

# National Transport Authority



Dublin City Council Environment SPC  
February 2019

# What We Do

## Bus, Rail & Light Rail Services



## Taxi & Bus Licensing



## Investment Projects



## Integration & Technology



## Transport Planning & Policy



## Personal Travel Choices



# What We Do

Statutorily responsible for a wide range of functions including:

- Delivery of public transport services nationally
- Regulation of commercial bus routes nationally
- National taxi regulation
- National public transport information and ticketing
- Transport planning and capital investment in public transport in Greater Dublin Area

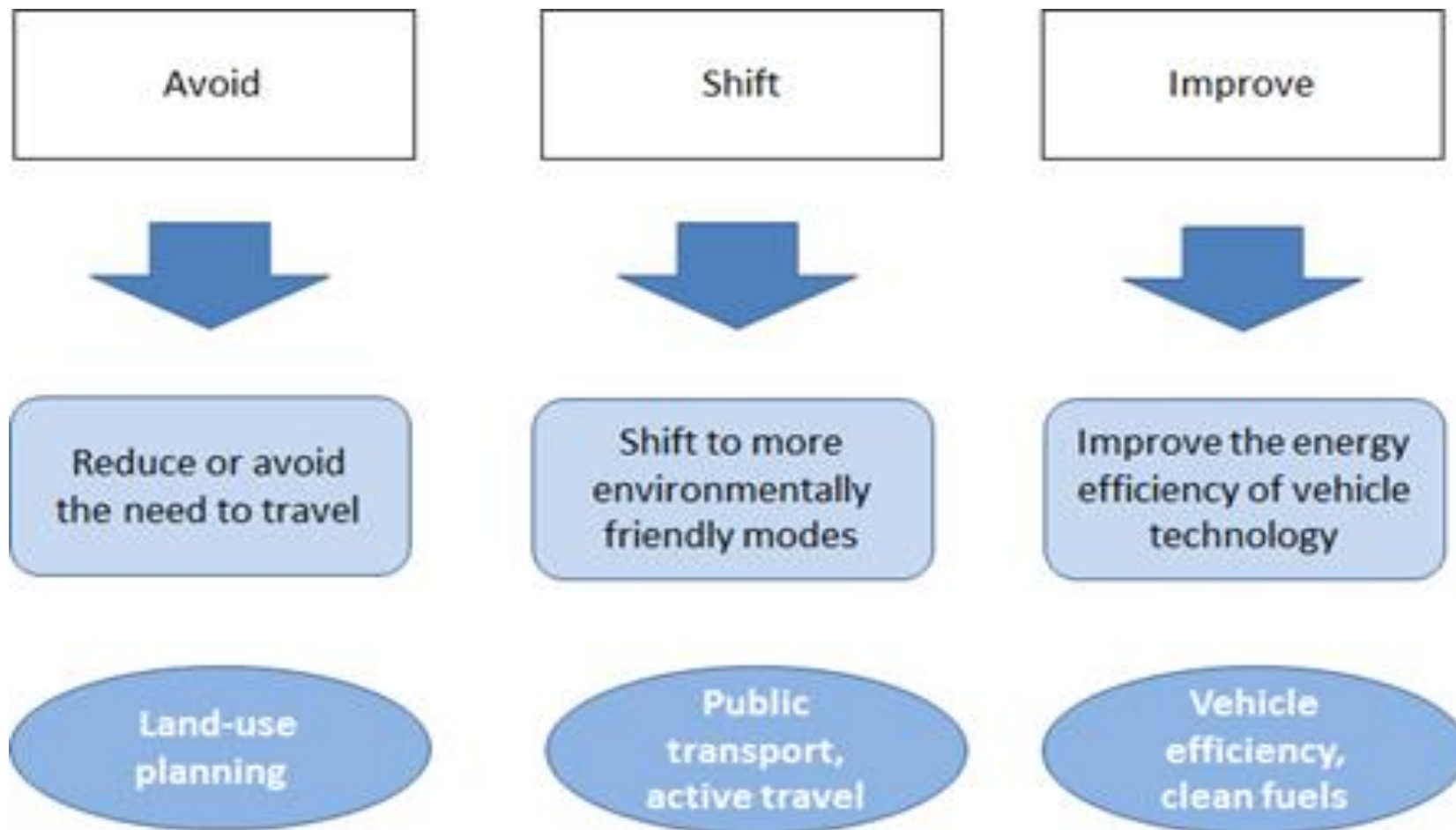
# Presentation Scope

- Role of NTA in Air Quality Protection
- Likely impacts of BusConnects and other Public Transport on Air Quality
- Electrification of Public Transport
- Any other issues deemed important

# Transport Sector

- Transport is a significant source of NO<sub>x</sub>, Particulate Matter and Volatile Organic Compounds emissions;
- While total NO<sub>x</sub> emissions have fallen, despite the improvements in fleets, total NO<sub>x</sub> emissions in transport have not fallen nationally;
- Ambient No<sub>x</sub> concentrations in urban areas are close to EU annual limit value

