategic Environmental Assessment	Strategic Environmental Assessment (SEA) is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme before a decision is made to make/adopt it.
Environmental Protection Objectives	Environmental Protection Objectives (EPOs) are methodological measures developed from policies which generally govern environmental protection objectives established at international, Community or Member State level and are used as standards against which the provisions of the Strategy and the alternatives can be evaluated in order to help identify which provisions would be likely to result in significant environmental effects and where such effects would be likely to occur, if - in the case of adverse effects - unmitigated.
Sponsoring Agency or Authority	The Sponsoring Agency/ Authority is the Government Department, Local Authority, or other public body or agency that requires the Project to be undertaken. It has overall responsibility for the proper appraisal, planning and management of Projects (including current expenditure) and for ensuring that the project proceeds along the lines approved by the Sanctioning Authority. Sponsoring Agencies are also responsible for post-project review. In some cases, TII may act as both the Sanctioning Authority and the Sponsoring Agency such as Projects delivered as Public Private Partnership (PPP) Projects.
Project Management Guidelines	Project Management Guidelines (PMGs) provide a framework for a phased approach to the management of the development and delivery of National Road and Public Transport Capital Projects. They are applicable to Projects which are funded through Transport Infrastructure Ireland (TII) and/or TII is the Sanctioning Authority, unless otherwise instructed by TII.

1. INTRODUCTION

Transport Infrastructure Ireland (TII) has prepared the National Roads 2040 Strategy, hereafter referred to as 'NR2040' or the 'Strategy'. NR2040 is TII's long-term strategy for planning, operating, and maintaining the National Roads network. It has been developed to support the delivery of Project Ireland 2040 and to align with the Department of Transport's (DoT) National Investment Framework for Transport in Ireland (NIFTI).

This SEA Statement has been prepared in accordance with Article 15 and 16 of the SEA Regulation S.I. 435 of 2004, as amended by S.I. 200 of 2011. This SEA Statement provides information on the decision-making process and documents how environmental considerations have been taken into account in the preparation of NR2040. The SEA Statement presents the following information:

- Section 1: Introduction and a summary of the key NR2040 Strategy information.
- Section 2: Summary of the SEA process undertaken on NR2040 and integration with the SFRA and AA process;
- Section 3: The influence the SEA process has on preparation of NR2040;
- Section 4: How consultation has influenced NR2040;
- Section 5: Preferred alternative and the reason for choosing it;
- Section 6: Screening of amendments to the Strategy;
- Section 7: Monitoring of significant environmental effects of NR2040; and
- Section 8: Conclusion.

1.1 Summary of key information

Title: National Roads 2040 Strategy (NR2040)

Author: Transport Infrastructure Ireland (TII) –Strategic Planning Unit

Period Covered: The Strategy provides context for planning development of the National Roads network to 2040. It is acknowledged that the strategy will be periodically reviewed in line with national government policy and will be updated as appropriate.

Geographic Scope: NR2040 is applicable to the Republic of Ireland but also allows for considerations in relation to potential all-Island and transboundary National Roads network interactions.

Environmental Assessments that informed the strategy: The SEA Process including SEA Scoping and the Environmental Report, Appropriate Assessment (Natura Impact Statement) and Strategic Flood Risk Assessment (SFRA).

Aim of the Strategy: To publish a long-term vision for the National Roads network which can be used to inform Government Capital Investment Plans and assist in the implementation of a range of Government policies affected by transport including the National Planning Framework (NPF). NR2040 will set out TII's high level Strategy for planning, operating and maintaining the National Roads network to serve the needs of its customers/people over a 20-year horizon.

The NR2040 is to achieve the following **vision** for National Roads in Ireland to 2040:

'An evolving sustainable transport system focused on safety, innovation, accessibility and mobility of people, goods and services'.

The key objectives of the NR2040 Strategy are for the National Roads network to be:

- Safe and efficient transport network for people and goods;
- Environmentally, socially and economically sustainable;
- Tailored for different customers in different places; and
- Managed and improved as a key public asset.

National Roads Investment Priorities and Portfolios:

NR2040's four investment priorities are consistent with the four NIFTI Investment priorities and aligned with the NPF.

- Decarbonisation;
- Protection and renewal;
- Mobility of people and goods in urban areas; and
- Enhanced regional and rural connectivity.

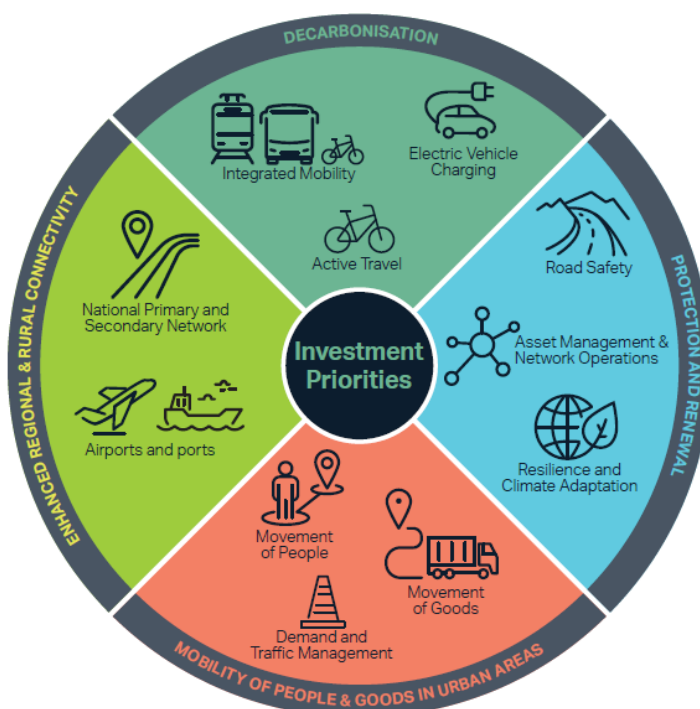


Figure 1-1 NR2040 Four Investment Priorities and Portfolios (NR2040,2022)

Date Strategy was adopted: The Strategy was approved by the TII Board on the 28th of March 2023.

2. SUMMARY OF SEA PROCESS UNDERTAKEN ON NR2040

Under the SEA Directive and transposing national regulations, there are a number of defined stages in the SEA process that are required to be undertaken. These are detailed in the sections below as they relate to the preparation of NR2040 and are summarised in Table 2-6.

2.1 Screening

The SEA Directive requires that certain plans and programmes, prepared by statutory bodies, for particular sectors (including transport), which are likely to have a significant impact on the environment, be subject to the SEA process.

In 2018 TII undertook an SEA Screening in accordance with the requirements of the SEA Directive and transposing Regulations S.I. 435 of 2004 (as amended). It found that NR2040 is likely to influence other plans, including those in a hierarchy and will set the framework for future development consent of projects listed in Annexes I and II to the Environmental Impact Assessment Directive. The screening determined that SEA was required.

2.2 Scoping

The purpose of the Scoping report was to consult with the relevant environmental authorities and to draw an opinion on the scope and level of detail of the environmental information to be included in the Environmental Report and as part of the draft Strategy. Scoping is an on-going activity that is re-activated at key stages in the policy making process as new information or available alternatives are narrowed to a preferred approach.

The SEA Scoping exercise was concerned with the 'likely' and 'significant' strategic environmental effects that the proposed draft Strategy is likely to have on the environment as a result of their implementation. Scoping is undertaken to ensure that the relevant environmental issues are identified allowing them to be addressed appropriately in the ER and considered as part of the preparation of the draft Strategy.

The Scoping Report set out the baseline environmental issues to be considered in the ER, the draft EPOs and the assessment framework. Statutory consultation was carried out with the SEA environmental authorities. All comments were considered as part of the SEA process.

2.2.1 Scoping Consultation

Article 6(3) of the SEA Directive requires that TII give notice to prescribed environmental authorities on the scope and level of details to be included in the Environmental Report. Transboundary consultation was undertaken with the Department of Agriculture, Environment and Rural Affairs (DAERA) in Northern Ireland. The environmental authorities consulted in the scoping stage are listed in Table 2-1.

Table 2-1 Statutory Environmental Authorities for SEA

Name	Address
Environmental Protection Agency	Environmental Protection Agency SEA Section, Office of Environmental Assessment, EPA Regional Inspectorate, Inniscarra, Co. Cork Email: sea@epa.ie
Minister for Housing, Planning, Community and Local Government	EU and International Planning Regulation Unit Department of Housing, Local Government and Heritage, Custom House, Dublin, D01 W6X0 Email: sea@housing.gov.ie
Minister for Housing, Planning, Community and Local Government (where there might be significant effects on architectural or archaeological heritage or nature conservation)	The Manager, Development Applications Unit, Department of Arts, Heritage Regional, Rural and Gaeltacht Affairs Newtown Road, Wexford Email: Manager.dau@housing.gov.ie
Department of Environment Climate and Communications	Corporate Support Unit, Department of Environment, Climate and Communications, Elm House, Earlsvale Road, Cavan, Co. Cavan. H12 A8H7 Email: PlanningNotifications@decc.gov.ie
Department of Agriculture, Food and the Marine	Environmental Co-ordination Unit, Climate Change and Bio Energy Division, Department of Agriculture, Food and the Marine, Pavilion A, Grattan Business Park, Portlaoise, Co. Laois, R32 K857 Email: Environmental_Co-ordination@agriculture.gov.ie
Transboundary Environmental Authorities	
Department of Agriculture, Environment and Rural Affairs	Natural Environment Division, Northern Ireland Environment Agency, Department of Agriculture, Environment and Rural Affairs Klondyke Building, Cromac Avenue, Malone Lower, Belfast, BT7 2JA Northern Ireland Email: SEATeam@daera-ni.gov.uk

2.3 Environmental Report

The SEA Directive requires that information on the baseline environment be focused upon the relevant aspects of the environmental characteristics of areas likely to be significantly affected and the likely evolution of the environment in the absence of the NR2040 Strategy. Any information that does not focus upon this is surplus to requirements; therefore, the SEA focuses on the significant issues. In addition, the SEA Directive aims to avoid duplication of the assessment whereby a strategic action forms part of a hierarchy in the decision-making process. Furthermore, if certain matters are more appropriately assessed at different levels of the decision-making process in which NR2040 is positioned, or if certain matters have already been assessed by a different level of the hierarchy, then additional assessment is not required during the SEA process as they are more appropriately assessed at that level in the decision-making process. For example, at project level planning application through the Environmental Impact Assessment (EIA) stage.

In accordance with the SEA Directive, the ER assessed the likely significant effects on the environment of implementation of the draft NR2040 considering the following information:

- The contents and level of detail in the draft NR2040;
- The stage of the draft Strategy is in the decision-making process;
- The extent to which certain matters are more appropriately assessed at different levels in the decision-making process in order to avoid duplication of environmental assessment;
- The current state of the environment, existing problems and the evolution of the environment in the absence of the draft Strategy;
- Links between NR2040 and other relevant plans and programmes and environmental protection objectives;
- Current knowledge and methods of assessment,
- The likely significant effects (positive, negative or neutral) on the environment of implementing the NR2040;
- Measures envisaged for the prevention, reduction and as fully as possible offset any significant adverse effects;
- An outline of the reasons for selecting the alternatives chosen; and
- Draft measures envisaged to monitor of the significant environmental effects associated with the implementation of the NR2040.

2.3.1 Environmental Assessment

SEA seeks to improve the quality of the plan/policy making process by:

- Raising awareness of the environmental impacts of the Strategy. While it will not always be possible to eliminate all potentially significant negative effects in balancing policy options, SEA at least helps to clarify the likely consequences of such choices and makes specific provision for mitigation measures where some negative impacts cannot be avoided; and
- Encouraging the inclusion of measurable targets and indicators to facilitate effective monitoring of implementation of the Strategy, and thus make a positive contribution to subsequent reviews.

2.3.1.1 Methodology

The assessment of the likely significant effects on the environment of implementing the draft Strategy was carried out using an accepted and commonly used methodology of creating an assessment matrix. The EPOs presented in Table 2-2 below are used as part of the objectives-led assessment of the measures contained within the strategy including the visions, objectives and commitments. The EPOs were developed based on the current understanding of the key environmental issues having regard to existing policy and problems established in the ER under each of the SEA environmental factors.

Table 2-2 Environmental Protection Objectives

Environmental Receptor	Environmental Protection Objectives
Biodiversity (BFF)	Protect, actively conserve, prevent damage and enhance biodiversity, particularly European designated sites, other nature conservation sites (and areas supporting them), protected and threatened habitats and species, and support ecological corridors.
Population and Human Health (PHH)	Protect and enhance the population and human health by increasing accessibility to the economy including employment, recreation and community facilities through an integrated, safe and efficient National Roads network and contribute to reduced harmful transport emissions.
Noise (N)	Reduce, and contribute to mitigation of noise pollution from road transport on National Roads.
Water (W)	Prevent deterioration and continue to support the achievement of good water quality status of all water bodies as required by the Water Framework Directive and avoid increasing flood risk associated with National Roads.
Air Quality (AQ)	Contribute to the reduction of air pollution and improvement in air quality resulting from transport, through the effective design, maintenance and operation of the National Road network.
Climate Change Mitigation (CCM)	Contribute to the reduction in greenhouse gas emissions through design and supporting the decarbonisation of the road transport network.
Climate Change Adaptation (CCA)	Ensure resilience to climate change is incorporated into the National Road network construction, operation and maintenance activities.
Land and Soils (L&S)	Conserve and sensitively use soils and geological resources and protect geological sites of value.
Material Assets (MA)	Ensure the effective use of existing infrastructure and support the circular economy particularly the use and reuse of existing resources, waste and energy across the network and TII assets.
Archaeological, Architectural and Cultural heritage (AACH)	Avoid, protect and/or minimise impacts to designated archaeological, architectural, and cultural heritage resources.
Landscape (L)	Protect designated and sensitive features of note in landscapes and sensitively manage landscape change.

An assessment matrix was developed comprising the text from the measures contained in the draft Strategy which are assessed against the EPOs. The strategy measures are given an assessment rating using the criteria detailed in Table 2-3 below.

Table 2-3 Criteria for assessing the potential effect

Description of Potential Effect	Effect
The NR2040* is likely to have a positive effect on the environmental protection objective.	+
The NR2040* is likely to have a negative effect on the environmental protection objective.	-
The NR2040* the effect is uncertain and/or there is insufficient information on which to determine the effect on the environmental protection objective.	?
The NR2040* is likely to have a neutral effect on the environmental protection objective.	0
The NR2040* is likely to have mixed positive and negative effects on the environmental protection objective	+/-
The NR2040* is likely to have negative or neutral effects on the environmental protection objective.	-/0
The NR2040* is likely to have a positive or neutral effect on the environmental protection objective.	+/0
*Refers to the provision(s) that is being assessed in the draft Strategy i.e., objectives or commitments, etc.	
EPO Abbreviations	
The following notation is used in the assessment tables: BFF (Biodiversity, Flora and Fauna); PHH (Population and Human Health); N&V (Noise and Vibration), W (Water including flooding), AQ (Air Quality), CCM (Climate Change Mitigation), CCA (Climate Change Adaptation), LS (Land & Soils), MA (Material Assets), ACCH (Architectural, Archaeological and Cultural Heritage), and L (landscape).	

When testing the draft NR2040 against each of the EPOs the measures in the Strategy could be rated as having potential positive, negative effects and/or a combination of effects as listed in Table 2-3. For example, where there is potential for predominantly positive effects to occur but also neutral effect on that EPO, the effect is rated as +/0. This criterion is used throughout the SEA for all assessments including the assessment of alternatives summarised in Section 5.0 of this report. The objectives led assessment helps to identify potential environmental effects which are reported in this ER and summarised in this SEA Statement.

A commentary relating to the assessment is provided under each assessment in the SEA ER to aid the reader in understanding the rationale for assigning the rating and potential effects. This approach allows the assessment team to explicitly test the likely significant effects across each of the EPOs to see which objectives/commitments/investments are likely to support the EPOs (positive effects) and which, if any, contradict the EPOs (negative effects) allowing for the strategy team to address the potential negative effects as it is developing.

While there are no specific projects or plans identified in the Strategy, the assessment considers and predicts the likely significant effects that subsequent plans/projects stemming from the measures or wording of the Strategy and their potential impact on the EPOs. The same methodology is applied during the assessment of the alternatives.

2.3.1.2 Summary of the assessment

An assessment was carried on the vision, objectives, investment priorities and commitments contained in the draft Strategy. The SEA team put forward mitigation measures in the form of changes to wording or inclusion of measures to prevent, reduce and as far as possible, offset any likely significant adverse effects on the environment resulting from the implementation of NR2040, this includes measures to be considered at the project level assessment e.g., EIA, AA.

Overall, the SEA found that the Strategy is a high-level document and any plans or projects stemming from it will be required to comply with all relevant environmental and planning legislation. Various mitigation measures were proposed by the SEA, AA and SFRA teams during workshops throughout the iterative process. Changes were included in the form of text changes and/or the inclusion of additional wording/sections in the Strategy. As an example, Section 6.4 of NR2040 Strategy was included as a recommendation stemming from the SEA process which states,

“NR2040 sits within the overall hierarchy of policy documents. Any future projects requiring planning consent arising from NR2040 are subject to the relevant project level assessment and the requirements of environmental directives including but not limited to: SEA Directive (2001/42/EC), EIA Directive (2011/92/EU as amended by 2014/52/EU) and Habitats Directive 92/43/EEC, Water Framework Directive (2000/60/EC) and Floods Directive (2007/60/EC) and associated national legislation, as appropriate.”

All plans and projects arising from NR2040, and the development, management and maintenance of the National Roads network are required to have regard to all planning and environmental legal requirements, thereby ensuring environmental protection is included as part of the implementation phase.

Table 2-4 Summary assessment of vision and key objectives

NR2040 – Vision and Key Objectives	Environmental Protection Objectives										
NR2040 Vision and Key Objectives	Biodiversity	PHH	Noise	Water	Air Quality	CC-Mitigation	CC – Adaptation	Land and Soils	Material Assets	AACH	Landscape
An evolving sustainable transport system focused on: safety; innovation; accessibility; mobility of people, goods, and services. Key objectives:	+/-	+	+/-	+/-	+/-	+/-	+/-	+	+	+/-	+/-
• Safe and efficient transport network for people and goods	+/-	+	+0	+/-	+0	+0	+/-	+0	+	0	0
• Environmentally, socially, and economically sustainable	+/-	+	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-

NR2040 – Vision and Key Objectives	Environmental Protection Objectives											
• Tailored for different customers in different places	+/-	+	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-
• Managed and improved as a key public asset	+/-	+	0/-	+/0	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-

Table 2-5 Summary assessment of NR2040 Investment Priorities

NR2040- Investment Priorities	Environmental Protection Objectives										
Overall Assessment of NR2040 Investment Priorities (Chapter 5)	Biodiversity	PHH	Noise & Vibration	Water	Air Quality	CC- Mitigation	CC – Adaptation	Land and Soils	Material Assets	AACH	Landscape
Decarbonisation	+/-	+	+/0	+/-	+	+	+	+/-	0/+	0/-	0/-
Protection and Renewal	+/-	+	+/-	+/-	+/-	+/-	+/0	+/0	+/0	+/-	+/-
Mobility of People and Goods in Urban Areas	+/-	+	+/-	+/-	+	+	+/0	+/-	+/-	-/0	-/0
Enhanced regional and rural connectivity	+/-	+	+/-	-	-	+/0	0	-	+	+/-	+/-

The SEA assessment identified a number of potential environmental effects associated with the investment priorities and commitments of the draft NR2040 Strategy. These potential effects include, but are not limited to, the following:

Potential negative effects associated with NR2040:

- Potential for interaction with Habitats Directive and wider biodiversity issues due to development of new infrastructure, ongoing maintenance, operation of roads particularly those on or close to protected areas, European Sites (e.g., SACs, SPAs, Ramsar sites) and nationally protected sites.
- Biodiversity issues and landscape changes including impacts on habitats and species of ecological value including local biodiversity. For example, due to disturbance and/ or fragmentation of ecological networks/ corridors associated with increases in levels of road traffic.
- Potential effects on the noise environment and air quality due to rise in harmful pollutants i.e., particulate matter, nitrogen dioxide, sulphur dioxide, benzene, etc. Outside factors influencing emissions include policy measures and behaviour change.
- Effects on water quality arising from the development of new infrastructure, upgrades, maintenance and operation activities.
- Potential effects due to road-based transport not decarbonising rapidly resulting in failure to meet climate targets and associated negative environmental impacts both on the National Roads network asset and the environment due to climate change effects.

Potential positive effects associated with NR2040:

- Greater focus on the provision of safe, sustainable and active modes and integrated mobility on/adjacent to National Roads network which is likely to have positive effects on the economy, population, contributing to meeting the Governments decarbonisation and climate targets.
- Positive impacts to population and human health and economy due to ongoing focus on improving safety, reducing severance particularly in urban areas, delivering integrated mobility, and efficiency of the National Roads network.
- Benefits to the economy and society by embracing National Roads network to become part of a 'sustainable transport system' recognising the important role of integrated travel and transportation focused on delivering accessibility that supports the mobility of people, goods and services.
- Reduction of noise and vibration at a local level through the development of sustainable and active travel infrastructure, support the development of infrastructure for EVs and appropriately sited multi-modal freight distribution centres.
- Emission reductions and improvements to air quality by supporting travel demand measures including new technologies that reduce congestion and providing viable alternatives to the private car through integrated and sustainable mobility projects on/or adjacent to the National Roads network.
- Resilience of the National Road network in the face of climate change particularly in 'life-line routes' for which individuals and communities depend.
- Support for investments that align with the NIFTI interventions and modal hierarchies and therefore supporting the NPF working towards environmentally sustainable growth patterns including compact sustainable development in urban areas with a focus on integrated land use and transport planning.
- Potential for improvements in transboundary impacts particularly emissions reductions.

