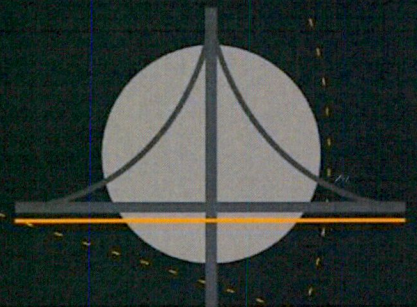
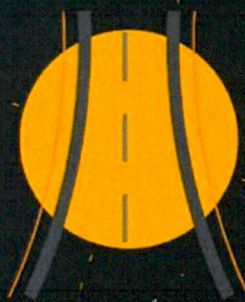
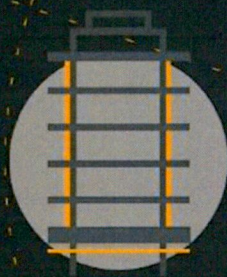


# Clonburris Phase 3 Residential Development

## Traffic and Transport Assessment

CLB-T3-ZZZ-SW-DTM-RP-DBFL-CE-0003



Nov 2022



DBFL CONSULTING ENGINEERS

















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1	21/10/22	Final Draft	Shauna Kelly	Daniel Garvey	Danny Pio Murphy
2	25/11/22	Planning	Shauna Kelly	Daniel Garvey	Danny Pio Murphy

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## Contents

1	Introduction.....	8
1.1	Background .....	8
1.2	Scope.....	8
1.3	Methodology .....	9
1.4	Report Structure .....	10
2	Receiving Environment.....	11
2.1	Land Use .....	11
2.2	Location.....	12
2.3	Local Amenities .....	13
2.4	Existing Transportation Infrastructure .....	14
2.4.1	Road Network.....	14
2.4.2	Existing Pedestrian and Cycling Facilities .....	16
2.4.3	Existing Public Transport – Bus.....	18
2.4.4	Existing Public Transport – Rail .....	19
2.5	Existing Site Accessibility .....	20
2.5.1	Walking Accessibility.....	20
2.5.2	Cycling Accessibility .....	21
2.5.3	Public Transport Accessibility.....	22
2.6	Emerging Transport Proposals .....	23
2.6.1	Roads Proposals.....	23
2.6.2	Cycle Network Proposals .....	24
2.6.3	Public Transport Proposals – BusConnects.....	26
2.6.4	Public Transport Proposals – DART+ South West.....	28
2.7	Road Safety Record .....	30







3	Policy Framework and Development Management Standards .....	31
3.1	Introduction.....	31
3.2	National Sustainable Mobility Policy.....	31
3.3	Sustainable Urban Housing: Design Standards for New Apartments.....	32
3.4	Transport Strategy for the Greater Dublin Area 2016-2035 .....	33
3.5	Draft Transport Strategy for the Greater Dublin Area 2022-2042 .....	34
3.6	South Dublin County Development Plan 2022-2028 .....	35
3.7	Clonburris SDZ Planning Scheme.....	38
3.8	Development Management Standards .....	39
3.8.1	Car Parking Standards.....	39
3.8.2	Cycle Parking Standards .....	40
4	Characteristics of Proposals.....	41
4.1	Overview .....	41
4.2	Site Access Arrangements .....	42
4.2.1	Vehicle Access.....	42
4.2.2	Pedestrian and Cyclist Access .....	43
4.3	Parking Provision .....	44
4.3.1	Car Parking .....	44
4.3.2	Cycle Parking .....	45
5	Trip Generation and Distribution .....	47
5.1	Introduction.....	47
5.2	Traffic Surveys.....	47
5.3	Trip Generation.....	48
5.4	Trip Redistribution.....	49
5.5	Committed Development.....	50



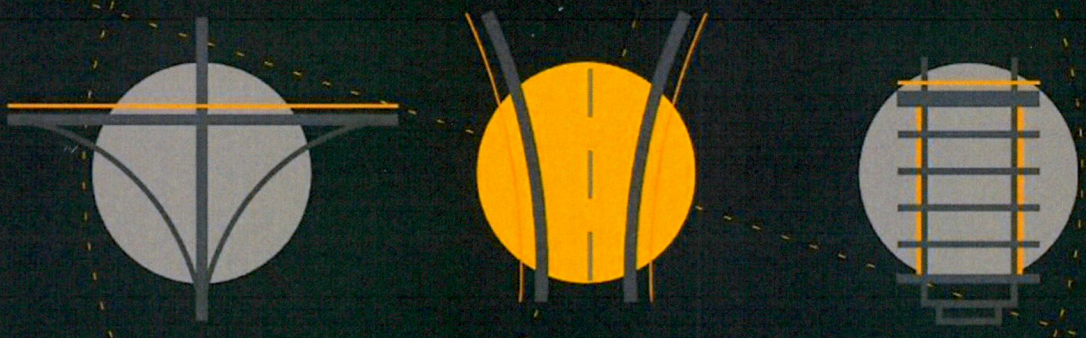


# TRANSPORTATION



DBFL CONSULTING ENGINEERS

Nov 2022



Traffic and Transport Assessment

Clonburris Phase 3  
Residential Development

CLB-T3-ZZZ-SW-DTM-RP-DBFL-CE-0003









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Contents

1	Introduction.....	8
1.1	Background .....	8
1.2	Scope .....	8
1.3	Methodology .....	9
1.4	Report Structure .....	10
2	Receiving Environment.....	11
2.1	Land Use .....	11
2.2	Location.....	12
2.3	Local Amenities .....	13
2.4	Existing Transportation Infrastructure .....	14
2.4.1	Road Network.....	14
2.4.2	Existing Pedestrian and Cycling Facilities .....	16
2.4.3	Existing Public Transport – Bus.....	18
2.4.4	Existing Public Transport – Rail .....	19
2.5	Existing Site Accessibility .....	20
2.5.1	Walking Accessibility.....	20
2.5.2	Cycling Accessibility .....	21
2.5.3	Public Transport Accessibility.....	22
2.6	Emerging Transport Proposals .....	23
2.6.1	Roads Proposals.....	23
2.6.2	Cycle Network Proposals .....	24
2.6.3	Public Transport Proposals – BusConnects.....	26
2.6.4	Public Transport Proposals – DART+ South West.....	28
2.7	Road Safety Record .....	30





3	Policy Framework and Development Management Standards .....	31
3.1	Introduction .....	31
3.2	National Sustainable Mobility Policy .....	31
3.3	Sustainable Urban Housing: Design Standards for New Apartments .....	32
3.4	Transport Strategy for the Greater Dublin Area 2016-2035 .....	33
3.5	Draft Transport Strategy for the Greater Dublin Area 2022-2042 .....	34
3.6	South Dublin County Development Plan 2022-2028 .....	35
3.7	Clonburris SDZ Planning Scheme .....	38
3.8	Development Management Standards .....	39
3.8.1	Car Parking Standards .....	39
3.8.2	Cycle Parking Standards .....	40
4	Characteristics of Proposals .....	41
4.1	Overview .....	41
4.2	Site Access Arrangements .....	42
4.2.1	Vehicle Access .....	42
4.2.2	Pedestrian and Cyclist Access .....	43
4.3	Parking Provision .....	44
4.3.1	Car Parking .....	44
4.3.2	Cycle Parking .....	45
5	Trip Generation and Distribution .....	47
5.1	Introduction .....	47
5.2	Traffic Surveys .....	47
5.3	Trip Generation .....	48
5.4	Trip Redistribution .....	49
5.5	Committed Development .....	50



5.6 Traffic Growth ..... 51

5.7 Assessment Scope ..... 52

5.8 Network Impact ..... 53

6 Network Analysis ..... 56

6.1 Introduction..... 56

6.2 Junction 2 – R113 Fonthill Road / CSLS ..... 57

6.2.1 Do-Minimum Scenario ..... 57

6.2.2 Do-Something Scenario ..... 60

6.3 Junction 3 – CSLS / New Link Road ..... 64

6.3.1 Do-Minimum Scenario ..... 65

6.3.2 Do-Something Scenario ..... 66

6.4 Summary of Network Analysis..... 68

7 Initiatives to Promote Sustainable Travel ..... 70

7.1 Overview ..... 70

7.2 Construction Stage ..... 70

7.3 Operational Stage..... 71

8 Summary and Conclusions ..... 73

8.1 Summary..... 73

8.2 Conclusions ..... 76

Appendix A: Traffic Flow Diagrams ..... A

Appendix B: TRICS Output Data ..... B

Appendix C: TRANSYT Output Files..... C

Figures

Figure 2-1 Land Use Zoning (Source: Figure 2.1.3 Clonburris SDZ Planning Scheme)..... 11





Figure 2-2 Site Location (Source: Google Maps).....	12
Figure 2-3 Indicative Site Boundary (Source: Google Maps).....	13
Figure 2-4 Local Amenities .....	14
Figure 2-5 Local Road Network.....	15
Figure 2-6 Pedestrian and Cycle Facilities along the R136.....	16
Figure 2-7 Pedestrian and Cycle Facilities along the R113.....	16
Figure 2-8 Pedestrian and Cycle Facilities along Thomas Omer Way .....	17
Figure 2-9 Grand Canal Way .....	17
Figure 2-10 Existing Cycle Facilities .....	18
Figure 2-11 Location of Local Bus Routes in relation to the Subject Site .....	18
Figure 2-12 Location of Local Bus Interchanges in Relation to the Subject Site .....	19
Figure 2-13 Location of Clondalkin-Fonthill Train Station in Relation to the Subject Site .....	20
Figure 2-14 15, 30 and 45 Minute Walking Accessibility .....	21
Figure 2-15 15, 30 and 45 Minute Cycling Accessibility .....	22
Figure 2-16 15-, 30- and 45-Minute Public Transport Accessibility.....	23
Figure 2-17 Proposed Street Network (Source: Clonburris SDZ Planning Scheme).....	24
Figure 2-18 Proposed Clonburris Southern Link Street Scheme and Surrounding Existing Road Network .....	24
Figure 2-19 Proposed Cycle Network (Source: GDA Cycle Network Plan) .....	25
Figure 2-20 Proposed cycle Network (Source: Draft GDA Cycle Network 2021).....	26
Figure 2-21 Proposed Future Bus Network (Source: BusConnects) .....	28
Figure 2-22 Proposed DART+ Network (Source: <a href="http://www.dartplus.ie">www.dartplus.ie</a> ).....	29
Figure 2-23 DART+ South West Proposals (Source: <a href="http://www.dartplus.ie">www.dartplus.ie</a> ) .....	29
Figure 2-24 RSA Collision Records.....	30
Figure 4-1 Proposed Site Layout .....	42
Figure 4-2 Proposed R136 / Link Street Signal Controlled Junction .....	43





Figure 4-3 Proposed R113 / Link Street Signal Controlled Junction .....	43
Figure 4-4 Proposed Street Hierarchy for the Subject Development Site .....	44
Figure 4-5 Cycle Parking Locations .....	46
Figure 5-1 Junctions included within the Network Analysis.....	48
Figure 5-2 Committed Development SDCC Ref. SDZ21A/0022 .....	51
Figure 5-3 2039 Network Impact Through Key Off-Site Junctions .....	55
Figure 6-1 Junctions assessed using TRANSYT .....	56
Figure 6-2 Junction 2 R113 Fonthill Road / CSLS .....	57
Figure 6-3 Junction 3 – CSLS / New Link Road .....	64
Figure 8-1 Network Impact Through Key Off-Site Junctions (2039) .....	76

## Tables

Table 2-1 No. of Services per Day on Existing Bus Routes (Source: Transport for Ireland) .....	19
Table 2-2 No. of Outbound Services per Day from Clondalkin-Fonthill Train Station .....	20
Table 2-3 Future BusConnects Frequencies (minutes) by Route (Source: BusConnects) .....	28
Table 3-1 Car Parking Standards .....	39
Table 3-2 Bicycle Parking Requirements .....	40
Table 4-1 Proposed Development Schedule .....	41
Table 4-3 Proposed Car Parking Provision.....	44
Table 4-4 Proposed Cycle Parking Provision .....	46
Table 5-1 Subject Development Vehicle Trip Rates .....	49
Table 5-2 Proposed Development Trips.....	49
Table 5-3 Committed Development Ref: SDZ21A/0022 Vehicle Trips.....	51
Table 5-4 National Traffic Growth Forecasts for the Dublin Metropolitan Area: Annual Growth Factors (Extract from Table 6.1 PAG) .....	52



Table 5-5 Network Impact Through Key Off Site Junctions ..... 54

Table 6-1 2024 Do-Minimum TRANSYT Results Junction 2 ..... 58

Table 6-2 2029 Do-Minimum TRANSYT Results junction 2 ..... 59

Table 6-3 2039 Do-Minimum TRANSYT Results Junction 2 ..... 60

Table 6-4 2024 Do-Something TRANSYT Results Junction 2 ..... 61

Table 6-5 2029 Do-Something TRANSYT Results Junction 2 ..... 62

Table 6-6 2039 Do-Something TRANSYT Results junction 2 ..... 63

Table 6-7 Impact Significance Junction 2..... 64

Table 6-8 2024 Do-Minimum TRANSYT Results Junction 3 ..... 65

Table 6-9 2029 Do-Minimum TRANSYT Results Junction 3 ..... 65

Table 6-10 2039 Do-Minimum TRANSYT Results Junction 3 ..... 66

Table 6-11 2024 Do-Something TRANSYT Results Junction 3 ..... 66

Table 6-12 2029 Do-Something TRANSYT Results Junction 3 ..... 67

Table 6-13 2039 Do-Something TRANSYT Results Junction 3 ..... 67

Table 6-14 Impact Significance Junction 3..... 68





## 1 Introduction

### 1.1 Background

DBFL Consulting Engineers (DBFL) have been commissioned to prepare a Traffic and Transport Assessment (TTA) for a proposed development on lands at Clonburris, Co. Dublin.

The development will consist of the construction of 157 no. dwellings on a site of c.3.45 hectares in the Clonburris South-West Development Area of the Clonburris Strategic Development Zone (SDZ) Planning Scheme 2019 as follows:

- A) 81 no. houses comprising 4 no. 2-bedroom houses, 65 no. 3-bedroom houses and 12 no. 4-bedroom houses (all 2-no. storey with associated private open space and car parking);
- B) 76 no. apartment units consisting of 26 no. 1-bedroom and 50 no. 2-bedroom units within Block 1 (4 no. storeys);
- C) Vehicular access will be provided from the permitted street under SDZ21A/0022 and the permitted Clonburris Southern Link Street (SDZ20A/0021) and R113 (Fonthill Road) to the east;
- D) All ancillary site development works including footpaths, landscaping boundary treatments, public and private open space areas, car parking (170 no. spaces) and bicycle parking (170 no. spaces), single-storey ESB sub-stations, bin and bicycle stores and all ancillary site development/construction works.

This report has been produced to address any potential concerns that the local planning authority (South Dublin County Council and ABP) may have pertaining to the level of influence the proposed development will have upon the local transportation system.

### 1.2 Scope

The purpose of this TTA is to quantify the existing transport environment and to detail the results of assessment work undertaken to identify the potential level of any transport impact generated as a result of the proposed development. The scope of the assessment covers transport and related sustainability issues including means of vehicular access, pedestrian, cyclist and local public transport connections. The principal objective of the report is to quantify any level of impact





across the local road network and subsequently ascertain both the existing and future operational performance of the local road network.

### 1.3 Methodology

Our approach to the study accords with policy and guidance both at a national and local level. Accordingly, the adopted methodology responds to best practices, current and emerging guidance, exemplified by a series of publications, all of which advocate this method of analysis. Key publications consulted include;

- 'Traffic and Transport Assessment Guidelines' (May 2014) Transport Infrastructure Ireland;
- 'Traffic Management Guidelines' Dublin Transportation Office & Department of the Environment and Local Government (May 2003);
- 'Guidelines for Traffic Impact Assessments' The Institution of Highways and Transportation; and
- South Dublin County Development Plan 2022-2028.
- 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities' The Department of Housing, Planning and Local Government (DHPLG) (December 2020).

Our methodology incorporated a number of key inter-related stages, including;

- **Background Review:** A background review of previous planning permissions on the subject Clonburris Phase 3 site and committed developments in the wider surrounding area was undertaken.
- **Site Audit:** A site audit was undertaken to quantify existing road network issues and identify local infrastructure characteristics, in addition to establishing the level of accessibility to the site in terms of walking, cycling and public transport. An inventory of the local road network was also developed during this stage of the assessment.
- **Development Framework:** A review of Development Frameworks and supporting transport focused studies was undertaken.
- **Traffic Counts:** Traffic counts surveys were analysed with the objective of establishing local traffic characteristics in the immediate area of the proposed development.
- **Trip Generation:** A trip generation exercise has been carried out to establish the potential level of vehicle trips generated by the proposed development.



- **Trip Distribution:** Based upon both the existing and future network characteristics, a distribution exercise has been undertaken to assign site generated vehicle trips across the local road network.
- **Network Analysis:** Further to quantifying the predicted impact of vehicle movements across the local road network for the adopted site access strategy more detailed computer simulations have been undertaken to assess the operational performance of key junctions in the post development 2024, 2029 and 2039 development scenarios.

## 1.4 Report Structure

As introduced above, this TTA seeks to clarify the potential level of influence generated by the proposed development upon the local road network and subsequently ascertain the existing and future operational performance of the local transport system. The structure of the report responds to the various stages of this exercise including the key tasks summarised below.

**Chapter 2** of this report describes the existing conditions at the proposed development location and surrounding area, whilst **Chapter 3** provides a summary of the relevant transport policies that influence the design and appraisal of the subject residential proposal.

A description of the proposed development scheme is described in **Chapter 4** whilst **Chapter 5** outlines the trip generation exercise carried out and the adopted methodology for applying growth factors to establish design year network traffic flows and the predicted scale of impact upon the local road network.

The results of detailed analysis of the operational performance of key local junctions are presented within **Chapter 6** whilst **Chapter 7** outlines a number of mitigation measures including how the construction phase of the project will be managed.

The main conclusions and recommendations derived from the analysis are summarised in **Chapter 8**.





## 2 Receiving Environment

### 2.1 Land Use

The subject development site is a greenfield site located within the Clonburris Strategic Development Zone (SDZ) lands. The Clonburris SDZ lands have an approximate land area of 280 hectares and is predominately agricultural in nature or greenfield sites. In recent years, Lucan East Educate Together National School and two secondary schools; Griffeen Community College and Kishoge Community College, have been constructed on the lands. The lands also contain a number of private residences, together with Irish Traveller accommodation which has been provided by South Dublin County Council. There are two train stations constructed within the SDZ; the Clondalkin-Fonthill station which is currently operational whilst the Kishoge station is constructed but has not been operational to date.

The subject lands are zoned under zoning class Objectives SDZ and is described within the South Dublin County Development Plan (2022-2028) as *“To provide for strategic development in accordance with approved planning schemes”*. As part of the Clonburris SDZ planning scheme, the lands are zoned for primarily residential use. This is shown in **Figure 2-1** below.

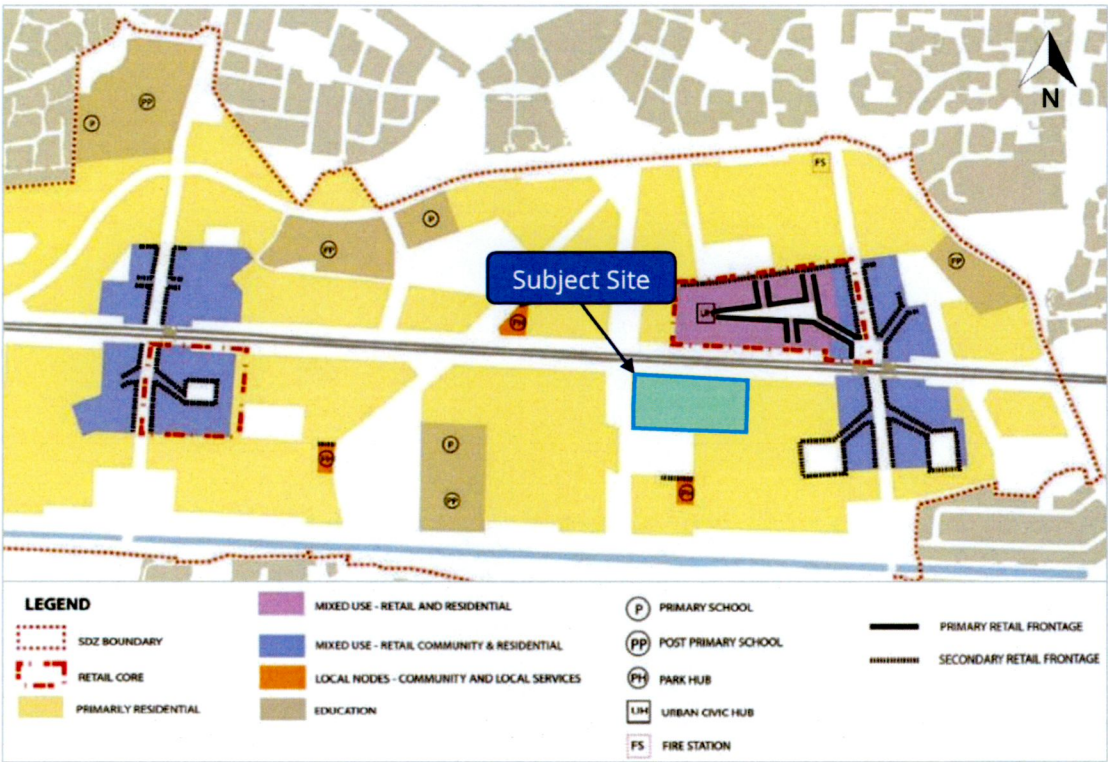


Figure 2-1 Land Use Zoning (Source: Figure 2.1.3 Clonburris SDZ Planning Scheme)

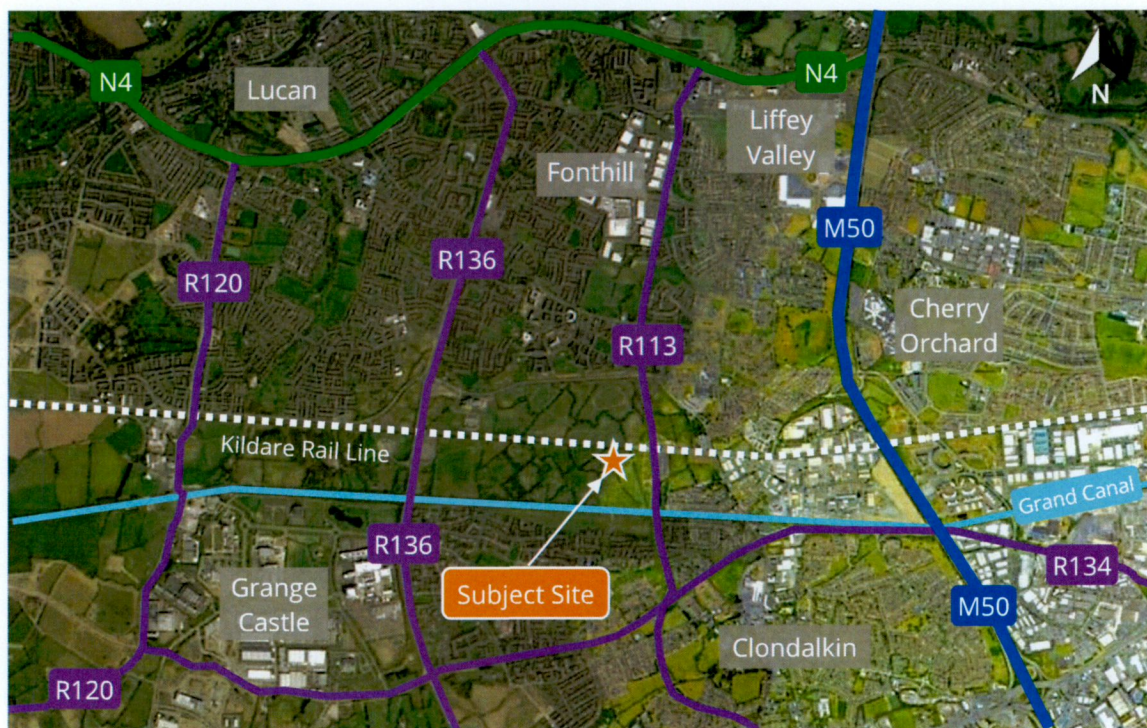


## 2.2 Location

The subject site is located within the Clonburris Strategic Development Zone (SDZ) lands. The subject site is bound to the south by the proposed Phase 1A development and to the east by the proposed Phase 1B development. The Kildare railway line forms the northern boundary while the Clonburris Southern Link Street forms the western boundary.

