

Appendix F5.2

Reference Case Schemes

1. REFERENCE CASE: GDA STRATEGY / NDP

- 1.1.1 A number of transport proposals for the Study Area (largely outlined within the GDA Strategy and National Development Plan) have the potential to have a significant impact on proposals for the N11/M11 upgrade scheme. In particular these include Bus Connects, MetroLink, M50 Multi-Point Tolling and M11 Tolling.
- 1.1.2 The National Transport Authorities' "Reference Case" ERM model runs currently include all of the GDA strategy Schemes for 2035. Furthermore, the interim year reference case of 2026 includes all of the schemes from the GDA strategy anticipated to be in place by 2026.
- 1.1.3 Given the impact these proposals are likely to have on the projected demand along the N11/M11 corridor, and the statutory basis of the GDA strategy, it is proposed that these schemes be considered for inclusion in all tests carried out during Phase 2 of the N11/M11 project.
- 1.1.4 In effect, these schemes would then form a Reference Case scenario, against which all project scheme options will be assessed. This Reference Case scenario will reflect the projected roll-out of the GDA Strategy up to 2027 and 2042 as defined in the National Development Plan (NDP). The following sections outline the schemes assumed to be in place for the opening and design years, based on a review of the NTA's reference case modelling assumptions.

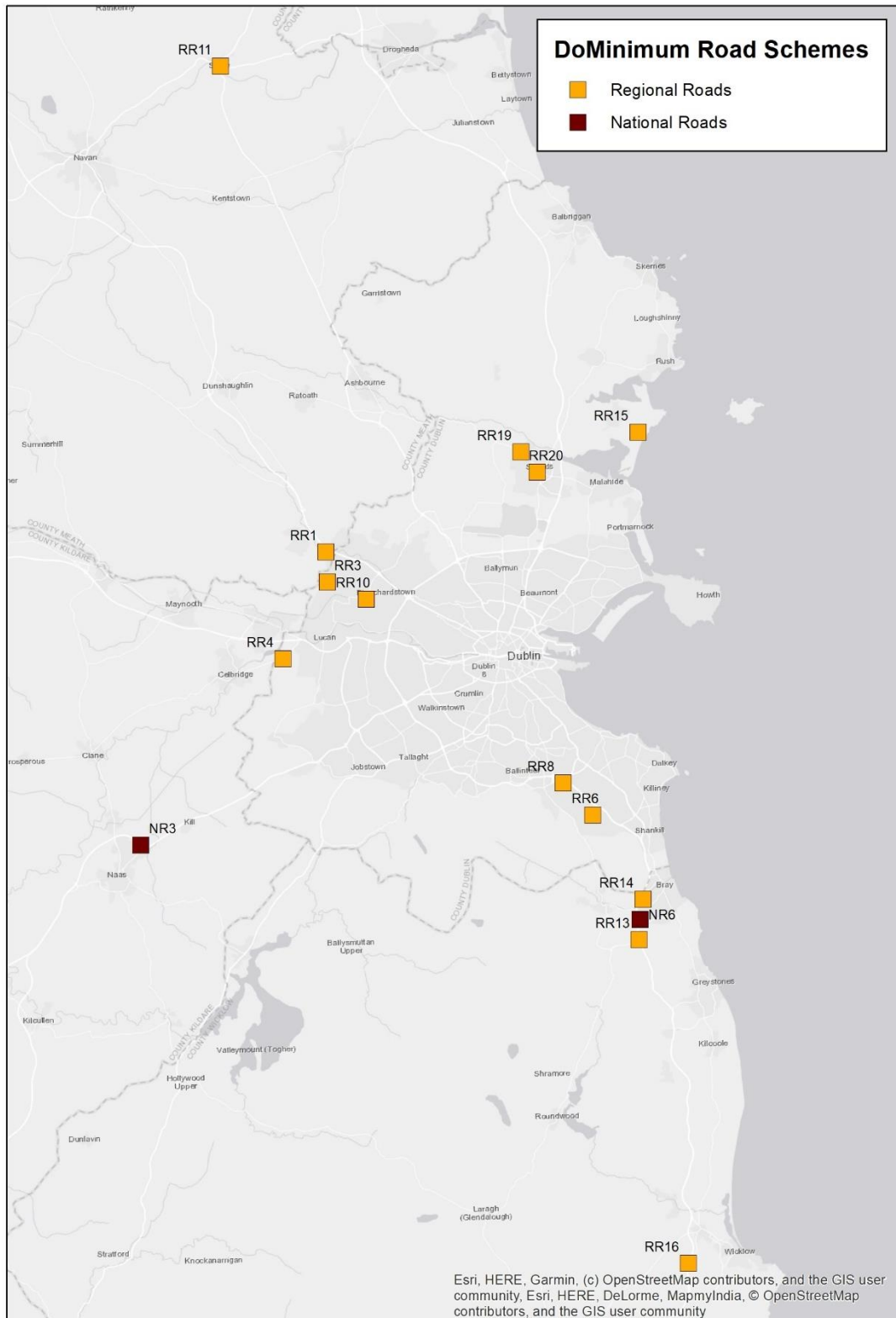
Opening Year (2027)