2.3.2 Consultation on the Environmental Report

Statutory Consultation of the Environmental Report

Similar to the Scoping exercise, statutory consultation was undertaken with the statutory environmental authorities as follows:

- Environmental Protection Agency (EPA);
- Minister for Environment, Climate and Communications, Department of Environment, Climate and Communications (DECC);
- Minister for Housing, Local Government and Heritage, Department of Housing, Local Government and Heritage (DHLGH); and
- Minister for Agriculture, Food and the Marine, Department of Agriculture, Food and the Marine.

All submissions received from statutory SEA environmental authorities are summarised in Section 4 of this report. Where any submissions resulted in changes to the SEA documents or the Strategy these are indicated this report.

Non statutory consultation

Non-statutory transboundary consultation was undertaken with the Department of Agriculture, Environment and Rural Affairs (DAERA) in Northern Ireland.

Non-statutory consultation was also undertaken with the wider public. This was achieved by placing the draft Strategy and environmental report on public display in TII offices in Park Gate Street and online from 5th of August to 14th of October and inviting submissions.

The Draft Strategy was issued to all local authorities for consultation. TII also presented the draft Strategy at the TII National Transport Conference in Sligo in October 2022, an invitation for open discussion and submissions on the draft Strategy was sought.

Submissions received from non-statutory consultation were considered in finalisation of the Strategy. These are summarised in the Strategy itself (Appendix C) and Section 4 of this SEA Statement.

2.3.3 Updated SEA Environmental Report

Following consultation feedback, the SEA Environmental Report was updated and republished including updates to the baseline environment and policy context.

2.4 SEA Statement

The SEA Statement provides information on the decision-making process and documents how environmental considerations have been taken into account in the preparation of NR2040. The SEA Statement is required to report on:

- How environmental considerations have been integrated into the final Strategy - highlighting the main changes to the Strategy from the SEA process;
- How the ER and consultations have been taken into account - summarising the key issues raised in consultations and in the Environmental Report, indicating what action, if any, was taken in response;
- The reasons for choosing the Strategy in the light of other reasonable alternatives; and
- The measures decided upon to monitor the significant environmental effects of implementation of NR2040.

This SEA Statement is issued to the statutory environmental authorities and is also made publicly available online as soon as practicable feasible after the final Strategy is approved by TII.


2.5 Summary of the SEA process and influence on NR2040

Table 2-6 below summaries some of the key SEA processes and the influence the process had on the preparation and subsequent finalisation of NR2040.

Table 2-6 Summary of key Stages of the SEA Process and influence on NR2040 Strategy

SEA Stage	Role within the SEA Process	Summary of influence on NR2040 Strategy development
Screening	SEA Screening determines whether the draft Strategy is likely to have significant environmental effects and if an SEA is required to be undertaken.	In 2018 TII undertook an SEA Screening in accordance with the requirements of the SEA Directive and transposing Regulations S.I. 435 of 2004 (as amended). It found that NR2040 is likely to influence other plans, including those in a hierarchy and will set the framework for future development

SEA Stage	Role within the SEA Process	Summary of influence on NR2040 Strategy development
		consent of projects listed in Annexes I and II to the Environmental Impact Assessment Directive. The screening determined that SEA was required.
Scoping & Statutory Consultation	The purpose of Scoping is to scope the SEA Directive environmental factors that will be assessed in the SEA. The Scoping Report is used to consult with the relevant SEA environmental authorities to draw an opinion on the scope and level of detail of the environmental information to be included in the Environmental Report that will inform the preparation of the draft NR2040.	<p>A Scoping Report was prepared and issued to the SEA environmental authorities to inform the SEA and the preparation of the draft Strategy.</p> <p>Two rounds of scoping were undertaken. The first round of scoping consultation took place on 3rd December 2019.</p> <p>A second Scoping exercise was undertaken and issued to the environmental authorities on 20th May 2022. This involved issuing an updated scoping report taking into consideration the evolving environmental policy and updated baseline since 2019.</p> <p>The scoping responses informed the SEA including the Environmental Protection Objectives and the preparation of the draft Strategy.</p> <p>A summary of the submissions and responses detailing actions taken is presented in Appendix B of the ER.</p>
Alternatives	The SEA Directive requires that reasonable alternatives, taking into account the objectives and the geographical scope of the strategy are identified, described and evaluated for their likely significant effects on the environment.	The SEA informed the alternatives considered and reasons for choosing the Strategy. This is presented in Section 5 of this report.
Environmental Report & Statutory Consultation	The ER and Non-Technical Summary (NTS) is required to identify, describe and evaluate the likely significant effects of implementing the NR2040 on the environment. It is also required to include an environmental assessment of the alternatives considered. The Environmental Report also presented the environment assessment of the draft NR2040 including proposed mitigation and monitoring which was published with the draft NR2040 for public consultation.	<p>The ER and NTS, was prepared and published in tandem with the other environmental assessments (AA and SFRA) and the draft NR2040 Strategy.</p> <p>All of the documents were issued to the environmental authorities and published on TII's website, as well as other social media outlets for public consultation.</p> <p>The consultation ran from the 5th of August 2022 until the 14th of October 2022 and helped inform the finalisation of NR2040 Strategy.</p>

SEA Stage	Role within the SEA Process	Summary of influence on NR2040 Strategy development
Updated to Environmental Report	As above	During the consultation process consultation feedback was considered and it was decided to include these SEA amendments in an updated SEA Environmental Report.
Finalisation of the Strategy	Following consultation process and consideration of feedback amendments were made to the Strategy and the Strategy adopted by the TII board.	The inclusion of feedback from both the SEA, AA and SFRA teams were considered for inclusion as part of the finalisation of the Strategy.
SEA Statement	Issuance of SEA Statement identifying how environmental considerations and consultation feedback has been taken account in the final NR2040 and SEA including finalisation of the SEA monitoring programme.	<p>Current stage </p> <p>The SEA Statement is the subject of this report. This report identifies how environmental considerations and consultation feedback has been taken into account.</p> <p>The SEA process is required to screen any material changes for likely significant effects on the environment this is undertaken in Section 6.0 of this report. None of the amendments to the Strategy were deemed to have a significant environmental effect above what was already assessed in the SEA ER and NIS.</p> <p>The SEA Statement is published following the finalisation of NR2040.</p>

2.6 Integration with other environmental assessments

SEA process was integrated as part of the draft Strategy preparation, AA and SFRA process as summarised in the diagram below. This was an iterative process and has continued to inform the final Strategy.

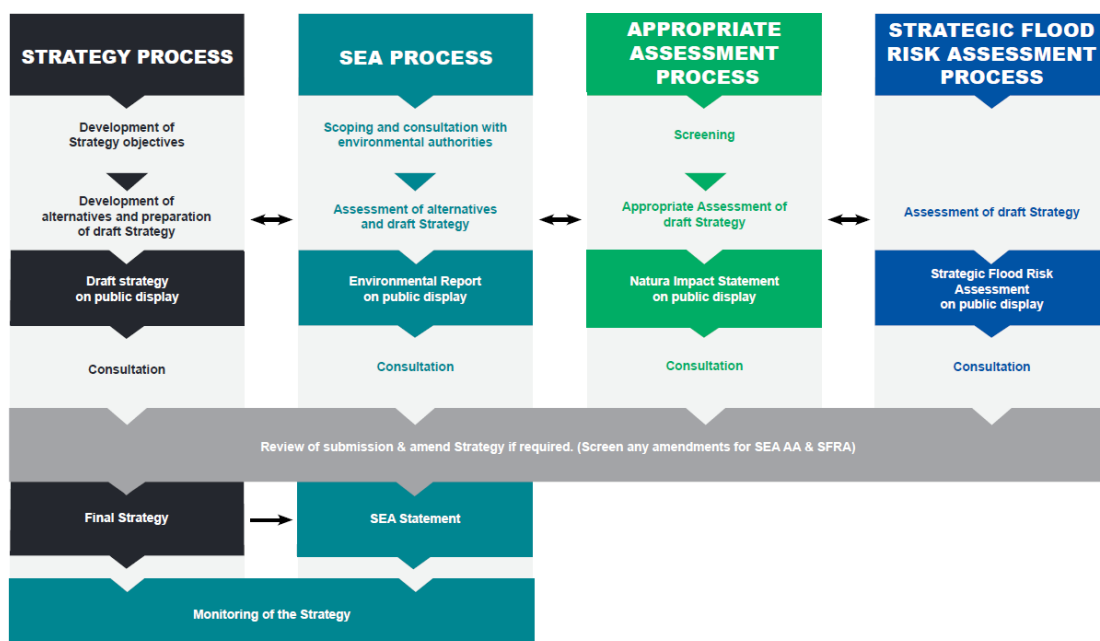


Figure 2-1 Integration of the Strategy development process with key stages of SEA, AA and SFRA processes

2.6.1 Appropriate Assessment

There is a requirement under the EU Directive 92/43/EEC (on the Conservation of Natural Habitats and of Wild Fauna and Flora, as amended (commonly referred to as the Habitats Directive)) to assess whether the draft NR2040 has the potential to adversely affect the integrity of a European Site. These sites include areas designated for the conservation and protection of habitats and wild fauna and flora and include Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

The Habitats Directive and Birds Directives are transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 to 2015 (S.I. No. 477 of 2011, S.I. No. 499 of 2013 and S.I. No. 255 of 2015), as amended, and requires that any plan or project not directly connected with or necessary to the management of a European Site but likely to have a significant effect on such a site must undergo an Appropriate Assessment (AA) in view of best scientific knowledge and in view of the conservation objectives of the site.

An Appropriate Assessment Screening was undertaken and determined that adverse effects could not be ruled out on Designated Sites and therefore a Natura Impact Statement (NIS) was prepared.

An NIS was prepared in accordance with the relevant provisions of the Habitats Directive, the Habitats Regulations and the Planning and Development Act 2000 (as amended), as well as the relevant case law and current guidance. It has demonstrated that, in the absence of appropriate mitigation, the Strategy could adversely affect the integrity of European sites, in view of their Conservation Objectives. In light of this finding, this NIS has prescribed appropriate mitigation to eliminate or minimise such effects. This assessment has been undertaken on the basis of the best scientific knowledge in the field and the Precautionary Principle. No reasonable scientific doubt remains as to the absence of such effects. Given the full and proper implementation of the mitigation prescribed in this NIS, the Strategy, either individually or in combination with other plans or projects, will not adversely affect the integrity of any European site.

The findings of the AA process have fed into the preparation of the SEA and the adopted NR2040.

2.6.2 Strategic Flood Risk Assessment

The EU Directive 2007/60/EC on the assessment and management of flood risk known as the 'Floods Directive' was transposed into Irish law by S.I. No. 122 of 2010, as amended by S.I. No. 495 of 2015. The aim of the Directive is to reduce the adverse consequences of flooding on human health, the environment, cultural heritage and economic activity. The Directive recognises the importance of land use management and spatial planning in flood risk management.

The SFRA for NR2040 has been carried out in accordance with *The Planning System and Flood Risk Management – Guidelines for Planning Authorities* (OPW 2009). The Guidelines identify the assessment process required to be undertaken as part of spatial planning development including the development of strategic plans such as NR2040.

The SFRA found that NR2040 is a high-level national strategy. It does not specify any plans or projects in specific locations. Therefore, any subsequent plans/projects stemming from the implementation of NR2040 will be required to comply with the mitigation included in the SFRA, and all relevant legislation and statutory guidance at the appropriate plan/project level. This ensures that where necessary such plans/projects will undertake the appropriate flood risk assessment as part of any future planning process, to ensure consistency with the Flood Risk Management Plans (FRMPs), as appropriate.

2.7 Finalisation of NR2040

NR2040 is TII's long-term Strategy for the planning, operating and maintaining the National Roads network to 2040. It has been developed to support the delivery of Project Ireland 2040 objectives and to align with the DoT's NIFTI. It also aligns with commitments in wider policy including the CAP and the DoT's *National Sustainable Mobility Policy*. The NR2040 Strategy is presented in the format shown in Table 2-7 and provides an overview of the contents of each section.

Table 2-7 Content of the draft NR2040

Section	Summary of contents
Chapter 1	Introduction Introduces NR2040, the Scope and role of National Roads and the structure of the Strategy.
Chapter 2	Policy Context Reviews some of the key government policies and plans that have influenced the development of NR2040.
Chapter 3	Long-term strategic Issues for National Roads Presents a brief evidence-based review of the context of how roads are currently used and projected future trends identifying key strategic issues facing the National Roads network.
Chapter 4	NR2040 Vision and Key Objectives Presents TII's Vision and key objectives in the development of the Strategy, considering national policy context and strategic issues.

Section	Summary of contents
Chapter 5	National Roads Investment Priorities and Portfolios Presents TII's four priority investment priorities namely: Decarbonisation, Protection and Renewal, Mobility of People and Goods in urban areas, and Enhanced Regional and Rural Connectivity.
Chapter 6	Implementation Sets out NR2040 Commitments and Implementation structure. It also summarises guidance to Sponsoring Agencies and Local Authorities in developing projects/ interventions that align with NR2040.
Chapter 7	Monitoring Framework
Appendix A	National Planning Policy Actions for National Roads
Appendix B	Assessment of Alternatives Summary
Appendix C	Response to Public Consultation comments for Draft NR2040

The SEA ER provides an overview of the background and context of the Strategy including its investment priorities and commitments and is not repeated in this report.

3. INFLUENCE OF THE SEA PROCESS ON NR2040

The SEA team have worked closely with the strategy development team through the development and finalisation of the Strategy to help integrate sustainable development considerations into the Strategy. The key stages in the SEA process have influenced the development of NR2040 as detailed in Section 2 of this report. Table 3-1 below provides a timeline of the development of the strategy together with a summary of how the SEA influenced the preparation of NF2040. It also includes integration with the AA and SFRA processes.

Collaboration was undertaken in a number of ways through in person meetings and workshops particularly early in the development stages (pre-covid). During covid and post covid much of this work transitioned to online workshops, including the SEA, AA and SFRA teams reviewing and commenting on various iterations of the draft strategy. Meetings and discussions were held including on the SEA recommendations and finalisation of the monitoring measures as well as inclusion of policy changes such as the Climate Action Plan 2023. These suggested amendments and recommendations by the SEA, AA and SFRA teams were considered by the strategy team throughout the preparation and finalisation of the Strategy.

The strategic environmental mitigation has been incorporated into the strategy through various methods working collaborating with the strategy development team. This has been achieved through various methods, namely:

- The environmental assessment of alternatives;
- The evolution of the strategy document primarily relating to the key measures/ action items which will influence other plans/ projects in a hierarchy, namely the: vision, key objectives, investment priorities and portfolios, and the commitments;
- During the consultation process on the draft Plan, consultation feedback on the SEA Environmental Report, the SFRA and the NIS have been considered and have influenced the final NR2040 Strategy;
- The environmental assessments identified at a strategic level potential effect on the environment as a result of the strategy vision, key objectives, investment portfolios and commitments. The SEA has informed the high-level of protection of the environment with a view to promoting sustainable development. The mitigation measures identified in Section 6.4 of the Strategy references that NR2040 sits within the overall hierarchy of policy documents, stating, *“Any future projects requiring planning consent arising from NR2040 are subject to the relevant project level assessment and the requirements of environmental directives including but not limited to: SEA Directive (2001/42/EC), EIA Directive (2011/92/EU as amended by 2014/52/EU) and Habitats Directive 92/43/EEC, Water Framework Directive (2000/60/EC) and Floods Directive (2007/60/EC) and associated national legislation, as appropriate. This strategy should be read in conjunction with the following environmental assessment reports: SEA Statement, Natura Impact Statement and SFRA and the mitigation included within them.”*
- The consultation process resulted in the text in italics being added to clarify this process.
- A new Monitoring section in Section 7 of the Strategy was added. It includes reference to the SEA Monitoring Programme (Table 7-1)

Table 3-1 Summary of SEA process and influence on NR2040

Timeline	NR2040 Strategy development	SEA, AA and SFRA Processes Key stages and changes
2018	Preparation of NR2040 commences	Screening for SEA, AA and SFRA was undertaken. Based on the precautionary principle it identified the need for these assessments to inform the preparation of the draft Strategy.
	Development of draft Vision and Objectives	The draft Strategy and SEA workshops commenced including the integration of sustainability considerations/feedback into the vision and objectives of the draft Strategy.
May 2019	Key issues to be considered are identified by the Strategy team. The draft Table of Contents was created for NR2040 report.	The SEA Scoping process commenced. The SEA Scoping Report is issued to environmental authorities in May 2019.
June-August 2019	Strategy team develops options.	Strategic environmental assessment of options undertaken to identify potential environmental effects informing the preferred draft option.
December 2019	Evidence-base and analysis is ongoing by the Strategy development team.	SEA Scoping letters issued to environmental authorities.
January 2020	Strategy development in progress	<ul style="list-style-type: none"> SEA Scoping responses are received from environmental authorities. The Scoping Consultation feedback is used to inform and support the integration of environmental considerations into the strategy development process and SEA process.
Jan – July 2020	Integration of SEA feedback including scoping consultation into the strategy development process.	<ul style="list-style-type: none"> Consideration of SEA Scoping feedback from environmental authorities as part of the strategy development process and the preparation of the ER. Preparation of the SEA Environmental Report Various workshops take place with the Strategy and SEA team. The SEA team made recommendations and provided informal feedback during in-person workshops which are considered as part of the Strategy development process.
July 2020– July 2021	NR2040 paused to inform development of NIFTI. The analysis and evidence base established during the preparation of the draft NR2040 feeds into the development of draft NIFTI which is being prepared in parallel by the DoT.	The NR2040 SEA, AA and SFRA processes are temporarily paused during this time.

Timeline	NR2040 Strategy development	SEA, AA and SFRA Processes Key stages and changes
August 2021 – April 2022	The development of NR2040 strategy recommences. Updates are made to draft Strategy considering the transport trends and policy direction from NIFTI and other government policies.	<ul style="list-style-type: none"> SEA, AA and SFRA processes recommence. SEA Scoping is reinitiated. Online workshops are held with the strategy team and SEA team.
May 2022	NR2040 strategy development and drafting process is ongoing.	An updated SEA Scoping report is issued to the SEA environmental authorities that includes information on the draft Strategy, updates to the receiving environment and policy context.
June - August 2022	Strategy development team redraft and includes updates to the draft NR2040.	<ul style="list-style-type: none"> Online workshops are held with the strategy team and SEA team. Consideration of the SEA recommendations and feedback during workshops are considered as part of the Strategy development process. For example, this includes explicit references to the 'Climate Act 2021' and associated emissions targets defined under the Climate Action Plan, TIIs Sustainable Implementation Plan which are included as part of the strategy. Text is added to Section 6.4 of the strategy to refer the requirement to undertake project level assessments for example, to undertake SEA, EIA, AA and FRA, at plan or project level, as appropriate.
August 2022	Draft Strategy published for consultation for 10 weeks.	<p>The draft Strategy and accompanying environmental assessment reports are published for and issue to the SEA environmental authorities for consultation, these include:</p> <ul style="list-style-type: none"> SEA Environmental Report Draft Natura Impact Statement Strategic Flood Risk Assessment
October - December 2022	Feedback from consultation is considered and amendments to the strategy commences.	<ul style="list-style-type: none"> Responses from the public consultation and environmental authorities are considered as part of the strategy finalisation and environmental assessments. A workshop is held between TII strategy team and SEA team to discuss the SEA ER recommendations. TII provide clarification and responses to the recommendations which are reported this SEA Statement (Section 3.1). The SEA team recommend references is made to the updated Climate Action Plan 2023, sectoral emissions targets are discussed in further detail with the strategy team. Updates are also made to the SEA ER baseline sections following on consultation feedback and changes to the policy context (Appendix A of the SEA ER is also updated).

Timeline	NR2040 Strategy development	SEA, AA and SFRA Processes Key stages and changes
December 2022	Environmental monitoring of NR2040	A workshop to inform the review and finalisation of the proposed environmental monitoring programme is held between the SEA team and the TII strategy team including the Environmental Policy and Compliance Sections of TII. The SEA Monitoring programme Table 7-1 of this SEA Statement is finalised commensurate with the national and strategic focus of the strategy.
January 2023	The integration of the SEA monitoring framework in the Strategy is considered.	The strategy team decided that a reference to the SEA environmental programme (Table 7-1 of this report) is sufficient. This SEA Statement is updated.
January 2023	Preparing to finalise NR2040. (Strategy updated bearing in mind consultation feedback and the SEA, AA and SFRA assessments on the revised strategy).	<ul style="list-style-type: none"> Minor text edits and suggestions for finalising the strategy are proposed by the SEA team. Screening of amendments to the strategy by the SEA, AA and SFRA teams. The various environmental assessment identifies that the modifications to the strategy do not lead to likely significant environmental effects, not previously considered by the teams and the current mitigations specified in the SEA ER, AA and SFRA remain adequate. Preparation of the SEA Statement is initiated.
February 2023	AA Consultation commences.	<ul style="list-style-type: none"> NIS issued to the Minister for consultation and is made available online for public consultation.
March 2023	The TII Board approve the Strategy.	<ul style="list-style-type: none"> The SEA Statement in updated following Ministerial consultation response. AA team prepared the AA Conclusion Statement.
April 2023	The NR2040 Strategy is published.	<ul style="list-style-type: none"> SEA Statement is published identifying how consultation and the SEA process has influenced the Strategy. An updated SEA ER is also published taking into consideration consultation feedback and relevant updates regarding the baseline. An updated SFRA is published including an assessment of the amendments made to the strategy. The AA Conclusion Statement is published.

3.1 Recommendations from the SEA Process

The following recommendations were proposed as part of the SEA Environmental Report (Section 9.2 Table 9.1) for consideration by TII as part of the finalisation of the Strategy. TII have considered the proposed recommendations and have addressed the SEA recommendations in the finalisation of the strategy. Where a recommendation has resulted in amendments or not to the strategy, these are detailed in the response column labelled ‘TII Response/ Action Taken in the final Strategy’ detailed in the Table 3-2 below.

