

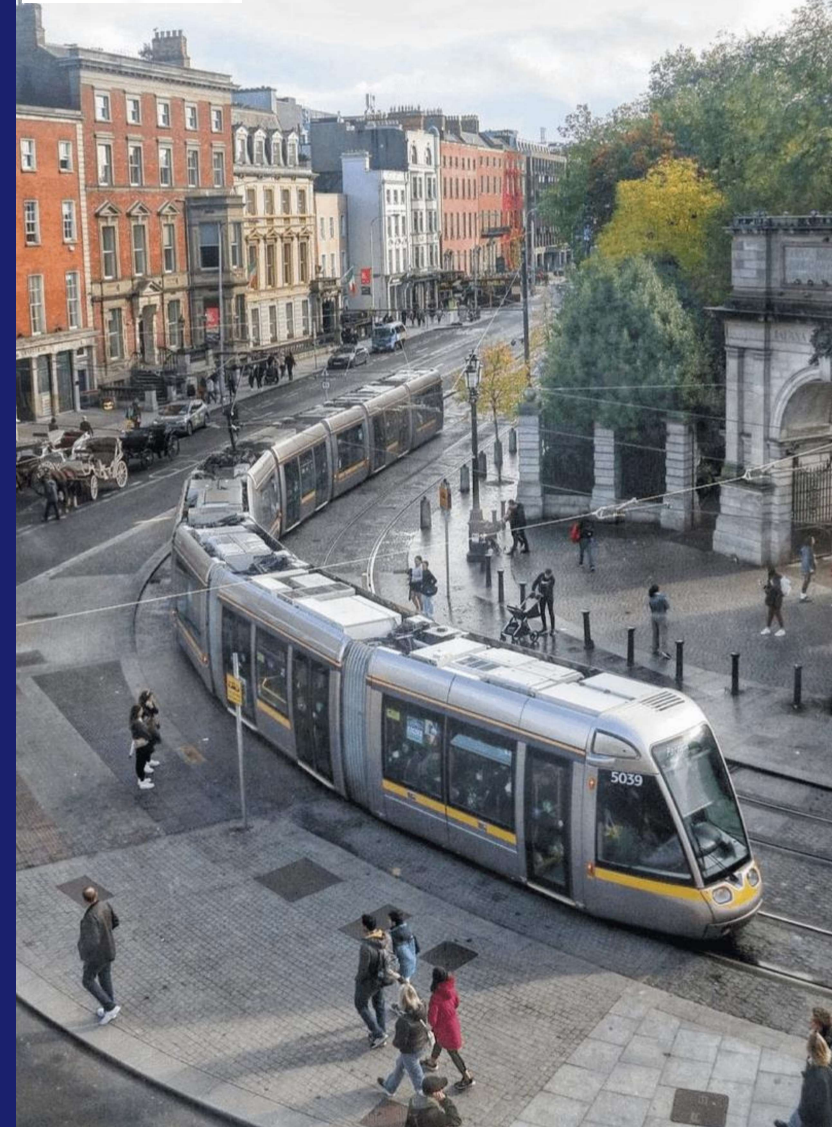
Transport Infrastructure Ireland & National Transport Authority

Light Rail in Ireland – Expanding the Network

Cathal Masterson (TII) & Marcello Corsi (NTA)



Transport Ireland 2026 – Croke Park Dublin



Today the light rail network is a vital transport asset for Dublin

Light rail has transformed transport in the city and unlocked new opportunities for housing and development supporting economic growth.



Enabling sustainable communities



Unlocking sustainable travel choices



Connecting Dublin's workforce to employment

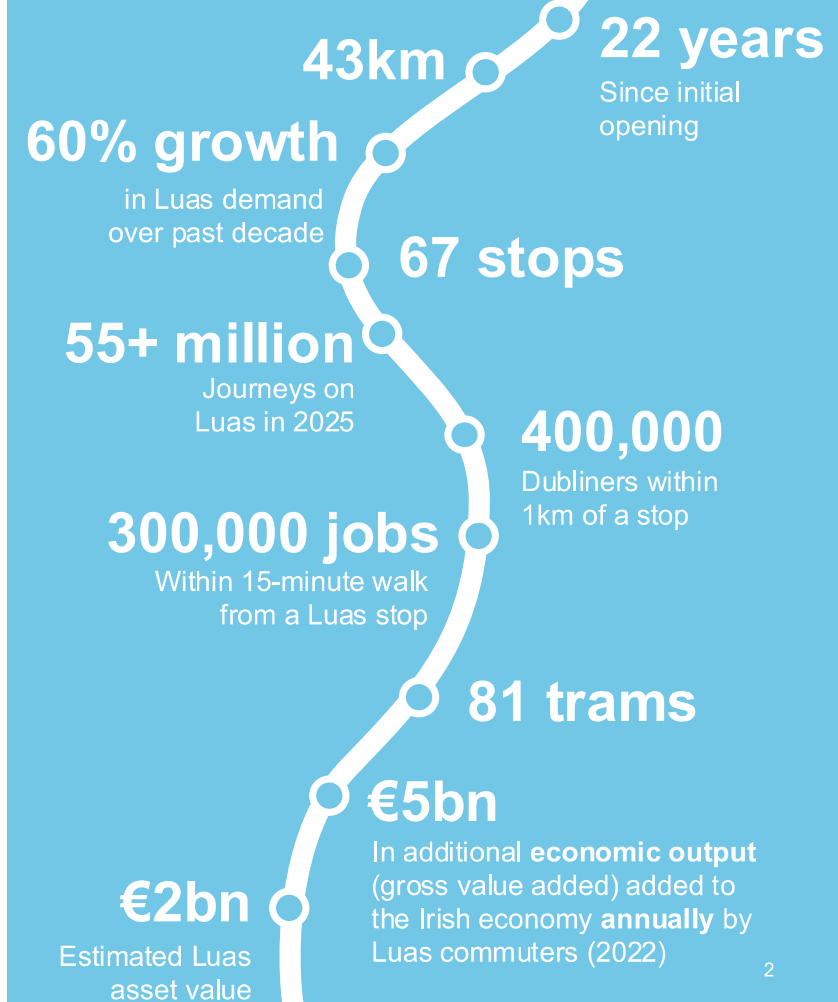


“Luas is beginning to transform Dublin, providing a public transport spine linking in with the bus system...It is an example of how good public transport can change the city, reducing carbon emissions and increasing liveability.”

John FitzGerald, Department of Economics, TCD, February 2024

At least 10,000 new jobs in the services and technology sectors located along Luas corridors in the last two decades

Luas in numbers...