# Addressing emissions

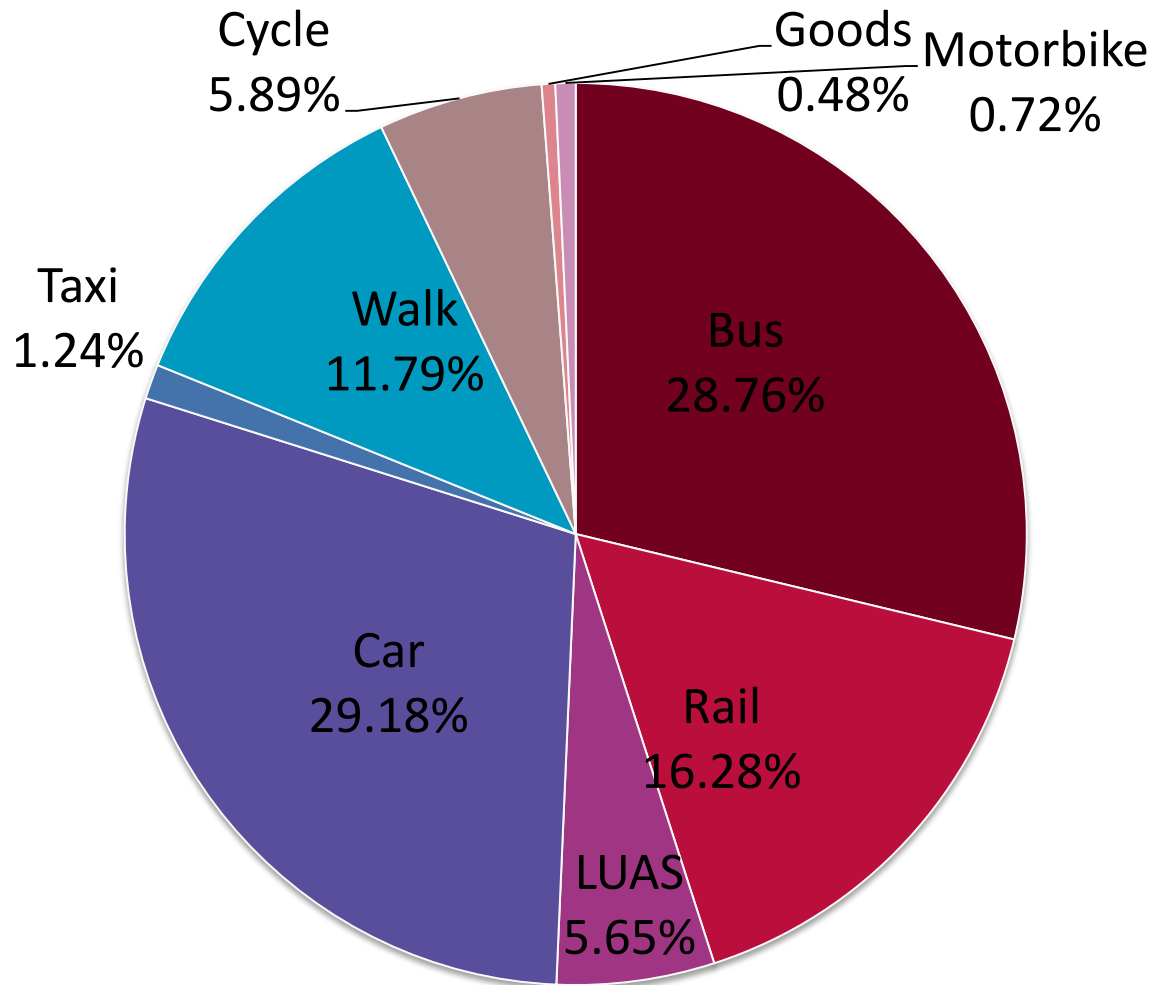


# Sustainable Transport Usage in Dublin





# Canal Cordon Count 2017 - Mode Share






# Trend in trips by sustainable modes

2006



 Sustainable Modes

 Car, Goods and Other Modes

2017



# NTA Role in reduction in Emissions in Land Transport



# NTA Role in Emissions Reduction

## Reduce demand for travel

- Better integration of land-use & transport planning

## Encourage greater use of sustainable modes

- Make existing public transport services more attractive
- Provide new public transport infrastructure
  - Giving higher priority to sustainable modes on existing roads
  - Providing safe segregated walking & cycling routes
- Change attitudes to walking, cycling and public transport usage

# NTA Role in Emissions Reduction

## Transition to Low Emission fleet

- Purchase low emission bus fleet for subsidised services
- Regulate commercial bus services to use low emission fleet
- Regulate small public service vehicle industry to use low emission fleet

# Reduction in Travel Demand



# Reducing the Need to Travel

## DESTINATIONS FURTHER FROM HOME



Destinations further from home increase car use adding to congestion.