The SDZ is located to the west of Dublin City Centre and the M50. It is conveniently positioned between Lucan to the north-west, Clondalkin to the south-east and Liffey Valley to the north-east. The lands are intersected in an east-west orientation by the Kildare railway line and by the Grand Canal to the south.

The general location of the subject site in relation to the surrounding road network is illustrated in **Figure 2-2** below, whilst **Figure 2-3** shows the indicative extent of the subject site lands. The subject site is located approximately 12 kilometres west of Dublin City Centre.



*Figure 2-2 Site Location (Source: Google Maps)*



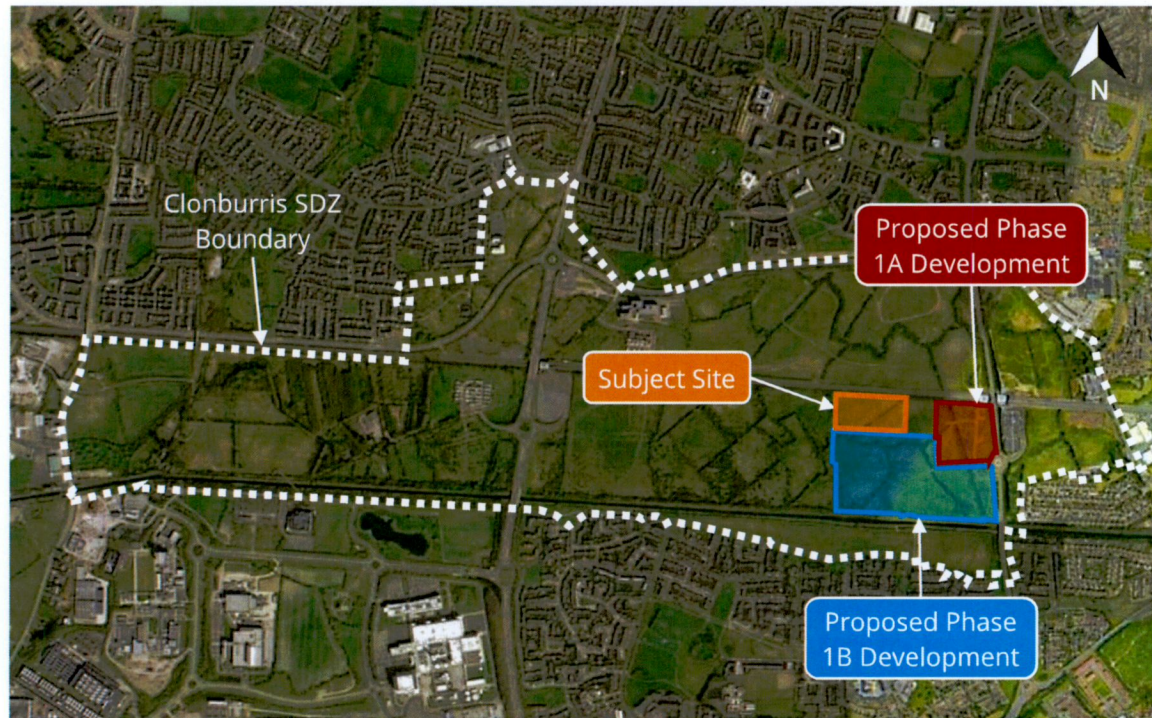


Figure 2-3 Indicative Site Boundary (Source: Google Maps)

## 2.3 Local Amenities

The proposed development site is well placed in terms of proximity to local amenities. Local primary schools include Lucan East Educate Together National School, Griffeen Valley Educate Together National School, Lucan Community National School, Divine Mercy National School, St. Peter and the Apostle Junior National School, Nano Nagle Junior National School, Talbot Senior National School and St. Ronan's National School. Some of the secondary schools found close to the subject site include Kishoge Community College, Griffeen Community College, Collinstown Park Community College, Coláiste Chilliain and Deansrath Community College.

The site is also conveniently located close to a number of retail centres including The Mill Shopping Centre, Bawnogue Shopping Centre, Nielstown Shopping Centre, Clondalkin Village Centre and Ballyowen Castle Shopping Centre. All of these facilities can be found within a 3km radius. A number of employment centres can also be found nearby including Clondalkin Industrial Estate, ACE Enterprise Park, Oakfield Industrial Estate, Elmfield Industrial Estate, Grange Castle Business Park and Fonthill Industrial Estate.

A number of leisure facilities will be easily accessible from the subject including Clondalkin Leisure Centre, Clondalkin Skatepark, Griffeen Valley Park, Grange Castle Golf Club and Lucan Sarsfields



GAA Club. Healthcare facilities in close proximity to the subject site include Cherry Orchard Hospital, Ballyowen Medical Centre, Clondalkin Medical Centre and Deansrath Health Centre.

The location of these amenities in relation to the subject site is shown in **Figure 2-4** below.



*Figure 2-4 Local Amenities*

## 2.4 Existing Transportation Infrastructure

### 2.4.1 Road Network

An important stage in the development of a Traffic and Transport Assessment is the identification and appreciation of the local network's existing transport conditions and vehicle movement characteristics. An audit of the local road network has therefore been undertaken to establish the existing transport conditions and vehicle movement patterns across the existing network. The proposed Clonburris residential development lies within the Clonburris SDZ. The SDZ is well connected to both the local and national road network with a number of key corridors found close by. An overview of the local road network can be found in **Figure 2-5** below.

The R120 can be found to the west of the SDZ, running in a north-south direction. The single carriageway road is subject to a speed limit of 60 km/h in the vicinity of the SDZ. Travelling north along the R120 provides a connection to Lucan Village and junction 4 on the N4. The N4 national road connects the M50 motorway to the M4 motorway. Travelling south along the R120 provides



a connection to Newcastle, junction 4 on the N7 and Rathcoole. The N7 national road connects the M50 motorway to the M7 motorway.

The R136 can be found running through the middle of the SDZ, also running in a north-south direction. This road has two lanes of traffic travelling in each direction with bus lanes also found on both sides. A speed limit of 80km/h is in place along the section of the R136 that passes through the SDZ. Travelling north along the R136 leads to junction 3 of the N4. Travelling south along the R136 leads to junction 2 on the N7, Citywest and Tallaght.

Another north-south aligned regional road, the R113, can be found to the east of the SDZ. This single carriageway road is subject to a speed limit of 60 km/h as it passes through the SDZ, with stretches of bus lane for southbound travel found along the western edge of the carriageway. Bus lanes for travel in both directions can be found north of the SDZ. The R113 connects to the N4 and Liffey Valley to the north and to Clondalkin and Tallaght to the south. The road also facilitates access to the Clondalkin Fonthill train station.

Local roads found in close proximity to the subject site include Ninth Lock Road and Thomas Omer Way. These roads form part of the eastern and northern boundaries of the SDZ, respectively. Ninth Lock Road is a single carriageway road, subject to a speed limit of 50 km/h. The road starts at The Mill Shopping Centre in Clondalkin and continues north until it joins with Thomas Omer Way and the R113. Thomas Omer Way has one lane of general traffic travelling in both directions with bus lanes also found on both sides of the corridor. The road connects the R136 to the R113 and is subject to a speed limit of 60 km/h.



Figure 2-5 Local Road Network



## 2.4.2 Existing Pedestrian and Cycling Facilities

Pedestrians travelling along the R136 benefit from the provision of footpaths and segregated cycle lanes on both sides of the corridor. These footpaths and cycle lanes are separated from the carriageway by mixed planting and barriers. Street lighting is also provided on both sides, but this is placed in front of the footpaths, focusing on illuminating the vehicular traffic, rather than the pedestrian and cyclist areas. This provision of pedestrian and cyclist facilities along the R136 is shown below in **Figure 2-6**.



*Figure 2-6 Pedestrian and Cycle Facilities along the R136*

The R113 features footpaths on both sides of the carriageway, separated from vehicular traffic by the presence of a grass verge and barriers. A segregated cycle lane can be found along the western edge of the corridor, adjacent to the footpath. Cyclists can make use of the bus lane provided on the eastern side of the carriageway. For the majority of the length of the R113 that passes through the SDZ, street lighting is only found on eastern edge of the corridor. However, additional street lighting is provided on the western side in the proximity of Clondalkin-Fonthill train station. The pedestrian and cycle facilities found along the R113 are presented below in **Figure 2-7**.



*Figure 2-7 Pedestrian and Cycle Facilities along the R113*



Pedestrians and cyclists travelling along Thomas Omer Way benefit from footpaths and segregated cycle lanes on both sides of the corridor. Street lighting is also provided on both sides. Signalised pedestrian crossings can be found at both ends of Thomas Omer Way, at the junctions with the R136 and the R113. An additional signalised pedestrian crossing is provided adjacent to Kishoge Community College and Griffeen Community College. The pedestrian and cyclist facilities found along Thomas Omer Way are illustrated below in **Figure 2-8**.



*Figure 2-8 Pedestrian and Cycle Facilities along Thomas Omer Way*

Grand Canal Way runs along the southern border of the SDZ. The trail is for exclusive use by pedestrians and cyclists. The path starts at the Blackhorse Luas Stop in Drimnagh and continues west as far as the termination of the Grand Canal at Shannon Harbour in Co. Offaly. Although it is possible to travel on both sides of the canal, only the path on the southern embankment is paved and benefits from street lighting. A view of Grand Canal Way is shown in **Figure 2-9**.



*Figure 2-9 Grand Canal Way*

**Figure 2-10** below presents an overview of the existing cycle facilities found in the vicinity of the subject site.



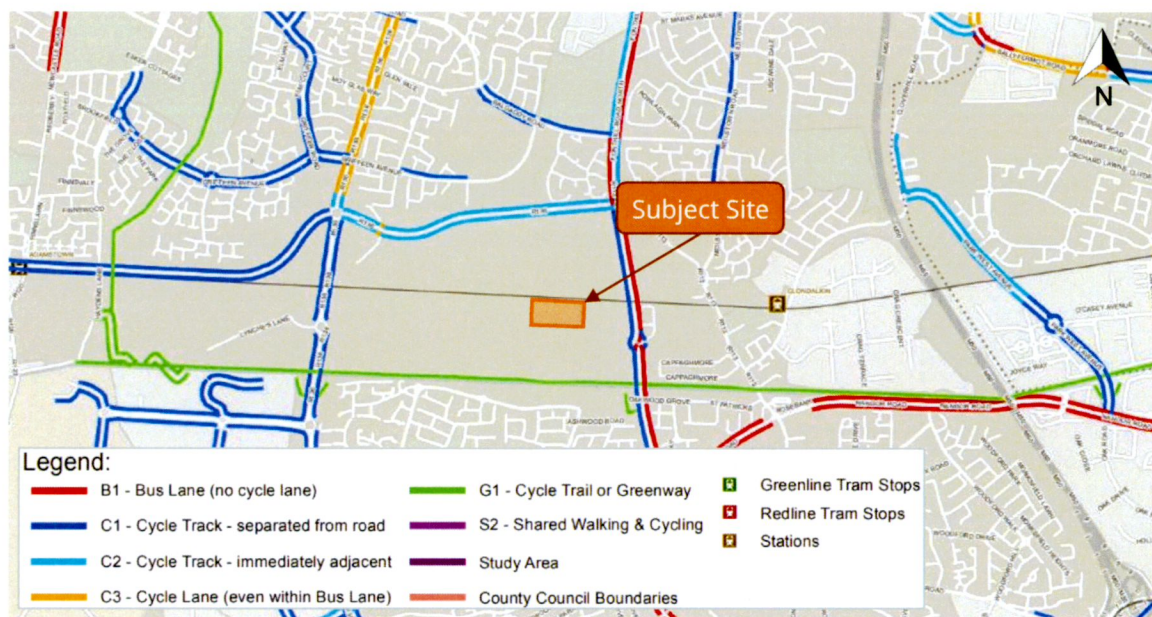


Figure 2-10 Existing Cycle Facilities

### 2.4.3 Existing Public Transport – Bus

Dublin Bus currently operates bus routes 13, G2, 51d, L54 and 151 in the vicinity of the subject site. These routes provide access to locations such as Grange Castle, Liffey Valley, Finglas, Lucan and Dublin City Centre. These routes can be seen in Figure 2-11 below.



Figure 2-11 Location of Local Bus Routes in relation to the Subject Site

Table 2-1 presents the number of buses operating on each route per day while Figure 2-12 illustrates the location of the closest bus stops to the subject site, serving each route.





Route No.	Description	No. of Services per Day		
		Mon - Fri	Sat	Sun
13	Harristown – Grange Castle	85	68	59
	Grange Castle – Harristown	87	68	63
G2	Liffey Valley Shopping Centre – Spencer Dock	82	67	49
	Spencer Dock - Liffey Valley Shopping Centre	81	67	49
51d	Aston Quay / Waterloo Road – Clondalkin	1	-	-
	Clondalkin – Aston Quay / Waterloo Road	1	-	-
L54	River Forest – Red Cow Luas	35	32	29
	Red Cow Luas – River Forest	36	32	39
151	Docklands – Foxborough	48	46	31
	Foxborough - Docklands	51	48	34

Table 2-1 No. of Services per Day on Existing Bus Routes (Source: Transport for Ireland)



Figure 2-12 Location of Local Bus Interchanges in Relation to the Subject Site

2.4.4 Existing Public Transport – Rail

The Clondalkin-Fonthill train station is located approximately 250m from the subject site on the R113. This station facilitates rail services to Newbridge, Hazelhatch & Celbridge, Portlaois, Grand Canal Dock and Dublin Heuston. **Table 2-2** No. of Outbound Services per Day from Clondalkin-Fonthill Train Station summarises the number of outbound services from the station daily by route while **Figure 2-13** illustrates the location of the station in relation to the subject site.





Direction	No. of Services per Day		
	Mon - Fri	Sat	Sun
To Newbridge	5	-	1
To Portlaoise	17	15	-
To Hazelhatch & Celbridge	17	-	-
To Carlow	1	-	-
To Kildare	1	2	4
To Grand Canal Dock	17	-	-
To Dublin Heuston	22	18	5
Total No. of Outbound Services	80	35	10

Table 2-2 No. of Outbound Services per Day from Clondalkin-Fonthill Train Station

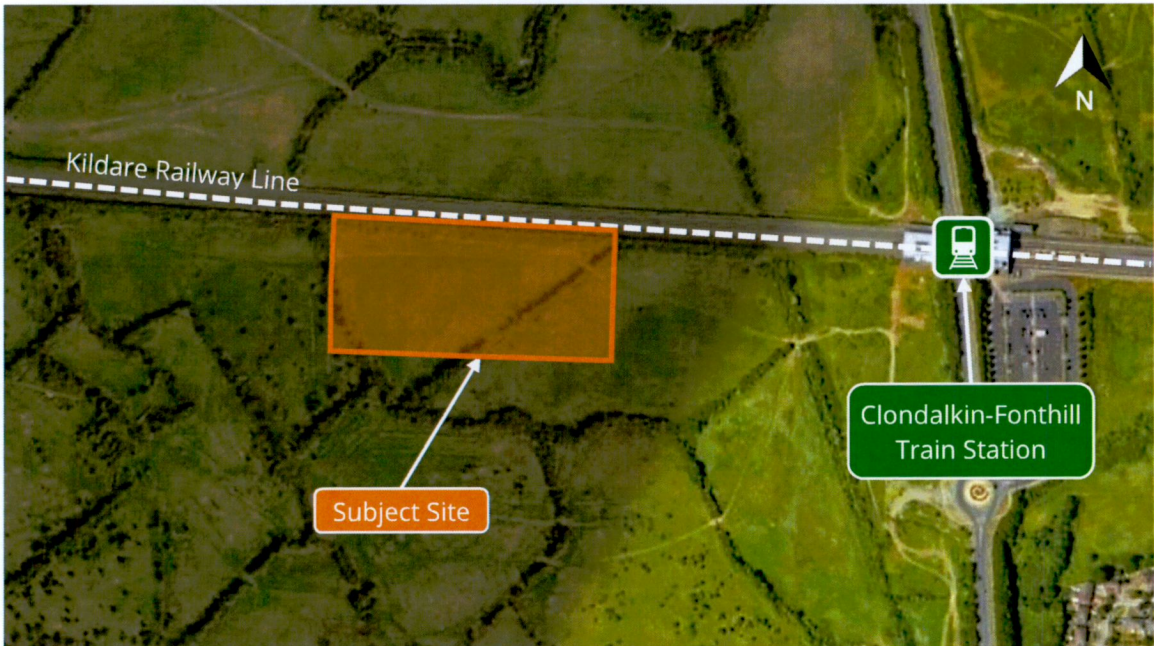


Figure 2-13 Location of Clondalkin-Fonthill Train Station in Relation to the Subject Site

2.5 Existing Site Accessibility

2.5.1 Walking Accessibility

The subject site currently benefits from excellent walking accessibility, with a number of local amenities readily accessible on foot. This accessibility is shown in **Figure 2-14** below. Within 15 minutes walking from the site, the retail hubs of Ace Enterprise Park and Bawnogue Shopping Centre can be reached. Schools accessible within 15 minutes on foot include Nano Nagle Junior National School and Talbot Senior National School.





Within 30 minutes on foot, a larger number of retail centres are accessible, including Neilstown Shopping Centre, The Mill Shopping Centre and Clondalkin Village Centre. Schools accessible within this time include St. Peter the Apostle Junior National School, Choláiste Chilliain, Deansrath community College and St. Ronan’s National School. Other amenities accessible within a 30 minute walk include Clondalkin Leisure Centre, Clondalkin Skatepark and Clondalkin Medical Centre.

Within 45 minutes on foot, the large employment zone of Grange Castle Business Park can be reached. Other amenities accessible within a 45 minute walk of the subject site include Grange Castle Golf Club, Fonthill Retail Park, Griffeen Community College and Kishoge Community College.

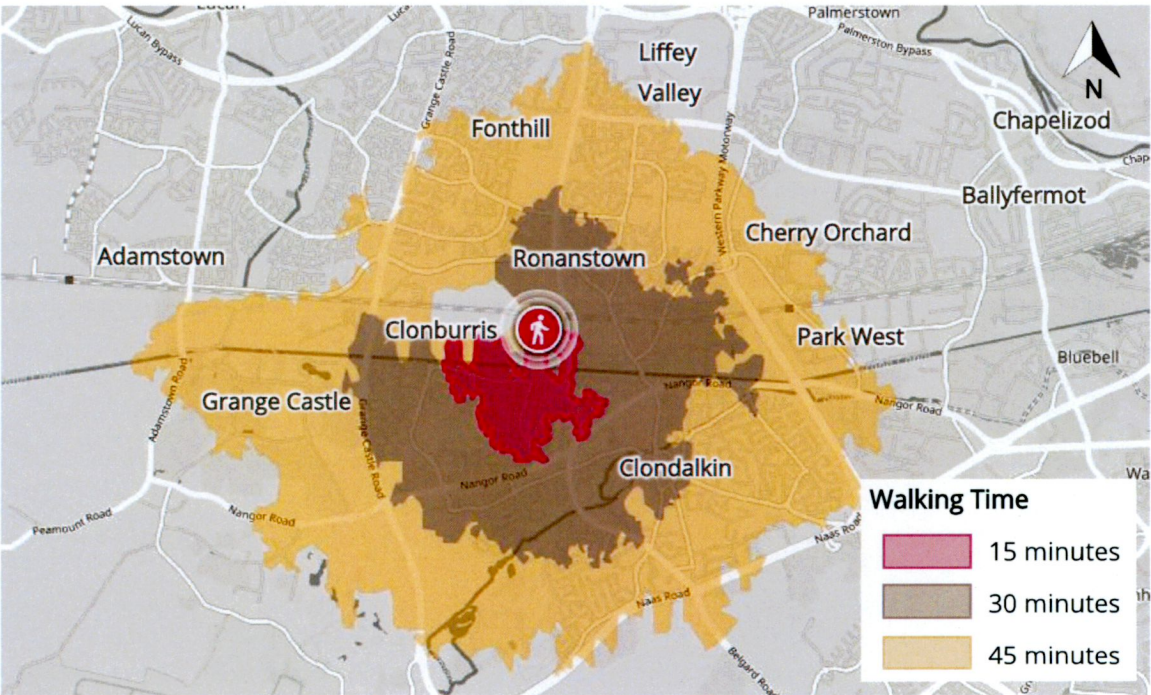


Figure 2-14 15, 30 and 45 Minute Walking Accessibility

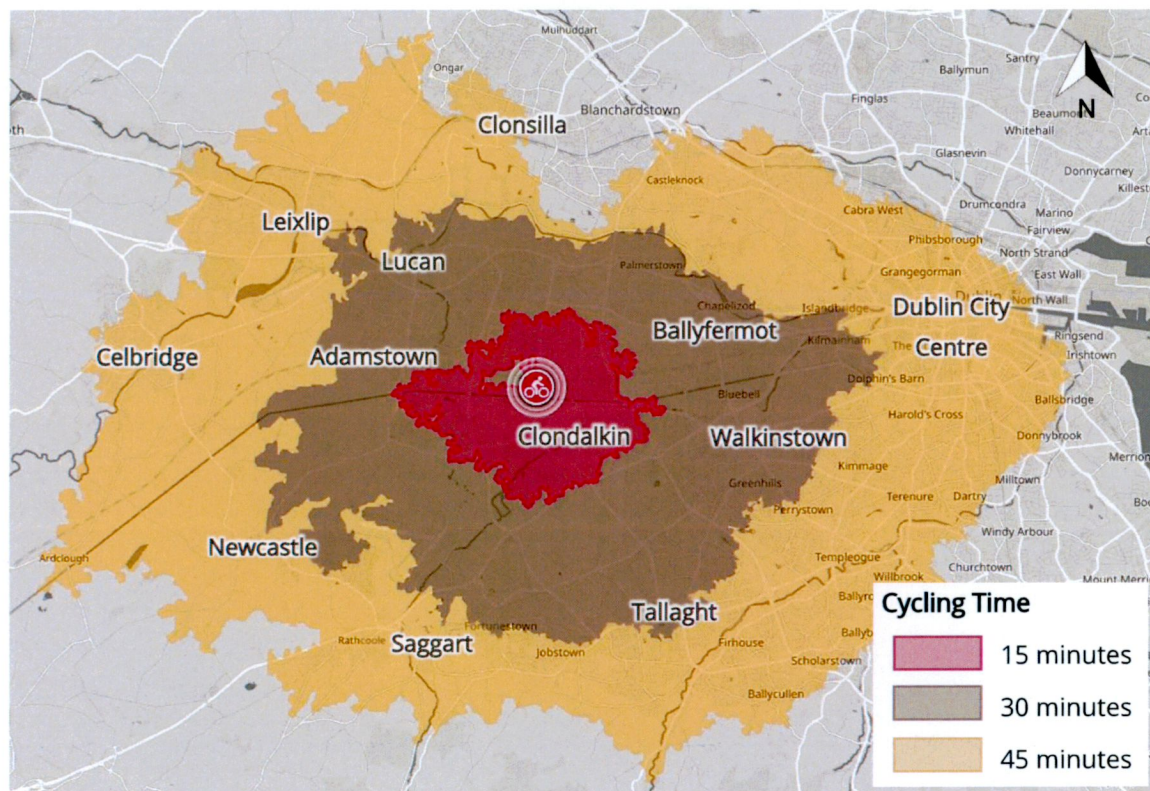
2.5.2 Cycling Accessibility

The subject site benefits from a wide cycle catchment with a large number of destinations and amenities accessible within 15 minutes by bike. This includes the majority of amenities accessible within 30-45 minutes on foot as well as Clondalkin-Fonthill train station.

