Appendix A6.3
Junction Design Report

Contents

1. Introduction

This report has been prepared to document the evolution of the design of key junctions along the Liffey Valley to City Centre Scheme (hereafter referred the Proposed Scheme). In addition, the report presents the junction assessment results for the final scheme design which demonstrate the expected operation of the junction.

Finally, a theoretical assessment has been carried out to demonstrate the capacity of the junctions for all modes. The methodology adopted is elaborated upon in the following sections.

2. Methodology

The proposed scheme has been designed over the course of a number of years, and during this period the design principles have evolved to improve the movement of people through the junctions for all modes. The final design principles which guided the junction design are documented in the BusConnects Preliminary Design Guidance Booklet. This document sets out the four typical junction arrangements adopted on the project as follows:

- Junction Type 1 – Both bus lanes are dedicated lanes up to the junction stop line and general straight ahead and left-turning traffic is restricted to one lane;
- Junction Type 2 – As per Junction Type 1 but with left turning traffic crossing the bus lane into a dedicated left turn lane in advance of the stop line;
- Junction Type 3 – Bus lanes are terminated just short of the junction to allow left-turners to turn left from a short left-turn pocket in front of the bus lane. Buses can continue straight ahead from this pocket where a receiving bus lane is proposed; and
- Junction Type 4 – Similar to the CYCLOPS junction in Manchester, U.K. the pedestrian crossings are located on the inside of the cycle lanes on all arms of the junction. This assists to minimise pedestrian crossing distances. Signalised pedestrian crossings are proposed across the cycle tracks to allow the pedestrian to cross from the footpath to the pedestrian crossing landing areas, thus avoiding any uncontrolled pedestrian-cyclist conflict. Bus lanes are terminated just short of the junction to allow left turners to turn left from a short left-turn pocket in front of the bus lane. Buses can continue straight ahead from this pocket where a receiving bus lane is proposed.

In addition to the evolution of the design principles, the design has been positively influenced through engagement with the public at various points in the design process. The evolution of the design is documented in this report with a clear rationale provide for the changes at key points in the project as follows:

- Concept Design;
- Emerging Preferred Routes (EPR);
- Second Public Consultation (PC2);
- Third Public Consultation (PC3); and
- Final Proposed Scheme.

2.1 Transport Modelling

Transport modelling has been a key input to the scheme design throughout the project. Given the complexity of the scheme proposals and changes to existing traffic regimes, the design went through an iterative process which was incorporated in the multi-tiered transport modelling approach consisting of strategic, local, and microsimulation modelling. The overall modelling methodology and information flow is summarised in Figure 2-1.

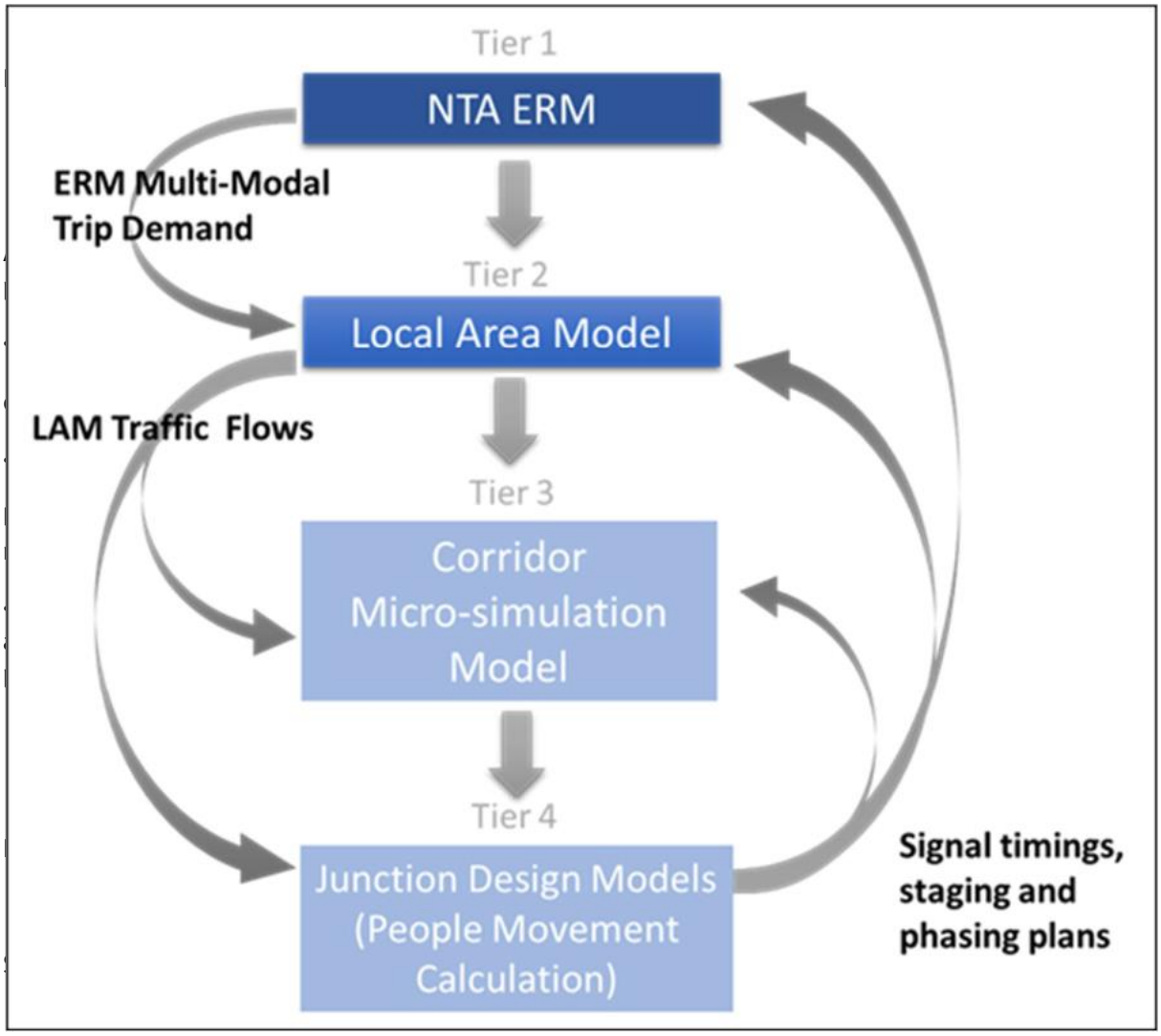


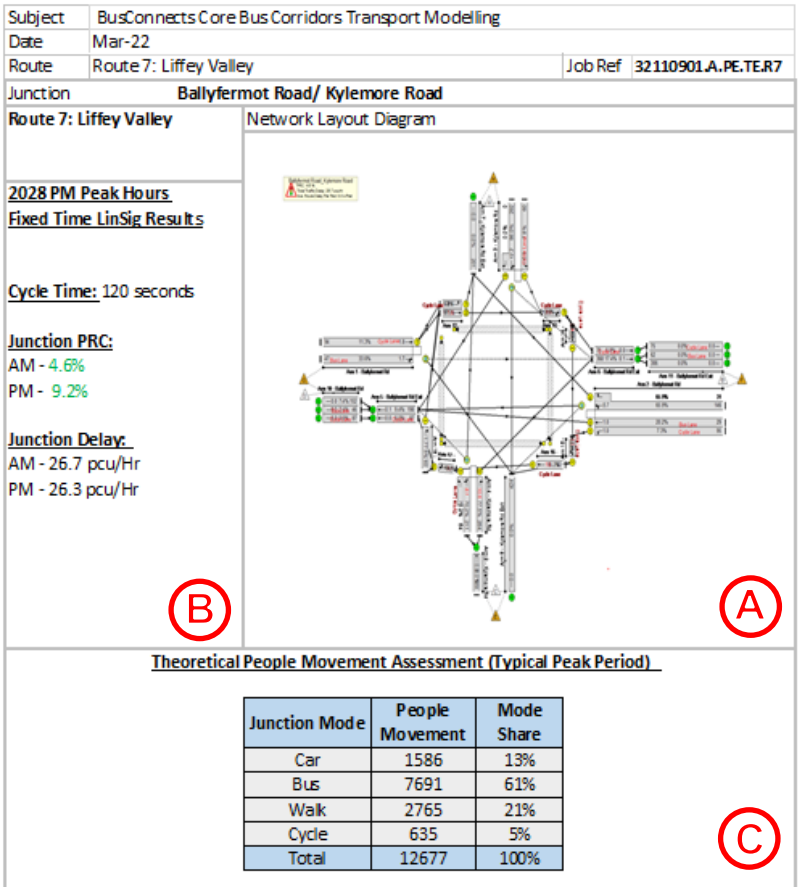
Figure 2-1 Transport Modelling Methodology and Information Flow

As shown above, there are four tiers in the transport modelling hierarchy that were used for the purposes of assessing the proposed scheme:

- East Regional Model (ERM): the primary tool that provides the strategic multi-modal demand outputs for the proposed forecast;
- Local Area Model (LAM): a more refined road network model used to provide consistent road-based outputs to inform the TIA, EIAR, microsimulation model, junction design models and traffic management plan testing;

- Microsimulation Model: represents the end-to-end corridor model of the proposed scheme to assist in the operational validation of proposed designs with the visualisation of the potential proposed scheme impacts and benefits; and
- Local Junction Models: each junction along the proposed CBC were modelled individually to support local junction design development.

For the purposes of the Junction Design and Modelling Report (JDR), results from the local junction models were extracted, which used LinSig, an industry-standard software that provides comprehensive assessment and design of a junction or a network of junctions. The local junction models were used to inform junction design considerations and 'proof of concept' demonstration of the preferred design for the CBC. The signal staging, timing and phasing from LinSig were incorporated into the three tiers of transport modelling hierarchy and it should be noted that this was an iterative approach throughout the design process of BusConnects. Figure 2-2 presents an example of the local junction modelling results from LinSig presented in this report. A description of the images follows.



Junction Mode	People Movement	Mode Share
Car	1586	13%
Bus	7691	61%
Walk	2765	21%
Cycle	635	5%
Total	12677	100%

Figure 2-2 Example of a junction modelling results in the JDR

A shows the junction layout in LinSig and the results per lane, which are the following:

- Number of PCUs arriving at the Stop Line – this is the number located at the back of the lane in Figure 2-2 and reflects the traffic flows on its respective lane;

- Degree of Saturation (%) – this is the number located in the middle of the lane in Figure 2-2 and is the ratio of Flow to Capacity per lane. The theoretical capacity of a junction is 90% and anything less than this assumes that the junction is within theoretical capacity; and
- Mean Max Queue (PCU) – this is the number located at the front of the lane in Figure 2 and is Maximum queue (per lane) within a typical cycle.

B shows the following Network Summary Results:

- Cycle (seconds) – Cycle time in seconds;
- PRC (%) – Practical Reserve Capacity, which is the available spare capacity at a junction (i.e. negative PRC = over-capacity; positive PRC = spare capacity);
- Junction Delay (PCU/hr) – the total aggregate delay on all lanes controlled by each Stage
- Stream;

C shows the tabulated information on the People Movement Assessment for the Do-Something 2028 scenario during the AM peak.

It should be noted that modelling bus priority signals is not possible in LinSig due to its dynamic nature. However, this was modelled in the microsimulation model and is reported in the Environmental Impact Assessment Report (EIAR).

2.2 People Movement

An assessment has been carried out to determine the people movement potential the proposed scheme will generate. This adopts a policy led approach to the design of junctions, which prioritises the movement of people as opposed to private modes and maximisation of sustainable modes i.e. walking, cycling and bus are considered in advance of management of general traffic movements at junctions. The outputs of the calculator provide an estimate of people movement per mode per junction and the respective percentage mode share. Figure 2-3 illustrates the People Movement Formulae.

People Movement Formulae	
Cyclists	$\sum\left(\frac{Green\ Time}{headway}\right)\left(\frac{3600}{Cycle\ Time}\right)\left(\frac{CT\ Width}{1.5}\right)$
Buses	$\sum(No.of\ Buses)(Occupancy)(\ Direction)$
General Traffic	$\sum LinSig\ PCU\ Capacity\ Outputs$
Pedestrians	$\sum(Green\ Time)\left(\frac{Walking\ Speed}{Ped.Walking\ Buffer}\right)\left(\frac{Crossing\ Width}{2}\right)\left(\frac{3600}{Cycle\ Time}\right)(No.Crossing\ Points)$

Figure 2-3 People Movement Formulae

The emerging proposed designs were inputted to the People Movement Calculation tool including the junction geometry, junction type and the signal staging, which produced initial people movement outputs and indicative green times per mode. The results provided an initial starting point to facilitate a review of the junction designs, where necessary pedestrian, cyclist and bus infrastructure was optimised accordingly to facilitate additional capacity. The revised designs were then added into the LAM to facilitate traffic modelling.

The LAM outputs provided traffic flows for the opening year (2028) and opening year +15 (2043). The traffic flows were fed into the LinSig models to facilitate a detailed analysis of the proposed junction

operation. The LinSig and DLAM analysis required traffic modelling iterations. The people movement results were also re-evaluated during the iteration process, the results were also used to inform the projected number of cyclists in the operational year in the Cycle Quantification assessment.

Below is a sample Table 2-1 of People Movement results, which captures the People Movement Assessment for Do-Something 2028 scenario for all modes during the morning peak hours at the Ballyfermot Road/ Kylemore Road junction.

Junction Mode	People Movement	Mode Share
Car	1586	13%
Bus	7691	61%
Walk	2765	21%
Cycle	635	5%
Total	12677	100%

Table 2-1 Theoretical People Movement Assessment (Typical Peak Period)

3. Junctions Assessed

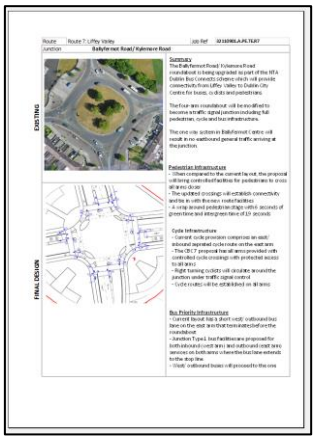
A total number of 27 junctions in the Proposed Scheme are presented in this report which are as follows:

1. Fonthill Road / Retail Park
2. Fonthill Road / Tesco
3. Coldcut Road/ Fonthill Road
4. M50 Bridge Signal Controlled Priority
5. Coldcut Road/ Cloverhill Road
6. Coldcut Road/ Kennelsfort Road Upper/ Ballyfermot Road
7. Ballyfermot Road/ Primary Health Care Centre
8. Ballyfermot Road/ Clifden Road
9. Ballyfermot Road/ Drumfinn Road
10. Ballyfermot Road/ Le Fanu Road
11. Le Fanu Road/ Chapelizod Hill Road/ Kylemore Road
12. Ballyfermot Road/ Commercial Centre
13. Ballyfermot Road/ Kylemore Road
14. Sarsfield Road / Landen Road
15. Sarsfield Road / Con Colbert Road
16. Inchicore Road / Memorial Road
17. Sarsfield Road / Inchicore Road / Grattan Crescent
18. Grattan Crescent / Tyrconnell Road/ Emmet Road
19. Emmet Road / St Vincent Street West
20. Emmet Road / South Circular Road / Old Kilmainham
21. James's Street / St James's Hospital
22. James's Street / Bow Lane West
23. James's Street / Thomas Street / Watling Street
24. Thomas Street / Bridgefoot Street
25. Thomas Street / Meath Street
26. Thomas Street / Saint Augustine Street / Cornmarket / Francis Street

27. Cornmarket / High Street / Bridge Street Upper

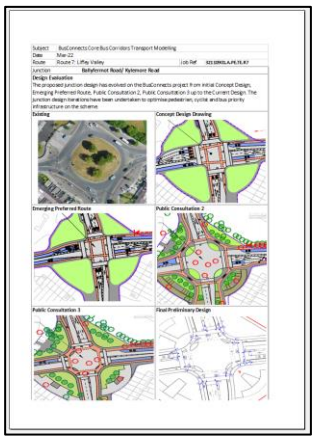
The junctions design, modelling commentary and results are presented in the same order as above in the next section.

Contents



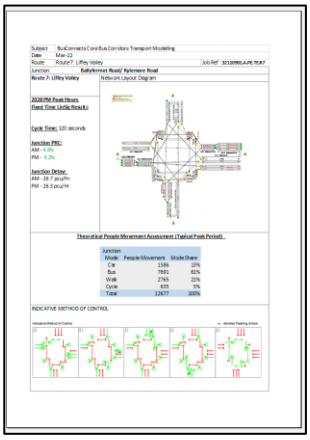
Current Proposal

- Existing;
- Proposed Design;
- Pedestrian Infrastructure;
- Cyclists Infrastructure; and
- Bus Priority.



Design Evolution

- Existing;
- Concept Design;
- Emerged Preferred Route;
- Public Consultation 2 (PC2);
- Public Consultation 3 (PC3); and
- Current Proposal.

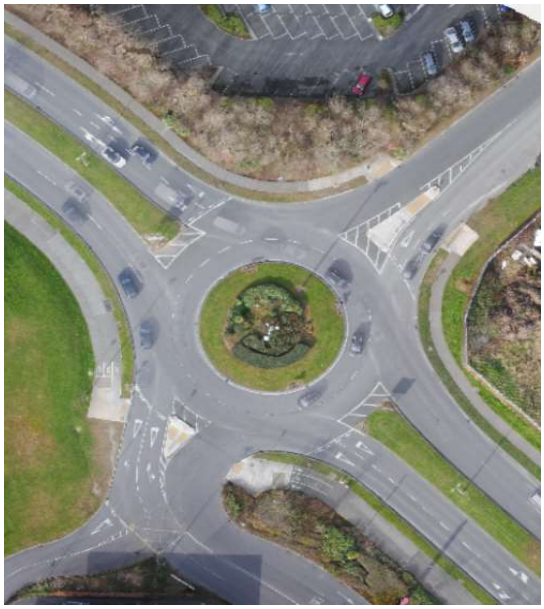


Transport Modelling

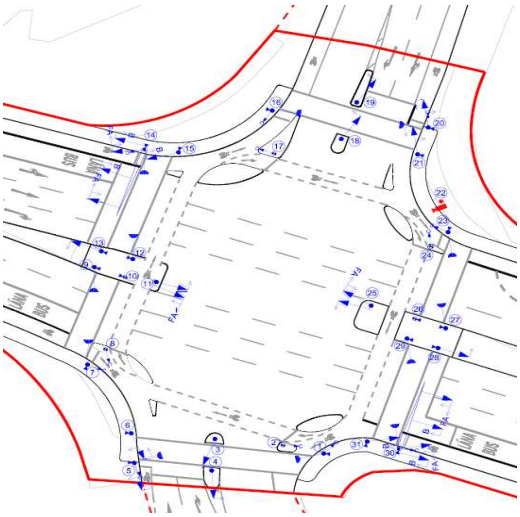
- LinSig Network outputs;
- People Movement; and
- Indicative Method of Control.

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Fonthill Road / Retail Park**		

EXISTING



FINAL DESIGN



Summary

The Retail Park junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The junction will be converted from a roundabout to a four-arm traffic signal junction.

Pedestrian Infrastructure

- When compared to the roundabout, the proposal will allow pedestrians to cross all arms under signal control
- The new crossings will enhance connectivity between the retail park and the shopping centre as well as along the Fonthill Road
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 20 seconds

Cycle Infrastructure

- Current cycle provision is a shared use path on the south side of Fonthill Road for east-west
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control

Bus Priority Infrastructure

- Junction Type 1 bus facilities are proposed on both inbound and outbound Fonthill Road routes where the bus lane extends to the stop line. This will provide the highest level of bus priority

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Fonthill Road / Retail Park**		

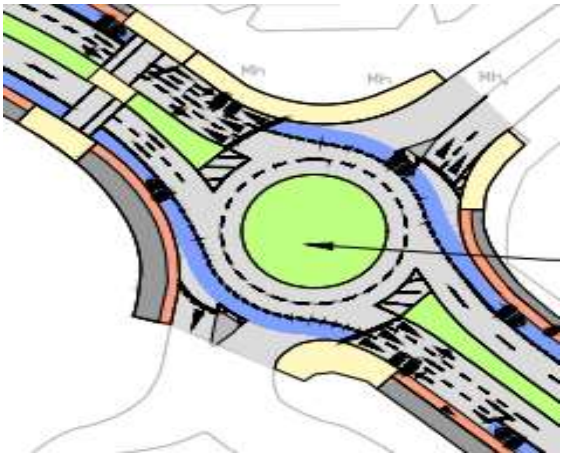
Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

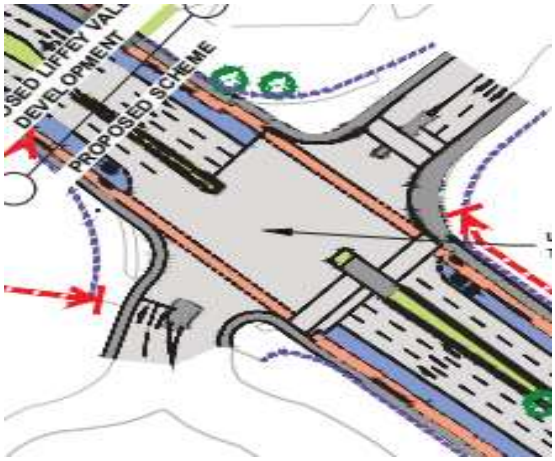
Concept Design Drawing

Emerging Preferred Route

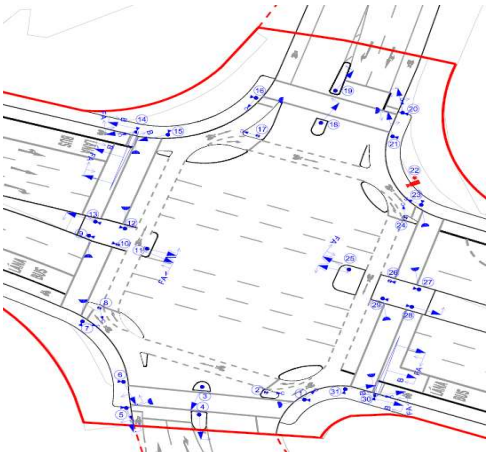


Public Consultation 2

Public Consultation 3



Final Preliminary Design



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Fonthill Road / Retail Park**

Route 7: Liffey Valley

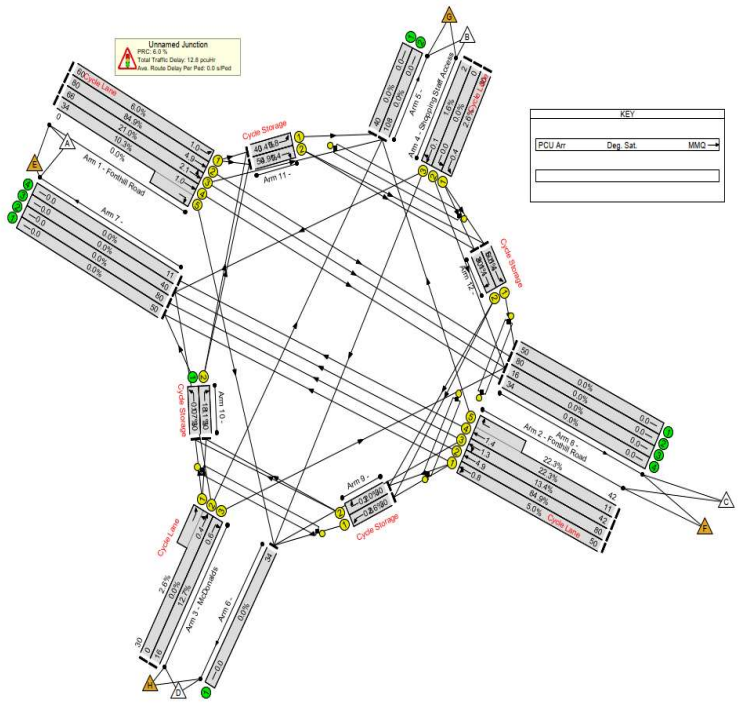
2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - 7.7%
PM - 6.0%

Junction Delay:
AM - 17.8 pcu/Hr
PM - 12.8 pcu/Hr

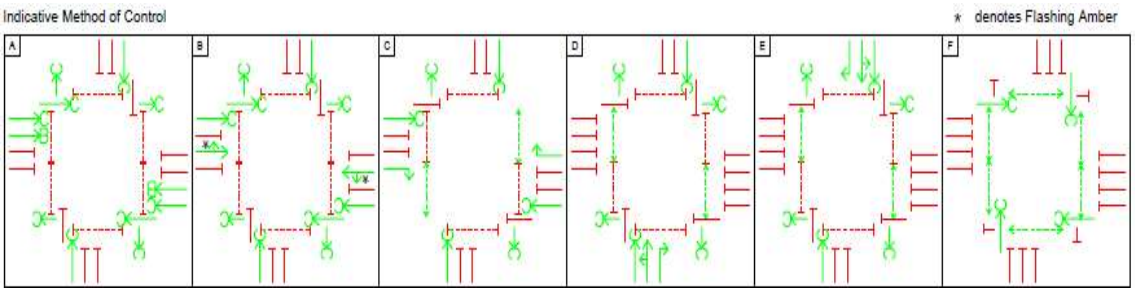
Network Layout Diagram



Theoretical People Movement Assessment (Typical Peak Period)

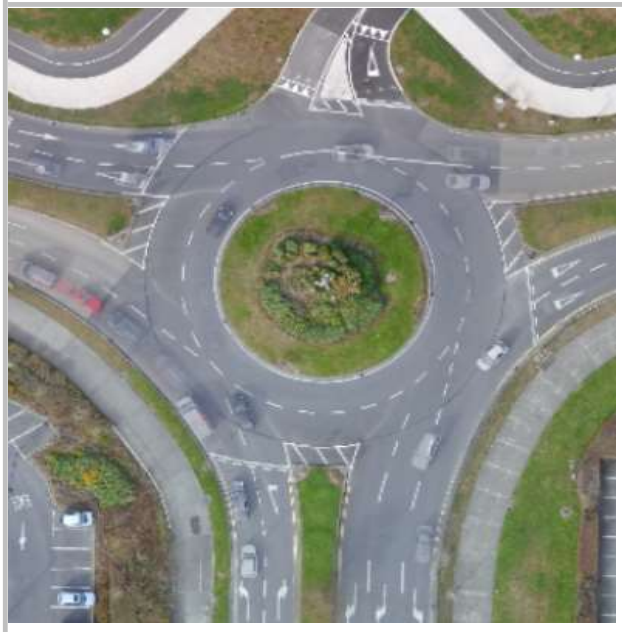
Junction Mode	People Movement	Mode Share
Car	2426	22%
Bus	6720	61%
Walk	1382	13%
Cycle	450	4%
Total	10978	100%

INDICATIVE METHOD OF CONTROL

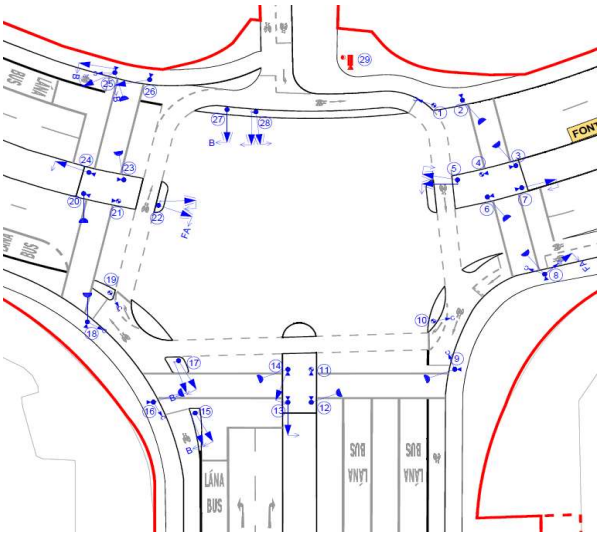


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Fonthill Road / Tesco**		

EXISTING



FINAL DESIGN



Summary

The Fonthill Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The junction will be converted from a roundabout to a three-arm traffic signal junction.