Table 3-2 TII response to SEA Recommendations

Item no.	Aspect of NR2040	SEA Recommendation	TII Response/ Action Taken in the final Strategy
1	Incorporation of the Environmental Assessments - SEA, AA and SFRA	It is recommended to explicitly address the results of the environmental assessments in the Strategy that the mitigation proposed in the SEA ER, AA and SFRA processes be incorporated as part of the final Strategy.	Environmental mitigation proposed in the SEA is referenced in Section 6.4 of the strategy and will be undertaken as part of the implementation of the Strategy. No change to the strategy.
2	Vision and Key Objectives	It is recommended that the vision and key objectives are linked to the investment priorities and portfolios to ensure that the vision is achieved across all portfolios and associated investments – i.e., development of Key Performance Indicators (KPIs), etc.	The vision and key objectives have been developed to support the vision. The objectives and any future KPIs will be considered by TII as part of subsequent reviews of the Strategy. Furthermore, the investment priorities and portfolios in terms of supporting the vision, will be reviewed regularly. No change to the strategy.
3	Decarbonisation	It is recommended that TII calculate emission from <i>all</i> activities thereby helping to inform a reduction in carbon associated with the construction and maintenance of the transport network through responsible use of resources, reuse and repurposing, as well as driving the net-zero transition and enabling customers to make more sustainable choices.	Emissions reductions is part of TII's Sustainability Plan, which is considered as part of NR2040. The Sustainability Implementation Plan (SIP) will be the key mechanism of carbon reduction for TII. NR2040 will support the SIP however, the focus is on influencing types of interventions into the future rather than specific carbon reductions. No change to the strategy.
4		Work with partners to deliver on the Climate Action Plan actions as appropriate e.g., associated with fleet electrification, modal shift to walking, cycling and public transport, and an overall reduction in vehicle-km travelled to reduce transport sector emissions.	There are a number of cross-cutting commitments in NR2040 which will support delivering the Climate Action Plan with partners. These include: <ul style="list-style-type: none"> <i>TII will work with government agencies and stakeholders to support the Climate Action Plan and government's national climate objective to "transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy by 2050."</i>

Item no.	Aspect of NR2040	SEA Recommendation	TII Response/ Action Taken in the final Strategy
			<ul style="list-style-type: none"> <i>National Road projects will be appraised in the context of compliance with Ireland's climate change targets, in line with the Governments Climate Action Plan, NIFTI and in accordance with the Department of Transport's Common Appraisal Framework. Predicted changes and/or targets associated with the levels of usage of each mode (e.g., bicycle, car, public transport, truck, van) will inform this.</i> <p>No change to the strategy.</p>
5		TII and Sponsoring Agencies should support positive behaviour change through the provision and/or improvement of necessary supporting infrastructure e.g., provision of safe and comfortable bus stop infrastructure and pick up/drop off on National Roads, improved signage on/ off National Roads to safe walking and cycling.	<p>Supporting positive behavioural change is covered in the following commitment:</p> <p><i>TII will continue to participate in wider efforts to decarbonise road transport through the provision of appropriate infrastructure and technology, and support of policy instruments and behaviour change measures.</i></p> <p>No change to the strategy.</p>
6	Behaviour change	It is suggested that TII continue to work with partners and government agencies to support decarbonisation and positive personal behaviour changes relating to use of road transport. For example, this could include ZEVI, SEAI, e.g., awareness raising campaigns associated with the effects of private car use for short trips, increased freight on roads due to increase in online personal shopping, increasing SUV sales all of which influences investment required to maintain the public asset.	<p>TII is committed to decarbonisation and through NR2040, will seek to support positive behavioural change through a range of interventions. As set out within Item 5 above, TII will continue to participate in wider efforts to decarbonise, including supporting behavioural change measures.</p> <p>No change to the strategy.</p>
7	Mobility of People	It is recommended that TII continue to liaise with all stakeholders to improve information and data collection associated with the Investment Priorities to ensure changing demographic and travel	<p>TII will continue to develop data collection methods which will be communicated as part of upcoming updates to the Project Appraisal Guidelines (PAG). These updates will continue to ensure that</p>

Item no.	Aspect of NR2040	SEA Recommendation	TII Response/ Action Taken in the final Strategy
		patterns are monitored to more accurately inform project appraisal process.	Sponsoring Agencies can access the relevant information to inform project development and decision making in line with investment portfolios and priorities. TII will continue to liaise with all stakeholders regarding data collection and dissemination of data, as appropriate. No change to the strategy.
		Investment Priority: Enhanced regional and rural connectivity	
8	Corridor interventions	As part of the project development process, corridor interventions will be required to consider the commitments contained in NR2040, demonstrate the use of up-to-date transport surveys to inform transport modelling and shall consider likely future trends in demographics required to support compact sustainable development, and how the interventions will contribute to meeting climate targets, in line with the NIFTI intervention hierarchy.	These requirements are broadly addressed in section 6.3 <i>Project Development Process</i> of NR2040. When developing a project on national roads, the relevant Sponsoring Agency or TII department will need to show that the proposed investment aligns with NIFTI, TII Project Appraisal Guidelines (PAG), DoT Common Appraisal Framework (CAF) and associated appraisal guidance documents including how it works towards NIFTI investment priorities and hierarchies. No change to the strategy.
9	Sustainability	In the draft NR2040, TII have committed to <i>“incorporate social and environmental sustainability objectives and goals in all decisions, policies, projects and processes.”</i> It is recommended that the process for integrating sustainability across the decision hierarchy be developed and communicated (internally and externally) to ensure greater transparency as part of the decision-making process.	TII is currently implementing the Sustainability Implementation Plan (SIP) with the goal of integrating sustainability across all activities in the organisation. This is translated in projects through the PMG and project appraisal process, Strategic Assessment Reports (SARs) across all aspects of the lifecycle and assessment of projects. The PMG and PAG will be updated and published on the TII website. No change to the strategy.
		Commitments	

Item no.	Aspect of NR2040	SEA Recommendation	TII Response/ Action Taken in the final Strategy
10	General	It is recommended that the commitments are given timeframes, if possible, and any analysis stemming from commitments/ actions is shared with the Sponsoring Agencies and Roads Authorities as appropriate in order to better understand the evidence base and support project development and decision at local level.	<p>TII consider that timeframes are not appropriate at this strategic level and the commitments will influence projects on an on-going basis. TII will continue to update and disseminate research and tools through the TII website, social media etc the availability of information, tools updates to guidance which are available for use by external bodies.</p> <p>The transport research unit in TII will review how the research that TII is involved in relating to NR2040 can be effectively communicated with outside bodies.</p> <p>No change to the strategy.</p>
11	Decarbonisation	TII state: "National Road projects will be appraised in the context of compliance with Ireland's climate change targets, in line with the Governments Climate Action Plan, NIFTI and in accordance with the Department of Transport's Common Appraisal Framework. Predicted changes and/or targets associated with the levels of usage of each mode (e.g., bicycle, car, public transport, truck, van) will inform this." It is recommended that TII shall develop the project appraisal guidelines to support this action following the publication of the final NR2040 Strategy.	<p>TII are currently in the process of updating PAG to reflect both wider policy commitments and NR2040.</p> <p>No change to the strategy.</p>
12	Induced demand	It is recommended that the analysis as part of the commitments in future demographic growth trends relating to induced travel demand is completed for all projects including those in the planning process to ensure traffic effects are appropriately assessed prior to project progression/construction and remedial action taken to address any potential induced demand effects.	<p>TII will continue to assess induced demand. The potential for induced demand and mitigation measures will be assessed at a project level.</p> <p>Schemes currently under development are not within the remit of NR2040'.</p> <p>No change to the strategy.</p>

Item no.	Aspect of NR2040	SEA Recommendation	TII Response/ Action Taken in the final Strategy
13	Commitments: Sustainability Implementation Plan	<p>It is recommended that the Sustainability Implementation Plan (SIP) publish its annual review so as to improve transparency and drive organisation change.</p> <p>Ensuring the organisation is appropriately staffed to drive the change and embedded sustainability into all activities should also be determined.</p>	<p>NR2040 is the transport strategy for the National Road Network. The dissemination of SIP does not fall within the remit of NR2040.</p> <p>No change to the strategy.</p>
14	Multi-modal distribution centres	<p>TII will collaborate with Local Authorities and CIÉ/Iarnród Éireann as appropriate as part of the statutory planning process with regards to rail freight and/or multi-modal distribution centres on or near National Roads.</p>	<p>TII has a commitment in NR2040 which states,</p> <ul style="list-style-type: none"> <i>TII supports the development of rail freight and multi-modal freight distribution centres on or near National Roads.</i> <p>TII will continue to engage with relevant parties when working on multi modal freight projects.</p> <p>No change to the strategy.</p>
15	Movement of People	<p>Consideration of the appropriate application of Design Manual for Urban Roads and Streets (DMURS) in certain urban locations and incorporation of Universal Design principles together with biodiversity and public realm enhancements would help integrate new structures into the existing landscapes, in line with TII Standards.</p>	<p>TII and local authorities will continue to comply with current national standards as well as TII standards.</p> <p>No change to the strategy.</p>
Chapter 6 Implementation			
16	Project development process	<p>It is recommended that the Project Appraisal Guidelines (PAG) be updated to strengthen the appraisal of proposed transport investments in line with the NR2040 Strategy investment priorities and NIFTI intervention hierarchy.</p> <p>Where possible, the updates should integrate the EPOs developed as part of the SEA process:</p> <ul style="list-style-type: none"> Integrate the requirement for data collection of indicators at project level assessments to support reporting requirements 	<p>The DoT are due to publish updated transport appraisal guidance in early 2023. TII will then update PAG to be consistent with the latest DoT guidance as necessary. This update will incorporate new requirements for options assessment and consideration of both NIFTI and NR2040.</p> <p>No change to the strategy.</p>

Item no.	Aspect of NR2040	SEA Recommendation	TII Response/ Action Taken in the final Strategy
		<p>related to projects identified in the NR2040 SEA environmental monitoring framework.</p> <ul style="list-style-type: none"> Provide greater clarity on the application of the PAGs for strategic options comparison assessment to ensure consistent application of the methodology across the sector. <p>The updated PAG shall be published following the NR2040's publication.</p>	
17	Intervention hierarchy	It is recommended that the TII work with the Sponsoring Agencies to ensure they understand the NIFTI modal and intervention hierarchy, which is supported in NR2040 with appropriate guidance developed if required on how it should be applied on projects derived from NR2040.	<p>TII will continue to work with the DoT to disseminate information regarding NR2040 as well as NIFTI intervention and modal hierarchies, enabling project alignment with NR2040 and NIFTI.</p> <p>No change to the strategy.</p>
18	Implementation Structure	The 'Non-infrastructure programme' includes TII Sustainability Implementation Plan (SIP) which relates to, and influences infrastructure plans / projects, and all TII activities. It is recommended that the SIP is applicable to all portfolios and TII activities in accordance with the intent of the Plan.	<p>The Figure 6.6 NR2040 Implementation Structure (Section 6.2) has been updated to show 'Supporting activities' for greater clarity.</p> <p>No change to the strategy.</p>
19	Protection and Renewal: Resilience and Climate Adaptation	<p>TII is updating its 'Strategy for Adapting to Climate Change on Ireland's Light Rail and National Road Network'. Examining the impacts of climatic events on surface, groundwater resources and environmental measures is an integral part of the climate adaptation strategy.</p> <p>It is recommended that TII and Sponsoring Agency shall have regard to the existing and updated Strategy (once published) during the project appraisal process.</p>	<p>TII and sponsoring agencies will continue to apply and align with up-to-date TII standards and strategies.</p> <p>TII have updated commitment in the Strategy to implement Climate Change Adaptation Strategy (2022).</p> <p>No change to the strategy.</p>
20	Option development process	When developing plans/projects on National Roads, the relevant Local Authority, third party and / or TII department will need to show that the proposed	<p>The text in Section 6.3 of the Strategy has been updated. Furthermore, guidance documents including the PAG are currently being updated</p>

Item no.	Aspect of NR2040	SEA Recommendation	TII Response/ Action Taken in the final Strategy
		<p>investment aligns with NIFTI and address how potential negative impacts, against one or more of the NR2040 Investment Priorities, will be mitigated.</p> <p>Option development will also be considered within the investment hierarchies, with justification required regarding sustainability. For example, if more seemingly cost-effective or environmentally sustainable solutions are judged as inappropriate.</p> <p>This analysis will be required to be revised and updated throughout the project and programme lifecycles in line with advances in techniques, data collection and technology.</p>	<p>which will address these points as part of the new processes, ensuring compliance with NIFTI and NR2040.</p> <p>No change to the strategy.</p>

4. HOW CONSULTATION HAS INFLUENCED THE STRATEGY

There have been several opportunities for consultation to influence the development of NR2040, through both statutory SEA consultation and non-statutory public consultation which is summarised in the sections below as it relates to the SEA process.

4.1 SEA Scoping

An SEA Scoping Report was issued to the statutory SEA environmental authorities as the basis for statutory consultation. The issues raised in the submissions from statutory consultees were addressed as part of the draft Strategy and are summarised in Appendix B of the SEA ER. As a result of the submissions, changes were incorporated into the SEA ER, which in turn influenced the Strategy. These included:

- Updates to the baseline and issues for consideration for the Strategy which are presented in the SEA ER and informed the Strategy development; and
- Amendments to the Environmental Protection Objectives (EPOs) which informed the assessment methodology.

4.2 Statutory Consultation on the draft Strategy

Statutory and non-statutory public consultation on the draft NR2040 and associated environmental reports (SEA ER, NIS and SFRA) was launched on 5th of August until the 14th of October. The reports were issued to the environmental authorities in accordance with the SEA Directive for statutory consultation and published on TII's website¹. The published reports were:

- Draft NR2040 Strategy and Draft NR2040 Public Consultation Short Report
- Strategic Environmental Assessment (SEA) Environmental Report (ER)
- Draft Natura Impact Statement (NIS)
- Strategic Flood Risk Assessment (SFRA)

Three responses from statutory SEA environmental authorities were received on the draft Strategy and the associated environmental reports:

- (1) Environmental Protection Agency
- (2) Department of the Environment, Climate and Communications - Geological Survey Ireland division
- (3) Transboundary consultation response from Department of Agriculture, Environment and Rural Affairs (DAERA). The following divisions responded:
 - Natural Environment Divisions (NED)
 - Water Management Unit (WMU)
 - Drinking Water Inspectorate (DWI)
 - Marine Conservation Advice (MCA)
 - Marine Plan Team (MPT)
 - Inland Fisheries Advice (IF)
 - Department for Communities, Historic Environment Division (HED)

A total of 22 submissions were received from government agencies and the public. A summary of the key issues raised from the statutory SEA consultees relating to the

¹ nr2040.consultation.ai

SEA, the actions taken by the SEA, AA and SFRA teams, and any resultant changes to the Strategy are summarised in Table 4-1. Table 4-2 details the transboundary responses. Non-statutory consultation responses relating to the SEA are detailed in Table 4-3. A summary of public consultation and stakeholder feedback relating to the strategy is detailed in Table 4-4 of this SEA Statement.

The proposed text additions to the Strategy resulting from the SEA process are indicated in **green text**.

4.2.1 Appropriate Assessment Consultation

A public consultation on the Draft Strategy, NIS of the draft NR2040 Strategy, SEA Environmental Report and SFRA was undertaken between the 5th of August 2022 and the 14th of October 2022.

Following the public consultation, a review of submissions and observations received was undertaken which was considered as part of the finalisation of the Strategy and the AA.

In accordance with Regulation 42(9) (a) and (b) of the Habitats Regulations, TII has prepared a draft Natura Impact Statement (NIS), including the evidence required for the purposes of AA for NR2040.

In accordance with Regulation 42 (9) (c), TII submitted a copy of the NIS and any other evidence relevant to AA to the Minister. The draft NIS was updated and titled 'Natura Impact Statement of the National Roads 2040 Strategy' (February 2023). A summary of the development of the NR2040 and the NIS was presented to the Minister.

In accordance with Regulation 42 (10), TII shall not, without the agreement of the Minister, conclude the Appropriate Assessment of NR2040 earlier than six weeks from the date on which the NIS is submitted, and shall take into account any submission received from the Minister before the adoption of the NR2040 Strategy by TII.

TII received a response from the Minister on the 12th of April which is addressed in the AA Conclusion Statement.

Table 4-1 Statutory consultation feedback on the draft Strategy and resultant changes to NR2040

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
Environmental Protection Agency			
EPA - Management of environmental noise and air quality	The Strategy should recognise to a greater extent, the need to address the impacts of transport on air quality and noise, as two main direct environmental impacts of road transport. The Strategy should include commitments to work with the other relevant bodies to improve both air quality and noise pollution.	NR2040 recognises the need to work with all stakeholders and this is stated in Section 6.5 Collaboration of the Strategy Furthermore there is a commitment in NR2040 "TII will work with government agencies and stakeholders to support the Climate Action Plan and government's national climate objective to <i>"transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy by 2050."</i>	NR2040 has changed text to commitment under Sustainability: In line with its legislative remit, TII will work with relevant bodies to support measures to reduce air quality and noise impacts from road transport.
EPA- Air quality	The transport sector is one of the largest contributors to particulate matter pollution in urban areas (particularly the diesel vehicle fleet). The impacts on air quality should be monitored and evaluated as part of the SEA monitoring.	The SEA Monitoring detailed in Section 7 of this report has been updated and identifies the air quality target and indicators including monitoring of air pollutants.	No change to the Strategy
EPA - Noise	In addressing transport-related noise, the focus should not be just on engineering solutions for road traffic noise, but on creating a preventative and management strategy through the provision of alternative, more environmentally friendly means of transport in our major urban locations. There should also be a focus on better routing and design of roads in more rural locations.	NR2040 is a strategic document with a strong focus on supporting the NPF and compact sustainable development including increasing sustainable modes of travel all of which will be required to be demonstrated as part of the project development and appraisal process. Decarbonisation is one of four Investment Priorities of the Strategy which focuses on sustainable modes of travel such as integrated mobility and active travel which will help avoid and reduce noise emissions from National Roads.	No change to the Strategy.
EPA - Noise	The Strategy should clarify TII's role regarding environmental noise management. This clarification is necessary for implementation of noise action plans where the roles and responsibilities of all	TII's legislative remit is set down under the Roads Act 1993, as amended. The SEA ER includes information on noise, including TII's role. The strategy is a high-level document	No Change to the Strategy

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
	<p>stakeholders involved, including TII, need to be clearly outlined.</p>	<p>and does not attempt to summarise legislative remit as it could become overly complex.</p> <p>Environmental noise from major infrastructure including roads, railways and airports is governed by the Environmental Noise Directive 2002/42/EC. The Directive is transposed into Irish Law by the European Communities (Environmental Noise) Regulations 2018 (S.I. No. 549 of 2018). Under the regulations, TII are responsible for the development of strategic noise mapping for all National Roads carrying in excess of 3 million vehicles a year and for major railways which carry more than 30,000 passengers per year. Local Authorities are responsible for preparing Noise Action Plan. TII engage with Local Authorities as required in the implementation of noise action plans.</p> <p>The SEA Team recommend adding additional text to Section 1.2 of the Strategy to state the following:</p> <p>TII is a non-commercial semi-State body, which operates under the aegis of the Department of Transport, Tourism and Sport.</p> <p>Our mission is to provide high quality transport infrastructure and services, delivering a better quality of life and supporting economic growth. TII's legislative remit is set down in the Roads Act 1993 (as amended). TII has overall responsibility for the planning and supervision of construction and maintenance works on National Roads. Priorities within the roads improvement programme are determined by TII taking account of the overall policy for national roads as decided by Government.</p>	

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
		However, no change was made to the strategy.	
EPA - Climate change	<p>The transport sector is responsible for about 20% of Ireland's GHG emissions. Urgent and accelerated action and investment is needed to decarbonise transport and transition to more sustainable transport modes, as well as to adapt to the effects of climate change. The scale of the challenges facing Ireland to address the climate emergency are immense. Recent EPA reports show that Ireland will not meet our longer-term targets on reducing greenhouse gas emissions.</p>	<p>Decarbonisation is an Investment Priority of the Strategy and encompasses three investment themes of integrated mobility, electric vehicle charging and active travel.</p> <p>TII have a number of commitments relating to decarbonisation including <i>"TII will reduce carbon emissions associated with the development, construction and operation of new infrastructure."</i></p> <p>NR2040 includes commitments to support the Climate Action Plan and subsequent updates. The SEA includes indicators to monitor the effect NR2040 has on the climate mitigation and adaptation.</p>	No change to the Strategy.
EPA - Water Framework Directive and hydromorphology considerations	<p>Hydromorphology is the second most significant pressure on water quality in Ireland resulting in damage to habitat and natural river or lake processes through physical modification.</p> <p>A clear commitment should be given that wider Water Framework Directive (WFD) objectives are achieved and not compromised during implementation of the Strategy, particularly where any road-related infrastructure or ancillary developments may impact on the hydromorphology or water quality status of water bodies.</p>	<p>The SEA has developed Environmental Protection Objectives which have been used to assess the strategy which include, "support the achievement of good water quality status of all water bodies as required by the Water Framework Directive and Marine Spatial Planning Directive (MSPD)". There are environmental indicators to monitor this target. Any projects stemming from NR2040 are required to comply with all the relevant EU Directives and national legislation.</p>	<p>Section 6.7 of the strategy has been amended to state:</p> <p>NR2040 sits within the overall hierarchy of policy documents and any future projects requiring planning consent arising from NR2040 are subject to the relevant project level assessments including the requirements of environmental directive including: SEA Directive(2001/42/EC), EIA Directive (2011/92/EU) as amended and Habitats Directive 92/43/EEC, Water Framework Directive (2000/60/EC) and Floods Directive (2007/60/EC) and associated national legislation, as appropriate.</p>

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
EPA – Biodiversity considerations	The Strategy would benefit from including information regarding the relevant measures and commitments to improve and enhance biodiversity, in addition to also providing for the protection of designated habitats and protected species.	The strategy is a high-level national document. All projects are required to consider impacts to biodiversity during the project development process and planning process including the requirements of the EIA and Habitats and Birds Directives. TII Project Appraisal Guidelines are currently being updated and will require projects to consider protection and enhancement measures as part of the project appraisal process. The SEA Monitoring programme under biodiversity also includes indicators to support this commitment.	No change to the Strategy.
EPA - Integration of environmental considerations	In finalising the Strategy, the EPA recommend that a section could also be provided with a summary of the key recommendations from the SEA (and AA) and how they have been considered and integrated into the Strategy.	Section 3.2 of the SEA Statement addresses the SEA ER recommendation and how they have influenced the strategy.	Text in Section 6.4 of the strategy refers to how the SEA has influenced the informed the strategy.
EPA - Strategy implementation, monitoring and review	The Strategy covers a timeframe to 2040. EPA suggest for periodic reviews of the Strategy to be carried out to report on progress implementing the Strategy and objectives and to enable the evaluation of its environmental performance. Consider aligning the Strategy implementation, monitoring and reporting with the environmental monitoring required under the SEA legislation, and as set out in the SEA ER	The SEA Environmental Monitoring Programme has been prepared for the Strategy which outlines the frequency of monitoring of the environmental indicator(s) pertaining to each of the Environmental Protection Objectives (EPOs), as appropriate.	The strategy has been updated to include a new Section on monitoring detailed in Section 7 Monitoring Framework of the Strategy. The new section includes a reference to the Strategic Environmental Monitoring Programme of NR2040 which is set down in the Table 7-1 of this SEA Statement.
EPA – Non-Technical Summary (NTS)	Consider amending the reference to the SEA Regulations of the NTS to refer to “S.I. 435 of 2004, as amended”.	Noted. This section relates to the SEA regulations generally which includes S.1 435 and S.I 436. S.I. 435 is referred to in the ER as the relevant regulations for undertaking this SEA.	No change to the Strategy.

