Stillorgan

Draft Local Area Plan 2018 - 2024

Appendix I - Stillorgan Village Area Movement Framework Plan

dlr
Comhairle Contae County Council

Clifton Scannell Emerson Associates

Stillorgan Village Area MFP Preliminary Design and Options Report

NTA Stillorgan Village Area Movement Framework Plan

Dún Laoghaire-Rathdown County Council Comhairle Contae Dhún Laoghaire-Ráth an Dúin

Client: Dun Laoghaire-Rathdown County Council

Date: April 2017

Job Number: 14_059

CONSULTING ENGINEERS

Civil Engineering | Structural Engineering | Transport Engineering | Environmental Engineering | Project Management | Health and Safety

Clifton Scannell Emerson Associates

Clifton Scannell Emerson Associates Limited,
Consulting Engineers, Seafort Lodge, Castlesdawson Avenue, Blackrock, Co. Dublin, Ireland.
T. +353 1 2885006 F. +353 1 2833466 E. info@csea.ie W. www.csea.ie

Document Control Sheet

Project Name:	NTA Stillorgan Village Area Movement Framework Plan
Project Number:	14_059
Report Title:	Stillorgan Village Area MFP Preliminary Design and Options Report
Filename:	RPT-14_059-001

Issue No.	Issue Status	Date	Prepared by	Checked by
D1	Draft	11/08/2016	EC/RN	GE/JK
F1	Final	26/04/2017	EC/RN	GE

Executive Summary

Clifton Scannell Emerson Associates (CSEA), in collaboration with Brady Shipman Martin (BSM), has produced this report detailing the Preliminary Design Stage of the Stillorgan Village Area Movement Framework Plan. The purpose of this study was to create an environment that will promote and sustain a rich and vibrant village where people living and working in Stillorgan can walk, cycle and access public transport within a network of safe, pleasant and well connected streets, civic spaces, green links and benefit from an improved environment around the village core.

The study has build on the recommendations from the Stillorgan Local Area Plan 2012 – 2017 and was conducted in accordance with the objectives of the County Development Plan 2016 - 2022.

The main problems that currently exist within the study area were identified as follows:

- Disconnected village sections
- Impression of car priority
- Inadequate Pedestrian/ Cycle facilities
- Extensive parking areas dominate landscape
- Poor visual and recreational/leisure amenity
- Wide traffic lanes

A number of surveys were conducted to obtain relevant data to inform the study including Topographical Surveys, Land Use and Planning Surveys, Origin Destination Surveys, Traffic Surveys, Public/ User attitudes survey and Parking Surveys. Accident data was also collated as part of the data collection process.

The Stillorgan Village Area Movement Framework Plan was informed by a full assessment of the exiting urban structure, public space, and movement patterns, combined with detailed analysis of the planned and likely future land use and movement requirements within and surrounding the study area. In developing options for Stillorgan Village, the vision and strategic objectives of the *Stillorgan Village Local Area Plan 2012-2017* in terms of Land Use, Accessibility, Community and People, Urban Design and Public Realm, and Infrastructure, were considered in full.

Options were looked at for Stillorgan Village with a focus on Urban Design, Public Realm, pedestrian (taking desire lines into account), cycle and road network improvements. Options for key junctions were then looked at in terms of network feasibility using capacity traffic modelling packages including Oscady Picady and Linsig.

The proposed design options include modifications to the layout of a number of key junctions, including:

- Junction of Lower Kilmacud Road, The Hill and Old Dublin Road;
- Main Shopping centre car park access arrangements;
- Junction of Lower Kilmacud Road, Upper Kilmacud Road, and South Avenue; and
- Junction of Lower Kilmacud Road and N11 Stillorgan Road.

To inform the design process, the existing and proposed layouts were modelled utilising traffic survey information obtained during data collection phase of the project. The modelling results shaped the preferred layout designs of these key junctions.

With respect to consultation, key land stakeholders were identified and contacted at the early stages of the project in order to facilitate engagement with the framework development process. This informed the study by providing the design team with an understanding of potential constraints and opportunities that could arise relating to future plans and objectives these stakeholders had for their developments.

Key Land stakeholders included:

1. Stillorgan Shopping Centre
2. Kilmacud Crokes
3. Blakes and Leisureplex Sites

Taking key skateholders views and modelling results into account, the emerging preferred options were drawn up for the study area. The study area was divided into a number of different sections,each with an associated package of works.

These preferred options were then used for public information. Public information was provided on the emerging options between October and Devember, 2015, with the public invited to provide feedback on the proposal.

