



**METRO NORTH
ORAL HEARING**

PROOF OF EVIDENCE

Richard Tucker

Scheme Traffic Management Plan Module C 107

Thursday 16th April 2009



**Metro North Oral Hearing
Proof of Evidence
Traffic
Module C Local Area Assessment – MN107
Richard Tucker**

C1.0 Area MN107 – Mater to St. Stephen's Green - Impact during Construction

C1.1 Brief Description of Works

C1.1.1 [SLIDE 1 – INTRODUCTION]

C1.1.2 Area MN107 includes the Metro North Stops;

- Parnell Square,
- O'Connell Bridge; and
- St Stephen's Green.

C1.1.3 [SLIDE 2 – AREA MN107 MAP]

C1.1.4 Within Area MN107, the Metro North alignment continues south of the Mater Stop, and continues in tunnel as far as St. Stephen's Green.

C1.1.5 Works in the area around the stops are complex in terms of traffic management and require various phases, as each stop is located either partially or fully within the existing road space within the heart of the city centre.

C1.1.6 There are both extensive enabling works and main works within Area MN107 and these have been described in previous evidence given by Mr Doug Thompson and Mr John McLoughlan respectively.

C1.2 Traffic Management Changes Prior to the Works - Future Infrastructure Proposals

C1.2.1 [SLIDE 3 – TRAFFIC MANAGEMENT CHANGES PRIOR TO THE WORKS]

C1.2.2 The key future transport infrastructure schemes within Area MN107 have been described by my colleagues Mr Ian Byrne and Mr Robert Kelly in previous Modules of the traffic evidence. Two proposals which are particularly relevant to the assessment of Metro North are the Samuel Beckett Bridge (at Macken Street) and the Public Transport Gate at College Green.

Samuel Beckett Bridge (at Macken Street)

C1.2.3 Samuel Beckett Bridge is currently under construction by Dublin City Council and will provide a valuable north south link across the River Liffey to the East of O'Connell Bridge. It will be operational in early 2010.

Public Transport Gate at College Green

C1.2.4 [SLIDE 4 – PUBLIC TRANSPORT GATE]

C1.2.5 As previously described by Mr Robert Kelly, a Public Transport Gate at College Green will be implemented by Dublin City Council prior to the construction of Metro North. This project is currently at the Public Consultation Stage.

C1.2.6 In summary the Public Transport Gate will result in access being prohibited for general traffic between Westmoreland Street and Dame Street in a Northbound direction and between College Street and Dame Street in a Southbound direction. Traffic access between College Street and Lower Grafton Street will be for Public Transport and access only.

- C1.2.7 As a result of the Public Transport Gate, general traffic will have to divert away from College Green either to the East or West of the area.
- C1.2.8 The Public Transport Gate measures will improve the environment of College Green, D'Olier Street and Westmoreland Street. It will benefit the pedestrian environment and safety whilst improving public transport journey times in the area.
- C1.2.9 During construction of Metro North it will provide a safer working environment and a safer environment for pedestrians due to the envisaged reduction in traffic movements in the area.
- C1.2.10 The reduction in traffic volumes in the vicinity will facilitate the reallocation of road space to provide for the work sites.

C1.3 Traffic Management Changes during Enabling Works

Parnell Square

C1.3.1 [SLIDE 5&6 – PARNELL SQUARE ENABLING WORKS]

- C1.3.2 The number of traffic lanes on Parnell Square East will be reduced to accommodate the enabling works. A general traffic and bus lane (southbound) and existing bus stops will be maintained. On-street parking will be removed in the vicinity of the works.
- C1.3.3 Some minor works will occur along Parnell Square North and West, resulting in the temporary removal of a small number of on-street parking bays. Traffic movements and access to properties and businesses (including the Rotunda Hospital) on Parnell Square West and North will be maintained.

O'Connell Bridge

C1.3.4 [SLIDE 7& 8 – O'CONNELL STREET]

- C1.3.5 During the enabling works two lanes in each direction will be maintained on O'Connell Street. Therefore, the existing traffic configuration will be maintained. The enabling works will be carried out mainly within the footpaths on the east and west side of O'Connell Street and the central median. Through all stages of the works, pedestrian access to all businesses and buildings will be maintained at all times.

C1.3.6 [SLIDE 9 – WESTMORELAND STREET]

- C1.3.7 During the enabling works, the road layout on Westmoreland Street will be altered, however, four lanes will be maintained at all times. At the junction with the Quays, these lanes will provide for one left turn to Aston Quay, two straight ahead lanes to O'Connell Bridge and one right turn to D'Olier Street.

St Stephen's Green

C1.3.8 [SLIDE 10 & 11 – ST. STEPHEN'S GREEN]

- C1.3.9 The current road access along St Stephen's Green North, St Stephen's Green West and through Glovers Alley will be maintained during the enabling works. There will be some alterations to pedestrian footpaths to accommodate service diversions however these works will be phased such that the impact on pedestrians movement is minimised.
- C1.3.10 Grafton Street and South King Street are pedestrianised streets, with loading occurring during the early morning period. Access for loading will be maintained during all phases of the enabling works.

C1.4 Traffic Impacts during Enabling Works

C1.4.1 [SLIDE 12 – DETERMINATION OF ENABLING WORKS IMPACT]

Determination

- C1.4.2 The likelihood of local impacts resulting from the enabling works within Area MN107 is determined to be high because:
- Dublin City Centre caters for significant amounts of commercial and retail businesses, residential properties, educational facilities etc;
 - Significant volumes of car traffic, public transport passengers, pedestrians, cyclists etc. circulate this area; and
- C1.4.3 It is necessary to assess the impact of the enabling works.