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
EPA – NTS Human Health	<p>Under Population and Human health <i>“The transport sector including road transport will be required to respond to the additional travel demand required over time, in a sustainable manner, while also addressing the related congestion and human health issues such as safety, air, noise, and water quality issues”</i>. The SEA and NTS could describe the specific measures to address this issue, particularly in urban locations.</p>	<p>The Strategy identifies Urban Congestion as a strategic issue. It includes a number of cross-cutting commitments to support increase travel demand such as sustainable mobility on National Roads as well as decarbonisation which will also improve safety, emissions to air and noise environment. Commitments in the Strategy include <i>“support the provision of segregated or offline active travel infrastructure adjacent to national roads”</i> to support safe and sustainable modes of travel along the National Roads network in urban and rural areas.</p> <p>The Strategy commits to delivering on its actions in line with the Government’s Road Safety Strategy 2021 2030 ‘<i>Our Journey towards Vision Zero</i>’.</p> <p>The finalised SEA Monitoring Programme contained in the SEA Statement contains several indicators under the various environmental factors including under population and human health, air, noise, and water quality that will monitor this issue.</p>	No change to the Strategy.
EPA – NTS Noise and Vibration Circular economy	<p>Regarding opportunities to reduce noise due to greater use of quieter vehicles or greater roll out of low noise road surfacing along the network, the SEA could describe what role TII will take in working with the Local Authorities to utilise low noise road surfacing along the network, particularly, in areas where significant noise related issues & potential health impacts are identified.</p> <p>The Strategy could support research into the use of recycled aggregates in road construction, to promote circular economy considerations.</p>	<p>Local Authorities are responsible for implementing noise action plans. Additional text is added to the updated SEA ER. <i>TII continue to work with all local authorities as part of the project development process including considerations relating to reducing noise impacts from National Roads.</i></p> <p>TII’s Sustainability Implementation Plan is supported as part of NR2040 which includes activities associated with the circular</p>	<p>Proposed changes to NR2040 Commitment under Sustainability: In line with its legislative remit, TII will work with relevant bodies to support measures to reduce air quality and noise impacts from road transport.</p>

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
		economy. Future projects will be cognisant of the circular economy practices and consider the use of recycled aggregates, as appropriate.	
EPA – Noise Monitoring	Table 0.9 Proposed SEA Monitoring Programme, in relation to the Noise environmental protection objective, the indicators could also consider including a reference to the lower World Health Organisation (WHO) Noise Guideline Value where noise impacts will start to occur.	The WHO Guidance shall be considered as appropriate at project-level assessments. No change is proposed to the monitoring indicators.	No change to the Strategy.
EPA – Environmental Baseline Considerations: Noise Considerations	<p>The World Health Organisation (WHO) has published Environmental Noise Guidelines that should be considered. Reference should be made to the lower WHO noise guideline values where health impacts will start to occur.</p> <p>In Table 5.5, (page 99), The SEA could also describe how TII intends to engage and support this process, in the context of noise action plans.</p> <p>EPA notes the reference (in Section 5.6, page 70) to the 2011 National Roads Authority Guidelines for Treatment of Air Quality During the Planning and Construction of National Road Schemes. There is merit in including a commitment to reviewing these guidelines to ensure they remain fit for purpose over the lifetime of the Strategy bearing in mind the revised WHO guidelines (air, noise) outlined above.</p> <p>In finalising the Strategy, consider supporting measures to protect any designated quiet areas in open country, in collaboration with the local authorities. In 2003, the EPA commissioned a research project to establish baseline data for the identification of quiet areas in rural locations. A range</p>	<p>TII are currently in the process of updating the Noise Guidelines for impact assessment on National Roads and will consider the WHO guidelines as appropriate to the Irish context.</p> <p>TII are responsible for the development of strategic noise mapping for all National Roads. Local Authorities are responsible for preparing Noise Action Plan. Text is included in the updated SEA ER.</p> <p>TII are currently in the process of producing standards to support existing air quality guidelines.</p> <p>NR2040 is a high-level strategy, the project development process will have regard to any environmental designations as appropriate, including designated quiet areas and associated research.</p>	No change to the strategy.

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
	<p>of minimum distance criteria from man-made noise sources were defined, and the report includes recommendations for the identification and control of Quiet Areas.</p> <p>EPA research report – EPA Research Report 423: Environmental Transport Noise and Health: Evidence from Ireland (Noise–Health) (EPA, 2022) may be useful to consider in finalising and implementing the Strategy.</p>	<p>Noted.</p>	
<p>EPA - Management of Environmental Noise and Air Quality</p>	<p>Consider recognising to a greater extent, the impacts of transport on air quality and noise, as well as clarifying TII's role in environmental noise management. While reference is made to the SEA monitoring framework which considers air quality and noise, overall, there appears to be little mention of environmental noise and air quality in the Strategy.</p> <p>Management of Environmental Noise and Air Quality In Section 5.4.5 of the SEA ER, EPA notes that while TII are not an Action Planning Authority (APA), any significant noise impacts need to be considered under the relevant noise roads action plan, drawn up by the Local Authorities. It is the EPA's understanding that TII have recently informed the LAs that it has no role in the implementation of Noise Action Plans under the Noise Regulations.</p> <p>EPA also notes in the Strategy the commitment which states, "<i>In line with its legislative remit, TII will minimise the impact of road infrastructure on the environment and support the development and maintenance of ecological corridors along National Roads</i>".</p> <p>The Strategy should clarify TII's role regarding environmental noise management.</p>	<p>Noted. SEA team recommend additional text is added to the Strategy which has been included in the Strategy. It is also recommended that reference to additional text stating: TII's legislative remit is set down in the Roads Act, 1993 (as amended), the SEA team recommend that this is referenced in the Strategy. This text is included in the updated SEA ER.</p>	<p>The strategy has been updated in Section 3.4 Sustainability to provide further detail on the impacts of transport on air quality and noise.</p> <p>The text after, the Roads Act, 1993 (as amended) has been added to the Strategy text.</p>

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
EPA - Management of Environmental Noise and Air Quality	The Strategy mentions that “ <i>environmental sustainability is the bedrock for social and economic sustainability in Ireland; avoiding and where unavoidable mitigating environmental impacts including climate change, air quality and noise as well as biodiversity impacts of National Roads</i> ”. This could be explained further in so far as it relates to environmental noise. The Strategy should clearly state what this means for road noise policy and what the Strategy actions for avoiding and mitigating against environmental noise will be, to cover the areas identified in the SEA.	Noted. NR2040 is policy led. TII does not set policy however is required to continue to comply with all relevant legislation including that related to noise.	Additional text is included in Section 3.4 Sustainability of the Strategy including TII’s role regarding noise. NR2040 is a high-level strategy document which will influence investment in National Roads it does not specify any projects.
EPA - Management of Environmental Noise and Air Quality	It is noted under decarbonisation commitments that TII will continue to “ <i>develop and enhance its Road Emissions Model to explore the emissions impact of changes in transport demand, supply of transport networks/services and changes in vehicle fleet technology</i> ”. A similar commitment could be included for environmental noise using the noise mapping and modelling process.	Noted.	Additional text is included in Section 3.4 of the Strategy. TII complies with its legislative requirements any further requirements will be addressed by TII as appropriate.
EPA - Management of Environmental Noise and Air Quality	Maintaining roads to reduce noise exposure could be a consideration that is covered under the investment priority on Asset Management and Network Operations. EPA advocates that specific environmental objectives covering environmental noise, noise action plans, mitigations and support for Local Authorities out to 2040 are outlined in the Strategy.	Noted.	Additional text is included in Section 3.4 of the Strategy. TII complies with its legislative requirements any further requirements will be addressed by TII as appropriate. TII do not have a role in noise action plans. NR2040 is a high-level strategy document which will influence investment in National Roads.
EPA - Management of Environmental Noise and Air Quality	Under the Strategy commitments, there should be consideration given to including a target around reducing the population exposed to environmental noise from national roads. The health aspects of	Noted. The SEA includes an environmental target to “Decrease noise pollution affecting people/communities from National Roads”. The SEA Monitoring indicators has been	NR2040 is a high-level strategy document which will influence investment in National Roads. Continued noise monitoring, and

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
	<p>environmental noise from roads including the 2018 WHO noise guideline values – as well as any national indicators – are also areas for consideration in this regard.</p>	<p>updated to include for updated guidance relating to noise which will address these issues as appropriate.</p>	<p>environmental impact assessments will be undertaken as part of the project development and appraisal process which will inform environmental impacts including those related to noise and avoiding, reducing and mitigation impacts to populations. No change to the strategy.</p>
<p>EPA - Environmental Baseline Considerations: Air Quality</p>	<p>SEA should consider amending the wording of the 'Air Quality and Emissions' section of Table 5.1 in the ER -Overview of the Environment – Ireland, to describe that <i>Ireland can meet its non-Emission Trading Scheme (ETS) EU targets of a 30 per cent emission reduction by 2030 (compared to 2005), assuming implementation of planned policies and measures and the use of the flexibilities available all take place. These include a land use flexibility using the Climate Action Plan 2021 afforestation rate of 8,000 hectares per annum.</i></p> <p>The section on Climate, agriculture is the largest sector as per the National Inventory Report, with the transport sector being the second largest.</p> <p>The Agency's most recent Air Quality in Ireland in 2021 report (EPA, 2022) shows that nitrogen dioxide, mainly from road transport remains the key threat to air quality. It also acknowledges that, while EPA monitoring shows air quality is currently within EU legal limits, the levels of pollutants exceed the World Health Organisation (WHO) Air Quality Guidelines for health. It is also worth noting that the EPA is currently doubling the national ambient air monitoring network across Ireland, which will provide enhanced real-time air quality information and provide air quality forecasting and modelling. In</p>	<p>The EPAs comments are noted, and the recommendations have been incorporated as suggested in the updated SEA ER Table 5.1.</p>	<p>No change to the Strategy.</p>

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
	implementing the Strategy and in subsequent reviews, TII should have regard to the latest up-to-date ambient air quality data.		
EPA – Environmental Baseline Considerations: Water Quality	Any developments which involve permanent alteration of river riparian habitat can have a significant and lasting impact on the hydromorphological condition of a waterbody. Any proposed developments associated with the Strategy within the riparian zone of rivers and lakes, should carefully consider their potential long-term future impact on water quality and hydromorphology.	Noted. NR2040 is a strategic document, therefore the SEA has been developed at a strategic level, including water issues. Any developments stemming from the Strategy will be required to consider and assess environmental impacts at project level, as appropriate.	Relevant policy updates including CAP 2023 have been included as part of the Strategy to ensure consistency.
EPA - Environmental Baseline Considerations: Landscape	In Section 4.11 Landscape, consider the Marine Institute’s Regional Seascape Character Assessment Final Report when proposing any transport related infrastructure in coastal areas. Currently, an 18-month EPA research project is underway relating to reframing Landscape character Assessment for environmental management (RELAVENT). The outputs of this project, which will be available in 2023 will include a toolkit for how to take into account landscape character which may be useful when implementing the Strategy.	The submission is noted, and additional text added to the landscape section 5.11 under seascape. All other comments are noted.	No change to the Strategy.
EPA - Relationship with Plans and Programmes	It will be important in implementing the Strategy and in undertaking periodic reviews that it remains aligned with national environmental commitments and continues to support environmentally sustainable development.	Noted. NR2040 is a strategic document and supports existing policies. Any periodic reviews will consider changes to policy context as appropriate. For examples, updates since the draft was published in August such as CAP 2023 have also been considered in the updated SEA ER and the Strategy.	No change to the Strategy.
EPA – Tourism and Recreation	The Strategy could consider how it can support greater uptake of clean or low carbon mobility alternatives (such as or electric vehicles and cycle	NR2040 identifies sustainable mobility for all users (including tourism sector) as strategic issue. For example, the Strategy commits to	No change to the Strategy.

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
	lanes) for the tourism sector. This section of the report could also consider how implementation of the Strategy can support sustainable national and regional tourism.	<p>“... increase the provision of electric vehicle charging infrastructure nationwide”. It also commits to supporting the National Cycle Network.</p> <p>To address the strategic issue of Sustainability, the NR2040 Strategy commits to “promote inter-modal solutions that maximise overall transport efficiency in terms of infrastructure and resource use” which will facilitate additional active travel along the National Roads network.</p>	
EPA – Cycle Network	National Transport Authority have recently started the SEA process for Cycle Connects – Ireland’s Cycle Network plan, which may be relevant to acknowledge and take account of in implementing the Strategy.	Noted. Cycle Connects – Ireland’s Cycle Network plan is included in Appendix A in the updated SEA ER.	<p>TII is developing a National Cycle Network plan, referenced in the Strategy. Any active travel interventions on the National Roads network will align with existing Investment Priorities.</p> <p>No change to the Strategy.</p>
EPA - Environmental Protection Objectives	In Table 6.1 – Environmental Protection Objectives (p104) of the SEA ER, regarding the Noise objective, it would be useful to describe how this will be achieved through the Strategy. For example, would TII be generating noise guidance with noise intervention levels specified?	<p>Noted. The EPOs are used as part of the objective led assessment to test the Strategy. They are not objectives of the Strategy.</p> <p>The environmental monitoring programme includes indicators which will track if this objective is being achieved to include tracking the number of people/ households affected by noise exposure. Furthermore, an additional indicator has been added for, TII to produce updated noise standards, which is currently in preparation.</p>	No change to the Strategy.
EPA SEA Mitigation Measures	In finalising and implementing the Strategy, the proposed mitigation measures and	Noted. The SEA targets and indicators will be used to inform updated guidance,	Noted. The Strategy refers to the mitigation measures (Section 6.4).

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
	recommendations arising from the SEA should be fully incorporated into the Strategy and reflected in the various projects arising out of its implementation.	assessments which will be assessed as part of the projects arising out of NR2040 implementation.	The responses to the SEA recommendations are detailed in Section 4.2 of this SEA Statement.
EPA SEA Monitoring Programme	EPA recommend incorporating the SEA-related monitoring into any Strategy implementation monitoring/review proposed over the lifetime of the Strategy, so that the environmental performance of the Strategy can be evaluated. If the monitoring identifies adverse impacts during the implementation of the Strategy, TII should ensure that suitable and effective remedial action is taken.	Noted.	Noted. The Strategy refers to the SEA Monitoring Programme included in this SEA Statement (Table 7-1). Only projects that comply with NR2040 investment hierarchies will be granted funding. No further change is made to the Strategy.
EPA Future Amendments to the Strategy	Screen any future amendments to the Strategy for likely significant effects, using the same method of assessment applied in the “environmental assessment” of the Strategy.	Noted. All amendments to the Strategy have been screened and assessed for SEA and are documented in this SEA Statement.	The assessment feedback has been provided to the Strategy team and incorporated into the Strategy text.
EPA SEA Statement – “Information on the Decision”	<p>Once the Strategy is adopted, an SEA Statement should be prepared to summarise:</p> <ul style="list-style-type: none"> • How environmental considerations have been integrated into the Strategy; • How the Environmental Report, submissions, observations and consultations have been taken into account during the preparation of the Strategy; • The reasons for choosing the Strategy adopted in the light of other reasonable alternatives dealt with; and, • The measures decided upon to monitor the significant environmental effects of implementation of the Strategy. <p>A copy of the SEA Statement with the above information should be sent to any statutory environmental authorities as part of the SEA process.</p>	Noted. The SEA has been prepared to comply with the requirements of the SEA Directive and all SEA documents have been sent to the relevant environmental authorities.	No change to the Strategy.

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
EPA Strategy Implementation	These is merit in codifying the commitments made in Strategy. This will assist in monitoring how the Strategy progresses these commitments, over its lifetime. It also helps assess these commitments against the Strategic Environmental Objectives of the SEA.	Noted and also recommended as part of the SEA process.	Noted. No change to the Strategy.
EPA Sustainable Transport and Climate Change	The EPA recommends a holistic and integrated systems approach for the transport sector following the 'Avoid, Shift, Improve' hierarchy framework. Freight transport is an important component of the transport emission profile, and investment in measures for decarbonising freight transport should be considered in the Strategy.	Noted.	<p>NR2040 is policy led and includes consideration of relevant policies include the 'Avoid Shift Improve hierarchy' as part of the development of the Strategy.</p> <p>The strategy text has been updated in Section 2.2 with a summary of the Climate Action Plan 2023 which, amongst others, refers to the Avoid-Shift-Improve framework and NR2040's alignment.</p> <p>The Strategy recognises the effects of the transport sector on climate and focuses on reducing emissions across all transport types, including freight. The Strategy commits to <i>"prioritise traffic management investment in freight corridors and where congestion results in high levels of GHG emissions"</i> to address this strategic issue of decarbonisation and movement of goods.</p>
EPA - Climate Change Adaptation	In planning for transport up to 2040, the need to adapt to the effects of climate could be further considered in the Strategy.	Noted. The plans listed have been considered as part of the SEA process and informed the preparation of the Strategy and detailed in Appendix A of the SEA ER.	Climate Adaptation and Resilience is identified as a strategic issue in the strategy.

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
Climate Change Adaptation	<p>The Strategy should consider the requirements of the National Adaptation Framework, the non-statutory 'Developing Resilience to Climate Change in the Irish Transport Sector' adaptation plan and the statutory Adaptation Plan for Transport Infrastructure.</p> <p>The Strategy should consider the exposure, vulnerability and impacts to the transport systems from weather and climate events, and the range of projected scenarios and changes to these scenarios due to climate change. The potential for co-benefits (for example, positive impacts on air quality, biodiversity, noise, etc.) and the potential for mal adaptation should also be considered.</p>		<p>TII commitment has been updated to state; TII will update and implement its Climate Adaptation Strategy (2022)². The newly published strategy considers these issues.</p>
	<p>In Section 3.3 Climate Adaptation and Resilience, given that the road network and the people that rely on it are vulnerable to the range of possible climate change effects and the SEA considers these aspects, the Strategy could discuss these aspects to a greater extent also.</p>	Noted.	<p>Climate adaptation and resilience is addressed in Section 3.3 of the Strategy. Furthermore, an amendment to commitment to implement TII's Climate Adaptation Strategy 2022 has been added to the Strategy and provides further direction on the matter.</p>
EPA - Green Procurement Considerations	<p>EPA recommend that TII consider including a commitment in the Strategy, to promote sustainable and green project level procurement practices, for any projects arising out of implementing the Strategy. The EPA's 2021 Green Public Procurement Guidance may be useful to consider in this regard.</p>	Noted.	<p>TII have their own procurement practices, and this has been included as part of the updated text in Table 6.1 of the Strategy replacing green procurement with "sustainable procurement".</p>

² Climate Adaptation Strategy (TII, 2022) <https://www.tii.ie/technical-services/environment/changing-climate/TII-Climate-Adaptation-Strategy-2022.pdf>

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
EPA - Key Chapters of Ireland's Environment – An Integrated Assessment 2020	<p>In finalising the Strategy and integrating the findings of the SEA into the Strategy, the recommendations, key issues and challenges described in EPA's State of the Environment Report Ireland's Environment – An Integrated Assessment 2020 should be considered, as relevant and appropriate. The following chapters should be consulted along with the related Key Messages prior to finalising the Strategy and the SEA process:</p> <ul style="list-style-type: none"> • Chapter 2 relating to Climate Change • Chapter 3 relating to Air Quality • Chapter 11 relating to Environment and Transport • Chapter 14 relating to Environment Health and Wellbeing 	<p>The findings from the EPA's State of the Environment Report Ireland's Environment – An Integrated Assessment 2020, have been considered and incorporated, where appropriate into the SEA ER and the Strategy.</p>	<p>Noted and considered as appropriate in the Strategy preparation.</p>
Department of Agriculture, Environment and Rural Affairs via the Geological Survey Ireland (DAERA)			
DAERA-Geoheritage	<p>Request that County Geological Sites (CGS) be assessed as a constraint during the planning stage of any potential road schemes.</p>	<p>Noted. The NR2040 is a strategic document implemented at national level. Future projects arising from the Strategy will take cognisance of all relevant geoheritage, including CGS's, land and soils as appropriate at project level.</p>	<p>No changes to the Strategy</p>
DAERA/GSI - Geoheritage	<p>The design of any future development should consider the use of information panels as appropriate to highlight the significance of the impacted CGS.</p>	<p>Noted. - Future projects arising from the Strategy will consider signage as part of the project design process.</p>	<p>No changes to the Strategy</p>
DAERA/GSI Groundwater	<p>Recommend the use of Geological Survey Ireland (GSI) Bedrock geology, Groundwater, GWClimate and GWFlood maps and data sets to identify potential structural failures and flooding in Karst areas. These datasets would also be of benefit to the Strategic Flood Risk Assessment Report.</p>	<p>Noted. The NR2040 is a strategic document and does not identify any specific projects. Any future projects developed from Strategy will utilise appropriate data from GSI, as appropriate.</p>	<p>No changes to the Strategy.</p>

Organisation & key issue	Summary of submission/key issues raised:	SEA response/ Updates to SEA ER	NR2040 Strategy response
DAERA/GSI - GSI's Group Scheme and Public Supply Source Protection Areas Map Viewer	<p>GSI's Group Scheme and Public Supply Source Protection Areas Map Viewer can be consulted to identify inner and outer source protection areas that may be in the vicinity of potential road schemes. Any road construction scheme works will need to be cognisant of the group / public water schemes and the interactions between surface water and groundwater as well as run-off. Appropriate design should be undertaken by qualified and competent persons to include mitigation measures as necessary, such as SUDs or other drainage mitigation measures.</p> <p>Other considerations include groundwater flow, drinking water sources and any potential contamination/dewatering as a result of road construction would need to be assessed.</p>		
DAERA/GSI - Natural Resources (Minerals / Aggregates)	<p>Aggregate Potential Mapping viewer can be utilised to identify areas of High to Very High source aggregate potential within the area. Natural resources used in the proposed transport infrastructure developments should be sustainably sourced from properly recognised and licensed facilities, and that consideration of future resource sterilization is considered.</p>		No changes to the Strategy.
DAERA/GSI - Geochemistry of soils, surface waters and sediments	<p>Baseline geochemistry data for Ireland is available as part of the Tellus programme, which is a national-scale mapping programme which provides multi-element data for shallow soil, stream sediment and stream water in Ireland.</p>		No changes to the Strategy.
DAERA/GSI - Geophysical data	<p>GSI recommends the use of high-resolution geophysical data (Magnetic field, electrical conductivity, natural gamma-ray radiation) of soils & rocks as part of the Tellus programme which currently cover approximately 75% of the country.</p>		No changes to the Strategy.