The drawings of the proposal included existing layouts and medium term plans proposed for the following areas:

- **Lower Kilmacud Road/ Overflow Parking (existing)**
- **Lower Kilmacud Road/Old Dublin Road Junction/N11 (existing)**
- **Old Dublin Road**
- **Lower Kilmacud Road at Mill House**
- **Upper/Lower Kilmacud Road South Avenue Junction**

- **The Hill/ N11 Slip Lane**

The feedback received from this public information period was collated and the preferred design options were updated to incorporate feasible alterations based on this feedback.

Indicative sketches of the proposed design options are shown below and included short to medium term options and long term options for the study area. A full set of design drawings can be found in Appendix E.

Figure (i): Short to Medium Term Proposal for Village Core

Figure (ii): Long Term Proposal for Village Core

Photomontages and cross-sections were also provided to give an indication as to what the scheme would look like into the future. The proposed works associated with each individual section of the study area were costed up separately, such that works could be carried out in stages in accordance with available funding.

Upon completion, the scheme will provide a positive transformation of the village, with the photomontages below providing a graphical representation of what this transformation will look like.

Figure (iii): Lower Kilmacud Road Potential (Looking East)

Figure (iv)*: Lower Kilmacud Road Potential (Looking West)*

Figure (v): Lower Kilmacud Rd / The Hill Junction Potential

Figure (vi): Old Dublin Road Potential (South Section)

Figure (vii): Old Dublin Road Potential (Middle section)

Table of Contents

1. Introduction

Clifton Scannell Emerson Associates (CSEA), in collaboration with Brady Shipman Martin (BSM), has produced this report detailing the Preliminary Design Stage of the Stillorgan Village Area Movement Framework Plan. The study area encloses Stillorgan Village and is shown in *Figure 1*. It is bound by the N11 to the north (at its junction with the Old Dublin Road), the N11 to the south (at its junction with the Hill), the N11 to the east (at its junction with Lower Kilmacud Road) and to a point just west of the staggered junction of Lower Kilmacud Road, the R826 and South Avenue to the west.

***Figure 1.1**: Study Area*

Stillorgan Village Area is a district centre and has many trip attractors including Stillorgan Village Shopping Centre, Kilmacud Crokes GAA club, the Leisure Plex facility (this may be redevelped into the future), Lidl supermarket, educational developments and various other local businesses including pubs, cafes, restaurants, banks, retail, etc.

With regard to character, Stillorgan Village provides a high parking provision, with wide junctions and mulitlane carriageways, and gives an overall impression of car priority. The urban environment in its present form provides little cohesion or sense of place.

o Brief

The purpose of this study is to create an environment that will promote and sustain a rich and vibrant village where people living and working in Stillorgan can walk, cycle and access public transport within a network of safe, pleasant and well connected streets, civic spaces, green links and benefit from an improved environment around the village core.

The study will build on information sourced from the Stillorgan Local Area Plan 2012-2017 and will be conducted in accordance with the objectives of the County Development Plan 2016-2022.

Stillorgan Local Area Plan 2012-2017

Stillorgan Local Area Plan (LAP) 2012-2017 provides a high-level vision for Stillorgan Village. It reports on the issues, oportunities, and constriants within Stillorgan Village Core, and focuses on a similar study area to that of our study. The LAP noted that the study area is affected by severe traffic congestion and poor pedestrian linkages, particularly within the vicinity of the shopping centre.

The LAP refers to the dominance of the car in Stillorgan Village. It noted that further use of public transport, walking and cycling should be promoted by facilitating the development of a pedestrian and cycle friendly area to address the problems created by this.

The LAP enphasised the importance of creating a strong urban form to facilitate a strong sense of community and identity, through the promotion of high quality architecture and urban design, including the provision of quality public spaces useable by all. It also highlighted the importance of providing an improved public realm with an emphasis on pedestrian safety.

It also noted that Stillorgan has experienced a decline in population for 24 years to 2007, with a low number of persons per household. The LAP enphasised the need to sustain the catchment population by reviving the heart of Stillorgan and enhancing the diversity of housing to cater for all needs to create a thriving and diverse community.

The LAP contains a land use strategy which identifies a vision for the redevelopment of the area. This vision supports the continued development of Stillorgan as a District Centre and Neighbourhood Centre. The aim of the land use strategy is to promote vitality and viability, improve the amenity of the surrounding environment, encourage an appropriate range of quality retail development and protect, where possible, the survival of small and specialists shops.