## BRINGING DESTINATIONS CLOSER TO HOME



Destinations closer to home reduce car use and congestion

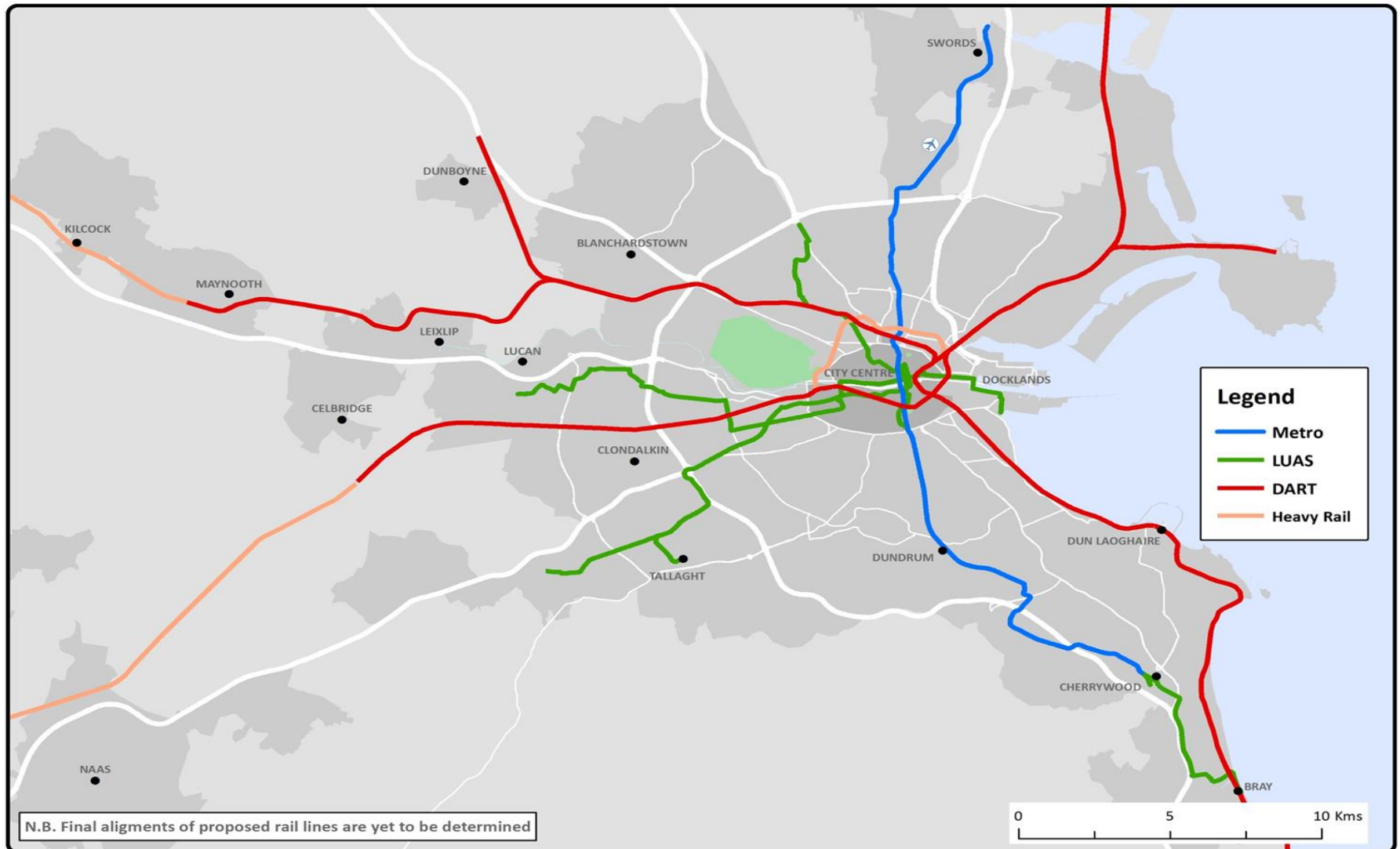
# GDA Transport Strategy

- Greater Dublin Area Transport Strategy 2016 – 2035
- First statutory plan
- Provides transport solutions to support the land use planning vision for the region
- Takes account of revised population and employment projections