Table 4-2 Transboundary Consultation feedback on the draft Strategy, SEA response and resultant changes to NR2040

Organisation & key issue	Summary of submission/key issues raised	SEA, AA and SFRA response	NR2040 Strategy response
Department of Agriculture, Environment and Rural Affairs – Northern Ireland			
DAERA/ NIEA – Comment	DAERA SEA Team is content that the environmental report and the process of consultation follow the SEA Directive and transboundary issues are considered as appropriate.	Noted.	No change to the Strategy.
DAERA - Natural Environment Division (NED)	Early engagement with relevant Northern Ireland (NI) bodies is recommended to explore potential transboundary issues.	Noted. Consultations will continue to be undertaken with NI bodies at project level, as appropriate.	No change to the Strategy.
DAERA Water Management Unit (WMU)	The DAERA Water Management Unit (WMU) is broadly supportive of the scope and content of the SEA ER of the Strategy in relation to the water environment.	Noted.	No change to the Strategy.
	With regard to mitigation, WMU recognises that the Strategy is a high level document and considers it appropriate to embed within the Strategy that all plans and projects arising from NR2040 and the development of National Road network infrastructure are required to have regard to all planning and environmental legal requirements.	Noted.	No change to the Strategy.
	With regard to the monitoring, the implementation of the strategy must be considered against appropriate monitoring measures in relation to both water quality and quantity. WMU consider associated trigger actions and interventions (including strategy revisions where required) essential if any unforeseen/adverse aquatic environment effects are identified as a result of the strategy.	Noted. The NR2040 is a strategic document. All projects arising from the Strategy will be subject to all planning processes and related environmental assessments including any monitoring and remedial actions as appropriate.	No change to the Strategy.
	The finalised River Basin Management Plan for the 3rd cycle period which runs from 2021-2027 for Northern Ireland is due to be published later in 2022.	Noted.	No change to the Strategy.
DAERA Drinking Water Inspectorate Response	The DAERA Drinking Water Inspectorate (DWI) recognises the significance and types of effects to be determined at the project level assessment stage as appropriate.	Noted.	No change to the Strategy.

Organisation & key issue	Summary of submission/key issues raised	SEA, AA and SFRA response	NR2040 Strategy response
<p>DAERA Marine Conservation Advice (MCA) NR2040 Draft for Public Consultation</p>	<p>In Section 3.3 Climate Adaptation and Resilience of the Strategy, the DAERA Marine Conservation Advice (MCA) recommends for roads near Lough Foyle and Carlingford Lough to consider the following information regarding coastal flooding and processes:</p> <p><u>UK Marine Policy Statement</u></p> <ul style="list-style-type: none"> Consider the contents under sections Section 2.6.7.4, Section 2.6.8.4, Section 2.6.8.5, and Section 2.6.8.6. <p><u>Draft Marine Plan for Northern Ireland</u></p> <ul style="list-style-type: none"> Consider the Core Policy on climate change and climate change adaptation, contained within the Draft Marine Plan for Northern Ireland. Paragraph 97 which states <i>“Public Authorities must consider if any actions are necessary to adapt the proposal to a changing climate, through decision making processes.”</i> Paragraph 100 which states: <i>“Increased temperatures, sea level rise and extreme weather events increase the risk of coastal erosion and flooding, and should be taken into account by proposers and public authorities. Proposals should be located and designed to cope with current and future conditions. Care needs to be taken to ensure proposals do not adversely impact on natural ecosystems”</i>. Consider the Core Policy on Coastal Processes. Consider the Core Policy on Resilience to Coastal Processes. Paragraph 114 which states <i>“Public authorities must consider the potential impact of proposals on coastal processes and conversely, how coastal processes may impact upon proposals over their lifetime, through decision</i> 	<p>Noted. The NR2040 is a strategic document, therefore the SEA has been developed at national level, including transboundary issues. Appendix A of the SEA ER contains a cumulative effects assessment of the Strategy with policy/ plan/ programmes, including the UK Marine Policy Statement and the Draft Marine Plan for Northern Ireland.</p> <p>Location specific issues will be addressed at project level as appropriate. Based on the above, the SEA has not been updated.</p>	<p>No change to the Strategy.</p>

Organisation & key issue	Summary of submission/key issues raised	SEA, AA and SFRA response	NR2040 Strategy response
	<p><i>making processes. The nature of coastal processes may require that attention is given to potential transboundary effects.”</i></p> <ul style="list-style-type: none"> • Paragraph 117 and 118 which state that “<i>proposers should ensure that proposals do not cause or exacerbate coastal change elsewhere and allow the continued functioning of existing services and activities. It is important to minimise and/or mitigate potential changes to coastal processes.</i>” • Paragraph 123 which states “<i>public authorities should only authorise a proposal if they are satisfied that there are no unacceptable adverse impacts on coastal processes.</i>” • Coastal development (squeeze): Section 6.33 states that “<i>The RDS recognises that coastal areas need to be protected from coastal squeeze, to safeguard against loss of distinctive habitats, and to help adaption to climate change, and accordingly states the landscape setting of features should also be conserved</i>”. This would be applicable to further development or hard sea defences at the coast. <p>Be cognisant of the results containing within the 2019 Baseline Study and Gap Analysis of Coastal Erosion Risk Management report.</p>		No changes to the Strategy
<p>DAERA Marine Conservation Advice (MCA) NR2040 SEA Environmental Report</p>	<p>In the SEA NTS under ‘The Landscape’ paragraph, the DAERA Marine Conservation Advice (MCA) recommends considering ‘Seascape’.</p>	<p>The ELC addresses natural, urban, peri-urban and rural areas, encompassing land, inland water, coastal and marine areas of all types, not just those that are considered for scenic or amenity value. In Section 5.14 of the updated SEA ER includes text relating to seascapes. Any future plans/projects arising from the Strategy will be required to comply</p>	No change to the Strategy.

Organisation & key issue	Summary of submission/key issues raised	SEA, AA and SFRA response	NR2040 Strategy response
		with policy and will be subject to the relevant environmental assessments, including landscape and visual amenity assessments as appropriate.	
DAERA Marine Conservation Advice (MCA) NR2040 SEA Environmental Report	<p>In Table 0.4 Environmental Protection Objectives (EPOs), MCA proposes recommendations for the following EPOs:</p> <ul style="list-style-type: none"> • Biodiversity (including marine biodiversity in coastal regions.) • Water (including marine coastal waters too.) • Climate Change Adaptation (considering Nature Based Solutions.) 	<p>The current EPOs addresses the comments raised i.e.</p> <ul style="list-style-type: none"> • EPO for biodiversity relates to both, terrestrial and marine biodiversity. • EPO for water relates to all water bodies which includes marine coastal waters. • EPO for climate - Nature based solutions (NbS) is already being used as part of adaptation response by TII. It is not considered appropriate to single out NbS under the protection objective. . 	No change to the Strategy.
DAERA Marine Conservation Advice (MCA) NR2040 SEA Environmental Report	<p>Under section 5.2.3 terrestrial biodiversity, MCA recommends considering marine biodiversity and the impacts of marine invasive non-native species (INNS) in coastal regions and along watercourses which discharge into the marine environment.</p> <p>MCA recommends considering the relationship between biodiversity and noise, water quality and marine environments, and biodiversity and climatic factors respectively in Table 5.4 interrelated SEA topics.</p>	<p>Section 5.2.4 Aquatic Biodiversity of the SEA ER considers the potential impacts on marine biodiversity and the marine environment.</p> <p>Table 5.4 of the SEA ER identifies the interrelationships between biodiversity and noise, water quality and marine environments, and biodiversity and climatic factors.</p>	No change to the Strategy.
DAERA Marine Conservation Advice (MCA)	In Table 5.5 Summary of key environmental considerations (positive/negative) on environmental factors – Biodiversity, flora and fauna, MCA recommends considering the marine	The NR2040 is a strategic document. All future projects arising from the Strategy will be subject to	No change to the Strategy.

Organisation & key issue	Summary of submission/key issues raised	SEA, AA and SFRA response	NR2040 Strategy response
NR2040 SEA Environmental Report	species where roads are developed in coastal or riparian areas.	interrelationships assessment which includes potential effects on marine environment as appropriate.	
DAERA - Marine Conservation Advice (MCA) - Natura Impact Assessment	The MCA recommends considering Northern Ireland's Priority Species.	Northern Ireland Priority Species are not directly connected to Appropriate Assessment, which is limited to the Qualifying Interests of European sites, and their supporting habitats and species. All projects arising from the Strategy will consider Northern Ireland's Priority Species, where applicable, as part of the required project development and assessment processes.	No change to the Strategy.
	On Page 24, under 'Categories of threats and pressures relating to climate impacts', the MCA recommends also considering changes to coastal processes and coastal squeeze.	Threats and pressures have been added to Section 3.5 of the NIS. <ul style="list-style-type: none"> • J02.01 – Landfill, Land Reclamation and drying out, general. • J02.12 – Dykes, embankments, artificial beaches, general. 	No change to the Strategy.
DAERA Marine Conservation Advice (MCA) - NIS	In Table 3-6 European Sites in the Zone of Influence, MCA recommends the inclusion of Skerries and Causeway SAC, Carlingford Marine pSPA and East Coast Marine pSPA Marine Protected Areas (MPAs). MCA also recommends considering Areas of Special Scientific Interest (ASSIs), Ramsar Sites and Marine Conservation Zones (MCZs).	These European sites have been added to Table 3-6: Areas of Special Scientific Interest (ASSIs), Ramsar Sites and Marine Conservation Zones (MCZs) are outside the remit of the NIS/ Article 6(3) assessment. These sites are referenced in the SEA ER.	No change to the Strategy.

Organisation & key issue	Summary of submission/key issues raised	SEA, AA and SFRA response	NR2040 Strategy response
	<p>Regarding Habitat Regulations Assessment, MPAs which have marine mammals as a site selection feature should use the following ranges for screening:</p> <ul style="list-style-type: none"> • All SACs within 100km of the project should be screened for Grey seals (<i>Halichoerus grypus</i>) • All SACs within 50km should be screened for Harbour seals (<i>Phoca vitulina</i>) • All SACs within 100km should be screened for Harbour porpoise (<i>Phocoena phocoena</i>) <p>Therefore, the Maidens SAC should be considered for Grey seals and the North Channel SAC should be considered for Harbour Porpoise.</p>	<p>The Zone of Influence in the NIS has considered the potential sources, pathways and receptors of impacts associated with the Strategy. Highly mobile Annex II species (Qualifying Interest species) can range over vast areas. These include:</p> <ul style="list-style-type: none"> • seals (>50km), • cetaceans (>1000km), • breeding seabirds (>1000km) • migratory fish (>1000km). <p>European sites outside the Zone of Influence will not be subjected to the direct effects of NR2040 or any plan/project stemming from it, however, the potential for ex-situ effects will be considered on a project-by-project basis.</p>	<p>No change to the Strategy.</p>
<p>DAERA MCA Marine Plan Team (MPT) Advice</p>	<p>SEA Environmental Report</p> <p>The DAERA Marine Plan Team (MPT) agree with the findings of the ER and welcome the standalone transboundary section of the ER and inclusion of NI plans and policies. .</p>	<p>Noted.</p>	<p>N/A</p>
	<p>The MPT concur with the findings of the NIS.</p>	<p>Noted</p>	<p>N/A</p>
	<p>NIS Typo In the last sentence of the NIS in the final paragraph (beginning <i>It also prescribes appropriate...</i>) in Section 1.1 Introduction on page 2 is incomplete. The same paragraph is then immediately repeated in full, but including the missing text, at the top of page 3.</p>	<p>Noted. The NIS has been updated.</p>	<p>N/A</p>
<p>DAERA Inland Fisheries</p>	<p>DAERA Inland Fisheries welcomes the opportunity to provide comment on the SEA Environmental Report and notes that previous comments to the SEA Scoping have been</p>	<p>Noted.</p>	<p>N/A</p>

Organisation & key issue	Summary of submission/key issues raised	SEA, AA and SFRA response	NR2040 Strategy response
	<p>incorporated into the SEA ER and are considered in the Strategy.</p> <p>Inland Fisheries are content with the NIS and assessment. DAERA will continue to engage with any subsequent drafts and the normal planning consultation process in relation to fisheries interests and potential transboundary impacts.</p>		
DAERA Landscape and Visual Comments	<p>Works at the individual project stages close to the Northern Ireland border may benefit from the NIEA Map Viewer in identifying Areas of Outstanding Natural Beauty (AONBs) and Landscape Character Areas, which may be impacted by transboundary landscape and visual impacts.</p>	<p>Noted. The NR2040 is a strategic document. All projects arising from the Strategy will consider the use of NIEA Map Viewer, where applicable to inform the impact assessments.</p>	<p>No change to the Strategy.</p>
DAERA Historic Environment Division (HED)	<p>The DAERA Historic Environment Division (HED) highlights the value of their map viewer and historic environment digital datasets, when it comes to development and implementation of specific works at the individual project stage, toward identification and mitigation of potential transboundary impacts with regard to cultural heritage concerns.</p>	<p>Noted. The NR2040 is a strategic document. All projects arising from the Strategy will consider the use of HED's Map Viewer, where applicable to inform the impact assessments.</p>	<p>No change to the Strategy.</p>

4.3 Non-statutory consultation on the draft Strategy

Overall, sixty-five submissions were received in response to the draft NR2040 public consultation. These ranged from international, national, regional, and local organisations and the public.

One submission was received from international government agency namely:

- Northern Ireland Environment Agency (NIEA) / Department of Agriculture, Environment and Rural Affairs (DAERA)

Written submissions were received from a total of eighteen organisations across national and regional level. Written submissions provided by organisations and/ or stakeholders at a national level (in alphabetical order) are as follows:

- An Taisce
- Department of Transport (DoT)
- Industrial Development Agency (IDA) Ireland
- Irish Cycling Advocacy Network (ICAN)
- National Transport Authority (NTA)
- Office of the Planning Regulator (OPR)
- Transport Mobility Forum (TMF)

Table 4-3 includes a summary of the submissions from non-statutory stakeholders relating to the SEA process and an associated response taken by the SEA, AA and SFRA teams.

The written submissions provided by organisations and stakeholders at a regional and local level (in alphabetical order) are as follows:

- Cork City Council (CCC)
- Donegal County Council (DCC)
- Kerry County Council (KCC)
- Meath County Council (MCC)
- N/M20 Cork to Limerick
- Northern & Western Regional Assembly (NWRA)
- Offaly County Council (OCC)
- Roscommon County Council (RCC)
- Tipperary County Council (TCC)
- Western Development Commission (WDC)
- Westmeath County Council (WCC)

For GDPR reasons names of submissions from the public were not collected. Any issues relating to the SEA process were considered as appropriate in finalising the SEA.

Consideration of feedback

Submissions were tagged by the strategy team under three key themes to include:

- (1) Infrastructure improvement – subdivided into Active travel, Integrated transport, and Safety;

- (2) Sustainability; and
- (3) Further engagement.

Additional themes identified were:

- (4) Regional connectivity – were subdivided into:
 - (i) General;
 - (ii) Figure 5.1 'Corridors where interventions support NPF/NIFTI 90kph target';
 - (iii) Figure 5.2 'National Primary Roads Predominant Roles'; and
 - (iv) Figure 5.3 'National Secondary Roads Predominant Roles'.
- (5) Mobility of People and Goods in Urban Areas; and
- (6) Other.

Table 4-4 includes a summary of key issues/ points raised in the submissions from all organisations and the public which are grouped under the themes above and includes details of the change made to the strategy.

Table 4-3 Non-statutory consultation feedback on the SEA

Organisation & key issue	Summary of submission/key issues raised:	SEA, AA and SFRA response	NR2040 Strategy response
Department of Transport			
SEA Monitoring	The Department is actively progressing work to establish an implementation group to support NIFTI monitoring. In addition to monitoring the implementation of NIFTI's follow-up actions, and future sectoral investment to ensure it aligns with the NIFTI Investment Priorities, this group will also co-ordinate reporting on the implementation of the Strategic Environmental Assessment (SEA) Monitoring Framework. As such, it may be useful to include a statement indicating alignment between NIFTI's SEA Monitoring Framework and that of NR2040.	Reference to this process is included in this SEA Statement - Section 7 Monitoring.	A new section on monitoring (Section 7) has been added to the Strategy.
Comment on SFRA	Comments on the NIS/SFRA Documents The SFRA documents could include more detail on the NIFTI intervention hierarchy and how these may affect flood risk assessments. The document sets out NIFTI Intervention types and examples in SFRA Table 2.2, with an intervention, description, and example. However, it does not tie these into the NIFTI intervention hierarchies of maintain, optimise, improve and new.	Section 2 of the SFRA presents a summary of the policy context under which NR2040 has been developed. Table 2.2 sets out the intervention hierarchies in NIFTI not NR2040. NIFTI has completed its own environmental assessments including SEA, AA and SFRA that can be consulted for these assessments, as appropriate.	No -change to the Strategy.
Comments on SFRA and NIS	The SFRA and NIS could include how the intervention hierarches (maintain, improve, optimise and new) would be approached under each heading, such as optimising existing national roads by including bus lanes by reallocating land space, or where new infrastructure is required, how it will ensure these align with the other investment priorities such as by ensuring greater decarbonisation. Table 5.1 on NIFTI investment priorities would be useful as a template for the intervention hierarchies. In the NIS, TII could also identify the impact of this hierarchy to the environment (e.g., does maintaining have less impact than new infrastructure).	Table 5.1 of the SFRA includes the assessment of the investment priorities for NR2040. The intervention hierarchies of NIFTI are assessed in the respective environmental assessments including the SFRA and NIS and should be consulted in this regard. NR2040 has committed to be consistent with NIFTI and any plans or projects falling out of these documents will be required to assess	No change to the strategy.

Organisation & key issue	Summary of submission/key issues raised:	SEA, AA and SFRA response	NR2040 Strategy response
		<p>the environmental impacts as required.</p> <p>The Strategy is high-level, and the NIS cannot make assumptions about how the intervention hierarchy will be approached under each heading, such as optimising existing national roads by including bus lanes by reallocating land space, or where new infrastructure is required, how it will ensure these align with the other investment priorities such as by ensuring greater decarbonisation.</p> <p>The purpose of the NIS is to identify potential adverse effects, and to prescribe mitigation measures to avoid or reduce those adverse effects. The question of whether maintenance or building new infrastructure will have a greater impact cannot be answered at the strategic level.</p>	

Table 4-4 Summary of consultation feedback on the draft Strategy and resultant changes to NR2040

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Infrastructure Improvement	National Cycle Network (NCN)	Suggest highlighting proposed NCN and its relationship with NRN.	NR2040 addresses the NCN in Section 6.2 Implementation Structure “The Decarbonisation Investment Priority ... incorporates Integrated Mobility programme, including major projects such as an Active Travel programme, which includes the National Cycle Network (NCN).” No amendment has been made to the strategy in this respect at this time.
		Request for increased active travel modes through the implementation and improvement of cyclist and pedestrian infrastructure.	NR2040 addresses active travel modes in Section 6.1 Commitments, in relation to (1) Sustainability, (2) Movement of People, and (3) Urban Congestion: “TII will promote inter-modal solutions that maximise overall transport efficiency in terms of infrastructure and resource use. For example, facilitating safe active travel along national road corridors that connect with rail and bus stations.” “TII will consider the needs of all road users for all projects. On urban dual carriageways and motorways approaching cities, TII will work with partner agencies to enable public transport and safe active travel alternatives for car users.” “TII will support the provision of segregated or offline active travel infrastructure adjacent to national roads.” As well as within Section 6.2 NR2040 Implementation Structure “The Decarbonisation Investment Priority ... incorporates Integrated Mobility programme, including major projects such as... an Active Travel programme”. One of the four investment priorities of NIFTI and NR2040 is Decarbonisation. “It encompasses three investment portfolio themes: Integrated Mobility; Electric Vehicle Charging; and Active Travel.” No amendment has been made to the strategy in this respect at this time.

