

Society of Chartered Surveyors Ireland - CPD Event

Sustainable Mobility and Climate-Proofing Our Communities



Robert Burns, Director of Service, Infrastructure & Climate Change
Dún Laoghaire-Rathdown County Council
18th January 2021

Outline

- 1. Introduction**
- 2. Climate Change**
- 3. Sustainable Mobility**
- 4. Urban Design and Mobility**
- 5. Mobility, Public Realm & the Economy**
- 6. Engagement & Collaboration**
- 7. Innovation, Research & Evaluation**
- 8. Thinking Global, Acting Local**
- 9. Final Thoughts**

Introduction

Key Challenges and Opportunities

- Making towns, villages and cities more liveable - attractive, accessible & socially & economically active
- Facilitating and accelerating a modal shift in transportation
- Creating more climate-resilient places and communities

Introduction

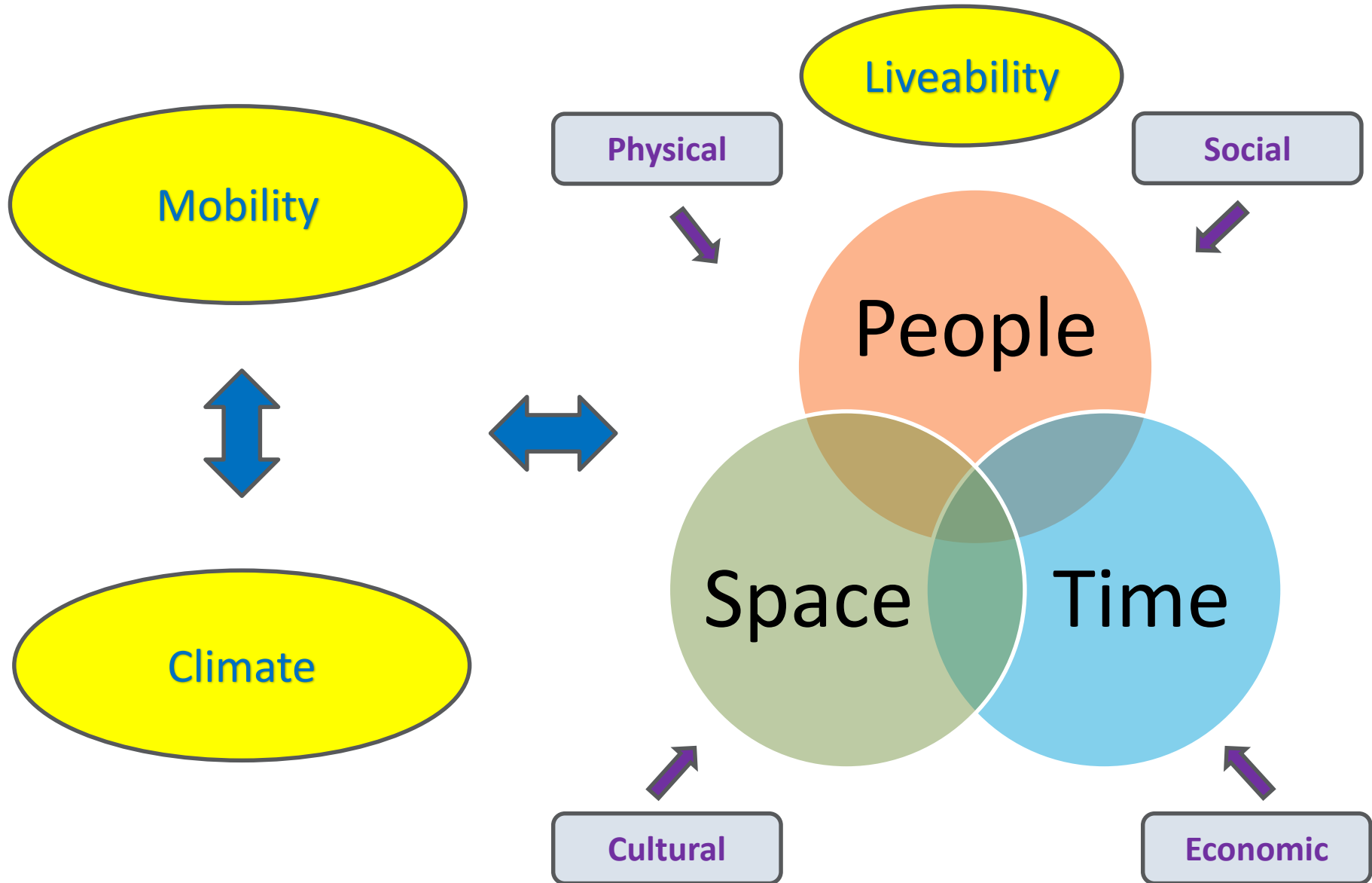
Liveability and Impact on Economic Investment

“The creation of attractive places to live and work is good planning and good enterprise policy. It can provide a competitive edge to Irish towns and cities when it comes to attracting and retaining the skills and talent on which FDI is reliant. As well as being a great place to do business, it is in Ireland’s interests to also be known as a great place to live.”