Pedestrian Infrastructure

- When compared to the roundabout, the proposal will allow pedestrians to cross all arms under signal control
- The new crossings will enhance connectivity and tie in with legacy facilities to the east
- Pedestrian greens integrated with other movements

Cycle Infrastructure

- Current cycle provision is segregated paths, staggered Toucan crossings over the east and west arms, but the south arm lacks controlled crossings
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control
- Cyclists will tie into the legacy cycle two-way

Bus Priority Infrastructure

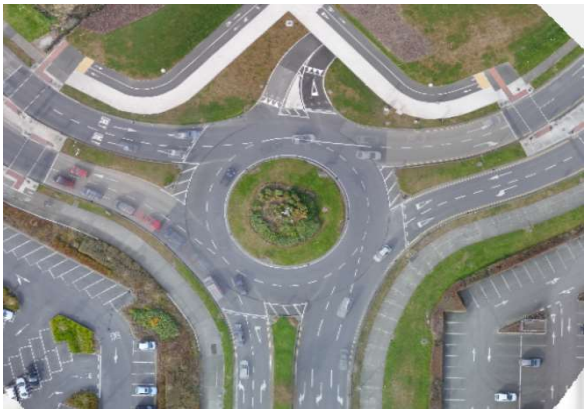
- Junction Type 1 bus facilities are proposed on both inbound and outbound Fonthill Road routes on the west and south arms where the bus lane extends to the stop line

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Fonthill Road / Tesco**		

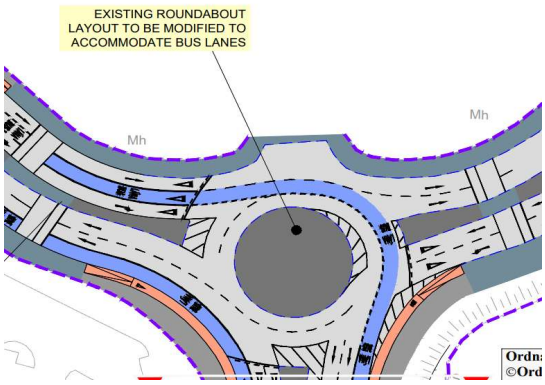
Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

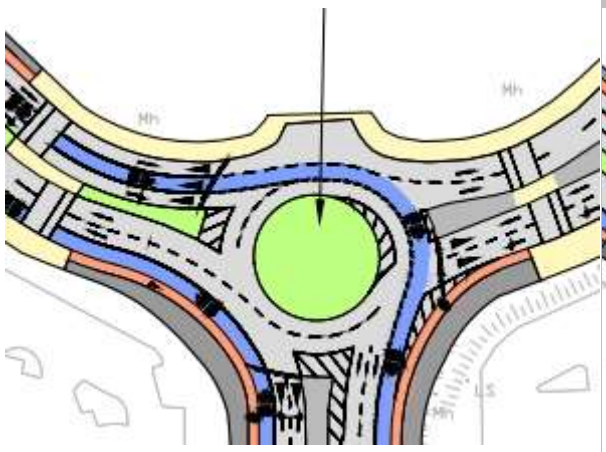
Existing



Concept Design Drawing

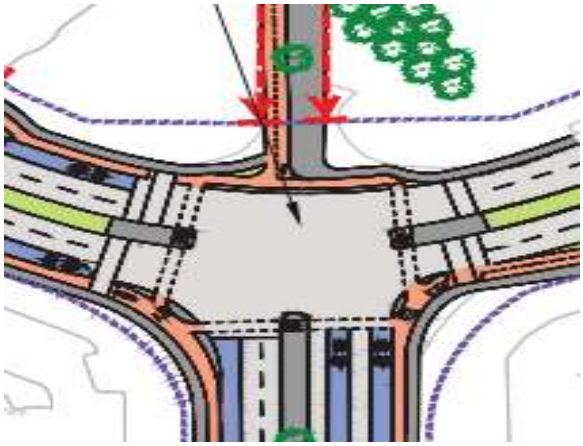


Emerging Preferred Route

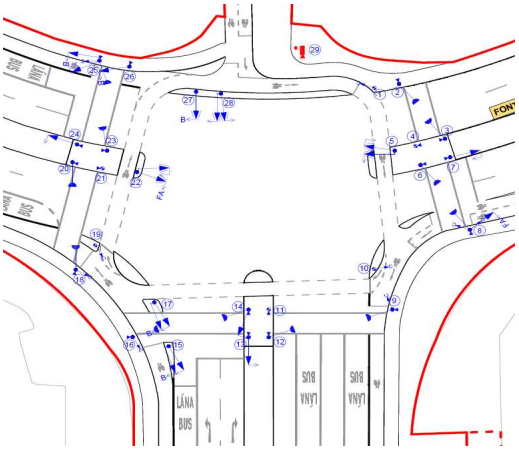


Public Consultation 2

Public Consultation 3



Final Preliminary Design

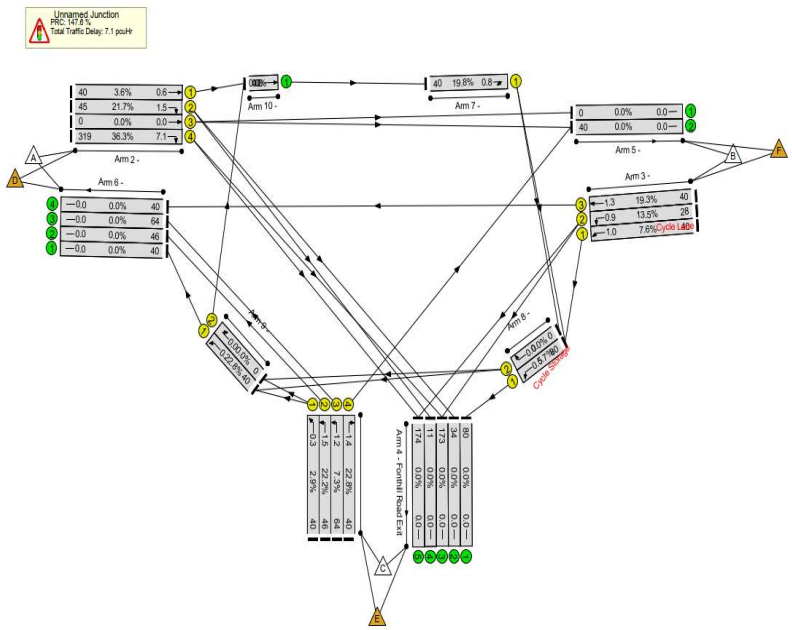


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Fonthill Road / Tesco**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - 147.63%
PM - 20.95%

Junction Delay:
AM - 7.07 pcu/Hr
PM - 8.72 pcu/Hr

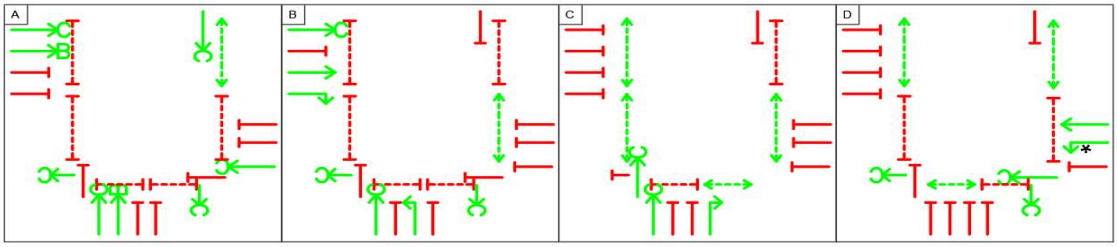
Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	3869	22%
Bus	10868	62%
Walk	2304	13%
Cycle	445	3%
Total	17486	100%

INDICATIVE METHOD OF CONTROL

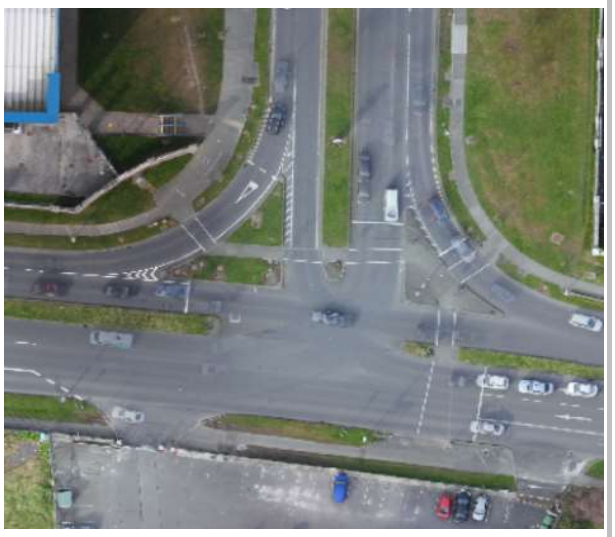
Indicative Method of Control

* denotes Flashing Amber

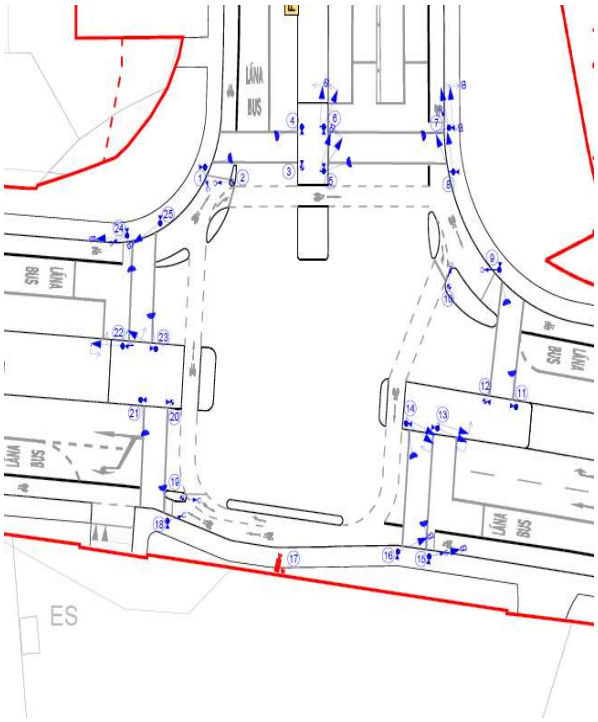


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Coldcut Road/ Fonthill Road**		

EXISTING



FINAL DESIGN



Summary

The Coldcut Road/ Fonthill Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include full pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will allow pedestrians to cross all arms under signal control
- The new and updated crossings will enhance connectivity and tie in with legacy facilities to the west
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 12 seconds

Cycle Infrastructure

- Current cycle provision is segregated paths on the north arm, with westbound cycles joining the bus lane
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control
- Cyclists will tie into the cycle routes established on all arms

Bus Priority Infrastructure

- Junction Type 1 bus facilities are proposed for both inbound and outbound services on all arms where the bus lane extends to the stop line

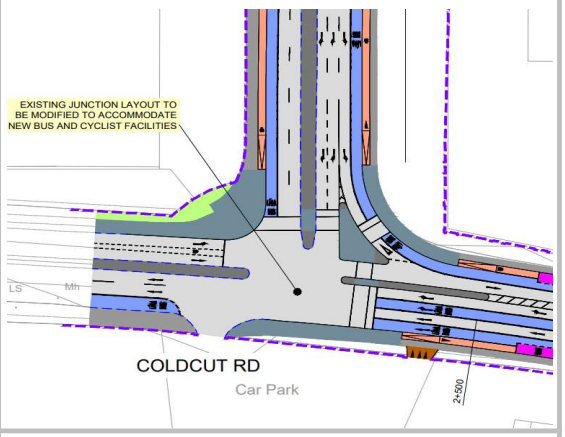
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Coldcut Road/ Fonthill Road**		

Design Evaluation

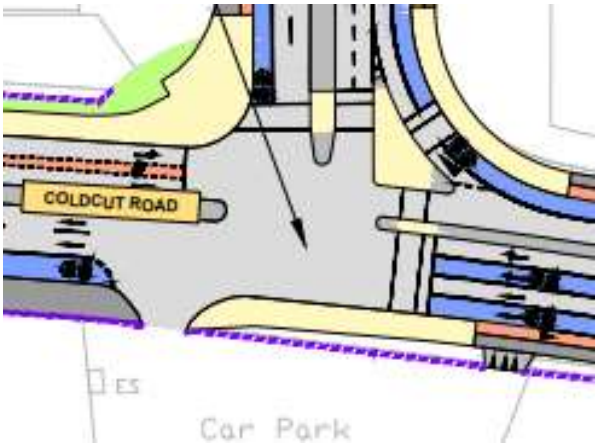
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

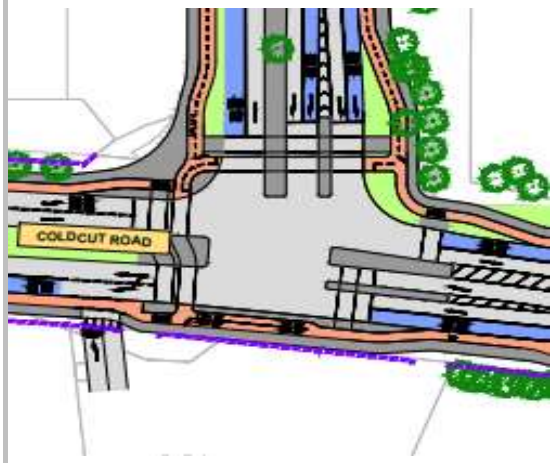
Concept Design Drawing



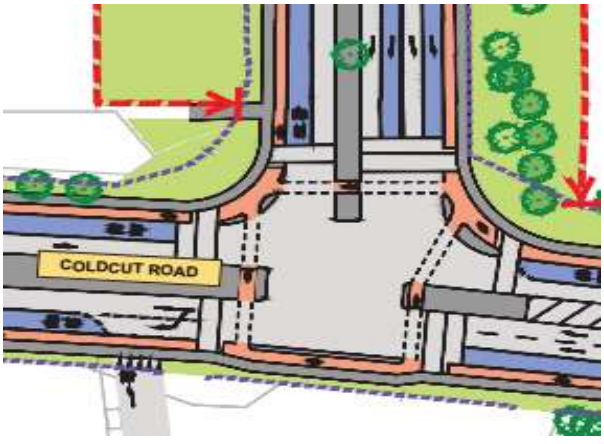
Emerging Preferred Route



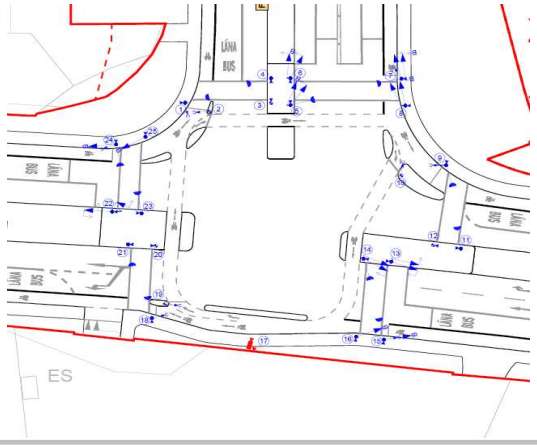
Public Consultation 2



Public Consultation 3



Final Preliminary Design

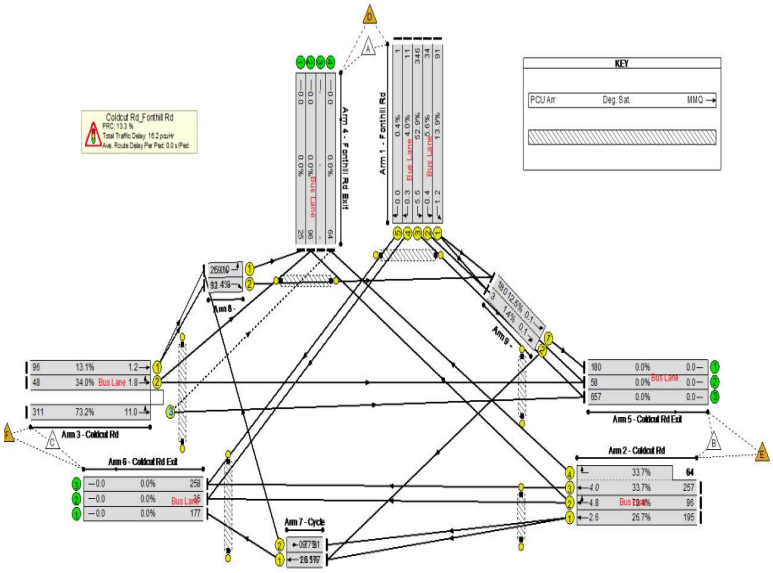


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Coldcut Road/ Fonthill Road**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

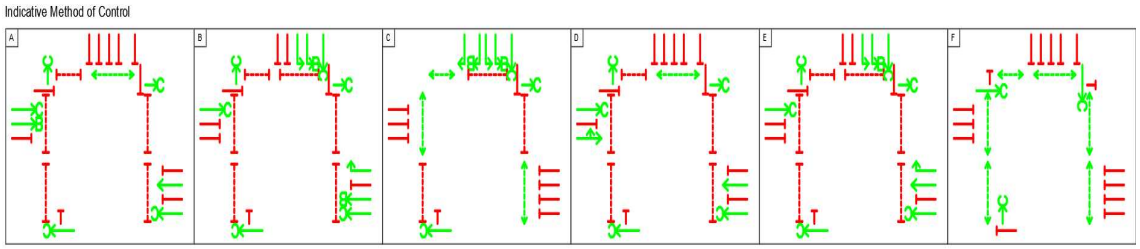
Junction PRC:
AM - 13.3%
PM - 14.5%

Junction Delay:
AM - 16.2 pcu/Hr
PM - 15.7 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2831	8%
Bus	31448	86%
Walk	1382	3%
Cycle	982	3%
Total	36643	100%

INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**M50 Bridge Signal Controlled Priority**		

EXISTING

Summar`y

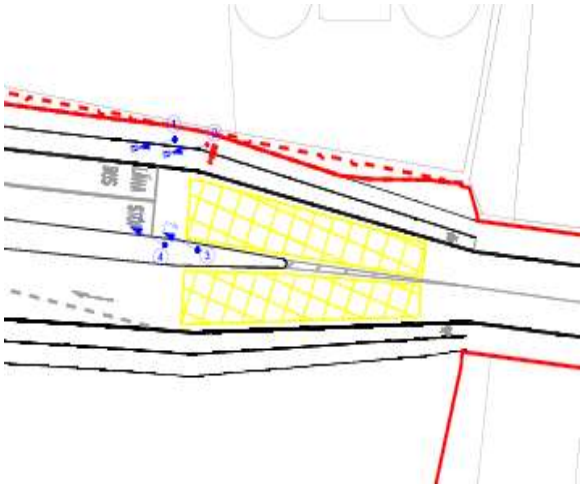
The Coldcut Road bridge over the M50 is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

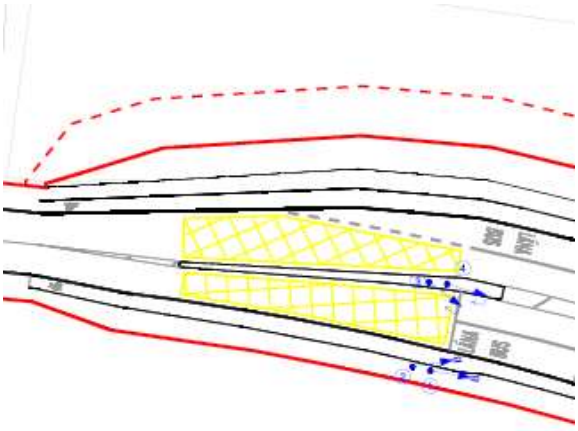
Each end of the bridge will be equipped with a traffic signal controller to provide controlled access to the bridge for buses.

Pedestrian Infrastructure

- In common with the current layout, the scheme will continue to have pedestrians traversing the bridge on each side

FINAL DESIGN





Cycle Infrastructure

- Current cycle provision is an off-carriageway westbound (outbound) path on the south side that terminates at the bridge.
- The CBC 7 proposal has cycle paths up to the bridge on each side which become shared use along the length of the bridge
- Cyclists then rejoin the cycle routes provided by the scheme on each side of the bridge

Bus Priority Infrastructure

- Junction Type 1 bus facilities are proposed for both inbound and outbound services on both arms where the bus lane extends to the stop line
- General traffic will be brought to a stop to allow buses to enter the bridge carriagewaysafely and bypass any queues

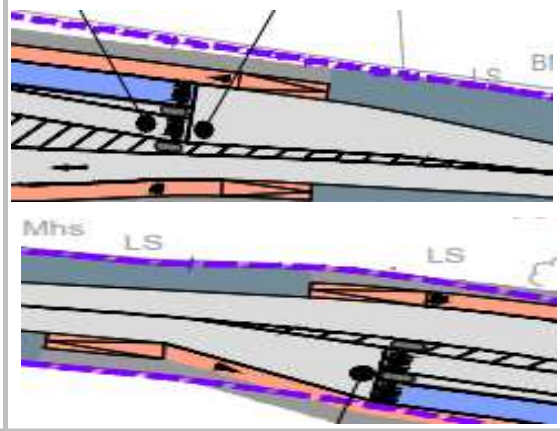
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**M50 Bridge Signal Controlled Priority**		

Design Evaluation

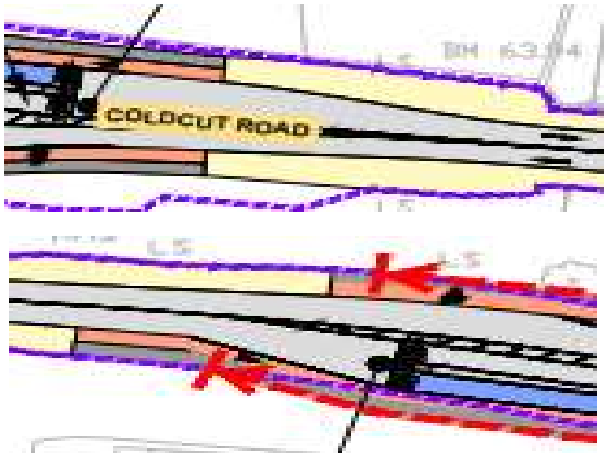
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

Concept Design Drawing

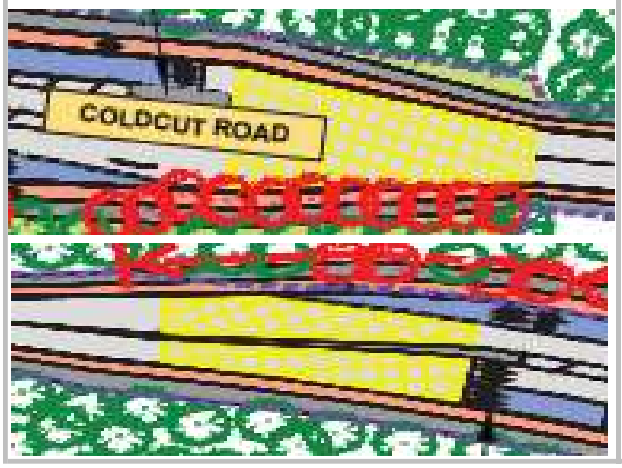


Emerging Preferred Route

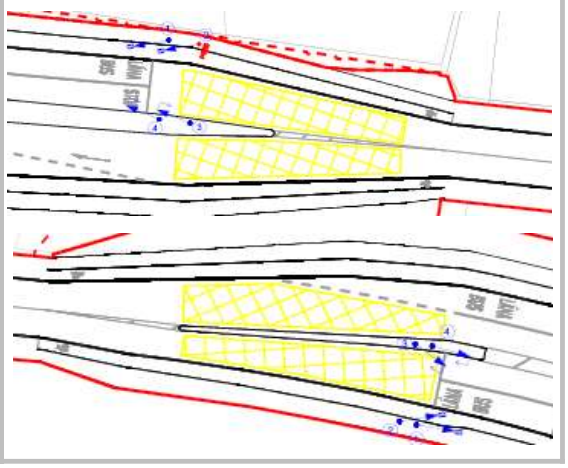


Public Consultation 2

Public Consultation 3



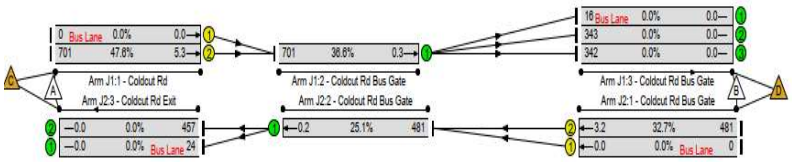
Final Preliminary Design



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**M50 Bridge Signal Controlled Priority**		

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 60 seconds

Junction PRC:
AM - 101.7%
PM - 164.0%

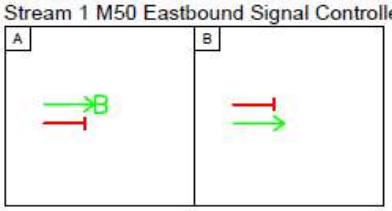
Junction Delay:
AM - 1.8 pcu/Hr
PM - 1.3 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

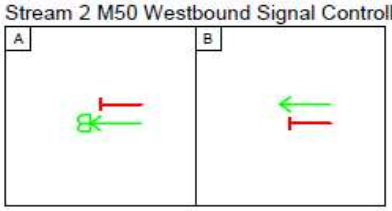
Junction Mode	People Movement	Mode Share
Car	3535	18%
Bus	15068	77%
Walk	0	0%
Cycle	1084	5%
Total	19687	100%

INDICATIVE METHOD OF CONTROL

Indicative Method of Control -
Stream 1 M50 Eastbound Signal Controlled Priority



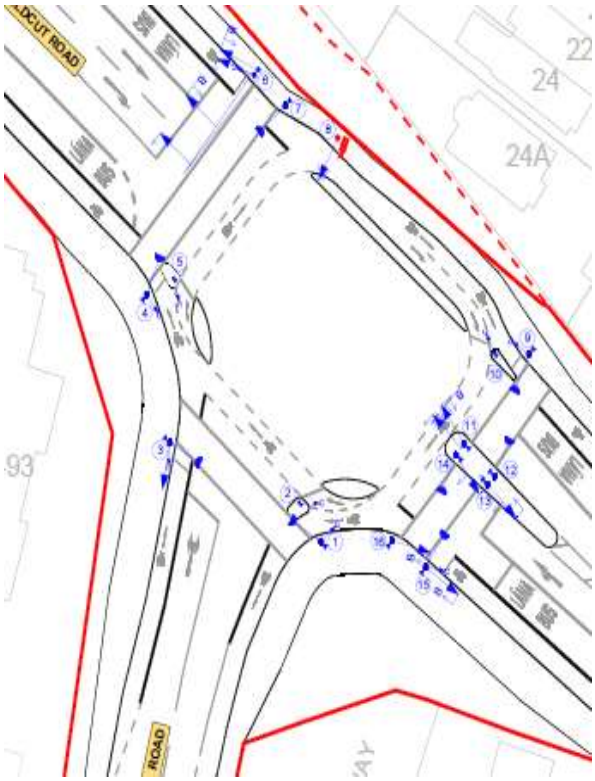
Indicative Method of Control -
Stream 2 M50 Westbound Signal Controlled Priority



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Coldcut Road/ Cloverhill Road**		

EXISTING

FINAL DESIGN



Summary

The Coldcut Road/ Cloverhill Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include full pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will allow pedestrians to cross all arms under signal control
- The new and updated crossings will enhance connectivity and tie in with the new route facilities
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 20 seconds

Cycle Infrastructure

- Current cycle provision is Toucan crossing movements across the east and south arms, but without connecting routes
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control
- Cyclists will tie into the cycle routes established on all arms

Bus Priority Infrastructure

- Current layout has a segregated inbound bus lane to assist buses through the junction
- Junction Type 1 bus facilities are proposed for both inbound and outbound services on both arms where the bus lane extends to the stop line

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Coldcut Road/ Cloverhill Road**		

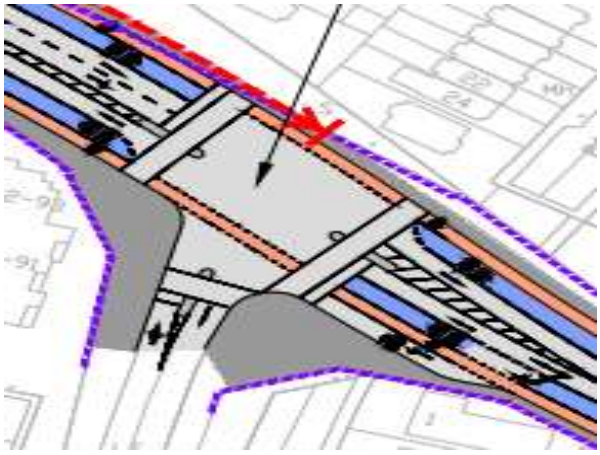
Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