County Development Plan 2016-2022

Dun Laoghaire Rathdown County Councils 'County Development Plan 2016-2022' consists of a written statement and a set of 14 maps. The written statement sets out the general policy of the Council for the development of the overall area of Dun Laoghaire Rathdown County Council. It includes detailed standards for the control of development and specific objectives for different areas, including Stillorgan.

The maps illustrate the land use zoning provisions of the Plan, the road programmes and other objectives such as the preservation of trees and structures of archaeological interest. The Plan seeks to provide for the future well-being of the residents of the County by facilitating the growth of employment. To assist in achieving this, it is important to ensure there is an adequate supply of zoned lands for anticipated needs, by protecting the quality of the environment and by safeguarding the provision of necessary infrastructure.

Our study area is contained within Map 2 of the Development Plan. The map shown in figure 1.2 focuses on the study area and is taken from the bottom middle section of 'Map 2'. The map identifies strategic development sites suitable for redevelopment, including the existing Shopping Centre, the Leisureplex and Blakes sites. These sites are zoned for District Centre uses.
The land use zoning objective for the area contained with this map are as follows:

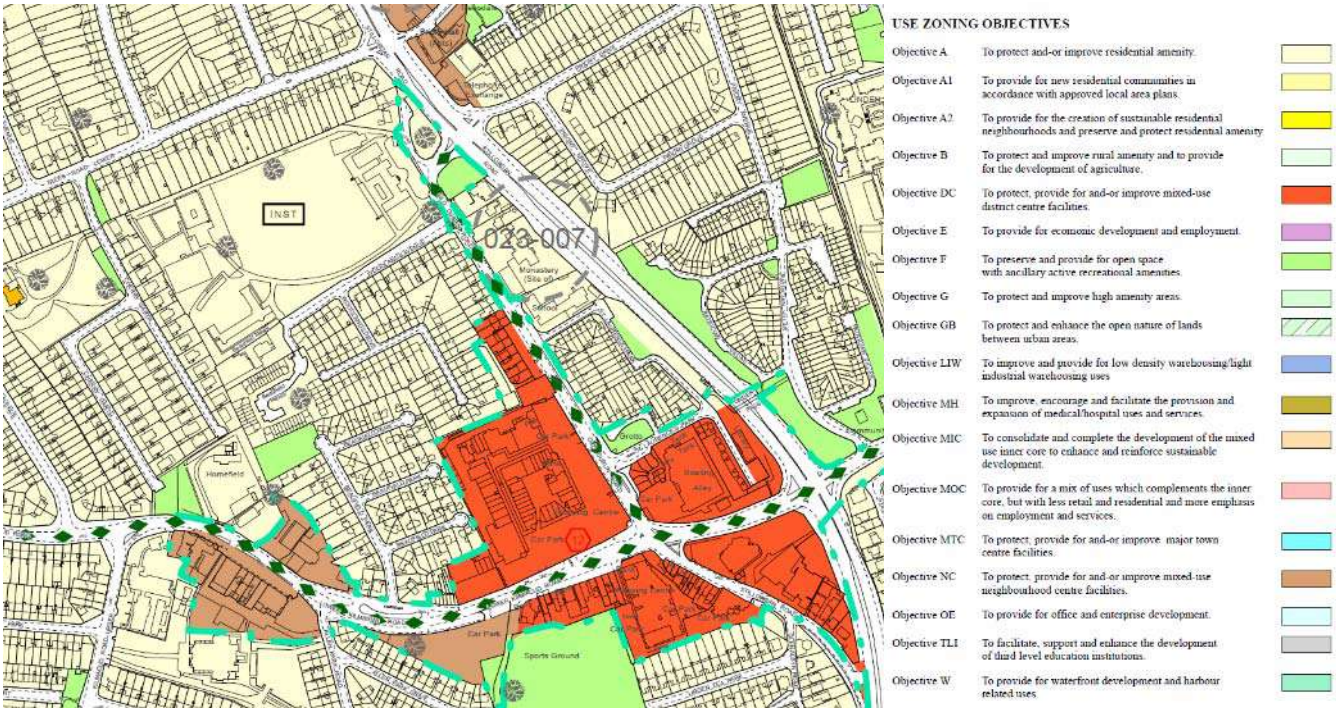


***Figure 1.2**: DLRCC Development Plan 2016-2022 - Map 2*

- Objective A (cream): To protect and-or improve residential amenity.
- Objective DC (orange): To protect, provide for and-or improve mixed-use district centre facilities.
- Objective NC (brown): To protect, provide for and-or improve mixed-use neighbourhood centre facilities.
- Objective F (green): To preserve and provide for open space with ancillary active recreational amenities.