James Farrell, Head of Strategic Policy at IDA Ireland

Introduction

Mobility, Climate-Resilience and Liveability



Introduction

Policy Context

- A UN High-Level Advisory Group defined sustainable transport as *“the provision of services and infrastructure for the mobility of people and goods— advancing economic and social development to benefit today’s and future generations—in a manner that is safe, affordable, accessible, efficient, and resilient, while minimizing carbon and other emissions and environmental impacts.”*
- The UN World Commission on Environment and Development: *“sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”*
- Policy on Sustainable Transport
 - National
 - Project Ireland 2040 – NPF & NDP
 - Climate Action and Low Carbon Act 2021
 - Climate Action Plan 2021
 - Regional/Local
 - GDA or Regional Transport Strategies
 - County or City Development Plans
 - Corporate Plans, Climate Change Action Plans, etc.

Introduction

Policy Context

- Government Policy
 - Active travel investment - €360/million/year or €1.8 billion/5 years - €34 million for DLRCC
 - BusConnects, DART+, Metro, LUAS
 - Legislating for e-scooters
 - Electrification of vehicles – 945,000 EVs by 2030
- Climate Action and Low Carbon Act 2021
 - National Climate Action Plan
 - Climate Adaptation and Mitigation Plans for all LAs
 - Sharper focus on mitigation
 - 5-yearly Carbon Budgets
 - Sectoral budgets – transport, agriculture, energy, etc.
 - Decarbonising zones



Big rows are coming in the autumn on climate policy. The Government signed off on the Climate Action Bill, but agreeing how to make it happen will be a whole other ball game. And the political task of bringing the public along with this is immense.

We are arguing about a few bike lanes, when to have the slightest chance of meeting our climate goals we require a revolution in transport. And in agriculture. And energy. And industry. There are really big positives, of course – new jobs, new industries, and better lifestyles.

Climate Change

Climate, Environment & Health Nexus

Climate Action

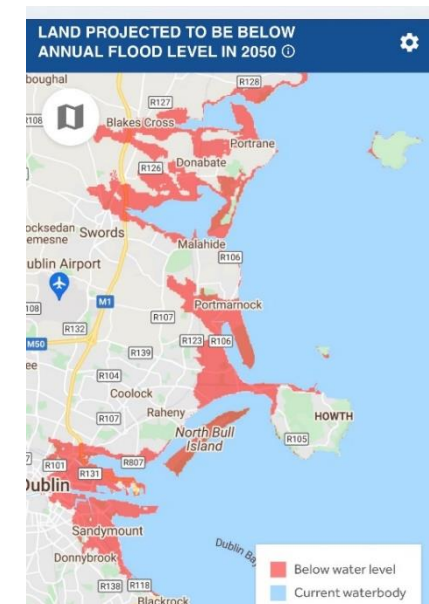
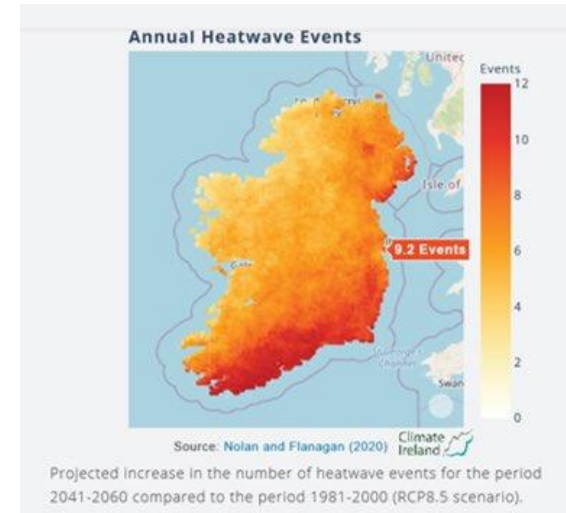
- Transportation – 40% CO2 energy-related emissions
- Emissions targets – down 51% by 2030 & Carbon Zero 2050
- Sea-level rise, flooding, heatwaves
- COP 26

Environment

- Air & Noise Pollution - exceedance of NO2
- Clean Air Strategies & Air Quality Action Plan in Dublin in 2021