C1.4.4 [SLIDE 13 – CATEGORISATION OF ENABLING WORKS IMPACT]

Categorisation

- C1.4.5 The impact of the enabling works is categorised as moderate to severe.

C1.4.6 [SLIDE 14 – ASSESSMENT OF ENABLING WORKS]

C1.4.7 [SLIDES 15 & 16 – LOCAL ASSESSMENT OF AREA MN107]

Assessment

- C1.4.8 There will be some traffic management changes during the enabling works resulting in a reduction in road capacity and impact on all road users. For certain road users, the impacts are sufficiently different from the main works to warrant a separate assessment.
- C1.4.9 The significant impacts on those road users affected during the enabling works in Area MN107, are as follows:

Parnell Square

- Ø Delivery and Servicing;
- Ø Access; and
- Ø Pedestrian Congestion.

O'Connell Bridge

- Ø Access;
- Ø Bus Stop Infrastructure;
- Ø Taxi Ranks and coverage;
- Ø Pedestrian Facilities and Congestion; and
- Ø Cycle Facilities and Routes.

St Stephen's Green

- Ø Delivery and Servicing;
- Ø Taxi Ranks and Coverage;
- Ø Pedestrian Congestion; and
- Ø Cycle Facilities.

C1.4.10 The reduction in road capacity is considerably less during the enabling works compared to the main works. The traffic management changes proposed, therefore, during the enabling works will have less impact on traffic movement than those proposed during the main works.

C1.4.11 The impact on general traffic flows and HGV flows, particularly, is not likely to be significant and, therefore, are not evaluated for the enabling works phase. The modelling results for the main works are assumed as a worst case scenario for general and HGV traffic within Area MN107. These are described later.

C1.4.12 The impact on other road user groups will vary at each of the three City Centre Stops. Therefore, each stop is assessed individually.

C1.4.13 [SLIDE 17 – RATING STAGE OF ENABLING WORKS]

Rating

C1.4.14 [SLIDE 18 – PARNELL SQUARE ENABLING WORKS IMPACT]

Parnell Square**Loading Bay Facilities**

C1.4.15 The loading area outside of the Rotunda Hospital on Parnell Square West will be affected during some phases of the enabling works. During these phases, which are short in duration, an alternative loading bay will be provided on this street, with the loss of up to approximately five car parking spaces. There will be no impact on the loading bay facilities in the area, however there will be an impact on parking which described below.

C1.4.16 Some loading currently occurs on double yellow lines on Parnell Square East. During the enabling works in this area, loading will also be facilitated on Rutland Place West. As access will be maintained to Parnell Square East during the works, and alternative loading is also provided on Rutland Place West, this impact is rated as slight.

On-Street Car Parking

C1.4.17 During the enabling works, approximately 20m sections alongside the footpaths on Parnell Square West and Parnell Square North will be affected. Therefore, at any

one time, approximately seven to nine car parking spaces will be temporarily closed on Parnell Square West and Parnell Square North respectively. At all times the disabled spaces and coach parking provided on Parnell Square West & North will be maintained.

C1.4.18 The current parking provision on Parnell Square West is 31 spaces and Parnell Square North is 51 spaces (including 3 disabled spaces and a coach bay). The reduction in on-street parking during the enabling works is rated as slight.

C1.4.19 The enabling works on Parnell Square East will require a loss of parking. At any one time approximately 10 car parking spaces on the west side of Parnell Square East will be lost to provide for two traffic lanes, footpaths and enabling works on this street. This loss of car parking on this street is rated as moderate.

Pedestrian Congestion

C1.4.20 [SLIDE 19 - 21 – PEDESTRIAN LEVEL OF SERVICE AT PARNELL DURING ENABLING WORKS]

C1.4.21 Pedestrian Level of Service assessment is used to measure the impact of pedestrian congestion. The pedestrian Level of Service concept has been presented in Module A of the traffic evidence.

C1.4.22 Peak pedestrian periods at Parnell Square are Thursday AM (08:00-09:00), Thursday PM (17:00-18:00) and Saturday afternoon (14:00-15:00). The pedestrian levels of service was analysed to determine the impact on pedestrian congestion during the enabling works. The results show that there will be minimal impacts on pedestrian congestion during enabling works.

Rating – O’Connell Bridge

C1.4.23 [SLIDE 22 – O’CONNELL BRIDGE ENABLING WORKS IMPACT]

On-Street Car Parking

C1.4.24 There will be a loss of four car parking spaces on Westmoreland Street. This is rated as a moderate impact.

Bus Stop Arrangements

C1.4.25 During the enabling works temporary alterations to footpaths in the vicinity of bus stops will be undertaken without interference to bus operations.

C1.4.26 There are three bus stops on O’Connell Street immediately north of Abbey Street, two northbound and one southbound, which will be relocated during the enabling works. These bus stops are proposed to be located at the GPO and Clery’s. This would result in a slight impact on bus stop arrangements.

Taxi Rank Facilities

C1.4.27 The number of taxi rank spaces will be maintained during the enabling works. Where works impact on existing taxi rank spaces, alternative spaces will be provided in close proximity by utilising car parking spaces. Therefore, the overall the impact on taxi ranks is insignificant.

Taxi Rank Coverage

- C1.4.28 As taxi rank relocation, as discussed above, is kept within 25m of existing ranks, the impact will be slight.

Pedestrian Facilities

- C1.4.29 During the substation works (which have been described in Mr Doug Thompson's evidence) north of Abbey Street the central median on O'Connell Street, will be closed to pedestrian north-south movements. The impact is rated as moderate.