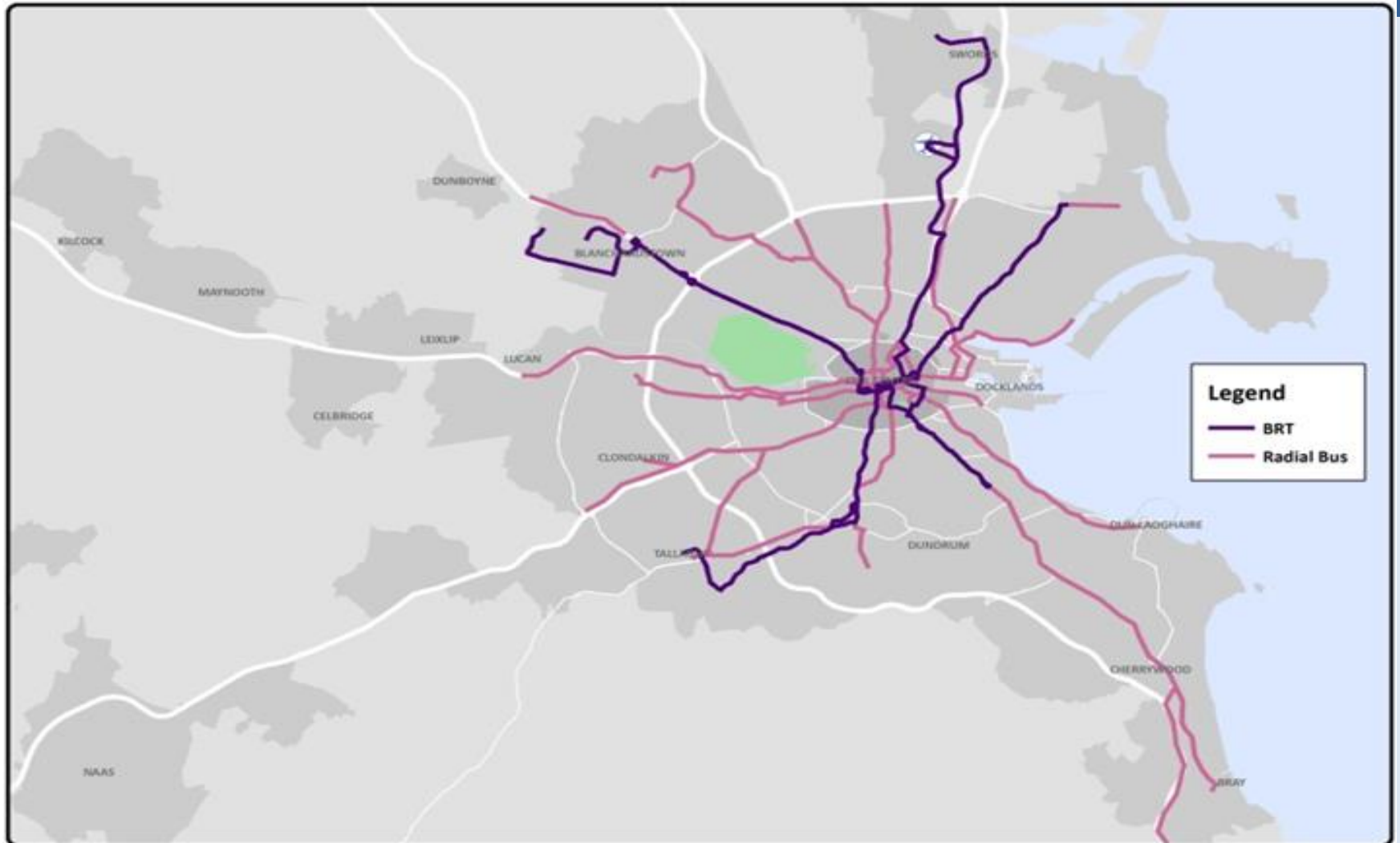




# Rail Network



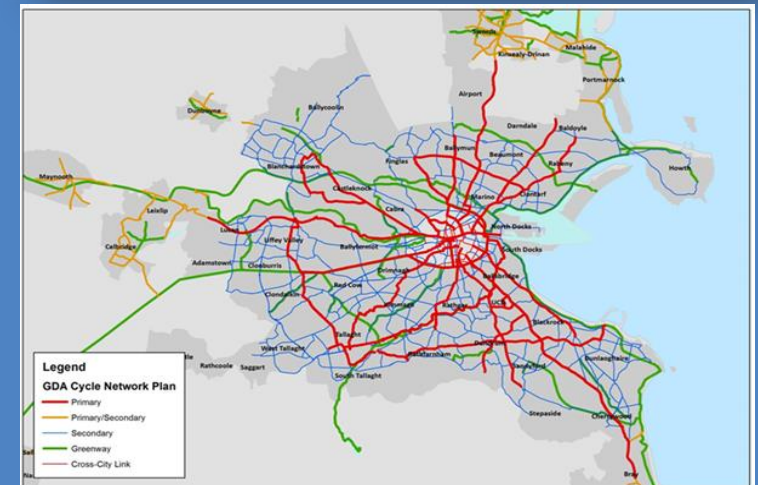
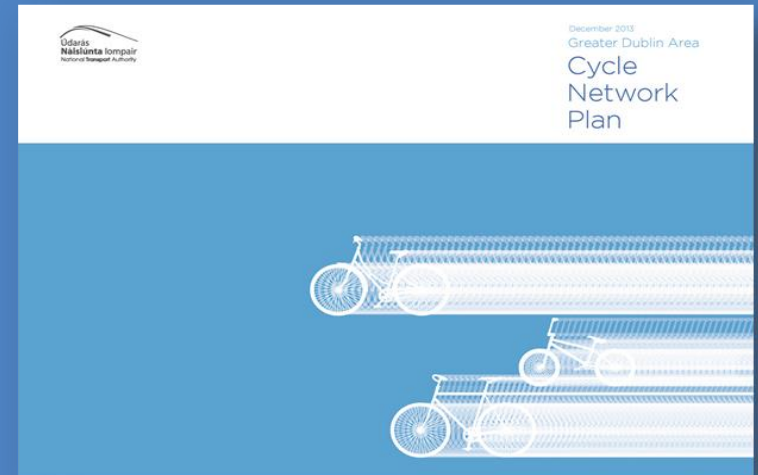
# Bus Network



# Cycling

## Construct the Greater Dublin Area Cycle Network

Key routes will be, to the extent practicable, segregated routes, where the cyclist is safely separated from motorised vehicular traffic



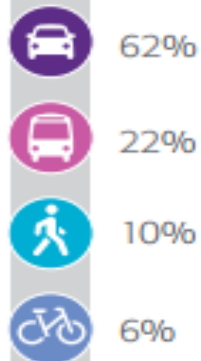
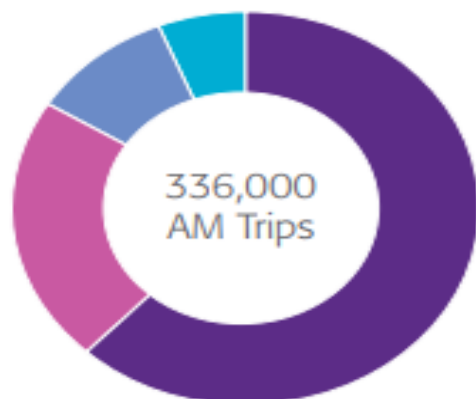
# Other Measures

- Park and Ride
- Demand Management
  - ✓ parking standards
  - ✓ parking charges
  - ✓ congestion charging
  - ✓ road pricing

