

A close-up of a human eye, where the iris is replaced by a glowing blue and white image of the Earth. The eye is looking directly forward, and the background is dark and blurry, suggesting a person's face in shadow.

Mainstreaming Sustainability in Appraisal

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TII Webinar Sustainability
11th December 2020

Aim:
Challenge how we as practitioners,
engineers, designers, public servants,
custodians and citizens can
incorporate sustainability into our
transport appraisal



Sustainability Gambit



United Nations 2015 - Sustainable Development Goals

Global policy

17 Sustainable Development Goals were set in 2015:



TII Corporate policy

TII's Sustainability Statement draws on the three most relevant:



Transport Project-level sustainability goals

SDGs may vary by project, given that each project is addressing a unique problem

Scale and location of transport projects will determine what SDGs we map

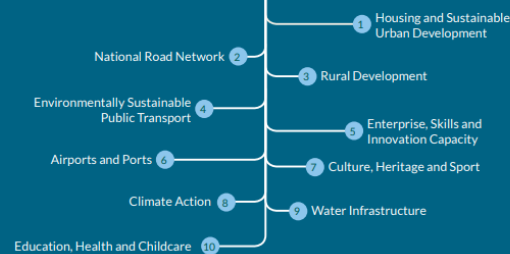
Theme	Mapped UN SDGs
Environmental	 
Social (Community Commitment)	 
Economic (Socio-economic)	 

Project Ireland 2040 – National Strategic Outcomes

National Planning Framework and its National Strategic Outcomes and Priorities of the National Development Plan



Strategic Investment Priorities



TII's Sustainability Principles (2020)

1. Provide effective, efficient and equitable mobility
2. Enable safe and resilient networks and services
3. Collaborate for a holistic approach
4. Deliver end-to-end improvements
5. Create total value for society
6. Transition to net zero



2 | Sustainability Statement

2.1 Sustainability Statement

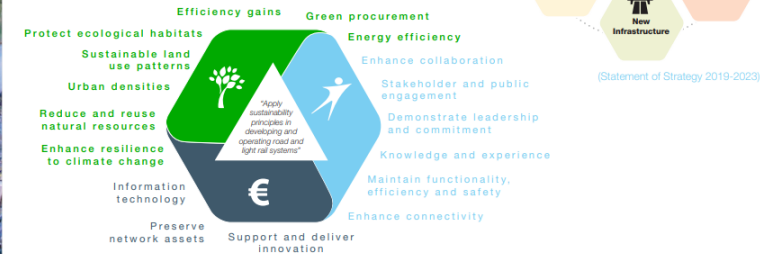
TII commits to strive to incorporate sustainability principles into the development and operation of the national road, light rail and metro networks; therefore, contributing to social well-being, supporting economic efficiency, and protecting, restoring and enhancing environmental systems for future generations.

The diagram below illustrates the extent of areas that are addressed in TII's Sustainability Statement.

Stakeholder and public engagement is one of the key aspects of the Sustainability Statement and two of the actions included are:

- Demonstrate leadership and commitment to sustainability through guidance to staff and supply chain partners
- Undertake dialogue with stakeholders and the wider community through the planning process

The diagram below illustrates that sustainability (including environmental sustainability) is fundamental to TII's Statement of Strategy 2019-2023.



Transport Infrastructure Ireland's Environmental Strategy

TII's Environmental Strategy (2018)

“Ka mau ka muri” - Walking Backwards into the Future

- Oldest Wooden Trackways – Togher or Tocher over bogs (Furbo, Corlea, Edercloon)

Why were they built? Connect people; de-risk a journey; food production and economy (*bóthair*).

How? Design and innovation; available materials.

Who? Level of civilized and cooperating communities with vision and foresight.