Health & Wellbeing

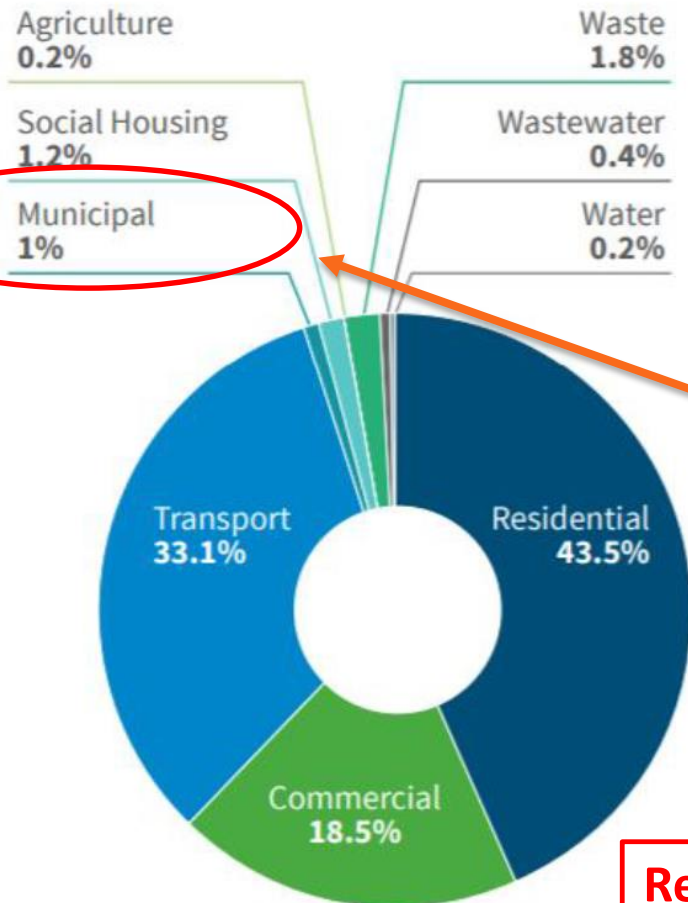
- Mental & physical health, incl. heat stress
- Independence & security
- Air pollution is the 'single biggest environmental health risk' (WHO)



Climate Change

GHG Emissions in the Dún Laoghaire-Rathdown Area

Figure 1: Total GHG Emissions for Dún Laoghaire-Rathdown Area per Sector



- Each Local Authority has a Climate Change Action Plan
- Impact of National Climate Action Plan & Carbon Budgets remains uncertain
- Decarbonising Zones

DLRCC's GHG Footprint:

- Street lighting
- Buildings
- Fleet
- Operations

Reduction in GHG emissions requires collaboration between public/private sectors & wider society

Sustainable Mobility

Design Manual for Urban Roads and Streets

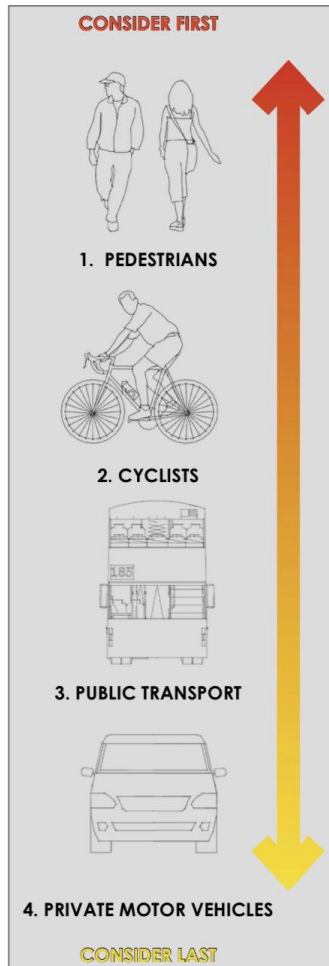


Figure 3.1: DMURS (Table 2.21) user hierarchy that promotes and prioritises sustainable forms of transportation

Sustainable Transport Hierarchy in DMURS is explicit part of national policy established in 2013 and consideration by designers is **mandatory**



Modal Shift
Relative advantages between modes

Sustainable Mobility

Network Principles

What is a Network?

- A complicated system of roads, lines, tubes, nerves, etc. that are connected to each other and operate together
(Oxford English Dictionary)
- In transport – canal, railway, road, walking & cycling networks

What is the Network Effect?

- When goods or services become more valuable as more people use them. For active mobility, for example, the more places are safely accessible on foot or by bike, the more likely people are to walk or cycle

What is Active Travel?

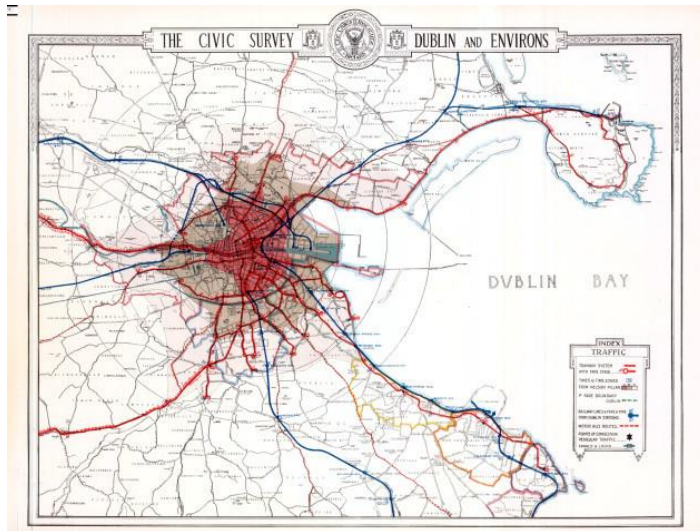
- Active travel is travelling with a purpose using your own energy, usually means walking or cycling to work, to school, to the shop as part of a ‘purposeful’ journey

Is that different to Walking and Cycling?