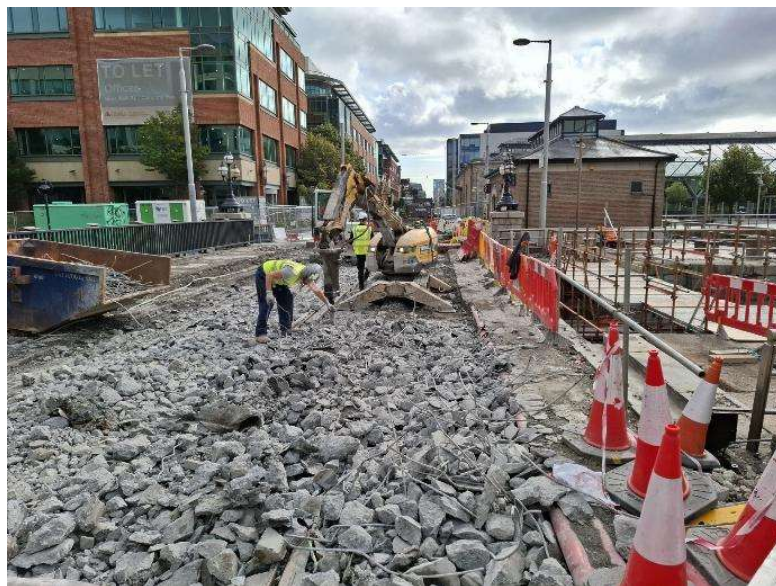
And it is important that we step-up asset management activities while also expanding the network.

There is an ambitious plan to expand the Luas network, but there is an equally pressing need to safeguard the asset condition and performance of the current core network.

The Greater Dublin Area Transport Strategy 2022-2042

sets out a significant expansion of the network in Dublin – which is expected to be refreshed later this year.

This strengthens the case for a step-up in asset management activities for the core network to address potential risks.



TII is strengthening Light Rail functions to enhance delivery capacity and capabilities.

Various reviews highlighted need to deliver:

- An **effective asset management regime** for the network.
 - **Backlog of asset renewals** and **network enhancement projects**.
 - New obligations as **Railway Organisation** and **Critical Entity**.
 - **New projects**, e.g., Finglas, Lucan, Poolbeg & Luas Cork.
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- **Network performance and asset condition declining**.
 - Services and patronage grown significantly. **Luas is busiest passenger railway in Ireland**.
 - **No funding for existing light rail infrastructure** in NDP 26-30.
 - **Average level of capital investment well below what is needed** for life-cycle asset renewals.
 - **No proper asset management system/s** and no 'single source of truth' on asset condition.

Estimates prepared for NDP (2026-2035) based on longer-term 20 year projections (2026 to 2045)



€1.8bn Cumulative Projection for Asset Investment Projection to 2045

Lessons learned from other networks underline importance of a robust asset investment programme

Recurring disruption on the Ottawa LRT



Following a **28-day** shutdown to address operational and technical issues, the LRT network experienced a **€1.8 million monthly fare revenue reduction** contributing to a projected €27.4 million annual operating deficit for the 2023 year.



Requirement to operate system at lower capacity (increased cost per ride)



Reimplement legacy services (former bus routes) at additional costs to meet demand



Undermined long-term public confidence and ridership growth on the system



A month of free fares considered for affected passengers after re-opening

Infrastructure failure halts service on the Enterprise line



Direct services between Belfast and Dublin were halted for **87 days** following the collapse of a 20-metre section of the Malahide Viaduct, costing the train operator **€2.4 million in lost revenue**



60% reduction in total passengers in the 3 months following the incident



A further **€7.6 million** in repairs and replacement bus/shuttle services



Reduced passenger confidence as safety concerns were raised about the maintenance of railway infrastructure



Recent peer review highlights that TII's capabilities are weaker than many of its European peers



Brussels

The MIVB plans, maintains and operates the public transport network in Brussels - directly responsible for maintenance and operation of network.

- The MIVB¹ has a **multi-annual investment programme** with an annual payment schedule.
- The MIVB typically delivers c.1-2 network extensions every c. 5 years, as outlined in the Agency's Tram Plan 2030.
- The agency has a **mature and well resourced network planning function to coordinate the multi-annual investment programme**.
- The MIVB has significant in-house resourcing and capabilities.
- The agency conducts **maintenance of the tram network** in line with **a multi-year plan**.
- **As the asset base ages, the MIVB has evolved to use longer sectional closures to undertake renewal projects** (up to 12 months in some cases).



Amsterdam

The GVB² manages the day-to-day operation and maintenance of Amsterdam's PT network.

- Agency contributes to new line development by identifying where lines and depots are needed, while technical designs and construction are not undertaken by the GVB. New lines planned in line with residential and industrial development, with City Authority making decisions on which lines to build.
- The GVB utilises **some internal engineering capabilities, but complex designs are outsourced to external consultants**.
- The organisation is **resourced to carry out operations and maintenance in-house** sufficiently, without reliance on a technical service provider.
- **GVB now starting to adopt more focus on asset management over a much longer 10–15 year planning cycle for asset management & renewals**.
- GVB has an **interesting decision making process for critical asset renewals which emphasises benefits** (and risks to the city).

1. Brussels Intercommunal Transport Company

Source: MIVB Tram Master Plan 2030, Luxtram stakeholder interview, EY-Parthenon analysis

... notably in asset management (life-cycle) and network planning.



Manchester

TfGM¹ manages the public transport system of Greater Manchester, consisting of busses and light rail, walkways and cycleways

- Agency has **c.£50m annual budget for asset renewals, with decision-making undertaken by in-house engineering experts.**
- TfGM can internally approve projects under £200m within its own assurance framework, reducing the need to submit time-consuming business cases.
- To facilitate broader new development capacity, TfGM **expanded the organisation's project management capabilities.**
- The **majority of engineering delivery is outsourced** to the operator and its subcontractors, reducing the need for expanded in-house asset management resources and capabilities.



Luxembourg

Luxtram is responsible for planning and developing light rail network in Luxembourg. Delivers day-to-day maintenance and operation of network.

- Luxtram can make decisions for maintenance projects up to €500k **without the need to submit business cases.**
- The organisation co-authors the National Mobility Plan by providing its specialist expertise on what is technically and operationally viable.
- Dedicated **in-house infrastructure and engineering experts lead all construction works** and manage the interface with design teams.
- The agency is resourced to run most core light rail activities in-house, including drivers and mechanics, while outsourcing corporate services.
- Luxtram is well resourced, with c. 220 employees designing, operating and maintaining 16km of track – organisation's long term strategy calls for c.500 employees when new lines bring total length of track to 40km.