Within a 30 minute cycle of the subject site, many urban villages can be reached, including Greenhills, Walkinstown, Ballyfermot and Chapelizod. Other larger suburbs that can be reached include Lucan and Adamstown. To the south of the subject site, 30 minutes cycling opens access to destinations such as Citywest and the TU Dublin Tallaght Campus.



To the west of the subject site, the towns of Celbridge and Leixlip are accessible within 45 minutes by bike. To the east, a 45 minute cycle allows travel to the majority of Dublin City Centre and all the amenities located there. The 15-, 30-, and 45-minute cycle catchment for the subject site is presented in **Figure 2-15** below.



*Figure 2-15 15, 30 and 45 Minute Cycling Accessibility*

### 2.5.3 Public Transport Accessibility

The subject site currently benefits from a number of bus and rail services that provide access to a wide variety of amenities and destinations of interest. This public transport catchment surrounding the subject site is shown in **Figure 2-16** below.

Within 15 minutes of the subject site, utilising public transport provides access to the residential areas south of the Grand Canal along with Ace Enterprise Park and Bawnogue Shopping Centre. Within 30 minutes, Fonthill Retail Park and Fonthill Business Park can both be reached along with the industrial areas around Ballymount and the Long Mile Road.

Travelling for 45 minutes on public transport from the subject site provides access to both Liffey Valley Shopping Centre and The Square Shopping Centre in Tallaght. Other destinations accessible in Tallaght include Tallaght University Hospital and TU Dublin Tallaght Campus. Public transport also enables travel into Dublin City Centre, as far as Cork Street and Kilmainham.



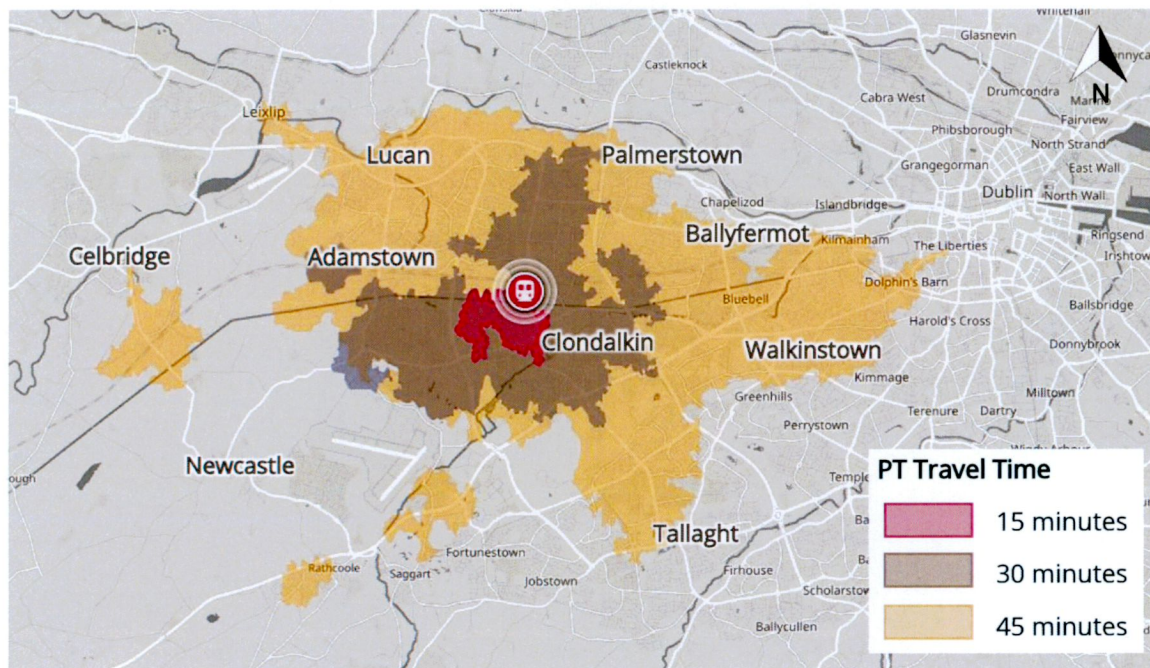


Figure 2-16 15-, 30- and 45-Minute Public Transport Accessibility

## 2.6 Emerging Transport Proposals

### 2.6.1 Roads Proposals

The Clonburris SDZ Planning Scheme (May 2019) outlines a number of proposed new roads throughout the SDZ lands that are aimed at maximising connectivity between residential and commercial areas within the scheme as well as providing residents with links to public transport interchanges. The provision of the street network across the SDZ lands has been identified as a six year roads objective within the South Dublin County Development Plan 2022-2028. The overall street network proposals for the SDZ lands are highlighted in **Figure 2-17** below.

Some of the streets proposed throughout the SDZ of most relevance to the subject development proposals include the local streets proposed throughout the subject site and the Clonburris Southern Link Street.

The Clonburris Southern Link Street was granted planning permission in 2021 and will provide a connection between the subject site and the R113 regional road as well as the wider SDZ. An overview of road layout can be seen in **Figure 2-18**. The road will feature high quality pedestrian and cycle facilities on both sides of the corridor as well as landscaping, pedestrian crossing facilities and bus stops.



The Clonburris Southern Link Street will consist of 4.0km of new road generally in the form of a 7m wide single carriageway with 1.75m wide off-road cycle tracks, 2m wide footpaths and public lighting. It will include 8 no. new junctions and alterations to 4 no. existing junctions, in addition it will provide a number of vehicular access spurs to facilitate future development of adjoining lands.

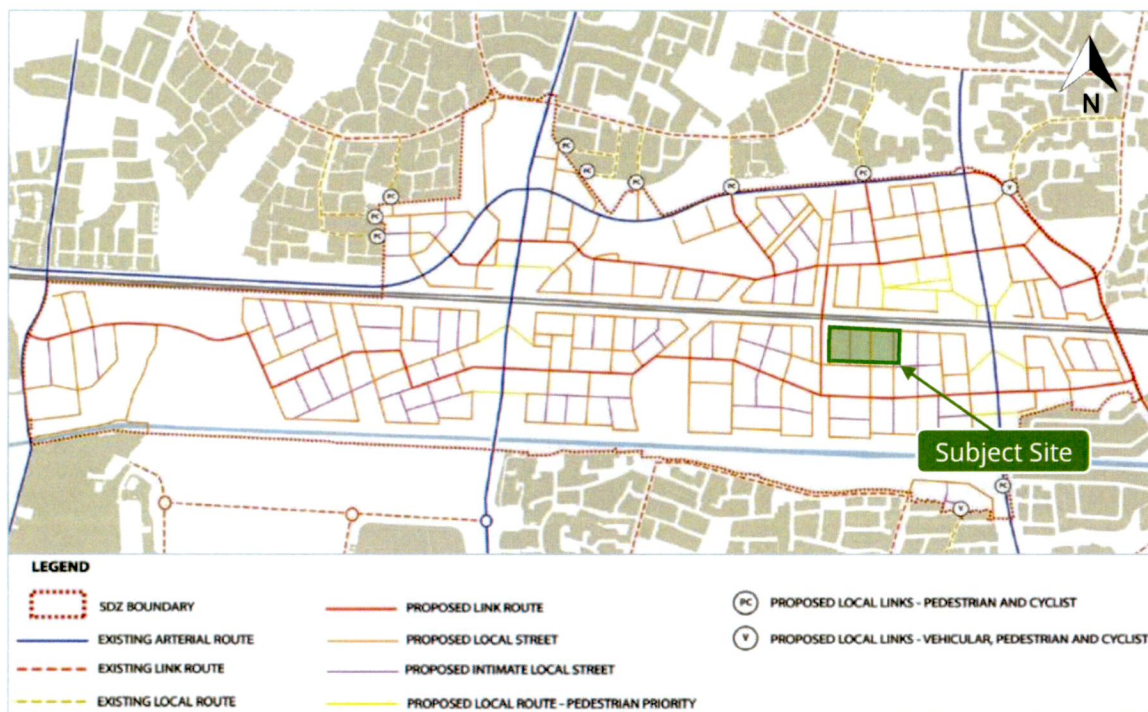


Figure 2-17 Proposed Street Network (Source: Clonburris SDZ Planning Scheme)

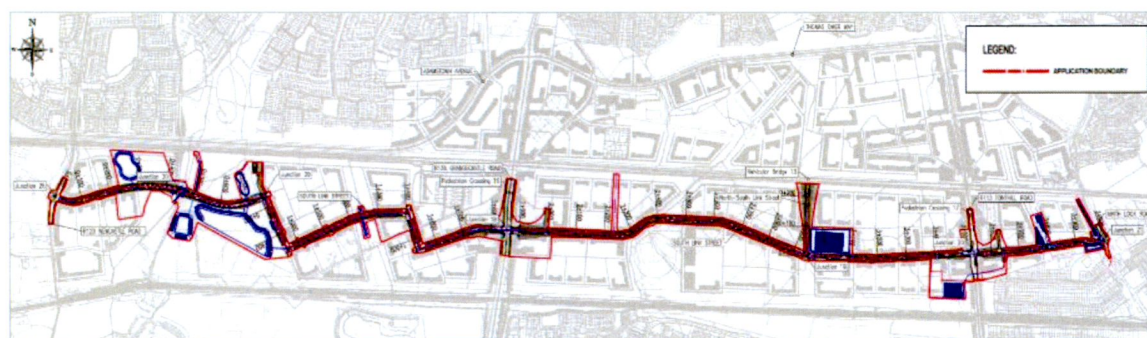


Figure 2-18 Proposed Clonburris Southern Link Street Scheme and Surrounding Existing Road Network

## 2.6.2 Cycle Network Proposals

The subject site lies within the 'Dublin Mid West' sector of the NTA's proposed cycle network, as outlined within the Greater Dublin Area Cycle Network Plan (2013). The sector extends from Leixlip towards the Phoenix Park to the north and from Adamstown as far as Greenhills to the south.

In the vicinity of the subject site, the following routes are proposed as indicated in **Figure 2-19**:



- **Primary Route SO5** – from Liffey Valley Shopping Centre south toward Fonthill Road and Ninth Lock Road to Clondalkin Village and Tallaght. A northward link will extend across the River Liffey to Blanchardstown
- **Secondary Route SO5a** – a parallel variant of route SO5 along Neilstown Road and Fonthill Road west of Clondalkin Village
- **Secondary Route SO6** – Lucan (Esker) – Grange Castle – Kingswood – Jobstown along the R136
- **Secondary Route SO8** – From the R113 along Thomas Omer Way and Adamstown Avenue to the R120
- **Route N10 Grand Canal Greenway** – Kilmainham to Adamstown

Of these routes outlined in the GDA Cycle Network Plan (2013), only primary route SO5 has yet to be instated. All other routes are currently operational.

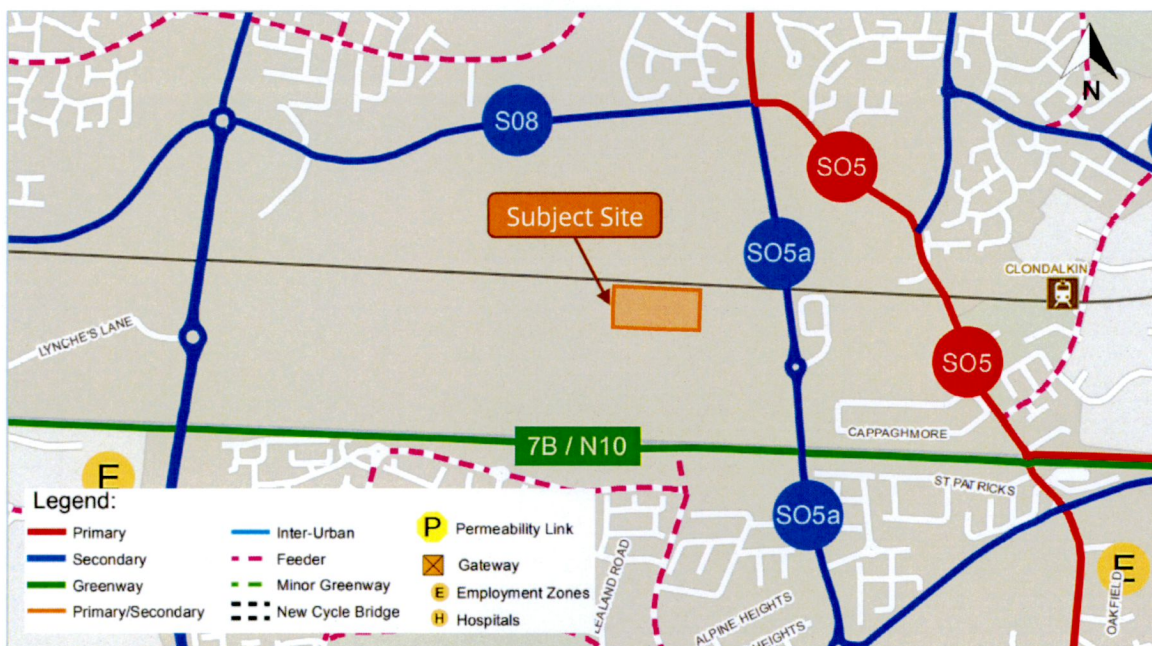


Figure 2-19 Proposed Cycle Network (Source: GDA Cycle Network Plan)

In November 2021, the NTA released an updated draft Greater Dublin Area Cycle Network Plan as part of the Draft Transport Strategy for the Greater Dublin Area 2022-2042. The majority of the proposed 2013 cycle network remains unchanged in the updated proposals. The primary changes to the network found in the updated plan is the provision of a number of greenway routes through the Clonburris SDZ lands. The proposed cycle facilities presented in the draft Greater Dublin Area Cycle Network Plan 2021 are shown below in **Figure 2-20**.





Figure 2-20 Proposed cycle Network (Source: Draft GDA Cycle Network 2021)

2.6.3 Public Transport Proposals – BusConnects

BusConnects is an initiative launched by the National Transport Authority with the aim of overhauling the bus system in the Dublin Region. This initiative includes review of the bus services and the definition of a core bus network of radial, orbital and regional core bus corridors. It also includes enhancements to ticketing and fare systems as well as transition to a new low emission vehicle fleet.

The initiative proposes to implement a redesign of the existing bus network. The expected fundamental changes to the network are as follows:

- Increasing the overall amount of bus services. Providing new and frequent orbital services connecting more outer parts of the city together;
- Simplifying the bus services on key radial routes into “Spines” where all buses will operate under a common letter system, buses will run very frequently and be more evenly spaced;
- Increasing the number of routes where buses will come every 15 minutes or less all day;
- The frequent network would become a web-shaped grid, with many interchanged opportunities to reach more destinations. Everywhere that two frequent routes cross, a fast interchange will be possible; and
- Additional services provided at peak hours to limit overcrowding.



The bus network redesign is the first step in a series of transformative changes to Dublin's bus network over the coming years. However, the next steps in this initiative are the improvements to the infrastructure and operation of the proposed bus network which include:

- Building a network of "next generation" bus corridors on the busiest bus routes to make bus journeys faster, predictable and reliable;
- Developing a state-of-the-art ticketing system using credit and debit cards or mobile phones to link with payment accounts and making payment much more convenient;
- Implementing a cashless payment system to vastly speed up passenger boarding times;
- A simpler fare structure, allowing seamless movement between different bus services without financial penalty;
- New bus stops with better signage and information and increased provision of additional bus shelters; and
- Transitioning to a new bus fleet using low-emission vehicle technologies.

In relation to the subject site, following this redesign of the bus network, the proposed development will be located in close proximity to the following routes:

- **D1 Branch** – Clongriffin – City Centre – Grange Castle
- **D3 Branch** – Clongriffin – City Centre – Clondalkin
- **G2 Branch** – Liffey Valley SC – City Centre – Spencer Dock
- **W2 Orbital** – Liffey Valley – Clondalkin – Tallaght
- **W4 Orbital** – Blanch. SC – Liffey Valley – Grange Castle Rd – Tallaght
- **L54 Local** – River Forest – Lucan – Clondalkin – Red Cow
- **X55 Express** – Clondalkin – City Centre – Ringsend

The new bus routes proposed by BusConnects are based on the existing road network. It is envisioned that these routes will evolve organically over time due to changes in local demographics and alterations to the road network. This is of particular relevance to Clonburris as the SDZ is predicted to experience significant growth over the coming years along with the construction of two new link roads and a local road network.

Based on the existing BusConnects plans, local route L54 and the G2 branch are both already operational. **Table 2-3** below summarises the proposed frequency at which these routes will operate while **Figure 2-21** displays the location of these routes in relation to the subject site.





Route No.	Description	Frequency (minutes)		
		Mon - Fri	Sat	Sun
D1	Clongriffin – City Centre – Grange Castle	15	15-20	20-30
D3	Clongriffin – City Centre – Clondalkin	15	15-20	20-30
G2	Liffey Valley SC – City Centre – Spencer Dock	12-15	15-20	20-30
W2	Liffey Valley – Clondalkin – Tallaght	15	15-20	20-30
W4	Blanch. SC – Liffey Valley – Grange Castle Rd – Tallaght	15-30	30-60	30-60
L54	River Forest – Lucan – Clondalkin – Red Cow	30	30-60	30-60
X55	Clondalkin – City Centre - Ringsend	5 services per day	-	-

Table 2-3 Future BusConnects Frequencies (minutes) by Route (Source: BusConnects)



Figure 2-21 Proposed Future Bus Network (Source: BusConnects)

2.6.4 Public Transport Proposals – DART+ South West

The DART+ Programme will revolutionise travel in the Greater Dublin Area. It will see the DART network grow from its current 50km in length to over 150km. The programme will see rail electrification introduced on existing lines servicing locations such as Drogheda, Maynooth, Hazelhatch and Greystones. Electrification of the fleet will help to reduce greenhouse gas emissions from transport, provide more frequent services with higher capacity and support sustainable growth among existing communities.

The second phase of the wider DART+ programme to be implemented will be DART+ South West. This project will increase services between Dublin City Centre and Hazelhatch & Celbridge from 12 trains per direction per to 23 trains per direction per hour. It will also see an increase in capacity from 5,000 passengers per direction per hour to 20,000 passengers per direction per hour. New stations along the line will include Heuston West and Glasnevin. It is expected that the railway





order for DART+ South West will be lodged before the end of 2022. **Figure 2-22** shows the extent of electrification proposed as part of the DART + programme while **Figure 2-23** illustrates the specific length of electrification proposed as part of DART+ South West.

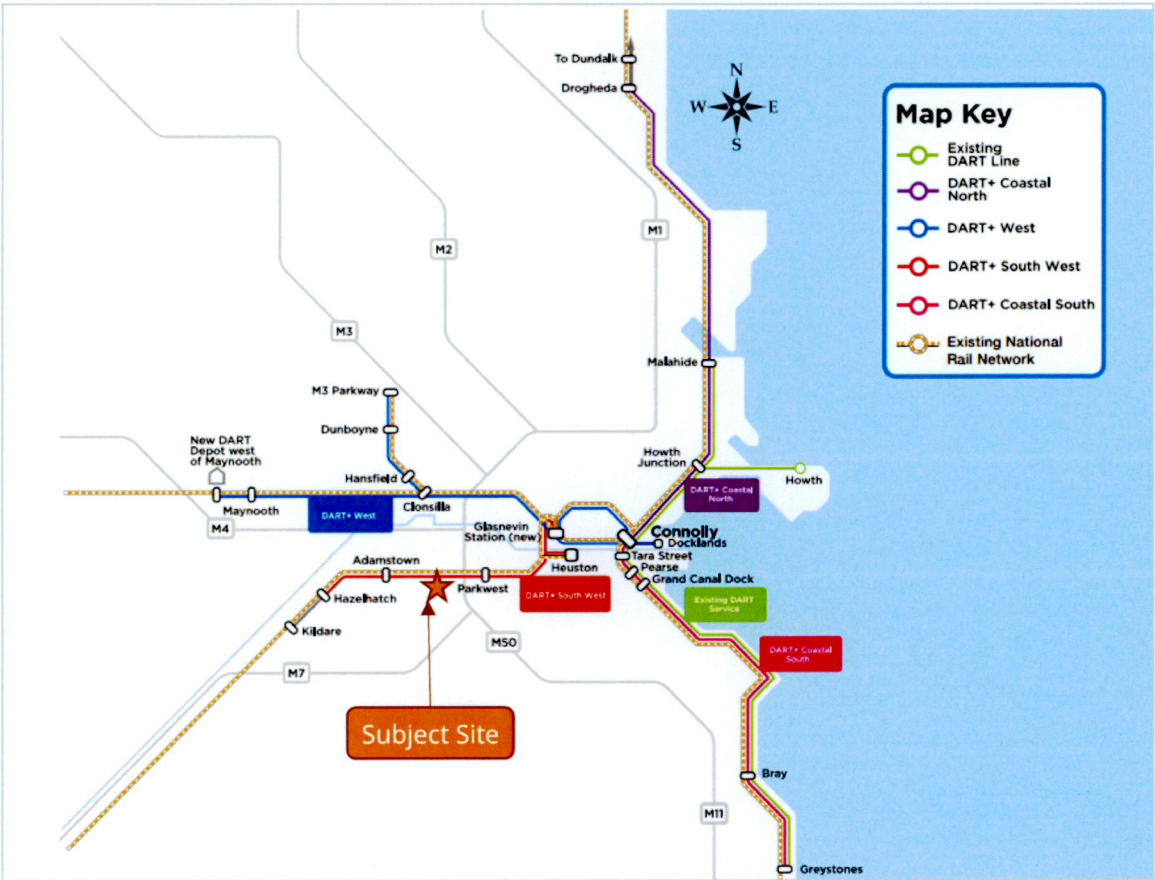


Figure 2-22 Proposed DART+ Network (Source: [www.dartplus.ie](http://www.dartplus.ie))

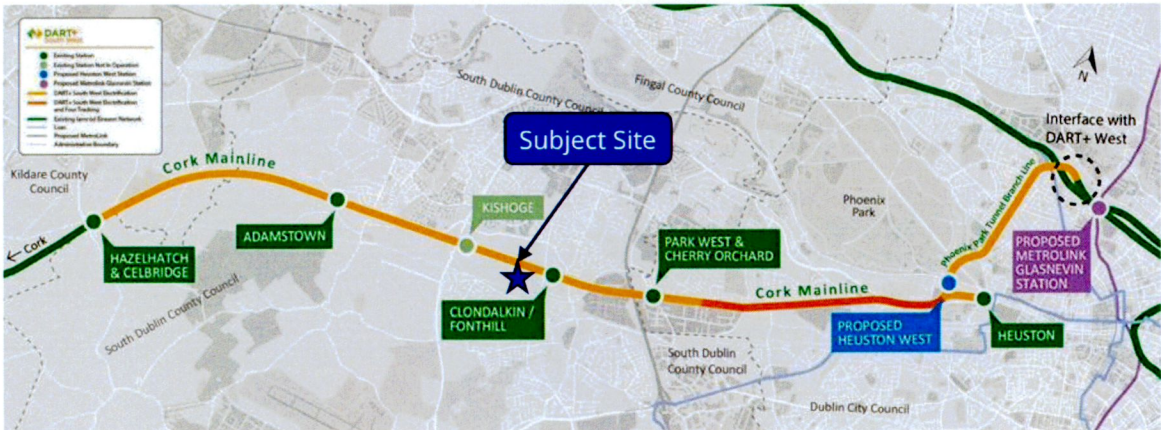


Figure 2-23 DART+ South West Proposals (Source: [www.dartplus.ie](http://www.dartplus.ie))





2.7 Road Safety Record

With the objective of ascertaining the road safety record of the immediate routes leading to/from the subject site, the collision statistics as detailed on the Road Safety Authority's (RSA) website ([www.rsa.ie](http://www.rsa.ie)) have been examined. The RSA website includes basic information relating to reported collisions over the most recent twelve-year period, from 2005 to 2016 inclusive. **Figure 2-24** below shows the location and severity of all road traffic accidents recorded in the Clonburris area in the period 2005 – 2016. As can be seen from the map, there were no collisions in the immediate vicinity of the subject site.