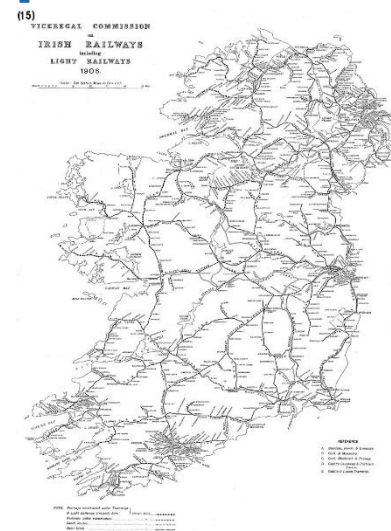
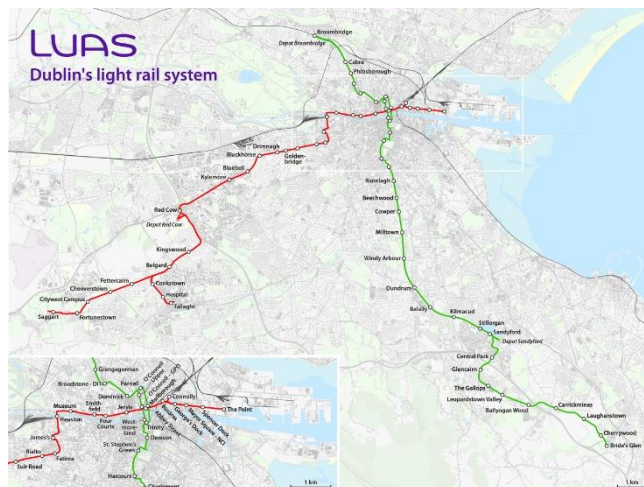
- Yes & No. Walking or cycling for purely leisure or exercise purposes is not considered active travel but same safety & quality principles should apply