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
<p>Infrastructure Improvement</p>	<p>Active Travel</p>	<p>Consider reprioritisation of road space in urban areas to support the implementation of Active Travel measures.</p>	<p>NR2040 addresses active travel, across the entire National Roads network, rural and urban, in: Section 5.1.3, as one of the Investment Portfolios under Decarbonisation <i>“TII is committed to delivering more on active travel modes in all its projects...”</i></p> <p>As well as in Section 6.1 Commitments, in relation to Sustainability (1), Movement of People (2), and Urban Congestion (3):</p> <ol style="list-style-type: none"> 1. <i>“TII will promote inter-modal solutions that maximise overall transport efficiency in terms of infrastructure and resource use. For example, facilitating safe active travel along national road corridors that connect with rail and bus stations.”</i> 2. <i>“TII will consider the needs of all road users for all projects. On urban dual carriageways and motorways approaching cities, TII will work with partner agencies to enable public transport and safe active travel alternatives for car users.”</i> 3. <i>“TII will support the provision of segregated or offline active travel infrastructure adjacent to national roads.”</i> <p>And in Section 6.2 Implementation Structure under the Decarbonisation Investment Priority which includes <i>“an Active Travel programme”</i>.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>Request improvement of active travel modes in rural areas, as well as urban areas.</p>	
		<p>Request reduction of urban congestion and on street parking.</p>	

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Infrastructure Improvement		Request consideration of new approach to the design and / or management of some urban national roads.	<p>NR2040 is TII's long-term strategy for planning, operating, and maintaining the National Roads network. Design guidelines are out of scope for the strategy.</p> <p>Design guidelines are developed in the Design Manual for Urban Roads and Streets (DMURS, 2019) and in TII's Design DN-GEO-03084 Treatment of transition zones to towns and villages on national roads (2021)</p> <p>DN-GEO-03084 (tiipublications.ie)</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		Request to re-evaluate pedestrian phase timing and duration on junction crossing national roads.	<p>NR2040 addresses vulnerable road users' safety in Section 5.1.3 Active Travel</p> <p><i>"TII is committed to delivering more on active travel modes in all its projects, such as improving the safety of National Roads for active travel users and reducing the severance caused by some National Roads in urban areas.</i></p> <p>As well as within Chapter 6. Implementation Section 6.1 NR2040 Commitments, in relation to the movement of people, <i>"TII recognises that busy urban motorways, ring roads and town bypasses can be hostile environments for pedestrians and cyclists wishing to cross. TII will identify and remedy severance impacts from National Roads."</i></p> <p>Specific investments are not within the NR2040's scope and should be developed at a project level through existing processes, outlined in Section 6.3 Project Development Process.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		Request provision of safe crossing points for cyclists / pedestrians across the National Road Network.	
	Integrated Transport	Request development of improved pedestrian and cycle crossing along National Roads to combat existing severance and enable better integration [specific project request]	<p>NR2040 addresses integrated mobility Section 5.1.1 Integrated Mobility</p> <p><i>"TII will contribute to integrated mobility by investing in measures such as Park and Ride / Share and bus prioritisation, where appropriate along National Roads."</i></p> <p>As well as within Section 6.2 Implementation Structure, in relation to Decarbonisation, which <i>"incorporates Integrated Mobility programme,</i></p>

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
<p>Infrastructure Improvement</p>	<p>Integrated Transport</p>	<p>sustainable modes of transport within urban areas.</p>	<p><i>including major projects such as: core bus corridors, bus and passenger facilities, Park & Ride and Park & Share”.</i></p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>Request implementation and improvement of the public transport network infrastructure.</p>	<p>NR2040 addresses integrated mobility in Section 5.1.1 Integrated Mobility</p> <p><i>“TII will contribute to integrated mobility by investing in measures such as Park and Ride / Share and bus prioritisation, where appropriate along National Roads.”</i></p> <p>As well as within Section 6.1 Commitments, in relation to (1) Future Demographic Growth Trends, and (2) Movement of People:</p> <ol style="list-style-type: none"> 1. <i>“TII will ensure that any future implementation of demand management proposals on the National Roads network aligns with the National Sustainability Mobility Policy as well as NIFTI Modal and Intervention Hierarchies.”</i> 2. <i>“On urban dual carriageways and motorways approaching cities, TII will work with partner agencies to enable public transport and safe active travel alternatives for car users.”</i> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>Request increasing Park and Ride facilities.</p>	<p>NR2040 addresses Park and Ride facilities in Section 5.1.1 Integrated Mobility</p> <p><i>“TII will contribute to integrated mobility by investing in measures such as Park and Ride / Share and bus prioritisation, where appropriate along National Roads.”</i></p>
		<p>Support of EV charging infrastructure at Park & Ride locations served by the NCN.</p>	<p>NR2040 addresses EV charging infrastructure at Park and Ride locations in Section 5.1.2 Electric Vehicle Charging</p> <p><i>“TII will work with the Department of Transport’s Zero Emissions Vehicles office to support the delivery of the national EV charging infrastructure in line with its EV Charging Infrastructure strategy, currently under development.”</i></p>

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Infrastructure Improvement	Integrated Transport		<p>Specific investments are out of scope for the strategy and should be developed at a project level through existing processes, outlined in Section 6.3 Project Development Process.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>In reference to the Rail Freight 2040 strategy, there are no proposed rail links to Rosslare Port.</p>	<p>NR2040 is TII's long-term strategy for planning, operating, and maintaining the National Roads network, under the remit of TII.</p> <p>The Rail Freight 2040 strategy is under the remit of Iarnród Éireann and as such out of scope for the current strategy.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
	Safety	<p>Need for safer and more accessible roads by increasing signage, speed cameras, safety training / road education, road maintenance / upgrades, better adaption to extreme weather conditions caused by climate change, lower traffic speeds (including speed limits).</p>	<p>NR2040 addresses (1) Road Safety, (2) Asset Management & Network Operations and (3) Resilience & Climate Adaptation in Chapter 5. Investment Priorities and Portfolios, as three portfolios under the Protection and Renewal Investment Priority:</p> <ol style="list-style-type: none"> 1. <i>“TII will deliver on its actions in the Road Safety Strategy (2021-2030) and collaborate with partners to deliver on supporting actions... TII will target investment on sections of national roads with the highest risk of fatal or serious injury...TII’s road safety programme will focus on achieving safe roadsides and a safe environment for vulnerable road users in line with the safe systems approach.”</i> 2. <i>“A key priority for TII is to maintain the existing National Roads network to a robust and safe standard”.</i> 3. <i>“There is need to ensure the road network is resilient to the effects of climate change...TII is continually maintaining and renewing road pavements and road assets such as signage, crash barriers and noise barriers. Adaptation to climate change is included in drainage designs by strengthening bridges and raising of roads...”</i> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>Traffic noise can be a serious environmental and health issue for residents that are adjacent to high-</p>	<p>NR2040 addresses road related noise in Section 5.2.3 Resilience and Climate Adaptation <i>“TII is continually maintaining and renewing road</i></p>

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Infrastructure Improvement	Safety	speed roads. It is considered that the strategy should be supportive of measures to reduce the noise impact of existing roads on residential communities, particularly in the context of larger towns and cities.	<p><i>pavements and road assets such as signage, crash barriers and noise barriers</i>".</p> <p>and in Section 6.1 Commitments, in relation to Sustainability "<i>In line with its legislative remit, TII will work with relevant bodies to support measures to reduce air quality and noise impacts from road transport.</i>"</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		Request more investment in effective traffic calming on national roads in smaller towns and villages that have not been bypassed.	<p>NR2040 is TII's long-term strategy for planning, operating, and maintaining the National Roads network.</p> <p>In Section 6.1 Commitments, in relation to the movement of people, "<i>TII recognises that busy urban motorways, ring roads and town bypasses can be hostile environments for pedestrians and cyclists wishing to cross. TII will identify and remedy severance impacts from National Roads</i>".</p> <p>Specific investments are not within NR2040's scope and should be developed at a project level through existing processes, outlined in Section 6.3 Project Development Process.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
Regional Connectivity	General	Consider the upgrade of national roads in the [specific Region] as a priority.	NR2040 does not suggest prioritisation of interventions or corridors, apart from NIFTI's Investment Priorities and its Modal and Intervention Hierarchies.
		Request recognition of the strategic importance of [specific Region].	Enhanced Regional and Rural Connectivity is one of NR2040's four Investment Priorities, as developed in Section 5.4 " <i>The enhanced regional and rural connectivity investment priority encapsulates the social and economic importance of the National Roads network, in supporting and balancing the regional cities, key settlements, and rural areas' prosperity and growth, towards achieving Project Ireland 2040 goals</i> ".
		There is a need for positive discrimination when considering investment decisions relating to [specific Region].	No amendment has been made to the strategy in this respect at this time.
		Request continued investment in the national road network between [specific areas] to maximise economic benefits.	NR2040 is TII's long-term strategy for planning, operating, and maintaining the National Roads network.

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Regional Connectivity	General		<p>Specific investments are not within NR2040's scope and should be developed at a project level through existing processes, outlined in Section 6.3 Project Development Process.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>Consider the re-classification of strategic regional roads as national routes.</p>	<p>TII analysis for NR2040 could inform decisions regarding reclassification from Regional to National and vice versa.</p> <p>Road's reclassification is a matter for the Minister, as laid out in the Roads Act, 1993, Part II³, and is not within TII's remit.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>Request consideration of how potential new links on the NRN be accommodated and implications on investment priorities.</p>	<p>TII's investment priorities as developed through NR2040 will remain relevant for links that may be defined as part of the National Roads network in the future.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>Suggested that NR2040 should consider how potential new links on the National Roads network would be accommodated and how these would affect TII's investment priorities. Potential new links could include [specific corridors].</p>	
	Figure 5.1 Interurban Connectivity	<p>Ambiguity as to the meaning of section 5.4 - Does a corridor where interventions support the NPF/NIFTI 90kph average inter-urban speed target have a higher ranking than Lifeline/Arterial Roads.</p>	<p>NR2040 does not suggest a ranking of interventions, apart from NIFTI's Investment Priorities and its Modal and Intervention Hierarchies.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>Requests to include [specific corridors] in Figure 5.1 as corridors where</p>	<p>Analysis has been re-examined and no amendment has been made to the identified corridors in Figure 5.1 at this time.</p>

³ The Government of Ireland, Roads Act, 1993 (as amended)

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Regional Connectivity		interventions support NPF/ NIFTI 90kph target	
		Request more detailed information (with regular updates) regarding current average speeds on national roads be made available.	TII's National Roads Indicators report provides annual updates on the performance and use of the National Roads network. No amendment has been made to the strategy in this respect at this time.
	Figure 5.2 Dominant Function of National Primary Roads	Request [specific routes] be identified as an 'International Connectivity' route or as a 'Regional Connectivity' route.	The strategy has been updated to represent Ireland West International Airport (Knock Airport) for international connectivity in Figure 5.2 No further amendment has been made to the identified corridors in Figure 5.2 at this time.
	Figure 5.3 Dominant Function of National Secondary Roads	Requests for [specific] amendments to Figure 5.3	The strategy has been updated to represent sections of the N56 as Collector and Arterial Routes, instead of Lifeline Routes. No further amendments have been made to the identified corridors in Figure 5.3 at this time.
		Consider applying a separate funding mechanism to life-line routes, given their key strategic importance.	NR2040 has established a separate funding mechanism for National Secondary roads, elaborated in Section 6.2 NR2040 Implementation Structure and illustrated in Figure 6.1. No amendment has been made to the strategy in this respect at this time.
Sustainability		Need to reduce vehicle use.	NR2040 supports a shift to more sustainable modes of transport including public transport and active travel modes and promotes decarbonisation as one of the investment priorities.
		Promote zero emission / alternative fuel vehicles.	No amendment has been made to the strategy in this respect at this time.
		Request quantitative terms of how NR2040 will contribute to the decarbonisation of the transport sector.	TII's National Roads Indicators report provides annual updates on the performance and use of the National Roads network including Emissions. No amendment has been made to the strategy in this respect at this time.

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
		Suggested that NR2040 takes account of upcoming and future requirements in relation to a net zero-carbon transport future in developing infrastructure projects.	NR2040 is in line with the National Policies, reviewed in Chapter 2 Policy Context, and sets Decarbonisation as an Investment Priority, in Section 5.1, and includes TII's commitment, in Section 6.1, to appraise all National Road projects " <i>in the context of compliance with Ireland's climate change targets, in line with the Governments Climate Action Plan, NIFTI and in accordance with the Department of Transport's Common Appraisal Framework.</i> " No amendment has been made to the strategy in this respect at this time.
Engagement with policies		Supportive of National Roads 2040, in providing a clear context for the National Road network as it relates to key areas of Government policy, including the National Planning Framework, the National Development Plan and the Climate Action Plan	Noted.
		Consider highlighting the potential for greater alignment between National Road Network planning and National Ports Policy.	The strategy has been updated to include review of the 'National Ports Policy' in Section 2.9 and mentions that ' <i>Integration between planning and policy for ports with that of the transport system should be of high priority. TII recognises the potential for greater alignment between planning and policy for Ports with that of the National Roads network.</i> ' No amendment has been made to the strategy in this respect at this time.
		Consider engaging with and responding to the 2022 OECD report entitled <i>Redesigning Ireland's Transport for Net Zero: Towards Systems that Work for People and the Planet.</i>	The strategy has been updated to include review of the OECD report 'Redesigning Ireland's Transport for Net Zero: Towards Systems that Work for People and the Planet' in Section 2.8 and mentions that ' <i>The NR2040 strategy has been developed in accordance with the OECD recommendations presented above and recognises the issues of increasing car use and emissions. TII widely supports the mitigations measures that should be put in place to reduce these emissions and improve the well-being of Irish citizens, which have been broadly responded to and recognised by the NR2040 investment priorities and commitments.</i> ' No amendment has been made to the strategy in this at this time.

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Engagement with policies		Request clarity on how the NR2040 and its investment priorities will align with the aim of the Government's Climate Action Plan.	<p>Decarbonisation is one of NR2040's four investment priorities, elaborated in Section 5.1.</p> <p>It encompasses three investment portfolio themes: Integrated Mobility; Electric Vehicle Charging; and Active Travel. These are meant to promote reduction of road transport emissions and promote achievement of Climate Action Goals.</p> <p>In addition, Section 6.1 Commitments, details seven TII commitments for addressing the strategic long-term issue of Decarbonisation, including <i>'National Road projects will be appraised in the context of compliance with Ireland's climate change targets, in line with the Governments Climate Action Plan, NIFTI and in accordance with the Department of Transport's Common Appraisal Framework. Predicted changes and/or targets associated with the levels of usage of each mode (e.g., bicycle, car, public transport, truck, van) will inform this.'</i></p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		Consider the National Policy Objectives (NPOs) as well as the National Strategic Outcomes (NSOs).	<p>NIFTI translated the National Planning Framework (project Ireland 2040), including its National Policy Objectives (NPOs), to a transport investment context and NR2040 in turn further develops NIFTI in the context of the National Roads network, as illustrated in Figure 2.1.</p> <p>NR2040 aligns with NPO2c where any interventions to improve regional connectivity will be developed in accordance with the NIFTI Investment Priorities and the Modal and Intervention Hierarchies.</p> <p>NPO2c states:</p> <p>"Accessibility from the north-west of Ireland and between centres of scale separate from Dublin will be significantly improved, focused on cities and larger regionally distributed centres and on key east-west and north-south routes."</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		Suggest regarding to the Avoid-Shift-Improve (ASI) framework in the Final Strategy.	NR2040 addresses the Avoid-Shift-Improve (ASI) framework in Chapter 7 Assessment of Alternatives of the SEA Environmental report.

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Engagement with policies			The strategy has been updated to include Appendix B Assessment of Alternatives Summary, including reference to the ASI framework.
	The balance of priorities between achieving NIFTI Intervention Hierarchy and the NDP commitments and NSO of regional and rural connectivity is unclear.	NIFTI translated the Project Ireland 2040 NSOs to a transport investment context and NR2040 in turn further develops NIFTI in the context of the National Roads network, as illustrated in Figure 2.1. No amendment has been made to the strategy in this respect at this time.	
	Current form of strategy is not consistent with the Regional Spatial and Economic Strategy (RSES) for the [specific region].	NR2040 is consistent with NIFTI, developing it in the context of the National Roads network, as illustrated in Figure 2.1. NIFTI Chapter 1 Overview, Section 1.4 Strategic Investment Framework for Land Transport outlines that: ⁴ <i>“Future transport investment projects and programmes as identified in investment strategies – whether they are developed by the NTA in the case of public transport, TII in the case of the National Roads network, or Local Authorities in the case of regional and local roads and other projects of a local nature – will have to demonstrate their fit with NIFTI and, by extension, with the NPF and NSOs.”</i>	
	Consider amending the Strategy to clearly reflect the regional accessibility ambitions of the National Planning Framework, and the RSES for the [specific region].	NR2040 addresses the importance of regional accessibility, as highlighted by the NPF, in Section 5.4.1.2 Regional Connectivity <i>“Both the NPF and NIFTI indicate the importance of maintaining and improving accessibility to and between the more peripheral areas of the state...Any interventions brought forward will be developed in accordance with the NIFTI Investment Priorities and the Modal and Intervention Hierarchies.”</i> No amendment has been made to the strategy in this respect at this time.	
Development plans should be consistent with RPOs and RSES.	Development plans are the responsibility of Local Authorities and should be consistent with RPOs and RSES. NR2040 is TII’s long-term strategy for planning, operating, and maintaining the National Roads network.		

⁴ Government of Ireland, National Investment Framework for Transport in Ireland (2021)

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
			No amendment has been made to the strategy in this respect at this time.
		Consider addressing commitments in the NPF and the Regional Strategies.	The strategy has been updated to include in Section 6.5 Collaboration, <i>“It is important that future transport investment is coordinated and integrated with other sectors including land-use planning to avoid the case of urban sprawl and promote NSOs such as compact urban growth.”</i> No amendment has been made to the strategy in this respect at this time.
		Request further engagement to clarify comments submitted and understand TII’s intentions regarding its priorities and funding of interventions before NR2040 is finalised.	The Draft NR2040 strategy was presented to Local Authorities in the TII Conference in Sligo in October 2022, with an invitation for open discussion.
		Request for further training for local authorities to become familiar with the content of the strategy and to translate its objectives into specific plans.	NR2040 provides guidance as to the Project Development Process in Section 6.3. The Draft NR2040 strategy was also presented to Local Authorities in the TII Conference in Sligo in October 2022. The slide deck presented was provided to all participants and will also be hosted on the nr2040.consultation.ai website alongside the Final Strategy and accompanying environmental reports.
Further Engagement			
Mobility of People and Goods in Urban Areas		Consider placing a critical emphasis on the need to safeguard the primary functions of the National Road network in catering for strategic movement, through the protection and optimization of existing assets. This is of particular importance in relation to the movement of freight and access to international gateways.	Two of the four investment priorities of NIFTI and NR2040 are Protection & Renewal and the Movement of People and Goods in Urban Areas. NR2040 addresses freight movement in Section 5.3.2 Movement of Goods <i>“TII will work with the Department of Transport and partner agencies to explore traffic and demand management measures to improve the journey time reliability required for the efficient movement of imports and exports.”</i> As well as within Section 6.1 NR2040 Commitments, in relation to the Movement of Goods & Services <i>“TII will provide/consider prioritisation measures such as dedicated freight lanes where such prioritisation results in greater transport efficiency.”</i>

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Mobility of People and Goods in Urban Areas			No amendment has been made to the strategy in this respect at this time.
		Consider highlighting the important role of the National Road network in the provision of bus-based public transport services, both within urban areas and for inter-urban movements, through the application of appropriate design interventions, traffic management and demand management measures.	One of the four investment priorities of NIFTI and NR2040 is the Movement of People and Goods in Urban Areas. TII recognises the importance of the National Roads network in catering for public transport and in Section 6.1 commits to future actions to support the movement of people including ‘ <i>Connecting Ireland and prioritisation measures such as dedicated bus lanes where such prioritisation results in greater transport efficiency.</i> ’ No amendment has been made to the strategy in this respect at this time.
		Urban Traffic Demand Measures should also consider rationalising tolling arrangements.	The Strategy has been updated to include a reference to TII’s BRUCE project in Chapter 3. Long Term Strategic Issues for National Roads- Section 3.10 Asset Management and Operations
		Consider improving road access to [specific] ports	NR2040 addresses International Connectivity in Section 5.4.1.3 International Connectivity and identifies National Primary Roads with an International Connectivity predominant function as illustrated in Figure 5.2. No amendment has been made to the strategy in this respect at this time.
		Supportive of measures that will improve visitor access to the county through Cork, Shannon, and Kerry Regional airports via National Roads.	No amendment has been made to the strategy in this respect at this time.
		Consider optimised vehicle flow on sections of the National Roads network [specific section mentioned] for the benefit of all users.	NR2040 addresses optimised vehicle flow in Section 5.3.3 Demand and Traffic Management <i>“TII will support travel demand management measures for National Roads... and implement other government policy on demand management on national roads... TII will expand traffic management measures in congested sections of national roads to ensure optimal vehicle flow to minimise carbon emissions, particularly from freight.”</i>

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
			<p>As well as within Section 6.1 NR2040 Commitments in relation to Urban Congestion</p> <p><i>“TII will promote traffic management interventions that help optimise traffic movement on urban National Roads.</i></p> <p>No amendment has been made to the strategy in this respect at this time.</p>
Other		Consider applying a weighting to the investment priorities, that will compensate for infrastructural deficiencies.	<p>NR2040 does not suggest a weighting of investment priorities, apart from NIFTI’s Investment Priorities and its Modal and Intervention Hierarchies.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		Consider including a clear acknowledgement of the pronounced and widening gap in the key indicators of economic performance and prosperity and outline how enhanced Road connectivity is one key factor towards addressing the pronounced legacy of under investment in multiple modes across [specific region].	<p>Project Ireland 2040 provides the National Planning Framework (NPF) for enhancing regional development. The NPF provides three Regional Assemblies to</p> <p>“co-ordinate, promote and support the strategic planning and sustainable development of the regions.”</p> <p>Whilst Project Ireland 2040 provides the framework for regional development, NR2040 will support Project Ireland 2040 in a transport context.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		Consider amending the Strategy to reflect the All-Island Dimension of Planning and Road Infrastructure	<p>TII considers the NR2040 maps to represent the All-Island dimension of planning and road infrastructure as presented in the Draft Strategy published for public consultation.</p> <p>No amendment has been made to the maps in this respect at this time.</p>
		Consider providing more focus on the <i>Integrated Mobility, Electric Vehicle Charging and Active Travel</i> goals (part of the Decarbonisation Investment Priority) for counties of a rural and peninsular nature.	<p>Section 5.1. Decarbonisation encompasses three investment portfolio themes: Integrated Mobility; Electric Vehicle Charging; and Active Travel.</p> <p>For Integrated Mobility,</p> <p><i>“TII will contribute to integrated mobility by investing in measures such as Park and Ride, Park and Share and bus prioritisation, where</i></p>