- 1.1.5 All GDA strategy schemes assumed to be in place in the Opening Year (2027) assessment are outlined below.

Road Schemes

- 1.1.6 From a review of GDA Strategy models, Proposed Road Schemes included in the 2027 reference case include the following:
- BRT 1 to 3 (see PT schemes coding for more details)
 - CBC 2 to 10 (see PT schemes coding for more details)
 - RR 1: N3 Castaheany Interchange
 - RR 3: N3-N4: Barnhill to Leixlip Interchange
 - RR 4: North-South Road – west of Adamstown SDZ linking N7 to N4 and on to Fingal
 - RR 6: Glenamuck Distributor Road
 - RR 8: Leopardstown Link Road Phase 2
 - RR 10: Porterstown Distributor Link Road
 - RR 11: Slane bypass
 - RR 15: R126 Donabate Relief Road: R132 to Portrane Demesne
 - RR 19: Oldtown – Moorestown Western Distributor Link Road
 - RR 20: Swords Relief Road at Lord Mayors
 - NR 3: Widening of the M7 between Junction 9 (Naas North) and Junction 11 (M7/M9)

Figure 1. 2027 Reference Case Road Schemes



Public Transport schemes

1.1.7 Details on additional Public Transport schemes anticipated for implementation up to 2027 as part of the GDA Strategy are provided in this section.

Heavy Rail schemes

HR1: Phoenix Park Tunnel

1.1.8 The reopening of the Phoenix Park Tunnel to passengers in November 2016 is included in the PT coding. Two different services are coded:

- Kildare – Grand Canal Dock & Vice versa
- Newbridge – Grand Canal Dock & Vice versa

1.1.9 2 trains per hour in the peak time (AM & PM) and 1 train per hour in the interpeak (LT & SR). Capacities coded are the same as on the Portlaoise service: 380 Seating capacity and 680 Crush capacity.

HR3: City Centre Re-signalling - DART Frequency of 5 Minutes

1.1.10 Same services coded as in Base Year 2012. Frequencies increased to meet to the 5min headway limit on the Connolly-Dún Laoghaire section at peak time (AM, PM) and 10min interpeak (LT, SR).

HR6: Additional Rail Station (Pelletstown)

1.1.11 Introduction of a new Rail station (N=99414) between Ashtown and Broomsbridge on the Dublin-Sligo line. Footbridge to provide access from the North side of the canal. Walk links added for access to the station from both sides of the canal. All services Maynooth-Dublin and M3 Parkway - Dublin to stop at Pelletstown. Journey Times increased by 1min. Same services as Base Year 2012.

HR8: Electrification to Drogheda-Malahide on the Northern line

1.1.12 Electrification of the rail tracks between Malahide and Drogheda. All current DART services from/to Malahide to be extended to Drogheda. Journey Times assumed to be the same as the current commuter diesel train journey times. Services coded on Drogheda-Malahide section are

- Drogheda – Bray: 2 per hour (AM & PM) / 1 per hour (LT &SR)
- Drogheda – Greystones: 2 per hour (AM & PM) / 1 per hour (LT &SR)
- Dundalk – Pearse: 2 per hour (AM & PM) / 1 per hour (LT &SR)
- Belfast – Connolly: 1 per hour

Light Rail schemes

LR2: Luas Green Line Capacity Enhancement

1.1.13 Luas capacity increased on the Green Line: 96 seating / 380 crush (55m tram sets) VS. 68 /319 in Base Year 2012 (45m tram sets)

LR4: Luas Cross City

- Extension of the Luas Green line to Broomsbridge. Service patterns:
- Sandyford – Parnell St. Headways: 5.5min (AM&PM) – 12min (LT&SR)
- Bride’s Glen – Broomsbridge Headways: 6min (AM&PM) – 12min (LT&SR)
- Capacity (per tram): 96 seating / 380 crush

Core Bus Corridors (CBC)