Key priorities for Light Rail Network Management



Priorities

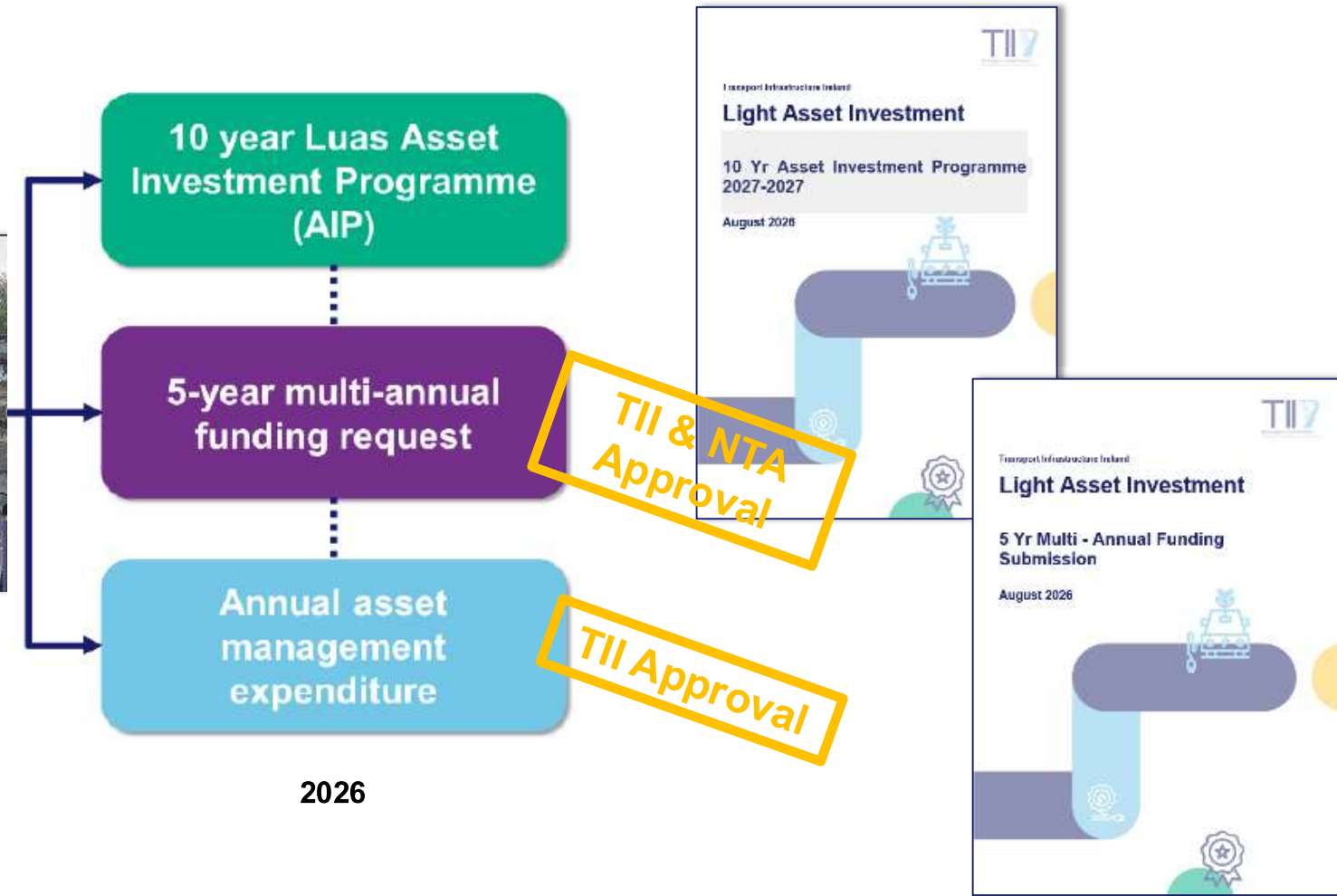
- 1** Scale up Light Rail teams and secure adequate **resources**
- 2** Secure **multi-annual funding for Asset Investment**
- 3** Fully mobilise **asset management function** (i.e. planning and delivery)
- 4** Develop **safety capabilities** to deliver as a new Railway Organisation
- 5** Enhance **collaboration with stakeholders** and **procure technical partners**
- 6** Strengthen **delivery** through governance, collaboration & standardisation
- 7** Place greater emphasis on **continuous technical learning with suppliers**

TII is at best a third class Light Rail Asset Manager when compared with peer organisations...but determined to improve!

TII with NTA support is preparing to roll out multi-annual Asset Investment Programme (life-cycle).