Sustainable Mobility

Network Principles



1922
Dublin Tram Network
2021



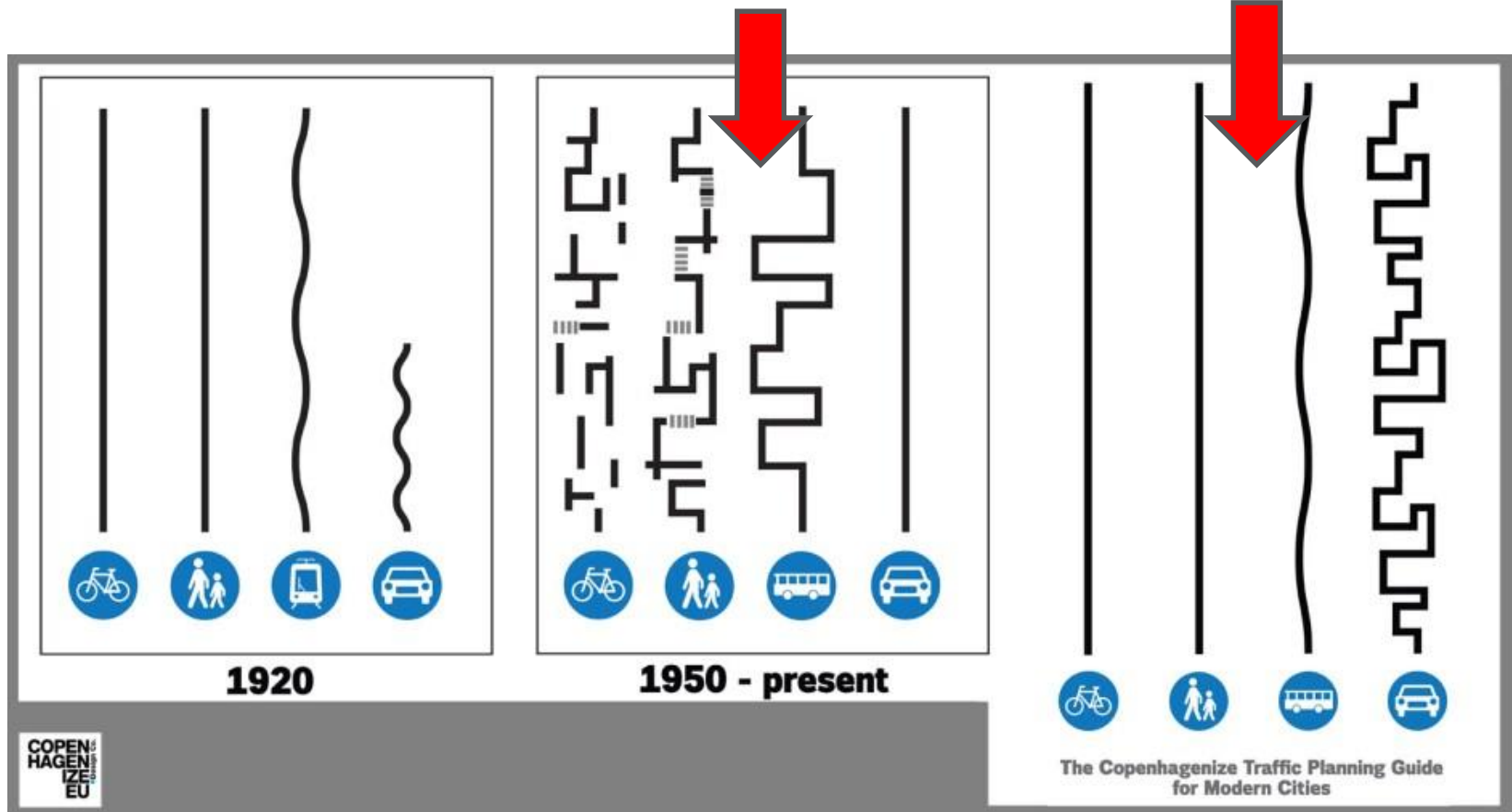
1908
Irish Railway Network
2021



Sustainable Mobility Network Principles

The Present?

The Future?



City Mobility Networks over the last 100 years
(Copenhagenize)

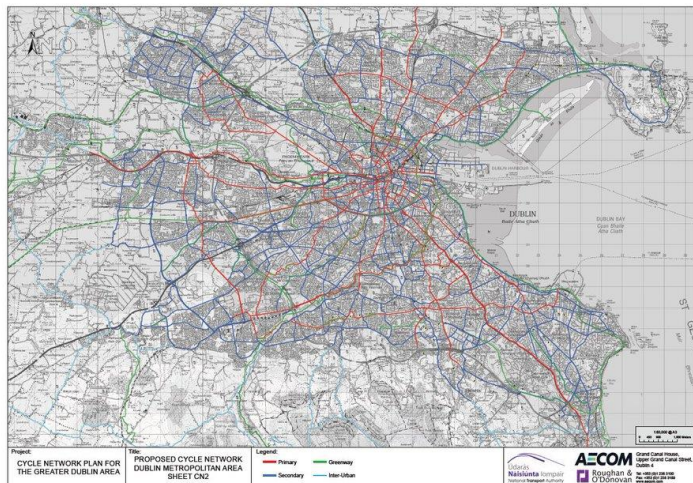
Sustainable Mobility

Network Principles

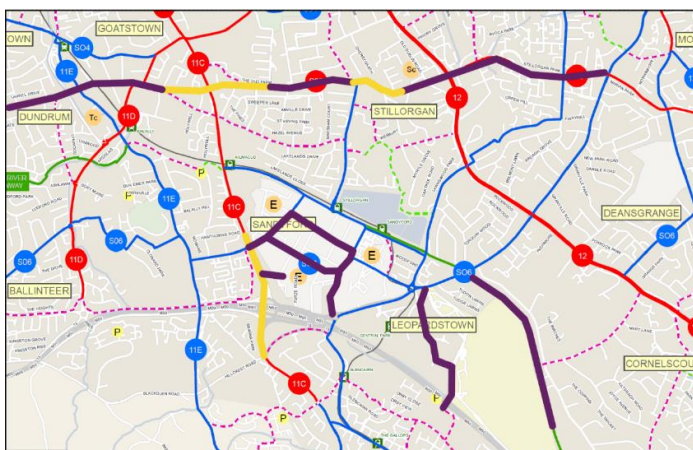
Active Travel Design Principles

Dutch CROW Cycling Design Manual

- Cohesion – anywhere to everywhere
- Directness – short, fast routes
- Safety – avoid differences in speed/mass
- Comfort – minimise stops, nuisance
- Attractiveness – subjective

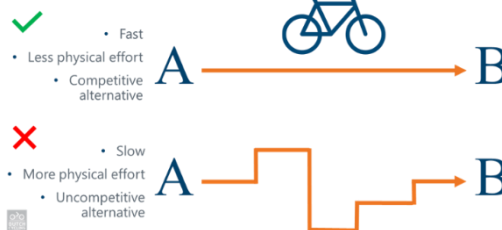


Greater Dublin Area Network Plan 2013



DLRCC Active Travel Routes in Sandyford Area

DIRECTNESS: Creating short and fast routes
Minimising detours



(UN)ATTRACTIVENESS



ATTRACTIVE

- Green
- Open
- Water
- Well maintained
- Quiet streets



UNATTRACTIVE

- Traffic
- Congestion
- Industry
- Dark / unlit

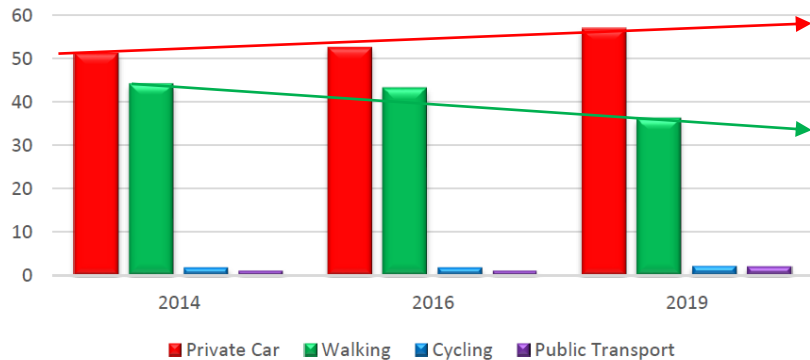
Sustainable Mobility Network Principles

Year	No. of Cars
1915	9,850
1985	709,546
1995	990,384
2005	1,662,157
2015	1,985,130
2019	2,174,799
2030	??