It should be noted that the area enclosed by the light green broken line indicates the area covered in the LAP.

o Objectives

The main objectives of this study are as follows:

- To advance measures/initiatives in line with the objectives of Stillorgan Local Area Plan;
- To facilitate the future growth and success of Stillorgan Village;
- To protect and enhance the role of Stillorgan Village as a District Centre focusing on public realm improvements to create a safe and attractive environment for visitors;
- To assess movements around and through the Stillorgan Village Area and optimise accessibility within the village;
- Modal shift through improved access to public transport and better connectivity for pedestrians and cyclists;
- Pedestrian, cycle, public transport, car and delivery vehicle networks to be designed to maximise connectivity, permeability and ease of movement for soft modes;
- To create multi-functional streets that balance 'movement' and 'place' and safety for all users within a traffic calmed environment;
- To improve access to and legibility of short stay car parking.

2. Problem Identification

As mentioned previously, the purpose of this study is to create an environment that will promote and sustain a rich and vibrant village where people living and working in Stillorgan can walk, cycle and access public transport within a network of safe, pleasant and well connected streets, civic spaces, green links and benefit from an improved environment around the village core.

In order to achieve this, it is important to identify the problems that currently exist within the study area.

The main problems identified within the study area are as follows:

- Disconnected village sections
- Impression of car priority
- Inadequate Pedestrian/ Cycle facilities
- Extensive parking areas dominate landscape
- Poor visual and recreational/leisure amenity
- Wide traffic lanes

Disconnected Village Sections

The shopping centres two car parks are disconnected: The two parking areas for the shopping centre comprise the main car park and the overflow car park. The overflow car park is located south west of the shopping centre on the south side of Lower Kilmacud Road. It is separated from the main shopping centre by a wide carriageway, with no clear visual link between the two.

The shopping centre and the village section opposite it on Lower Kilmacud Road are disconnected. There are a number of businesses on the south side of Kilmacud Road adjacent the shopping centre including three banks, a café, a betting shop, Lidl, a cinema, a pub. These business are disconnected from the shopping centre due to the wide carriageway that separates them. There are limited pedestrian facilities to assist crossing, which effectively acts as a deterrent to pedestrians who would be more likely to travel between the two areas if the urban environment was more inviting.

Similarly, the hostile pedestrian environment acts as a deterrent for potential customers who may otherwise travel between the shopping centre and the businesses on the Hill and on the east side of Old Dublin Road (near the junction with Lower Kilmacud Road).

There are a number of local businesses clustered together on the west side of Old Dublin Road just north of the shopping centre, including a hardware store and an Asian supermarket which are also disconnected from the shopping centre. Again this is due to a lack of visual continuity between the two, with an idol plot of land separating the two areas and a built out wall blocking a visual path between them.

There is a further cluster of local businesses including a Centra, a restaurant/ bar and a pharmacy, located west of the overflow car park (between the overflow car park and the junction of Lower Kilmacud Road, the R826 and South Avenue). These businesses are located sufficiently far from the shopping centre giving the impression of being located outside the village.

***Figure 2.1**: Poor visual connection between overflow car park and shopping centre.*

Impression of car priority

The road network passing though Stillorgan Village features multilane carriageways with surplus to requirement widths, oversized junctions, and limited pedestrian and cycle facilities. Pedestrian footpaths are, for the most part, poorly maintained. No cycle lanes are provided through the core village area.

There are high levels of congestion through Stillorgan Village. There is also a high parking provision, with no access or turn restrictions on car parking access points, encouraging vehicles to make erratic manoeuvres to travel the shortest route to their preferred destination. This further reinforces the village's impression of car priority and creates an intimidating environment for cyclists and pedestrians to get around.

***Figure 2.2**: High parking provision and wide carriageway widths create impression of car priority – opportunity for public realm improvement*

Wide traffic lanes

Wide traffic lanes are a prominent feature of the Stillorgan Village core area. The carriageway layout on the section of Lower Kilmacud Road, between the N11 and its junction with Old Dublin Road/ The Hill comprises between four and five traffic lanes.