April 2025

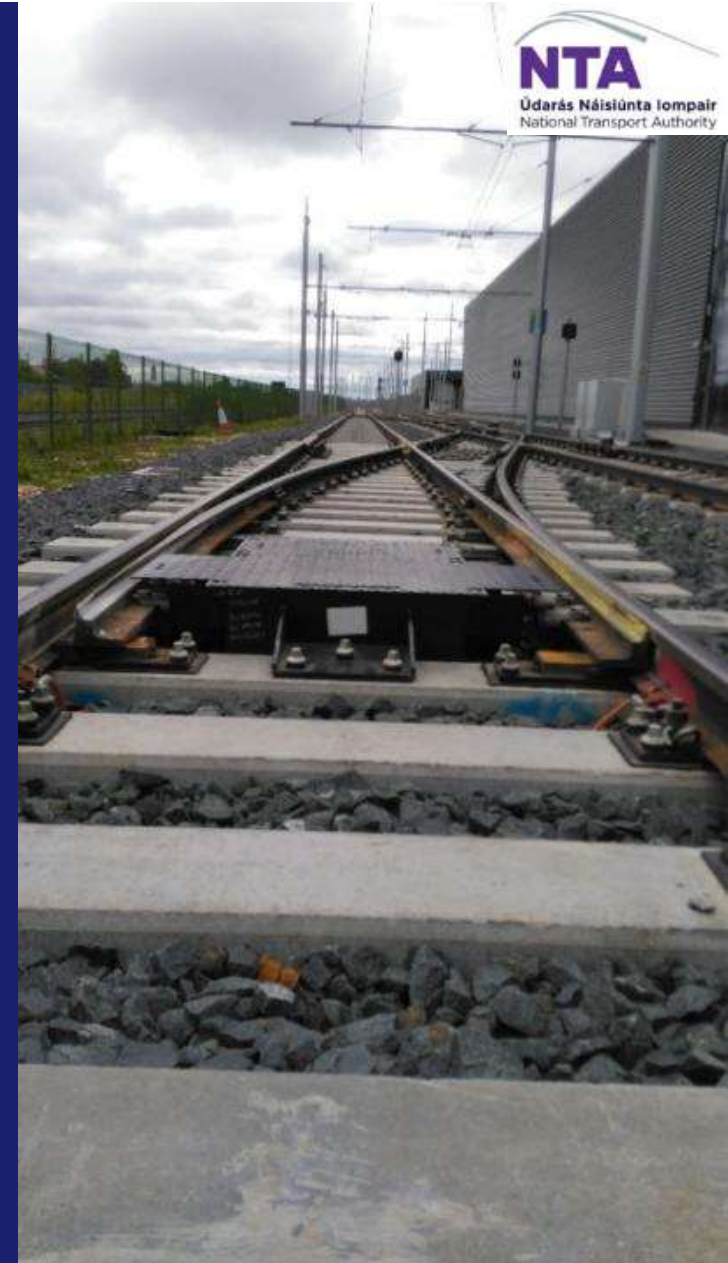


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Network Expansion

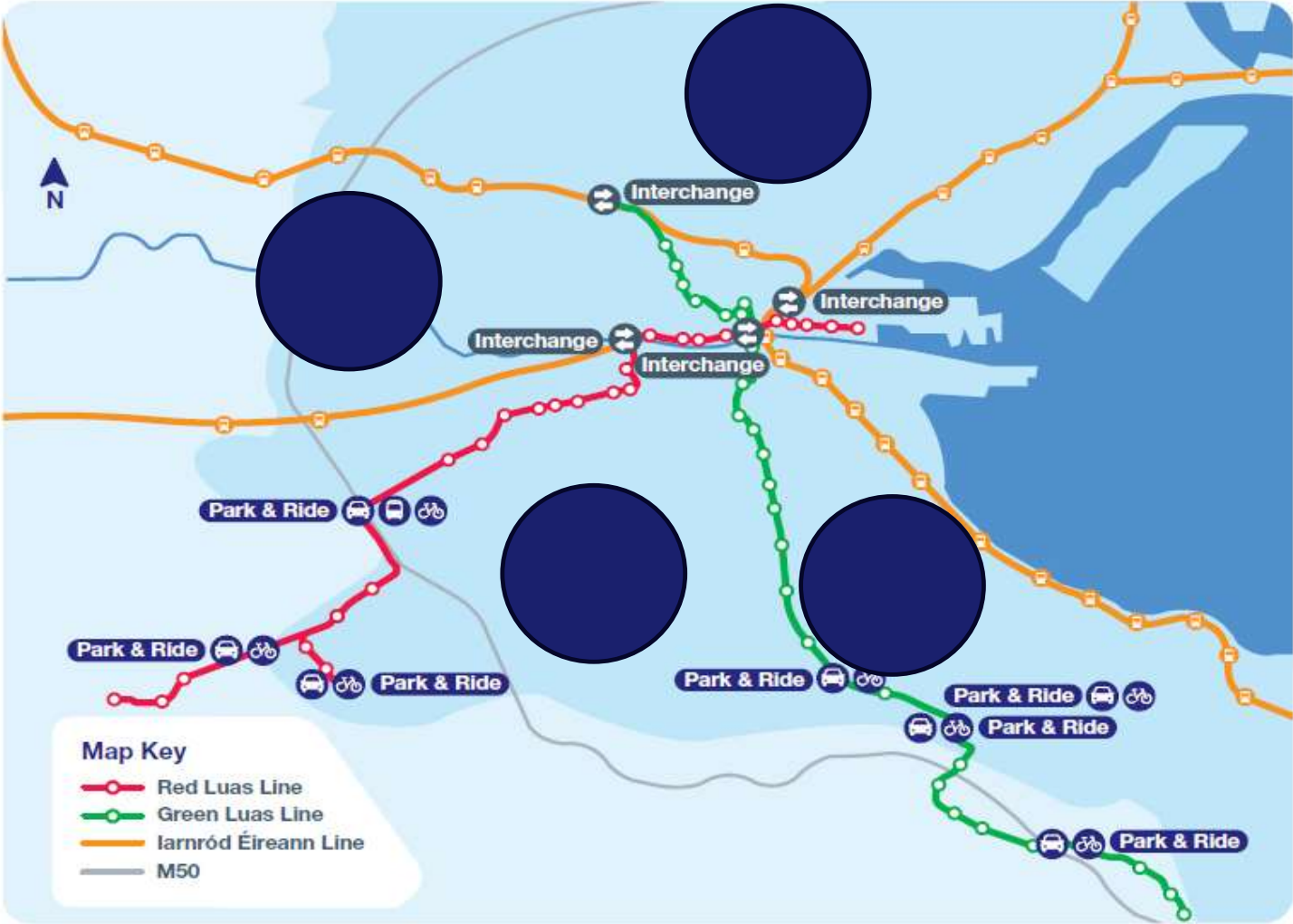


Transport Ireland 2026 – Croke Park Dublin

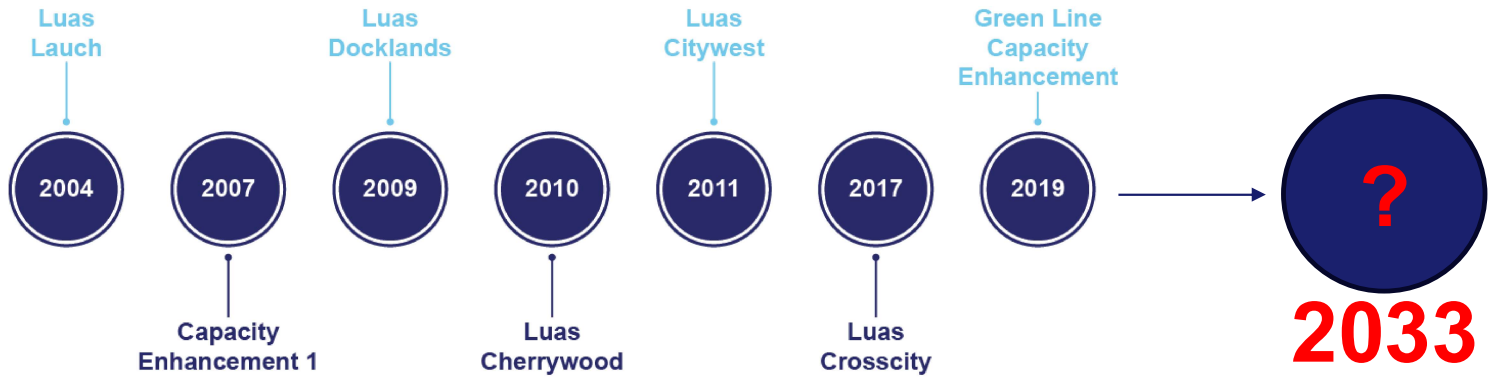
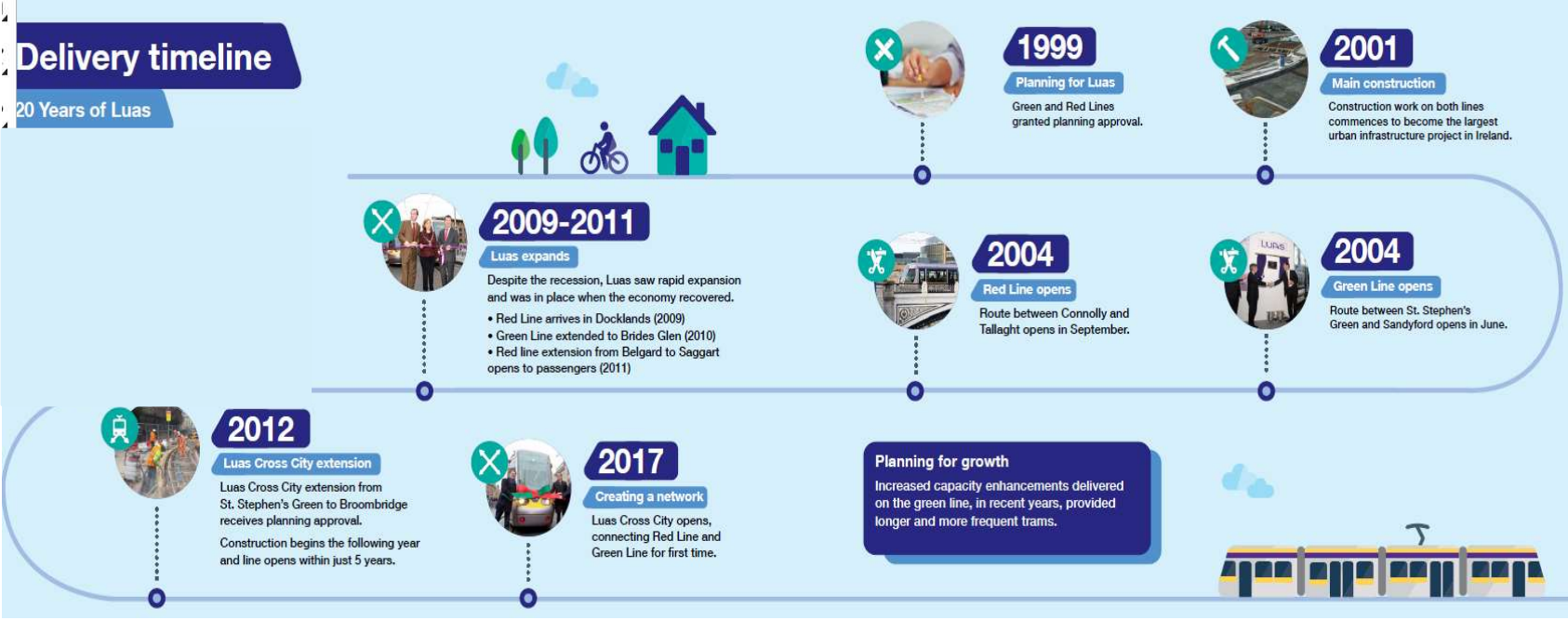