Pedestrian Congestion

- C1.4.30 [SLIDE 23 - 25 – PEDESTRIAN LEVEL OF SERVICE AT O'CONNELL BRIDGE DURING ENABLING WORKS]
- C1.4.31 The peak periods at this location are Thursday AM (08:00-09:00), Thursday PM (17:00-18:00) and Saturday afternoon (16:00-17:00). The pedestrian levels of service were analysed to determine the impact on pedestrian congestion during the enabling works. The results show that there will be minimal impacts on pedestrian congestion during enabling works.

Cycle Facilities

- C1.4.32 The cycle lanes along the quays will not be affected, except for short periods during night time works. This is rated, therefore, as a slight impact.
- C1.4.33 The short section of cycle lane (approximately 70m) on O'Connell Street will be removed during the enabling works. Cyclists will use the traffic lanes or avail of alternative parallel routes. This is rated as a severe impact. However there are currently only short sections of cycle lanes on this street and therefore the impact is slight.
- C1.4.34 Cycle parking which is currently located on the central median of O'Connell Street, near Gray's monument, will be moved northbound by approximately 50m outside of the works area. This is rated as a slight impact.

Rating – St Stephen's Green

- C1.4.35 [SLIDES 26 – ST. STEPHEN'S GREEN ENABLING WORKS IMPACT]

Loading Bay Facilities

- C1.4.36 During the enabling works, the loading bay on St Stephen's Green West will be temporarily affected. The bay will be temporarily reduced for a short duration of time whilst works are undertaken within it. The impact of this is rated as moderate.
- C1.4.37 Loading/ servicing on Grafton Street/ South King Street/ St Stephen's Green North will continue during the enabling works. Loading vehicles will continue to exit onto St Stephen's Green North. On Grafton Street, active loading will be restricted within 20m of the works sites to allow for pedestrian circulation. This impact is rated as slight.

On-Street Car Parking

- C1.4.38 For short periods the car parking on St Stephen's Green West (near Grafton Street) will be affected. This will result in the loss of six car parking spaces

including two disabled spaces. The two disabled spaces will be relocated to St Stephen's Green North, just east of Dawson Street, replacing two existing car parking spaces. The impact is rated as a moderate.

Taxi Rank Facilities

C1.4.39 There are currently 22 taxi spaces located on St Stephen's Green North, west of Dawson Street. The enabling works will affect the taxi rank on the northern side of this street, where there are 9 taxi spaces.

C1.4.40 It is proposed that the taxi spaces affected are relocated onto St Stephen's Green West, south of York Street. The maximum number of spaces affected will be five spaces which will reduce the parking at this location to 10 spaces, including 2 disabled spaces. There is no loss of taxi spaces and therefore no rated impact.

C1.4.41 The impact on parking due to taxi rank relocation is rated as a moderate.

Taxi Rank Coverage

C1.4.42 As discussed above, the taxi rank affected on St Stephen's Green North will be relocated to St Stephen's Green West, approximately 200m south of the existing taxi rank. This is rated as a moderate impact.

Pedestrian Congestion

C1.4.43 [SLIDE 27 - 29 – PEDESTRIAN LEVEL OF SERVICE AT ST. STEPHEN'S GREEN DURING ENABLING WORKS]

C1.4.44 Pedestrian Level of Service analysis was undertaken for the following time periods:

- Thursday AM peak (08:00-09:00), to coincide with existing peak Luas patronage; and
- Saturday afternoon (16:00-17:00).

C1.4.45 These results show that there will be slight impacts on pedestrian congestion due to the enabling works. On St Stephen's Green West the existing footpath width will be maintained during all phases of enabling works. During some phases of the enabling works on St Stephen's Green North the footpath width is less than the existing width and at this time additional footpath will be provided around the works. This is rated as a slight impact.

C1.4.46 The most significant impact on Grafton Street is during the Saturday afternoon peak. This impact is rated as severe. Grafton Street caters for a large number of pedestrian movements and is a critical pedestrian link in the City Centre. Therefore, the severe impact identified is not acceptable and further mitigation measures are required.

C1.4.47 As a further mitigation for this impact, it is proposed that works will be restricted on Grafton Street during the weekend and will only be undertaken outside of peak times to allow for pedestrian movements. Also, during these peak times, the works will be covered over and hoardings removed to allow full pedestrian movements on this street. Therefore the existing levels of service will be maintained during the weekends on Grafton Street.

Cycle Facilities

C1.4.48 Cycle parking facilities which are currently located on St Stephen's Green North and St Stephen's Green West will be temporarily relocated onto South King Street

and outside of the works on St Stephen's Green North and St Stephen's Green West. The relocated cycle parking will be within 50m of its existing location and, therefore, this is rated as a slight impact.

C1.5 Traffic Management Changes during Main Works

C1.5.1 The main works were previously described in the Evidence given by Mr Geoff Featherstone.

Parnell Square

C1.5.2 [SLIDES 30 & 31 – TRAFFIC MANAGEMENT CHANGES DURING MAIN WORKS PARNELL SQUARE]

C1.5.3 Construction of the Parnell Square Stop will be primarily accommodated on Parnell Square East between the junctions of Denmark Street Great /Gardiner Row and Rutland Place. There will be substantial loss of street space for general traffic, bus, taxi and pedestrian movement on Parnell Square East. One southbound public transport lane will be maintained during the main construction phase. A section of the existing footpath will also be maintained on the eastern side of the street to facilitate pedestrian movement and local access requirements.

C1.5.4 The reduction of Parnell Square East to one lane will require the relocation of all the bus stops in this area.