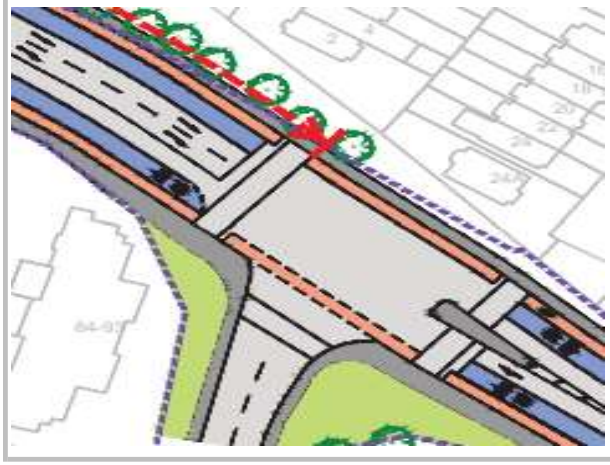
Concept Design Drawing

Emerging Preferred Route

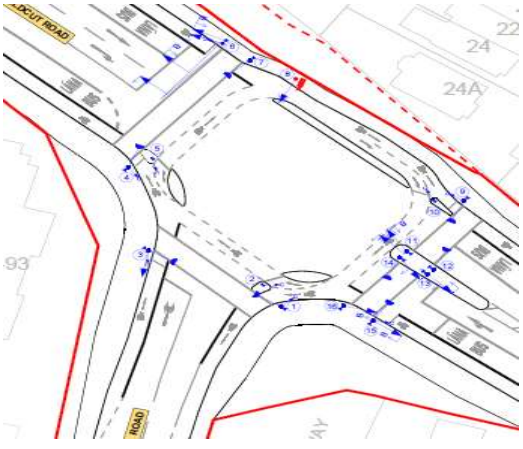


Public Consultation 2

Public Consultation 3



Final Preliminary Design

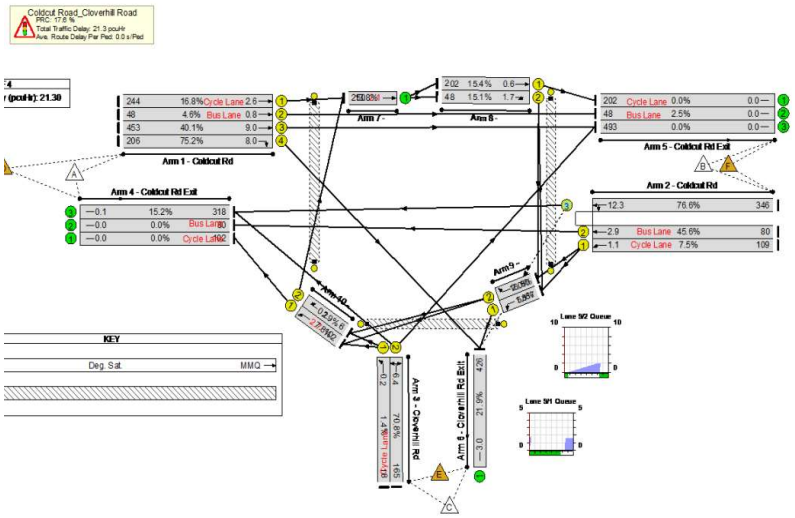


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Coldcut Road/ Cloverhill Road**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - 17.6%
PM - 11.3%

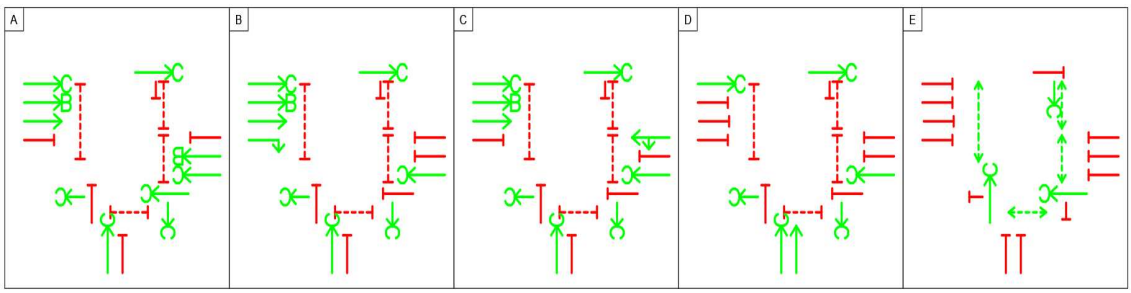
Junction Delay:
AM - 21.3 pcu/Hr
PM - 20.7 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2468	7%
Bus	32261	86%
Walk	2074	5%
Cycle	888	2%
Total	37691	100%

INDICATIVE METHOD OF CONTROL

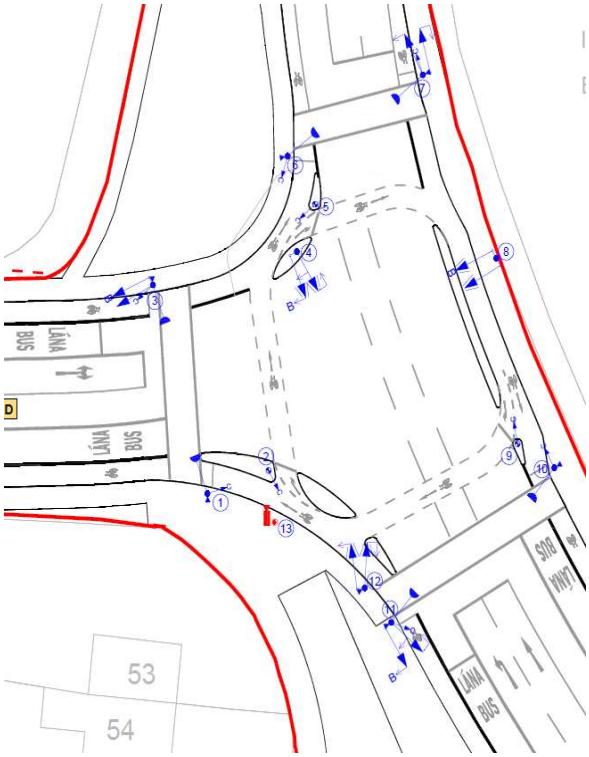
Indicative Method of Control



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Coldcut Road/ Kennelsfort Road Upper/ Ballyfermot Road**		

EXISTING

FINAL DESIGN



Summary

The Coldcut Road/ Kennelsfort Road Upper/ Ballyfermot Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include full pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will allow pedestrians to cross all arms under signal control
- The new and updated crossings will enhance connectivity and tie in with the new route facilities
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 19 seconds

Cycle Infrastructure

- Current cycle provision is on-carriageway cycle lanes on the south and north arms
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control
- Cyclists will tie into the cycle routes established on all arms

Bus Priority Infrastructure

- Current layout has no specific bus facilities
- Junction Type 1 bus facilities are proposed for both inbound (west arm) and outbound (south arm) services on both arms where the bus lane extends to the stop line

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Coldcut Road/ Kennelsfort Road Upper/ Ballyfermot Road**		

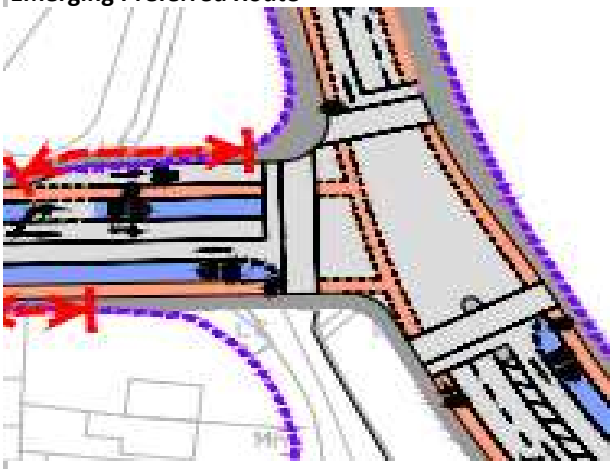
Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

Concept Design Drawing

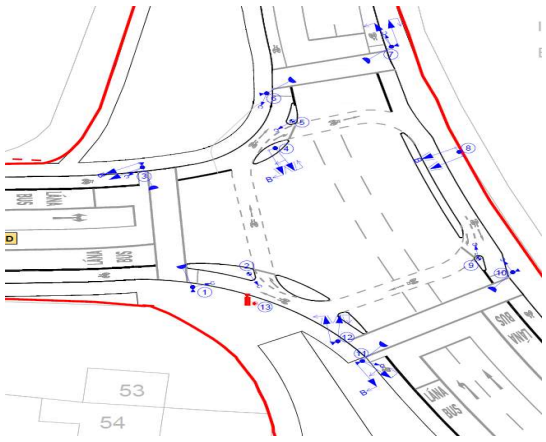
Emerging Preferred Route



Public Consultation 2

Public Consultation 3

Final Preliminary Design

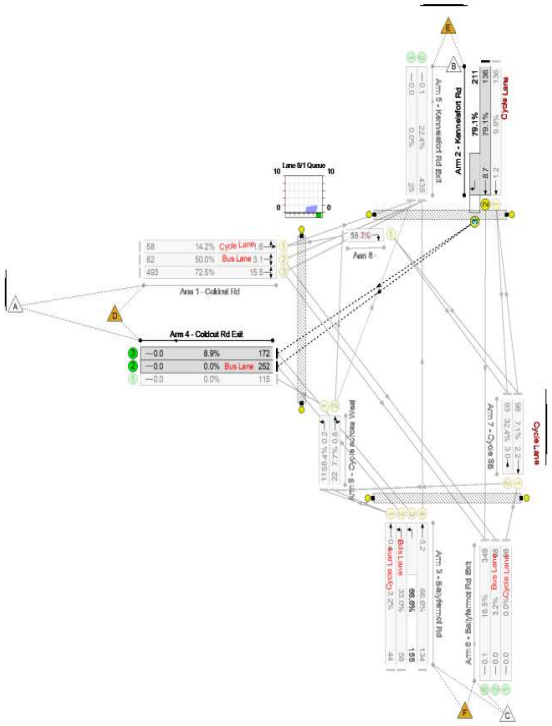


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Coldcut Road/ Kennelsfort Road Upper/ Ballyfermot Road**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - 13.7%
PM - 0.7%

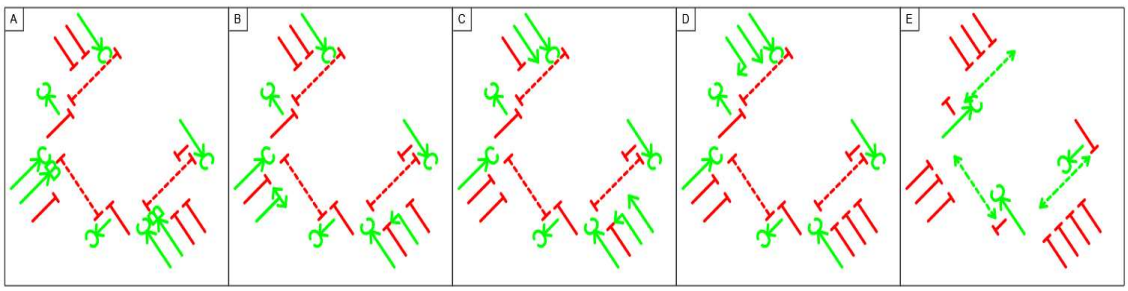
Junction Delay:
AM - 22.4 pcu/Hr
PM - 22.9 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2142	15%
Bus	8925	64%
Walk	2074	16%
Cycle	716	5%
Total	13857	100%

INDICATIVE METHOD OF CONTROL

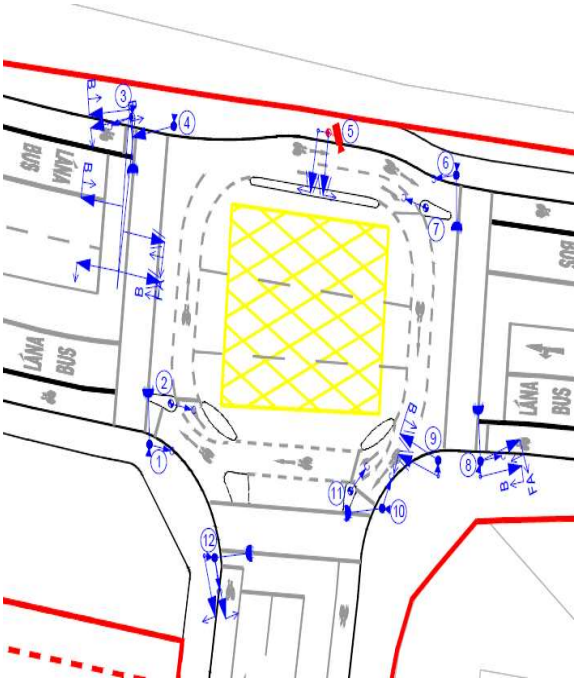
Indicative Method of Control



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Primary Health Care Centre**		

EXISTING

FINAL DESIGN



Summary

The Ballyfermot Road/ Primary Health Care Centre junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include full pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will allow pedestrians to cross all arms under signal control
- The new and updated crossings will enhance connectivity and tie in with the new route facilities
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 19 seconds

Cycle Infrastructure

- Current cycle provision is on-carriageway cycle lanes on the east, south and west arms, with advanced cycle stop lines on the south arm
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control
- Cyclists will tie into the cycle routes established on all arms

Bus Priority Infrastructure

- Current layout has no specific bus facilities
- Junction Type 1 bus facilities are proposed for both inbound (west arm) and outbound (east arm) services on both arms where the bus lane extends to the stop line

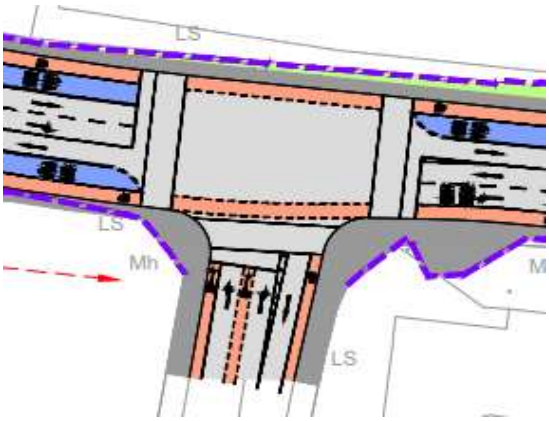
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Primary Health Care Centre**		

Design Evaluation

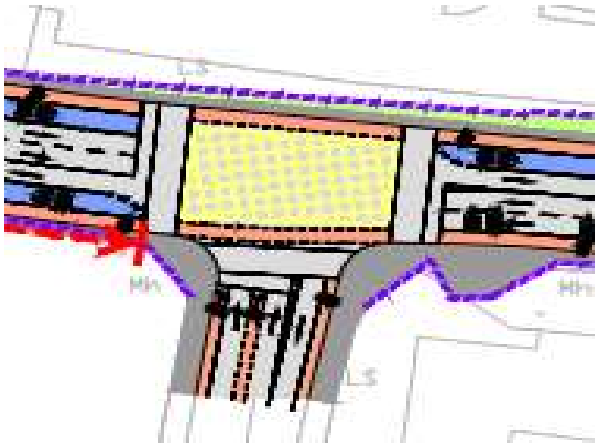
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

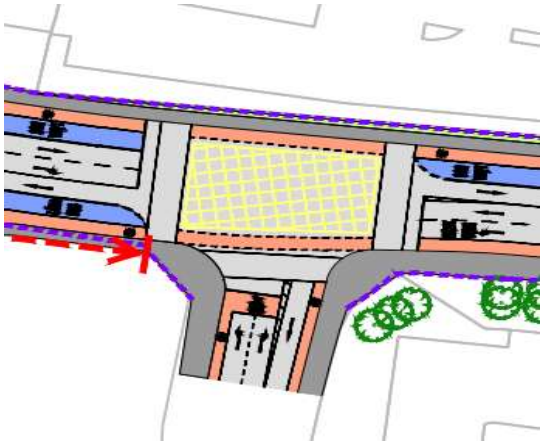
Concept Design Drawing



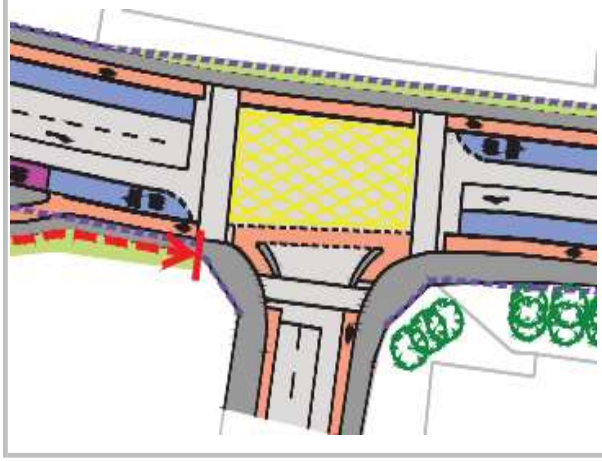
Emerging Preferred Route



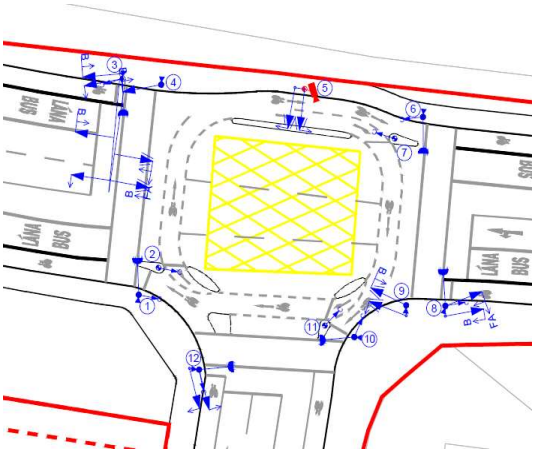
Public Consultation 2



Public Consultation 3



Final Preliminary Design

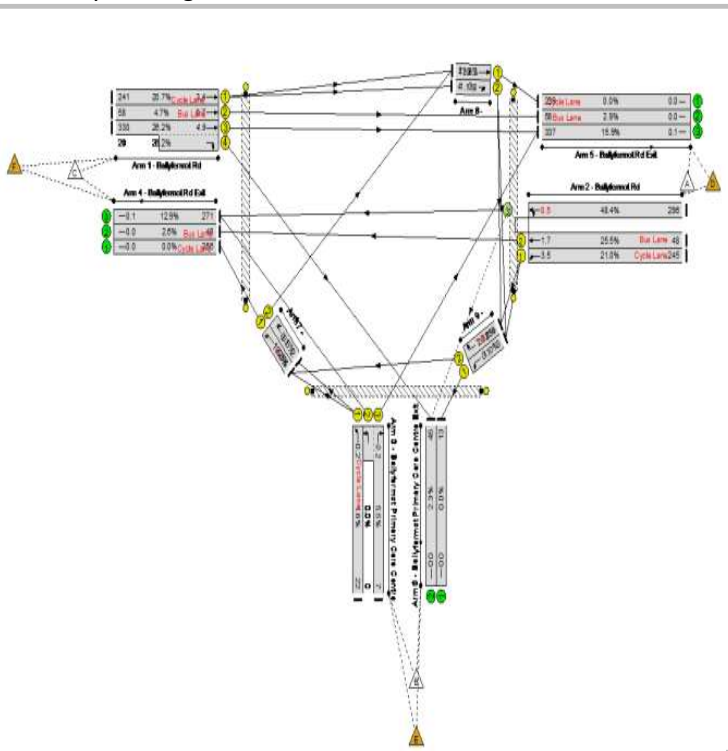


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Ballyfermot Road/ Primary Health Care Centre**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - 85.9%
PM - 53.9%

Junction Delay:
AM - 8.8 pcu/Hr
PM - 12.9 pcu/Hr

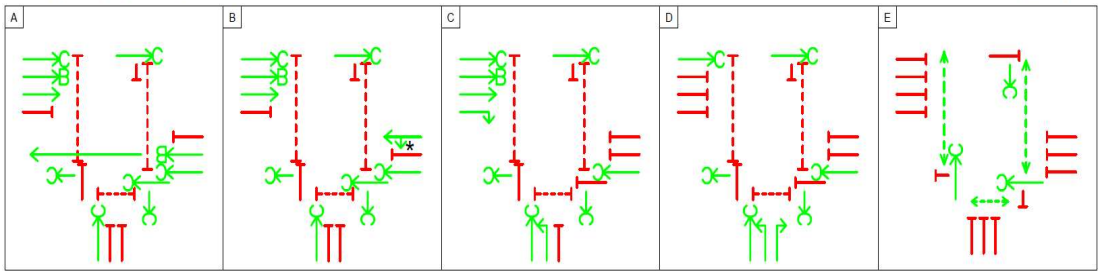
Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	1948	5%
Bus	37196	88%
Walk	1212	2%
Cycle	2074	5%
Total	42430	100%

INDICATIVE METHOD OF CONTROL

Indicative Method of Control

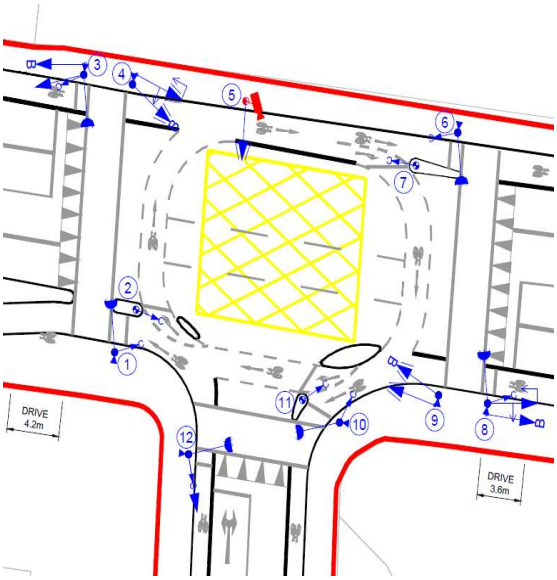
* denotes Flashing Amber



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Clifden Road**		

EXISTING

FINAL DESIGN



Summary

The Ballyfermot Road/ Clifden Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include full pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will allow pedestrians to cross all arms under signal control
- The updated crossings will enhance connectivity and tie in with the new route facilities
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 17 seconds

Cycle Infrastructure

- Current cycle provision is an on-carriageway cycle lane for east/ inbound and an off-carriageway route for west/ outbound
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control
- Cyclists will tie into the cycle routes established on all arms

Bus Priority Infrastructure

- Current layout has no specific bus facilities
- Junction Type 1 bus facilities are proposed for both inbound (west arm) and outbound (east arm) services on both arms where the bus lane extends to the stop line

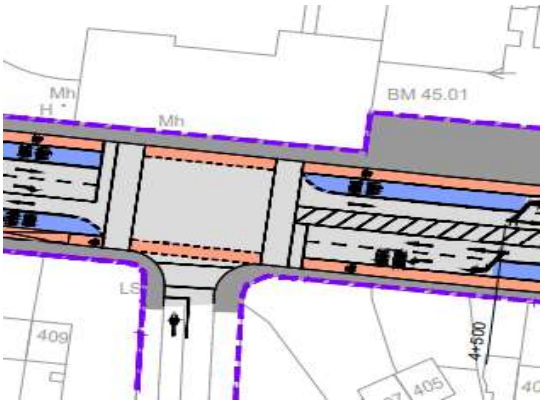
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Clifden Road**		

Design Evaluation

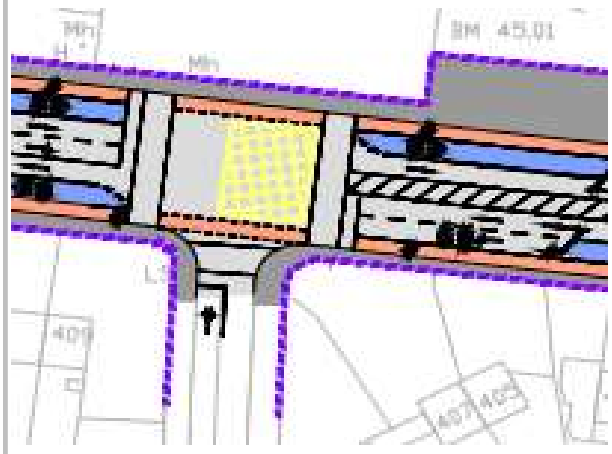
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

Concept Design Drawing

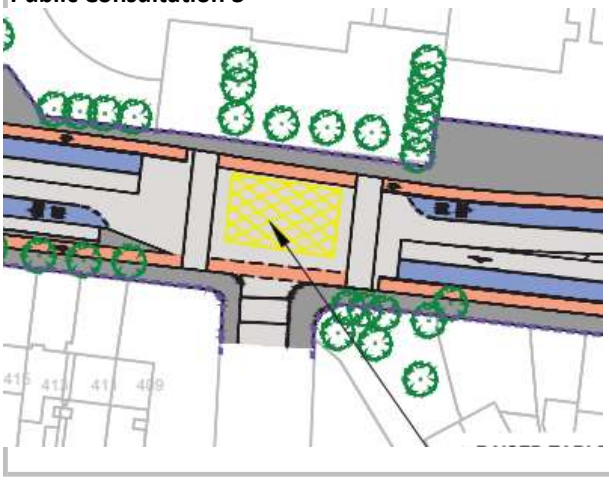


Emerging Preferred Route

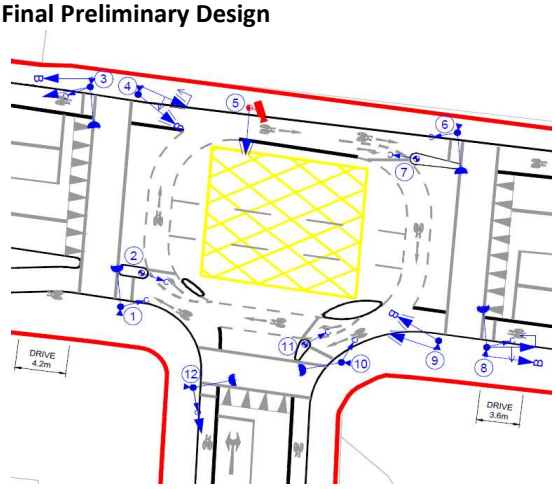


Public Consultation 2

Public Consultation 3



Final Preliminary Design

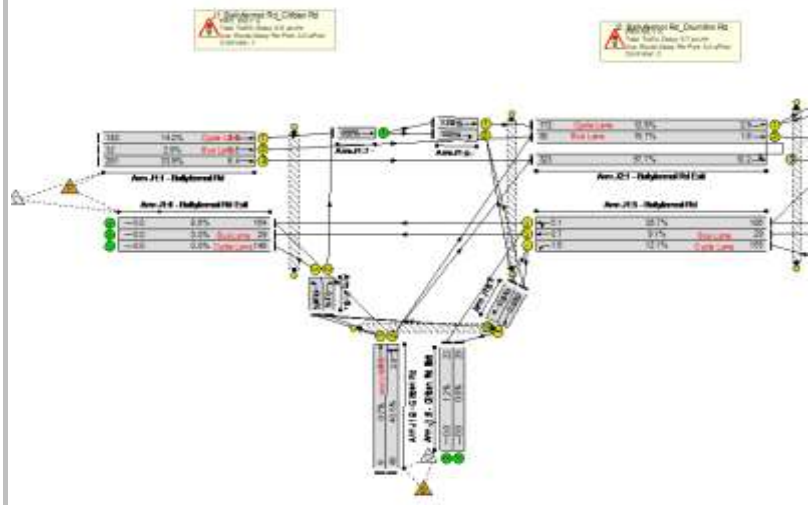


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Ballyfermot Road/ Clifden Road**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - 106.7%
PM - 65.3%

Junction Delay:
AM - 6.9 pcu/Hr
PM - 6.6 pcu/Hr

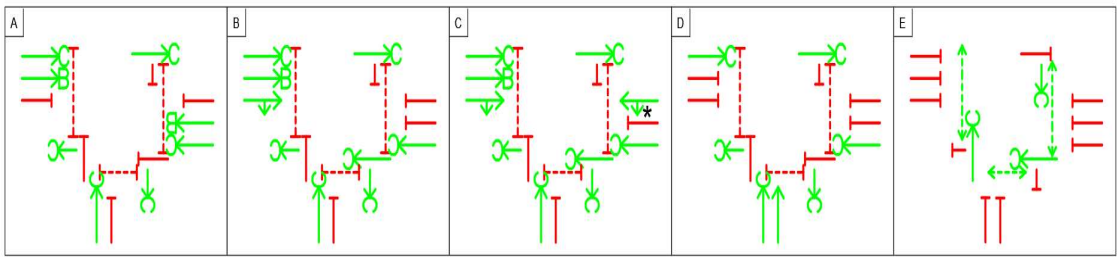
Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	1753	4%
Bus	37275	89%
Walk	2074	5%
Cycle	855	2%
Total	41957	100%

INDICATIVE METHOD OF CONTROL

Indicative Method of Control

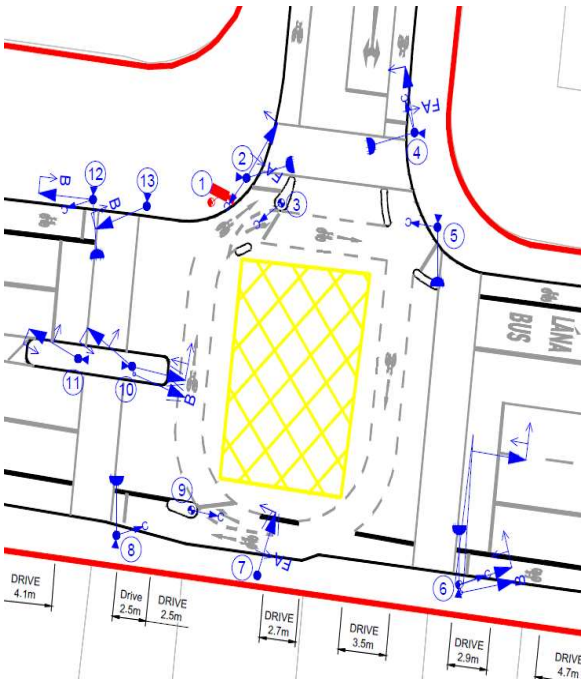
* denotes Flashing Amber



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Drumfinn Road**		

EXISTING

FINAL DESIGN



Summary

The Ballyfermot Road/ Drumfinn Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include full pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will allow pedestrians to cross all arms under signal control
- The updated crossings will enhance connectivity and tie in with the new route facilities
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 18 seconds