Luas and Rail in Dublin today, where are the gaps?

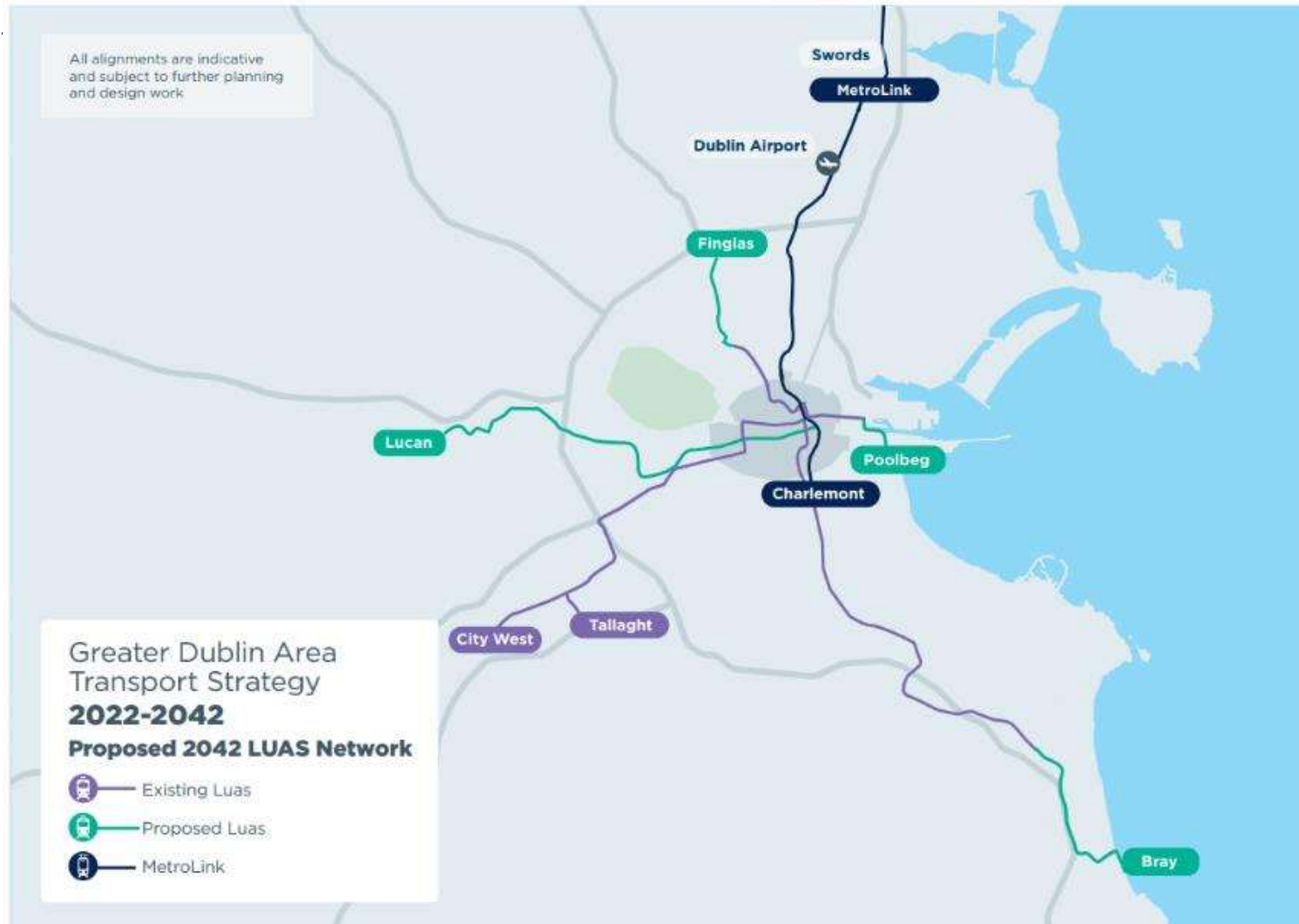
43km + 150km



A brief history of Luas



Transport Strategies – Plans for light rail



Projects underway – new lines and extensions

Finglas (4km)	• Phase 5a: Detailed design and procurement
Cork (18km)	• Phase 3: Preliminary Design
Lucan (16km)	• Phase 2: Option Selection
Poolbeg (1.5km)	• Phase 1: Scope and Purpose
Bray (6km)	• To be delivered before 2042
Sandyford via UCD	• Prefeasibility Study (increasing priority)