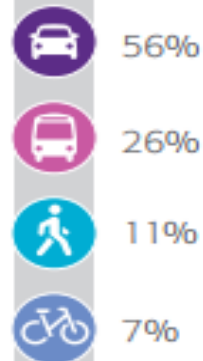
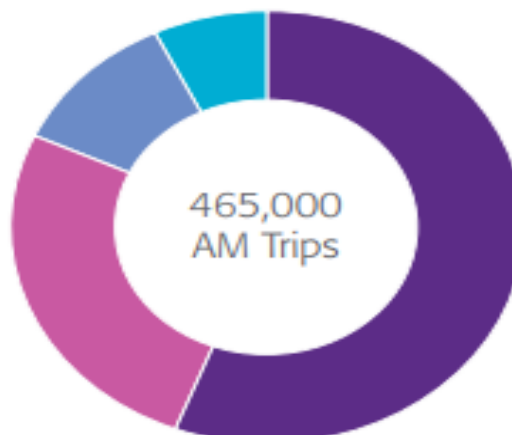


# Planned Outcomes

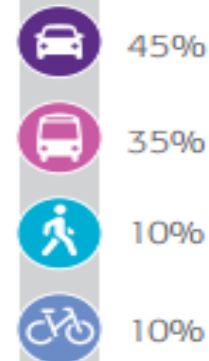
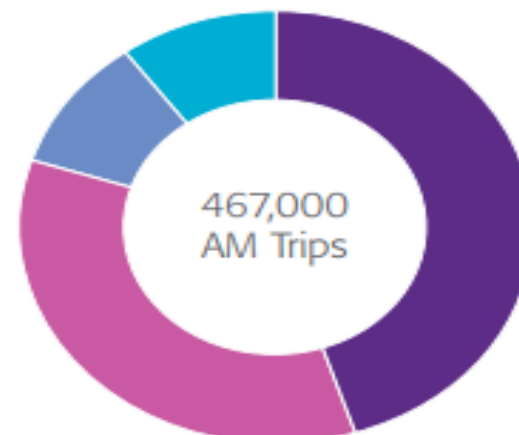
Mode Share 2011



Mode Share 2035  
Without Strategy



Mode Share 2035  
With Strategy



Commuting Growth 2011–2035 = 39% More Trips

# Making public transport services more attractive





# Technology and integration

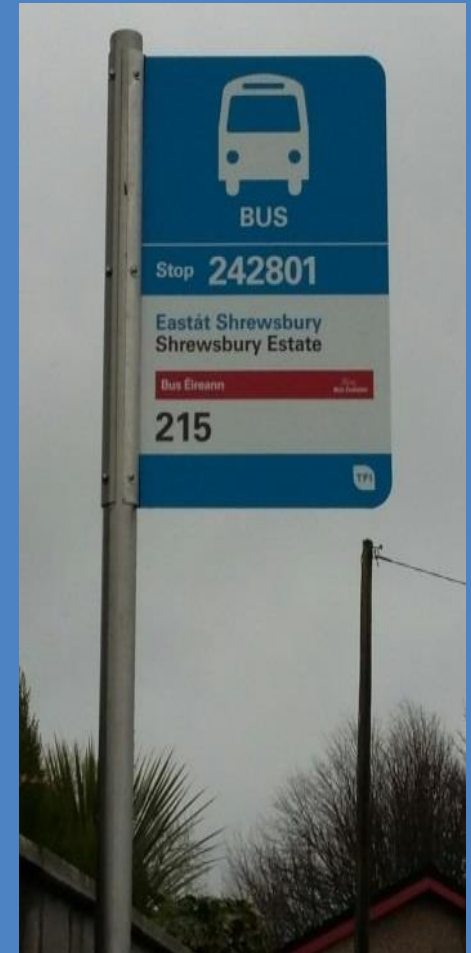
- National intermodal online journey planner and app has been completed
- Real Time Passenger Information signs & app available at [www.transportforireland.ie](http://www.transportforireland.ie)
- Integrated ticketing via our Leap card





# Public transport improvements

- Additional services
- Improved reliability & punctuality
- Improved information at stops
- Transport for Ireland brand developed as the unifying brand



# Provide new public transport infrastructure



# National Development Plan 2018 - 2027



# Key Projects

- BusConnects €2.4bn
- DART Expansion €2bn
- Metrolink €3bn
- Cycling Infrastructure

- Core Bus Network
- Dart Network
- Non-DART Rail Network
- Luas Network
- Proposed Luas extensions
- Metro



**BUS  
CONNECTS**

TRANSFORMING CITY BUS SERVICES



# BusConnects





- All our cities and towns low density layout means the bus system will form the backbone of the city's public transport system
- Tackling each city region's congestion issues means focussing on the bus system
- ***BusConnects*** is a plan to fundamentally transform our cities and towns bus system