O'Connell Bridge

C1.5.5 [SLIDES 32 to 35 – TRAFFIC MANAGEMENT CHANGES DURING MAIN WORKS O'CONNELL BRIDGE]

C1.5.6 The stop at O'Connell Bridge will require separate works areas to be located in O'Connell Street Lower and Westmoreland Street. Construction works at the O'Connell Bridge Stop will be undertaken in multiple construction phases. The road layout on O'Connell Street and Westmoreland Street will be altered to accommodate the works.

C1.5.7 It is a requirement of the STMP to maintain a number of traffic lanes on both O'Connell Street and Westmoreland Street throughout the duration of the works. The minimum requirements with regards to number of traffic lanes to be kept open are as follows:

- O'Connell Street – Four lanes at all times, two northbound and two southbound;
- O'Connell Bridge – Four Lanes at all times, two northbound and two southbound;
- Westmoreland Street - One lane at all times, travelling northbound; and
- D'Olier Street – Three lanes at all times.

C1.5.8 Traffic management measures required to carry out the main works will be implemented via a series of phased interventions. The changes will be carried out by Dublin City Council and RPA with each intervention monitored to confirm that traffic continues to function adequately.

C1.5.9 [SLIDES 36 – SEQUENCING OF TRAFFIC MANAGEMENT MEASURES]

C1.5.10 The sequence of these interventions following the installation of the Public Transport Gate and Enabling works is as follows:

- Ban the right turn from Bachelors Quay onto O'Connell Bridge for all traffic.
- Close off the left turn from Westmoreland Street to Fleet Street (west).
- Ban the left turn from Westmoreland Street to Aston Quay.
- Progressively reduce the number of lanes in Westmoreland Street to leave one lane between Fleet Street and O'Connell Bridge (Public Transport lane) open to operate in a Northbound direction across O'Connell Bridge. Permit access to Fleet Street (eastbound) for general traffic.
- New Public Transport Bridge between Marlborough Street and Hawkins Street to provide a turn back facility for Buses from the North Quays to the South Quays at a point when the left turn from Westmoreland Street onto Aston Quay is no longer available.
- Implement a North bound contra flow bus lane on D'Olier Street as required.

C1.5.11 During the main works, it is proposed to close the vehicular access from Westmoreland Street to Fleet Street (westbound towards Temple Bar). Fleet Street will be converted to two-way traffic flow between Angelsea Street and Aston Place. The direction of traffic on Fleet Street between Aston Place and Prices Lane will be reversed to provide access from Fleet Street to the Quays.

C1.5.12 As a consequence of these traffic management interventions, the following lanes will be removed from Westmoreland Street:

- one northbound lane;
- the left turn onto Fleet Street towards Temple Bar;
- the right turn onto D'Olier Street; and
- the left turn onto Aston Quay.

C1.5.13 D'Olier Street will operate as existing if a contra flow northbound lane is not required.

St Stephen's Green

C1.5.14 [SLIDE 37 – TRAFFIC MANAGEMENT CHANGES DURING MAIN WORKS ON ST. STEPHEN'S GREEN]

C1.5.15 [SLIDE 38 – GLOVERS ALLEY TRAFFIC MANAGEMENT CHANGES]

C1.5.16 The main area of construction of the St. Stephen's Green Stop will include some of the northwest section of St. Stephen's Green Park, St. Stephen's Green North between Dawson Street and Grafton Street, and St. Stephen's Green West between Grafton Street and Glovers Alley.

C1.5.17 During construction the current one-way road which runs along St. Stephen's Green North, West and into Glovers Alley will be closed. An alternative route via Mercer Street will allow for the diversion of all traffic accessing St. Stephen's

Green/College of Surgeons car parks and the Fitzwilliam Hotel car park and servicing area.

C1.5.18 The direction of flow will be reversed on Glovers Alley to facilitate an Eastbound movement from Mercer Street to St Stephen's Green West.

C1.5.19 A traffic lane will be opened in front of the Royal College of Surgeons to allow traffic exiting from Glovers ally to turn right travel southbound on St Stephen's Green West and enter York Street.

C1.6 Bus Traffic Management Changes during the Main Works

C1.6.1 [SLIDE 39 – BUS TRAFFIC MANAGEMENT CHANGES TO SERVICES]

C1.6.2 As a result of the traffic management changes in the vicinity of O'Connell Bridge, the existing bus route network will be revised. In particular, routes which currently operate via Westmoreland Street will be affected by the removal of the left turn from Westmoreland Street to Aston Quay. In addition, a small number of routes which currently turn right from O'Connell Bridge onto Eden Quay will also be diverted.

C1.6.3 The work undertaken since the issue of the EIS has greatly reduced the number of bus routes affected by the works. Within the EIS, approximately 150 bus routes were identified that would be subject to diversions. By comparison, approximately 30 Dublin Bus routes will be subject to minor diversions around O'Connell Bridge under the current proposals. Other bus services will also be subject to minor diversions, including Bus Éireann, Swords Express and other private operators. Route diversions will be agreed with the relevant bus operator prior to implementation of the works.

C1.6.4 Subsequent to the removal of the left turn from Westmoreland Street to Aston Quay, it will no longer be possible to directly access Aston Quay from Pearse Street. It is proposed to divert the affected services via Dame Street.

C1.6.5 Following to the removal of the left turn from Westmoreland Street to Aston Quay, it will no longer be possible to directly access Aston Quay from Dame Street. It is proposed to divert the eastbound services to the North Quays. The new Marlborough Street Bridge will provide a direct link between the north and south Quays.