Need for pipeline: Finglas ➡ Cork and Poolbeg ➡ Sandyford ➡ Lucan ➡ Bray

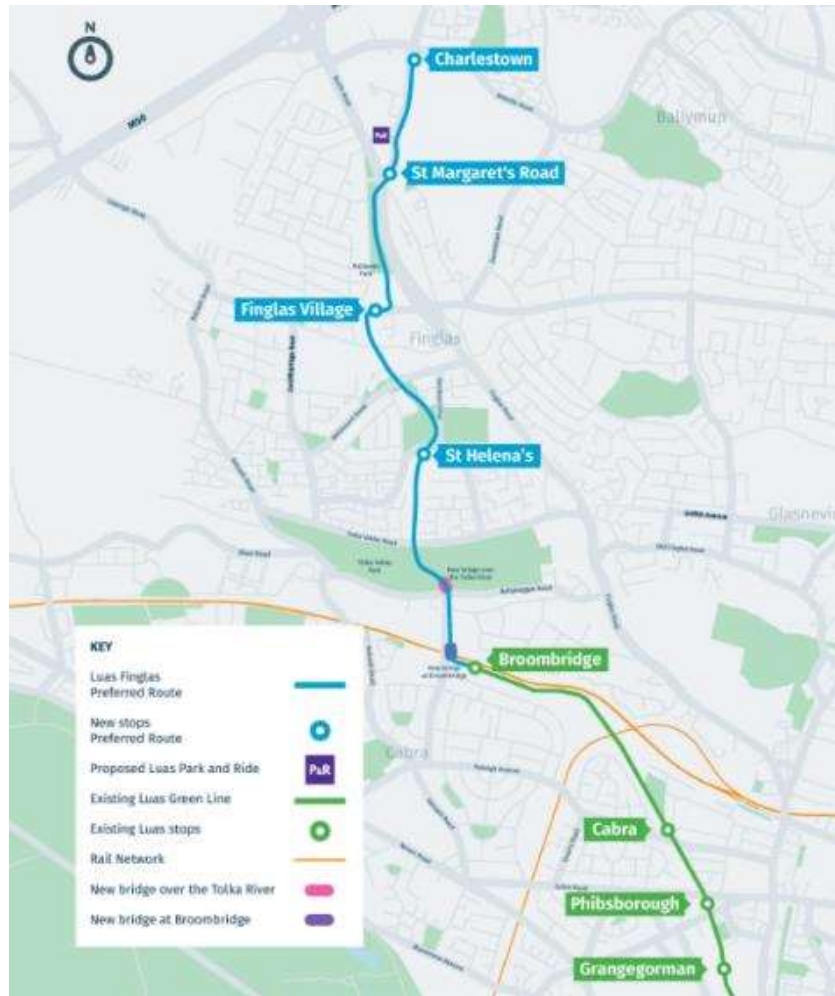
Projects underway – new lines and extensions



Luas Finglas:

Luas Finglas Objectives	Serve existing and future transport demand	A safe, frequent, reliable public transport connection	Reduce public transport journey times	Contribute to the Climate Action Plan targets	Promote economic growth
Luas Finglas Outcomes	14% population growth => 30,000 future potential users within 1km of tram stop	Opening year frequency of 7.5 minutes	17 minute savings in journey time from Charlestown to Dublin city centre	+ 1.3M PT trips - 4% road user emissions (-10k) + 11% PT trips	Economic and Social regeneration Access to jobs, education and opportunities

Projects underway – new lines and extensions



Luas Finglas Key Facts

Distance and stops



Frequency and journey times*







Luas Finglas - St Helena's Stop

Look to local tree functions

Taller trees and plants with deeper roots capture and store more carbon

safety/ lighting

Safety and intervisibility

Buffer and Screening

Combine plant functions, layering, low maintenance, quick to establish

Increased species, less risk of disease

SUDS opportunities

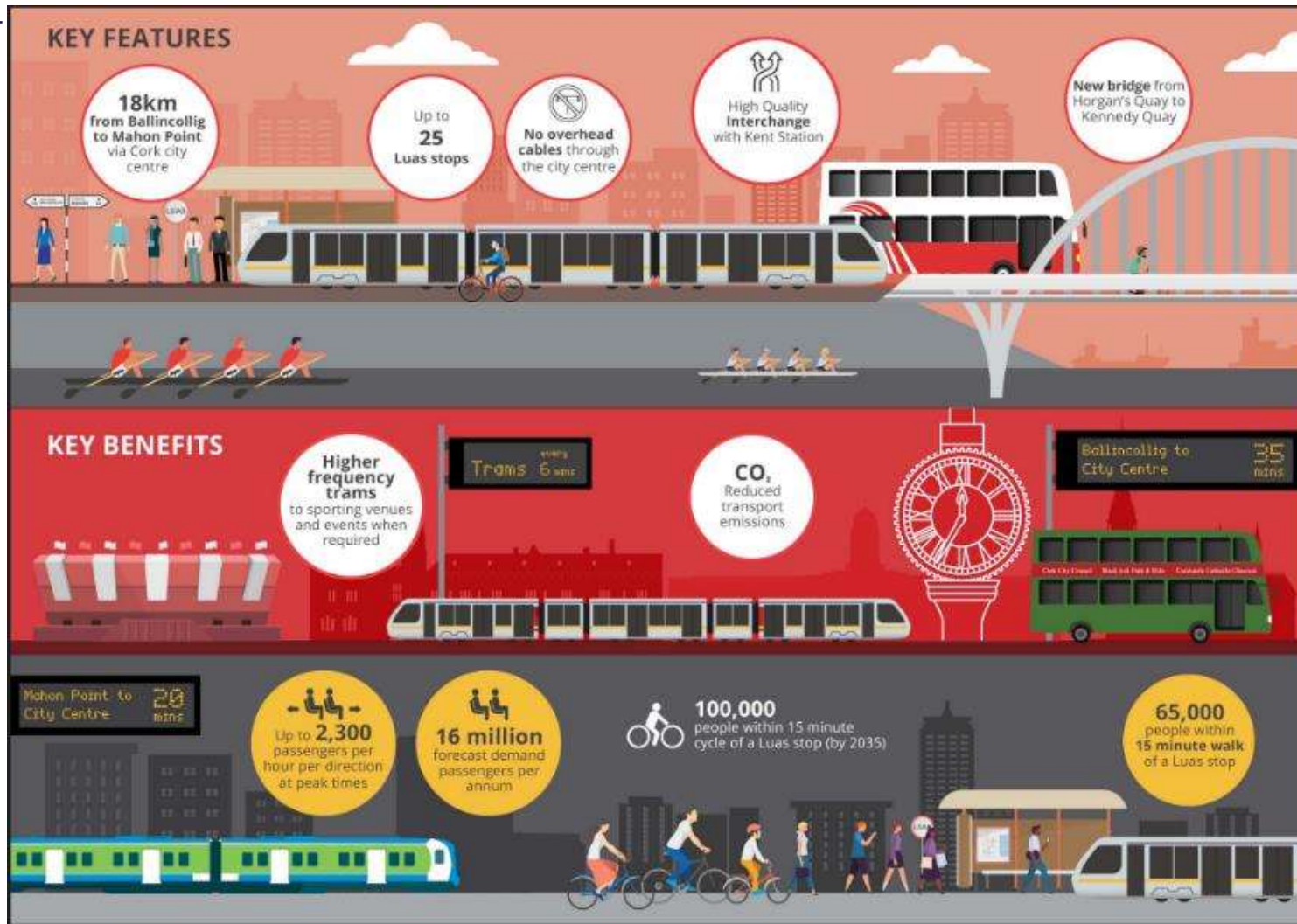
Planting used to highlight Circulation / junctions

Consider the planting palette

A simple palette of planting will be used to create connected green spaces along the transport routes.

Planting will be multifunctional with all plant types chosen with reference to their adaptability, robustness and ease of maintenance.