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Other			<p><i>appropriate along National Roads.” As well as “Improving connections to major public transport hubs”.</i></p> <p>TII is committed in supporting the Department for Transport and will <i>“support the delivery of the national EV charging infrastructure in line with its EV Charging Infrastructure strategy, currently under development.”</i></p> <p>TII will continue to deliver active travel projects, such as improving the safety of National Roads for active travel users and reducing the severance caused by some National Roads in urban areas.</p> <p>TII are currently developing Greenway schemes in rural areas. Section 5.1.3 Active Travel of the NR2040 addresses the NCN and Greenway network.</p> <p><i>“TII will collaborate with other stakeholders to implement the National Cycle Network plan to cater for more active trips and expand the Greenway network nationwide, on behalf of the Department of Transport.”</i></p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>Consider the rapid evolving nature of EVs as a strategic issue and driver-assist technology, have the potential to impact on the operating capacity of National Roads. Therefore, consider potential long-term implications for traffic on the National Road networks from evolving vehicle design (including the design of road infrastructure both urban and inter-urban).</p>	<p>NR2040 has and will continue to consider technological change as set out in Section 3.9</p> <p><i>“TII is committed to the facilitation of Connected Driving on National Roads in collaboration with key stakeholders.”</i></p> <p>As well as within Section 5.1.2 Electric Vehicle Charging</p> <p><i>“TII will work with the Department of Transport’s Zero Emissions Vehicles office to support the delivery of the national EV charging infrastructure in line with its EV Charging Infrastructure strategy, currently under development.”</i></p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		<p>Consider whether and how the interface of the National Road network with relevant regional and local roads could</p>	<p>TII is cognisant that the National Roads network is not considered in isolation to local and regional solutions. TII supports holistic regional transport solutions and will continue to work in partnership with local</p>

Theme	Sub-theme	Summary Comments:	TII response & change to strategy
Other		be better be addressed at a strategic level to 2040 to help achieve the vision and objectives of TII for the National Road network.	<p>authorities and the NTA to develop improvements at a local and regional level.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>
		Provide more emphasis on the implications of the development of multimodal autonomous freight movement.	<p>NR2040 has considered multimodal freight in Section 3.7 <i>“Integration of road and rail freight is supported by TII and is important for reducing freight related congestion and emissions on National Roads.”</i></p> <p>Moving forward, TII will continue to work with the Department of Transport to consider opportunities for utilising the rail network for freight movements.</p> <p>NR2040 also considers Technological Change in Section 3.9 <i>“TII is committed to the facilitation of Connected Driving on National Roads in collaboration with key stakeholders.”</i></p> <p>As part of NR2040, the development of autonomous vehicles will be monitored on a regular basis. The potential implications of autonomous freight movements will be considered in terms of possible interventions required on the National Roads network.</p> <p>No amendment has been made to the strategy in this respect at this time.</p>

5. THE PREFERRED ALTERNATIVE AND REASON FOR CHOOSING IT

5.1 Introduction

Article 5 of the SEA Directive requires the SEA process to identify, describe and evaluate “reasonable alternatives” of achieving the objectives of NR2040.

As stated in the Directive; “an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated”.

Article 13E of the SEA Regulations 2004 require the identification, description and evaluation of the significant effects on the implementation of the strategy and the reasonable alternatives considered. An outline of the reasons for selecting the alternatives is also required to be considered.

Under the SEA Directive, alternatives are required to be reasonable, realistic, capable of implementation and set at the appropriate level at which NR2040 will be implemented, operating within the planning hierarchy i.e., the higher the level of the plan the more strategic the options which are available.

5.2 NR2040 Alternatives

Three main alternatives considered during the development of the draft NR2040 are:

- Alternative 1: Do Nothing Scenario;
- Alternative 2: Predict and Provide Scenario; and
- Alternative 3: Policy-Led Scenario (decide and provide).

The assessment of alternatives is undertaken in the sections below. The alternatives are firstly assessed individually against the previously defined EPOs using the methodology defined in Section 2.3.1 of this report. The alternatives are then compared against each other. The assessment is presented in the sections and tables below and informed the identification of a preferred alternative.

5.2.1 Alternative 1: Do Nothing Scenario

A ‘Do Nothing’ scenario is the baseline or existing situation, referencing 2018 when NR2040 development was initiated as the ‘base year’. This approach does not involve any additional investment or changes to the National Roads network. Furthermore, the ‘Do Nothing’ scenario also assumes continued economic growth in line with normal cycles i.e. It does not take into account potential recession or increasing energy/fuel prices.

Based on these exclusions, transport planning would continue to be guided primarily by the 2015 Strategic Investment Framework for Land Transport (SIFLT). SIFLT established three, ranked priorities that include:

1. Achieve steady state maintenance;
2. Address urban congestion; and
3. Maximise the value of existing land transport networks.

The Do-Nothing Scenario assumes population growth would continue with an additional 1 million people in Ireland by 2040 meaning a likely continuation in the increase in transport demand, car ownership, and continued growth in transport of freight via the National Roads network. Land use patterns would also likely continue

developing similar to past trends, with the majority of the population living in urbanised areas highly dependent on cars as the primary mode of travelling to work, school or college as well as other trip purposes. There would also be an increase in the population in rural areas which would continue to result in dispersed settlement patterns across the country (rather than a move towards compact sustainable development) and a continuation of a high reliance on the private car. In 2018, the majority of commuter trips (61.4%) were by car (CSO, 2016). 39% of these trips were less than or equal to 15 mins and 61% greater than 15 mins (TII Indicators Report 2018). Therefore, it is likely that the increase of private car use would prevail with limited investment in sustainable modes of travel particularly in urban areas. There would be more cars on the road which would likely increase congestion, particularly in urban areas resulting in effects on air quality and quality of life factors.

The Do-Nothing scenario includes continued investment in protection and renewal programmes and to a degree demand management measures particularly in urban areas. However, this scenario is likely to lead to more new roads being constructed rather than providing integrated transport and planning solutions. New roads require substantially greater investment than maintaining or optimising existing assets resulting in additional investment over the long-term; this could comprise the protection and renewal programme or investment technology, behaviour change etc. required to support decarbonisation.

This alternative also assumes there would be a continuation in the delivery of the previous NDP roads building programme and a failure to examine other solutions/interventions offered by sustainable Modal Hierarchies or combinations of interventions that are less intrusive to the environment. Whilst there would be benefits to travel times, new road construction would likely undermine any investments made in public transport and indeed increase private car, induced demand and longer journeys due to improved road transport networks. New road construction also has the potential to negatively impact all EPOs during the construction and operation stages to some degree or another.

The assessment in the Table below identifies that the majority of EPOs have the potential to be impacted in a negative and/or neutral manner depending on the location, characteristics and nature of the intervention being developed. Climate Mitigation (CCM) and CCA adaptation would be negatively affected as the Do-Nothing scenario would not include any measures to support integrated sustainable mobility required to support the decarbonisation of the transport sector.

NR2040 Assessment of Alternatives	Environmental Protection Objectives										
	Biodiversity (B)	PHH	Noise	Water	Air Quality	CC- Mitigation	CC – Adaptation	Land and Soils	Material Assets	AACH	Landscape
Alternative 1: Do-Nothing	+/-	+/-	0/-	0/-	0/-	-	-	+/-	+/-	0/-	0/-

The Do-Nothing scenario fails to address the NSOs of the NPF and would not address new policy framework contained in the NDP, Sustainable Mobility Policy and decarbonisation efforts required under the 'Climate Amendment Act 2021' and associated CAP.

In the absence of a long-term vision, TII would be reacting to proposals of others, be they from local authorities or special interest groups. This would inevitably lead to a bottom-up generation of the pipeline of National Roads activities without a strategic vision or top-down framework for assessment or prioritisation resulting in:

- Increase in GHG emissions affecting climate change and failure to meet transport emissions reductions;
- Compromise compact growth and development of sustainable travel;
- Continued urban sprawl and dispersed settlement patterns particularly in commuter belt areas from urban generated travel;
- Increase in congestion and impacts on the environment (air and noise) and quality of life factors; and
- It would not address EV charging infrastructure requirements.

The assessment identifies that there are likely to be negative and/or neutral effects either directly or indirectly on all EPOs if the "Do Nothing" approach is adopted, therefore Alternative 1 is discounted.

5.2.2 Alternative 2: Predict and Provide Scenario

A "Predict and Provide" approach for accommodating future transport needs, focuses on predicting future demand for travel and providing the necessary infrastructure/services to meet that demand. This effectively would be similar to SIFLT, but an updated version based on similar principles. This option would also involve opportunities for sustainable travel and protection and renewal portfolios.

Drawing on the lessons learned from SIFLT, the predict and provide model has not served to deliver compact sustainable development but has exacerbated and facilitated people travelling longer and further from urban centres resulting in unsustainable planning and transport patterns and increasing greenhouse gas emissions. This scenario would also continue to support new infrastructure projects to provide for the increased demand predicted due to projected population growth.

Continuing with a Predict and Provide model that includes the four NIFTI interventions and three modal hierarchies as part of a ranked approach to investment priorities on the National Roads network would still not fully address the changed policy and fiscal context. The outcome is likely to lead to over investment in the construction of new infrastructure projects and a continued investment on protection and renewal to the detriment of the other priorities such as sustainable mobility, demand management and influencing behaviour change. It would exacerbate road transport trends and the need for a holistic approach to address decarbonisation and meet climate targets. This scenario would continue to undermine the NPF vision for compact sustainable development.

This scenario assumes land use development and travel patterns continue in line with past trends, including continuation of urban sprawl and the ongoing shift in population and jobs towards Dublin and its surrounding counties.

This would not support the internationally recognised standard of "avoid, shift, and improve":

1. **Avoid** – Reduce the need to travel;
2. **Shift** – Move travel to more environmentally-friendly/ sustainable modes; and
3. **Improve** – Improve efficiency of transport modes to reduce emissions.

This standard aims to reduce emissions from the road transport sector and achieve decarbonisation targets by 2050 thus supporting current government policy including the NPF, Climate Action Plan and Sustainable Mobility Policy.

Decades of poor planning has resulted in low density communities reliant on private car use with little or no integration or possibility of integrating with public transport. The significant investment in the motorway network has facilitated economic growth but has also contributed to significant car dependency with little chance of alternative modes of transport being viable or attractive particularly in more rural areas.

This scenario would likely result in provision of more road capacity i.e., construction of roads, in a ‘predict and provide’ manner that would not be consistent with the NIFTI approach. Aside from the emissions (from both the construction and operation process), more roads result in increased capacity therefore supports and encourages car dependency, increases driving speeds, and results in induced traffic over the long-term.

NR2040 Assessment of Alternatives	Environmental Protection Objectives										
	Biodiversity	PHH	Noise	Water	Air Quality	CC- Mitigation	CC – Adaptation	Land and Soils	Material Assets	AACH	Landscape
Alternative 2: Predict and Provide	-/0	+/-	-/0	-/0	-/0	-/+	+/-	-/0	-	-/0	-/0

Given the changing policy and likely significant negative impacts on the environment across many of the EPOs, including BFF, PHH, CCM, CCA and L&S (use of finite resources) and poor resource efficiency due to the likely development of more roads, the “predict and provide”, single point forecast approach, was not determined to be the preferred approach for NR2040.

5.2.3 Alternative 3: Policy Led (Decide and Provide) Scenario

The “Policy Led (Decide and Provide)” approach includes a strategic vision for National Roads that recognises this evolving environment and responds to policy change while contributing to policy development at the national, regional and local levels as well as across sectors of the economy.

TII conducted analysis to understand differing functions of the National Roads network and to identify how to realise the policy ambitions of Project Ireland 2040. This analysis has enabled the identification of the key strategic issues facing the National Roads network both now and into the future. This information was shared in the development of NIFTI and informed NIFTI’s four investment priorities. This third alternative includes two interrelated strands:

1. Project level alternatives; and
2. Incorporating a range of plausible future scenarios.

This third alternative was prepared to support the NPF NSOs and consequently NIFTI. It guarantees alignment between government policies and the operational and functional requirements of National Roads.

The Policy Led (Decide and Provide) Scenario considers the future of the National Roads in a more complex and evolving environment than before which is directed to support Project Ireland 2040 NSOs while also remaining adaptable to a range of plausible futures.

The Policy led approach will result in TII 'providing' for National Roads investments adhering to the national policy requirements to support increased population, half of which is planned for targeted growth in five urban regions, and the economy. It requires taking a holistic approach to investments including consideration and support (rather than undermining) of investment in public transport options, sustainable travel and land use planning. NR2040 incorporates the NIFTI Investment Intervention hierarchies of:

1. Maintain;
2. Optimise;
3. Improve; and
4. New.

The policy led approach moves away from the current system of transport and land use planning in order to address continuing urban sprawl, longer journey times and increasing emissions. It supports the internationally recognised 'Avoid, Shift and Improve' policy approach and promotes sustainable mobility.

The policy led approach also supports the NPF, and in turn will support Roads Authorities and Sponsoring Agencies and other stakeholders to work collaboratively in addressing the previous poor integration between planning and road transport and also address the contribution that road transport has to patterns of development, climate change, sedentary lifestyles, air and noise emissions issues. The approach supports decarbonisation in the road transport sector. This is evident through support for EV infrastructure along National Roads to address fuel range anxiety and ensure safe and efficient trips can be made in EVs and continue to support their roll out to reach government decarbonisation targets.

Integration of multiple modes will limit growth in vehicle kilometres. Bus and truck priority will be deployed where it can provide for more efficient movement of people and goods. Provision of walking, cycling infrastructure, in particular where it addresses severance, will reduce unnecessary car travel. All investments will be carried out with NIFTI modal hierarchy. In addition, this approach prioritises utilisation of existing assets, in line with NIFTI intervention hierarchy, prior to the development of new roads.

NR2040 Assessment of Alternatives	Environmental Protection Objectives										
	Biodiversity	PHH	Noise	Water	Air Quality	CC- Mitigation	CC – Adaptation	Land and Soils	Material Assets	AACH	Landscape
Alternative 3: Decide and Provide	+/-	+/0	+	+/-	+	+	+	+/-	+	-/0	-/0

The implementation of Alternative 3 has the potential to result in some positive and negative impacts on biodiversity and the water environment in terms of the potential to improve and enhance existing assets as part of renewal and improvement works but could also result in positive and negative impacts due to new construction works. Effects on PHH would likely improve due to greater focus on facilitating other travel options over the private car particularly in urban areas and ensuring investment is maintained in regional and rural areas to ensure continued safe and efficient accessibility to goods and services.

Effects on L, AACH, L&S are rated as potential neutral or negative impacts due to likely changes in the environment which would be dependent on the nature of intervention or new infrastructure and the sensitivity of the environment.

There is likely to be positive effects on National Roads as a material asset under Alternative 3 but there could be land-take and therefore negative impacts on land use as an economic asset as well as soil sealing. There is likely to be a positive effect on Climate adaptation and mitigation (CCA) (CCM) due to a focus on sustainable mobility, indirectly supporting decarbonisation and assisting in meeting Ireland’s emissions reduction targets. This should in turn have positive impacts on AQ. The shift to sustainable transport modes could result in positive and negative impacts on Noise; however, with newer vehicles being quieter and low noise road surfacing being applied across more National Roads, there is potential for likely decreases in noise emissions in localised areas.

Alternative 3 would, over time deliver a more comprehensive integrated transport network that connects National Roads seamlessly with rail, bus priority measures, and walking and cycling infrastructure allowing urban and rural areas to function more efficiently with the capacity to adapt and become resilient to climate change effects. It also supports the use of technology and user data to help plan and manage the asset more effectively.

This policy led scenario includes investment priorities and provides guidance to Sponsoring Agencies and local authorities, as to the types of investments and associated interventions across National Roads, in the face of fiscal, social, and environmental change. It also recognises there will be unique alternatives at Project Level and is adaptable to alternative futures.

5.2.3.1 Comparative assessment of Alternatives

Comparative assessment of alternatives with regards to their potential effects on EPO’s is presented below.

Alternatives 1 and 2 are both broadly based around similar policy and fiscal context which favour the construction of new roads and fail to adequately consider the long-term social, economic and environmental benefits for integrated and sustainable transport and land use planning system. In environmental terms, the assessment of alternatives has identified that for the most part Alternatives 1 and 2 have a relatively even performance with few EPOs being identified as having a positive effect. PHH is identified as positive or negative in recognition that the development of roads generally supports personal mobility, connectivity and economic development but it is recognised that there is potential negative effect on health from maintaining high car dependency, supporting sedentary lifestyles, air and noise pollution and also effects due to contributions to climate change. The remaining EPOs are rated as potential negative and/or neutral as a result of continued focus on physical construction works. Both Alternatives 1 and 2 don't go far enough to addressing climate mitigation. However, an alternative 2 would predict and provide in terms of planning for resilience as part of the protection and renewal portfolio and may therefore contribute positively to climate adaptation. However, these options fail to adequately address or support the decarbonisation of the road transport, or any other sustainable mode interventions required to avoid GHG emissions in the first place.

Alternative 3 approach is more positive in terms of protecting and enhancing biodiversity, positive in terms of social and economic promotion of sustainable travel patterns and thereby supporting long-term economic growth and addresses social inequalities by facilitating access to safe, sustainable and cheaper modes of transport particularly in urban areas and reducing congestion.

NR2040 Assessment of Alternatives	Environmental Protection Objectives										
	Biodiversity	PHH	Noise	Water	Air Quality	CC- Mitigation	CC – Adaptation	Land and Soils	Material Assets	AACH	Landscape
Alternative 1: Do-Nothing	-/0	+/-	-/0	-/0	-/0	-	-	-/0	-/0	-/0	-/0
Alternative 2: Predict and Provide	-/0	+/-	-/0	-/0	-/0	-/+	+/-	-/0	-	-/0	-/0
Alternative 3: Decide and Provide	+/-	+/0	+/-	+/-	+	+	+	+/-	+	-/0	-/0

Alternative 3 performs better across some EPOs when compared against Alternatives 1 and 2. However, there are potential positive and negative effects across many EPOs. The potential negative effects across the EPOs is in recognition that all alternatives allow for some limited road construction, which must be considered lastly in accordance with the NIFTI Intervention and Modal Hierarchies. The NIFTI modal supports the development of sustainable modes of travel as appropriate on the National Roads network. They also support the protection and renewal of existing assets. Alternative 3 makes the greatest potential contribution to delivering on sustainable mobility initiatives and meets the strategic key issues addressing urban congestion, historically poor integration with land use planning and transport needs and indirectly addressing climate mitigation and resilience across the network.

This option recognises that there may, as a last resort, the need to develop new roads as part of the intervention mix and therefore there is potential for negative impacts across many EPOs due to infrastructure development.

NR2040 is designed to be adaptable to different futures supporting the National Planning Framework growth targets including National Road transport activity to 2040. The ability of the Strategy to be adaptable to a variety of futures is desirable due to its unpredictability as evidenced by the changed travel patterns imposed by travel restrictions during Covid-19 or effects on fuel prices arising from the Russia-Ukraine War affecting societal travel patterns and other global impacts.

Alternative 3 is designed to focus on four key Investment Priorities namely: Decarbonisation; Protection and Renewal; Mobility of People & Goods in Urban Areas; and Enhanced Regional and Rural connectivity. The investment priorities align with NIFTI's Modal Hierarchy in terms of investing more in high quality public transport, walking and cycling facilities with improved frequency and comfort instead of expensive, intrusive and environmentally damaging heavy road projects with the associated environmental effects continuing to influence unsustainable land use and travel patterns focused on the growing use of National Roads long into the future. Continuing to invest in road construction results in little incentive for people to change their behaviour and the reliance on the private car over other modes of travel continues. Alternative 3 also recognises that public transport and active modes will not always be available to everyone everywhere and that the role of the National Roads network is likely to remain as critical infrastructure particularly for 'lifeline routes' where there is no other viable transport infrastructure available. Measures such as road pricing and congestion charges and the use of technology are also considered in this alternative. These measures will have to be balanced with the availability of alternatives to ensure accessibility and social inclusion is maintained for all communities particularly for deprived geographical areas and vulnerable groups⁵ in accordance with the Project Appraisal Guidelines.

The Strategy also attempts to align with other Government policies including climate commitments. It recognises and responds to the differing challenges and issues across diverse parts of the National Roads network, which are all linked to common appraisal guidelines. This will ensure a responsive Strategy that respects the natural and built environment, society and the economy.

The reason for choosing the Policy Led (Decide and Provide) alternative is that it is aligned with current and emerging international and national policy in terms of supporting an integrated transportation network that will result in fewer negative effects on the EPOs when compared against the other options.

⁵ Vulnerable groups can include women, children, young people, older people, people with disabilities, ethnic minorities, lower-income socio-economic groups and identified deprived areas. (TII – PAG Unit 7.0)

6. SCREENING AMENDMENTS TO THE STRATEGY

The SEA ER was prepared in Q3 of 2022 which recorded the strategic environmental assessment of the draft NR2040. The SEA ER and draft strategy were the subject of a statutory public consultation. On foot of this consultation, NR2040 has been updated taking into account comments or issues raised across the stakeholder base (summarised in sections 4 of this report). NR2040 and the updated SEA ER has addressed updates to policy as well as public and stakeholder feedback. The format of the Strategy has remained similar to that of the draft Strategy with the inclusion of additional appendices. The updated format of NR2040 is described in Table 2-7 of this report.