# BUS CONNECTS

TRANSFORMING CITY BUS SERVICES



Core Bus Corridors  
providing continuous bus  
priority



Redesign of  
Network of Bus  
Services



State-of-the-art  
Ticketing System



Simpler Fare  
Structure



Cashless Payment  
System



Park & Ride  
facilities



New Bus Livery



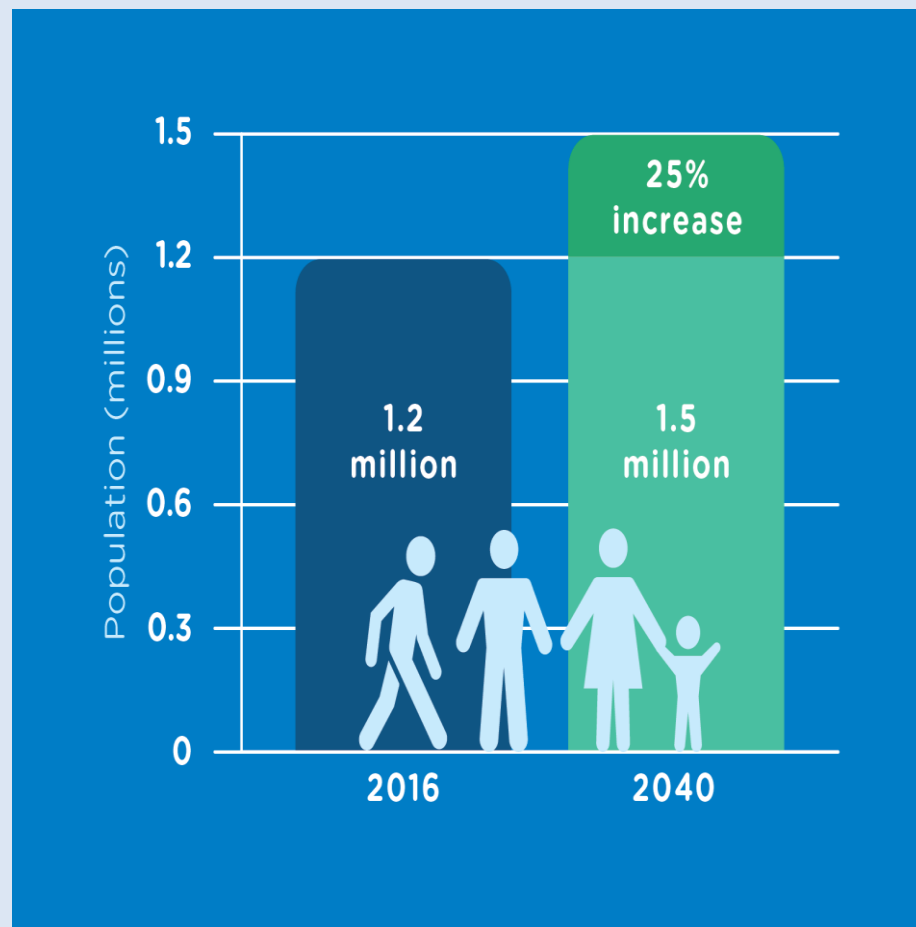
New Bus Stops  
+ Shelters



Use of Low  
Emission Vehicles

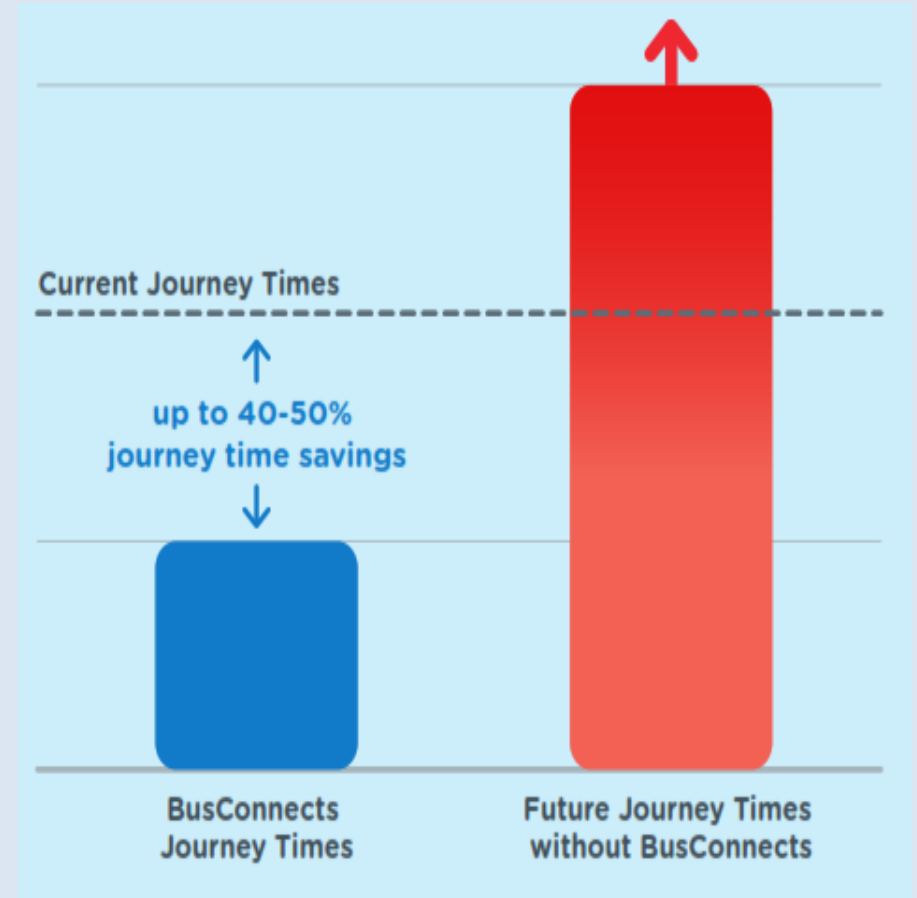
# BusConnects – Why we need it?