The review of the RSA data reveals that there was one fatal accident near Clonburris, which occurred in the Grange Castle Business Park. A cluster of minor accidents was recorded to the south of the site on the New Nangor Road, Fonthill Road South and Lucan Newlands Road. Less dense clusters of minor accidents have also been recorded on the Balgaddy Road and Fonthill Road North. In summary the review confirms that no significant incident trends or significant safety concerns are evident across the local road network.

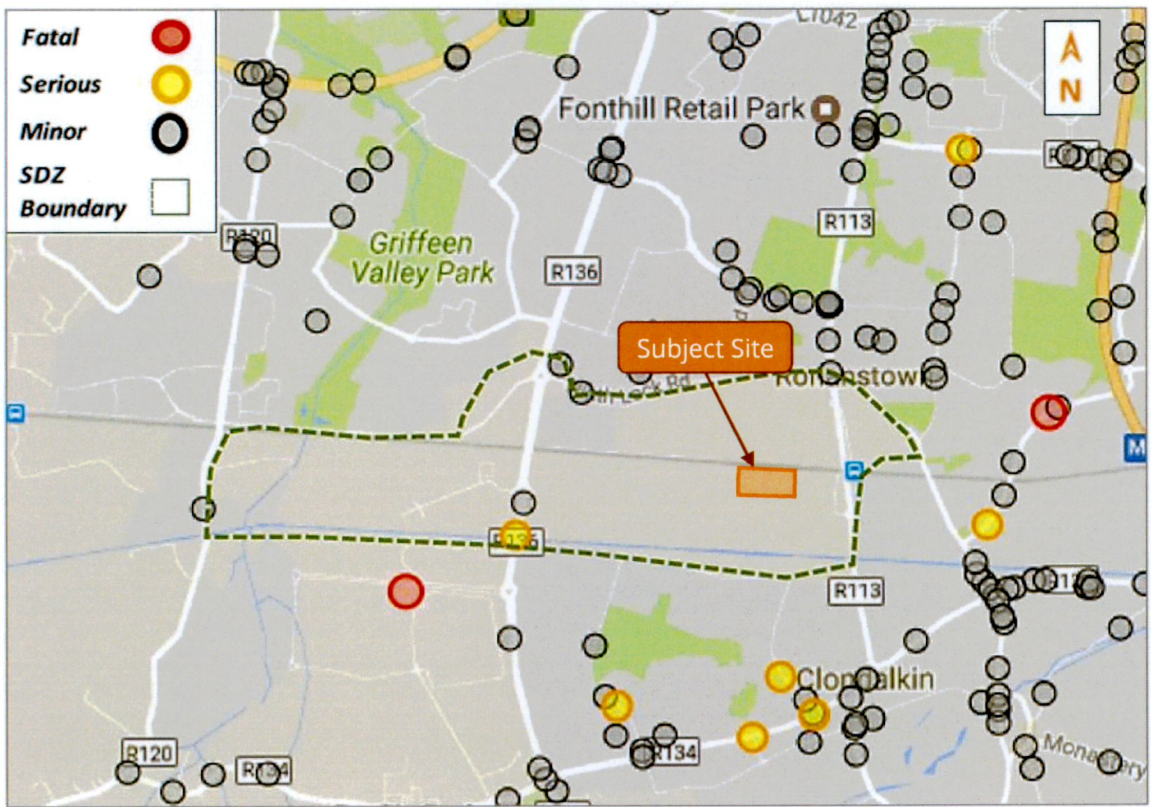


Figure 2-24 RSA Collision Records

## 3 Policy Framework and Development Management Standards

### 3.1 Introduction

In the context of transportation, the subject Clonburris development proposals policy framework is influenced by the following key documents. A common theme through each of these key documents is the emphasis placed upon the importance of travel demand management, with many identifying the need to promote sustainable travel patterns.

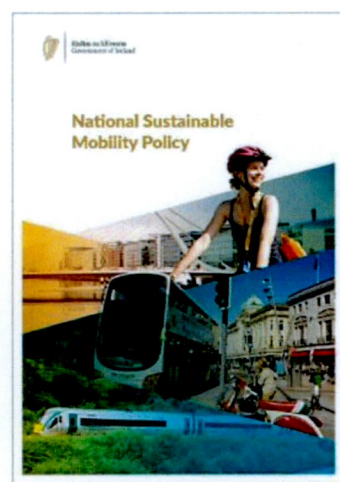
- National Sustainable Mobility Policy (2022)
- Sustainable Urban Housing: Design Standards for New Apartments (2020)
- Transport Strategy for the Greater Dublin Area (2016 – 2035)
- Draft Transport Strategy for the Greater Dublin Area (2022 – 2042)
- South Dublin County Development Plan (2022 – 2028)
- Clonburris SDZ Planning Scheme (2019)

### 3.2 National Sustainable Mobility Policy

The National Sustainable Mobility Policy was published in April 2022 by the Department of Transport and replaces Smarter Travel 2009. The overall aim of the Policy is to *“set out a strategic framework for 2030 for active travel and public transport to support Ireland’s overall requirement to achieve a 51% reduction in carbon emissions by the end of this decade”*.

The Policy is a direct response to the fact that continued growth in demand for road transport is not sustainable due to the resulting adverse impacts of increasing congestion levels, localised air pollution, contribution to global warming and the additional negative impacts to health through promoting increasingly sedentary lifestyles.

The following 3 key Policy areas and 10 goals form the basis of the National Sustainable Mobility Policy:







### **Safe and Green Mobility**

1. Improve mobility safety
2. Decarbonise public transport
3. Expand availability of sustainable mobility in metropolitan areas
4. Expand availability of sustainable mobility in regional and rural areas
5. Encourage people to choose sustainable mobility over the private car

### **People Focuses Mobility**

6. Take a whole journey approach to mobility, promoting inclusive access for all
7. Design infrastructure according to Universal Design Principles and the Hierarchy of Road Users model
8. Promote sustainable mobility through research and citizen engagement

### **Better Integrated Mobility**

9. Better integrate land use and transport planning at all levels
10. Promote smart and integrated mobility through innovative technologies and development of appropriate regulation

The policy is accompanied by an Action Plan with a total 91 actions organised by goal to be completed by 2025. Each action has been assigned to a specific government department or body with the hope of creating accountability for their implementation. The success of the policy will be measured using an annual National Household Travel Survey administered by the National Transport Authority.

## **3.3 Sustainable Urban Housing: Design Standards for New Apartments**

This guideline document was produced by the Department of Housing, Planning and Local Government (DHPLG) (2020). The purpose of this document is to set out standards for apartment development, mainly in response to circumstances that had arisen whereby some local authority standards were at odds with national guidance.

With the demand for housing increasing, this means that there is a need for an absolute minimum of 275,000 new homes in Ireland's cities by 2040. It is therefore critical to ensure that apartment living is an increasingly attractive and desirable housing option for a range of household types and tenures.

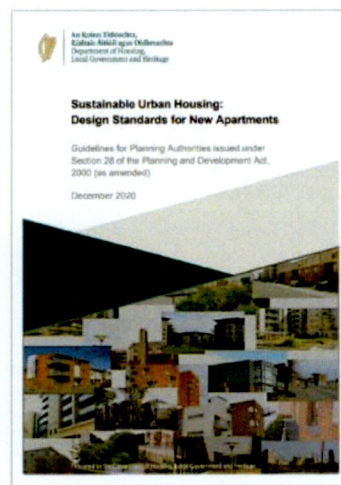


These Guidelines apply to all housing developments that include apartments that may be made available for sale, whether for owner occupation or for individual lease.

Cycling provides a flexible, efficient and attractive transport option for urban living and these guidelines require that this transport mode is fully integrated into the design and operation of all new apartment development schemes.

The quantum of car parking or the requirement for any such provision for apartment developments will vary, having regard to the types of location in cities and towns that may be suitable for apartment development, broadly based on proximity and accessibility criteria.

For all types of location, where it is sought to eliminate or reduce car parking provision, it is necessary to ensure, where possible, the provision of an appropriate number of drop off, service, visitor parking spaces and parking for the mobility impaired. Provision is also to be made for alternative mobility solutions including facilities for car sharing club vehicles, cycle parking and secure cycle storage.



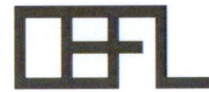
### 3.4 Transport Strategy for the Greater Dublin Area 2016-2035

The Transport Strategy for the Greater Dublin Area 2016-2035 is a document compiled by the National Transport Authority (NTA) which sets out the Strategic Transport Plan for the Greater Dublin Area for the period up to 2035. This sets out an integrated long-term strategy for the area, including new public transport proposals such as expansions to DART and Luas services and also a new Metro route.

This document will influence transport planning across the region until 2035 and replaces 'A Platform for Change – An Integrated Transportation Strategy for the Greater Dublin Area 2000 to 2016'. It thereby underpins all transportation strategies, traffic management schemes and development plans prepared by Dublin City Council during this timeframe.







The Strategy sets out a clear hierarchy of transport users, commencing with the sustainable modes of travel such as walking, cycling and public transport users at the very top of the hierarchy. The Strategy adopts the general principle that these users should have their safety and convenience needs considered first and that the hierarchy is applied where a large share of travel is (or could be) made by walking, cycling and public transport.

In addition to guiding the development of specific Strategy measures, the NTA encourages that the *“transport user hierarchy should guide engineers, planners and urban designers on the order in which the needs of transport users should be considered in designing new developments or traffic schemes in the Greater Dublin Area.”*

### 3.5 Draft Transport Strategy for the Greater Dublin Area 2022-2042

The Draft Greater Dublin Area Transport Strategy 2022-2042 has arisen from a review of the original 2016 strategy. The updated document *“sets out the framework for investment in transport infrastructure and services over the next two decades”*.



The overall aim of the Transport Strategy is *“to provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region’s climate change requirements, serves the needs of urban and rural communities, and supports economic growth”*.

Four primary objectives have been identified as part of the Draft Greater Dublin Area Transport Strategy 2022-2042. These are:

- **An Enhanced Natural and Built Environment:** To create a better environment and meet our environmental obligations by transitioning to a clean, low emission transport system, reducing car dependency, and increasing walking, cycling and public transport use.
- **Connected Communities and a Better Quality of Life:** To enhance the health and quality of life of our society by improving connectivity between people and places, delivering safe and integrated transport options, and increasing opportunities for walking and cycling.
- **A Strong Sustainable Economy:** To support economic activity and growth by improving the opportunity for people to travel for work or business where and when they need to and facilitating the efficient movement of goods.



- **An Inclusive Transport System:** To deliver a high quality, equitable and accessible transport system, which caters for the needs of all members of society.

With regards to cycling, the Strategy acknowledges the growth in cycling in the 'greater Dublin Area' since the mid 2000s and the need to provide a coherent network of cycling facilities linking origins and destinations to cater for trips within communities. Measures for cycling outlined within the Strategy include:

- **Measure CYC1 – GDA Cycle Network** It is the intention of the NTA and local authorities to deliver a safe, comprehensive, attractive and legible cycle network in accordance with the updated Greater Dublin Area Cycle Network Plan.
- **Measure CYC2 – Cycle Infrastructure Design** It is the intention of the NTA to ensure that cycle infrastructure in the GDA provides an appropriate quality of service for all users, through the implementation of the design guidance contained in the latest version of the National Cycle Manual.

In terms of walking, the Strategy highlights the importance of good quality pedestrian facilities while recognising that walking forms some part of most journeys. Plans to provide a better walking environment include:

- Improving footpaths to ensure they are of sufficient width, adequately lit, serve both sides of the road in most urban areas, have good quality surfacing and are free of unnecessary clutter.
- Improving junctions to reduce the distance pedestrians have to cross and the number of times they must stop and wait during a crossing.
- Optimising crossing times for pedestrians at signalised junctions.
- Installing additional pedestrian crossing points where requirements are identified.
- Expanding and improving wayfinding systems.

### 3.6 South Dublin County Development Plan 2022-2028

The South Dublin County Council Development Plan 2022-2028 sets out the strategic policies and objectives that will guide development in the county over the coming six years.

The following sustainable movement objectives as outlined in the plan are of particular relevance to the proposed residential development:





**SM1 Objective 1:** *"To achieve and monitor a transition to more sustainable travel modes including walking, cycling and public transport over the lifetime of the County Development Plan, in line with the County mode share targets of 15% Walk; 10% Cycle; 20% Bus; 5% Rail; and 50% Private (Car / Van / HGV / Motorcycle)".*

**SM1 Objective 4:** *"To ensure that future development is planned and designed in a manner that facilitates sustainable travel patterns, with a particular focus on increasing the share of active modes (walking and cycling) and public transport use and creating a safe and attractive street environment for pedestrians and cyclists".*

**SM1 Objective 5:** *"To ensure that future development is planned and designed in a manner that maximises the efficiency and protects the strategic capacity of the metropolitan area transport network, both existing and planned, and to protect and maintain regional accessibility".*

**SM1 Objective 6:** *"To safeguard the County's strategic road network and to improve the local road and street network in a manner that will better utilise existing road space and encourage a transition towards more sustainable modes of transport".*

**SM2 Objective 2:** *"To create a comprehensive County-wide network supported by sustainable movement studies and other permeability measures, consisting of legible, sign-posted and well-maintained:*

- (i) Safe cycling routes through the implementation of the Greater Dublin cycle Network Plan, NTA (2011) and the Cycle South Dublin project; and*
- (ii) Walking routes that link communities to key destinations, amenities and leisure activities".*

**SM2 Objective 3:** *"To ensure that connectivity for pedestrians and cyclists is maximised and walking and cycling distances are reduced by promoting compact growth and permeability in the design and layout of new development areas".*

**SM2 Objective 5:** *"To ensure that all streets and street networks are designed in accordance with the principles, approaches and standards contained in the Design Manual*





*for Urban Roads and Streets (2013; updated 2019) so that the movement of pedestrians and cyclists is prioritised within a safe and comfortable environment for a wide range of ages, abilities and journey types”.*

**SM3 Objective 3:** *“To ensure that future development is planned in such a manner as to facilitate a significant shift to public transport use through pursuing compact growth policies, consolidating development around existing and planned public transport routes and interchanges, and maximising access to existing and planned public transport services throughout the network”.*

**SM3 Objective 4:** *“To optimise accessibility to public transport, increase catchment and maximise permeability through the creation of new and upgrading of existing walking and cycling routes linking to public transport stops”.*

**SM4 Objective 10:** *“To support sustainable measures including car-pooling and car clubs which promote access to cars rather than car ownership and which facilitate higher utilisation of vehicles rather than higher numbers of vehicles”.*

**SM3 Objective 21:** *“To support the opening of the Kishogue rail station to align with the delivery of homes within the Clonburris SDZ area, in accordance with the SDZ Planning Scheme phasing”.*

**SM5 Objective 1:** *“To ensure that all streets and street networks are designed to passively calm traffic through the creation of a self-regulating street environment that promotes active travel modes and public transport”.*

**SM6 Objective 3:** *“To minimise the impact of new development on the county’s road and street network through prioritising active travel and public transport and implementing appropriate traffic and transport management measures”.*

**SM6 Objective 8:** *“To require all major traffic generating development to submit a Mobility Management Plan/Workforce Plan and/or Traffic and Transport Assessment”.*

**SM7 Objective 1:** *“To implement maximum car parking standards for a range of land-use types, where provision is based on the level of public transport accessibility”.*

**CS7 Objective 4:** *“To promote and facilitate development at the Strategic Development Zones at Adamstown and Clonburris, in accordance with their planning scheme and*

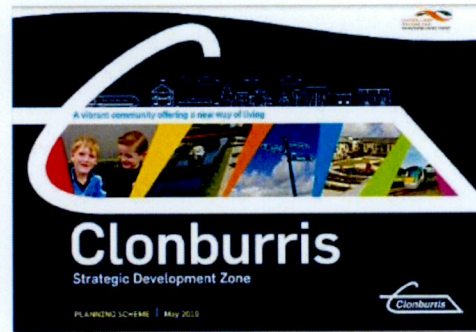




*associated phasing requirements, whilst adapting to and facilitating emerging transport service level pattern needs."*

### 3.7 Clonburris SDZ Planning Scheme

The Clonburris Strategic Development Zone (SDZ) Planning Scheme was published by South Dublin County Council in May 2019. The overarching principle for movement and transport within the scheme is *"to develop the SDZ lands in a manner that maximises existing and proposed public transport opportunities, including high quality rail and bus services, and support these opportunities with an integrated network of streets and routes with a clear hierarchy that promotes walking and cycling"*.



The Planning Scheme also outlines 5 key principles for movement and transport at Clonburris. These are:

- To link the Development Areas of Clonburris with each other and with surrounding communities through a permeable and clear hierarchy of integrated streets and dedicated pedestrian and cycle routes;
- To integrate appropriate pieces of infrastructure that overcome challenges to movement across the SDZ lands;
- To develop a transport framework that maximises route choice and access to residential, education, retail, service, community and leisure uses by means of walking, cycling and public transport while balancing the needs of the car; and
- To upgrade existing sections of strategic roads within the SDZ lands to integrated urban streets
- To seek the delivery of public transport infrastructure and services that will serve the trips demands of the SDZ Planning Scheme.



3.8 Development Management Standards

3.8.1 Car Parking Standards

General Car Parking

Reference has been made to Table 12.26 of the South Dublin County Development Plan (2022-2028), Section 2.2.6 of the Clonburris SDZ Planning Scheme and Chapter 4 of *Sustainable Urban Housing: Design Standards for New Apartments* as published by the Department of Housing, Planning and Local Government (DHPLG) in December 2020.

As referenced in section 2.2.6 of the Clonburris SDZ Planning Scheme, SDCC parking zone 2 standards shall be applied to the proposed development. Furthermore, in reference to the DHPLG (December 2020) guidance, the location of the subject site can be classified as *an* “Intermediate Urban Location”. For residential developments located within intermediate urban locations, the DHPLG guidelines state *“Planning authorities must consider a reduced overall car parking standard and apply an appropriate maximum car parking standard”*.

With regard to the proposed development schedule, the associated SDCC and DHPLG car parking requirements are outlined in **Table 3-1** below. It should be noted that all car parking rates are maximum rates.

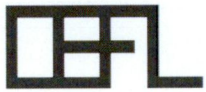
Unit Type		No. of Units	SDCC Development Plan Standard	SDCC Maximum Allowable	DHPLG Requirement
Apartment	1-bed	26	0.75 / unit	20	Reduced Provision
	2-bed	50	1 / unit	50	
House	2-bed	4	1.25 / unit	5	N/A
	3-bed	65	1.5 / unit	98	
	4-bed	12	1.5 / unit	18	
Total		157	-	191	<191

Table 3-1 Car Parking Standards

Accessible Car Parking

Whilst Chapter 13 of the Development Plan does not explicitly raise the requirement for the provision of accessible car parking spaces in private developments, it is suggested that in reference to national guidance that at least 5% of car parking spaces provided for the apartment units should be designated as dedicated accessible parking spaces.





Electric Vehicle Parking

As stated in section 12.7.5 of the Development Plan, residential developments shall provide EV charging points at a minimum of 20% of all car parking spaces.

3.8.2 Cycle Parking Standards

The appropriate level of cycle parking provision for the proposed development is to be provided in reference to (i) the SDCC Development Plan standards, (ii) the Clonburris SDZ Planning Scheme standards and (iii) the DHPLG guidelines. The corresponding bicycle parking standards for the proposed development is detailed in Table 3-2 below.

Unit Type		No. of Units	SDCC & DHPLG Standard		SDCC & DHPLG Requirement	
			Long Stay	Short Stay	Long Stay	Short Stay
Apartment	1-bed	26	1 / Bedroom	1 / 2 units	26	13
	2-bed	50			100	25
House	2-bed	4	N/A	N/A	N/A	N/A
	3-bed	65				
	4-bed	12				
Sub Total					126	38
Total					164	

Table 3-2 Bicycle Parking Requirements

In addition to the provision of standard cycle parking, the Clonburris SDZ Planning Scheme requires that 10% of cycle parking spaces are equipped with infrastructure to facilitate the charging of electric bikes.



## 4 Characteristics of Proposals

### 4.1 Overview

The development will consist of the construction of 157 no. dwellings on a site of c.3.45 hectares in the Clonburris South-West Development Area of the Clonburris Strategic Development Zone (SDZ) Planning Scheme 2019 as follows:

- A) 81 no. houses comprising 4 no. 2-bedroom houses, 65 no. 3-bedroom houses and 12 no. 4-bedroom houses (all 2-no. storey with associated private open space and car parking);
- B) 76 no. apartment units consisting of 26 no. 1-bedroom and 50 no. 2-bedroom units within Block 1 (4 no. storeys);
- C) Vehicular access will be provided from the permitted street under SDZ21A/0022 and the permitted Clonburris Southern Link Street (SDZ20A/0021) and R113 (Fonthill Road) to the east;
- D) All ancillary site development works including footpaths, landscaping boundary treatments, public and private open space areas, car parking (170 no. spaces) and bicycle parking (170 no. spaces), single-storey ESB sub-stations, bin and bicycle stores and all ancillary site development/construction works.

Table 4-1 below summarises the proposed development schedule while Figure 4-1 shows the proposed site layout.

	1-bed	2-bed	3-bed	4-bed	Total
Apartments	26	50	-	-	76
Houses	-	4	65	12	81
Total					157

Table 4-1 Proposed Development Schedule



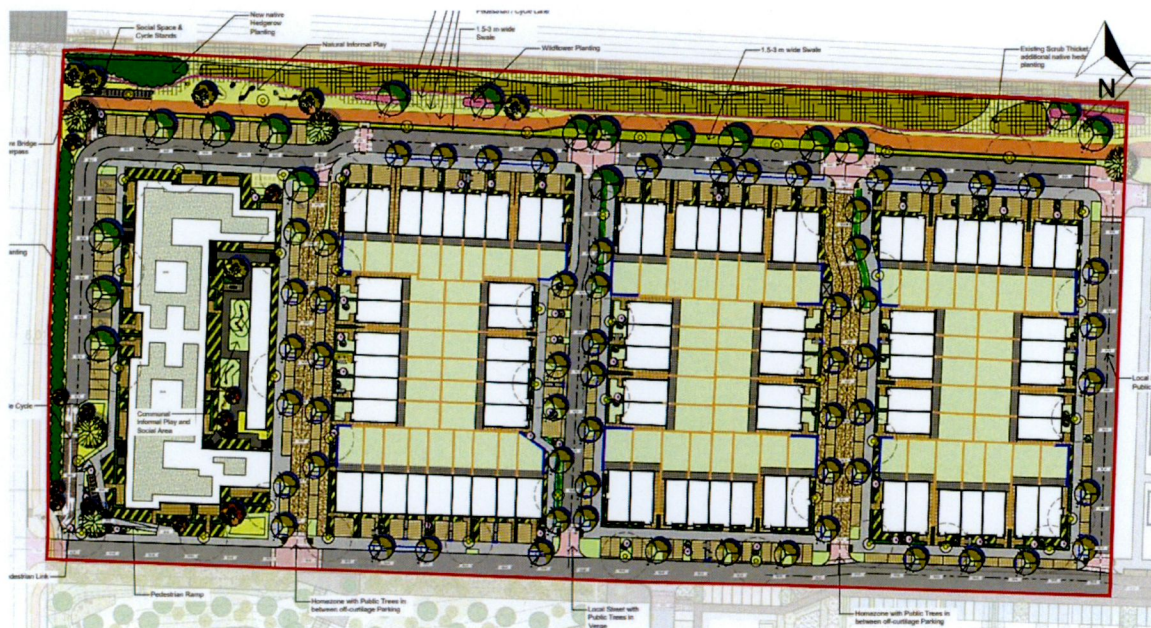


Figure 4-1 Proposed Site Layout

## 4.2 Site Access Arrangements

### 4.2.1 Vehicle Access

Vehicular access to the subject development is proposed via a priority-controlled junction along the Clonburris Southern Link Street, as shown in **Figure 4-4**. Once constructed, access onto the link street from the existing road network will be possible via signalised junctions between the link street and the R136 and R113. These signalised junctions will replace the two existing roundabout junctions on these roads, both located between the Grand Canal and the Kildare railway line. The layout of these signalised junctions has been taken from the Clonburris Southern Link Street planning application (SDCC Ref: SDZ20A/0021) and are presented in **Figure 4-2** and **Figure 4-3** below.