} x 2

Car Ownership in Ireland

Percentage Journeys less than 2kms by
Mode in Ireland - 2014, 2016, & 2019



Understanding the Problem

Car Ownership

v

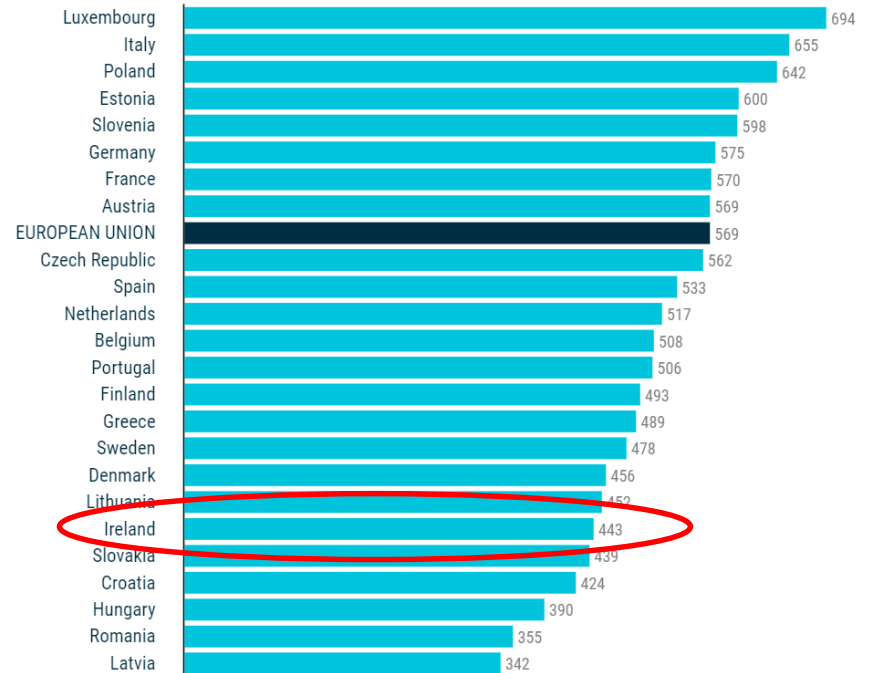
Car Use

BY COUNTRY AND VEHICLE TYPE / 2015 - 2019

Passenger cars v

2019

VEHICLES PER 1,000 INHABITANTS



Vehicles per 1,000 Inhabitants in Europe

Urban Design and Mobility

Which of these two questions do we think are more likely to have a positive response?

Would you like cycle lanes going through your village or town?

Or

Would you like your village or town to have less traffic, nicer public spaces and to be a place where it is easier and safer to walk and cycle around?

Sustainable Transport is not about an ideology, it is part of a strategy to support compact development, social equity, economic prosperity and to help make our public spaces more liveable and climate-resilient

Urban Design and Mobility

“Every city resident is a pedestrian at some point in the day. A city whose streets invite people to walk, bike, and sit along them also inspires people to innovate, invest, and stay for good.”

Janette Sadik-Khan

Former New York City Transport Commissioner



“It’s interesting to see which cities of the world are on the list of liveable cities. They’re always the cities that are sweet to their people.”

Jan Gehl, Danish Architect and Urban Designer

Urban Design and Mobility Strategy and Implementation

Dún Laoghaire Urban Framework Plan

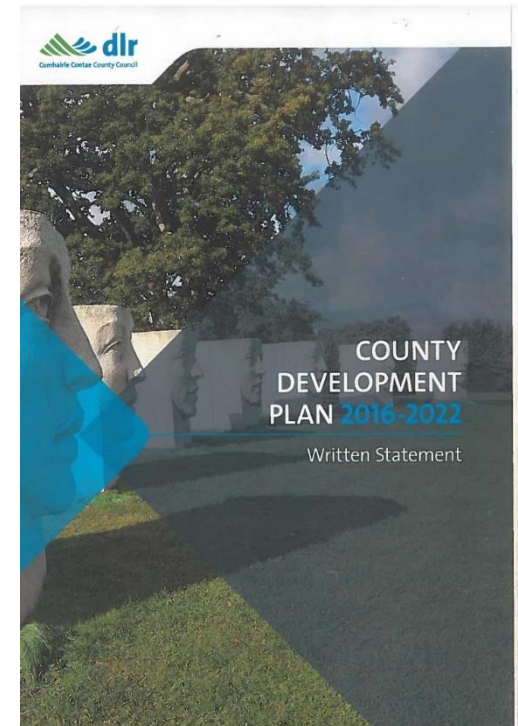


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Whole



Part



3

Dún Laoghaire Pedestrianisation



Urban Design and Mobility

DLR's Coastal Mobility Route



Key Points

- c. 5 km route, - 2-way cycleway 3.6 km & Quiet Streets 0.9km
- Reallocated traffic lane - one-way system for vehicles
- June-August 2020 & Design & Construction in 3 months
- Est. cost €2.5million or c. €550k/km
- After 20,000 cyclists/week
- Before 4,000 cyclists/week
- 30,000 pedestrians/week
- **Est. 2 million active travel trips/year**
- Wide diversity of users – young, old, families, people with mobility challenges, etc.
- Mayo Greenway 3,300 cyclists/week
- Waterford Greenway 3,500 cyclists/week
- CMR for practical journeys (work, school, etc.) & leisure
- Links up coastal villages
- Increase in footfall in Dún Laoghaire