Between a point approximately 60 metres east of its junction with South Avenue to a point just west of the service vehicle access to the Shopping Centre, Lower Kilmacud Road provides two traffic lanes in each direction. However, east of this service vehicle access and moving into the villages core area, Lower Kilmacud Road expands significantly in width to form up to five traffic lanes at its widest point (i.e. on the west approach to its junction with Old Dublin Road and The Hill) including a left slip lane, two straight lanes, a short right lane and one exit lane.

Similarly, the carriageway of Old Dublin Road varies in width between two and four lanes. Its widest point is located on the northern approach to its junction with Lower Kilmacud Road. At this point, it comprises four lanes, including a continuous left slip lane, a straight lane, a short right lane and a single exit lane. It also facilitates movements coming from a left slip lane on Lower Kilmacud Road to merge with the exit lane.

While numerous lanes can assist capacity at junctions, excessively wide carriageways make it difficult for pedestrians to cross and create an unattractive urban environment for pedestrians and cyclists. A balance needs to be struck between reducing vehicular lane widths through the village and preventing queuing onto the N11.

***Figure 2.3**: Wide carriageway width on Lower Kilmacud Road adjacent Shopping Centre*

Inadequate Pedestrian facilities

Stillorgan village is divided into a number of areas containing clusters of businesses. In order to move between these village sections, there is often the need to cross wide carriageways. Pedestrians tend to choose the shortest route between two points of interest. Thus, it is necessary to position pedestrian crossings to match desire lines in order to discourage pedestrians from crossing wide carriageways at uncontrolled locations.

Pedestrian crossing facilities are currently provided at the junction of Lower Kilmacud Road, South Avenue and the R826. Moving along Lower Kilmacud Road east of this junction, the next crossing is located 230 metres away, at a point just west of Allen Park Road. Continuing east, the next pedestrian crossing is located a further 230 metres away. This crossing facilitates movements between the overflow car park and the main shopping centre car park.

The heart of Stillorgan Village lies east of this point and, despite this, the next crossing is located 180 metres away at Lower Kilmacud Roads' junction with The Hill and Old Dublin Road. High volumes of

pedestrians have desire lines between these two points and therefore the gap between these two crossings is too great to meet the pedestrian demand. This creates a safety issue through this area as pedestrians tend to cross the wide carriageway without any assistance (i.e. no controlled crossings or splitter island to assist crossing). Figure 2.4 shows a vulrenable road user crossing Lower Kilmacud Road through this area, with no protection from vehicular traffic.

Moving further east along Lower Kilmacud Road, a pedestrian crossing is provided 190 metres away at its junction with the N11.

With respect to crossings on Old Dublin Road, there is a signallised pedestrian crossing located on Old Dublin Road, 150 Metres north of the junction of Old Dublin Road, the Hill and Lower Kilmacud Road. There is currently a pedestrian crossing at this junction facilitating pedestrian movements across Old Dublin Road.

However, these crossings do not match the desire line for pedestrians wishing to travel between the Shopping Centre and the Leisure Plex site, library, northbound bus stop on the N11 and/ or the line of businesses on the east side of Old Dublin Road. With no pedestrian crossing facilitating movements through this desire line, pedestrians are likely to cross the road at uncontrolled points between the two existing signalised crossings currently provided on Old Dublin Road.

***Figure 2.4**: Pedestrian crossings do not match desire lines, encouraging pedestrians to cross wide carriageway with no crossing facilities*

Inadequate Cycle Facilities

Figure 2.5 shows a cyclist using the footpath to avoid an intimidating road environment through Stillorgan Village.
There are no cycle lanes provided in the study area, except for through a short section on the east approach to the junction of Lower Kilmacud Road, South Avenue and the R826. This cycle lane starts 70 metres east of the junction. However, it is marked in the left slip lane and does not adequately highlight the merging movement of cyclists travelling straight through the junction, which is the point at which cyclists are particularly vulrenable.

Cycle parking is provided at a number of locations in Stillorgan Village. The demand for cycle parking within the private land owned by the shopping centre site, particularly in the cycle parking area located beside TESCO supermarket, is greater than the supply of cycle parking spaces. It should be noted that sufficient levels of cycle parking are provided in most areas of Stillorgan.

It is recommended that more spaces are provided outside TESCO supermarket. This land, however, is not in charge of DLRCCs and consultation will need to be undertaken with shopping centre management to suggest an increase in cycle parking provision at that location.

***Figure 2.5**: Intimidating road environment for cyclists encourages cyclists to travel on the footpath*

Unattractive Public Realm

Figure 2.6 shows a busy urban environment. There are expansive areas of concrete with little planting or aestheticallly pleasing features such as street furniture, water features, high quality paving (e.g. granite paving), etc. through the village core. Such features often act as a signal to drivers that they are driving through a high pedestrian activity zone. This, in turn, improves safety by encouraging lower speeds through the area.