Cycle Infrastructure

- Current cycle provision is an on-carriageway cycle lane for east/ inbound and an off-carriageway route for west/ outbound
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control
- Cyclists will tie into the cycle routes established on all arms

Bus Priority Infrastructure

- Current layout has no specific bus facilities
- Junction Type 1 bus facilities are proposed for both inbound (west arm) and outbound (east arm) services on both arms where the bus lane extends to the stop line

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Drumfinn Road**		

Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

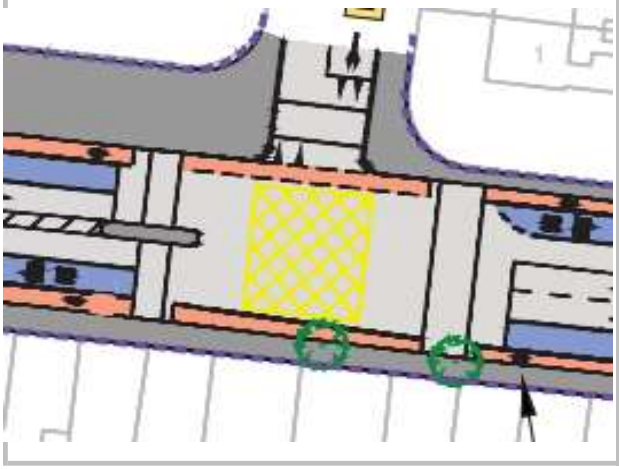
Existing

Concept Design Drawing

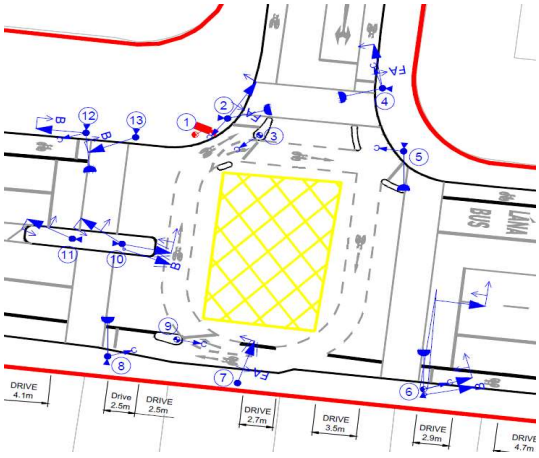
Emerging Preferred Route

Public Consultation 2

Public Consultation 3



Final Preliminary Design

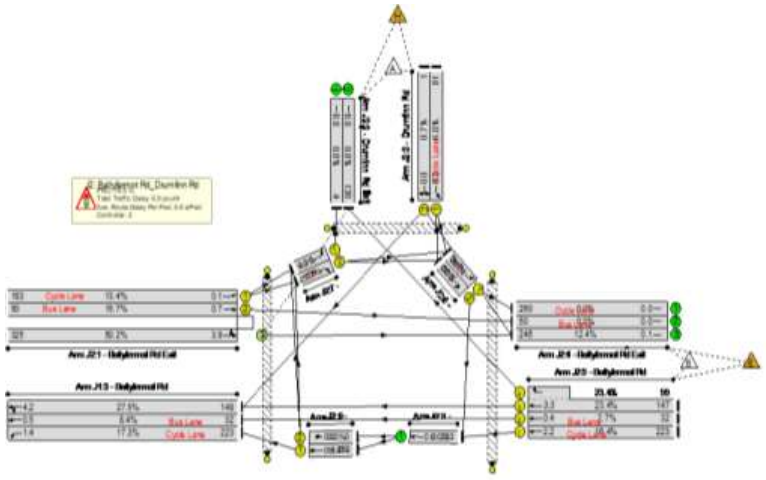


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Ballyfermot Road/ Drumfinn Road**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - 56.1%
PM - 79.5%

Junction Delay:
AM - 9.6 pcu/Hr
PM - 6.8 pcu/Hr

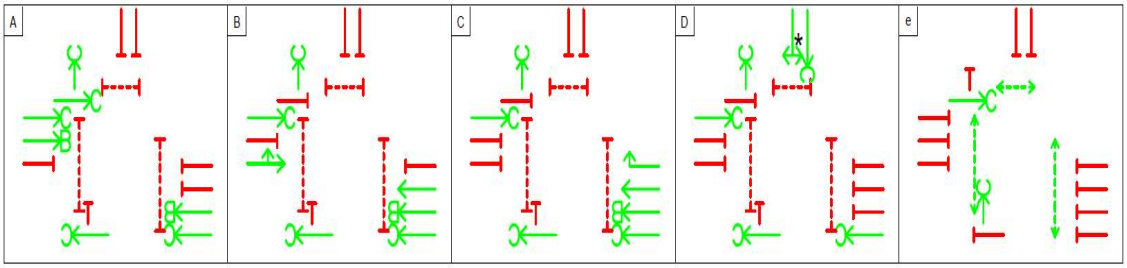
Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	1889	5%
Bus	36855	88%
Walk	2074	5%
Cycle	855	2%
Total	41673	100%

INDICATIVE METHOD OF CONTROL

Indicative Method of Control

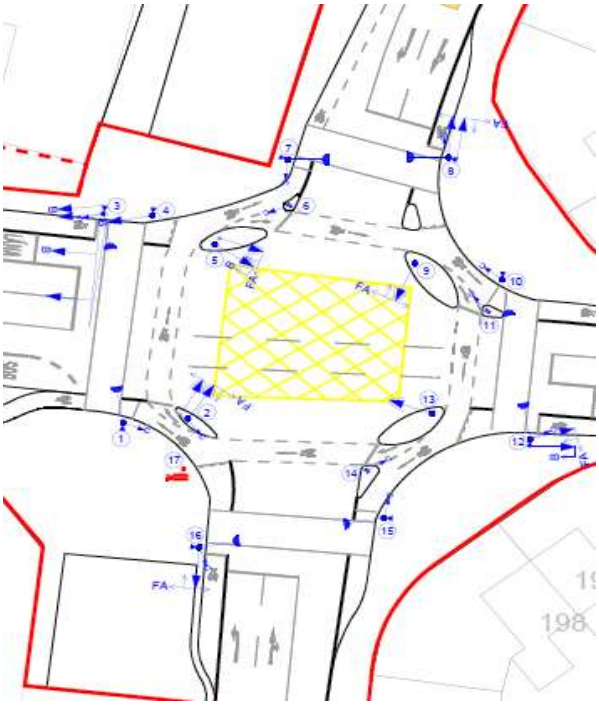
* denotes Flashing Amber



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Le Fanu Road**		

EXISTING

FINAL DESIGN



Summary

The Ballyfermot Road/ Le Fanu Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The four-arm traffic signal junction will be modified to include full pedestrian, cycle and bus infrastructure.

East/ Inbound traffic will be diverted north to

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross all arms under signal control
- The updated crossings will maintain connectivity and tie in with the new route facilities
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 19 seconds

Cycle Infrastructure

- Current cycle provision comprises advanced cycle stop lines on all arms
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control
- Cyclists will tie into the cycle routes established on the east, north and west arms
- Cyclists joining the south arm will merge with

Bus Priority Infrastructure

- Current layout has no specific bus facilities
- Junction Type 1 bus facilities are proposed for both inbound (west arm) and outbound (east arm) services on both arms where the bus lane extends to the stop line
- East/ Inbound buses will proceed to the bus gate in Ballyfermot Centre

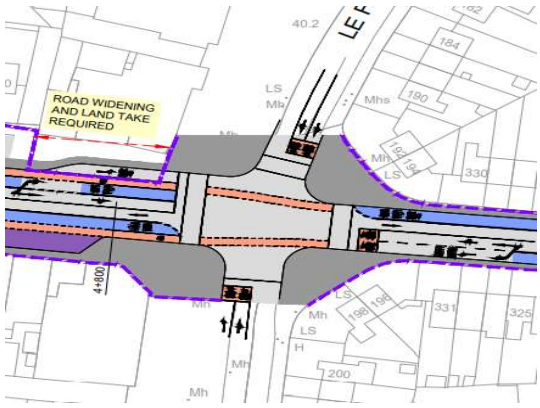
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Le Fanu Road**		

Design Evaluation

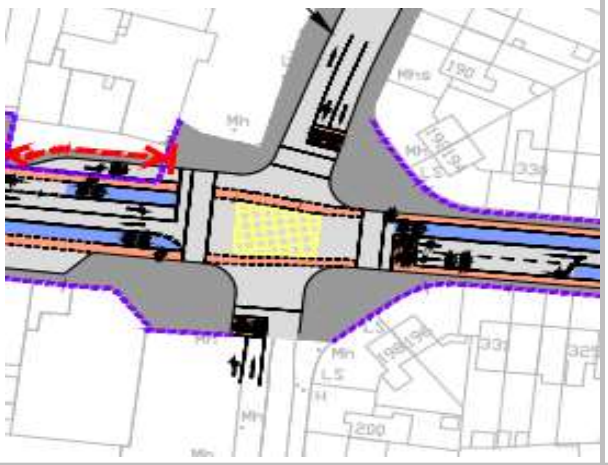
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

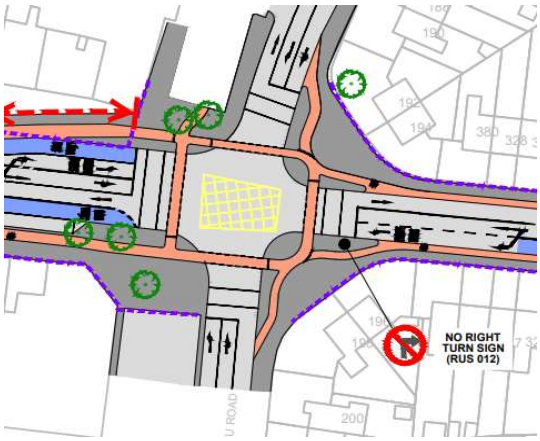
Concept Design Drawing



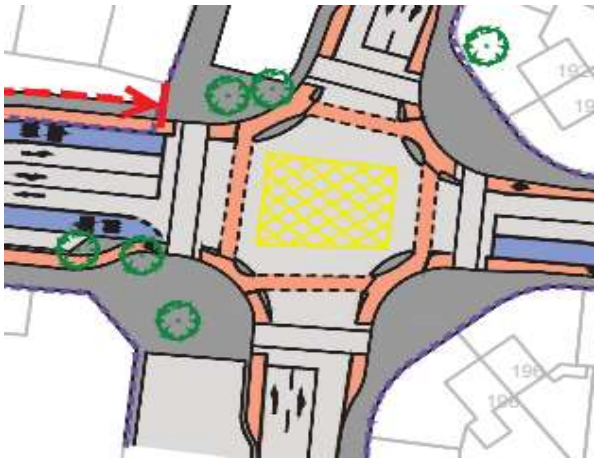
Emerging Preferred Route



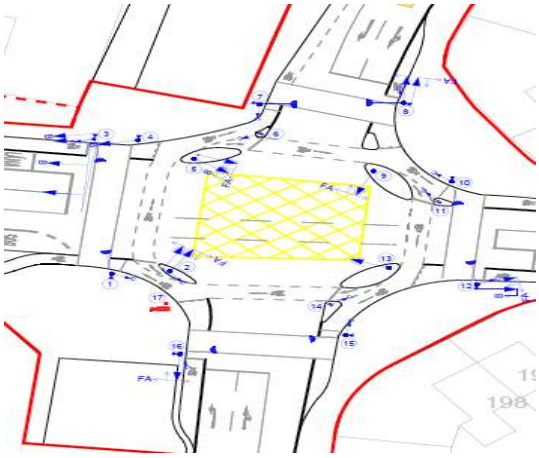
Public Consultation 2



Public Consultation 3



Final Preliminary Design

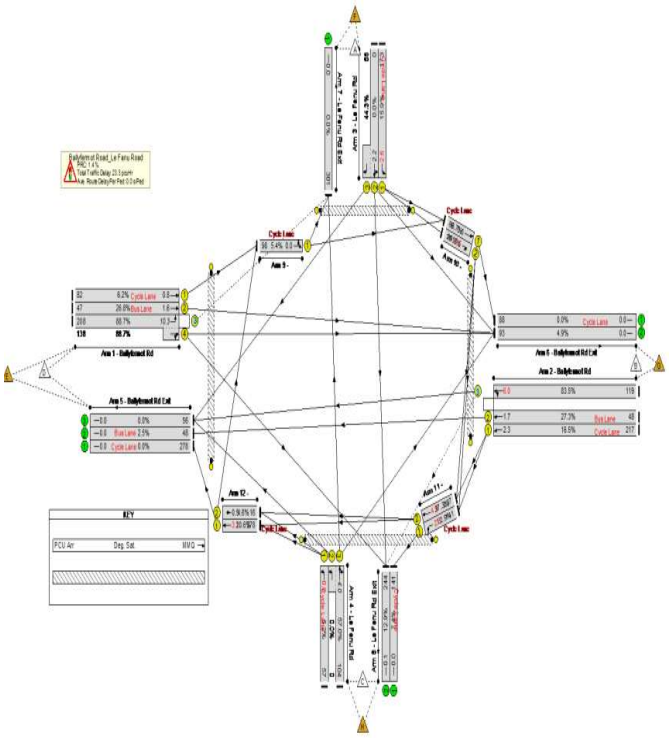


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Ballyfermot Road/ Le Fanu Road**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - 1.4%
PM - 3.6%

Junction Delay:
AM - 23.3 pcu/Hr
PM - 18.3 pcu/Hr

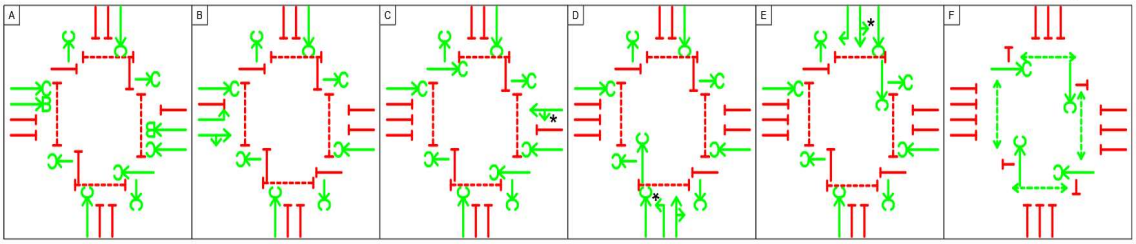
Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	971	6%
Bus	12548	74%
Walk	2765	16%
Cycle	603	4%
Total	16887	100%

INDICATIVE METHOD OF CONTROL

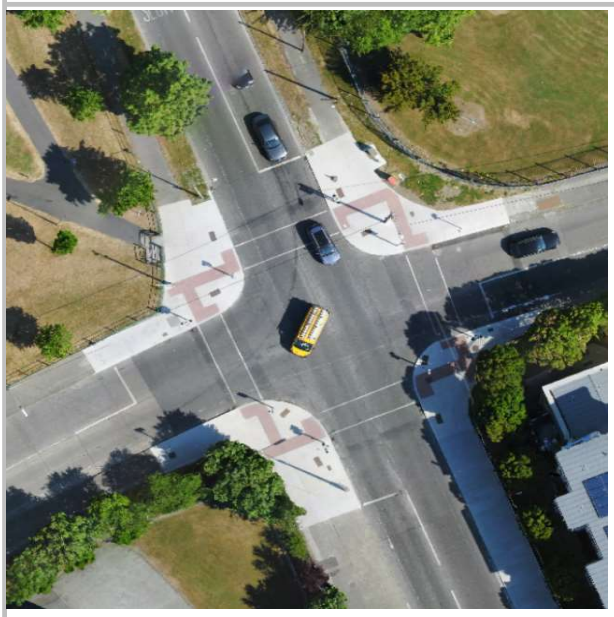
Indicative Method of Control

* denotes Flashing Amber

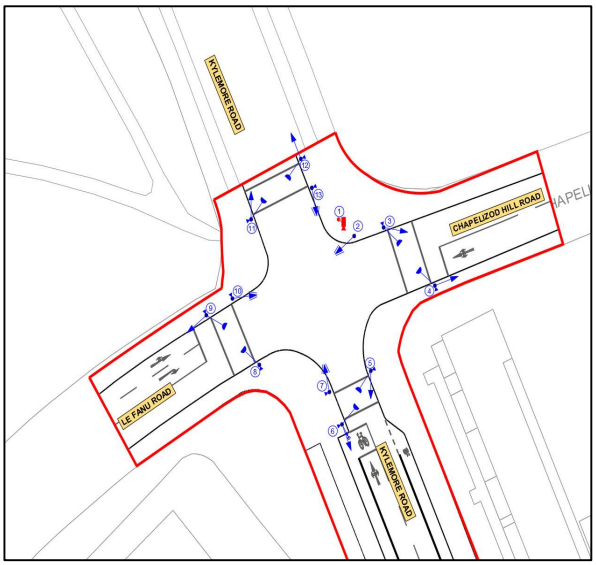


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Le Fanu Road/ Chapelizod Hill Road/ Kylemore Road**		

EXISTING



FINAL DESIGN



Summary

The Le Fanu Road/ Chapelizod hill Road/ Kylemore Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The four-arm traffic signal junction will be modified to include full pedestrian facilities.

This site will be used by general traffic bypassing the bus gate in Ballyfermot Centre.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross all arms under signal control
- The updated crossings will maintain connectivity and tie in with the existing facilities
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 11 seconds

Cycle Infrastructure

- There are currently no cycle facilities at this site
- The CBC 7 proposal introduces a northwest-bound cycle route on the Kylemore Road southeastern arm which leads users to an advanced cycle stop line and a southeast-bound cycle route heading away from the junction

Bus Priority Infrastructure

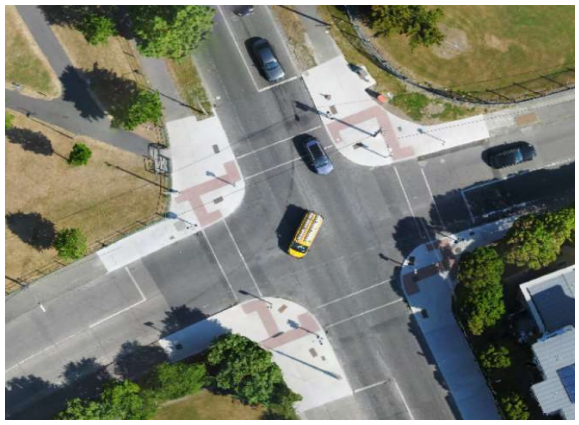
- Current layout has no specific bus facilities
- The majority of bus services will use Ballyfermot Centre and will not pass through this junction

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Le Fanu Road/ Chapelizod Hill Road/ Kylemore Road**		

Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

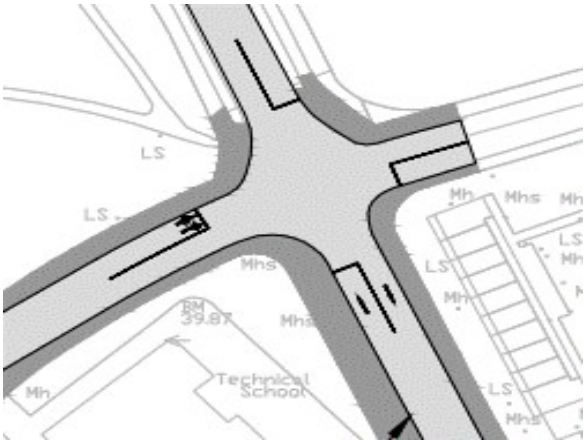
Existing



Concept Design Drawing

Junction not included
at Concept Design Stage

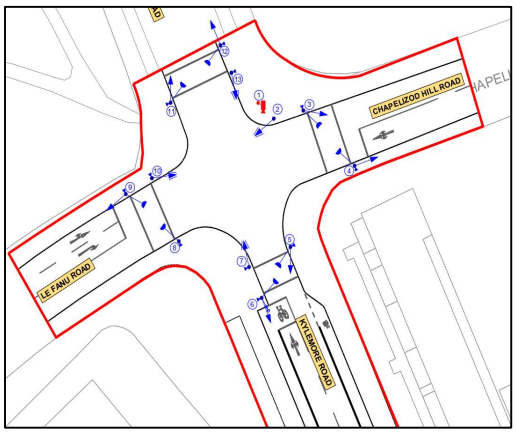
Emerging Preferred Route



Public Consultation 2

Public Consultation 3

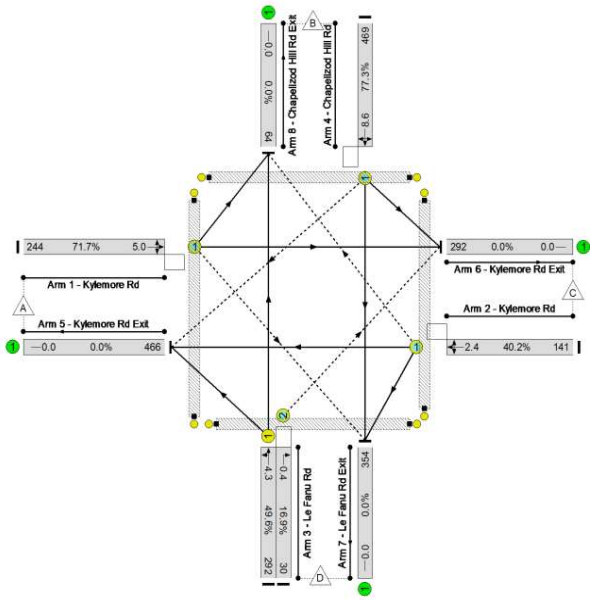
Final Preliminary Design



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Le Fanu Road/ Chapelizod Hill Road/ Kylemore Road**		

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 60 seconds

Junction PRC:
AM - 16.4%
PM - 22.8%

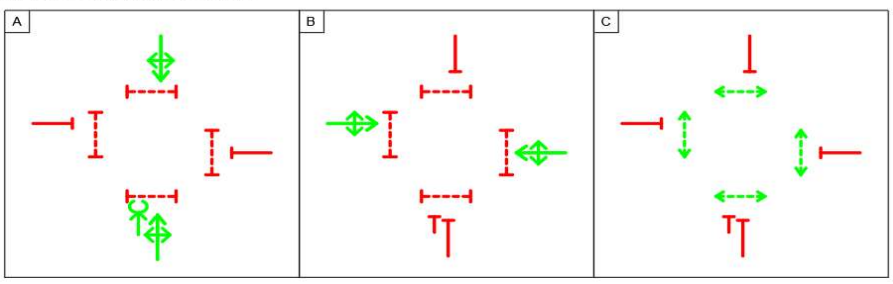
Junction Delay:
AM - 10.2 pcu/Hr
PM - 8.7 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	3752	58%
Bus	0	0%
Walk	2765	42%
Cycle	0	0%
Total	6517	100%

INDICATIVE METHOD OF CONTROL

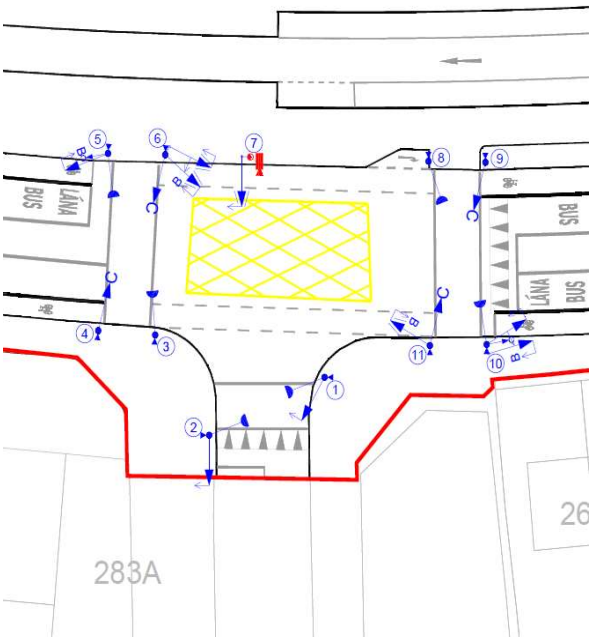
Indicative Method of Control



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Commerical Centre**		

EXISTING

FINAL DESIGN



Summary

The Ballyfermot Road/ Commercial Centre junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include full pedestrian, cycle and bus infrastructure.

The one way system in Ballyfermot Centre will result in no eastbound general traffic at or through the junction.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross all arms under signal control
- The updated crossings will maintain connectivity and tie in with the new route facilities
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 13 seconds

Cycle Infrastructure

- Current cycle provision comprises advanced cycle stop lines on the east and west arms
- The CBC 7 proposal has the east and west arms provided with Toucan cycle crossings to provide protected access to all arms
- Cycle routes will be established on the main road arms
- Cyclists will tie into the cycle routes established on the east and west arms

Bus Priority Infrastructure

- Current layout has a short east/ inbound bus lane with a bus stop on the west arm
- Junction Type 1 bus facilities are proposed for both inbound (west arm) and outbound (east arm) services on both arms where the bus lane extends to the stop line
- West/ outbound buses will proceed to the bus gate in Ballyfermot Centre

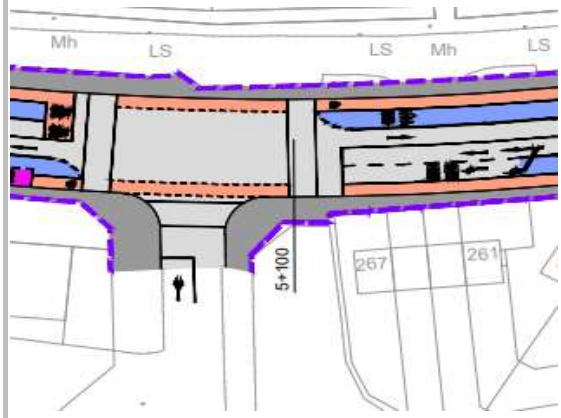
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Commerical Centre**		

Design Evaluation

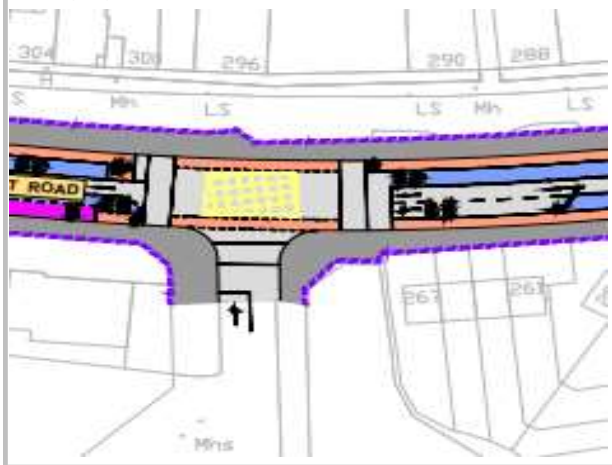
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

Concept Design Drawing

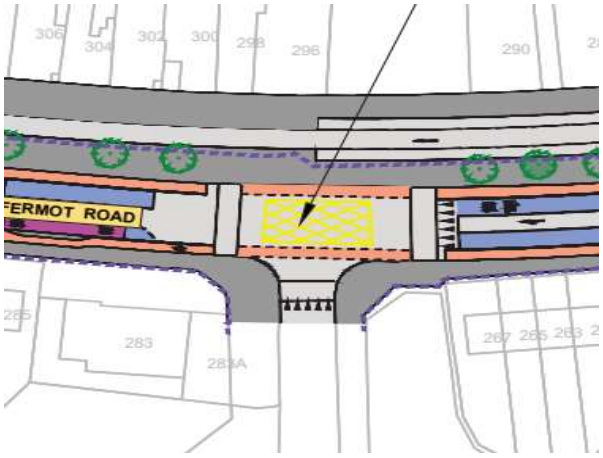


Emerging Preferred Route

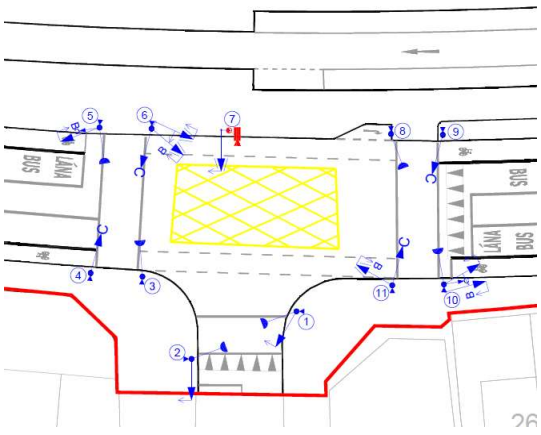


Public Consultation 2

Public Consultation 3



Final Preliminary Design

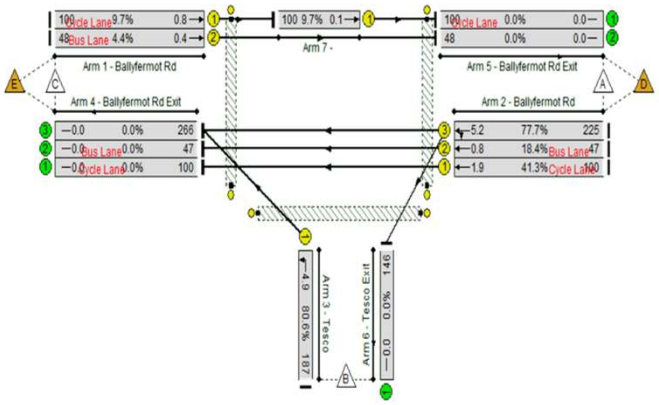


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Ballyfermot Road/ Commerical Centre**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 60 seconds

Junction PRC:
AM - 16.4%
PM - 22.8%

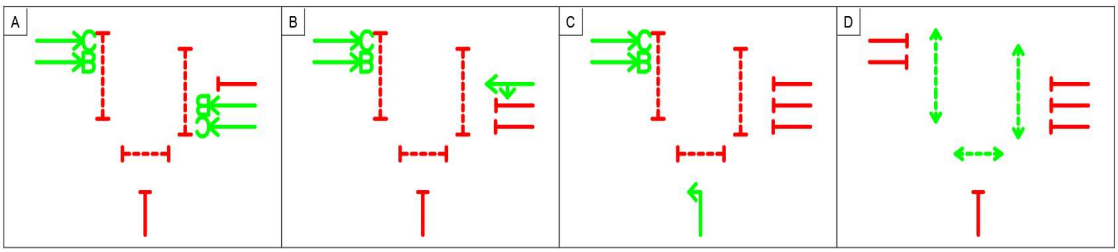
Junction Delay:
AM - 10.2 pcu/Hr
PM - 8.7 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	632	2%
Bus	35175	86%
Walk	4147	10%
Cycle	855	2%
Total	40809	100%

INDICATIVE METHOD OF CONTROL

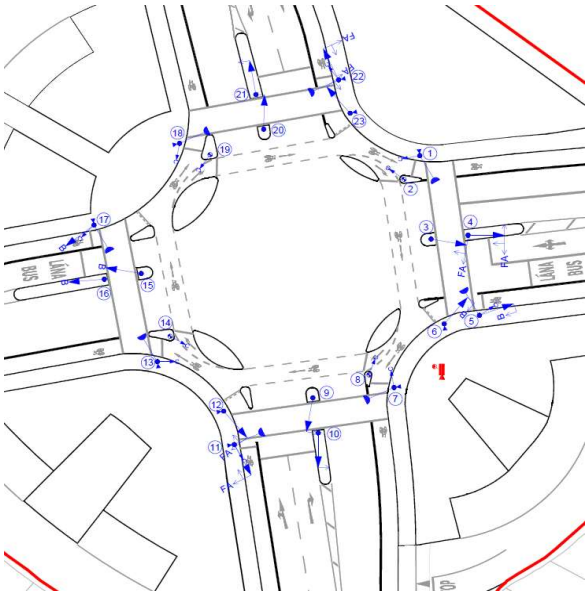
Indicative Method of Control



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Kylemore Road**		

EXISTING

FINAL DESIGN



Summary

The Ballyfermot Road/ Kylemore Road roundabout is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The four-arm roundabout will be modified to become a traffic signal junction including full pedestrian, cycle and bus infrastructure.