Urban Design and Mobility

DLR's Coastal Mobility Route



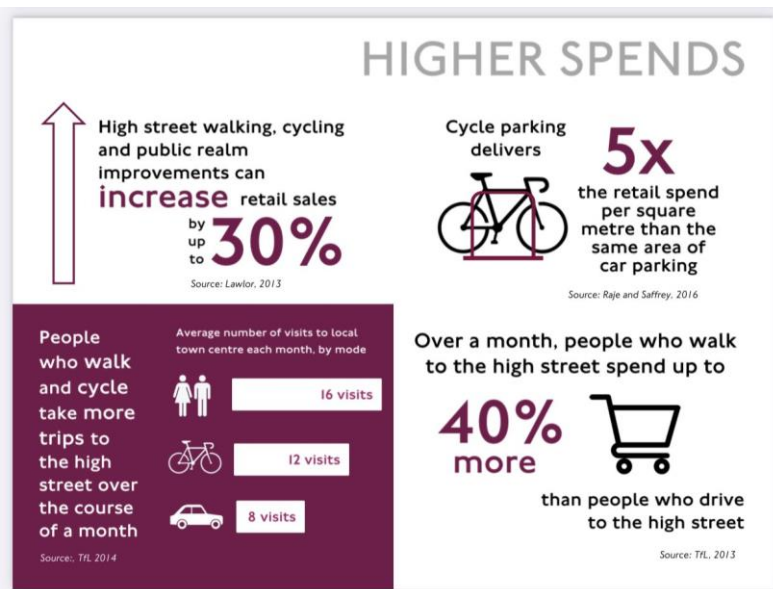
Multi-disciplinary approach to urban design and mobility is critical

Mobility, Public Realm & the Economy

- Major changes in towns and cities throughout the world and much of this prompted or accelerated by Covid
- 15-minute City in Paris, Superblocks in Barcelona, Town Centres First in Scotland – all initiatives that pre-date the pandemic
- Town Centres First – focuses on **A**ctivity, **A**tractiveness and **A**ccessibility
- 'Post-retail' - High street retail challenged by increasing competition from online retailers, working from home & fall-off in tourists
- Research shows that investment in the public realm, including providing better facilities for walking & cycling can significantly increase retail sales
- Climate change means that we need to make adaptations in order to be climate-resilient – adaptation cost up to €800 million/year
- Vehicle congestion in our towns and cities comes at a significant economic cost:
 - Dublin 6th most congested city in Europe
 - Congestion est. €350m in 2017 & projected €2 billion in 2033

Mobility, Public Realm & the Economy

- Research for Transport for London by University College London shows public realm, walking & cycling improvements can boost high street retail sales by 30%
- Those who walk to the high street spend on average 40% more per month than those who drive
- <http://content.tfl.gov.uk/walking-cycling-economic-benefits-summary-pack.pdf>



Engagement & Collaboration

- Traditional consultation/engagement model
 - Preliminary Design
 - Public element - Request written submissions
 - Review, consider and proceed with design & construction
 - What happens during or after the project, and how engaged are people with the process?
- Plan - Do/Trial - Review - Improve Model - with a multi-disciplinary approach
- Public & stakeholder engagement before, during and after planned changes
- Community engagement and collaboration – children, older people, disability groups, residents, businesses, NGOs, etc.
- Public health stakeholders – air quality, noise, physical activity, etc.
- Specific legislation for trialling like ETROs in the UK may be beneficial, and has ben flagged by the Minister of Transport
- Academic engagement on research & evidence-based approach on mobility interventions – common framework for planning & evaluation

Engagement & Collaboration

DLR ADAPTIVE BUILD MODEL

Implementation model for engagement, design and build of public realm and mobility works that seeks to allow fast paced delivery in challenging times whilst ensuring community involvement throughout the design and build process.



EVALUATE AND ENGAGE

The first stage of the process involves existing data analysis, site analysis, network mapping, community engagement to establish wishes and issues.

REVIEW AND IMPROVE

The final stage of the process will analyse the usage and effects of the design intervention and make improvements and changes on the ground.



DESIGNS INSTALLED

The next stage of the process sees designs being realised on the ground. These can be installed in a temporary way or as a trial. Data gathering on usage will occur.