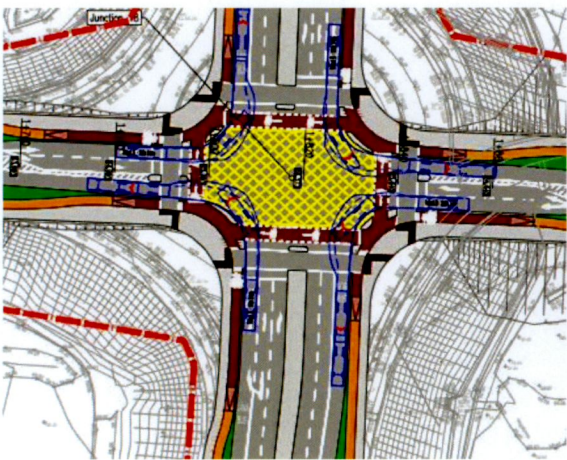


Figure 4-2 Proposed R136 / Link Street Signal  
Controlled Junction

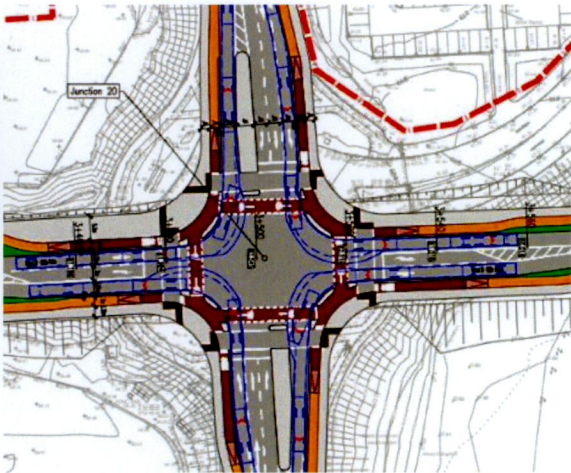


Figure 4-3 Proposed R113 / Link Street Signal  
Controlled Junction

4.2.2 Pedestrian and Cyclist Access

Pedestrians and cyclists will also be able to access the subject site via the Clonburris Southern Link Street. Additional access will be offered via a proposed pedestrian and cycle route along the northern border of the subject site.

Pedestrian and cyclist access throughout the proposed development will be optimised via a defined street hierarchy that promotes permeability across the subject site and maximises connectivity between the subject site and other development plots within the SDZ. This proposed street hierarchy is shown in **Figure 4-4** below.



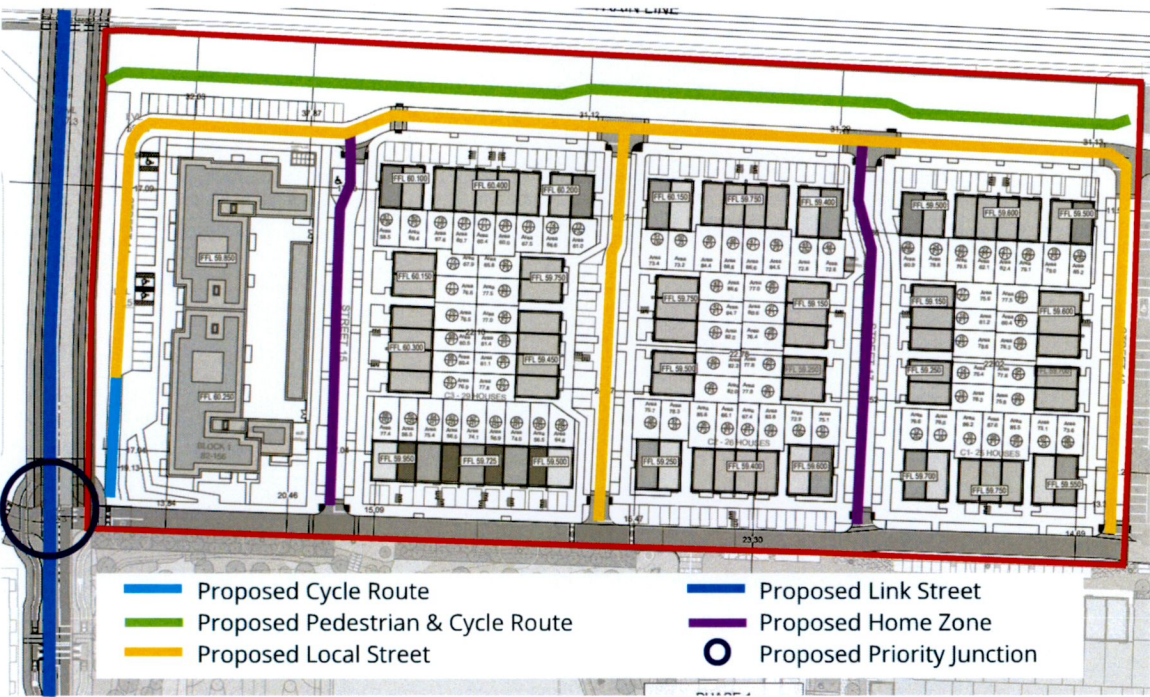


Figure 4-4 Proposed Street Hierarchy for the Subject Development Site

4.3 Parking Provision

4.3.1 Car Parking

General Car Parking

The provision of car parking considers the requirements of the South Dublin County Development Plan (2022-2028) as well as the recommendations of Sustainable Urban Housing: Design Standards for New Apartments (December 2020). The proposed development provides a total of 170 no. car parking spaces. Of these spaces, 120 no. are reserved for the houses while 50 no. spaces are provided for the apartment units. This equates to an overall ratio of 1.08 car parking spaces per dwelling. The proposed car parking provision for the subject development is summarised in **Table 4-2** below.

Unit Type	No. of Units	DHPLG Requirement	SDCC Maximum Allowable	Proposed Provision
Apartments	76	Reduced Provision	70	50
Houses	81	N/A	121	120
Total	157	<191	191	170

Table 4-2 Proposed Car Parking Provision





As there are more apartment units than car parking spaces assigned to the apartments, a car parking management regime will be implemented by the development's management company to control access to the on-site car parking bays within the basement level of the two apartment blocks. This results in the active management of the availability of on-site car parking for residents / visitors.

Residents within the proposed residential apartments will not be given ownership of a designated car parking space. Nevertheless, all residents of the proposed apartment units will have the opportunity to apply to the management company for both (i) a resident's car parking permit (updated annually or upon return of the same permit) to the management company to gain access to a dedicated (assigned) on-site car parking space or (ii) a visitor's car parking permit. A nominal charge will be applied to obtain a permit with the objective of covering the associated management and enforcement costs.

Each permit will enable the resident or visitor to park a vehicle within a specific assigned parking bay for a defined period of time. This management regime will enhance the availability of on-site car parking, ensuring that every resident who needs car parking an avail of an on-site car parking space whilst residents that actually don't own a car are not unnecessarily assigned a car parking space.

### *Disabled Car Parking*

A total of 4 no. disabled car parking spaces will be provided for the apartment units within the proposed development. This equates to 8% of the proposed car parking provision for the apartment units.

### *Electric Vehicle Parking*

Electric vehicle parking will be provided in line with the SDCC Development Plan 2022-2028 and Clonburris SDZ planning scheme requirements. A minimum of 34 no. car parking spaces will be provided with EV charging facilities whilst all other spaces will be provided with ducting to allow for the future installation of additional EV charging points.

## **4.3.2 Cycle Parking**

Resident / long stay cycle parking is provided by secure, weather protected bicycle parking located adjacent to the apartment block. Short stay cycle parking is provided as Sheffield stands. The location of the cycle parking is shown in **Figure 4-5**.





The total number of cycle parking spaces has been identified in reference to both the SDCC Development Plan (2022-2028) and DHPLG guidelines. In summary, a total of 130 no. long stay and 40 no. short stay cycle parking spaces will be provided for the proposed development. **Table 4-3** below summarises the proposed cycle parking provision.

Unit Type	No. of Units	SDCC & DHPLG Requirement		Proposed Provision	
		Long Stay	Short Stay	Long Stay	Short Stay
Apartments	76	126	38	130	40
Houses	81	N/A	N/A	N/A	
Sub Total		126	38	130	40
Total		164		170	

Table 4-3 Proposed Cycle Parking Provision

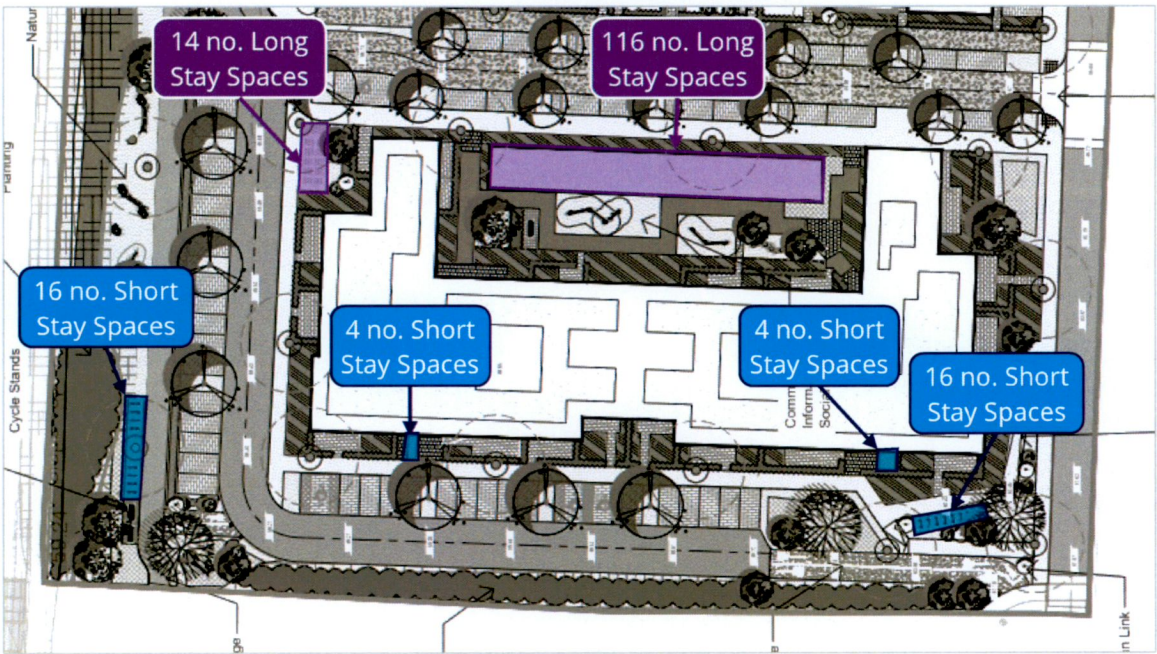


Figure 4-5 Cycle Parking Locations



## 5 Trip Generation and Distribution

### 5.1 Introduction

The following paragraphs present the process by which the potential level of vehicle trips, associated with the future residential development have been generated and subsequently assigned across the local road network. In order to assess the operation of the proposed road network and its future capacity, an Excel based traffic model of the existing network and proposed links were created.

### 5.2 Traffic Surveys

Historic traffic counts were obtained via the planning application for the Clonburris Southern Link Street (SDCC Ref: SDZ20A/0021); the historic baseline data was made available under the National Transport Authority / South Dublin County Council's South West Dublin Local Area – Model Development Report. This report was analysed with the objective of establishing local traffic characteristics in the immediate area of the proposed development.

In order to analyse and assess the impact of the proposed link road scheme on the surrounding road network, a traffic generation and distribution model was created (excel based) of the following key junctions, as show in **Figure 5-1** below.

- **Junction 1** – Ninth Lock Road / CSLS;
- **Junction 2** – R113 Fonthill Road / CSLS;
- **Junction 3** – CSLS / New Link Road;
- **Junction 4** – CNLS / New Link Road; and
- **Junction 5** – R113 Fonthill Road / CNLS;



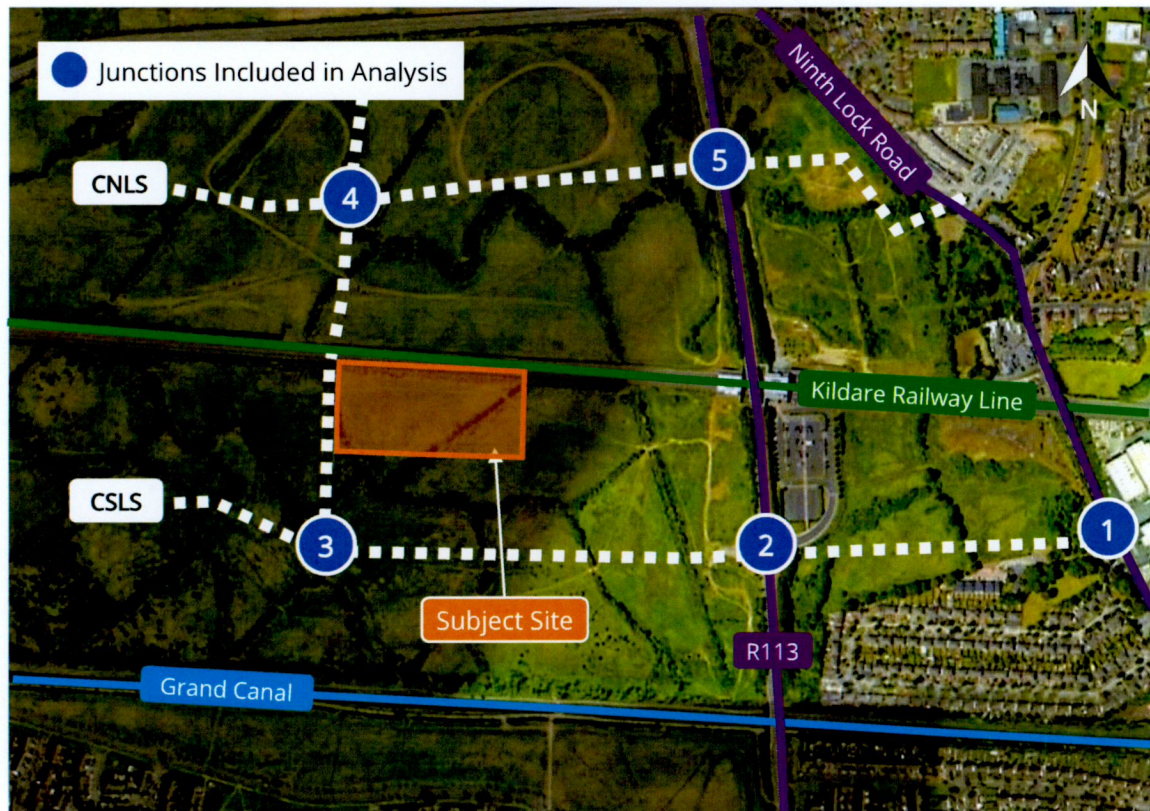


Figure 5-1 Junctions included within the Network Analysis

### 5.3 Trip Generation

Whilst the majority of person trips to / from the proposed development will likely be undertaken by sustainable modes of travel, the specific impact of the subject scheme will be predominately influenced by the number of additional vehicle movements that the scheme could potentially generate.

To assist in determining this, a review of trip generation factors contained within the TRICS database was carried out. TRICS data is primarily UK based, although a number of Irish sites have recently been included and the number of Irish sites continues to expand. Nevertheless, we consider that TRICS will provide a reasonable indication of traffic generation from the proposed development.

Notwithstanding the above, internal research undertaken by TRICS has shown that there is no direct evidence of trip rate variation by country or region. The use of English, Scottish or Welsh data can be equally applicable to Ireland if users consider important site selection filtering factors





such as levels of population, location type, local public transport provision, and development size and car ownership levels, amongst others.

Data supplied for inclusion in TRICS undergoes a procedure of validation testing, and there is no evidence from this procedure suggesting that data from Ireland bears any significant fundamental differences to that from the other countries included. Consequently, we consider that TRICS will provide a reasonable indication of traffic generation from the proposed development.

Table 5-1 below presents the peak hour trip rates (using data from TRICS) adopted for the proposed development during the morning and evening peak hour periods. Utilising these TRICS generated trip rates, the potential vehicle trips generated from the proposed development have been calculated on the assumption that the residential development will be completed and fully occupied by the end of the 2024 Opening Year and also for the assessment of the 2039 Design Year.

Land Use	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr	Dep	Two-way	Arr	Dep	Two-way
Apartments	0.021	0.085	0.106	0.079	0.043	0.122
Houses	0.074	0.208	0.282	0.150	0.080	0.230

Table 5-1 Subject Development Vehicle Trip Rates

Table 5-2 below presents the calculated vehicle trips for the proposed development.

Land Use	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arr	Dep	Two-way	Arr	Dep	Two-way
Apartments	6	17	23	12	6	19
Houses	2	6	8	6	4	9
Total	8	23	31	18	10	28

Table 5-2 Proposed Development Trips

5.4 Trip Redistribution

A redistribution of the local network traffic was carried out following the assumption that when the Clonburris Southern Link Street scheme is completed, this will have an impact on the surrounding road network. When the new link street is complete, it will provide a connection between three key regional routes; the R120 Lock Road, the R136 Grange Castle Road and the R113 Fonthill Road. This gives an alternative route to motorists by bypassing the R134 and Thomas Omer Way corridors.





The following assumptions were made for the redistribution of the 2018 base year traffic to the surrounding network and the proposed CSLS:

- **Movement 1** – of the traffic travelling on the R113 Fonthill Road North, 3% would turn right onto the CSLS West and 3% would turn left into the CSLS East;
- **Movement 2** – of the traffic travelling on the R113 Fonthill Road South, 10% would turn left onto the CSLS East and 40% would turn right onto the CSLS West;
- **Movement 3** – 20% of traffic travelling along Ninth Lock Road South would turn left onto the CSLS.

## 5.5 Committed Development

With the objective of providing a robust appraisal we have included third party committed developments that have the potential to generate additional vehicle movements across the local road network.

One no. third party committed development was identified, which being located in close proximity to the proposed residential development, may generate an impact upon the local road network's existing traffic characteristics.

### *Committed Development – SDCC Ref. SDZ21A/0022*

Southeast of the subject site, within the Clonburris SDZ, planning permission has been granted for 569 no. residential units, a creche and an innovation hub. The permitted development forms phase 1A of the overall development at the Clonburris SDZ. The development's vehicular accesses are located along the Clonburris Southern Link Street.

DBFL consider that the permitted development may generate an impact on the local road network and as such it has been included as a committed development. The location of this development in relation to the subject site is shown in **Figure 5-2** below.

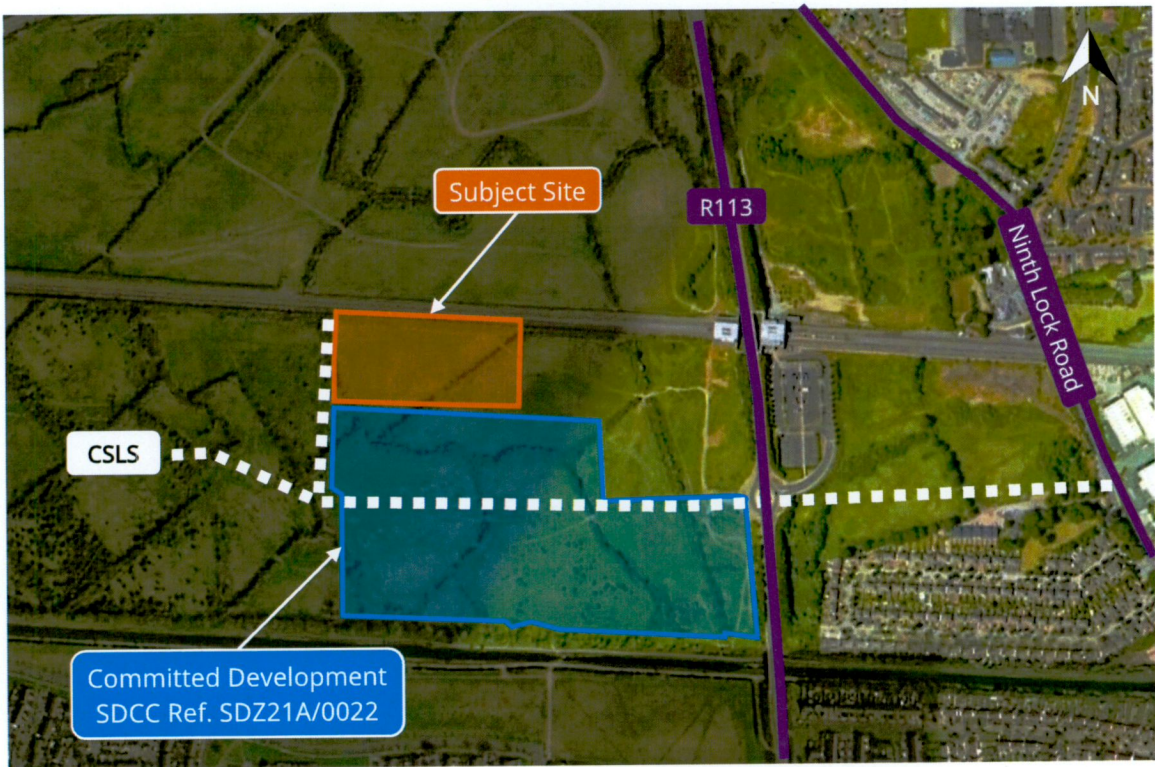


Figure 5-2 Committed Development SDCC Ref. SDZ21A/0022

The vehicle trips associated with the committed development have been retrieved from the Traffic Model previously completed by DBFL as part of the development’s planning application. **Table 5-3** below summarises the predicted AM peak hour and PM peak hour vehicle trips generated by the committed development. In order to provide a robust assessment, DBFL have assumed that the entire development will be occupied by the adopted Opening Year of 2024.

Land Use	Units / sqm	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
		Arr	Dep	Two-way	Arr	Dep	Two-way
Apartments	396	13	36	49	26	14	40
Houses	173	8	34	42	31	17	48
Creche	547	15	13	28	14	15	29
Total		36	83	119	71	46	117

Table 5-3 Committed Development Ref: SDZ21A/0022 Vehicle Trips

5.6 Traffic Growth

The TTA adopts an Opening Design Year of 2024 which seeks to allow sufficient time for the planning and subsequent construction stages to be completed along with Future Design Years of 2029 (Opening Year +5 years) and 2039 (Opening Year +15 years).



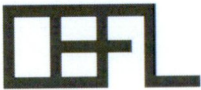


Table 6.1 within the TII Project Appraisal Guidelines provides Annual Traffic Growth Factors for the different regions within Ireland. The subject site lies within the 'Dublin Metropolitan Area' with growth factors as outlined in **Table 5-4** below. In order to provide a robust assessment, DBFL have assumed medium traffic growth rates for the adopted Opening Year of 2024 and the Future Design Years of 2029 and 2039.

Low Sensitivity Growth Rates				Central Growth Rates				High Sensitivity Growth Rates			
2016-2030		2030-2040		2016-2030		2030-2040		2016-2030		2030-2040	
LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1.0146	1.0280	1.0034	1.0116	1.0162	1.0295	1.0051	1.0136	1.0191	1.0328	1.0087	1.0172

*Table 5-4 National Traffic Growth Forecasts for the Dublin Metropolitan Area: Annual Growth Factors (Extract from Table 6.1 PAG)*

As such, applying the annual factors, as outlined in **Table 5-4** above, the following growth rates were adopted to establish corresponding baseline network flows for the 2024 Opening Year and 2029 and 2039 Future Design Years.

- 2018 to 2024 – 1.0810 (or 8.1%);
- 2018 to 2029 – 1.1533 (or 15.33%);
- 2018 to 2039 – 1.1872 (or 18.72%)

It is noted that the TII Project Appraisal Guidelines states that *“the central growth rates are intended for use in project appraisal with the low and high growth rates to be used as sensitivity test for economic and environmental impacts”*.