1.1.14 A total of nine Core Bus Corridors have been coded in the road network following the Regional Model Saturn coding guide. Drawings of the routes and junction layouts were

provided by the NTA. No modifications to the 2012 Bus services (except local rerouting to take account of road network modifications). No extra bus services have been added. CBCs included are:

- CBC 2: Ballymun - From the Ikea in Ballymun to the Liffey at Church Street via Mobhi Road / Phibsborough.
- CBC 3: Finglas - From the Tyrrelstown North of Finglas to Phibsborough to tie in to the Ballymun CBC.
- CBC 4: Lucan - From the N4 East of Leixlip to Quays at Fr Matthew Bridge.
- CBC 5: Ballyfermot - From Fonthill Rd at Liffey Valley Centre to Christchurch.
- CBC 6: Clondalkin - From Clondalkin (Fonthill Road) to Christchurch.
- CBC 7: Greenhills - From the Square Tallaght to Christchurch via Walkinstown.
- CBC 8: Rathfarnham - From Rathfarnham (Grange Road Stone Mason's Way Junction) to Christchurch.
- CBC 9: Bray - From Bray (Killarney Road Church Road Junction) to UCD.
- CBC 10: Dún Laoghaire - From Dún Laoghaire to Merrion Square.

Core Orbital Buses (COB)

1.1.15 Six orbital services have been included in the strategy. Routes have been provided by the NTA. Same characteristics have been defined for all of them: 10min headway (in all time periods) and standard double-decker bus capacities (74 seating / 88 crush). Orbital services coded are:

- COB 1: Dún Laoghaire – Dundrum
- COB 2: Dundrum / UCD – Tallaght
- COB 3: Dundrum – Finglas
- COB 4: Ranelagh – Drumcondra
- COB 5: Tallaght – Blanchardstown
- COB 6: Blanchardstown – Kilbarrack

Bus Rapid Transit

1.1.16 Three Bus Rapid Transits coded in the strategy. Same characteristics have been defined for all of them:

- Bus capacities: 71 seating / 90 crush
- Dublin Bus Fare system applied
- In-Vehicle time factor: 1.00 (same as Luas sub mode, Dublin Bus: 1.50)
- Runtime factor (same as regional buses):
 - AM: 1.11 (Dublin Bus: 1.14)
 - LT: 1.14 (Dublin Bus: 1.20)
 - SR: 1.18 (Dublin Bus: 1.27)
 - PM: 1.12 (Dublin Bus: 1.22)
- Boarding penalty: 10min (same as other sub modes)

1.1.17 BRTs and frequencies coded are:

- BRT 1: UCD to Little Pace (Blanchardstown) - 3min (AM & PM) / 6min (LT & SR)
- BRT 2: Clongriffin to Rathfarnham - 3min (AM & PM) / 6min (LT & SR)
- BRT 3A: City Centre to Airport – 8min (AM & PM) / 12min (LT & SR)
- BRT 3B: City Centre to Swords (doesn't go through the airport) – 4min (AM & PM) / 8min (LT & SR)

Bus Connects

- 1.1.18 In addition to the above PT schemes, which are outlined in the GDA strategy, it is also proposed to include Bus Connects in the reference case models. Bus Connects is a major investment programme to improve public transport in Dublin. It aims to overhaul the current bus system in Dublin through a programme of integrated actions to deliver a more efficient, reliable and better bus system for more people.
- 1.1.19 It is proposed to use existing ERM coding of the Bus Connects services when carrying out NTA reference Case Scenario runs.