Projects underway – Luas Cork



Projects underway – Luas Cork



Luas Cork



Indicative view of Luas Cork at Bishopstown GAA Club

Luas Cork



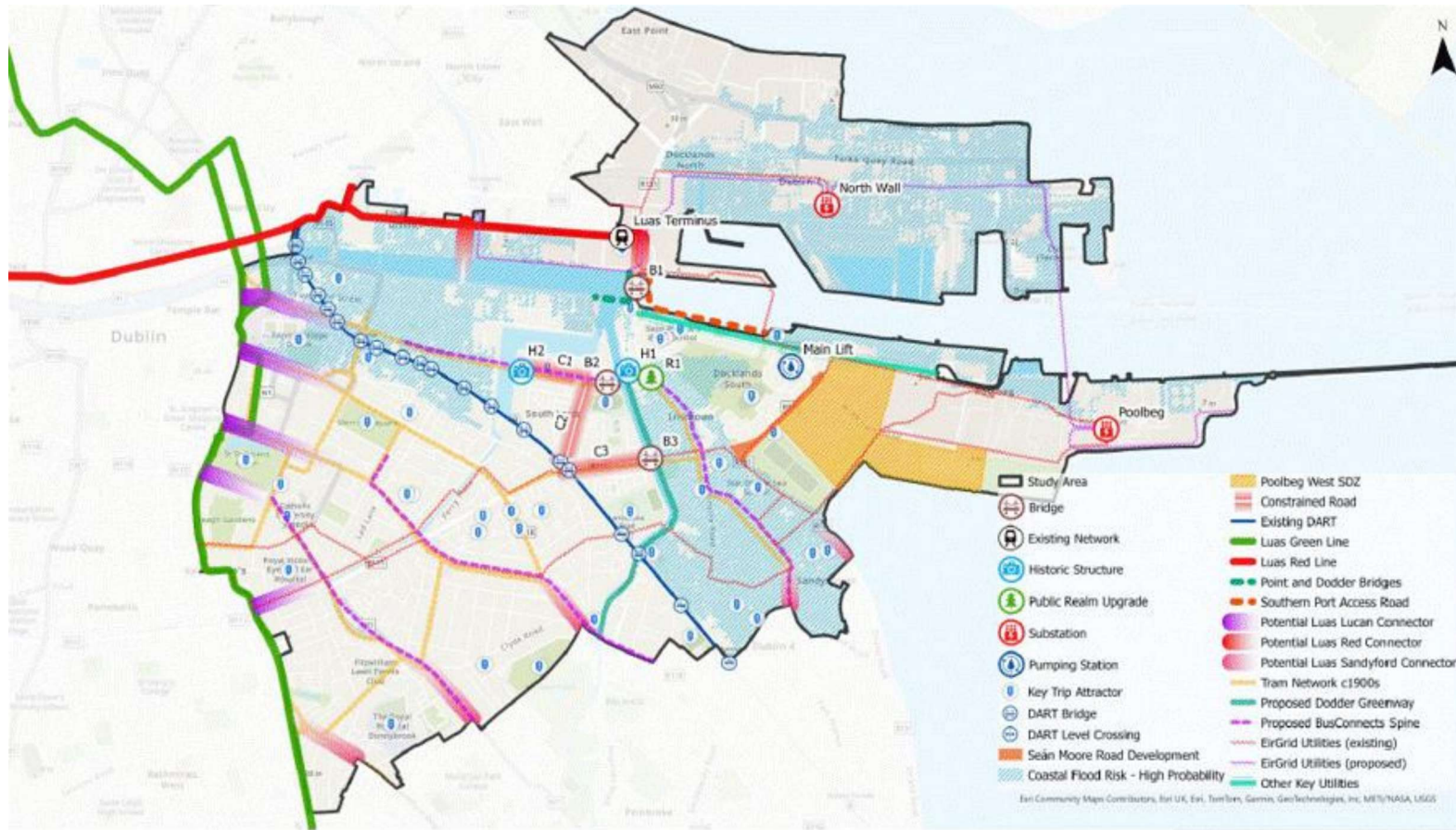
Indicative view of Luas Cork through St Patrick's Street