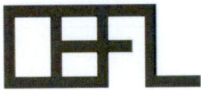
5.7 Assessment Scope

Two different traffic scenarios have been assessed, namely (a) the 'Base' (Do-Nothing) traffic characteristics and (b) the 'Post Development' (Do-Something) traffic characteristics.

The 'Base' traffic scenario takes into account the existing flows travelling across the network. The proposed development traffic flow were added to the network's 'Base' traffic flows to establish the 'Post Development' traffic flows. In summary, the following scenarios are considered: -

*Do-Nothing:*

- A1 – 2024 Base Traffic Flows
- A2 – 2029 Base Traffic Flows
- A3 – 2039 Base Traffic Flows



*Do-Something:*

- B1 – 2024 Do Nothing (A1) + Proposed Development
- B2 – 2029 Do Nothing (A2) + Proposed Development
- B3 – 2039 Do Nothing (A3) + Proposed Development

*Assessment Periods*

The junction turning count surveys identified the AM and PM peak hour flows as occurring between 08:00-09:00 and 17:00-18:00 respectively. These peak hour periods form the basis of the future design years 2024 Opening Year, 2029 (Opening Year +5) and 2039 (Opening Year +15) network assessments.

**5.8 Network Impact**

The TII document entitled Traffic and Transport Assessment Guidelines (2014) provides thresholds in relation to the impact of a proposed development upon the local road network. The scale of impact is considered material when the level of traffic it generates surpasses the thresholds of 10% and 5% on normal and congested networks, respectively. When such levels of impact are generated a more detailed assessment should be undertaken to ascertain the specific impact upon the network's operational performance. In accordance with the TII guidelines, we have undertaken an assessment to establish the potential level of impact upon the key junctions of the local road network. To enable this calculation to be undertaken we have based the analysis upon the 2024 Opening Year and the 2029 and 2039 Future Design Year scenarios.

**Table 5-5** below details the specific scale of network impact predicted at each of the key local junctions during the 2024 Opening Year and the 2039 Future Design Year.





Junction		Peak Period	2024 Opening Year			2039 Future Design Year		
			DM + CSLS	DS + CSLS	% Impact	DM + Full SDZ	DS + Full SDZ	% Impact
1	Ninth Lock Road / CSLS	AM	995	1002	0.71%	1730	1736	0.36%
		PM	1681	1687	0.38%	1736	1741	0.32%
2	R113 Fonthill Road / CSLS	AM	1600	1619	1.15%	2601	2617	0.63%
		PM	1597	1614	1.04%	2756	2771	0.53%
3	CSLS / New Link Road	AM	317	348	9.71%	969	996	2.80%
		PM	306	334	9.07%	911	935	6.68%
4	CNLS / New Link Road	AM	0	0	N/A	1099	1102	0.25%
		PM	0	0	N/A	893	894	0.13%
5	R113 Fonthill Road / CNLS	AM	1289	1297	0.60%	2581	2588	0.26%
		PM	1208	1215	0.57%	2348	2354	0.26%

Table 5-5 Network Impact Through Key Off Site Junctions

For the analysis of this proposed development, **Table 5-5** indicates that one of the key local junctions assessed will experience an impact approaching the 10% threshold that classifies a material impact. This is due to all development traffic having to travel via this junction in the 2024 Opening Year as the CNLS will not be operational at this point. This junction along with junction 2 have been selected for further detailed analysis as presented in Chapter 6. **Figure 5-3** outlines the network impact through the 5-no. key off site junctions for the 2039 Future Design Year.

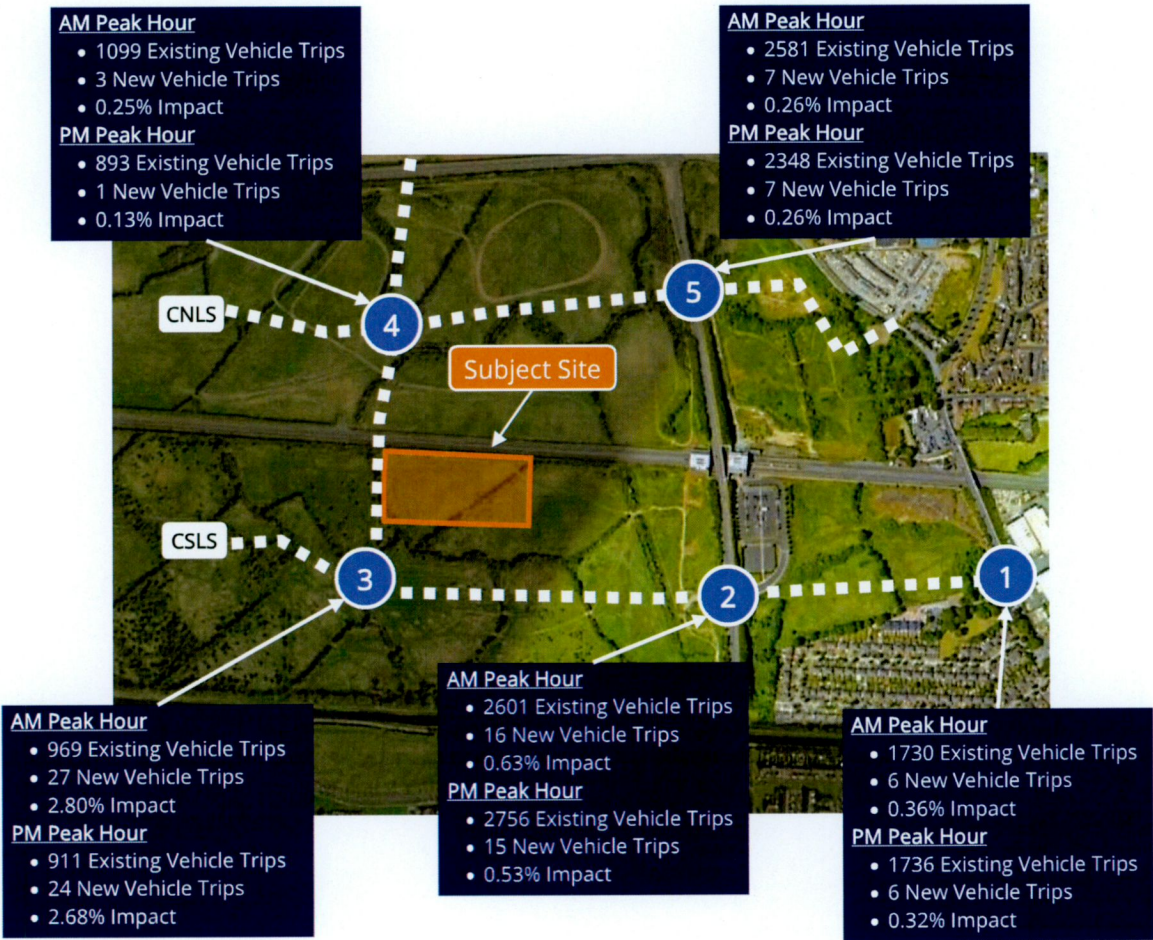


Figure 5-3 2039 Network Impact Through Key Off-Site Junctions



## 6 Network Analysis

### 6.1 Introduction

The operational assessment of the local road network has been undertaken using the Transport Research Laboratory (TRL) computer package TRANSYT for signal-controlled junctions. When considering signalised junctions, a Degree of Saturation (DoS) of greater than 90% (0.90) would indicate a junction to be approaching capacity, as operation above this DoS value is poor and deteriorates quickly. For the TRANSYT analysis, a 60-minute AM and PM period has been simulated, from 08:00 to 09:00 and 17:00 to 18:00, respectively. For these junction analysis sets traffic flows were entered using an Origin-Destination table for the peak hours.

In order to analyse and assess the impact of the potential development on the surrounding road network, a traffic model replicating the local road network including the key off-site junctions was developed to quantify conditions in each of the following three future design years:

- 2024 Opening Year
- 2029 Interim Year (Opening Year +5 years)
- 2039 Future Horizon Year (Opening Year +15 years)

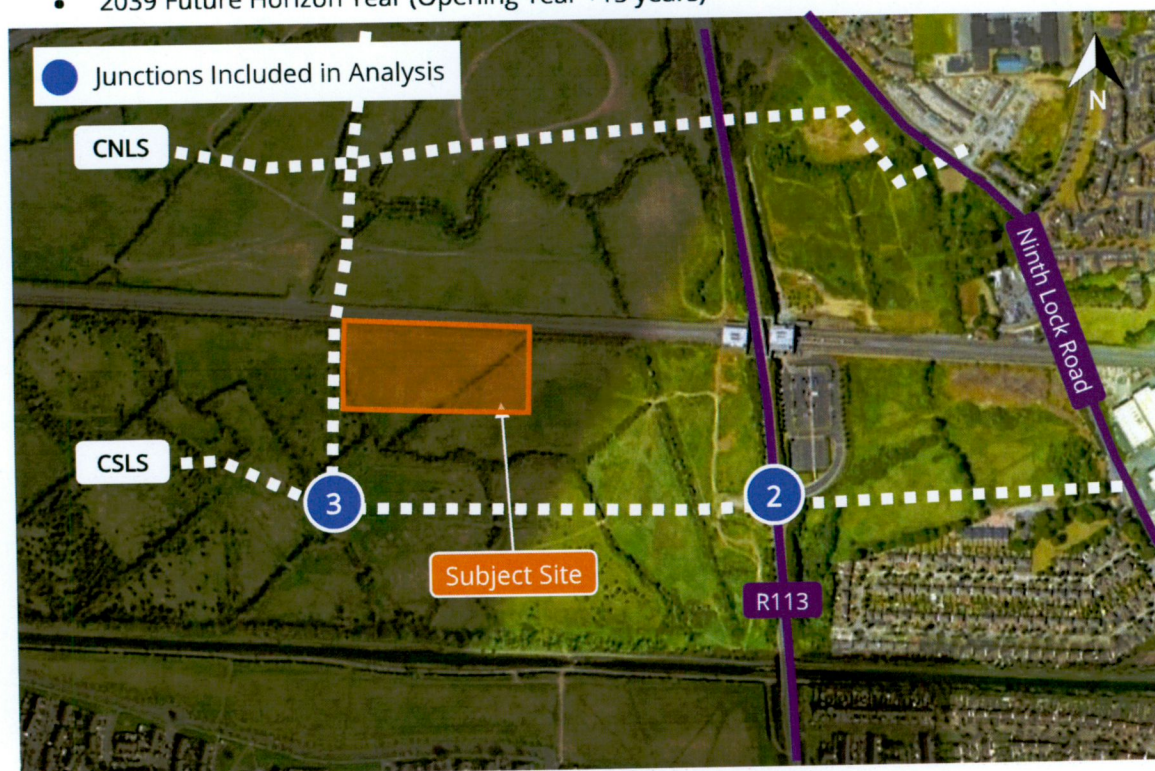


Figure 6-1 Junctions assessed using TRANSYT





6.2 Junction 2 – R113 Fonhill Road / CSLS

The results of the operational assessment of this proposed signal controlled off-site junction during the weekday morning and evening peaks are summarised in **Table 6-1** to **Table 6-6** below. The arms were labelled as follows within the TRANSYT model:

- Arm A: R113 Fonhill Road (N)
- Arm B: Clonburris Southern Link Street (E)
- Arm C: R113 Fonhill Road (S)
- Arm D: Clonburris Southern Link Street (W)

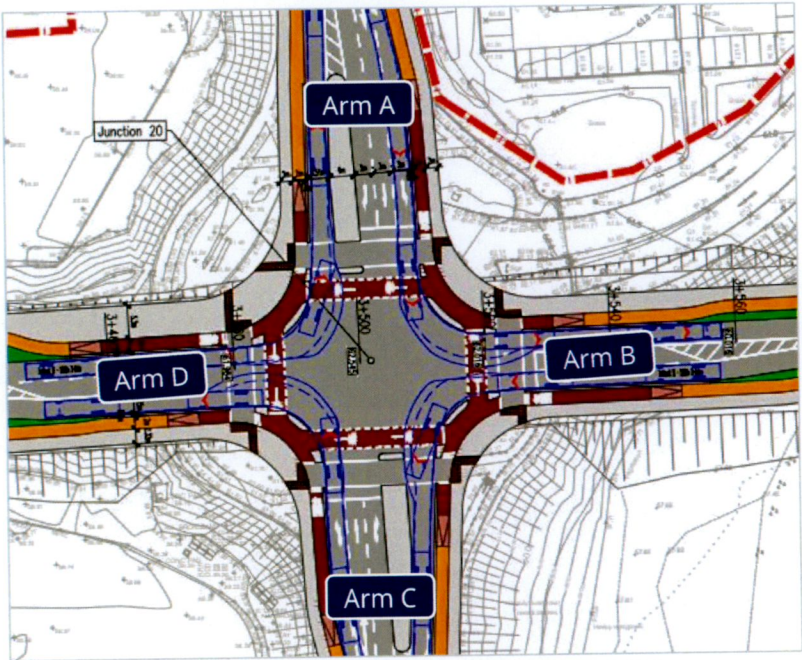


Figure 6-2 Junction 2 R113 Fonhill Road / CSLS

6.2.1 Do-Minimum Scenario

2024 Opening Year

The TRANSYT results indicate that the R113 Fonhill Road / CSLS signalised junction will operate over capacity during the AM peak and under capacity during the PM peak for the 2024 “Do-Minimum” scenario. A maximum degree of saturation DoS value of 105% was recorded during the AM peak “Do-Minimum” scenario with a maximum Mean Max Queue (MMQ) of 53.22 PCUs. During the PM peak “Do-Minimum” scenario, a maximum DoS of 67% was recorded along with an MMQ of 22.73 PCUs.





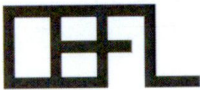
Scenario		Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2024 Do-Minimum	AM Peak Hour	A	R113 Fonthill Road (N)	1	4	40.64	0.71
				2	105	184.59	53.22
				3	38	96.83	1.56
		B	Clonburris Southern Link Street (E)	1	14	63.29	1.86
				2	13	64.74	1.62
		C	R113 Fonthill Road (S)	1	4	40.10	0.90
				2	85	69.90	26.48
				3	33	94.10	1.33
		D	Clonburris Southern Link Street (W)	1	36	66.55	5.43
				2	37	67.66	5.47
	PM Peak Hour	A	R113 Fonthill Road (N)	1	2	25.38	0.48
				2	67	41.01	22.73
				3	45	101.79	1.93
		B	Clonburris Southern Link Street (E)	1	63	87.47	7.37
				2	54	90.01	4.68
		C	R113 Fonthill Road (S)	1	3	25.47	0.59
				2	62	38.75	19.85
				3	44	100.89	1.87
		D	Clonburris Southern Link Street (W)	1	27	73.91	2.89
				2	54	89.69	4.62

Table 6-1 2024 Do-Minimum TRANSYT Results Junction 2

2029 Future Design Year

The TRANSYT results indicate that the R113 Fonthill Road / CSLS signalised junction will operate over capacity during the AM peak and under capacity during the PM peak for the 2029 “Do-Minimum” scenario. A maximum degree of saturation DoS value of 112% was recorded during the AM peak “Do-Minimum” scenario with a maximum Mean Max Queue (MMQ) of 71.91 PCUs. During the PM peak “Do-Minimum” scenario, a maximum DoS of 72% was recorded along with an MMQ of 25.08 PCUs.





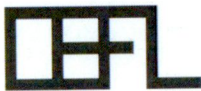
Scenario		Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2029 Do-Minimum	AM Peak Hour	A	R113 Fonthill Road (N)	1	4	40.67	0.74
				2	112	271.12	71.91
				3	39	97.57	1.63
		B	Clonburris Southern Link Street (E)	1	15	63.45	1.98
				2	13	64.87	1.71
		C	R113 Fonthill Road (S)	1	5	40.12	0.93
				2	91	80.46	30.48
				3	35	95.43	1.45
		D	Clonburris Southern Link Street (W)	1	38	66.93	5.70
				2	40	68.32	5.88
	PM Peak Hour	A	R113 Fonthill Road (N)	1	2	25.42	0.53
				2	72	43.17	25.08
				3	48	103.69	2.06
		B	Clonburris Southern Link Street (E)	1	67	89.88	7.91
				2	58	92.10	5.06
		C	R113 Fonthill Road (S)	1	3	25.49	0.61
				2	66	40.40	21.90
				3	46	102.72	1.99
		D	Clonburris Southern Link Street (W)	1	29	74.21	3.03
				2	57	91.73	5.00

Table 6-2 2029 Do-Minimum TRANSYT Results junction 2

2039 Future Design Year

The TRANSYT results indicate that the R113 Fonthill Road / CSLS signalised junction will operate over capacity during the AM peak and PM peak for the 2039 “Do-Minimum” scenario. A maximum degree of saturation DoS value of 135% was recorded during the AM peak “Do-Minimum” scenario with a maximum Mean Max Queue (MMQ) of 164.21 PCUs. During the PM peak “Do-Minimum” scenario, a maximum DoS of 148% was recorded along with an MMQ of 112.66 PCUs.





Scenario		Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2039 Do-Minimum	AM Peak Hour	A	R113 Fonthill Road (N)	1	8	34.28	1.71
				2	89	69.48	33.46
				3	51	106.85	2.26
		B	Clonburris Southern Link Street (E)	1	73	93.02	9.70
				2	69	86.80	9.52
		C	R113 Fonthill Road (S)	1	8	33.78	1.88
				2	135	508.19	164.21
				3	24	90.04	0.95
		D	Clonburris Southern Link Street (W)	1	77	95.31	10.74
				2	79	94.78	12.47
	PM Peak Hour	A	R113 Fonthill Road (N)	1	3	32.37	0.72
				2	88	66.92	32.90
				3	55	110.50	2.47
		B	Clonburris Southern Link Street (E)	1	148	645.22	88.42
				2	140	584.63	56.13
		C	R113 Fonthill Road (S)	1	23	35.90	5.64
				2	120	357.57	112.66
				3	23	89.54	0.90
		D	Clonburris Southern Link Street (W)	1	28	67.98	3.76
				2	62	88.21	7.01

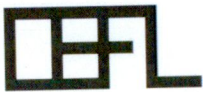
Table 6-3 2039 Do-Minimum TRANSYT Results Junction 2

6.2.2 Do-Something Scenario

2024 Opening Year

The TRANSYT results indicate that the R113 Fonthill Road / CSLS signalised junction will operate over capacity during the AM peak and under capacity during the PM peak for the 2024 “Do-Something” scenario. A maximum degree of saturation DoS value of 107% was recorded during the AM peak “Do-Something” scenario with a maximum Mean Max Queue (MMQ) of 56.71 PCUs. During the PM peak “Do-Something” scenario, a maximum DoS of 67% was recorded along with an MMQ of 22.73 PCUs.





Scenario		Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2024 Do-Something	AM Peak Hour	A	R113 Fonthill Road (N)	1	4	41.32	0.71
				2	107	206.49	56.71
				3	39	97.57	1.63
		B	Clonburris Southern Link Street (E)	1	14	61.61	1.91
				2	13	65.66	1.64
		C	R113 Fonthill Road (S)	1	5	40.80	0.94
				2	86	72.69	27.05
				3	33	94.10	1.33
		D	Clonburris Southern Link Street (W)	1	37	65.12	5.83
				2	39	69.06	5.69
	PM Peak Hour	A	R113 Fonthill Road (N)	1	2	25.38	0.48
				2	67	41.01	22.73
				3	51	106.85	2.26
		B	Clonburris Southern Link Street (E)	1	65	88.63	7.66
				2	54	90.01	4.68
		C	R113 Fonthill Road (S)	1	3	25.51	0.64
				2	62	38.75	19.85
				3	44	100.89	1.87
		D	Clonburris Southern Link Street (W)	1	30	74.44	3.14
				2	55	90.34	4.74

Table 6-4 2024 Do-Something TRANSYT Results Junction 2

2029 Future Design Year

The TRANSYT results indicate that the R113 Fonthill Road / CSLS signalised junction will operate over capacity during the AM peak and under capacity during the PM peak for the 2029 “Do-Something” scenario. A maximum degree of saturation DoS value of 112% was recorded during the AM peak “Do-Something” scenario with a maximum Mean Max Queue (MMQ) of 71.91 PCUs. During the PM peak “Do-Something” scenario, a maximum DoS of 72% was recorded along with an MMQ of 25.08 PCUs.





Scenario		Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2029 Do-Something	AM Peak Hour	A	R113 Fonthill Road (N)	1	4	40.67	0.74
				2	112	271.12	71.91
				3	41	99.17	1.75
		B	Clonburris Southern Link Street (E)	1	15	62.66	2.07
				2	14	65.80	1.72
		C	R113 Fonthill Road (S)	1	5	40.14	0.97
				2	91	80.46	30.48
				3	35	95.43	1.45
		D	Clonburris Southern Link Street (W)	1	40	66.67	6.19
				2	42	69.77	6.07
	PM Peak Hour	A	R113 Fonthill Road (N)	1	2	25.42	0.53
				2	72	43.17	25.08
				3	53	108.02	2.33
		B	Clonburris Southern Link Street (E)	1	69	91.59	8.27
				2	58	92.10	5.06
		C	R113 Fonthill Road (S)	1	3	25.53	0.67
				2	66	40.40	21.90
				3	46	102.72	1.99
		D	Clonburris Southern Link Street (W)	1	31	74.78	3.28
				2	58	92.10	5.06

Table 6-5 2029 Do-Something TRANSYT Results Junction 2

### 2039 Future Design Year

The TRANSYT results indicate that the R113 Fonthill Road / CSLS signalised junction will operate over capacity during the AM peak and the PM peak for the 2039 “Do-Something” scenario. A maximum degree of saturation DoS value of 135% was recorded during the AM peak “Do-Something” scenario with a maximum Mean Max Queue (MMQ) of 164.21 PCUs. During the PM peak “Do-Something” scenario, a maximum DoS of 150% was recorded along with an MMQ of 112.66 PCUs.



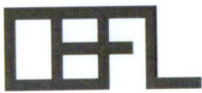


Scenario		Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2039 Do-Something	AM Peak Hour	A	R113 Fonthill Road (N)	1	8	34.28	1.71
				2	89	69.48	33.46
				3	54	109.23	2.40
		B	Clonburris Southern Link Street (E)	1	74	93.43	9.77
				2	69	86.80	9.52
		C	R113 Fonthill Road (S)	1	8	33.78	1.88
				2	135	508.19	164.21
				3	24	90.04	0.95
		D	Clonburris Southern Link Street (W)	1	80	99.96	11.53
				2	80	95.73	12.63
	PM Peak Hour	A	R113 Fonthill Road (N)	1	3	32.37	0.72
				2	88	66.92	32.90
				3	60	116.18	2.77
		B	Clonburris Southern Link Street (E)	1	150	655.30	90.40
				2	140	584.63	56.13
		C	R113 Fonthill Road (S)	1	24	35.96	5.71
				2	120	357.57	112.66
				3	23	89.54	0.90
		D	Clonburris Southern Link Street (W)	1	30	68.28	3.94
				2	63	88.50	7.07

Table 6-6 2039 Do-Something TRANSYT Results junction 2

The TRANSYT assessment for Junction 2 shows an oversaturated performance during the 2024 morning peak hour in the DM and DS scenarios, and within capacity in the evening peak time. However, the impact of the development is an increase of 2% in capacity in the morning, and no increase in the evening. During the 2039 morning and evening peak hours, the junction also shows an oversaturated capacity. However, the completion of the proposed development would result in no increase in saturation during the AM peak and just a 2% increase in the PM peak. This means that the network is over capacity regardless of the Proposed Development. This result is expected and consistent with the Traffic & Transport Assessment of the Southern Link Street – Clonburris SDZ, prepared by DBFL Consulting Engineers. This document showed an oversaturated network for Opening Year and Future Horizon Year, similar to results obtained above. It is important to note that the analysis has assumed the pedestrian stage will be called during every cycle. As such





the TRANSYT analysis represents a worst-case scenario, with it being likely that the junctions will perform better than the TRANSYT results indicate. Additionally, the area will be served with high frequency bus & rail services, high quality cycle infrastructure and new road developments. A comparison of the DoS value recorded during the Do-Minimum and Do-Something Scenario is presented in **Table 6-7** below.