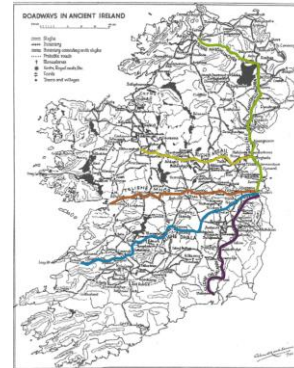
Corlea Trackway

Reminder: TII's Sustainability Principles

1. Provide effective, efficient and equitable mobility
2. Enable safe and resilient networks and services
3. Collaborate for a holistic approach
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Detail from Monasterboice High Cross



Colm O'Lochlainn
Roadways in Ancient Ireland

Further reading: A road on the Long Ridge – Hermann Geissel

Meet Jimmy...

Someone who sat in
your shoes 30, 40, 50,
60 years ago.



Appraisal



Background

The Project Appraisal Guidelines reflect TII's objectives & Central Government expenditure policy

Appraisal

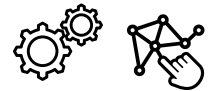
- The **purpose** of appraisal is to ensure that scarce public funds are allocated in an efficient manner by establishing the merits of a proposal using a consistent and comprehensive framework to:
 - Assess the 'worth' of a project or programme, whether it has 'value'
 - Identify if a project or programme will yield benefits and to whom
 - Understand if the project is meeting the set objectives.
- Appraisal is a process that occurs throughout the project lifecycle.
- It should not be seen as a pass/fail process, "ticking the box", but should be a tool that you use to tell a narrative.

What can you do to improve project appraisal?

- Use the Project Appraisal Guidelines to explain why your project **adds value**.
- Critically assess “Value” – not only in monetary terms.
- Check that your appraisal process evolves in line with wider societal and environmental concerns, and that they reflect TII’s Sustainability Principles. Values change over time, hence what people measure will change.
- Project objectives need to be informed by the ‘bigger picture’ and road projects appraised in compliment with public transport and active modes. When setting objectives, look at the Project Appraisal Balance Sheet.
- Mutual benefits such as connectivity, accessibility and resilience are not always captured.
- Use appraisal as a ‘live’ document that you update. Allow for a feedback mechanism – scope to improve projects in

People measure what they value

Criterion	Sub-Criteria
Environment	Air Quality and Climate Noise and Vibration Landscape and Visual (including light) Biodiversity – Flora and Fauna Waste Soils and Geology Hydrology Hydrogeology Architectural Heritage Archaeological and Cultural Heritage Non-agricultural properties Agriculture
Safety	Collision Reduction Security
Physical Activity	Ambience Absenteeism Reduced Health Risk
Economy	Efficiency and Effectiveness Wider Economic Impacts Transport Quality and Reliability Funding Impacts
Accessibility & Social Inclusion	Deprived Geographical Areas Vulnerable Groups
Integration	Transport Integration Land Use Integration Geographical Integration Other Government Policy Integration