C1.7 Transport Impacts during the Main Works

C1.7.1 [SLIDE 40 - DETERMINATION]

Determination

C1.7.2 The likelihood of local impacts resulting from the main construction works within Area MN107 is determined to be high because:

- Dublin City Centre has significant amounts of commercial and retail businesses, residential properties, educational facilities etc;
- Significant volumes of car traffic, public transport passengers, pedestrians, cyclists etc. circulate this area;
- The probability of impact is high; and

C1.7.3 The impact of the main works in Area MN107 will be significant and requires categorisation.

C1.7.4 [SLIDE 41 - CATAGORISATION]

Categorisation

C1.7.5 Due to the magnitude and complexity of the main works and the associated traffic management changes within this area, the impacts are categorised as moderate to severe in significance requiring further assessment.

C1.7.6 [SLIDE 42 - ASSESSMENT]

C1.7.7 [SLIDES 43 to 45 – LOCAL ASSESSMENT OF AREA MN107]

Assessment

C1.7.8 The assessment has identified the impact on the following categories of road users, as insignificant:

At Parnell Square:

- Taxi Service Coverage;

At O'Connell Bridge:

- Taxi Service Coverage;

At St Stephen's Green:

- Bus Stop Arrangements; and
- Pedestrian Congestion.

C1.7.9 All other categories were assessed as being significant and analysed to determine the impact rating.

C1.7.10 [SLIDE 46 – RATING]

Rating – General Traffic

General Traffic Flows

C1.7.11 As a result of the construction works being undertaken post implementation of the Public Transport Gate the impacts on general traffic and HGVs will be less significant than those identified within the EIS.

C1.7.12 [SLIDE 47 – GENERAL TRAFFIC FLOW IMPACTS]

C1.7.13 Severe impacts are predicted on:

- St Stephen's Street Lower;
- Meath Street; and
- Golden Lane.

- C1.7.14 Positive impacts were identified on over 70 roads. Overall there will be a reduction in traffic volumes within the City Centre. This is as a result of the introduction of the Public Transport Gate at College Green which removes through traffic and encourages more people to use public transport to access the City Centre.

Heavy Goods Vehicles

C1.7.15 [SLIDE 48 – HGV TRAFFIC FLOW IMPACTS]

- C1.7.16 Severe impacts are predicted on the following roads, partly due to construction vehicle movements:
- Lincoln Place;
 - Lombard Street East;
 - Lower Merrion Street;
 - Tara Street; and
 - Westland Row.

Rating – Public Transport

Bus Journey Times

- C1.7.17 Bus journey times were extracted from the MNTM within the Canal Cordon Area. The Canal Cordon is a well established boundary for the analysis of traffic within Dublin City Centre. It is predicted that no bus routes will be impacted severely during the construction works when the public transport gate is in place. By comparison, without the public transport gate eight routes were identified which would be impacted severely. Similarly, the introduction of the public transport gate will reduce the instances of moderate impact on bus route journey times from five to one.
- C1.7.18 The impact of the construction of Metro North on bus journey times will be greatly reduced because of the public transport gate. Overall, the impact will be positive.

Parnell Square

C1.7.19 [SLIDE 49 – RATING OF PARNELL SQUARE IMPACT]

Rating - Loading Bay Facilities

- C1.7.20 As during the enabling works, loading will occur on Rutland Place West.
- C1.7.21 The loading bay on Parnell Street, east of O'Connell Street will be altered to allow for relocating bus stops here. It will continue to be over 20m in length. This is categorised as a slight impact.

Rating - On-Street Car Parking

- C1.7.22 During the main works, a large portion of Parnell Square East will be closed, however a footpath and a bus lane will be facilitated. There will be a loss of 15 car parking spaces in total on the west side of Parnell Square East. This is rated as a severe impact. However, there is alternative on-street car parking provided in the locality, including Parnell Square North and Parnell Square West.
- C1.7.23 It is also proposed that a bus stop is relocated from Parnell Square East to Parnell Square North which will incur the loss of additional car parking. There will be an additional loss of eight car parking spaces on Parnell Square West due to the

works. The total loss of car parking on this street is 15 spaces. This is rated as a moderate impact.

Rating - Access Diversions

C1.7.24 During the construction works there will be one southbound bus lane. All general traffic access will be restricted from this street. Local access and egress will be facilitated.

C1.7.25 General traffic will be rerouted via North Great Georges Street and this is rated as a moderate impact.

Rating - Bus Stop Arrangements

C1.7.26 There are five bus stops on Parnell Square East which will be relocated for the duration of the works. In general, it is currently proposed to relocate bus stops as follows:

- Dorset Street routes – stops relocated to Parnell Street;
- Blessington Street routes – stops relocated to O'Connell Street;
- Denmark Street routes – stops relocated to Denmark Street; and
- Parnell Square North routes – stops relocated to Parnell Square North.

C1.7.27 The impact on bus stops on Parnell Square East will be mostly moderate with some slight impacts. Work is ongoing with Dublin City Council and Dublin Bus to finalise the bus stop relocations.

Rating - Taxi Rank Facilities

C1.7.28 There are no existing taxi ranks on Parnell Square East and taxi movements will not be restricted because of these works. Two taxi spaces are proposed for Parnell Square East, south of the works. This will accommodate set down facilities for businesses and buildings on Parnell Square East.

Rating - Pedestrian Facilities

C1.7.29 During the main works, a footpath will remain on the eastern side of Parnell Square East. The footpath on the western side of this street and its crossing on the northern end of the square will be closed during the main works. This is rated as a moderate impact.

C1.7.30 Pedestrian access to the Garden of Remembrance will be closed from Parnell Square East but will continue to be possible via the entrance on Parnell Square North. This is rated as a slight impact.