Scenario	2024		2039	
	AM Peak	PM Peak	AM Peak	PM Peak
Do-Minimum (DM)	105%	67%	135%	148%
Do-Something (DS)	107%	67%	135%	150%
DM vs DS	+2%	+0%	+0%	+2%

Table 6-7 Impact Significance Junction 2

6.3 Junction 3 – CSLS / New Link Road

Both the “Do Minimum” and the “Do Something” scenarios adopt the signalised layout illustrated in **Figure 6-3**, modelled using TRANSYT. The results of the operational assessment of this signal-controlled junction during the weekday morning and evening peaks are summarised in **Table 6-8** to **Table 6-13** below. The three arms were labelled as follows within the TRANSYT model:

- **Arm A:** Link Road
- **Arm B:** Clonburris South Link Road West
- **Arm C:** Clonburris South Link Road East

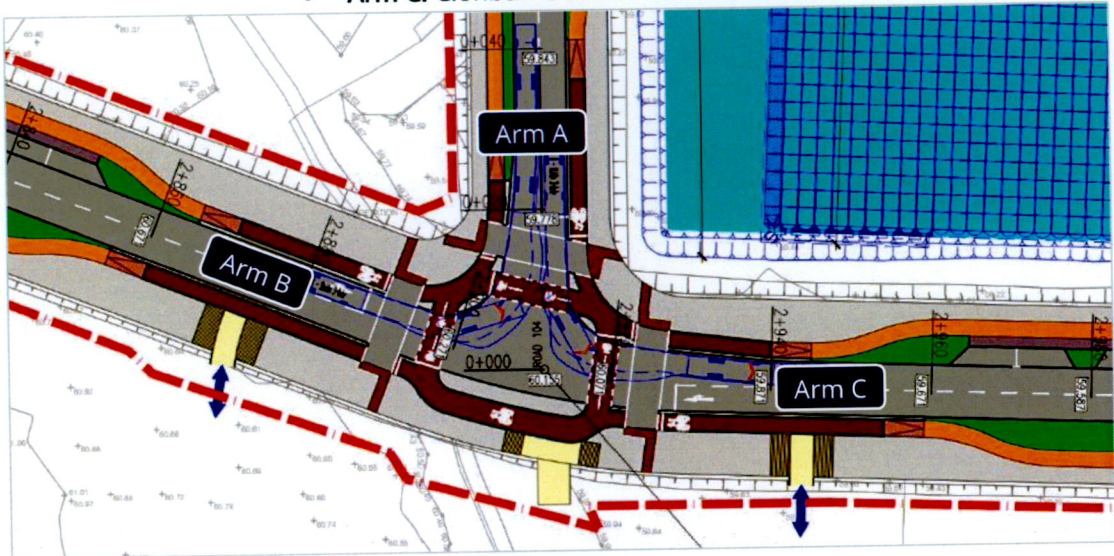


Figure 6-3 Junction 3 – CSLS / New Link Road





6.3.1 Do-Minimum Scenario

2024 Opening Year

The TRANSYT results indicate that the CSLS / New Link Road signalised junction will operate within capacity during the AM peak and PM peak for the 2024 “Do-Minimum” scenario. A maximum degree of saturation DoS value of 33% was recorded during the AM peak “Do-Minimum” scenario with a maximum Mean Max Queue (MMQ) of 3.44 PCUs. During the PM peak “Do-Minimum” scenario, a maximum DoS of 26% was recorded along with an MMQ of 3.18 PCUs.

Scenario		Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2024 Do-Minimum	AM Peak	A	Link Road	1	0	0.00	0.00
		B	CSLS (W)	1	33	38.49	2.67
		C	CSLS (E)	1	24	15.99	3.44
	PM Peak	A	Link Road	1	0	0.00	0.00
		B	CSLS (W)	1	26	26.33	3.13
		C	CSLS (E)	1	26	24.89	3.18

Table 6-8 2024 Do-Minimum TRANSYT Results Junction 3

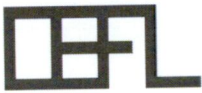
2029 Future Design Year

The TRANSYT results indicate that the CSLS / New Link Road signalised junction will operate within capacity during the AM peak and PM peak for the 2029 “Do-Minimum” scenario. A maximum degree of saturation DoS value of 34% was recorded during the AM peak “Do-Minimum” scenario with a maximum Mean Max Queue (MMQ) of 3.72 PCUs. During the PM peak “Do-Minimum” scenario, a maximum DoS of 28% was recorded along with an MMQ of 3.35 PCUs.

Scenario		Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2029 Do-Minimum	AM Peak	A	Link Road	1	0	0.00	0.00
		B	CSLS (W)	1	34	38.73	2.77
		C	CSLS (E)	1	26	16.18	3.72
	PM Peak	A	Link Road	1	0	0.00	0.00
		B	CSLS (W)	1	28	26.56	3.32
		C	CSLS (E)	1	27	25.07	3.35

Table 6-9 2029 Do-Minimum TRANSYT Results Junction 3





2039 Future Design Year

The TRANSYT results indicate that the CSLS / New Link Road signalised junction will operate within capacity during the AM peak and PM peak for the 2029 “Do-Minimum” scenario. A maximum degree of saturation DoS value of 76% was recorded during the AM peak “Do-Minimum” scenario with a maximum Mean Max Queue (MMQ) of 11.37 PCUs. During the PM peak “Do-Minimum” scenario, a maximum DoS of 57% was recorded along with an MMQ of 9.11 PCUs.

Scenario		Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2039 Do-Minimum	AM Peak	A	Link Road	1	65	46.02	6.54
		B	CSLS (W)	1	75	47.31	9.37
		C	CSLS (E)	1	76	41.82	11.37
	PM Peak	A	Link Road	1	57	51.01	3.84
		B	CSLS (W)	1	52	13.37	9.11
		C	CSLS (E)	1	20	9.54	2.76

Table 6-10 2039 Do-Minimum TRANSYT Results Junction 3

6.3.2 Do-Something Scenario

2024 Opening Year

The TRANSYT results indicate that the CSLS / New Link Road signalised junction will operate within capacity during the AM peak and PM peak for the 2024 “Do-Something” scenario. A maximum degree of saturation DoS value of 35% was recorded during the AM peak “Do-Something” scenario with a maximum Mean Max Queue (MMQ) of 3.55 PCUs. During the PM peak “Do-Something” scenario, a maximum DoS of 28% was recorded along with an MMQ of 3.38 PCUs.

Scenario		Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2024 Do-Minimum	AM Peak	A	Link Road	1	16	45.30	0.61
		B	CSLS (W)	1	35	38.79	2.80
		C	CSLS (E)	1	25	16.03	3.55
	PM Peak	A	Link Road	1	7	43.71	0.26
		B	CSLS (W)	1	27	25.79	3.32
		C	CSLS (E)	1	28	25.86	3.38

Table 6-11 2024 Do-Something TRANSYT Results Junction 3





### 2029 Future Design Year

The TRANSYT results indicate that the CSLS / New Link Road signalised junction will operate within capacity during the AM peak and PM peak for the 2029 “Do-Something” scenario. A maximum degree of saturation DoS value of 36% was recorded during the AM peak “Do-Something” scenario with a maximum Mean Max Queue (MMQ) of 3.77 PCUs. During the PM peak “Do-Something” scenario, a maximum DoS of 29% was recorded along with an MMQ of 3.59 PCUs.

Scenario	Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2029 Do-Minimum	AM Peak	A	Link Road	1	16	45.30
		B	CSLS (W)	1	36	39.04
		C	CSLS (E)	1	26	16.22
	PM Peak	A	Link Road	1	7	43.71
		B	CSLS (W)	1	29	26.00
		C	CSLS (E)	1	29	26.05

Table 6-12 2029 Do-Something TRANSYT Results Junction 3

### 2039 Future Design Year

The TRANSYT results indicate that the CSLS / New Link Road signalised junction will operate within capacity during the AM peak and PM peak for the 2039 “Do-Something” scenario. A maximum degree of saturation DoS value of 76% was recorded during the AM peak “Do-Something” scenario with a maximum Mean Max Queue (MMQ) of 11.49 PCUs. During the PM peak “Do-Something” scenario, a maximum DoS of 61% was recorded along with an MMQ of 9.42 PCUs.

Scenario	Arm	Arm Name	Stream	Degree of Saturation %	Mean Delay per Veh (s)	Mean Max Queue (PCUs)
2039 Do-Minimum	AM Peak	A	Link Road	1	71	49.26
		B	CSLS (W)	1	76	47.99
		C	CSLS (E)	1	76	42.19
	PM Peak	A	Link Road	1	61	52.93
		B	CSLS (W)	1	53	13.52
		C	CSLS (E)	1	21	9.59

Table 6-13 2039 Do-Something TRANSYT Results Junction 3





For Junction 3, the analysis shows a network performance within capacity during all scenarios. The impact of the Proposed Development is again minimal, with an increase of capacity of 2% in the morning and evening peak hour in 2024, and 4% in the evening peak hour in 2039.

Scenario	2024		2039	
	AM Peak	PM Peak	AM Peak	PM Peak
Do-Minimum (DM)	33%	26%	76%	57%
Do-Something (DS)	35%	28%	76%	61%
DM vs DS	+2%	+2%	+0%	+4%

Table 6-14 Impact Significance Junction 3

6.4 Summary of Network Analysis

Two of the five junctions studied as part of the network traffic model have been brought forward for a more detailed analysis using the Transport Research Laboratory (TRL) computer package TRANSYT for signal-controlled junctions. These junctions were Junction 2 R113 Fonthill Road / Clonburris Southern Link Street and Junction 3 Clonburris Southern Link Street / New Link Road.

Junction 2 will operate over capacity during the 2024, 2029 and 2039 AM peak hour “Do-Minimum” scenario, with a maximum degree of saturation of 135% recorded during the 2039 Future Design Year. The junction will operate under capacity during the 2024 and 2029 PM peak hour “Do-Minimum” scenario but over capacity during the 2039 PM peak hour “Do-Minimum” scenario. A maximum degree of saturation of 148% was recorded during the 2039 Future Design Year.

In a similar manner, junction 2 will operate over capacity during the 2024, 2029 and 2039 AM peak hour “Do-Something” scenario, with a maximum degree of saturation of 135% recorded during the 2039 Future Design Year. The junction will operate under capacity during the 2024 and 2029 PM peak hour “Do-Something” scenario but over capacity during the 2039 PM peak hour “Do-Something” scenario. A maximum degree of saturation of 150% was recorded during the 2039 Future Design Year.

Junction 3 will operate under capacity during both the AM peak hour and PM peak hour “Do-Minimum” and “Do-Something” scenarios for the 2024 Opening Year and 2029 and 2039 Future Design Years. A maximum degree of saturation of 76% was recorded during the AM peak hour for both the 2039 “Do-Minimum” and “Do-Something” scenarios. A maximum degree of saturation of 57% was recorded during the 2039 PM peak hour “Do-Minimum” scenario while a maximum



degree of saturation of 61% was recorded during the 2039 PM peak hour "Do-Something" scenario.

Overall, the proposed development is not expected to increase the maximum degree of saturation recorded during the 2039 AM peak hour for either junction 2 or junction 3. During the 2039 PM peak hour, the proposed development is expected to increase in the maximum degree of saturation by 2% at junction 2 and 4% at junction 3.





## 7 Initiatives to Promote Sustainable Travel

### 7.1 Overview

A package of integrated mitigation measures has been identified to off-set the additional local demand that the proposed residential development on the subject zoned lands could potentially generate as a result of the forecast increase in vehicle movements by residents of the scheme. The strategy includes specific measures for both the construction and operational stages of the proposed development.

### 7.2 Construction Stage

The Construction Management Plan (which is a standalone report and included in the planning documentation) and the associated Construction Traffic Management Plan (CTMP) in addition to the application's accompanying Construction and Waste Management Plan will incorporate a range of integrated control measures and associated management initiatives with the objective of mitigating the impact of the proposed development's on-site construction activities.

The CTMP will be prepared prior to the commencement of construction work on site. This plan will be prepared in consultation with SDCC and submitted for approval in order to agree on traffic management and monitoring measures (in advance of works commencing) some of which are outlined below:

- All works on site will be undertaken during hour of the day in accordance with SDCC requirements.
- A dedicated construction access / egress is to be provided which will segregate all construction activities from the proposed development and nearby residential areas.
- During the pre-construction phase, the site will be securely fenced off from adjacent properties, public footpaths, and roads.
- The surrounding road network will be signed to define the access and egress routes for the development including dedicated 'haul' routes to/from the development site.
- The traffic generated by the construction phase of the development will be strictly controlled in order to minimise the impact of this traffic on the surrounding road network and local properties. All HGV trips could potentially be restricted from traveling to / from the development during the local road networks peak hours.



- All road works will be adequately signposted and enclosed to ensure the safety of all road users and construction personnel.
- All employees and visitors' vehicle parking demands will be accommodated either on-site or at a predetermined off-site location. On-street parking of construction vehicles and construction personnel vehicles will be discouraged.
- A programme of street cleaning across the local street and identified 'haul' routes' will be implemented.
- A construction Mobility Management Plan will be developed by the appointed contractor to encourage all construction personnel to utilise the vast range of sustainable travel options available when travelling to/from the subject site.

### 7.3 Operational Stage

With the objective of mitigating the potential impact of the proposed residential development above during its operational stage, and with the objective of promoting sustainable travel for all residents, workers, and visitors to the development; the following initiatives have been identified and subsequently form an integral part of the subject development proposals.

- **Management** – A Mobility Management Plan (MMP) is to be rolled out with the aim of guiding the delivery and management of a range of coordinated initiatives by the scheme promotor. The MMP ultimately seeks to encourage sustainable travel practices for all journeys to and from the proposed development site. The MMP will be developed in partnership with SDCC to specifically consider the opportunities of shaping all journeys and promoting sustainable transport habits throughout the scheme.
- **Management** – A Car Park Management Strategy. The availability of parking spaces is a key determinant of mode choice and car usage. With the objective of minimizing travel by car and encouraging the use of sustainable modes instead, it is proposed to manage the assignment of the car parking provision and promote a 'car lite' scheme. This is considered an appropriate approach considering the site accessibility characteristics (e.g., walking, cycling, bus) local availabilities and travel to places of work, education, and essential services, and existing local car ownership levels. This 'car lite' approach will help to reduce car dependency in South Dublin, reduce traffic congestion and pollution, improve the quality of the environment, and help tackle climate change in addition to encouraging sustainable travel.





- **Facilities** - In addition to facilitating and encouraging bicycle use increasing cycle parking is an alternative measure when reducing car parking spaces.
- **Infrastructure (by others)** – Planning infrastructure investment that will further enhance the sites sustainable accessibility credentials include;
  - BusConnects (e.g., Core Bus Corridor) scheme will also deliver improvements to cycling facilities in the area,
  - The proposed GDA cycling network plan will also encourage a greater uptake in walking and cycling amongst residents.



## 8 Summary and Conclusions

### 8.1 Summary

DBFL Consulting Engineers (DBFL) have been commissioned to prepare a Traffic & Transport Assessment (TTA) for a proposed development on lands at Clonburris, Co. Dublin.

The development will consist of the construction of 157 no. dwellings on a site of c.3.45 hectares in the Clonburris South-West Development Area of the Clonburris Strategic Development Zone (SDZ) Planning Scheme 2019 as follows:

- A) 81 no. houses comprising 4 no. 2-bedroom houses, 65 no. 3-bedroom houses and 12 no. 4-bedroom houses (all 2-no. storey with associated private open space and car parking);
- B) 76 no. apartment units consisting of 26 no. 1-bedroom and 50 no. 2-bedroom units within Block 1 (4 no. storeys);
- C) Vehicular access will be provided from the permitted street under SDZ21A/0022 and the permitted Clonburris Southern Link Street (SDZ20A/0021) and R113 (Fonthill Road) to the east;
- D) All ancillary site development works including footpaths, landscaping boundary treatments, public and private open space areas, car parking (170 no. spaces) and bicycle parking (170 no. spaces), single-storey ESB sub-stations, bin and bicycle stores and all ancillary site development/construction works.

The purpose of this report is to quantify the existing transport environment and to detail the results of assessment work undertaken to identify the potential level of transport impact generated as a result of the proposed residential development. Our methodology incorporated a number of key inter-related stages, including;

- Site Audit;
- Planning File Review;
- Policy Review;
- Analysis of Traffic Counts;
- Trip Generation, Distribution and Assignment;
- Network Analysis.

The on-site car parking allocation has been derived for this development with consideration of both the South Dublin County Development Plan and DHPLG *'Sustainable Urban Housing: Design*





*Standards for New Apartments*. Ample cycle parking is proposed along with other initiatives to promote sustainable travel.

As per best practice guidance this TTA has carried out a range of network assessments investigating different traffic conditions for an Opening Year of 2024, the Interim Design Year of 2029 and the Future Design Year of 2039.

The findings of the analysis summarised within this Traffic and Transport Assessment are as follows:

- The subject site benefits from existing pedestrian facilities on all surrounding roads. Cycle facilities found along the Grand Canal Greenway, Fonthill Road and Grange Castle Road provide connections to the City Centre, Lucan Village, Liffey Valley and the N4.
- The GDA Cycle Network Plan proposed a number of routes in the vicinity of the subject development offering links to a number of destinations such as the City Centre, Liffey Valley, Tallaght, Clondalkin and Lucan via the SO5, SO5a, SO6, SO8 and Grand Canal Greenway. All of these routes have since been constructed apart from route SO5 which runs from Liffey Valley Shopping Centre south toward Fonthill Road and Ninth Lock Road to Clondalkin Village and Tallaght. A northward link will extend across the River Liffey to Blanchardstown.
- Under the NTA's BusConnects proposals the subject development site will be served by bus services with an 12-15-minute frequency. These new public transport links will be directly accessible to the subject site as they will run along the R136 Grange Castle Road, the R113 Fonthill Road and Ninth Lock Road.
- The proposed residential development will increase the population of the local area, which will support the existing bus services and will make further improvements to these services more viable. Occupiers of the development would place additional patronage on public transport, which should lead to increased investment and to the enhancement of public transport within the area.
- Clondalkin-Fonthill Train Station is located approximately 500m east of the subject site. The train station is easily accessible both on foot and by bike from the subject development site. Services calling at Clondalkin-Fonthill Station offer connections to Heuston, Drumcondra, Connolly, Tara Street, Pearse and Grand Canal Dock.
- The primary vehicular access for the subject development will be provided via a new link road off the Clonburris Southern Link Street. This vehicular access will also be usable to



both pedestrian and cyclists. There are additional non-vehicular access points provide filtered permeability, ensuring shorter walking and cycling distances and increasing the attractiveness of these sustainable modes.

- The subject development is predicted to generate 31 and 28 two-way vehicle trips in the AM peak hour and PM peak hour periods respectively.
- The network impact analysis analysed the impact of the proposed development upon the local road network. The five key junctions that were analysed were Ninth Lock Road / CSLS (Junction 1), R113 Fonthill Road / CSLS (Junction 2), CSLS / New Link Road (Junction 3), CNLS / New Link Road (Junction 4) and R113 Fonthill Road / CNLS (Junction 5). The level of traffic at Junction 3 approached the 10% threshold and as such, an assessment of the impact of the proposed development has been undertaken to ensure a robust assessment. Junction 2 was also assessed further due to the relatively large increase in vehicle numbers on this junction in the Do-Something Scenario and the poor performance of this junction in the Planning Ref: SDZ20A/0021 analysis.
- **Figure 8-1** below details the total number of two-way vehicle trips that will pass through the key off-site junctions in the 2039 Future Design Year and the resulting percentage increase in traffic flows as a result of the traffic generated by the proposed development.



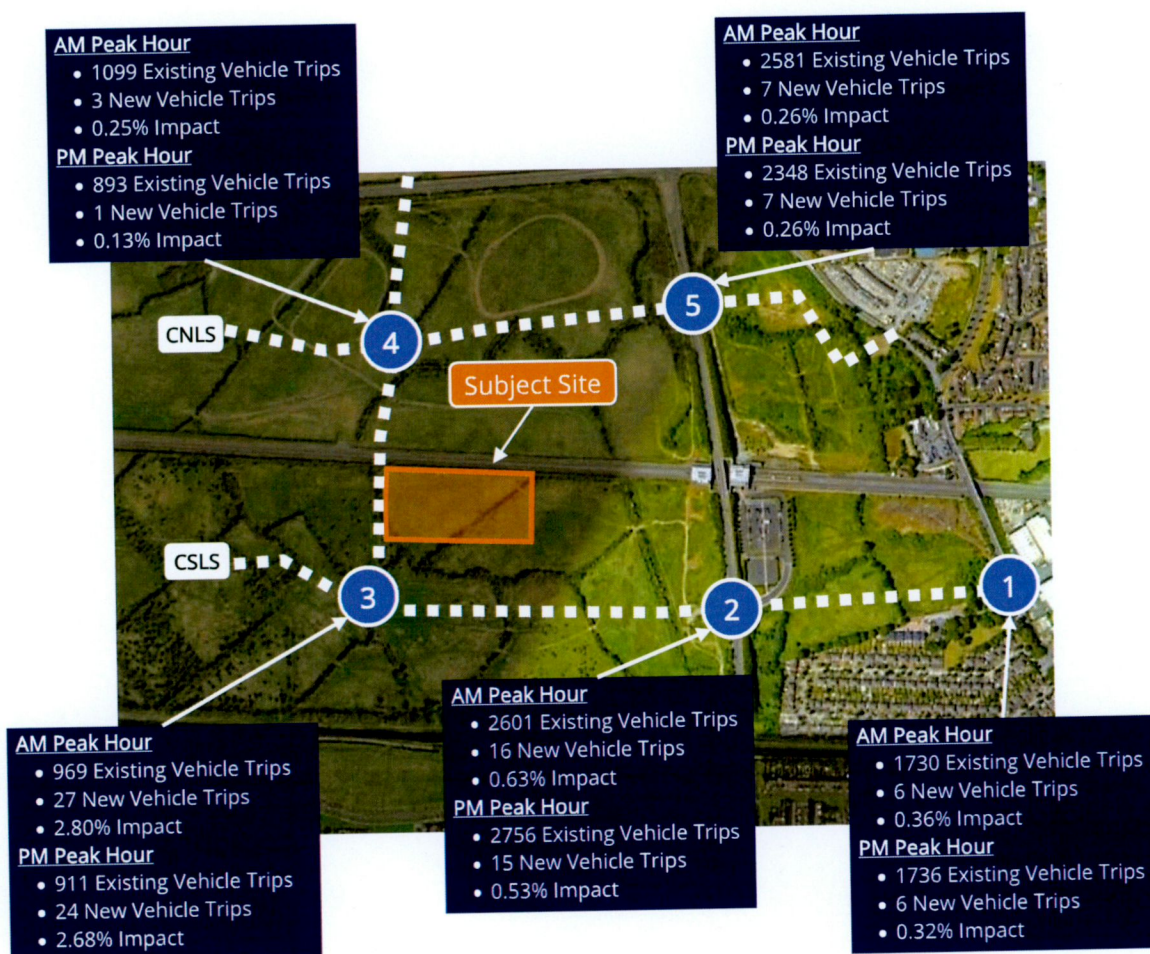


Figure 8-1 Network Impact Through Key Off-Site Junctions (2039)

- TRANSYT analysis was carried out on Junction 2 and Junction 3. Two different scenarios were tested at each junction, Do Minimum (base flows redistributed) and Do Something (proposed development flows added to the Do Minimum scenario). Junction 2 is shown to operate over capacity for both the Do Nothing and Do Something scenarios. Junction 3 will operate within capacity for all design years and scenarios.
- The proposed development will result in no increase in Degree of Saturation at either junction 2 or junction 3 during the 2039 AM peak hour. The development will result in a minimal increase during the PM peak hour of just 2% at junction 2 and 4% at junction 3.