The one way system in Ballyfermot Centre will result in no eastbound general traffic arriving at the junction.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will bring controlled facilities for pedestrians to cross all arms closer
- The updated crossings will establish connectivity and tie in with the new route facilities
- A wrap around pedestrian stage with 6 seconds of green time and intergreen time of 19 seconds

Cycle Infrastructure

- Current cycle provision comprises an east/ inbound seprated cycle route on the east arm
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control
- Cycle routes will be established on all arms

Bus Priority Infrastructure

- Current layout has a short west/ outbound bus lane on the east arm that terminates before the roundabout
- Junction Type 1 bus facilities are proposed for both inbound (west arm) and outbound (east arm) services on both arms where the bus lane extends to the stop line
- West/ outbound buses will proceed to the one

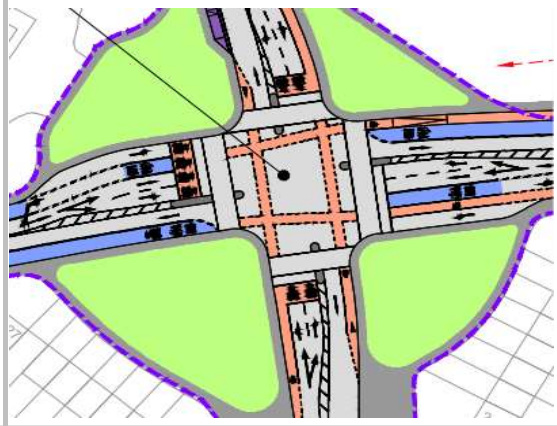
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Kylemore Road**		

Design Evaluation

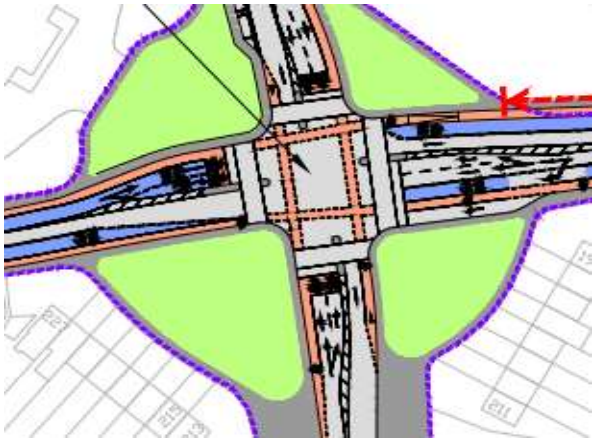
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

Concept Design Drawing



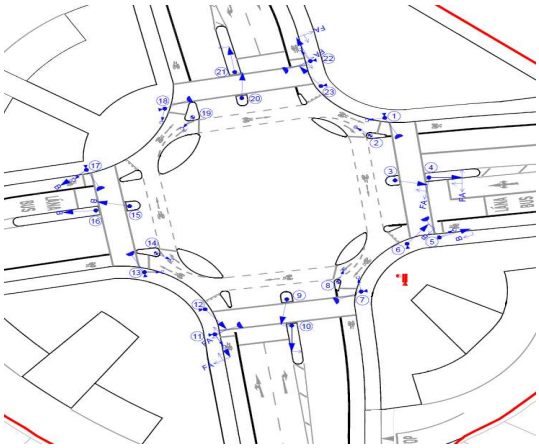
Emerging Preferred Route



Public Consultation 2

Public Consultation 3

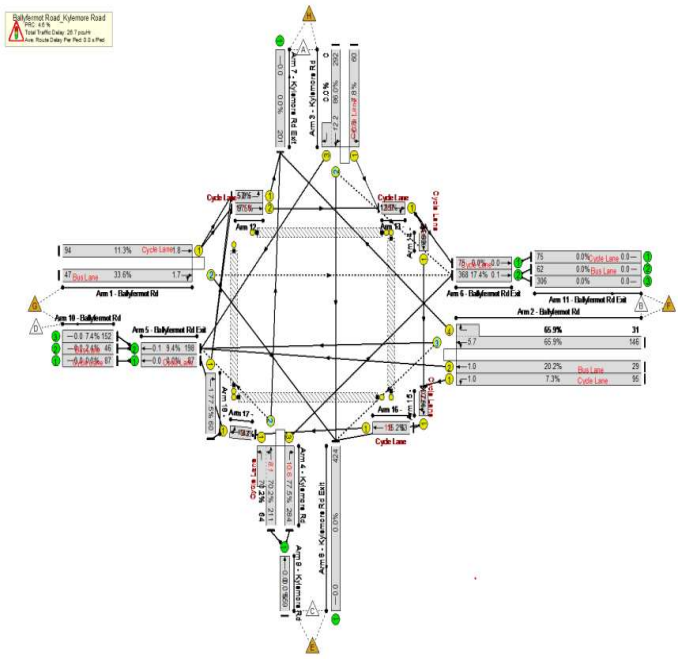
Final Preliminary Design



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Ballyfermot Road/ Kylemore Road**		

Route 7: Liffey Valley

Network Layout Diagram



2028 PM Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - 4.6%
PM - 9.2%

Junction Delay:
AM - 26.7 pcu/Hr
PM - 26.3 pcu/Hr

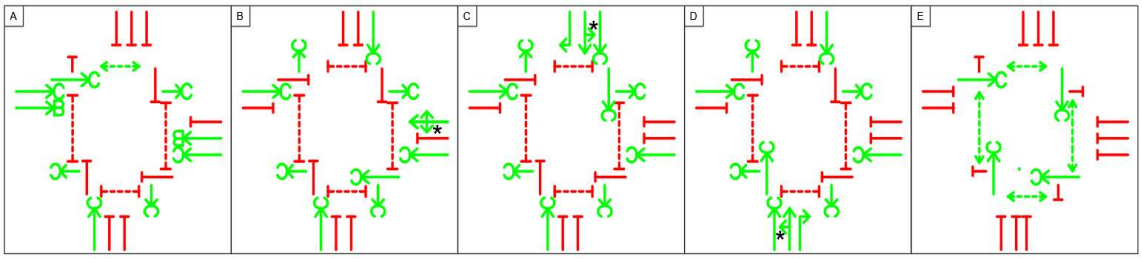
Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	1586	13%
Bus	7691	61%
Walk	2765	21%
Cycle	635	5%
Total	12677	100%

INDICATIVE METHOD OF CONTROL

Indicative Method of Control

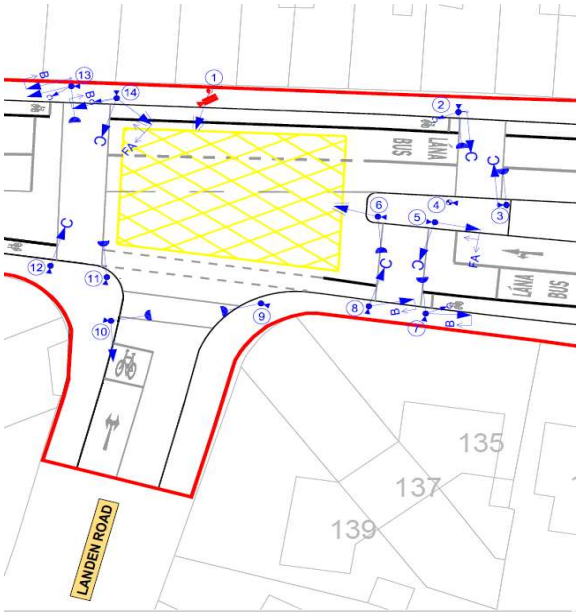
* denotes Flashing Amber



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Sarsfield Road / Landen Road**		

EXISTING

FINAL DESIGN



Summary

The Sarsfield Road/ Landen Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will allow pedestrians to cross all arms under signal control
- The updated crossings will maintain connectivity and tie in with the existing facilities
- A wrap around pedestrian phase with 6 seconds of green time and intergreen time of 18 seconds

Cycle Infrastructure

- Current cycle provision is on-carriageway cycle lanes for east/ inbound and west/ outbound with advanced cycle stop lines
- The CBC 7 proposal has east and west arms provided with controlled cycle crossings with protected access. The side road will have an advanced cycle stop line
- Right turning cyclists will use Toucan crossings to circulate around the junction
- Cyclists will tie into the cycle routes established

Bus Priority Infrastructure

- Current layout has no specific bus facilities
- Junction Type 1 bus facilities are proposed for both inbound (west arm) and outbound (east arm) services on both arms where the bus lane extends to the stop line

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Sarsfield Road / Landen Road**		

Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

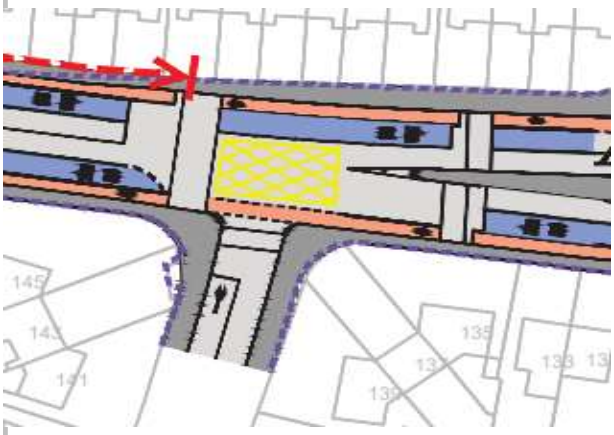
Existing

Concept Design Drawing

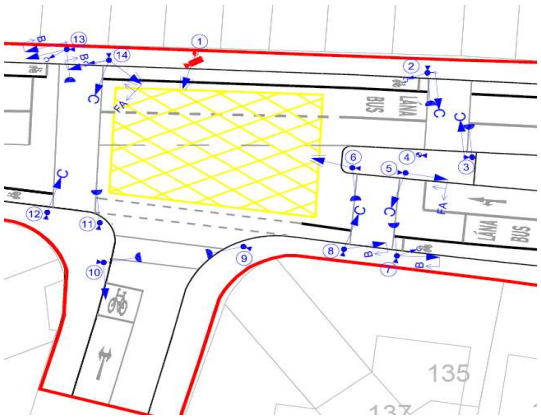
Emerging Preferred Route

Public Consultation 2

Public Consultation 3



Final Preliminary Design

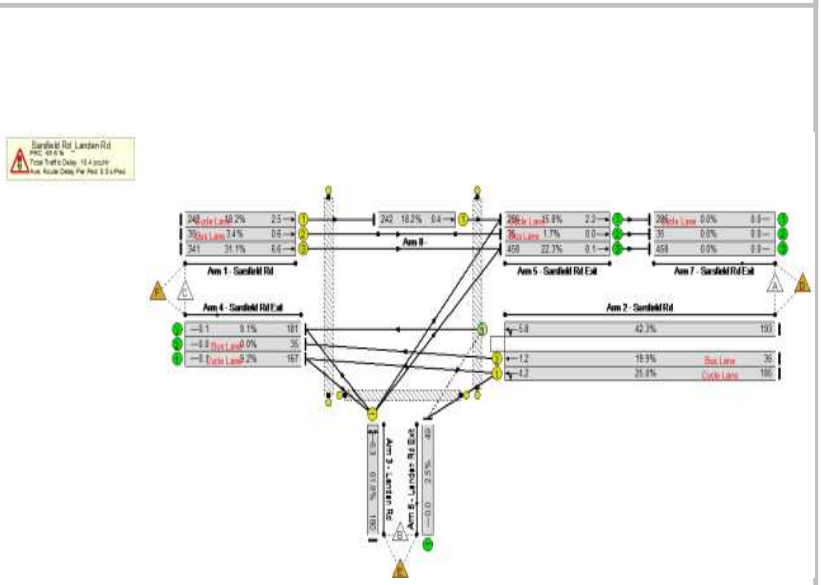


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Sarsfield Road / Landen Road**

Route 7: Liffey Valley

Network Layout Diagram



2028 AM Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

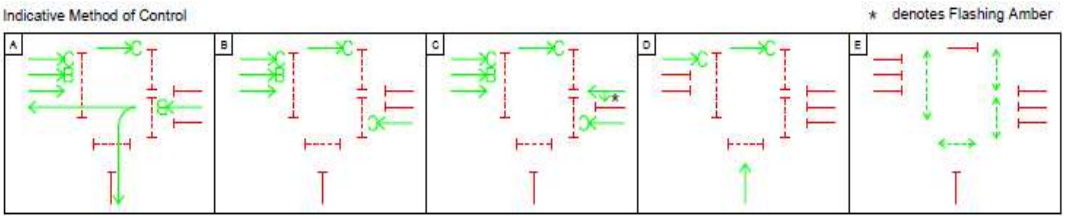
Junction PRC:
AM - 45.6%
PM - 35.5%

Junction Delay:
AM - 10.4 pcu/Hr
PM - 8.1 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2206	6%
Bus	31185	85%
Walk	2074	6%
Cycle	1057	3%
Total	36522	100%

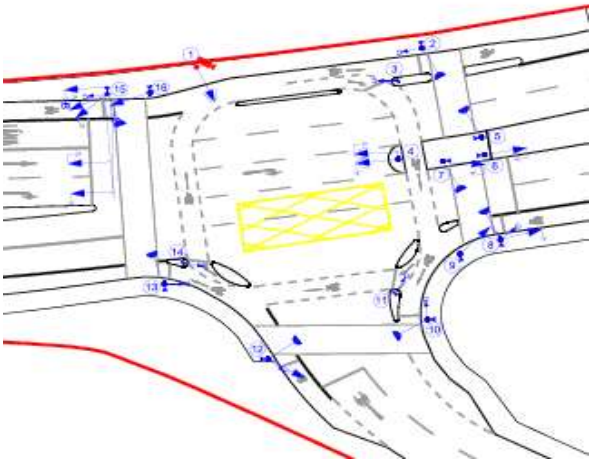
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Sarsfield Road / Con Colbert Road**		

EXISTING

FINAL DESIGN



Summary

The Sarsfield Road/ Con Colbert Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include pedestrian, cycle and bus infrastructure.

Left-turning traffic to the west will come under

Pedestrian Infrastructure

- When compared to the current layout, the proposal will allow pedestrians to cross all arms under signal control
- The updated crossings will enhance connectivity by tying in with the existing facilities and those provided by the scheme
- A wrap around pedestrian phase with 6 seconds of green time and intergreen time of 19 seconds

Cycle Infrastructure

- Current cycle provision is an on-carriageway cycle lane for east/ inbound leading to an advanced cycle stop line for right turns south
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access
- Right turning cyclists will circulate around the junction under traffic signal control
- Cyclists will tie into the cycle routes established on the east and west arms, those on the south arm will leave/ join general traffic

Bus Priority Infrastructure

- Current layout has no specific bus facilities on the junction approaches, but has a west/ outbound lane after the junction
- Junction Type 1 bus facilities are proposed on the west arm for the inbound, where the bus lane extends to the stop line and outbound where a bus lane starts for westbound services

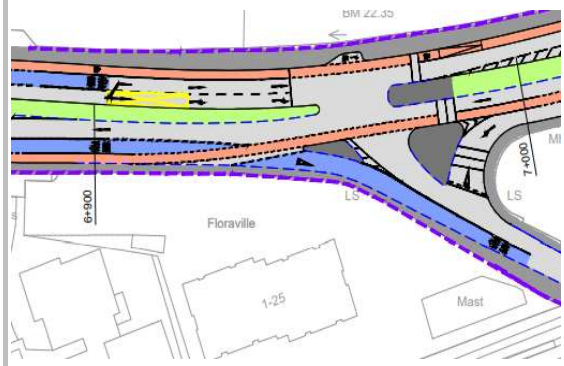
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Sarsfield Road / Con Colbert Road**		

Design Evaluation

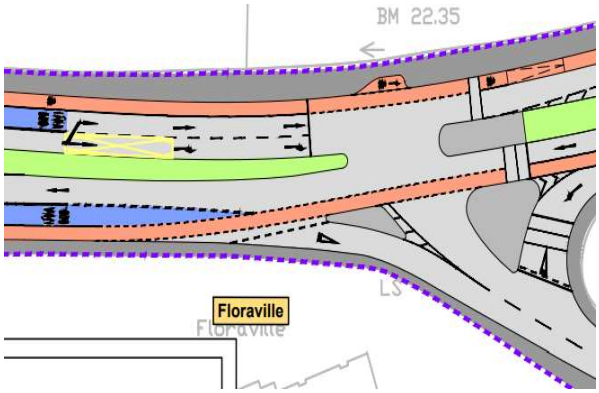
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

Concept Design Drawing

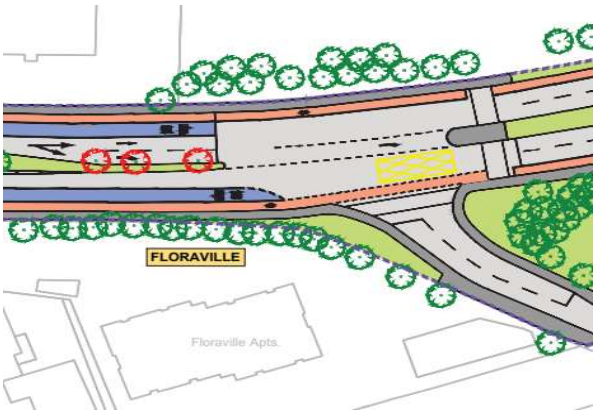


Emerging Preferred Route

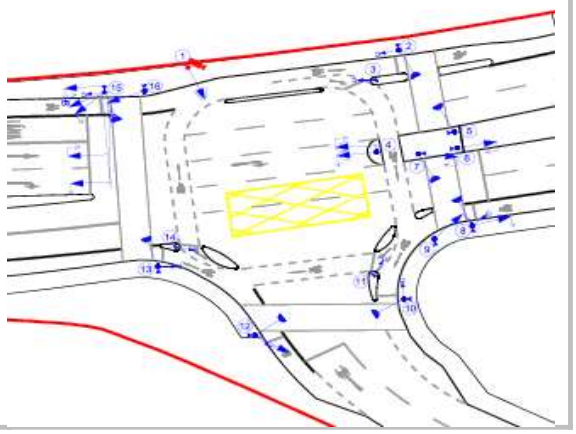


Public Consultation 2

Public Consultation 3



Final Preliminary Design

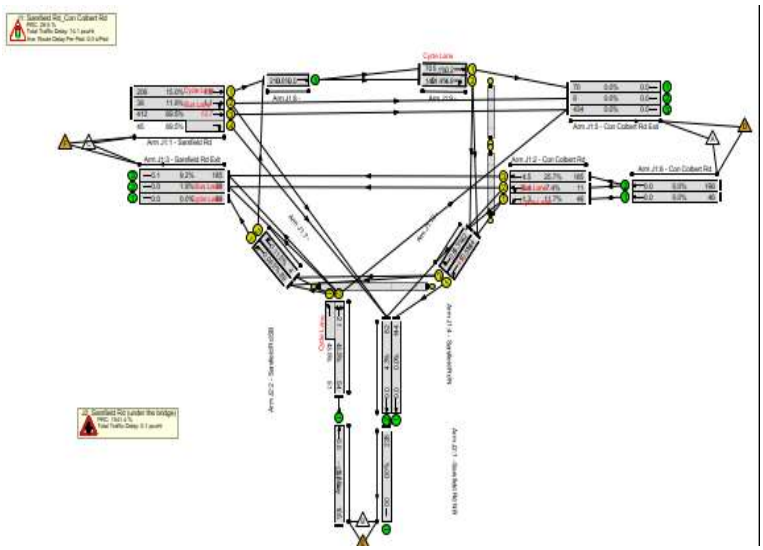


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Sarsfield Road / Con Colbert Road**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

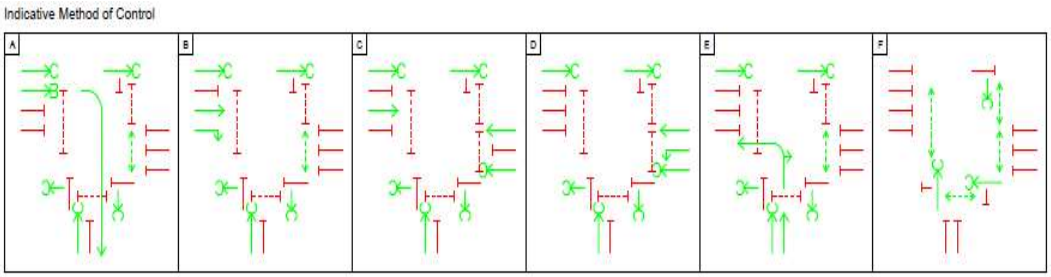
Junction PRC:
AM - 29.5%
PM - 41.0%

Junction Delay:
AM - 14.1 pcu/Hr
PM - 14.2 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	1778	11%
Bus	12075	76%
Walk	1382	9%
Cycle	658	4%
Total	15893	100%

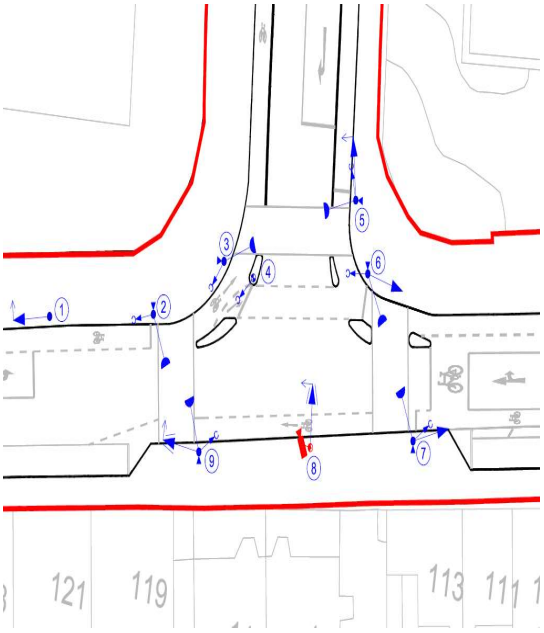
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Inchicore Road / Memorial Road**		

EXISTING

FINAL DESIGN



Summary

The Inchicore Road/ Memorial Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include pedestrian and cycle infrastructure.