The strategic environmental assessment assessed the draft Strategy including the vision, key objectives and commitments. This stage of the SEA process assesses the material changes made to the draft Strategy. Minor corrections to text and grammar are not considered as part of the SEA screening process as these are not considered material changes. The full assessment of the draft Strategy is contained in the SEA ER while this SEA Statement assesses the amendments.

The amendments to the draft Strategy are documented in Table 6-1 below in the order in which the changes are presented in the updated Strategy. The first column includes the 'updated text of NR2040'. The black text is the text as contained in the draft NR2040. The green text reflects the amended or new text to the updated Strategy.

The amendments are screened in the adjoining column titled 'Screening for SEA/ AA' where an assessment is included to identify if the amendments will result in likely significant effects on the environment not previously considered as part of the SEA and AA processes.

Table 6-1 Screening of updated text of NR2040

Updated text of NR2040	Screening for SEA/AA
<p>Section 5.1 Decarbonisation</p> <ul style="list-style-type: none"> Integrated Mobility TII will ensure that the potential for induced travel demand will be estimated for all major projects such that the need for any future investments in the road network will align with decarbonisation objectives. Active Travel TII is committed to delivering improved active travel provision in all its projects, such as improving the safety of the National Roads network for active travel users and reducing the severance caused by some National Roads in urban areas. 	<p>The amendments strengthen the link between future investments and decarbonisation objectives.</p> <p>These amendments are strategic in nature and support sustainable development. No additional specific negative environmental impacts on the environment are identified.</p>
<p>Future Demographic Growth Trends</p> <ul style="list-style-type: none"> TII will implement government policy on demand management. NIFTI sets out the importance of the provision of alternative transport options, such as cycle infrastructure and public transport services before demand-side measures are implemented. TII will ensure that any 	<p>The amendment strengthens the alignment of the Strategy with the government policy on sustainable mobility. The amendments are minor in nature. No additional environmental impacts on the environment are identified.</p>

Updated text of NR2040	Screening for SEA/AA
<p>future implementation of demand management proposals on the National Roads network aligns with the National Sustainability Mobility Policy as well as NIFTI Modal and Intervention Hierarchies.</p>	
<p>Amendments to Section 6.1 Commitments of NR2040 Climate Adaption & Resilience</p> <ul style="list-style-type: none"> TII will implement its Climate Adaptation Strategy (2022). 	<p>The amendments include minor changes to the title of the strategy. No additional environmental impacts on the environment are identified.</p>
<p>Amendments to Section 6.1 Commitments of NR2040 Sustainability</p> <ul style="list-style-type: none"> In line with its legislative remit, TII will work with relevant bodies to support measures to reduce air quality and noise impacts from road transport. 	<p>The amendments strengthen TII's commitment to reduce air quality and noise impacts from road transport. No additional environmental impacts on the environment are identified.</p>
<p>Amendments to Section 6.1 Commitments of NR2040 Movement of People</p> <ul style="list-style-type: none"> TII will consider the needs of all road users for all projects. On urban dual carriageways and motorways approaching cities, TII will work with partner agencies to enable public transport and safe high-quality active travel alternatives for car users. TII will continue to support reductions in car dependency and levels of car usage nationally while recognising the important role that private mobility plays for many road users. Where bypasses are built, urban realm improvements will be required in the bypassed town to enable more sustainable mobility. 	<p>The amendments are minor in nature. No additional environmental impacts on the environment are identified.</p> <p>The amendments are minor in nature. No additional environmental impacts on the environment are identified.</p> <p>This measure will have positive effects on Population and Human Health, Climate and Material Assets by providing infrastructure that supports sustainable mobility encouraging the use of public transport and active travel. This measure is also considered to have mixed impacts across the environmental objectives where construction activity is required.</p>
<p>Amendments to Section 6.1 Commitments of NR2040 Movement of Goods & Services</p> <ul style="list-style-type: none"> In partnership with other agencies, TII will protect access to ports and airports and improve access where required. 	<p>The amendments strengthen TII's commitment to protect or improve access to ports and airports. No additional environmental impacts on the environment are identified.</p>

Updated text of NR2040	Screening for SEA/AA
<p>Amendments to Section 6.1 Commitments of NR2040 Movement of Goods & Services</p> <ul style="list-style-type: none"> TII recognises the issue of safe and secure parking areas for HGV drivers and is currently undertaking a review of the Service Area Policy, published in 2014, to improve service areas on motorway and dual carriageway sections of the National Roads network as well as providing safe stop and rest areas. 	<p>This measure to improve service areas for HGV drivers will have positive effects on Population and Human Health, and Material Assets. The provision of safe stop and rest areas will be of benefit for all road users by indirectly reducing the risk of driver fatigue related collisions. This measure is also considered to have mixed impacts across the environmental objectives where construction activity is required.</p>
<p>Amendments to Table 6.2 National Roads Intervention types and examples of NR2040 Road Construction</p> <ul style="list-style-type: none"> Where no feasible alternative exists to serve the required function, deliver new road infrastructure with sustainable procurement and circular economy practices. 	<p>The amendments are minor in nature. No additional environmental impacts on the environment are identified.</p>

7. MONITORING SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE STRATEGY

Article 10 of the SEA Directive requires monitoring of the likely significant environmental effects of the implementation of plans/programmes in order to identify at an early-stage unforeseen effects and undertake appropriate remedial action. This section sets out the SEA monitoring programme.

7.1 NR2040 project development process

The Strategy identifies the project development process that the relevant Local Authority, third party and / or TII department will need to adhere to ensuring projects align with NR2040 and the NIFTI Intervention Hierarchy. Projects will be required to address transport challenges through the use of existing infrastructure before considering provision of new infrastructure which will help reduce physical impacts on the environment caused by new road construction.

All plans/ projects stemming from NR2040 will continue to be required to demonstrate that the proposed investment aligns with NIFTI, as set out in the DoT Common Appraisal Framework (CAF) and/or associated appraisal guidance documents as published by DoT, and address how to work towards achieving the NIFTI Investment Priorities.

NR2040 provides interpretation and further detail to streamline the project development process and associated investment, by requiring all projects to indicate:

- How the project objectives align with one or more of NIFTI investment priorities;
- Specific strategic issue(s) facing National Roads that the project resolves;
- The spatial context through guidance on the types of intervention for different regions and types of National Roads;
- How the project aligns to one or more of TII's commitments; and
- Identification of the portfolio and programme that would accommodate the project.

This process is consistent with existing TII Project Appraisal Guidelines, DoT Common Appraisal Framework and DoT NIFTI investment priorities and hierarchies. It also aligns with the Department of Expenditure and Reform (DEPR) Public Spending Code (PSC) requirements to demonstrate the strategic rationale for significant, publicly funded investments.

The Strategy has included a section on Monitoring Framework (Section 7) which describes how TII will lead monitoring of NR2040 Strategy across three different areas:

- **Environmental monitoring programme** – as detailed in Table 7-1 of this SEA Statement.
- **Project-level assessments and appraisals** – through the existing methods of monitoring carried out by TII where the development, and appraisal process aligns with the TII PAG, DoT CAF, and DoT NIFTI investment priorities and hierarchies. Project-level assessments are required to highlight existing issues and those that may arise in the future as well as their underlying causes. This may include existing or potential future problems regarding safety, travel time, travel time reliability, accessibility and social inclusion, severance, connectivity, employment, and socio-economic factors. This will ensure that programmes and projects entering the implementation portfolios are aligned with NR2040. TII in

its role of approving authority must ensure compliance with the Public Spending Code requirements on monitoring during delivery and evaluation post-delivery.

- **Annual National Roads Indicators reports** – The TII National Indicators report is published annually and includes key performance indicators and updates on the use of the National Roads network. Indicators include information on the road network, economy, road condition, safety, accessibility, and the environment.

Monitoring of NR2040 will continue to take place on an ongoing basis as part of the project assessment, development and appraisal process and the existing monitoring and reporting. This monitoring will be used by TII and stakeholder regarding environmental performance as it relates to National Roads and in turn will inform reviews of the Strategy.

7.2 Strategic Environmental Monitoring Programme for NR2040

Existing plans and policies have been used when formulating the Environment Protection Objectives (EPOs) including those in the NPF, NIFTI and their respective SEAs. The EPOs in the existing SEAs have been used as a building block to inform the development of NR2040 specific EPOs. The close connection with existing EPOs facilitates working towards shared environmental and sustainability objectives, as well as ease of monitoring throughout the implementation of the Strategy.

A number of targets and indicators are identified under each EPO in Table 7-1 below. The monitoring of these indicators will allow quantitative measures of trends and the potential significant environmental effects to be monitored over of the lifetime of NR2040 Strategy. These indicators have been revised and agreed with TII and are set at a strategic level commensurate with the high-level nature of the Strategy. The indicators are broadly based on existing monitoring sources with the information sources and frequency for each target are identified.

The monitoring will be led by TII and undertaken with a view to better understand the effects on the environment of the implementation of the Strategy and will feed into any subsequent reviews of the Strategy.

Table 7-1 Strategic Environmental Monitoring Programme of NR2040 Strategy

Environmental Protection Objective	Environmental Target	Indicator(s)	Lead & Stakeholders/ Source	Frequency
Biodiversity: Protect, actively conserve, prevent damage and enhance biodiversity, particularly European designated sites, other nature conservation sites (and areas supporting them), protected, natural and semi-natural habitats and species, and support ecological corridors.	Maintenance or restoration of the favourable conservation status for all habitats and species protected under European and national legislation through the implementation of NR2040 as required under the Habitats Directive and Birds Directive.	The conservation status of habitats and species as assessed under Article 17 of the Habitats Directive, Article 12 of the Birds Directive, Birds of Conservation Concern in Ireland (2020-2026) and red lists published by the NPWS.	Department of Housing, Local Government and Heritage report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive (every 6 years), and National Monitoring Report for the Birds Directive under Article 12.	Every 3 years in line with DHLG reporting requirements.
	Avoid and reduce significant negative impacts on protected and threatened habitats and species for EU Designated Sites through the implementation of NR2040.	<ul style="list-style-type: none"> Number of Natura 2000 sites in Ireland listing road-related impacts as pressures and threats (refer to Natura Impact Statement of NR2040 for baseline). Number of derogation licences granted on the National Roads network. 	TII - through NPWS data and through project-level assessments, requirements of Contract documents, Projects progression, NPWS, local Authorities, etc.	Every 3 years in line with DHLG(NPWS). reporting and Project level assessments (AA/NIS results)
		<ul style="list-style-type: none"> TII will develop a Biodiversity Strategy. 	TII	N/A
	Reduction in Roadkill	<ul style="list-style-type: none"> Total number of roadkill reported to TII. Number of road traffic accidents that mention wild animals as a result of projects stemming from NR2040. 	<ul style="list-style-type: none"> TII NPWS National Biodiversity Data Centre 	Annually
	Support Biodiversity Net Gain (BNG) measures as appropriate.	<ul style="list-style-type: none"> TII are committed to publish a TII Biodiversity Impact Assessment Standard and technical document. 	<ul style="list-style-type: none"> TII 	N/A

Environmental Protection Objective	Environmental Target	Indicator(s)	Lead & Stakeholders/ Source	Frequency
		<ul style="list-style-type: none"> TII will continue to undertake research projects and aim to develop a metric for Biodiversity Net Gain (BNG) in respect of National Roads. 	<ul style="list-style-type: none"> TII 	Ongoing
	Maintain, improve and/or increase the quantity and quality of ecological corridors or 'steppingstones' along National Roads supporting local biodiversity.	<ul style="list-style-type: none"> TII to include requirements regarding ecological corridors as part of the project development process and/or standards. 	<ul style="list-style-type: none"> TII 	Ongoing through project development process.
<p>Population & Human Health: Protect and enhance the population and human health by increasing accessibility to the economy including employment, recreation and community facilities through an integrated, safe and efficient National Roads network and contribute to reduced harmful transport emissions.</p>	Support measures to reduce car dependency and increase sustainable mobility on or adjacent to the National Roads and increase in the number of active travel journeys and capacity of sustainable travel on National Roads as appropriate to their function.	<ul style="list-style-type: none"> Share of investment in active travel and sustainable transport. Total number of Vehicle kilometres travelled on National Roads. Percentage of investment in active travel and sustainable transport. Continued decrease in number of Vehicle kilometres travelled on National Roads. Total number of kilometres of safe walking, cycling and bus transport infrastructure on or adjacent to National Roads. National Cycle Network roll out. Numbers of users on greenways. 	<ul style="list-style-type: none"> All indicators are reported by TII in conjunction with Sponsoring Agency/ Road Authorities and published in the TII National Roads Indicators Report Sources of data include Census and NTA: National Housing Travel Survey NTA TII <p>(TII + COS NHTS, Canal Cordon, Greenways monitoring, etc.)</p>	<p>Annually</p> <p>Every 3/5 years.</p> <p>Annually</p> <p>Annually</p> <p>Annually</p>

Environmental Protection Objective	Environmental Target	Indicator(s)	Lead & Stakeholders/ Source	Frequency
		<ul style="list-style-type: none"> Total number of prioritised bus lanes. Total number of park and ride, and park & share facilities at transport interchanges. Number of car-sharing journeys on National Roads. 	<p>TII National Roads Indicators Report (through AADT + CSO, NCT reports)</p> <p>CSO & NTA NHTS</p>	Annually
	Maintain and improve the Level of Service on National Roads as appropriate to function.	<ul style="list-style-type: none"> Level of Service on National Roads. 	<p>All indicators are reported by TII in conjunction with Sponsoring Agency/ Road Authorities and published in the TII National Roads Indicators Report</p>	Annually
	Maintain the Volume to Capacity ⁶ Ratio on National Primary and Secondary Roads as appropriate to their corridor/function.	<ul style="list-style-type: none"> Volume to capacity ratio on National Primary and Secondary Roads. 		
	Halt fatalities and collisions on National Roads in line with Vision Zero.	<ul style="list-style-type: none"> Total number of fatalities and collisions on National Roads. 	<p>Reported in National Roads Indicators Report - TII through statistics from Road Safety Authority (RSA) & An Garda Síochána:</p>	Annually
	Prevent and reduce severance resulting from National Roads.	<ul style="list-style-type: none"> Total number of schemes delivered to address severance issues. Number of new schemes introducing severance. 	<p>TII with Sponsoring agency or Roads Authority.</p>	Annually
	Improve the assessment methodology for human health impacts in the development of national roads.	<ul style="list-style-type: none"> Publish a population and human health impact assessment standard. 	TII	Ongoing

⁶ The Volume to Capacity (V/C) Ratio relates the AADT volume carried on a section of road to its daily operational capacity (The Volume to Capacity (V/C) Ratio relates the AADT volume carried on a section of road to its daily operational capacity)

Environmental Protection Objective	Environmental Target	Indicator(s)	Lead & Stakeholders/ Source	Frequency
Noise: Reduce and contribute to mitigation of noise pollution from road transport on National Roads.	Decrease noise pollution affecting people/communities from National Roads.	<ul style="list-style-type: none"> Produce updated standards for noise impact assessment. Total number of people/households affected by noise exposures greater than 55dB Lden and 50 dB Lnight along National Roads network. 	<p>TII</p> <p>Noise mapping from TII</p>	Ongoing
Water: Prevent deterioration and continue to support the achievement of good water quality status of all water bodies as required by the Water Framework Directive and manage flood risk affecting the National Roads network.	Reduce the impacts and frequency of flood events on National Roads.	<ul style="list-style-type: none"> Percentage of the National Road network assets affected by flooding events and any remedial measures applied. 	TII & Local authorities, OPW	Annually/Ongoing
	Support the achievement of good water quality status of all water bodies as required by the Water Framework Directive and Marine Spatial Planning Directive (MSPD).	<ul style="list-style-type: none"> Status of water bodies / catchments in compliance with the environmental objectives under WFD and MSFD. Total number of waterbodies where road/ transport infrastructure related development is identified as a pressure on water quality resulting from projects implemented under NR2040. Publication of a Water quality standard for planning stage. 	<p>Project level assessments. EPA and Marine Institute, Irish Water, Local Authorities, LAWPRO.</p> <p>TII</p>	Ongoing
Air Quality: Contribute to the reduction of air pollution and improvement in air quality resulting from transport through the effective design, maintenance and	Improve air quality and ensure no air quality exceedances arising from National Roads network.	<ul style="list-style-type: none"> Air quality assessments from projects that are aligned with NR2040. 	<p>TII</p> <p>EPA monitoring and TII monitoring relating to air quality.</p>	Ongoing – Annually

Environmental Protection Objective	Environmental Target	Indicator(s)	Lead & Stakeholders/ Source	Frequency
operation of the National Road network				
Climate Change – Mitigation: Contribute to the reduction in greenhouse gas emissions through design and support the decarbonisation of road transport.	Reduce GHGs emissions arising from National Road transport and projects.	<ul style="list-style-type: none"> Total GHG emissions calculated from the construction (incl. embodied carbon), operation and maintenance of the National Roads network. 	Sponsoring Agency Project level assessment (Planning and post project review). Data sources and toolkits: TII Road Emissions Tool and Emission Factor Tool Kit (CSO, COPERT, EPA monitoring, etc) SEAI Energy in Ireland reports.	Frequency: (Post project review: 5 years after opening)
		<ul style="list-style-type: none"> Total number of EV charging infrastructure including fast charge on National Roads. % Change in number and fuel type of vehicles (car and commercial) i.e., breakdown petrol, diesel, EV, alternative fuel in Ireland. 	ZEVI CSO, COPERT, alternative fuels, DoT.	Annually
	Improve quantification of GHG emissions arising from the construction and operation of National Roads.	<ul style="list-style-type: none"> Publication of TII Climate Standards for the planning process. Improvements in quantification methods of greenhouse gas emissions associated with the planning, construction and operation phases of projects aligned with NR2040 through the EIA process. Publication of TII Carbon Tool for road projects user guidance. 	Sponsoring Agencies TII TII TII	Ongoing – Annually N/A N/A

Environmental Protection Objective	Environmental Target	Indicator(s)	Lead & Stakeholders/ Source	Frequency
		<ul style="list-style-type: none"> Publication of TII Road Emissions Model development report. 		
	Continue to improve quantification of GHG emissions arising from the use of National Roads.	<ul style="list-style-type: none"> Greenhouse gas emissions arising from the use of National Roads network. 	TII through the National Roads Indicators Report.	Annually
	Climate mitigation and adaptation is a cross-cutting theme and has interactions with other EPOs in this programme to include those detailed under Population and Human Health, Material Assets, Climate adaptation.	<ul style="list-style-type: none"> Relevant interrelated indicators referenced in this environmental monitoring programme. 	N/A	N/A
Climate Change – Adaptation (CCA): Ensure resilience to climate change is incorporated into the National Road network construction, operation and maintenance activities.	Ensure National Roads are resilient to the effects of climate change throughout their design life.	<ul style="list-style-type: none"> Implementation of TIIs Climate Change Adaptation Strategy (2022) 	TII	Ongoing
	This EPO has interactions with other EPOs targets and indicators including those under PHH, W and MA.	<ul style="list-style-type: none"> Relevant interrelated indicators referenced in this environmental monitoring programme. 	N/A	N/A
Land & Soils (S&G): Conserve and sensitively use soils and geological resources and protect geological sites of value.	Avoid using finite soil and geological resources.	<ul style="list-style-type: none"> Publication of TII Circular economy strategy and policy. 	TII	Once off
Material Assets Ensure the effective use of existing infrastructure and support the circular economy particularly the	Where no feasible alternative exists to serve the required function, deliver new road infrastructure with sustainable procurement and circular economy practices.	<ul style="list-style-type: none"> Investment allocated across the different portfolios under NR2040. 	TII – Capital Investment Plan and Annual Reports	Annually

Environmental Protection Objective	Environmental Target	Indicator(s)	Lead & Stakeholders/ Source	Frequency
use of existing resources, waste and energy across the network and TII assets.	Reduce and manage congestion on National Roads.	<ul style="list-style-type: none"> Location and duration of congestion and any remedial measures taken to address issue. 	TII - National Roads Indicators Report	Annually
	Support rail freight and multi-modal distribution centres on or near National Roads.	<ul style="list-style-type: none"> Work with partners to inform study on feasibility of rail freight and multi-modal distribution centres on or near National Roads. 	TII DoT, Irish Rail	Annually
	Support the delivery of new road technologies and provide for vehicle innovation.	<ul style="list-style-type: none"> TII Investment in Smart Motorways, C-ITS, Modern asset management systems. 	TII	Ongoing
Archaeological, Architectural and Cultural heritage (AACH) Avoid, protect and/or minimise impacts to designated archaeological, architectural, and cultural heritage resources.	Avoid, reduce and/or mitigate plan/project level impacts on archaeological, architectural and cultural heritage. AACH.	<ul style="list-style-type: none"> Update Guidelines and publish a standard in the assessment of archaeological, architectural and cultural heritage assessment. (Cultural Heritage Impact Assessment (CHIA) currently in draft format). Continued implementation of relevant legislation, guidance and standard on plans/projects stemming from NR2040, as required. 	TII Sponsoring Agency	Ongoing through the plan/project level assessments as required.
Landscape: Protect designated and sensitive features of note in landscapes and sensitively manage landscape change.	Avoid, reduce or mitigate plan/project level impacts on landscape.	<ul style="list-style-type: none"> Continued implementation of relevant legislation, guidance and standard on Landscape Character Assessment and Landscape and Visual Assessments (LVIA) stemming from NR2040, as required. 	Sponsoring Agency	Ongoing through the plan/project level assessments as required.

8. CONCLUSION

The SEA processes carried out during the preparation of the NR2040 has been fully integrated with the Strategy development process as well as the AA and SFRA processes. This process has ensured that the potential significant environmental effects associated with the development, and subsequent implementation of the Strategy have been identified and mitigation included as part of the strategy.

Monitoring of the Strategy will be taken forward by TII as detailed in Table 7-1 of this SEA Statement which refers to the SEA environmental monitoring programme of the NR2040 Strategy. The SEA process has helped inform the high-level protection of the environment with a view to promoting sustainable development.

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