Rating - Pedestrian Congestion

C1.7.31 [SLIDE 50-52 – PEDESTRIAN LEVEL OF SERVICE ASSESSMENT PARNELL SQUARE EAST]

C1.7.32 The results of the pedestrian Level of Service assessment are a worst-case scenario because the pedestrian flows on Parnell Square East have not been reduced to reflect that the bus stops will be relocated from this location and therefore the associated pedestrians will not use this footpath during this time.

- C1.7.33 The results show that there will be moderate impacts to pedestrians during the main works.

Rating - Cyclist Facilities

- C1.7.34 During the construction works there will be a bus lane southbound on Parnell Square East. This will facilitate cycle movements in this direction. This is rated as a moderate impact on cyclists.

O'Connell Bridge

- C1.7.35 [SLIDE 53 – RATING OF O'CONNELL BRIDGE IMPACT]

Rating - Loading Bay Facilities

- C1.7.36 No existing loading bays will be adversely affected. An additional loading bay will be provided on Westmoreland Street, south of Fleet Street.
- C1.7.37 There will be a moderate impact on loading to premises on Westmoreland Street between Fleet Street and the Quays.

Rating - On Street Parking

- C1.7.38 There will be four car parking spaces lost during the construction works on Westmoreland Street. This total loss of parking on this street is rated as moderate.

Rating - Access Diversions

- C1.7.39 [SLIDE 54 – ACCESS DIVERSIONS AT O'CONNELL BRIDGE]

- C1.7.40 General access to Westmoreland Street will be altered as a result of the introduction of the public transport gate at College Green. Access from College Street to Westmoreland Street will be maintained.
- C1.7.41 During the main works, Westmoreland Street will be reduced to one public transport lane northbound. The left turn access from Westmoreland Street to Fleet Street (westbound to Temple Bar) will be closed.
- C1.7.42 The revised access to Fleet Street, including the multi-storey car park, will be provided from Dame Street via Angelsea Street and from Aston Quay via Aston's Place or Asdill's Row. Subsequently, the distance will be reduced both from Dame Street and the Quays resulting in an insignificant impact.
- C1.7.43 Access from College Street to Westmoreland Street will be maintained during construction. Egress from Westmoreland Street will be by way of Fleet Street (eastbound to Townsend Street). At present, Fleet Street is designated as a bus only street from Westmoreland Street to D'Olier Street. During the construction works, the traffic management on Fleet Street will be altered to allow for access. This will result in a moderate impact.

Rating - Bus Stop Arrangements

- C1.7.44 [SLIDE 55 – BUS STOP ARRANGEMENTS AT O'CONNELL BRIDGE]

- C1.7.45 Three bus stops on Westmoreland Street between Fleet Street and the Quays will be relocated. The stops affected serve buses arriving from the south via Dame Street and College Street.

- C1.7.46 In general, it is proposed to relocate bus stops as follows:
- northbound – stops relocated to O'Connell Bridge; and
 - eastbound – stops relocated to Dame Street and Tara Street.

C1.7.47 The impact on bus stops will be mostly moderate with some slight impacts.

Rating - Taxi Rank Facilities

C1.7.48 The taxi rank on the west side of Westmoreland Street between College Street and Fleet Street will be maintained during the main works.

C1.7.49 A bus stop will be relocated from Westmoreland Street to the western side of O'Connell Bridge which will affect the existing night-time taxi rank. This rank will be relocated to the north side of Aston Quay adjacent to the existing taxi rank. This is rated as a slight impact for taxi rank facilities.

Rating - Pedestrian Facilities

C1.7.50 The pedestrian strategy for O'Connell Street is to maintain existing pedestrian level of service, where possible. To achieve this, pedestrians will be encouraged to use the central median. Also, all non-necessary street furniture will be temporarily removed or relocated to achieve the maximum footpaths width.

C1.7.51 Pedestrians will be encouraged to make best use of available footpaths around the construction area with the introduction of additional crossing points.

C1.7.52 There will be increases in HGV flows on Aston Quay of up to 46 vehicles (38%). This is rated as a severe impact on pedestrian facilities. Because of the layout of Aston Quay, pedestrians are removed from general traffic, by a bus lane on the south and parking/ taxi rank on the north side of the street. This will reduce the severe impact of increased HGV flows on pedestrians.

Rating - Pedestrian Congestion

C1.7.53 [SLIDE 56 to 58 – PEDESTRIAN LEVEL OF SERVICE ASSESSMENT O'CONNELL BRIDGE]

C1.7.54 All of the construction stages were investigated for Thursday AM, Thursday PM and Saturday afternoon peaks. The construction stages which will have the greatest impact on pedestrians were determined and the pedestrian Level of Service assessment is based on these stages.

C1.7.55 The results of the pedestrian assessment indicate that there will be some moderate impacts on pedestrian congestion. However, many of the streets and crossings are rated as having insignificant or slight impacts.

C1.7.56 During some phases of the works severe impacts are anticipated on O'Connell Street and Westmoreland Street. Local diversions around the worksites will mitigate these impacts.

Rating - Cyclist Facilities

C1.7.57 The cycle lanes along the quays will not be affected during the main works.

C1.7.58 The short section of cycle lane (approximately 70m) on O'Connell Street will be removed. Cyclists will use the traffic lanes or avail of alternative parallel routes.

This is rated as a severe impact. However there are currently only sections of cycle lanes on this street and therefore the impact is acceptable.

C1.7.59 The northbound lane on Westmoreland Street will also provide for cyclists. There are currently no cycle lanes on this street and therefore this impact is not rated.

C1.7.60 There will be increases in non-construction HGV flows on Aston Quay of up to 46 vehicles (38%). This is rated as a severe impact on cyclists. Because of the bus lane on the southside of the street, cyclists are somewhat removed from the HGV traffic. This will mitigate the severe impact of increases in HGV flows on cyclists.