Memorial Road change from one-way northbound

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross all arms under signal control
- The updated crossings will maintain connectivity and tie in with the existing facilities
- A wrap around pedestrian phase with 6 seconds of green time and intergreen time of 13 seconds

Cycle Infrastructure

- Current cycle provision is on-carriageway two-way cycle route on the east arm with an advanced cycle stop line for west/ outbound
- The CBC 7 proposal has all arms provided with controlled cycle crossings with protected access. The east arm will retain an advanced cycle stop line
- Right turning cyclists will use traffic signal control to circulate around the junction
- Cyclists will tie into the cycle routes established

Bus Priority Infrastructure

- Current layout has no specific bus facilities
- The CBC 7 proposal includes no specific bus measures

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Inchicore Road / Memorial Road**		

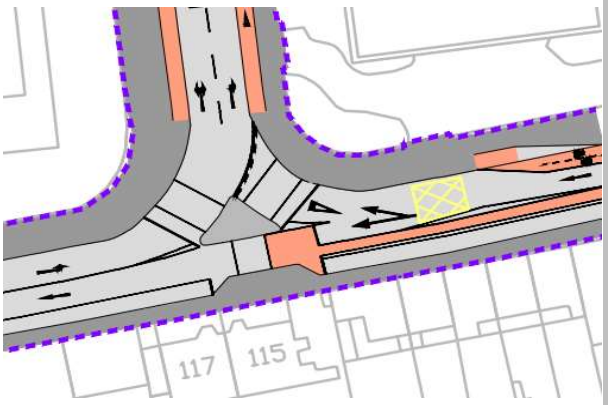
Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

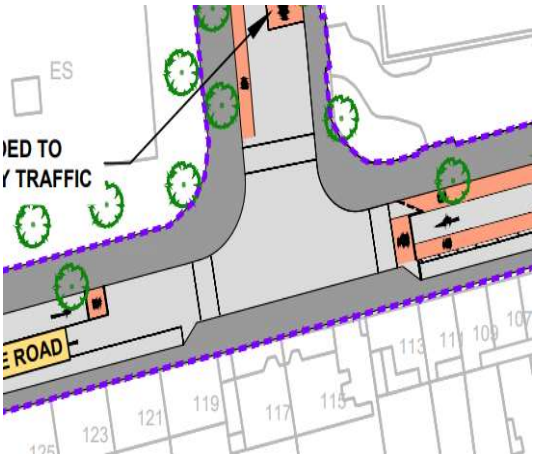
Existing

Concept Design Drawing

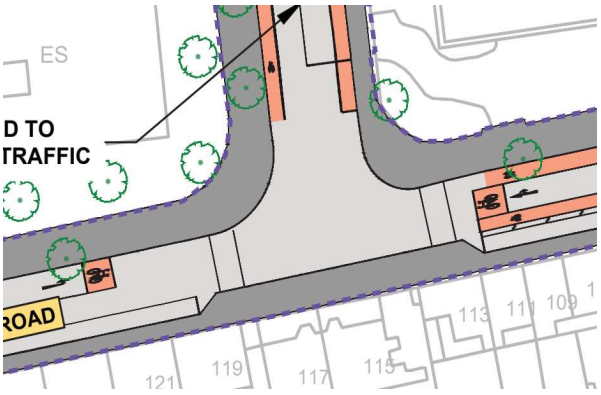
Emerging Preferred Route



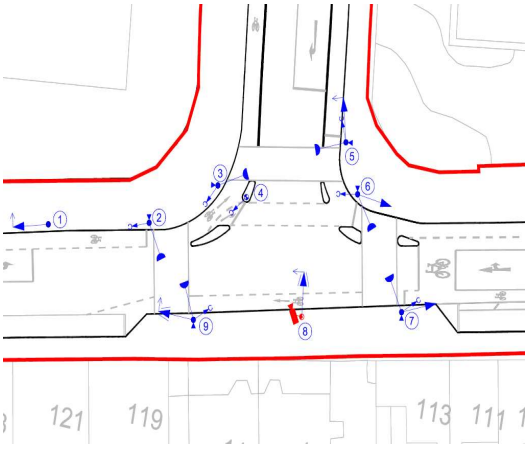
Public Consultation 2



Public Consultation 3



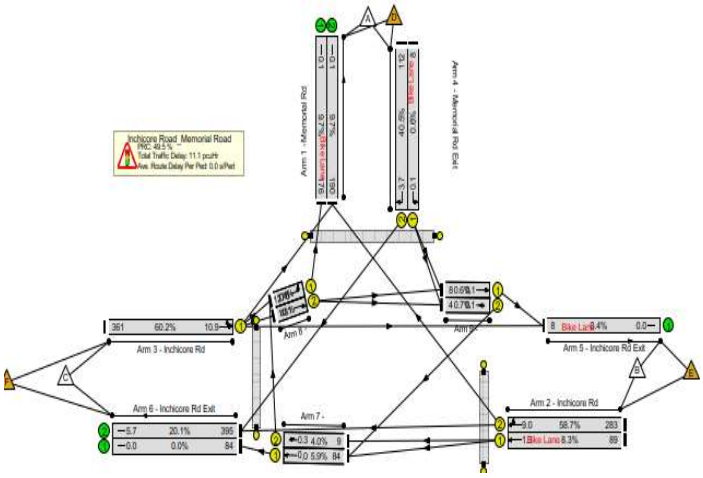
Final Preliminary Design



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Inchicore Road / Memorial Road**		

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

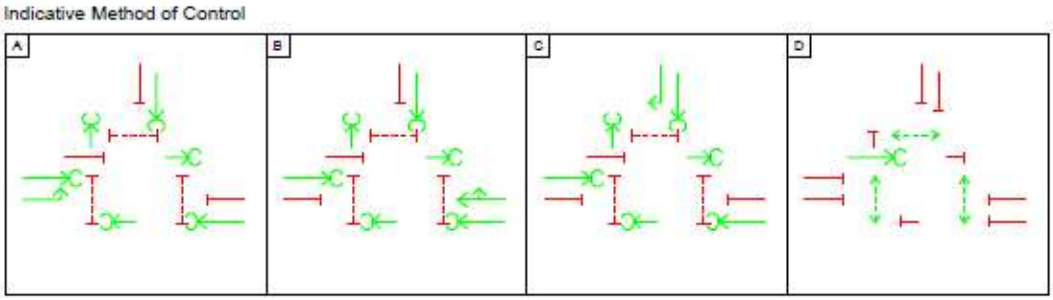
Junction PRC:
AM - 49.5%
PM - 104.2%

Junction Delay:
AM - 11.1 pcu/Hr
PM - 6.2 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction		
Mode	People Movement	Mode Share
Car	1489	5%
Bus	26506	85%
Walk	2074	7%
Cycle	1032	3%
Total	31101	100%

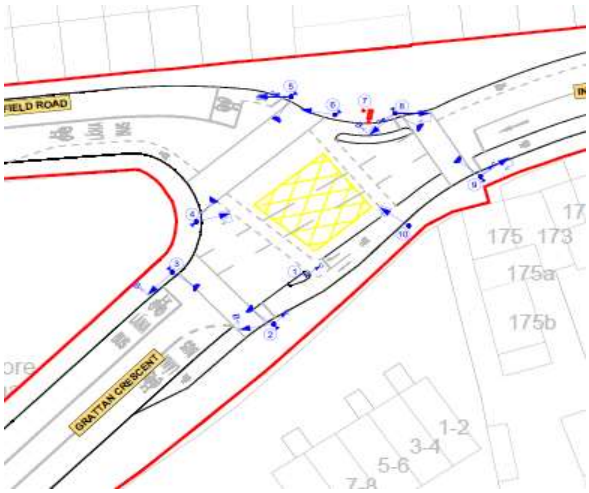
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Sarsfield Road / Inchicore Road / Grattan Crescent**		

EXISTING

FINAL DESIGN



Summary

The Sarsfield Road/ Inchicore Road/ Grattan Crescent junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will expand facilities and allow pedestrians to cross all arms under signal control
- The updated crossings will simplify connectivity and tie in with the existing facilities
- A wrap around pedestrian phase with 6 seconds of green time and intergreen time of 14 seconds

Cycle Infrastructure

- Current cycle provision is on-carriageway cycle route lane on the west arm for eastbound cycles
- The CBC 7 proposal has the east and west arms provided with controlled cycle crossings with protected access. The east arm will also have an advanced cycle stop line.
- Right turning cyclists will circulate around the junction under traffic signal control
- Cyclists will tie into the cycle routes established on the east and west arms

Bus Priority Infrastructure

- Current layout has a westbound bus lane on the exit from the junction, with a short left turn bus lane on the soutwest arm
- Junction Type 1 bus facilities are proposed for the southwest arm where the bus lane extends to the stop line

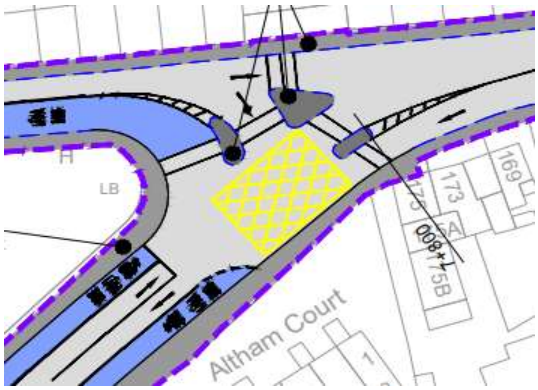
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Sarsfield Road / Inchicore Road / Grattan Crescent**		

Design Evaluation

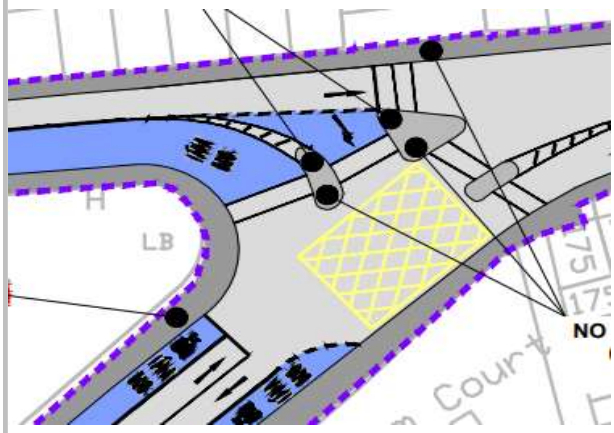
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

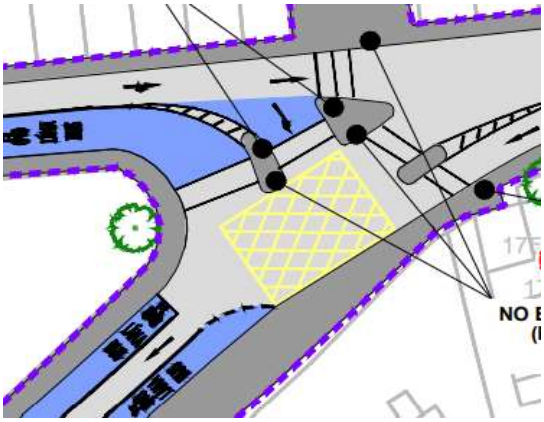
Concept Design Drawing



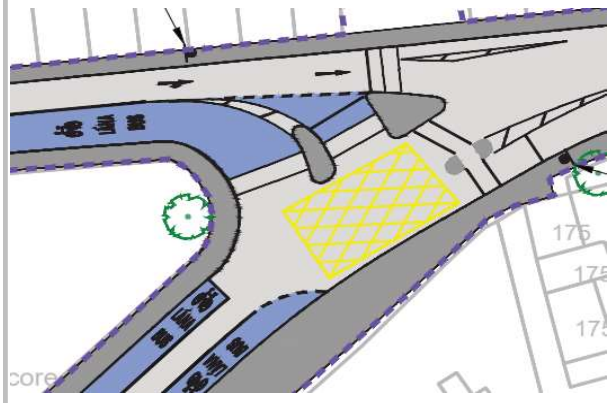
Emerging Preferred Route



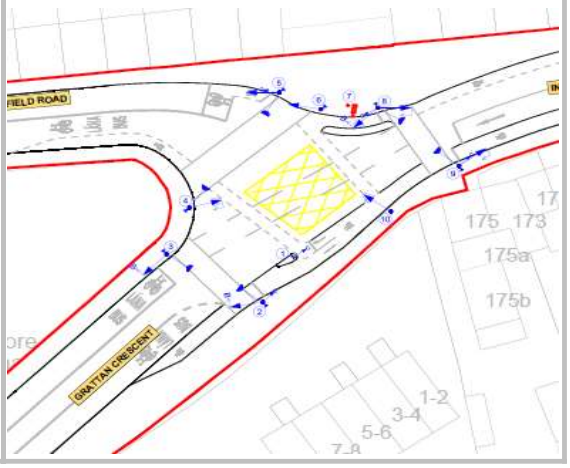
Public Consultation 2



Public Consultation 3



Final Preliminary Design

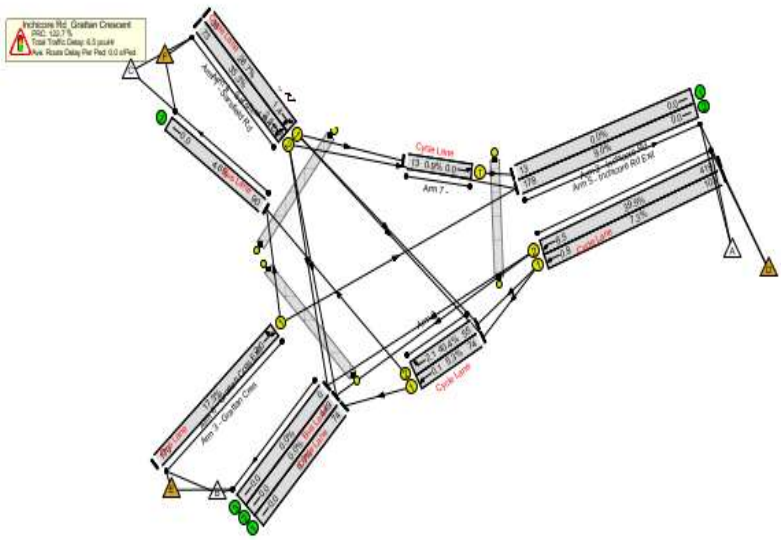


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Sarsfield Road / Inchicore Road / Grattan Crescent**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

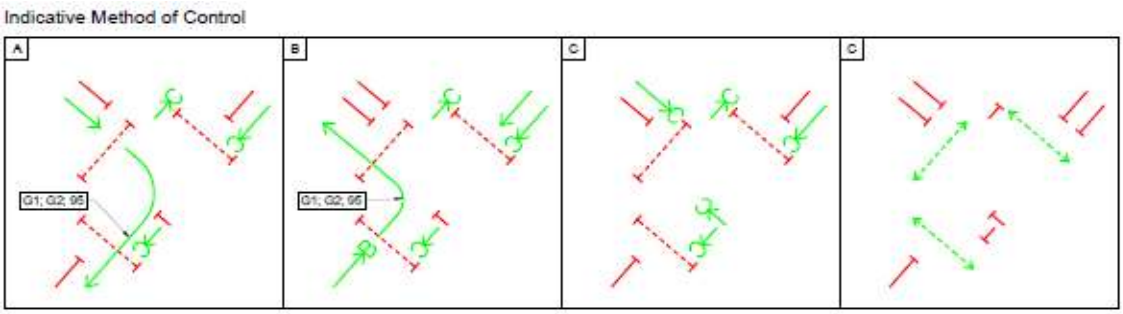
Junction PRC:
AM - 122.7%
PM - 37.0%

Junction Delay:
AM - 6.5 pcu/Hr
PM - 11.1 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	1589	30%
Bus	1018	18%
Walk	2074	39%
Cycle	684	13%
Total	5365	100%

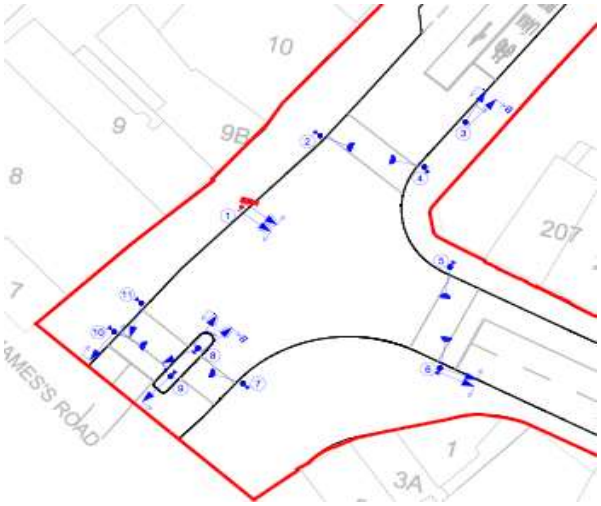
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Grattan Crescent / Tyrconnell Road/ Emmet Road**		

EXISTING

FINAL DESIGN



Summary

The Grattan Crescent/ Tyrconnell Road/ Emmet Road junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross all arms under signal control
- The updated crossings will maintain connectivity and tie in with the existing facilities
- A wrap around pedestrian phase with 6 seconds of green time and intergreen time of 13 seconds

Cycle Infrastructure

- The current layout has no cycle-specific facilities
- The CBC 7 proposal has cyclists using the southbound bus lane
- Cyclists on other arms will continue to use the same lanes as general traffic

Bus Priority Infrastructure

- Current layout has no specific bus facilities
- Junction Type 1 bus facilities are proposed for the northeast arm where the bus lane extends to the stop line. Buses from this lane will have to turn left onto Emmet Road

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Grattan Crescent / Tyrconnell Road/ Emmet Road**		

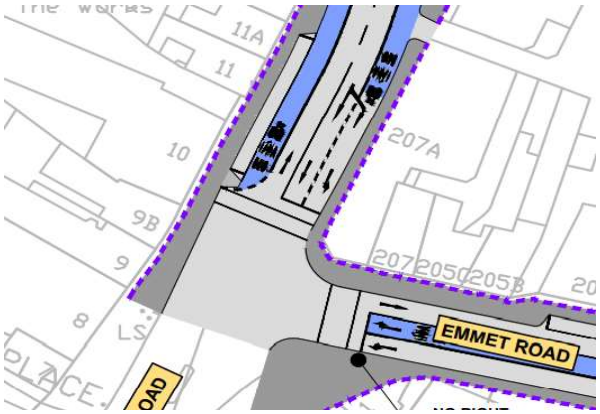
Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

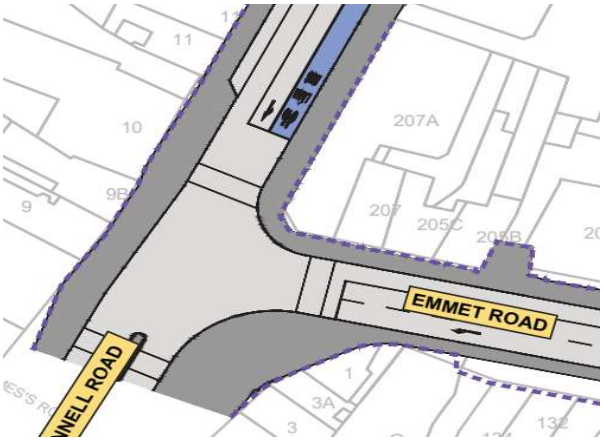
Concept Design Drawing

Emerging Preferred Route

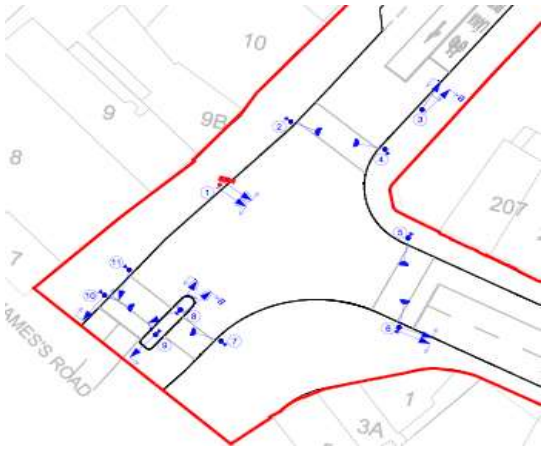


Public Consultation 2

Public Consultation 3



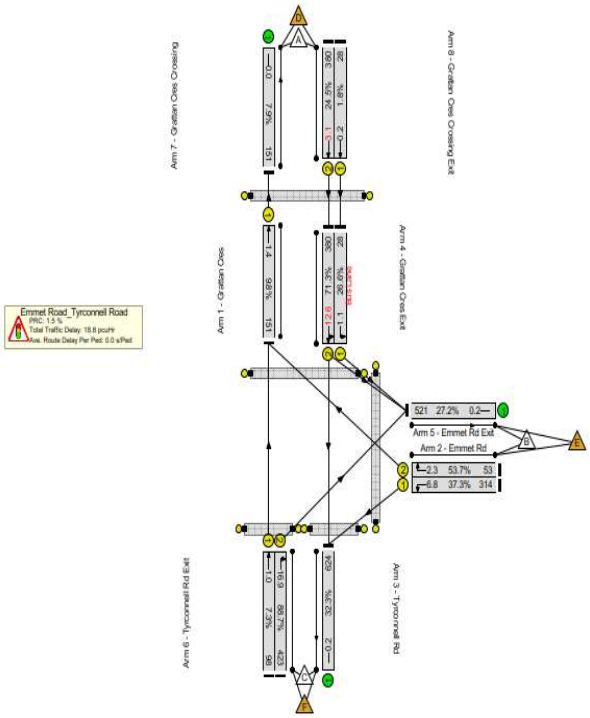
Final Preliminary Design



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Grattan Crescent / Tyrconnell Road/ Emmet Road**		

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

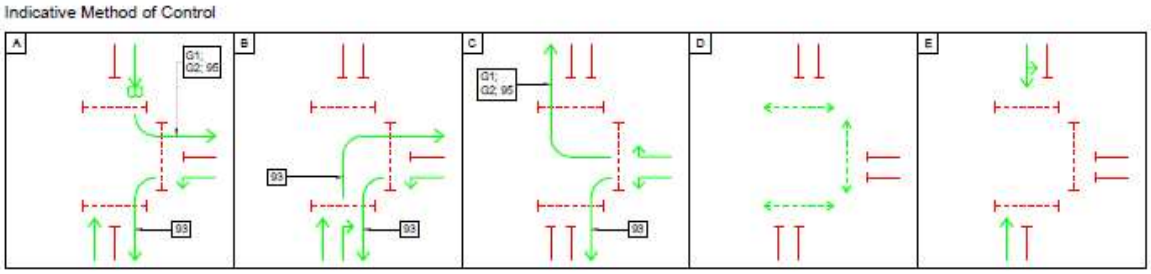
Junction PRC:
AM - 1.5%
PM - 7.7%

Junction Delay:
AM - 18.8 pcu/Hr
PM - 17.1 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2196	21%
Bus	5792	58%
Walk	2074	21%
Cycle	0	0%
Total	10062	100%

INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Emmet Road / St Vincent Street West**		

EXISTING

FINAL DESIGN

Summary

The Emmet Road/ St Vincent Street West junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm junction will be modified to have traffic signal control, including pedestrian and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will allow pedestrians to cross the east and south arms under signal control
- The crossings will maintain connectivity and tie in with the existing facilities
- A wrap around pedestrian phase with 6 seconds of green time and intergreen time of 10 seconds

Cycle Infrastructure

- The current layout has no cycle-specific facilities
- FOr CBC 7, cyclists on all arms will continue to use the same lanes as general traffic

Bus Priority Infrastructure

- Current layout has no specific bus facilities
- Junction Type 1 bus facilities are proposed for the outbound (east arm) services where the bus lane extends to the stop line
- A bus lane for east/ inbound starts just after the eastbound exit from the junction

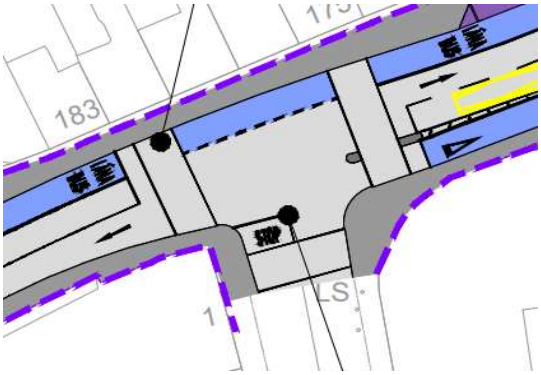
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Emmet Road / St Vincent Street West**		

Design Evaluation

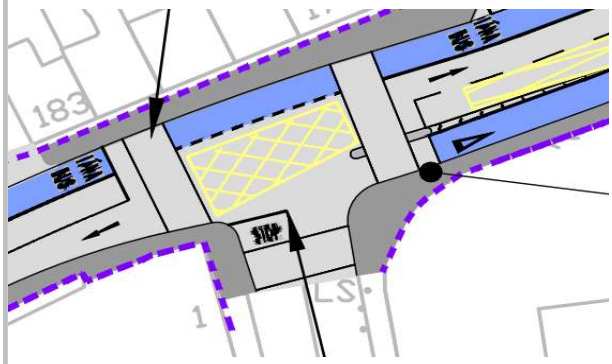
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

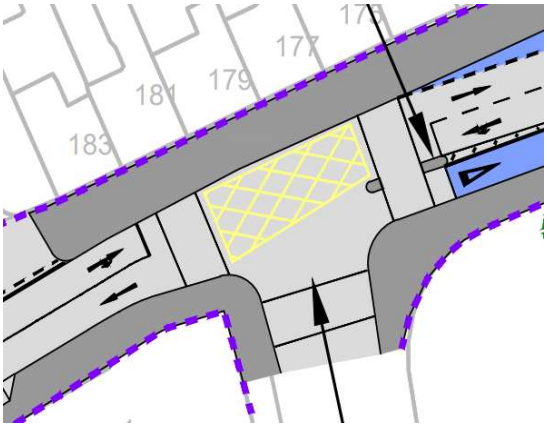
Concept Design Drawing



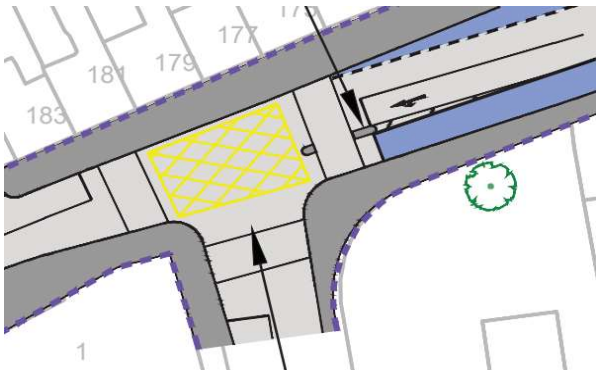
Emerging Preferred Route



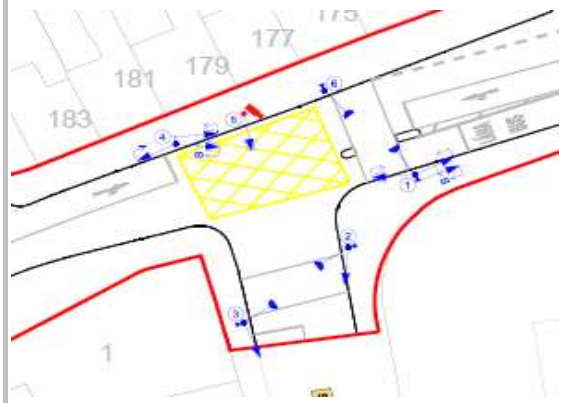
Public Consultation 2



Public Consultation 3



Final Preliminary Design



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Emmet Road / St Vincent Street West**

Route 7: Liffey Valley

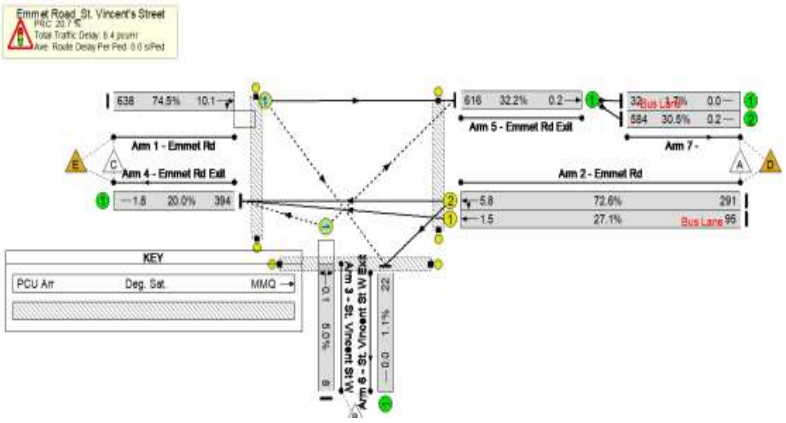
Network Layout Diagram

2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 60 seconds

Junction PRC:
AM - 30.8%
PM - 20.7%

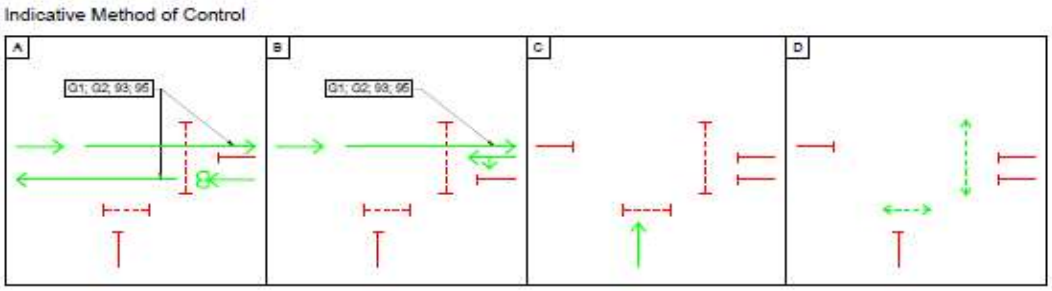
Junction Delay:
AM - 6.6 pcu/Hr
PM - 8.4 pcu/Hr



Theoretical People Movement Assessment (Typical Peak Period)

Junction		
Mode	People Movement	Mode Share
Car	1665	10%
Bus	9978	62%
Walk	4147	27%
Cycle	296	1%
Total	16086	100%

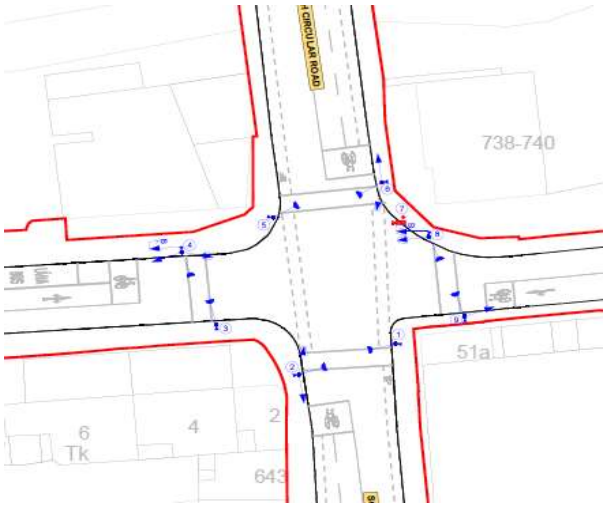
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Emmet Road / South Circular Road / Old Kilmainham**		

EXISTING

FINAL DESIGN



Summary

The Emmet Road/ South Circular Road/ Old Kilmainham junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The four-arm traffic signal junction with pedetrian and cycle facilities will be modified to have bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross all arms under signal control
- The crossings will maintain connectivity and tie in with the existing facilities
- A wrap around pedestrian phase with 6 seconds of green time and intergreen time of 13 seconds

Cycle Infrastructure

- The current layout has north-south cycle lanes on the north and south arms, including some recent temporary cycle protection. The south arm also features an advanced cycle stop line
- The CBC 7 proposal maintains the north-south lanes and provides advacned cycle stop lines for all arms

Bus Priority Infrastructure

- Current layout has no specific bus facilities
- Junction Type 1 bus facilities are proposed for the east/ inbound arm where the bus lane extends to the stop line

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Emmet Road / South Circular Road / Old Kilmainham**		

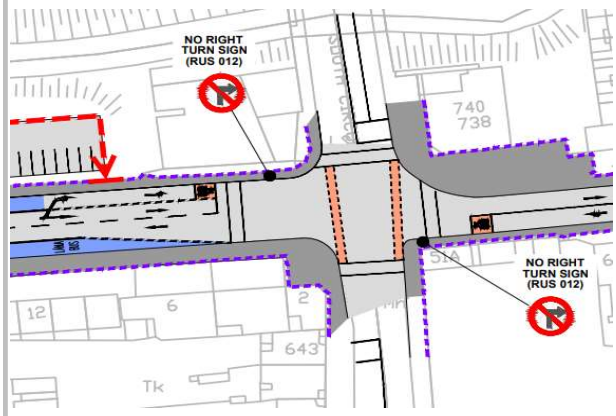
Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