Projects underway – Luas Lucan

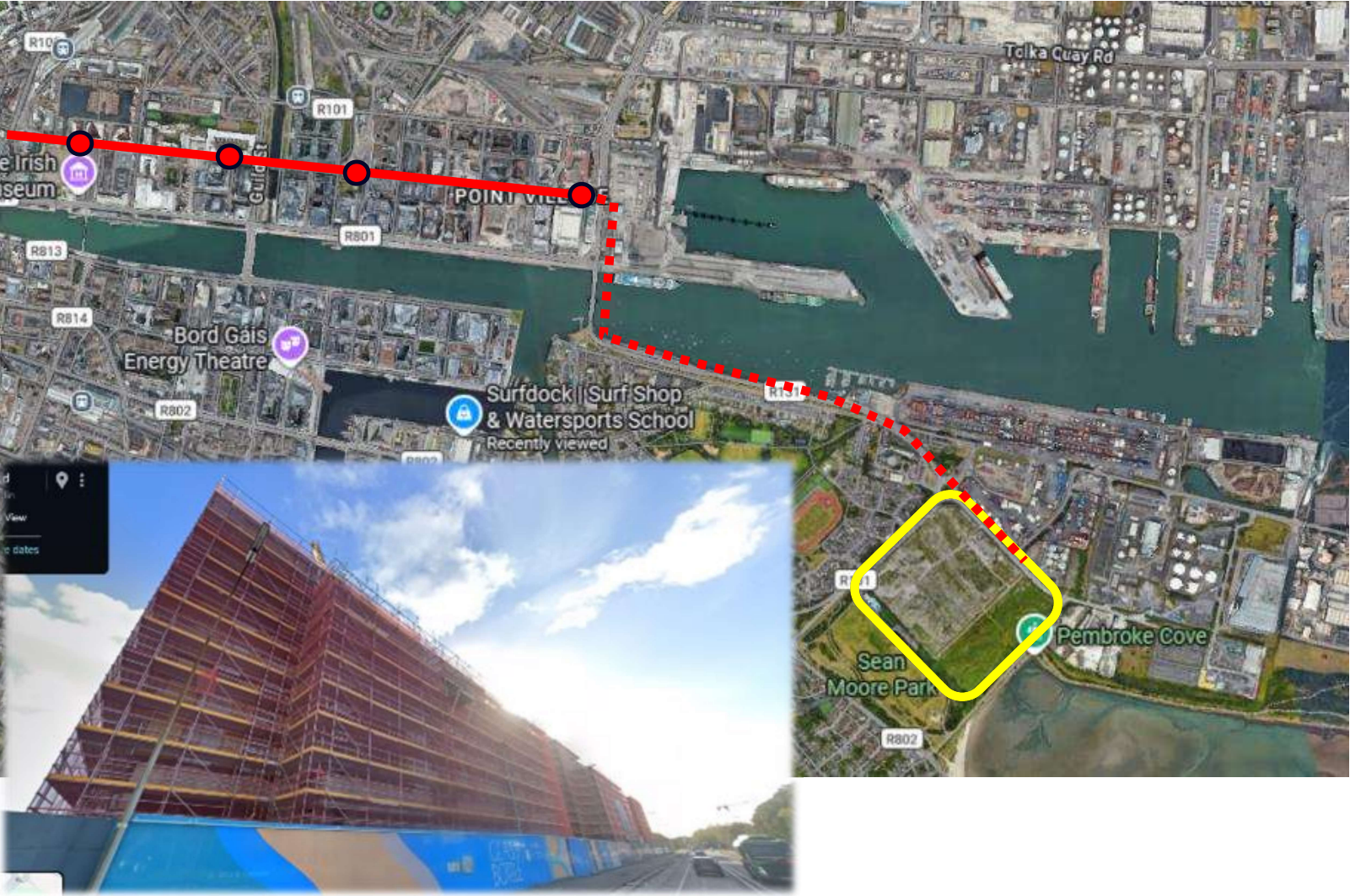


Figure 9.4 Long list of options

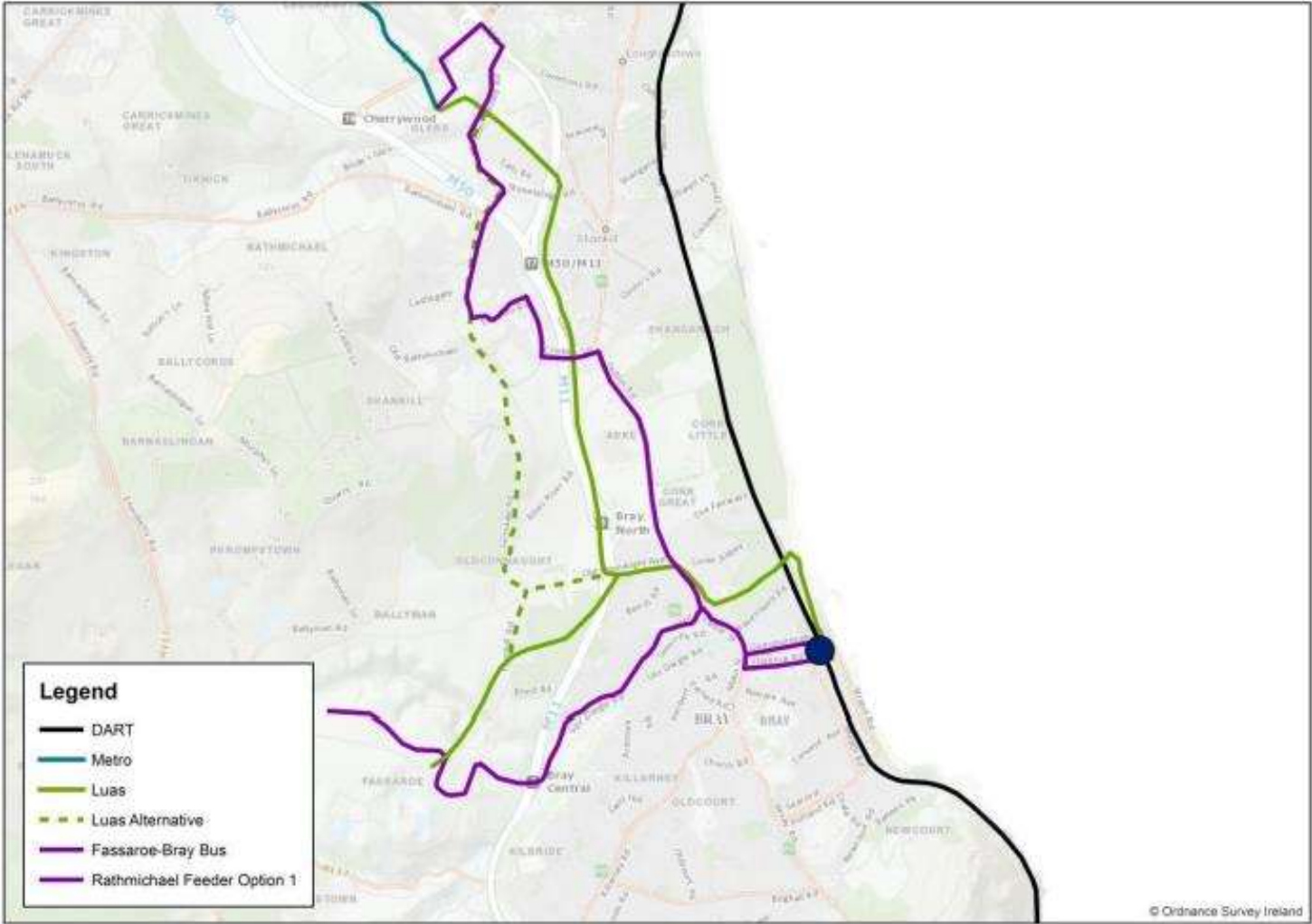
Projects underway – Luas Poolbeg



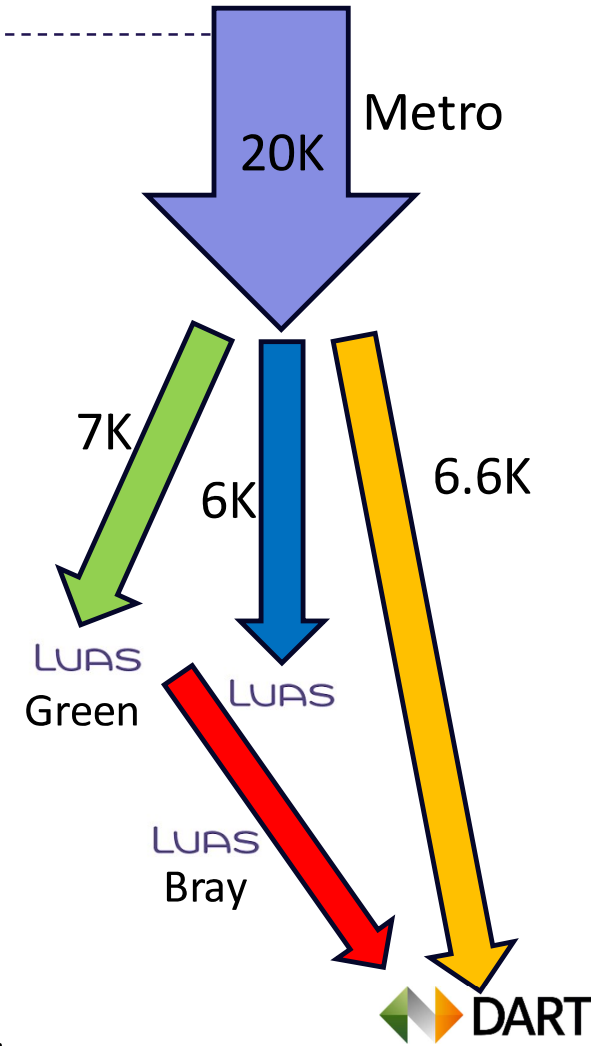
Projects underway – Luas Poolbeg



Projects underway – Luas Bray



Projects underway – Studies – Luas Sandyford



Conclusions



Luas is an Irish success of the last 20+ years and keeps delivering benefits. Ireland is undergoing a rail boom, and Luas is busy again with major expansions. Luas meets existing and future transport demand in an effective way. Luas is a sign of a modern, open, accessible, international and attractive city.
Can we imagine Dublin without Luas?

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Thank you for your attention

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