- Address congestion
- Enable population growth
- Allow economic growth
- Reduce emissions



# The Benefits it will bring: For bus users

- **Time Savings:** Bus journey time savings of up to 40-50%
- **Reliability:** Reliable and punctual bus services
- **Capacity:** Increased capacity to carry a 50% uplift on current 140 million passengers per year. Faster journey times means the same bus fleet can operate more services.



# The Benefits it will bring: For Cycling and Urban Centres

- **Cycling:** BusConnects is the single biggest cycling infrastructure plan in the history of the state – 200kms of cycle tracks/lanes will be provided.
- **Greater Dublin Area Cycle Network Plan:** Delivery of the BusConnects corridors will provide the foundation of the overall Greater Dublin Area cycle network plan.
- **Improved urban centres:** BusConnects offers the opportunity to enhance some local centres and provide additional landscaping plus outdoor amenities at suitable local centres as part of the project.



**200kms of cycle track/lanes  
to be provided**





# MetroLink Project



# Change attitudes to sustainable transport



# Smarter Travel Programmes

- Voluntary programmes
- Working with SMEs, large employers and third level institutions to implement travel plans
- Green schools programme





# Transitioning public transport fleet



# Rail Fleet

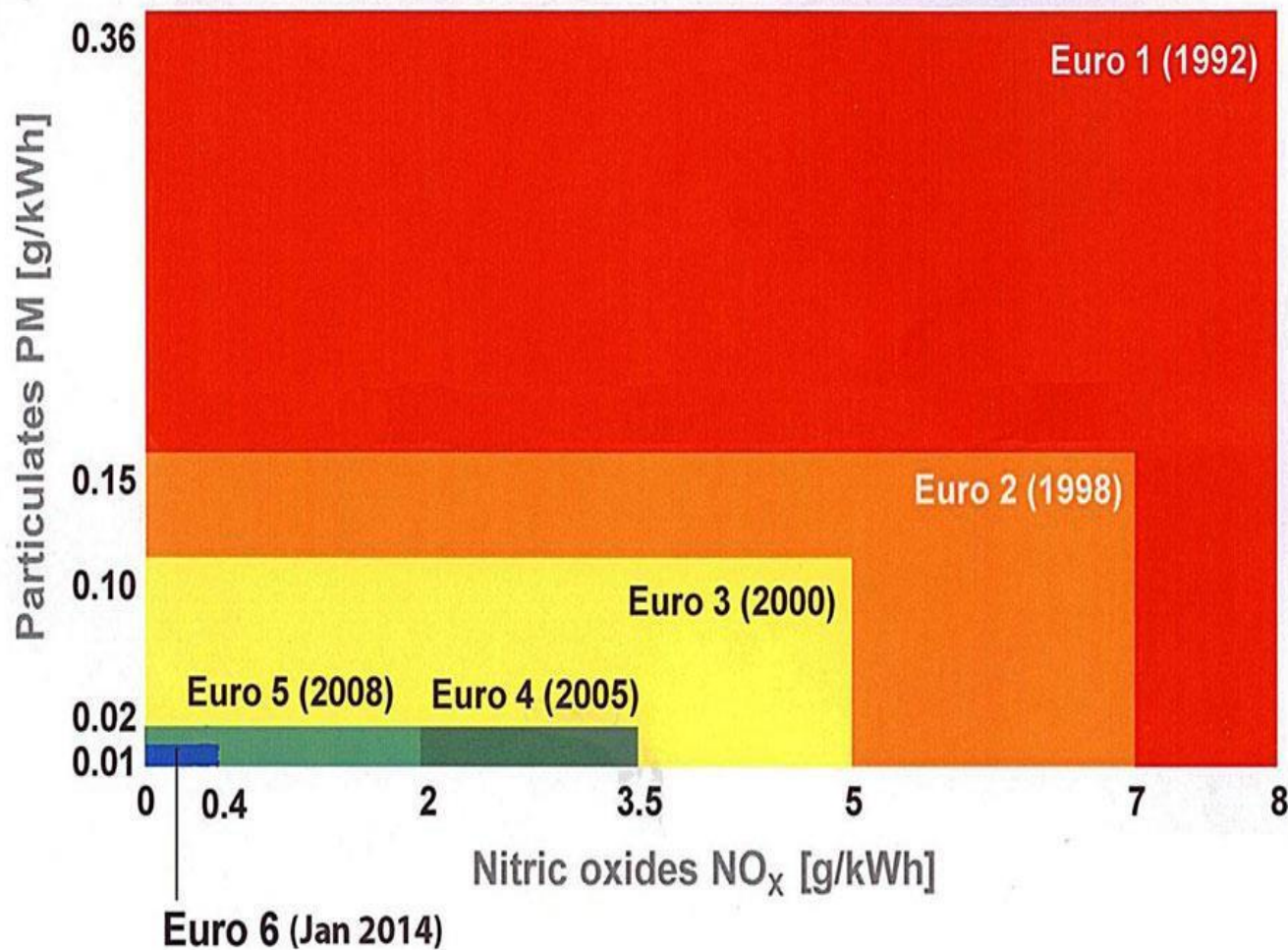
- Currently DART and Luas services are only fully electric rail services
- DART Expansion programme is a key project in GDA Transport Strategy
- Funding in current capital plan of €2bn
- New fleet required to meet growing demand on commuter services. NTA looking to future proof any new fleet purchase for diesel and electric transmission
- Electrify the lines to Drogheda, Maynooth, and Sallins

# Current Bus Fleet

- All of the current fleet run on Diesel;
- All vehicles purchased since 2015 meet at a minimum the latest Euro VI standard for emissions;
- As most of vehicles being replaced date back to the early “Noughties” the reduction in emissions especially in terms of Nitrous Oxides ( $\text{No}_x$ ) and Particulate Matter (PM) is very significant.