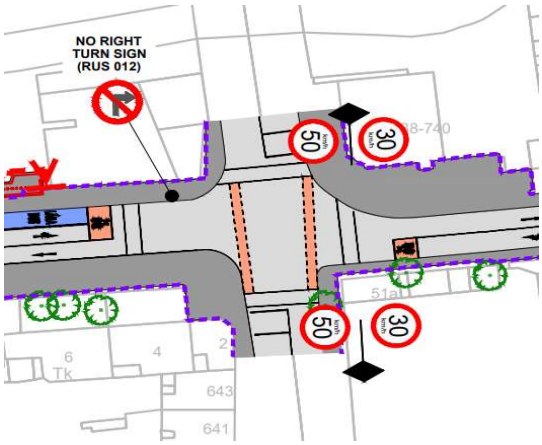
Existing

Concept Design Drawing

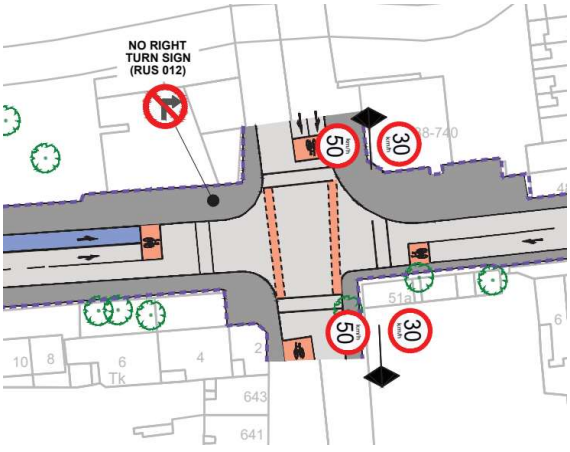
Emerging Preferred Route



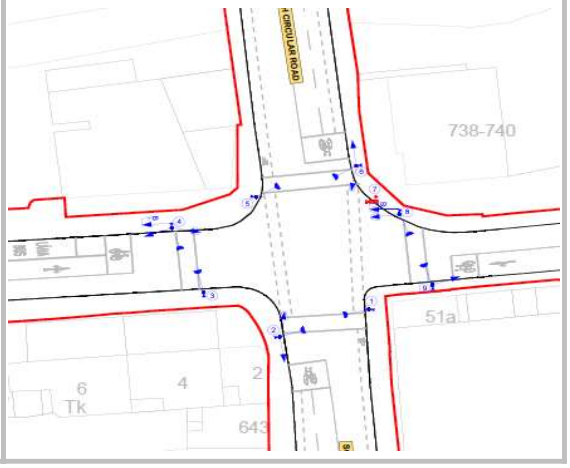
Public Consultation 2



Public Consultation 3



Final Preliminary Design

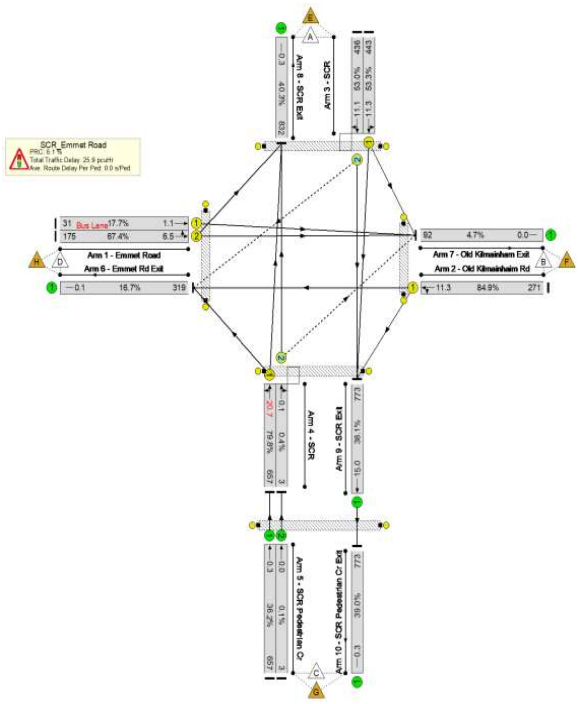


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Emmet Road / South Circular Road / Old Kilmainham**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

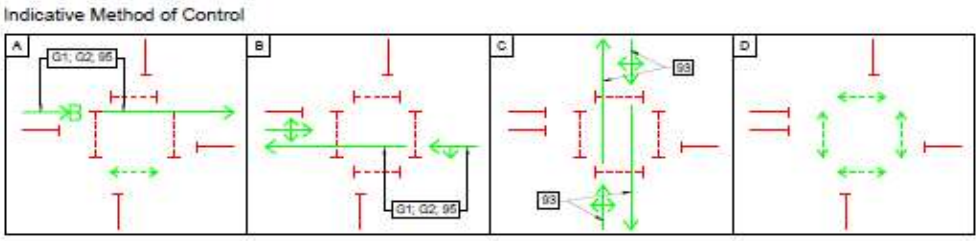
Junction PRC:
AM - 6.1%
PM - 14.1%

Junction Delay:
AM - 25.9 pcu/Hr
PM - 23.1 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	4564	34%
Bus	6648	49%
Walk	2074	14%
Cycle	303	3%
Total	13589	100%

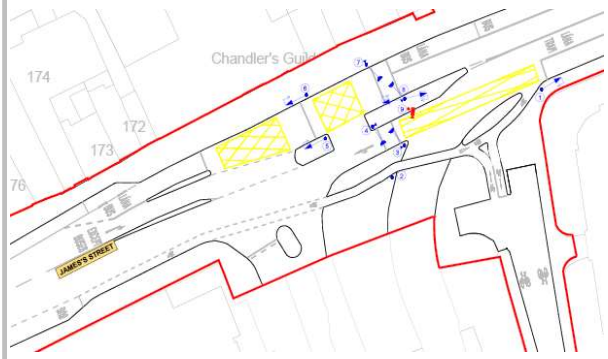
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**James Street / St James's Hospital**		

EXISTING

FINAL DESIGN



Summary

The James Street/ St James's Hopsital junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction with pedetrian and tram facilities will be modified to have bus infrastructure.

The LUAS tram system passes through this site,

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross James Street under signal control
- The crossings will maintain connectivity and tie in with the existing facilities
- A wrap around pedestrian phase with 6 seconds of green time and intergreen time of 12 seconds, though east/ inbound trams will have green at that time

Cycle Infrastructure

- The current layout has a west/ outbound cycle lane that takes users across the bus/ tram and hospital access
- The CBC 7 proposal maintains the current facilities

Bus Priority Infrastructure

- Current layout has no specific bus facilities, though an east/ inbound bus lane starts east of the junction
- East/ inbound general traffic routed away from the to provide an exclusive bus lane

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**James Street / St James's Hospital**		

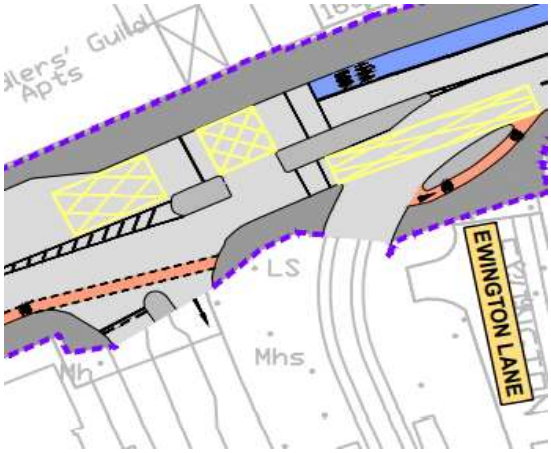
Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

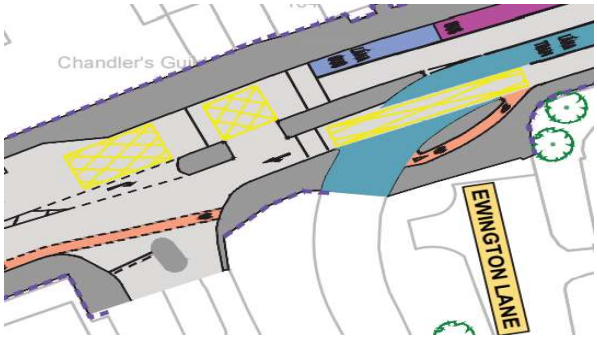
Concept Design Drawing

Emerging Preferred Route

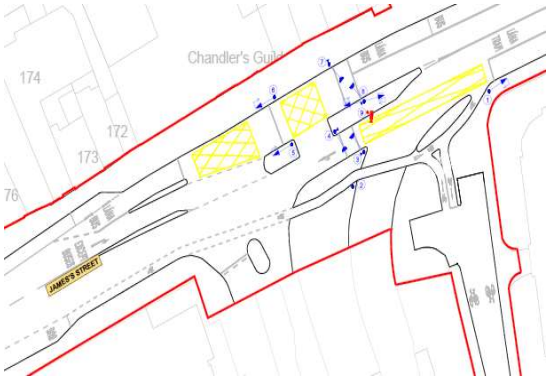


Public Consultation 2

Public Consultation 3



Final Preliminary Design

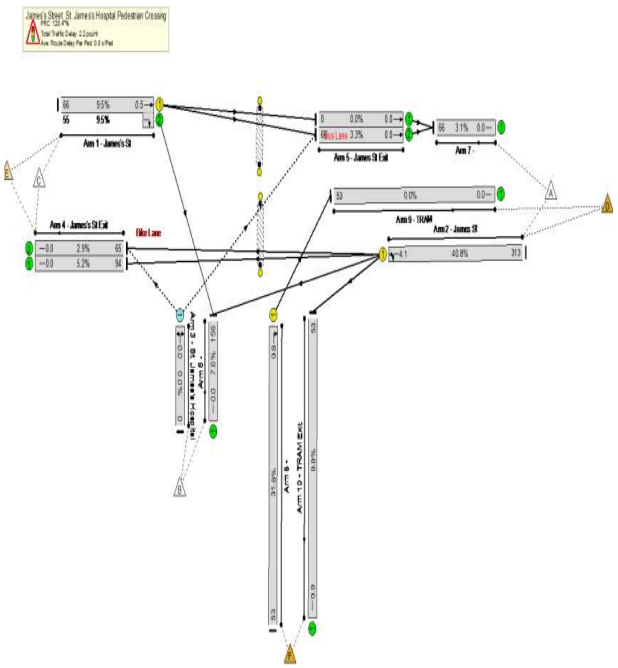


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **James Street / St James's Hospital**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 60 seconds

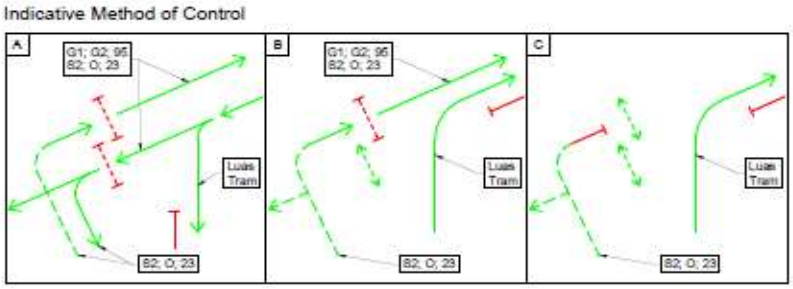
Junction PRC:
AM - 120.4%
PM - 244.4%

Junction Delay:
AM - 2.2 pcu/Hr
PM - 1.7 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2574	27%
Bus	5136	55%
Walk	1382	15%
Cycle	306	3%
Total	9398	100%

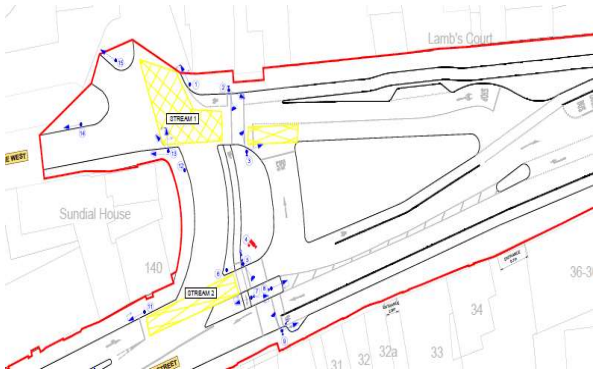
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**James Street / Bow Lane West**		

EXISTING

FINAL DESIGN



Summary

The James Street/ Bow Lane West junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The two-node, six-arm traffic signal junction with pedetrian and tram facilities will be modified to have bus and cycle infrastructure.

The LUAS tram system passes through this site,

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross James Street under signal control with an additional controlled movement across ethe ast arm of Bow Lane West
- The crossings will increase connectivity and tie in with the existing facilities
- Pedestrian movements will receive green with non-conflicting tram and bus movements

Cycle Infrastructure

- The current layout has a west/ outbound cycle lane
- The CBC 7 proposal provides a west/ outbound cycle lane on James Street with an exclusive green stage, plus a southbound route through the junction and an east/ inbound cycle route along the east arm of Bow Lane West

Bus Priority Infrastructure

- Current layout has no specific bus facilities

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**James Street / Bow Lane West**		

Design Evaluation

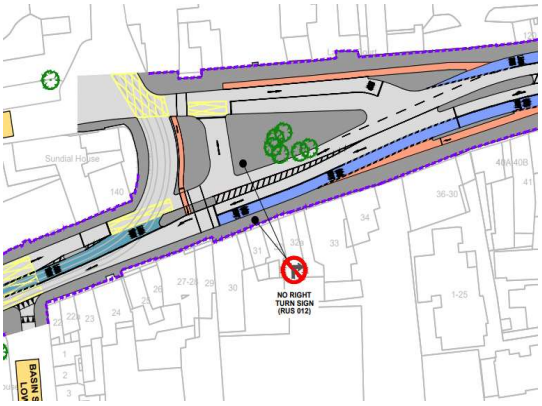
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

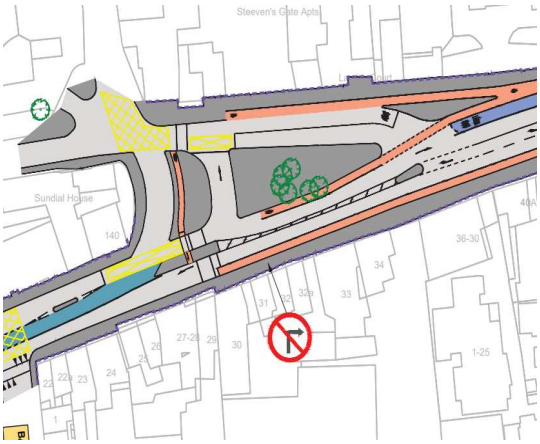
Concept Design Drawing

Emerging Preferred Route

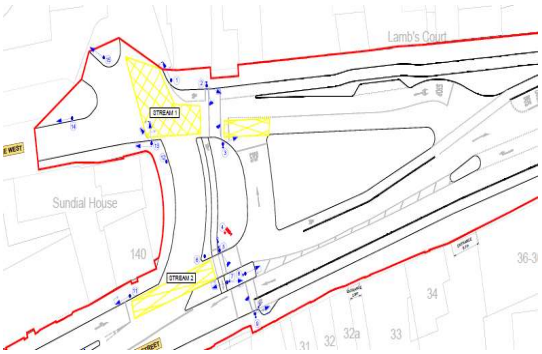
Public Consultation 2



Public Consultation 3



Final Preliminary Design

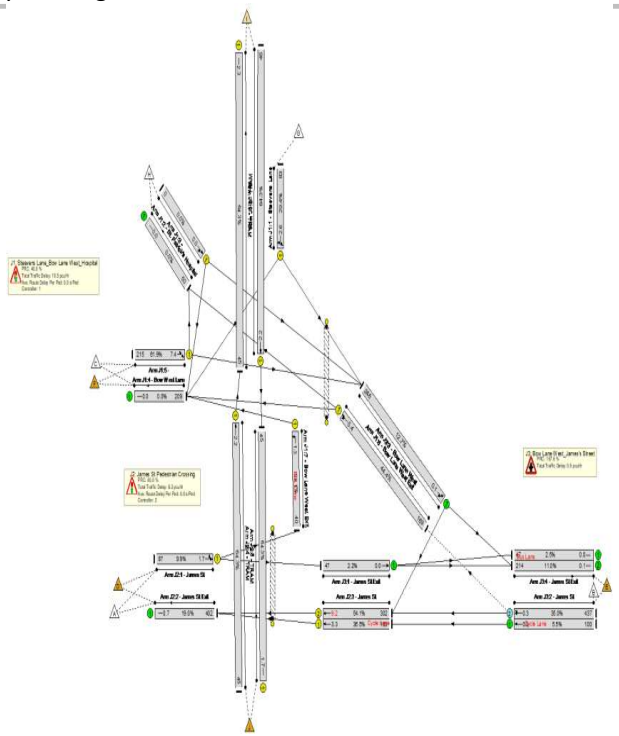


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **James Street / Bow Lane West**

Route 7: Liffey Valley

Network Layout Diagram



2028 PM Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

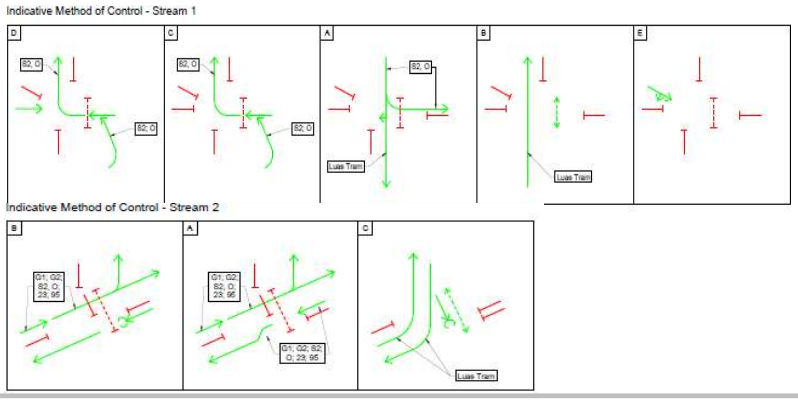
Junction PRC:
AM - 5.9%
PM - 20.6%

Junction Delay:
AM - 20.5 pcu/Hr
PM - 116.3 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2305	10%
Bus	19005	80%
Walk	2304	10%
Cycle	0	0%
Total	23614	100%

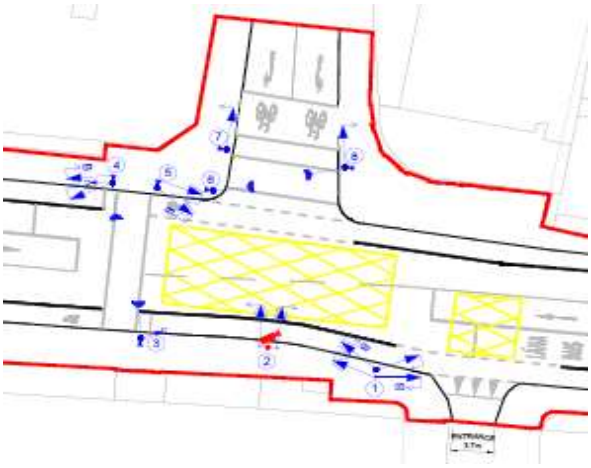
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**James Street / Thomas Street / Watling Street**		

EXISTING

FINAL DESIGN



Summary

The James Street/ Thomas Street/ Watling Street junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross the west and north arms under signal control
- The updated crossings will maintain connectivity and tie in with the existing facilities
- Pedestrian movements will receive green with non-conflicting cycle, bus and general traffic movements

Cycle Infrastructure

- There are currently no specific cycle facilities, though cyclists can use the bus lanes
- The CBC 7 proposal has east and west arms provided with controlled cycle lanes with protected access. The side road will have an advanced cycle stop line
- Cyclists will tie into the cycle routes established on the east and west arms

Bus Priority Infrastructure

- Current layout has bus lanes for both east/ inbound and west/ outbound bus services
- Junction Type 1 bus facilities are proposed for both inbound (west arm) and outbound (east arm) services on both arms where the bus lane extends to the stop line

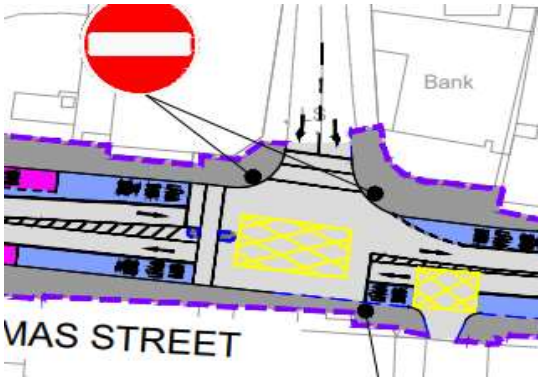
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**James Street / Thomas Street / Watling Street**		

Design Evaluation

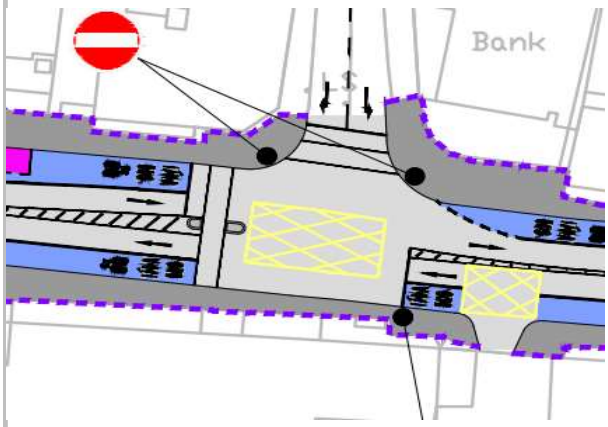
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

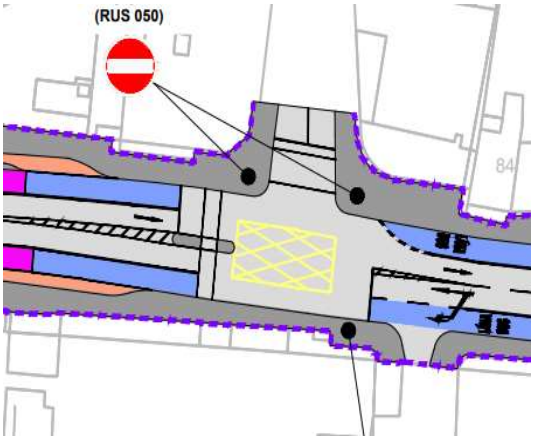
Concept Design Drawing



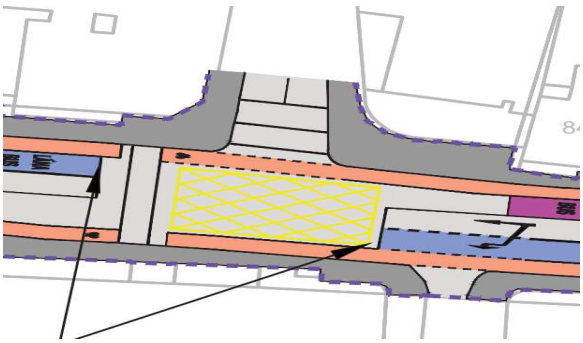
Emerging Preferred Route



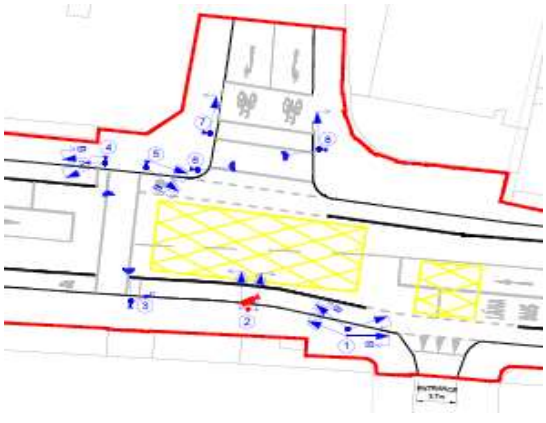
Public Consultation 2



Public Consultation 3



Final Preliminary Design



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **James Street / Thomas Street / Watling Street**

Route 7: Liffey Valley

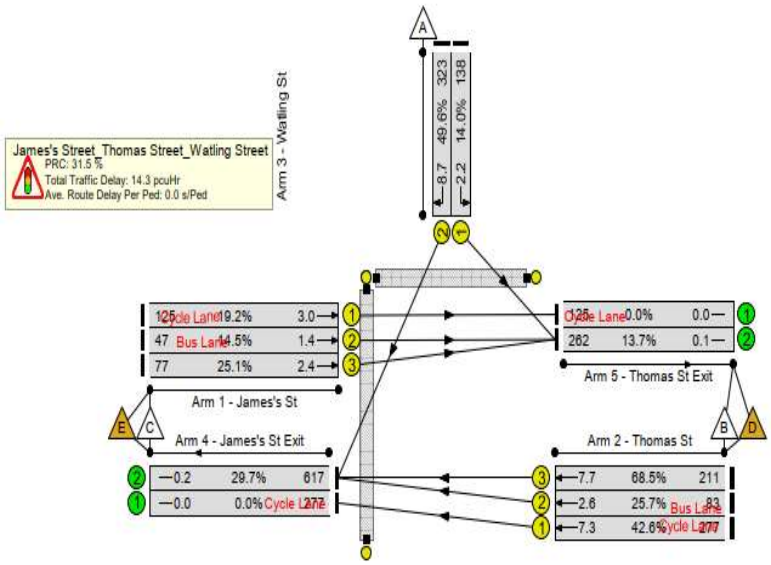
Network Layout Diagram

2028 AM Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - 31.5%
PM - 7.5%

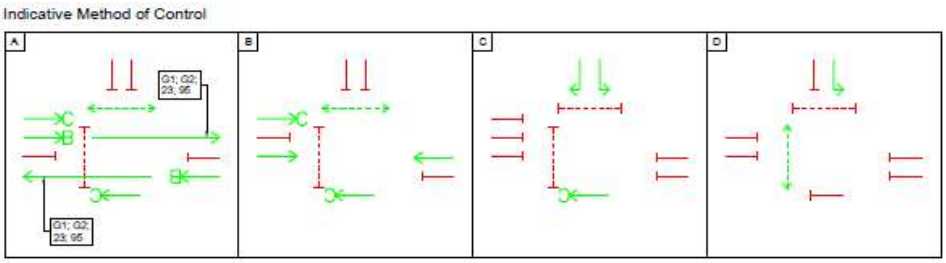
Junction Delay:
AM - 14.3 pcu/Hr
PM - 14.4 pcu/Hr



Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2706	12%
Bus	16958	77%
Walk	1382	6%
Cycle	1028	5%
Total	22074	100%

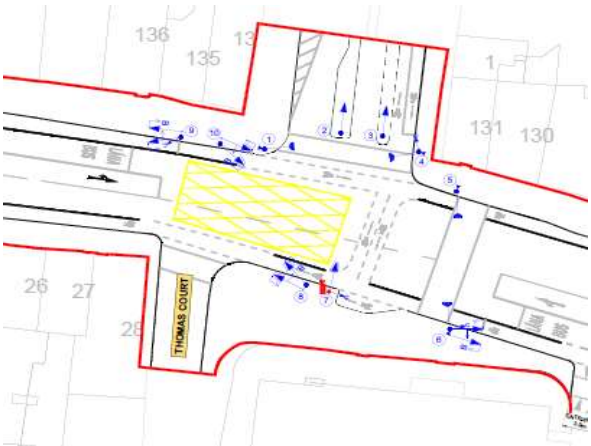
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Thomas Street / Bridgefoot Street**		

EXISTING

FINAL DESIGN



Summary

The Thomas Street/ Bridgefoot Street junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include pedestrian, cycle and bus infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross the east and north arms under signal control
- The updated crossings will maintain connectivity and tie in with the existing facilities
- A wrap around pedestrian phase with 6 seconds of green time and intergreen time of 17 seconds

Cycle Infrastructure

- The current layout has cycle lanes on all three arms, with an advanced cycle stop line on the north arm
- The CBC 7 proposal has controlled cycle lanes on the east and west arms
- The layout accommodates a proposed Dublin City Council scheme to provide two-way cycle route on Bridgefoot Street

Bus Priority Infrastructure

- Current layout has bus lanes for both east/ inbound and west/ outbound bus services that terminate before the stop line and restart after the junction
- Junction Type 1 bus facilities are proposed for both inbound (west arm) and outbound (east arm) services on both arms where the bus lane extends to the stop line. The east arm lane is short,

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Thomas Street / Bridgefoot Street**		