Innovation, Research & Evaluation

TRAVEL & TRANSPORT

dlr Cycle Parking Survey: Call for Survey Participants

General News | Public Notices | Press Releases |
Tuesday, July 27, 2021 | **DLR COUNTY**

Bike Parking Study
DLRCC/TCD/Smart Sandyford



E-Cargo Bike Pilot
DLRCC/Bleper/TCD/Smart Sandyford
Inclusive Cycles Pilot
DLRCC/Cycling Without Age/The Bike Hub



Dynamic Engagement Model
DLRCC/Ramboll



Dún Laoghaire Summer Streets
DLRCC/Ramboll



Community-led Placemaking
DLRCC/A Playful City/Other Partners



Covid Mobility Evaluation
DLRCC/TU Dublin

Research requires investment & collaboration

Innovation, Research & Evaluation

Covid Mobility & Public Realm - Blackrock Village

- One-way system for vehicles, widened footpaths, expanded public space and cycling facilities
- Heritage village - placemaking and public realm improvements
- Village bypassed & 2 large shopping centres
- Very engaged business & residential community
- Excellent transport links, strong retail sector and large residential population



Innovation, Research & Evaluation

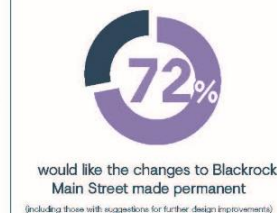
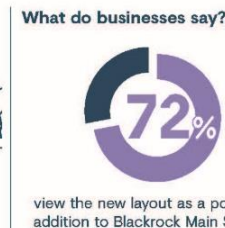
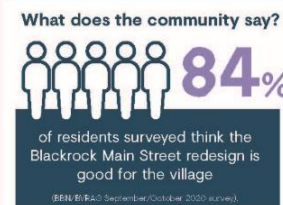
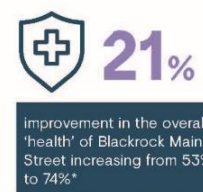
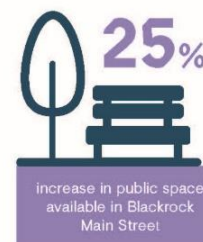


Covid Mobility Evaluation
DLRCC/TU Dublin

Key Points

- Evaluation by TU Dublin commissioned by DLRCC
- 72% support for changes by businesses
- 84% support for changes by residents
- 72% of business want changes made permanent
- 40% reduction in vehicular traffic on Main St. & reduction in traffic speeds
- 8 new businesses opened since July 2020
- Healthy Cities Check of Main St. up 21%

Blackrock and Coastal Mobility Route research



How are people getting about?



Who is using the Coastal Mobility Route?



Innovation, Research & Evaluation



E-Cargo Bike Pilot

DLRCC/Bleeper/TCD/Smart Sandyford



Ecargobikes for Businesses in DLRCC

- Partnership DLRCC/Bleeper/Smart Sandyford/TCD
- Businesses in DLRCC can trial a ecargobike for 6 months at a discounted rate
- Cheaper, faster, greener deliveries & logistics, allowing businesses 'tip their toe' into sustainable mobility
- Trial is being independently evaluated by TCD
- Trialling to succeed – find out what works and doesn't work, & improve/refine
- Hope is that this will influence national policy & lead to a national financial support scheme for ecargobikes



Innovation, Research & Evaluation



Thinking Global, Acting Local

Blackthorn Park, Sandyford



Societal & Climate Impact

- Completed in 2021 by DLRCC Parks Dept.
- Place to exercise, rest & play
- iTree Ecosystem Analysis
 - 6,000 trees
 - 2.4 ha in tree cover
 - 36 t/yr carbon stored
 - 6 t/yr carbon sequestered
 - 30 kgs of air pollutants removed
 - 16 t/yr oxygen produced
- Tree tags

Thinking Global, Acting Local

15-Minute City & Compact Neighbourhoods



Vauban, Freiburg, Germany

- Community of 5,000 people in centre of Freiburg
- Car-Free – parking only at edges of development & thru traffic limited to 5 km/hr
- Children play in the street
- Extensive walking and cycling routes & tram running through development
- Housing built through cooperatives as developers thought a 'car-free' development wasn't viable

Final Thoughts

- Making towns more liveable - attractive, accessible and active
 - Plan strategically for compact development
 - Adopt a 'Town Centres First' policy
 - Community & business engagement – from start to end
 - Collect, analyse & communicate the information, focusing on economic & social benefits
- Facilitating and accelerating modal shift in transportation
 - Leadership is the key challenge
 - Communicate on national & local policies - focus on incentives, but...
 - Champion the projects & seek to get quick wins & support of key stakeholders (residents, business groups, community groups, etc.)
 - Achieving 100% consensus is impossible!
- Creating more climate-resilient places and communities
 - Widen & deepen the engagement with communities on the need for climate action – emphasise how they can help & input
 - Communicate on the co-benefits – better air quality, less noise, less disruption from flooding, better for our health, safer mobility, etc.
 - Promote the need for multi-agency/disciplinary approach
 - Evolving & fluid – Climate Action Plan, Decarbonising Zones & Carbon Budgets

Society of Chartered Surveyors Ireland - CPD Event

Sustainable Mobility and Climate-Proofing Our Communities



Thank You!