***Figure 2.6**: Unattractive Public Realm with expansive areas of concrete paving*

3. Data Collection

A number of surveys were conducted to obtain relevant data to inform the study including Topographical Surveys, Land Use and Planning Surveys, Origin Destination Surveys, Traffic Surveys, Public/ User attitudes survey and Parking Surveys. Accident data was also collated as part of the data collection process.

3.1 Topographical Survey

Topographical surveys were tendered for sections of the study area not already covered in existing topographical data held by DLRCC. Figure 3.1 shows the extent of the area for which survey data was obtained. As shown in Figure 3.1, the survey area also includes a section of the N11 from a point north of its junction with Lower Kilmacud Road to a point north of its junction with Trees Road Lower, which lies outside our study area.

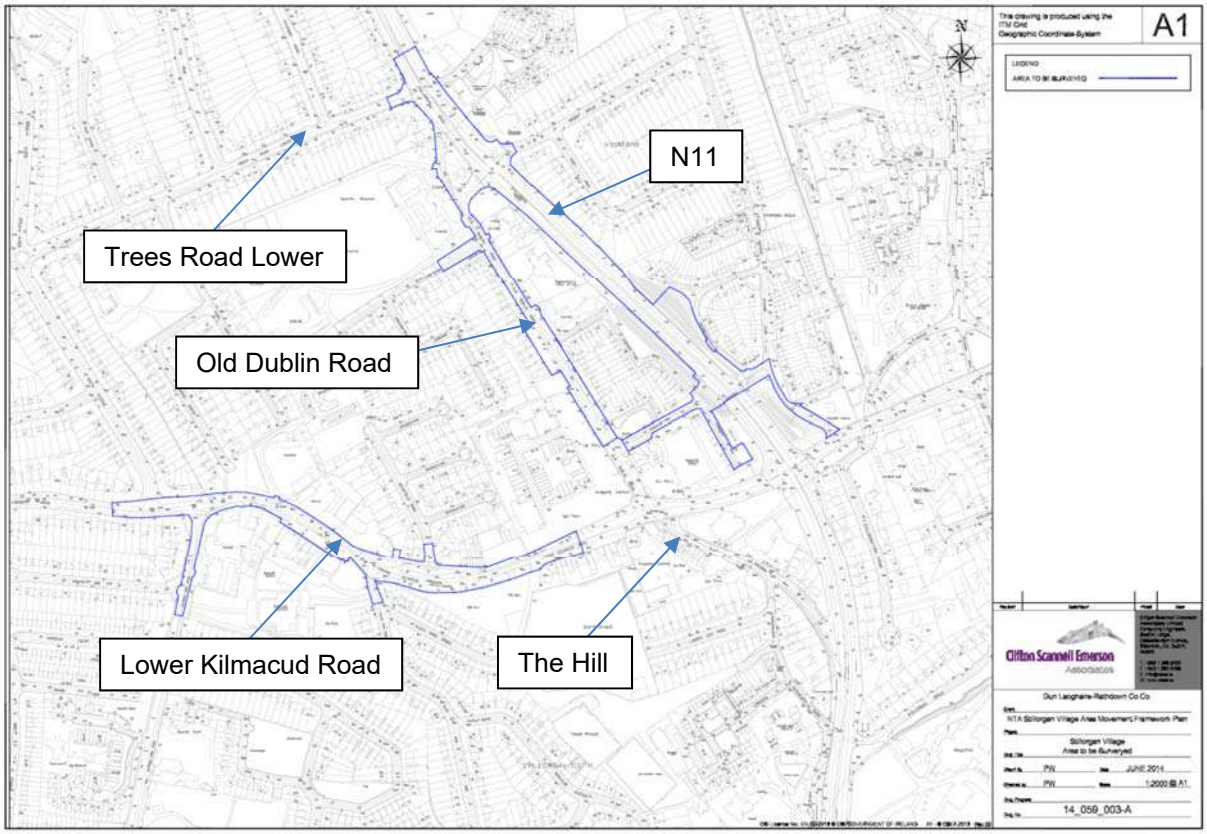


***Figure 3.1**: Extent of Topographical Survey Area*

3.2 Land Use and Planning Survey

The Stillorgan Village Area Movement Framework Plan has been informed by the existing built context of the area; existing movement patterns to, from and through the area; and an understanding of the potential future development and regeneration objectives and capacity.