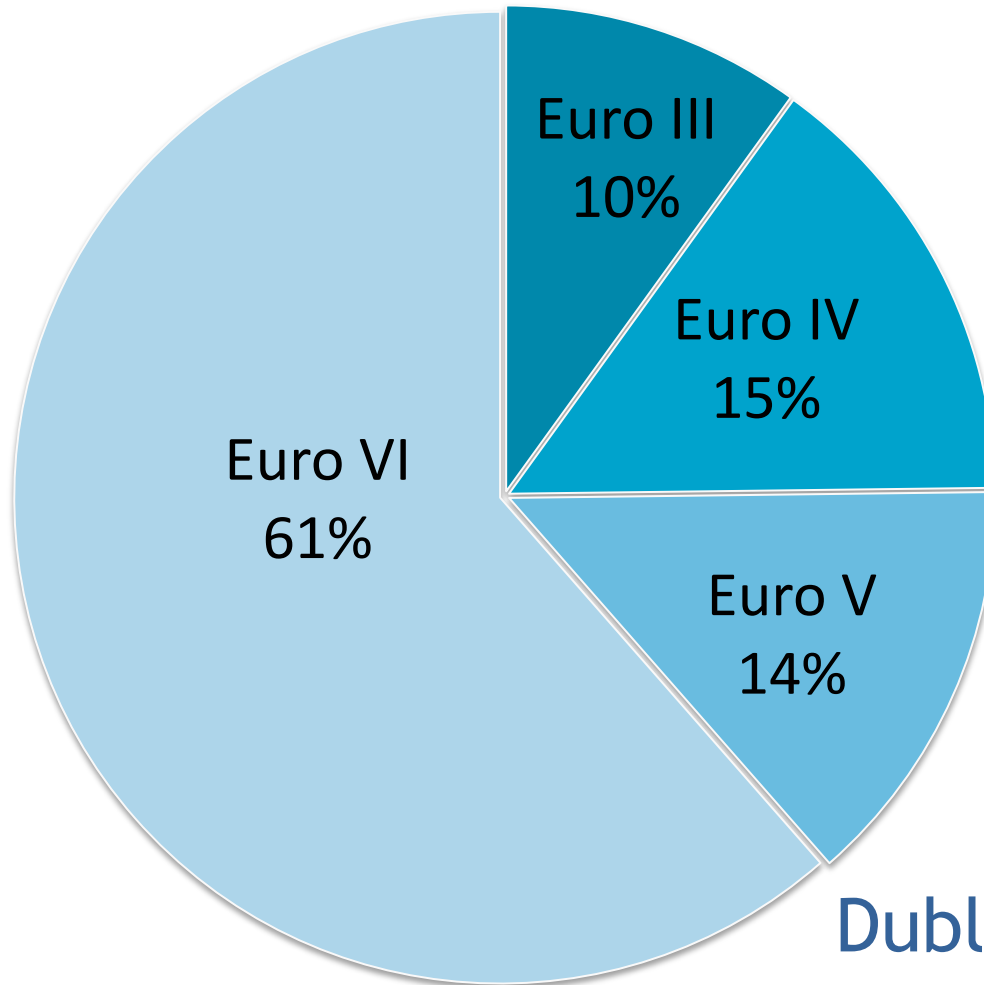
# EU Exhaust Emissions Standards: Buses/Coaches



# Euro VI Standard

- Euro VI provides a significant step change in comparison with earlier technology. This standard requires a reduction of 80% in NO<sub>x</sub> and 66% in PM emissions over the engine type approval test compared to the Euro V stage limits; and
- Addressing concerns over the applicability of laboratory testing, the Euro VI standard now includes on-road in-use testing, using mobile emissions testing equipment.





**Dublin Metropolitan Area  
Urban Public Bus Fleet**  
(by July 2019)

## BusConnects

- Half of the urban public bus fleet in Dublin of approx 500 buses, will be converted to low emission vehicles (LEVs) by 2023.
- Full conversion of the DMA's urban public bus fleet to LEVs will be completed by 2030.

“Transition to low emission buses, including electric buses, for the urban public bus fleet, with no diesel-only buses purchased from July 2019 [...]”

(Source: NDP 2018-2027)



# Urban Buses: Main Non-Diesel-Only Technologies

## Series Hybrid

powered by  
**batteries and/or ultracaps**  
charged via braking & **diesel engine**



## Battery-Electric

powered by **batteries**  
charged via braking &  
**plug-in charger and/or pantograph**



## Electric

powered by **overhead wires**  
via trolley pole



## Parallel Hybrid

powered by **diesel engine** OR  
**batteries and/or ultracaps**  
charged via braking



## (Bio-)Gas

powered by  
**compressed natural gas engine**



## H<sub>2</sub>-Electric

powered by  
**batteries and/or ultracaps**  
charged via braking & **H<sub>2</sub> fuel cell**



# Conclusion



# Conclusion

- NTA will continue to work to reduce emissions by:
  - a greater level of integration of land-use and transport planning in partnership with local authorities;
  - a greater share of people are using sustainable transport;
  - Transitioning public transport fleet to low emission fleet.