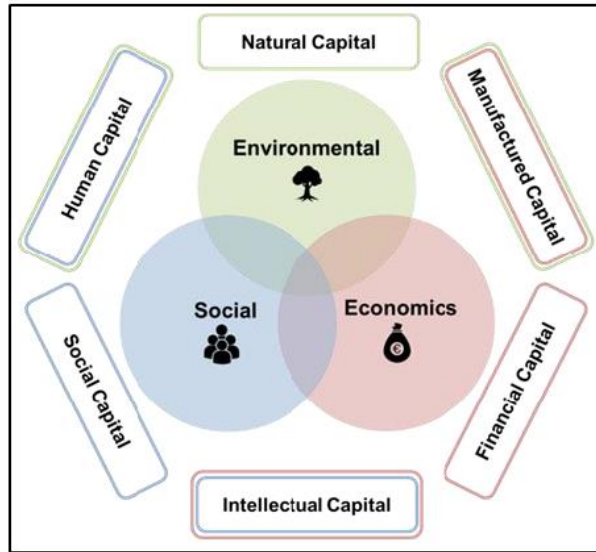


Value - People measure what they value

- Types of value:
 - “Social Value” – refers to the value of public goods, wider social benefits
 - ✓ E.g. the walkability of a town or village, enabling social interaction
 - ✓ “Well-being Value” - Active modes – increased physical activity, with health benefits (physical and mental health)
 - ✓ Safety
 - ✓ “Economic Value”
 - ✓ “Equity Values” – (connecting disadvantaged communities, access to workplaces and education and services – providing lifelines)
 - ✓ “Resilience Values” – Network resilience and community resilience
 - ✓ “Environmental values” - obvious values such as reducing fuel and CO₂, noise, air pollution
 - ✓ Repurposing existing infrastructure : E.g. cycle tracks on canal/disused railway
 - ✓ Biodiversity protection (E.g. overpass, underpass, wildlife crossings)

How to measure “value”?

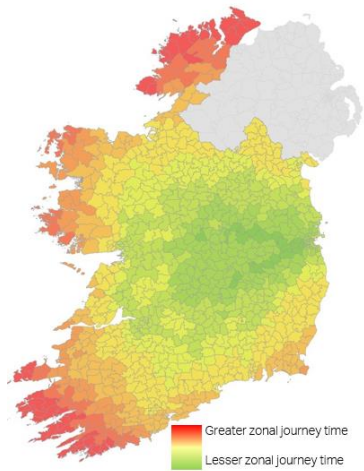
- Cost benefit analysis emphasises the monetisation of values
- Appraisal catches up with policy – evident in the monetisation of certain values – e.g. cost of carbon
- Not all values can or should be reduced to monetary terms – GDP does not measure well-being
- Explore Well-being, Quality of Life and Happiness indicators



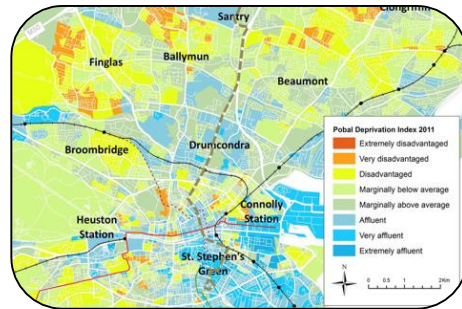
Integrated Capitals Framework

Economic Indicators	Environmental Indicators	Social Indicators
Personal Consumption Expenditures	Cost of Water Pollution	Value of Housework
Income Inequality	Cost of Air Pollution	Cost of Family Changes
Adjusted Personal Consumption	Cost of Noise Pollution	Cost of Crime
Services of Consumer Durables	Cost of Net Wetlands Change	Cost of Personal Pollution Abatement
Cost of Consumer Durables	Cost of Net Farmland Change	Value of Volunteer Work
Cost of Underemployment	Cost of Net Forest Cover Change	Cost of Lost Leisure Time
Net Capital Investment	Cost of Climate Change	Value of Higher Education
	Cost of Ozone Depletion	Services of Highways & Streets
	Cost of Non-Renewable Energy Resource Depletion	Cost of Commuting
		Cost of Motor Vehicle Crashes

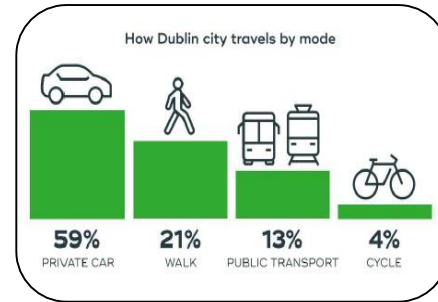
Wellbeing: Genuine Progress Indicators



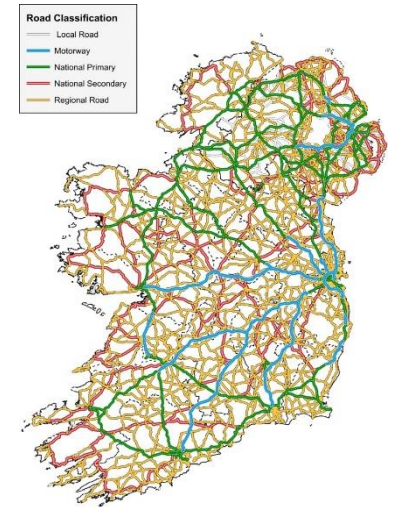
Core/Periphery Analysis



Deprivation Index (2016)