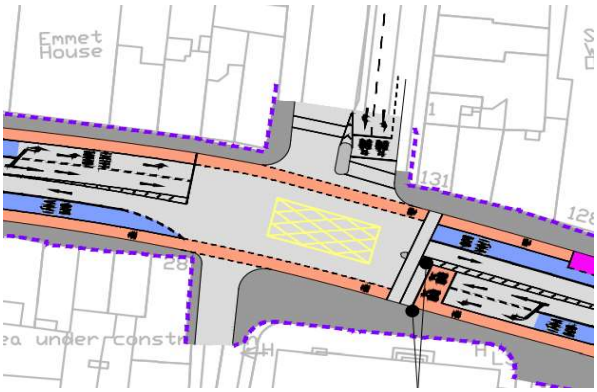
Design Evaluation

The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

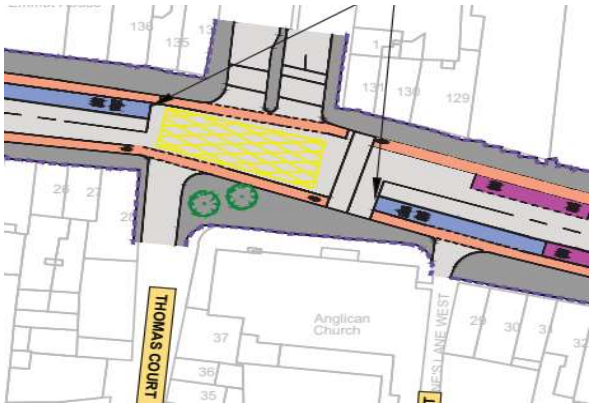
Concept Design Drawing

Emerging Preferred Route

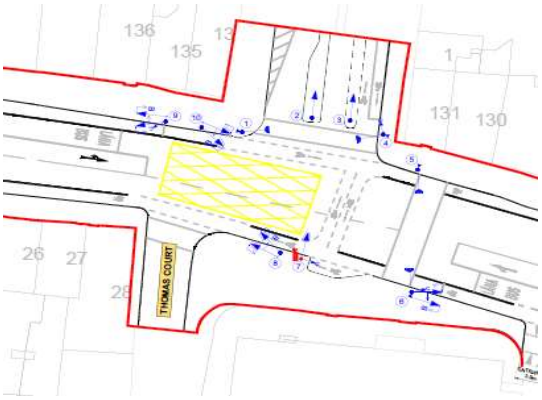


Public Consultation 2

Public Consultation 3



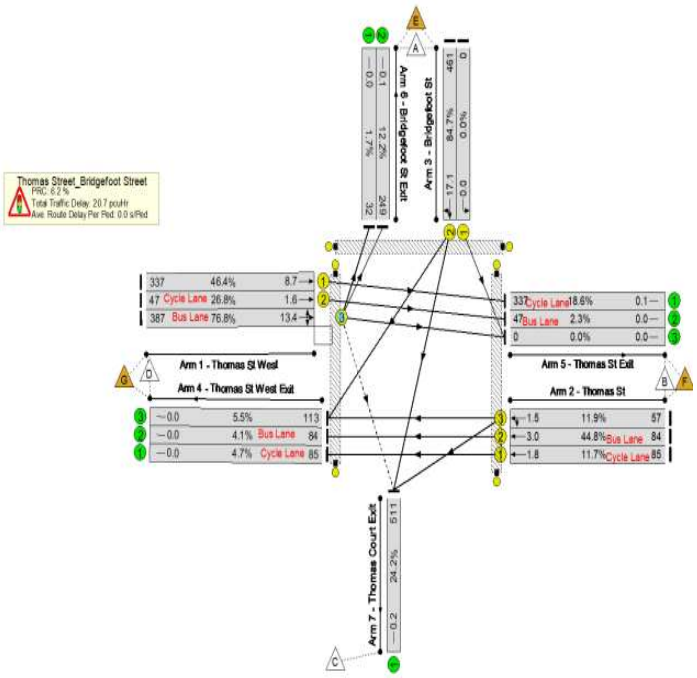
Final Preliminary Design



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Thomas Street / Bridgefoot Street**		

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

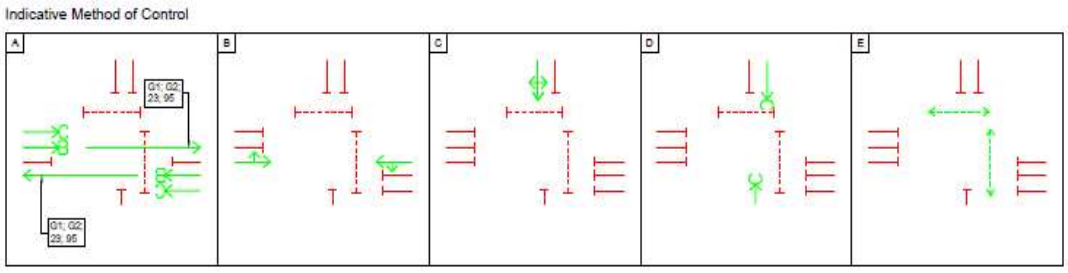
Junction PRC:
AM - 6.2%
PM - 1.8%

Junction Delay:
AM - 20.7 pcu/Hr
PM - 20.9 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	1777	13%
Bus	9529	69%
Walk	1382	10%
Cycle	1160	8%
Total	13848	100%

INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Thomas Street / Meath Street**		

EXISTING

FINAL DESIGN

Summary

The Thomas Street/ Meath Street junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be modified to include pedestrian and cycle infrastructure.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross the west and south arms under signal control
- The updated crossings will maintain connectivity and tie in with the existing facilities
- Pedestrian movements will receive green with non-conflicting cycle, bus and general traffic movements

Cycle Infrastructure

- The current layout has a short cycle lane on the west arm
- The CBC 7 proposal has controlled cycle lanes on the east and west arms with an advanced cycle stop line on the side road

Bus Priority Infrastructure

- Current layout has a bus lane on the west arm that terminates before the stop line and the east arm bus lane has parking permitted
- Space constraints prevent bus lanes being provided but an east/ inbound bus lane starts after the junction
- The upstream junction to the east will have a phase that holds back general west/ outbound traffic and allow a bus to get ahead

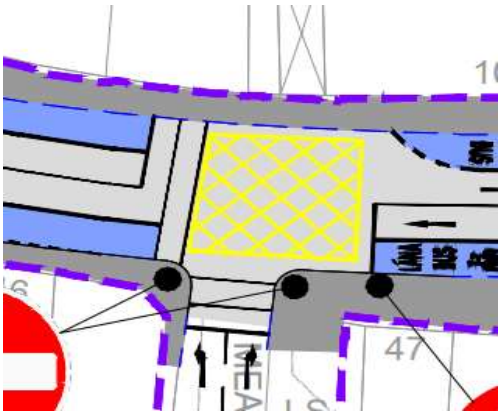
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Thomas Street / Meath Street**		

Design Evaluation

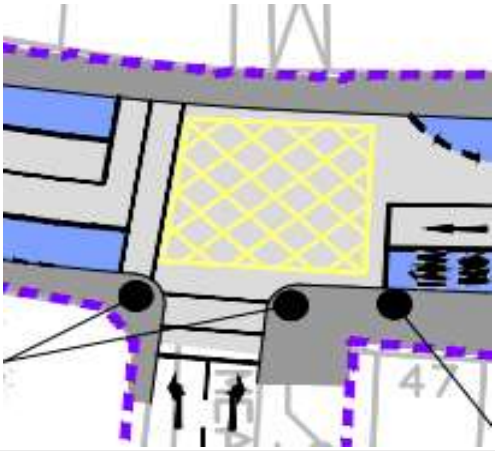
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

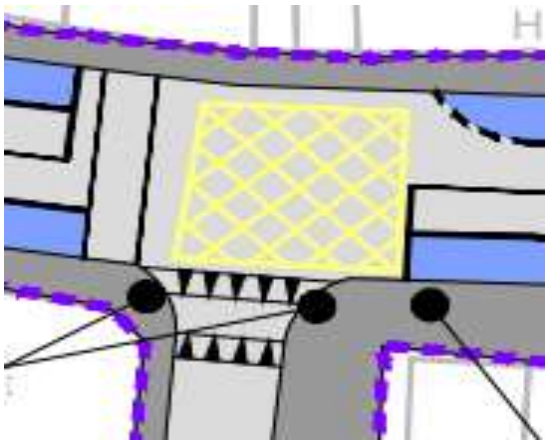
Concept Design Drawing



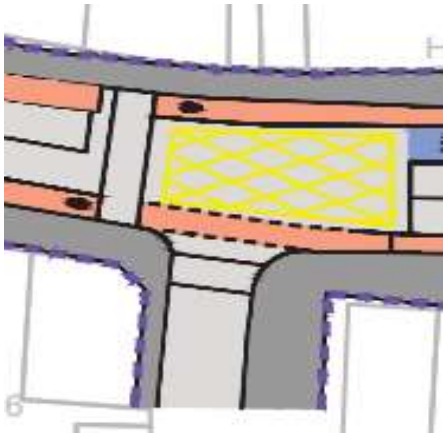
Emerging Preferred Route



Public Consultation 2



Public Consultation 3



Final Preliminary Design

Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Thomas Street / Meath Street**

Route 7: Liffey Valley

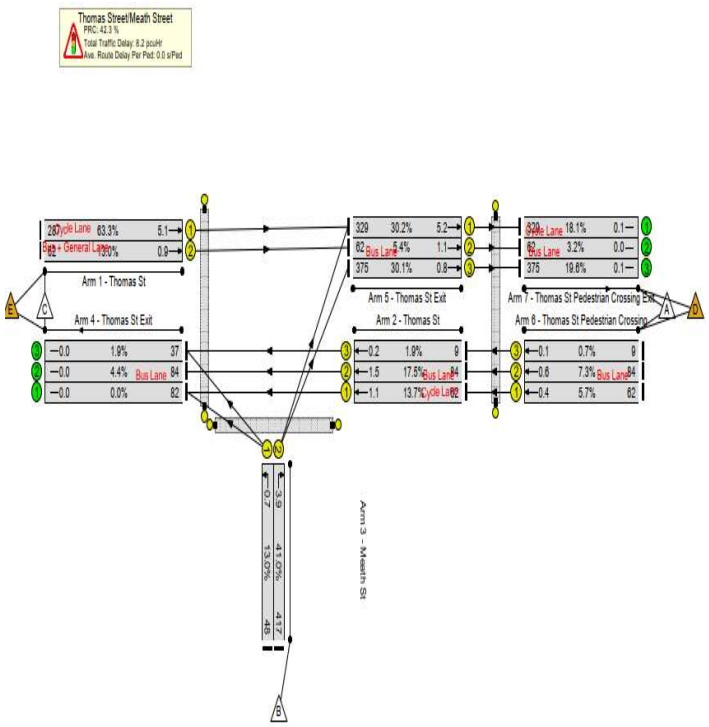
2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 60 seconds

Junction PRC:
AM - 42.3%
PM - 278.1%

Junction Delay:
AM - 8.2 pcu/Hr
PM - 5.8 pcu/Hr

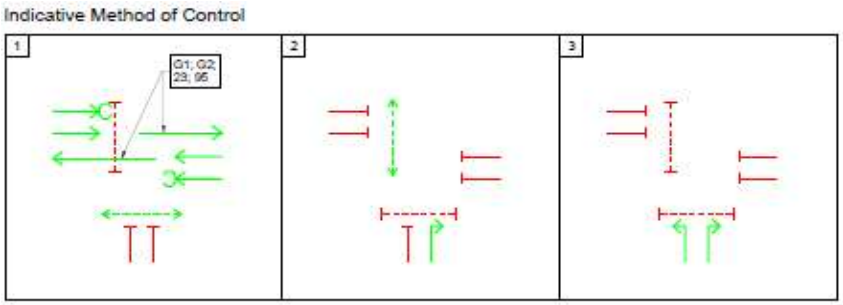
Network Layout Diagram



Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2340	12%
Bus	13729	69%
Walk	2765	14%
Cycle	965	5%
Total	19799	100%

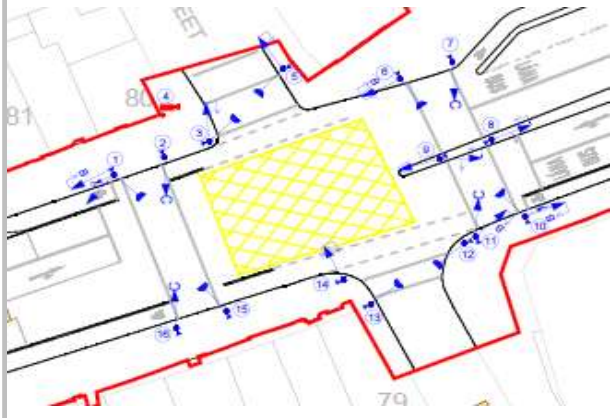
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Thomas Street / Saint Augustine Street / Cornmarket / Francis Street**		

EXISTING

FINAL DESIGN



Summary

The Thomas Street/ Saint Augustine Street/ Cornmarket/ Francis Street junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The four-arm traffic signal junction will be modified to include pedestrian and cycle infrastructure. The Francis Street arm is one-way only - away from the junction.

Pedestrian Infrastructure

- When compared to the current layout, the proposal will continue to allow pedestrians to cross all the arms under signal control
- The updated crossings will maintain connectivity and tie in with the existing facilities
- Pedestrian movements will receive green with non-conflicting cycle, bus and general traffic movements

Cycle Infrastructure

- The current layout has cycle lanes on both the east and west arms, with an advanced cycle stop line on the west arm
- The CBC 7 proposal has controlled cycle lanes on the east and west arms
- Right turning cyclists will use the Toucan crossings on the east and west arms

Bus Priority Infrastructure

- Current layout has a bus lane on the west arm that terminates at the stop line
- The CBC 7 proposal provides bus lanes on the east and west arms, though the west/ outbound bus lane terminates after the junction due to space constraints
- The will have a phase that holds back general west/ outbound traffic and allow a bus to get ahead

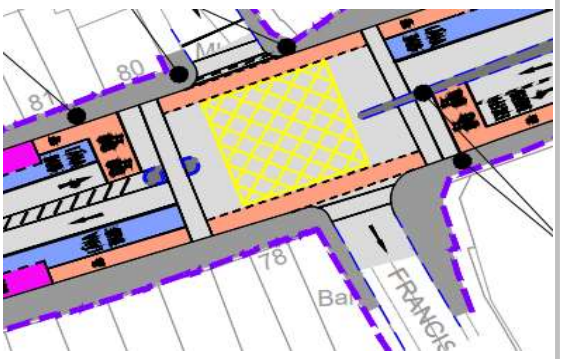
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Thomas Street / Saint Augustine Street / Cornmarket / Francis Street**		

Design Evaluation

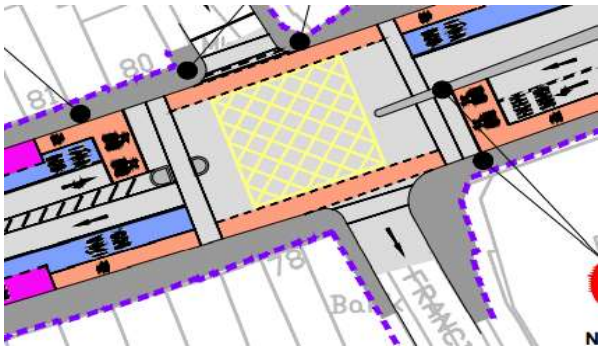
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

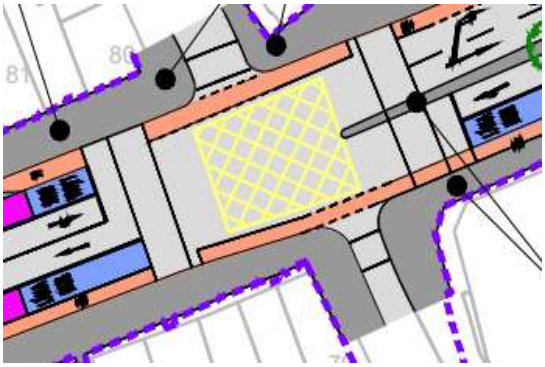
Concept Design Drawing



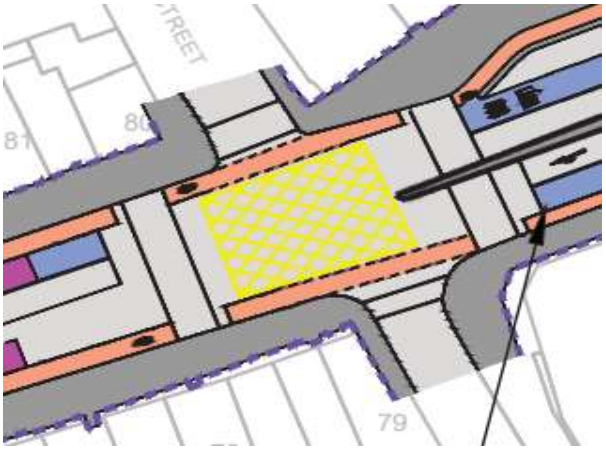
Emerging Preferred Route



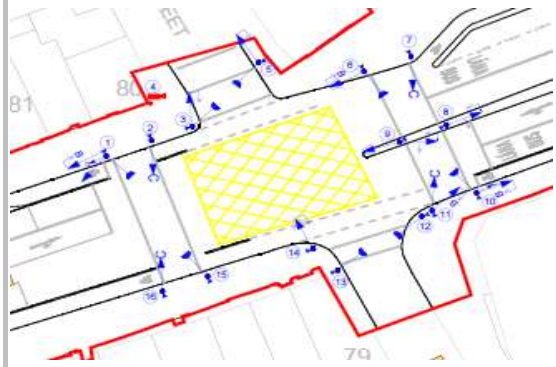
Public Consultation 2



Public Consultation 3



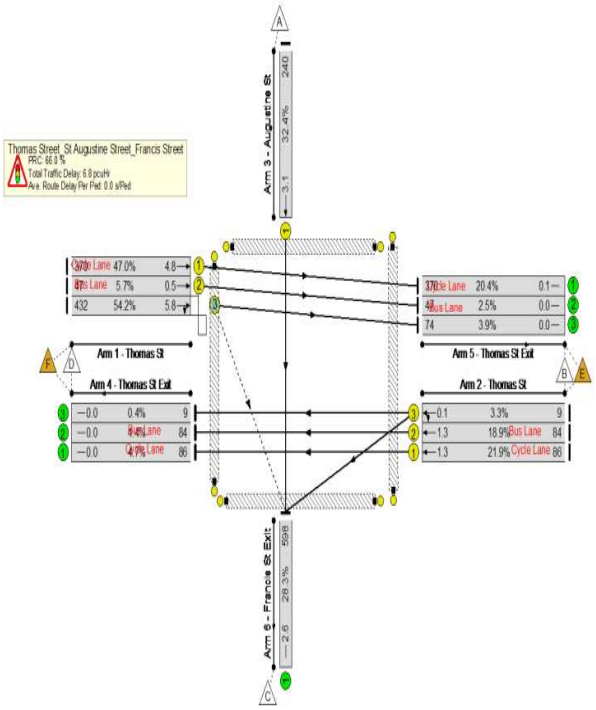
Final Preliminary Design



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Thomas Street / Saint Augustine Street / Cornmarket / Francis Street**		

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 60 seconds

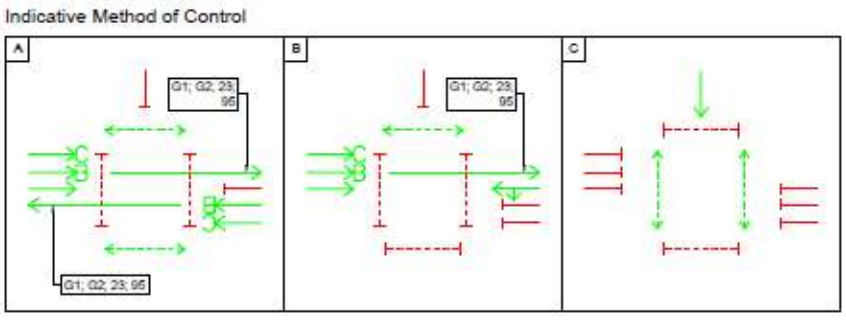
Junction PRC:
AM - 66.0%
PM - 39.3%

Junction Delay:
AM - 6.8 pcu/Hr
PM - 5.9 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2243	5%
Bus	33469	79%
Walk	5530	13%
Cycle	1114	3%
Total	42356	100%

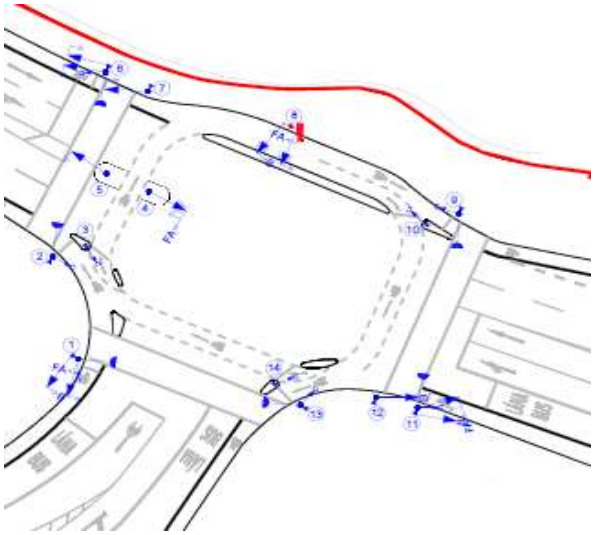
INDICATIVE METHOD OF CONTROL



Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Cornmarket / High Street / Bridge Street Upper**		

EXISTING

FINAL DESIGN



Summary

The Cornmarket/ High Street/ Bridge Street Upper junction is being upgraded as part of the NTA Dublin Bus Connects scheme which will provide connectivity from Liffey Valley to Dublin City Centre for buses, cyclists and pedestrians.

The three-arm traffic signal junction will be significantly modified to include pedestrian, cycle and bus infrastructure.

This is the end of the CBC 7 scheme and ties into the Tallaght / Clondalkin Scheme

Pedestrian Infrastructure

- When compared to the current layout and the concept designs, the proposal will allow pedestrians to cross in a more direct way, including a new crossing on the west arm
- The updated crossings will enhance connectivity and tie in with the existing facilities
- A wrap around pedestrian phase with 6 seconds of green time and 19 seonds of intergreen

Cycle Infrastructure

- The current layout has cycle lanes on both the east and west arms, with an advanced cycle stop line on the east arm
- The CBC 7 proposal has controlled cycle routes on all three arms with protected access to all arms
- Right turning cyclists will circulate around the junction under traffic signal control

Bus Priority Infrastructure

- Current layout has a bus lane on the east arm that terminates before the stop line
- The CBC 7 proposal provides Junction Type 1 bus lanes on the east and west armsthat extend to the stop lines

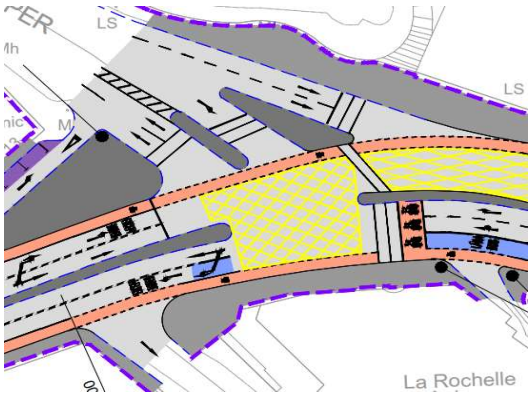
Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**
Junction	**Cornmarket / High Street / Bridge Street Upper**		

Design Evaluation

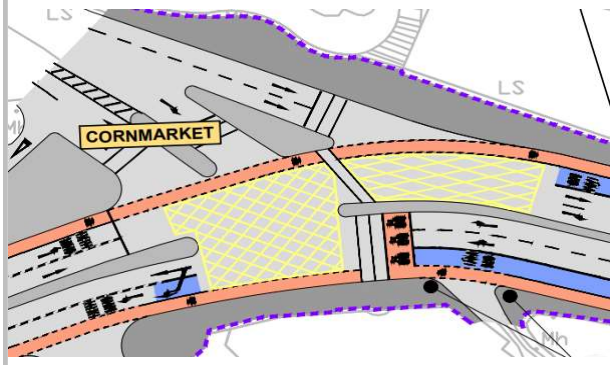
The proposed junction design has evolved on the BusConnects project from initial Concept Design, Emerging Preferred Route, Public Consultation 2, Public Consultation 3 up to the Current Design. The junction design iterations have been undertaken to optimise pedestrian, cyclist and bus priority infrastructure on the scheme.

Existing

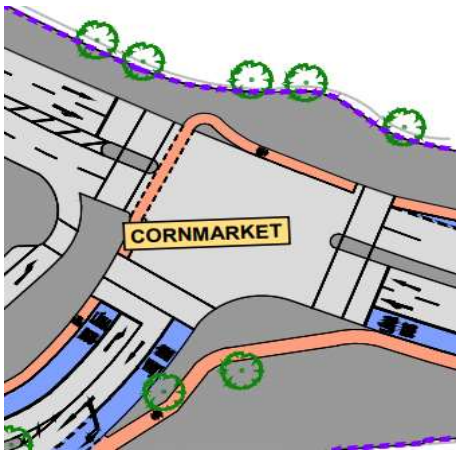
Concept Design Drawing



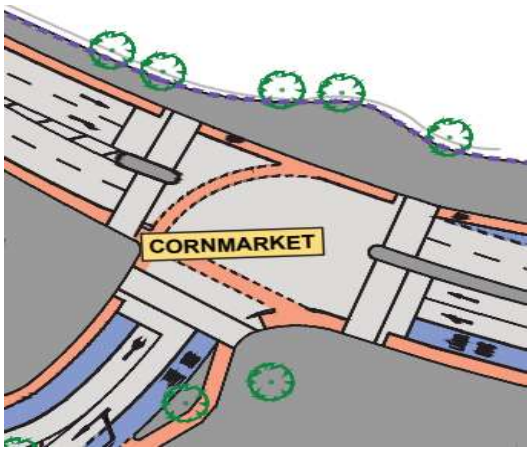
Emerging Preferred Route



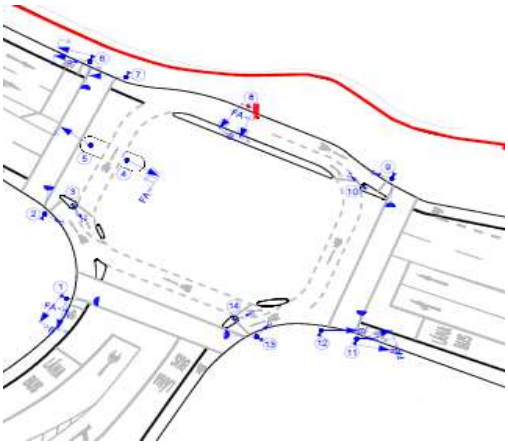
Public Consultation 2



Public Consultation 3



Final Preliminary Design

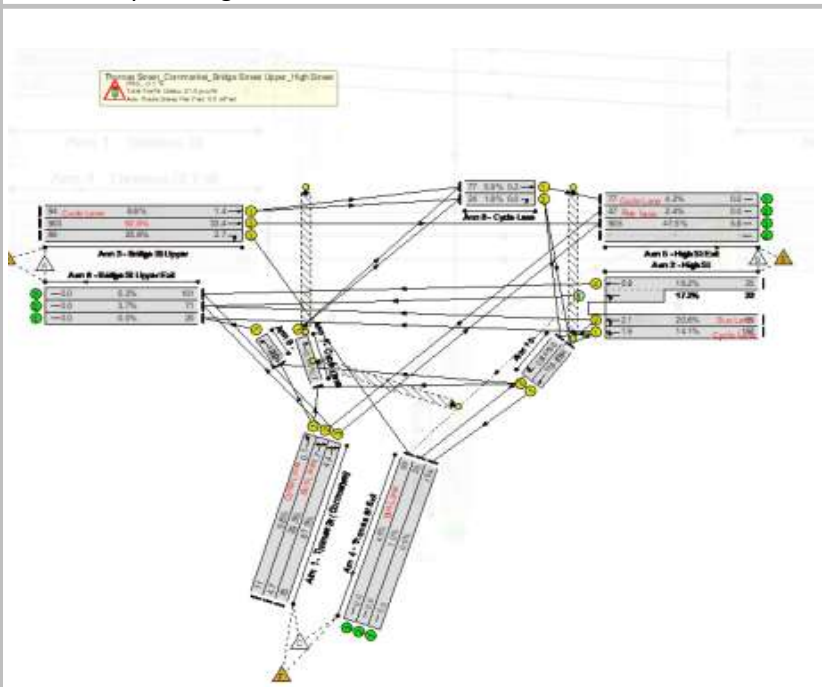


Subject	BusConnects Core Bus Corridors Transport Modelling		
Date	Mar-22		
Route	Route 7: Liffey Valley	Job Ref	**32110901.A.PE.TE.R7**

Junction **Cornmarket / High Street / Bridge Street Upper**

Route 7: Liffey Valley

Network Layout Diagram



2028 Peak Hours
Fixed Time LinSig Results

Cycle Time: 120 seconds

Junction PRC:
AM - -3.1%
PM - 15.7%

Junction Delay:
AM - 21.1 pcu/Hr
PM - 14.6 pcu/Hr

Theoretical People Movement Assessment (Typical Peak Period)

Junction Mode	People Movement	Mode Share
Car	2875	20%
Bus	8820	61%
Walk	2074	15%
Cycle	622	4%
Total	14391	100%

INDICATIVE METHOD OF CONTROL