St Stephen's Green

C1.7.61 [SLIDE 59 – ST. STEPHEN'S GREEN IMPACT]

Rating - Loading Bay Facilities

C1.7.62 The loading bay on St Stephen's Green West will be relocated slightly south of its existing location. This loading area will be accessed via Glovers Alley in the eastbound direction, with traffic exiting onto York Street. This will provide for set-down/ pick-up for the Fitzwilliam Hotel and other businesses in the area. This relocated loading bay will be approximately 50m south of its existing location and approximately the same size and therefore is rated as a slight impact.

C1.7.63 Service access from Grafton Street onto St Stephen's Green North will continue to be facilitated with a moderate impact.

Rating - On-Street Parking

C1.7.64 As during the enabling works, the car parking on St Stephen's Green West (near Grafton Street). This total loss of six car parking is rated as a moderate impact.

C1.7.65 During the main works, it will be necessary to relocate the existing taxi rank on St Stephen's Green North west of Dawson Street. All 23 taxi spaces will be relocated to St Stephen's Green North (east of Dawson Street), St Stephen's Green West (south of York Street) and Molesworth Street. On-street parking will be removed to facilitate the relocation of taxi ranks.

C1.7.66 There will be one car parking space lost of St Stephen's Green North which is rated as a slight impact. Furthermore, there will be a loss of nine car parking spaces on Molesworth Street. There are currently 43 car parking spaces on this street and therefore this loss in car parking is rated as a slight impact.

C1.7.67 All on-street parking on that is lost can be accommodated in the multi-storey car parks in the area. Therefore, the impact on on-street parking is deemed to be acceptable.

Rating - Access Diversions

C1.7.68 [SLIDE 60 – ACCESS DIVERSIONS AT ST STEPHEN'S GREEN]

C1.7.69 The revised access arrangements to Glovers Alley will result in a diversion of approximately 1,650m from Merrion Square. This is 700m longer than the current route. This is rated as a severe impact. However, access from other directions will be reduced. Overall, the revised access is considered to be suitable.

Rating - Taxi Rank Facilities

- C1.7.70 The construction works will require the relocation of all 23 taxi spaces on St Stephen's Green North, between Dawson Street and Grafton Street. These will be relocated further along St Stephen's Green North, St Stephen's Green West and Molesworth Street.
- C1.7.71 As the number of rank spaces will be maintained the impact on rank facilities is insignificant.

Rating - Taxi Rank Coverage

- C1.7.72 The taxi spaces relocated to St Stephen's Green West, south of York Street, are approximately 200m south of their existing location. This is rated as a moderate impact. The taxi spaces which are relocated to Molesworth Street will be approximately 200m from the current position, which is also rated as a moderate impact.

Rating - Pedestrian Facilities

- C1.7.73 The footpaths adjacent to the works will be closed. The existing footpaths adjacent to the buildings on St Stephen's Green North and West will accommodate pedestrian diversions. This is rated as a moderate impact.
- C1.7.74 The Park entrance at the Fusilier's Arch will be closed during the works. Access to the park will be maintained via pedestrian entrances on St Stephen's Green West and St Stephen's Green North. These are both less than 100m from the Fusilier's Arch. This is rated as a slight impact.

Rating - Cyclists Facilities

- C1.7.75 There is currently one short dedicated cycle lane on St Stephen's Green West, between York Street and Glovers Alley. Cyclists can also use the traffic lane running along St Stephen's Green North, St Stephen's Green West and through Glovers Alley (south/ west-bound).
- C1.7.76 During the main works, these facilities will be removed and St Stephen's Green North and St Stephen's Green West between Dawson Street and Glovers Alley will become pedestrianised. This will require cyclists to dismount and is rated as a slight impact.
- C1.7.77 Cycle parking in the vicinity of the works will be relocated to St Stephen's Green West, between Glovers Alley and York Street, and South King Street. This is rated as a slight impact.

C1.8 Summary of Impact**C1.8.1 [SLIDE 61 & 62 – SUMMARY OF IMPACT AREA MN107]**

- C1.8.2 A summary of key findings during the works within Area MN107 is listed below:
- In general, the City Centre will experience a combination of positive and negative impacts during the main works for all road user groups;
 - The Public Transport Gate is shown to mitigate impacts on bus services resulting in a significantly positive impact on bus journey times through the city centre. Furthermore, the PT Gate will encourage more people to use public transport services thereby

reducing the number of vehicles on the road network. It will be necessary to implement minor bus route diversions in and around the O'Connell Bridge stop. The number of routes affected is significantly reduced from that identified in the EIS. The relocation of bus stops will be required in specific areas, and potential alternative locations have been identified which will maintain bus operations at existing levels;

- Access to all multi-story car parks and properties, including servicing and delivery requirements can be maintained at all times;
- There are some localised negative impacts on general traffic flows within the City Centre area, which are offset by positive impacts elsewhere. This is illustrated by the strategic analysis of the City Centre which will be presented by Mr Ian Byrne;
- Comprehensive analysis of the impacts on pedestrians around the three City Centre stops has been undertaken and has shown that pedestrian movements can be maintained, but that some pedestrian diversions will be required;
- There will be increased non-construction HGV flows on Aston Quay resulting in a severe impact on pedestrians and cyclists. However the impact is reduced by the existence of a bus lane on Aston Quay and the removal of the left turn from Westmoreland Street to Aston Quay; and
- Overall the impacts on cyclists will be slight, as the loss of cycle facilities will be offset by both new cycle facilities, and reductions in general traffic flows arising from implementation of the Public Transport gate.