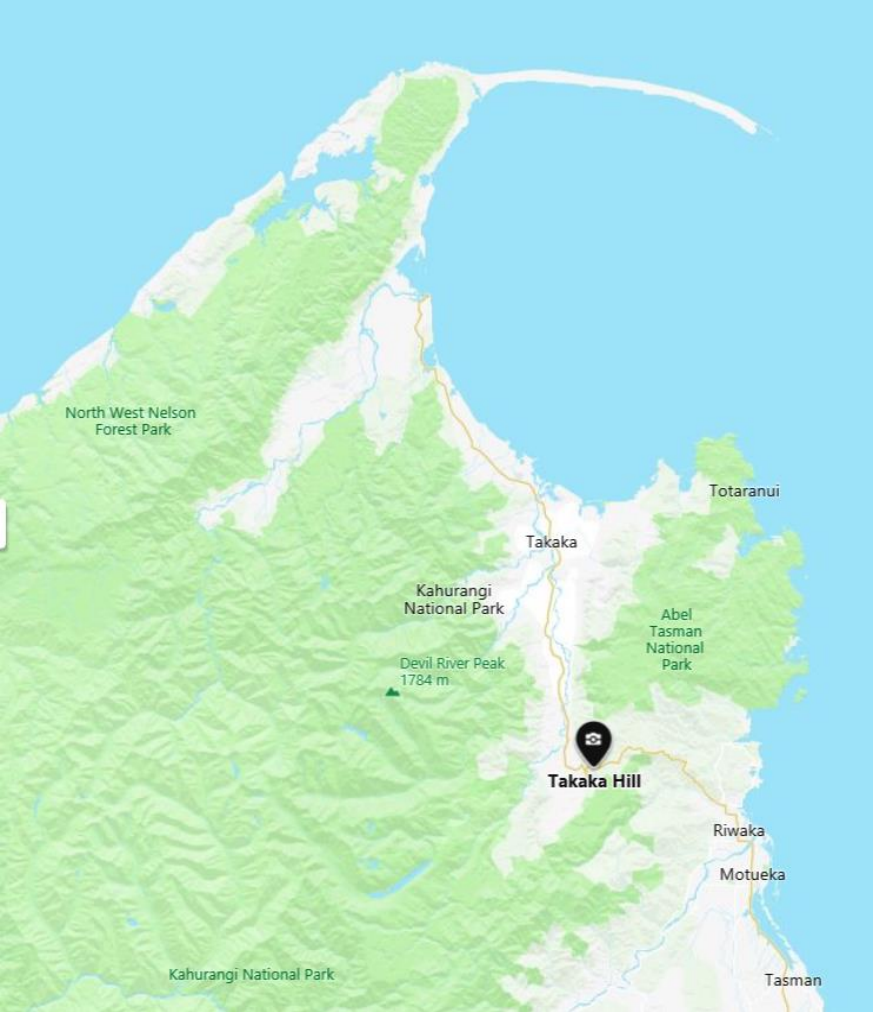


Mode Share



Network Resilience & Lifelines

Cyclone Gita – February 2018



Cyclone Gita – February 2018



Measuring Resilience?
Approx. €12million to repair road

Disruption costs
6,000 residents and tourists isolated
Evacuation by boat
Emergency response – but longer term business disruption