## 8.2 Conclusions

In conclusion, it is considered that the impact on the surrounding road network, as a result of the proposed development on the surrounding road network will be minimal. This is based on the



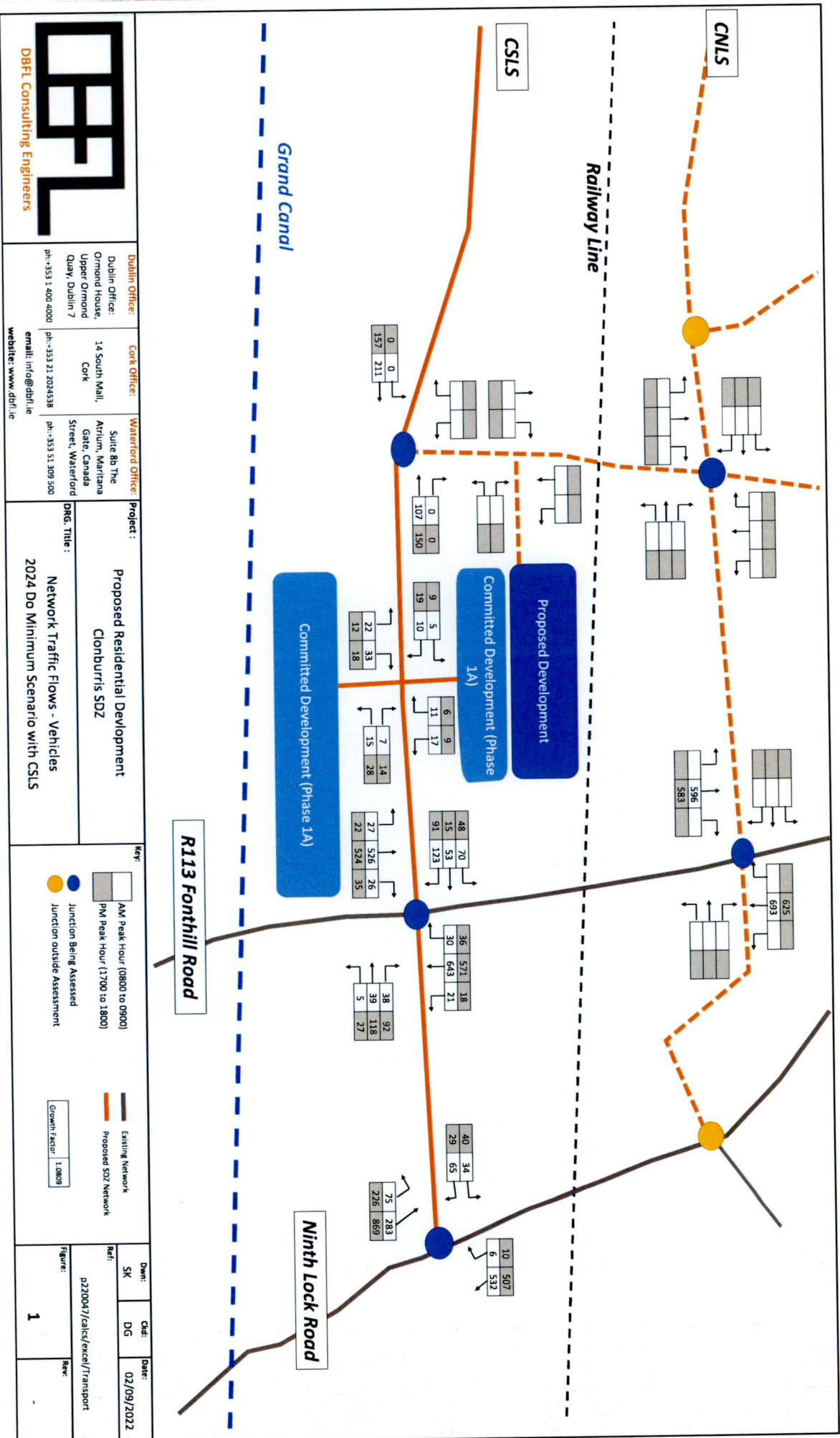
anticipated levels of traffic generated by the proposed development, the existing and future road infrastructure and the information and analysis summarised in the above report.

It is concluded that the proposals represent a sustainable and viable approach to development on the subject lands and there are no significant traffic or transportation related reasons that should prevent the granting of planning permission for the proposed residential development.





Appendix A : Traffic Flow Diagrams



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**Project:**  
Proposed Residential Development  
Clonburris SDZ

**DMG Title:**  
Network Traffic Flows - Vehicles  
2024 Do Minimum Scenario with CSLS

**Key:**

- AM Peak Hour (0800 to 0900)
- PM Peak Hour (1700 to 1800)
- Junction Being Assessed
- Junction outside Assessment
- Existing Network
- Proposed SDZ Network
- Growth Factor: 1.0809

**Dwn:** SK  
**Cld:** DG  
**Date:** 02/09/2022

**Ref:**  
p220047/ca/cv/excel/Transport

**Figure:**  
1

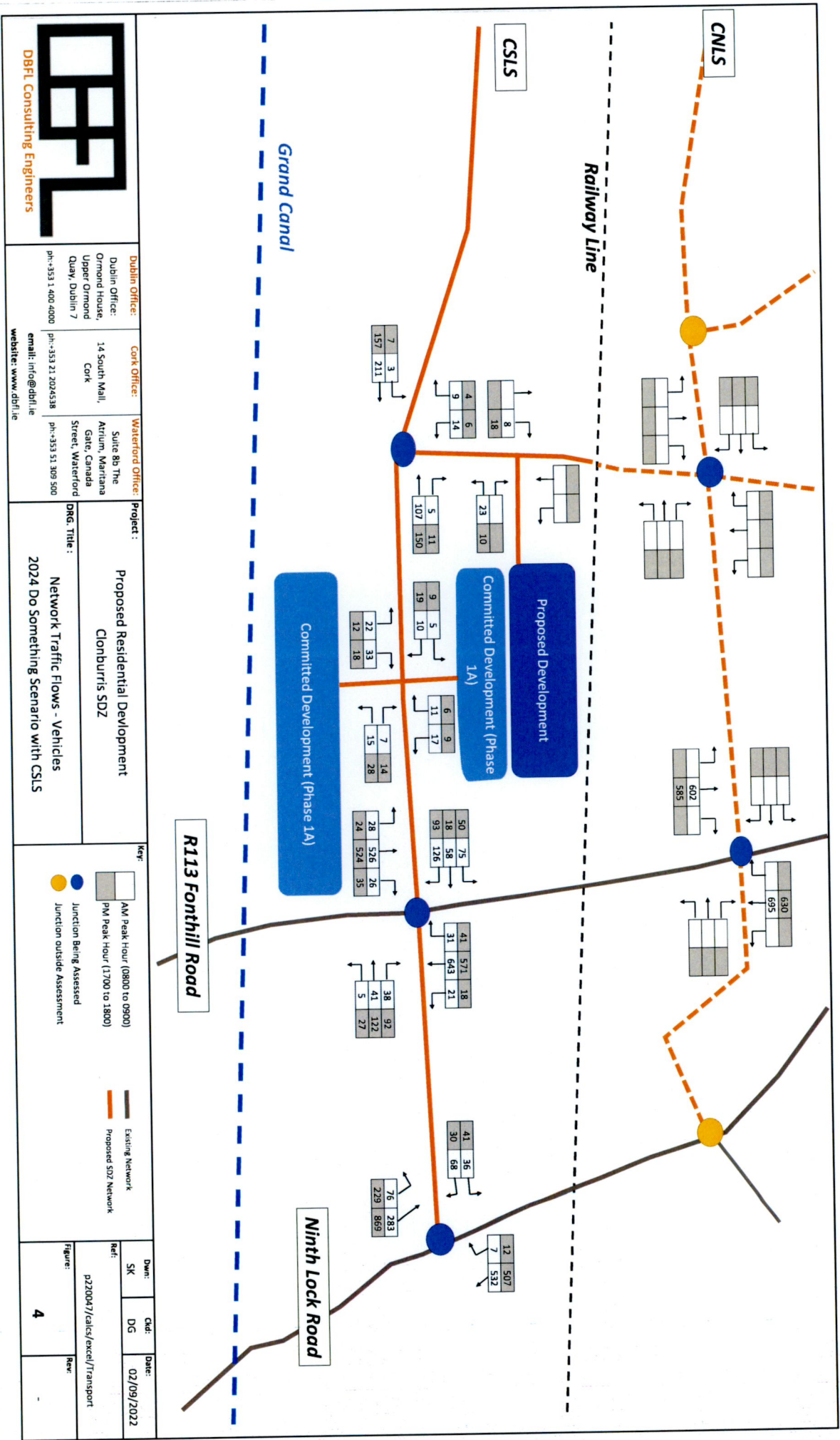
**Rev:**  
-

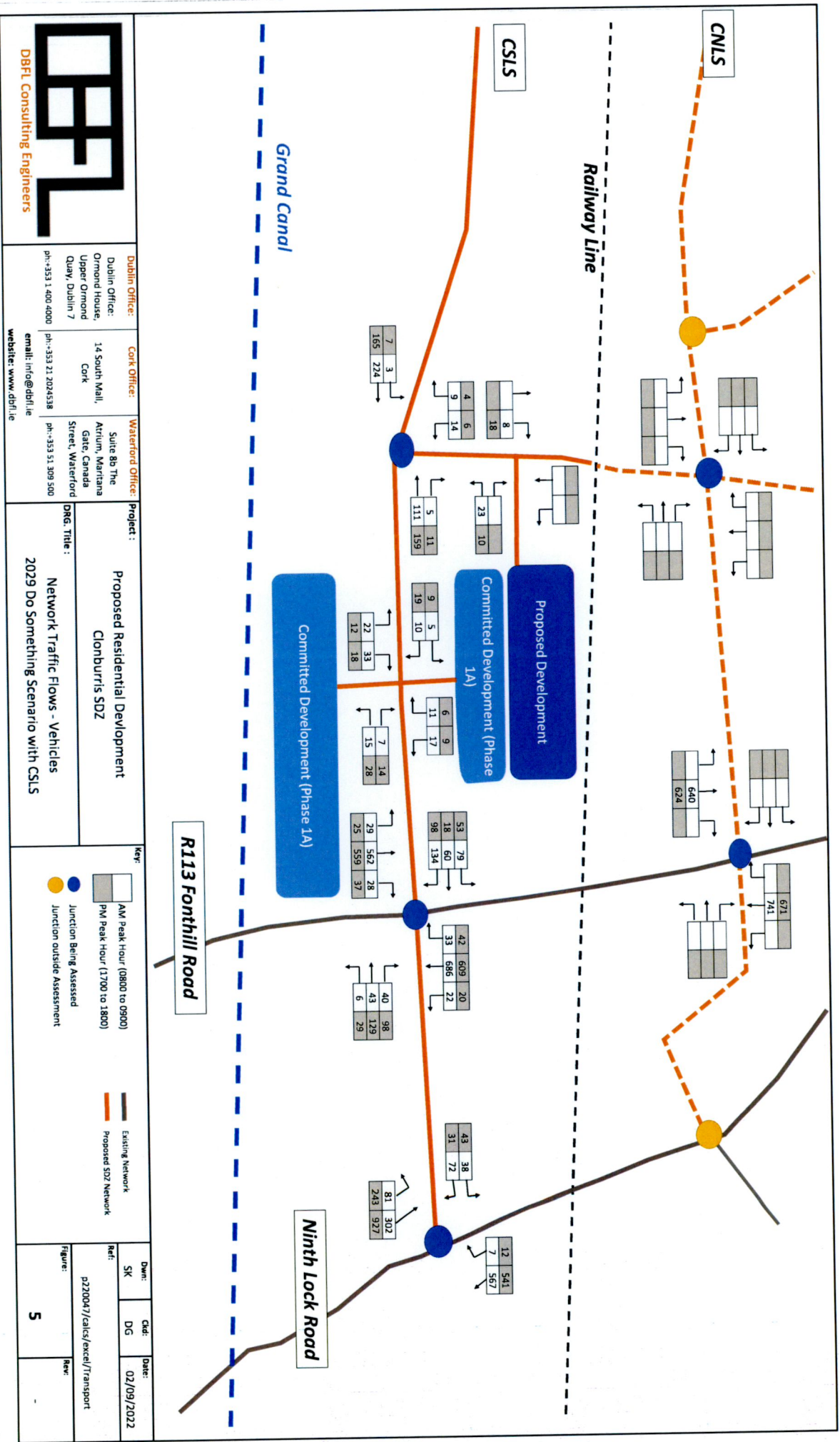












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**Project:**  
Proposed Residential Development  
Clonburris SDZ

**DRG Title:**  
Network Traffic Flows - Vehicles  
2029 Do Something Scenario with CSLS

**Key:**

- AM Peak Hour (0800 to 0900)
- PM Peak Hour (1700 to 1800)
- Junction Being Assessed
- Junction outside Assessment
- Existing Network
- Proposed SDZ Network

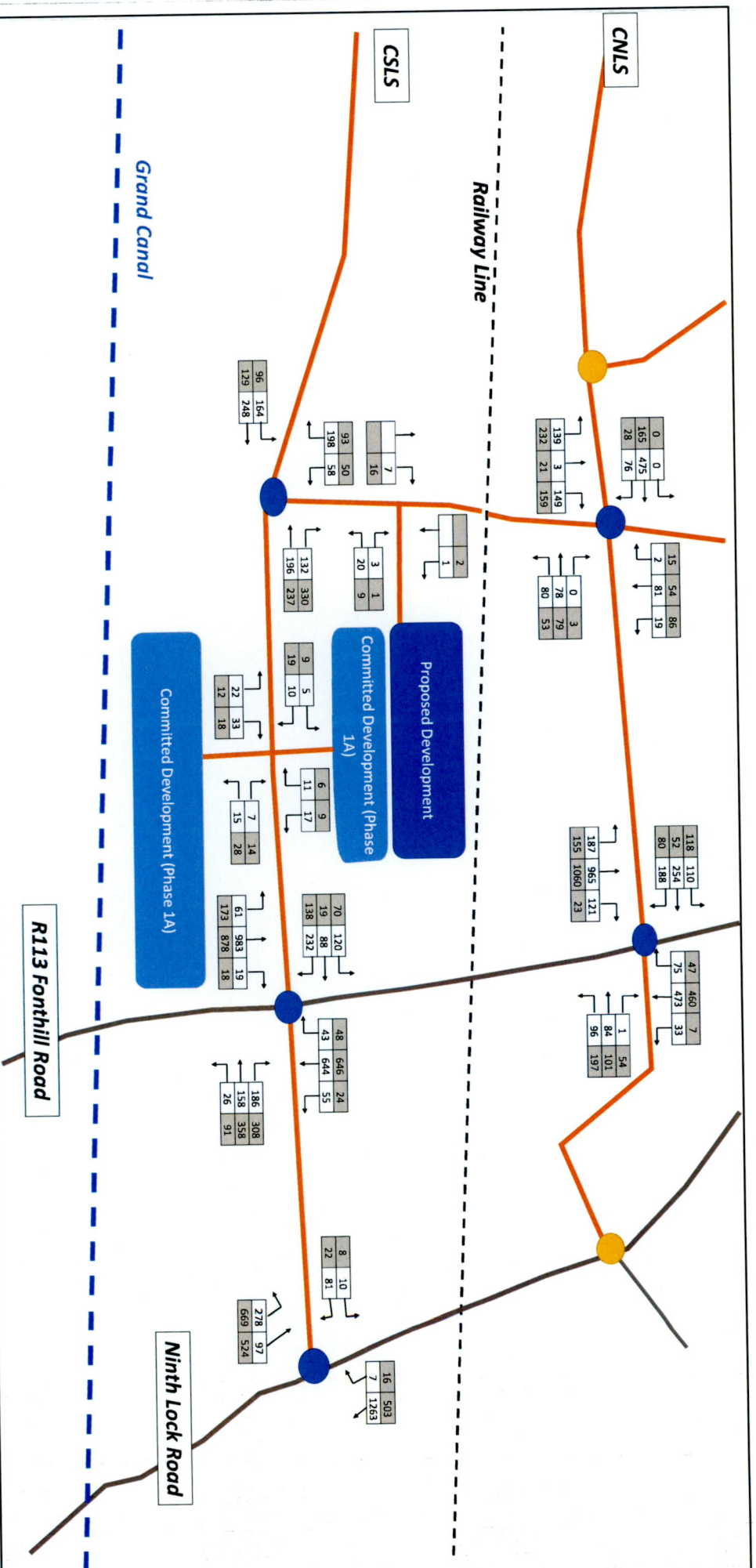
**Dwn:** SK  
**Ctd:** DG  
**Date:** 02/09/2022

**Ref:**  
p22004/calcd/excel/Transport

**Figure:**  
5

**Rev:**  
-







Appendix B : TRICS Output Data



Apartment Trip Rates

Licence No: 638801

DBFL Ormond House Dublin

Calculation Reference: AUDIT-638801-210714-0758

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL  
Category : C - FLATS PRIVATELY OWNED

TOTAL VEHICLES

Selected regions and areas:

<b>01</b>	<b>GREATER LONDON</b>	
	BE BEXLEY	1 days
	BK BARKING	1 days
	BM BROMLEY	1 days
	HG HARINGEY	1 days
	HM HAMMERSMITH AND FULHAM	2 days
	HO HOUNSLOW	3 days
	IS ISLINGTON	3 days
	KI KINGSTON	1 days
	NH NEWHAM	1 days
	SK SOUTHWARK	3 days
	TH TOWER HAMLETS	1 days
	WF WALTHAM FOREST	1 days
<b>02</b>	<b>SOUTH EAST</b>	
	BD BEDFORDSHIRE	3 days
	EX ESSEX	2 days
	HC HAMPSHIRE	1 days
	HF HERTFORDSHIRE	1 days
<b>03</b>	<b>SOUTH WEST</b>	
	DV DEVON	1 days
<b>04</b>	<b>EAST ANGLIA</b>	
	NF NORFOLK	1 days
	SF SUFFOLK	1 days
<b>05</b>	<b>EAST MIDLANDS</b>	
	LE LEICESTERSHIRE	1 days
<b>06</b>	<b>WEST MIDLANDS</b>	
	WM WEST MIDLANDS	1 days
<b>07</b>	<b>YORKSHIRE &amp; NORTH LINCOLNSHIRE</b>	
	SY SOUTH YORKSHIRE	1 days
<b>09</b>	<b>NORTH</b>	
	CB CUMBRIA	1 days
<b>10</b>	<b>WALES</b>	
	CO CONWY	1 days
<b>11</b>	<b>SCOTLAND</b>	
	SA SOUTH AYSRSHIRE	1 days
	SR STIRLING	2 days
<b>14</b>	<b>LEINSTER</b>	
	LU LOUTH	3 days
<b>15</b>	<b>GREATER DUBLIN</b>	
	DL DUBLIN	2 days
<b>16</b>	<b>ULSTER (REPUBLIC OF IRELAND)</b>	
	MG MONAGHAN	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

### Primary Filtering selection:

*This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.*

Parameter: No of Dwellings  
Actual Range: 6 to 255 (units: )  
Range Selected by User: 6 to 493 (units: )

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

### Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 23/10/20

*This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.*

### Selected survey days:

Monday	7 days
Tuesday	14 days
Wednesday	6 days
Thursday	10 days
Friday	6 days

*This data displays the number of selected surveys by day of the week.*

### Selected survey types:

Manual count	43 days
Directional ATC Count	0 days

*This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.*

### Selected Locations:

Town Centre	6
Edge of Town Centre	29
Neighbourhood Centre (PPS6 Local Centre)	8

*This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.*

### Selected Location Sub Categories:

Development Zone	3
Residential Zone	20
Built-Up Zone	14
High Street	1
No Sub Category	5

*This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.*

### Secondary Filtering selection:

#### Use Class:

C3 43 days

*This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.*

### Population within 500m Range:

All Surveys Included



**Secondary Filtering selection (Cont.):**

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	4 days
15,001 to 20,000	3 days
20,001 to 25,000	1 days
25,001 to 50,000	19 days
50,001 to 100,000	8 days
100,001 or More	5 days

*This data displays the number of selected surveys within stated 1-mile radii of population.*

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	3 days
50,001 to 75,000	6 days
75,001 to 100,000	3 days
125,001 to 250,000	6 days
250,001 to 500,000	5 days
500,001 or More	19 days

*This data displays the number of selected surveys within stated 5-mile radii of population.*

Car ownership within 5 miles:

0.5 or Less	6 days
0.6 to 1.0	19 days
1.1 to 1.5	18 days

*This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.*

Travel Plan:

Yes	9 days
No	34 days

*This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.*

PTAL Rating:

No PTAL Present	24 days
1b Very poor	1 days
2 Poor	2 days
3 Moderate	4 days
5 Very Good	4 days
6a Excellent	5 days
6b (High) Excellent	3 days

*This data displays the number of selected surveys with PTAL Ratings.*

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters

<b>1</b>	<b>BD-03-C-01</b>	<b>BLOCKS OF FLATS</b>			<b>BEDFORDSHIRE</b>
	WING ROAD				
	LEIGHTON BUZZARD				
	LINSLADE				
	Edge of Town Centre				
	Residential Zone				
	Total No of Dwellings:		175		
	Survey date: <b>TUESDAY</b>		15/05/18		Survey Type: <b>MANUAL</b>
<b>2</b>	<b>BD-03-C-02</b>	<b>BLOCKS OF FLATS</b>			<b>BEDFORDSHIRE</b>
	STANBRIDGE ROAD				
	LEIGHTON BUZZARD				
	Edge of Town Centre				
	Residential Zone				
	Total No of Dwellings:		62		
	Survey date: <b>TUESDAY</b>		15/05/18		Survey Type: <b>MANUAL</b>
<b>3</b>	<b>BD-03-C-03</b>	<b>BLOCKS OF FLATS</b>			<b>BEDFORDSHIRE</b>
	COURT DRIVE				
	DUNSTABLE				
	Edge of Town Centre				
	No Sub Category				
	Total No of Dwellings:		146		
	Survey date: <b>TUESDAY</b>		15/05/18		Survey Type: <b>MANUAL</b>
<b>4</b>	<b>BE-03-C-01</b>	<b>BLOCKS OF FLATS</b>			<b>BEXLEY</b>
	CROOK LOG				
	BEXLEYHEATH				
	Edge of Town Centre				
	Residential Zone				
	Total No of Dwellings:		79		
	Survey date: <b>WEDNESDAY</b>		19/09/18		Survey Type: <b>MANUAL</b>
<b>5</b>	<b>BK-03-C-01</b>	<b>BLOCKS OF FLATS</b>			<b>BARKING</b>
	NORTH STREET				
	BARKING				
	Town Centre				
	No Sub Category				
	Total No of Dwellings:		40		
	Survey date: <b>THURSDAY</b>		10/09/20		Survey Type: <b>MANUAL</b>
<b>6</b>	<b>BM-03-C-01</b>	<b>BLOCKS OF FLATS</b>			<b>BROMLEY</b>
	RINGER'S ROAD				
	BROMLEY				
	Town Centre				
	Built-Up Zone				
	Total No of Dwellings:		160		
	Survey date: <b>MONDAY</b>		12/11/18		Survey Type: <b>MANUAL</b>
<b>7</b>	<b>CB-03-C-01</b>	<b>BLOCK OF FLATS</b>			<b>CUMBRIA</b>
	KING STREET				
	CARLISLE				
	Town Centre				
	Built-Up Zone				
	Total No of Dwellings:		40		
	Survey date: <b>THURSDAY</b>		12/06/14		Survey Type: <b>MANUAL</b>
<b>8</b>	<b>CO-03-C-01</b>	<b>BLOCKS OF FLATS</b>			<b>CONWY</b>
	MOSTYN BROADWAY				
	LLANDUDNO				
	Edge of Town Centre				
	Built-Up Zone				
	Total No of Dwellings:		37		
	Survey date: <b>MONDAY</b>		26/03/18		Survey Type: <b>MANUAL</b>