C2.0 Area MN107 – City Centre – Impact during Operation

C2.1.1 [SLIDE 63 – Operational Phase]

- C2.1.2 The strategic, or city wide, operational impact of Metro North will have beneficial traffic impacts as a result of the mode shift from car to Metro.
- C2.1.3 Metro North will result in modal shift from car to metro along the alignment. This will result in a decrease in traffic to the city centre from the Metro North corridor.
- C2.1.4 Metro North will have a beneficial impact on bus movement through the City Centre.
- C2.1.5 The operational impact of the Metro North on traffic within Area MN107 will be mainly related to vehicle re-assignment across the road network. In other words, vehicles with different origins and destinations will utilise the road space freed up by the modal shift generated by Metro North. There will, therefore, be an indirect benefit to those drivers who are outside the catchment area of Metro North in that they will benefit from a freeing up of road space. An additional benefit will be a contraction of the peak period as drivers will re-time their trip making.

C2.2 Traffic Management Changes during Metro North Operation

- C2.2.1 At the time of preparation of the EIS, it was assumed that traffic management within the city centre will revert to the current arrangements after the completion of Metro North construction. It should be noted however, that as the construction period will be of considerable duration and after such a period, it may not be appropriate to return the traffic management within Area MN107 to the current arrangements.
- C2.2.2 The STMP includes the delivery of the Public Transport Gate at College Green, which will remain in operation after Metro North construction is completed. However, the STMP did not further assess the impact of the operational phase of Metro North as it is considered that these impacts will be less severe than during the construction phase.
- C2.2.3 In addition, there are some traffic access arrangements which will remain in place during operation of Metro North.

General Traffic Access

- C2.2.4 The following changes to vehicular access will be implemented during the operation of Metro North:
- Access to vehicular traffic from St Stephen's Green North to Glovers Alley will remain closed. This arrangement will allow for the creation of a pedestrian plaza at the northwest corner of St Stephen's Green which will facilitate the large numbers of pedestrians predicted in the locality of the stop. The access arrangements proposed in the construction phase of Metro North will remain; and
 - Access to Fleet Street between Westmoreland Street and Price's Lane will also remain closed and vehicles will continue to access the area from the South Quays via Aston Place.

C2.3 General Traffic Flows

- C2.3.1 Metro North will have a positive impact on traffic within the City Centre. Decreases in traffic flows are predicted on a number of roads within Area MN107.
- C2.3.2 Average traffic speeds in the City Centre will not be substantially affected by the operation of Metro North. There will be a slight positive impact on average traffic speeds during the AM peak in 2029. The levels of traffic in the city centre, and hence the average traffic speeds in the area, are influenced by traffic conditions in the surrounding areas and the Greater Dublin Area as a whole.

C2.4 Car park access arrangements

- C2.4.1 During the operational phase of Metro North, car park access will generally return to current arrangements, except for the following:
- Access to Fleet Street Car park will continue to be provided from Aston Quays via Price's Lane; and
 - Access to St. Stephen's Green, College of Surgeons, Fitzwilliam Hotel and Drury Street car parks will continue to approach from the north via William Street South and from the south via York Street.
- C2.4.2 Overall, the impact on car park access within Area MN107 will be slight.

C2.5 Public transport

- C2.5.1 Bus operations in the City Centre can revert to the existing configuration when Metro North is operational.

C2.6 Pedestrian

O'Connell Bridge Stop

- C2.6.1 The underground stop at O'Connell Bridge will be one of the largest stops along the alignment of Metro North and will be served by three main access points. One main access point will be located on the western side of Westmoreland Street between Fleet Street and Aston Quay; this will provide access from the south, southeast and southwest of the stop. The second main access will be located on the western side of O'Connell Street between Bachelors Walk and Abbey Street; this will provide access from the north and northwest. The final main access will be located on the opposite side of O'Connell Street between Eden Quay and Abbey Street; this will provide access to the north and north east. In addition, this access will be in close proximity to the Luas Red Line stop at Abbey Street and it will serve passengers transferring between the two lines.
- C2.6.2 The existing pedestrian crossings on Westmoreland Street, around O'Connell Bridge and on O'Connell Street will facilitate pedestrian movement to and from the stop.
- C2.6.3 As part of Metro North, the existing footpaths on the western side of Westmoreland Street will be widened to accommodate the stop accesses and to provide additional footpath space for the increase in pedestrian movements generated by Metro North's passengers. The escalators on O'Connell Street will be positioned within the existing footpaths. The existing footpaths on O'Connell Street are very wide and the proposed escalators can be accommodated.

St Stephen's Green

C2.6.4 The closure of the vehicular access between St Stephen's Green and Glovers Alley will allow for the creation of a pedestrian plaza at the northwest corner of St Stephen's Green. The area will become a pedestrian friendly environment where pedestrians are free to circulate between Grafton Street, South King Street, St Stephen's Green North (west of Dawson Street) and St Stephen's Green West (north of York Street). In addition to providing very high quality pedestrian infrastructure, the plaza will facilitate the safe and easy interchange between Metro North, Luas and Interconnector services. Overall, the pedestrian environment will be improved.

C2.7 Summary of Operational Impact

C2.7.1 [SLIDE 64 – CONCLUSION]

C2.7.2 There will be no residual impacts when Metro North is operational. Metro North will have a positive impact on all road users within Area MN107.

Railway Procurement Agency
Ghníomhaireacht um Fháil Iamróid
Parkgate Business Centre,
Parkgate Street, Dublin 8, Ireland
Phone +353 1 646 3400
Fax +353 1 646 3401
www.rpa.ie

Responsible for

LUAS METRO

Integrated
Ticketing
System

With funding and
support from

transport21
progress in motion