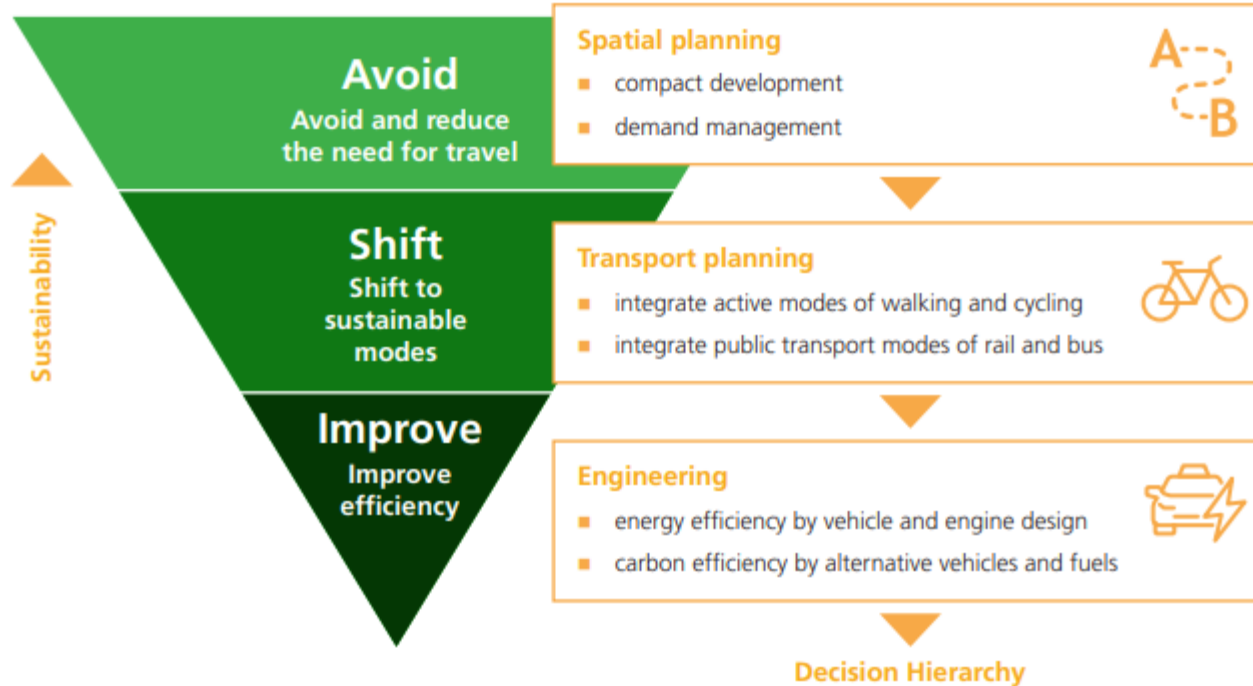
How can we develop more holistic and sustainable appraisal?

- Strengthen and deepen our existing tools
- Use the Project Appraisal Balance Sheet criteria when strategic decisions are made
- Multicriteria analysis gives much more scope to include wider values:
 - ✓ Futures Thinking
 - ✓ Resilience and climate risk mitigation
 - ✓ Place-making
 - ✓ Connecting communities
 - ✓ Innovation
 - ✓ “Avoid-Shift-Improve”