It is recognised that the current land use pattern that has evolved over the last number of decades is inefficient. A combination of underutilised lands, poor provision for pedestrian and cyclist movement, significant opportunity for increased use of public transport, and a lack of a structured urban environment, all contribute to the continuance of sub-optimal and unsustainable land use. The Stillorgan Village Area Movement Framework Plan considers all aspects fo land use in an integrated and multi-disciplinary manner, and sets out a strategy to consolidate land use at Stillorgan; to enhance its mobility and access characteristics; and to coordinated all investment towards a more structure and identifiable urban environment.

Stillorgan Local Area Plan 2012- 2017

The Vision for Stillorgan set out in the Stillorgan Local Area Plan 2012- 2017 emphasises the establishment of a "sense of place and community" within Stillorgan, enhancing its vitality and viability as a District Centre. It anticipates consolidation and intensification of development to address the issue of population decline, as well as major improvements in the public realm and the quality of services and amenities.

The Stillorgan Local Area Plan 2012- 2017 sets out Strategic Objectives under five headings, and they are summarised as follows:

1. Land Use – seeking to maximise the significant redevelopment potential of available sites at Stillorgan that are well served by public transport.
2. Accessibility – to provide an enhanced pedestrian environment, reduce vehicular congestion, and promote the use of public transport.
3. Community and People – to support community facilities as focal elements that contribute to the creation of a strong sense of community and identity.
4. Urban Design and Public Realm – to promote the creation of an identifiable civic core through the introduction of mixed-use developments that delivers a structured urban context that responds to and enhances the local character and promotes a good quality visual environment.
5. Infrastructure

Section 1.3.4 of the **Dun Laoghaire Rathdown County Development Plan 2016 – 2022** provides a summary of the Stillorgan Local Area Plan (LAP) and states that the quantum and type of development specified in the LAP is in accordance with the Core Strategy. Chapter 9 of the County Development Plan 2016-2022 sets out a vision statement for Dun Laoghaire Rathdown County Council as follows: 'to initiate and/or give effect to the package of specific local objectives within the lifetime of the 2016-2022 County Development Plan.' A list of local objectives is then provided in this chapter. Objective 12 relates to this study and sets out 'to implement and develop the lands at Stillorgan in accordance with the Stillorgan LAP'

Land Use and Planning Activity

The current land use pattern is identified on *Figure 3.2* below. The core retail and commercial area is readily identifiable at the junction of Lower Kilmacud Road and Old Dublin Road, with Kilmacud Crokes and Glenalbyn immediately south of the core, and with a secondary cores further west along the Lower Kilmacud Road comprising retail and community uses, and to the north along the Old Dublin Road. The core areas are immediately surrounded by residential settlements.

Of particular significance to the future of Stillorgan, and as identified in the Stillorgan Local Area Plan, is the fact that there are substantial regeneration sites available that are focussed around the main core. These include the Shopping Centre and its overflow carpark, the Blakes and Esmonde Motors sites, and the Leisureplex site.

It is important that investment in public realm and mobility at Stillorgan anticipates the future intensification of these core regeneration sites, and that such regeneration contributes to the future urban structure and to the character of Stillorgan.

Movement

Stillorgan today is a legacy of late 20th century planning and development, and manifests as a car-centric sub-urban retail and residential centre. It was designed for high levels of vehicular access, and had minimal pedestrian and cycle infrastructure. Despite increased awareness and uptake of walking, cycling and public transport, Stillorgan retains its vehicle dominant character, and undermines the sense of road safety and potential sense of place.

The Stillorgan Village Area Movement Framework Plan anticipates significant change to the way in which Stillorgan functions as a more dense urban centre, and provides for high levels of pedestrian and cycle movement in a safe environemnt, together with the development of streetscapes of higher

visual quality and active frontage that will contribute towards the establishment of an vibrant and healthy contemporary village environment.