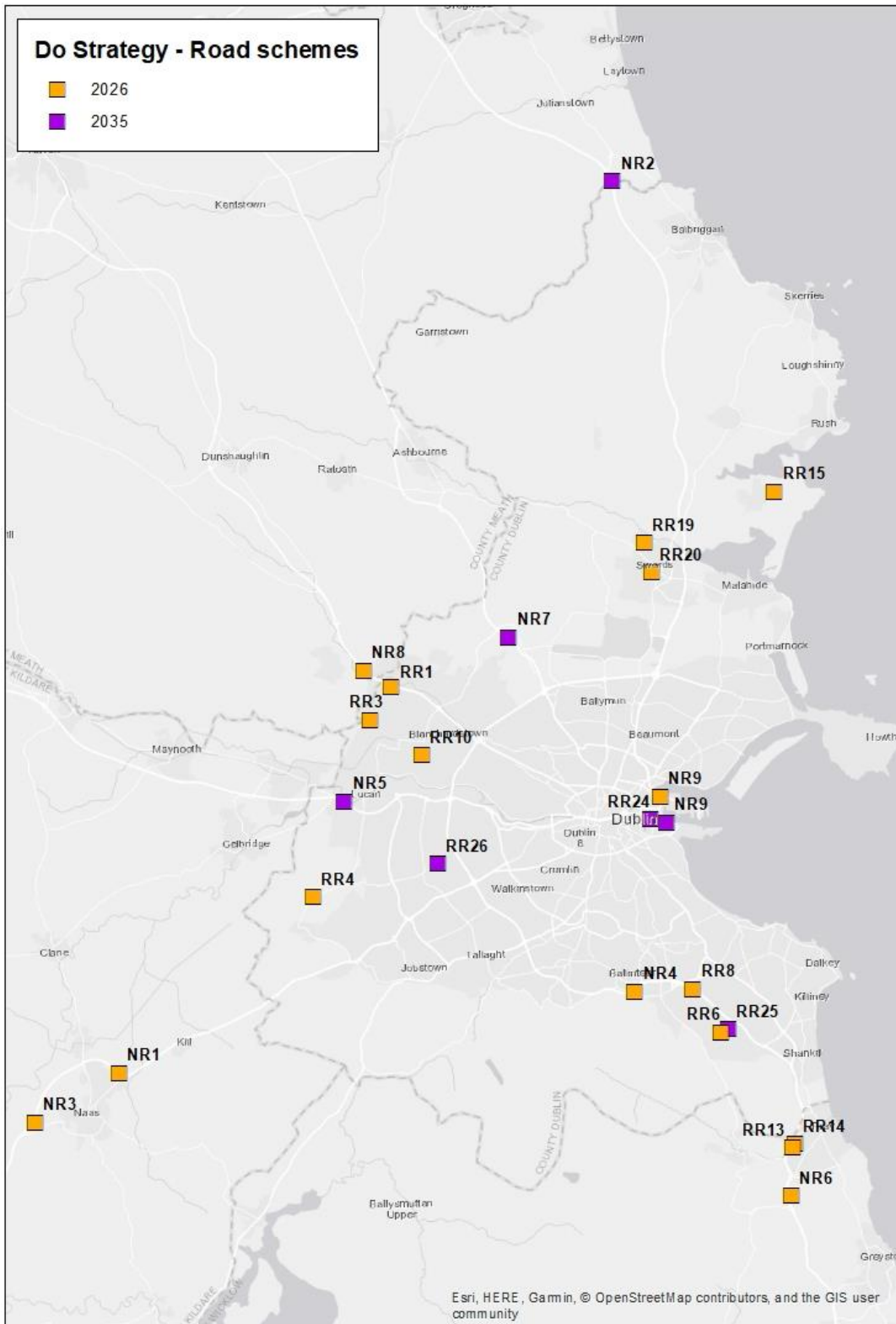
Design Year (2042)

- 1.1.20 All GDA strategy schemes assumed to be in place in the Design Year (2042) assessment are outlined below.

Road Schemes

- 1.1.21 From a review of GDA Strategy models, Proposed Road Schemes, which are scheduled to occur after 2026 and are included in the 2035 reference case include the following:
- CBC 1 (see PT schemes coding for more details)
 - RR24: Poolbeg development network modifications
 - RR25: Cherrywood development network modifications
 - RR26: Clonburris development network modifications
 - NR 1: Widening of the N7 to 3 lanes between junction with the M50 and the M7. No junctions were rationalised or re-configured due to lack of information at the time the scheme was coded. This was based on the previous GDA Strategy coding.
 - NR 2: Widening of the 2-lane section of the M1 to 3 lanes between Drogheda and junction with the M50, in both direction. No junctions were rationalised or re-configured due to lack of information at the time the scheme was coded. This was based on the previous GDA Strategy coding.
 - NR 4: Widening of the M50 to three lanes in each direction between Junction 14 (Sandyford) and Junction 17 (M11). No junctions were rationalised or re-configured due to lack of information at the time the scheme was coded. This scheme overlaps with NR 6 (2026) at junction 14 (M50/N11).
 - NR 5: Reconfiguration of the N4 from its junction with the M50 to Leixlip to rationalise accesses and to provide additional capacity at the Quarryvale junction
 - NR 7: Enhancements of the N2/M2 national route inclusive of a bypass of Slane, to provide for additional capacity on the non-motorway sections of this route, and to address safety issues in Slane village associated with, in particular, heavy goods vehicles
 - NR 8: Widening of the N3 between Junction1 (M50) and Junction 4 (Clonee), plus related junction and necessary changes to the existing national road network
 - NR 9: Development of a road link connecting from the southern end of the Dublin Port Tunnel to the South Port area, which will serve the South Port and adjoining development areas, intended primarily for goods access and remove goods vehicle from East-Link (Thomas Clarke) bridge.
 - DM 1: Multi point tolling on the M50. Same values coded as in previous 2035 Strategy coding
 - DM 2: National Traffic Management Strategy. Same values coded as in previous 2035 Strategy coding.