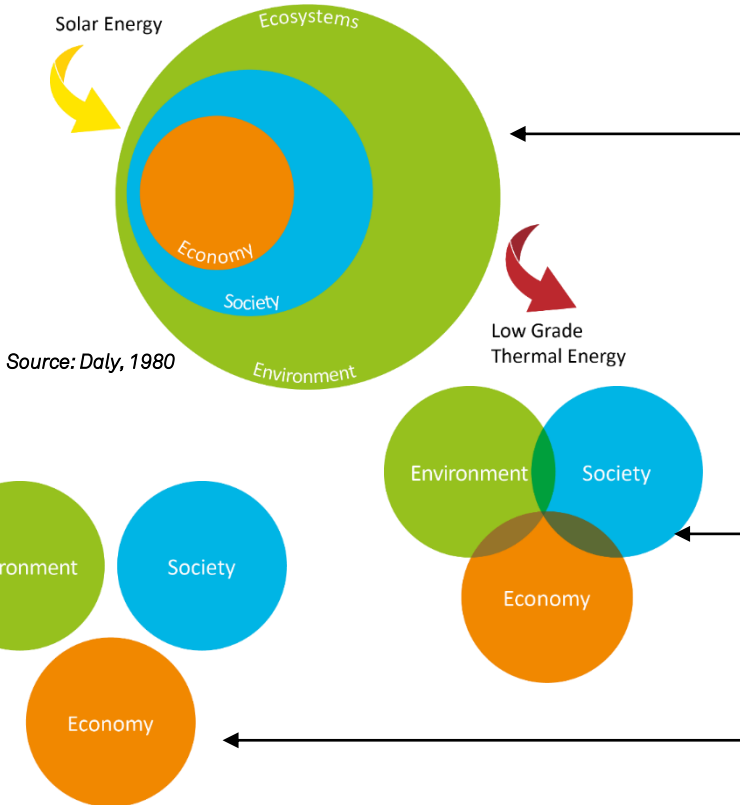
**Where we want
to get to?**



Avoid Shift Improve – from EPA State of Environment (2020)



Where are we on the 'Ladder of Sustainability', and where would we like to be?



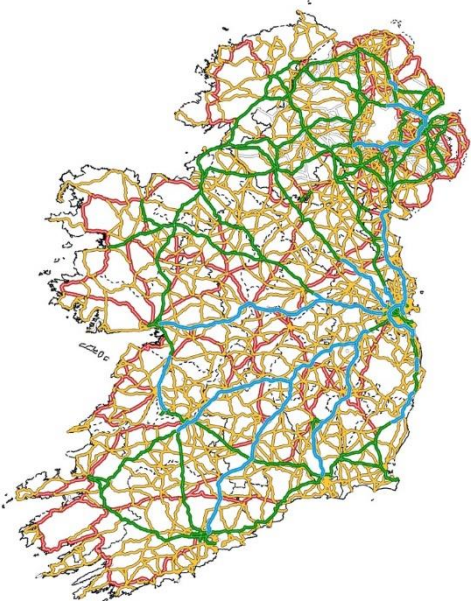
Source: Daly, 1980

Holistic world view requiring radical change	
Ideal model	<p>Providing a healthy environment and strong social well being is prime purpose of development;</p> <p>Humans and the environment are one and the same;</p> <p>Decision making shared with community;</p> <p>Economics seen as delivering social outcomes not capital gain;</p> <p>Change is radical because we are facing a number of crises.</p>
Strong sustainable development	<p>Environmental protection is needed to ensure economic growth;</p> <p>Links between the environmental, social outcomes and economic growth acknowledged;</p> <p>Decision making centralized but strong community engagement;</p> <p>Focus on, and purpose of, economic growth to deliver social benefits;</p> <p>Change rapid but not radical as we are facing some significant problems some of which are intractable (wicked)</p>
Weak sustainable development	<p>Economic growth is needed to provide environment protection;</p> <p>Environmental protection, social outcomes and economic growth largely management separately;</p> <p>Decision making centralized but limited community engagement;</p> <p>Economic growth will also deliver social benefits;</p> <p>Change needed because we are facing environmental and social problems, all of which require a level of management.</p>
Treadmill approach	<p>Focus on economic growth with the environment and people seen as resources;</p> <p>Environmental protection, social outcomes and economic growth management separately with economics the main focus;</p> <p>Key decision made with minimal involvement of the community – most decisions left to market forces;</p> <p>The problems we are facing require either technical fixes or economic growth;</p> <p>Slow and as-needs changes.</p>
Anthropocentric view with only incremental change	

Source: Jones & Baker, 2005

References:
 Daly, H. (1980) Introduction to the Steady-State Economy. In *Economics, Ecology, Ethics: Essays Toward a Steady-State Economy*.
 Jones, C. et al. (2005) *Strategic Environmental Assessment and Land Use Planning: An international evaluation*. Introduction

Thank you!



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