Figure 2. 2042 Reference Case Road schemes



Public Transport schemes

- 1.1.22 Details on additional Public Transport schemes anticipated for implementation between 2027 and 2042, as part of the GDA Strategy, are provided below.

Heavy Rail schemes

HR4: DART Expansion programme

- 1.1.23 The DART Expansion programme is a comprehensive scheme for all heavy rail commuter lines in the Greater Dublin Area, including electrifications to Drogheda, Maynooth and Hazelhatch. Services coded have been imported from the full DART expansion configuration (NTA project ER058). Modifications from the 2026 Strategy coding are:

- Hazelhatch – Clongriffin (DART Underground)
 - Headways: 7.5 min (AM & PM) – 12 min (LT & SR)
 - Capacities: 512 seating / 1,382 crush
- Hazelhatch – Drogheda (DART Underground)
 - Headways: 7.5 min (AM & PM) – 12 min (LT & SR)
 - Capacities: 512 seating / 1,382 crush
- Maynooth – Bray
 - Headways: 5 min (AM & PM) – 7.5 min (LT & SR)
 - Capacities: 512 seating / 1,382 crush
- Maynooth – Greystones
 - Headways: 30 min (AM & PM) – 60 min (LT & SR)
 - Capacities: 512 seating / 1,382 crush
- Shuttle service Drogheda – Dundalk
 - Headways: 30 min (AM & PM) – 60 min (LT & SR)
 - Capacities: 370 seating / 1,321 crush
- Shuttle service Howth – Howth Junction
 - Headways: 10 min (AM & PM) – 20 min (LT & SR)
 - Capacities: 256 seating / 691 crush
- Shuttle service M3 Parkway – Clonsilla
 - Headways: 15 min (AM & PM) – 30 min (LT & SR)
 - Capacities: 185 seating / 660 crush

Light Rail schemes

LR1: Metro North

- 1.1.24 Metro Line linking Swords to Dublin city Centre via Dublin Airport. Route, stations location, journey times, frequencies and capacities based on the 2010 RPA Metro North study (LR7):

- 33min Swords (Estuary) to St. Stephen’s Green end-to-end journey times
- 3min (AM & PM) / 6min (LT & SR)
- Capacity (per metro): 125 seating / 500 crush

LR3 / LR6: Metro Extension to Bray

- 1.1.25 Metro Line (as LR1) extension to Bray, using existing Luas Green line and a new built section between Bride’s Glen and Bray. Main characteristics are:

- The total end-to-end Journey Times is approximately 87 minutes from Estuary to Bray
- 2min frequency for all time periods

- Capacity (per metro): 120 seating / 470 crush
- In-Vehicle Time Factor: 1.00 (same as Luas mode)
- Boarding penalties: 10min (same as all other sub modes)
- Luas Green line shortened to Charlemont – Charlestown (see LR5)

LR5: Luas Extension to Finglas

1.1.26 Extension of the existing Luas Green line North to Charlestown. Service pattern affected by LR6 (Metro Extension to Bray) as Charlemont-Bride’s Glen section used for Metro services Swords-Bray.

- Charlemont – Charlestown services
- 38min end-to-end journey times
- 6min (AM & PM) / 12min (LT & SR)
- Capacity (per Luas): 96 seating / 380 crush

LR7: Lucan Luas

1.1.27 New built Luas line between Lucan and College Green. Main characteristics are:

- 42min end-to-end journey times
- 4min frequency for all time periods
- Capacity (per Luas): 72 seating / 292 crush

LR8: Luas Extension to Poolbeg

1.1.28 Extension of the existing Luas Red line East to Poolbeg. Main characteristics are:

- Tallaght – Poolbeg services
- 58min end-to-end journey times
- 6min (AM & PM) / 10min (LT & SR)
- Capacity (per Luas): 72 seating / 292 crush
- New Light Rail & Active Modes bridge crossing beside East-Link (Thomas Clarke) bridge.

Core Bus Corridors

- CBC 1: Clontarf to Ringsend