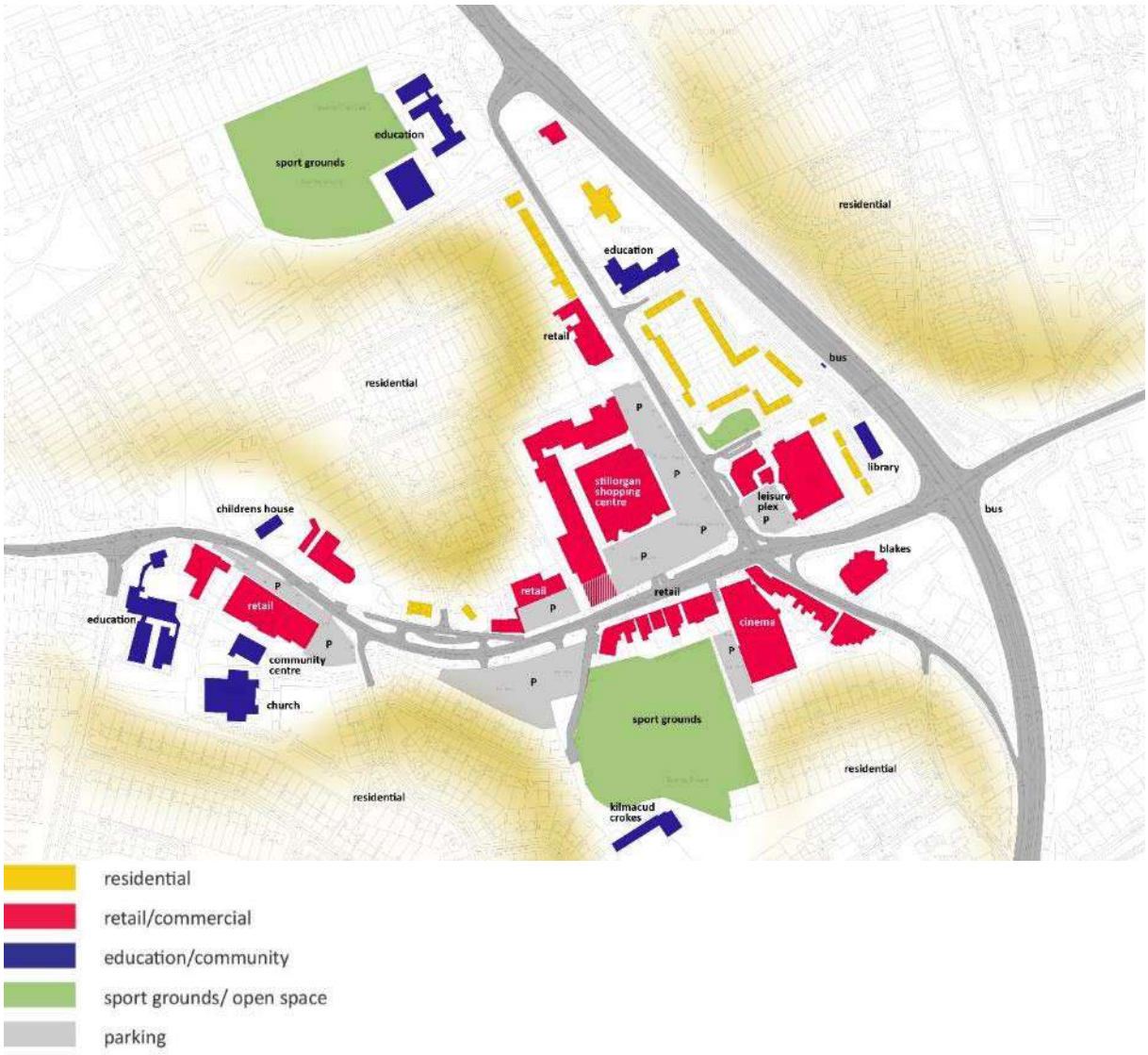


***Figure 3.2**: Current Land Use Map*

In developing the Stillorgan Village Area Movement Framework Plan, each of the major landowners in the area were consulted in order to understanding their short, medium and longer term objectives. These included the major commercial land owners and Kilmacud Crokes. A number of synergies were identified that would be mutually beneficial to both the stakeholders and to the village and the public realm.

The proposals for streetscapes, public realm, movement and access contained in the Plan, are compatible with stakeholder plans for future development.

3.3 Origin Destination Survey

Irish Traffic Surveys conducted an origin destination survey using Bluetooth technology. Each Bluetooth device comprises two parts - the Bluetooth unit itself (which can be cable tied to street furniture) and a box on the ground which houses the battery to power the device. Once installed, the units obtain Bluetooth data by measuring signals from mobile phones, hands free kits, satellite navigation devices via Bluetooth and Wi-Fi.

The MAC addresses are tagged with anonymous ID's using a complex hashing algorithm before being analysed to ensure people's privacy is maintained. These anonymous ID's are collated over time to develop an understanding of people's travel and behaviour.

Hashed ID's from numerous sites can be combined to provide data over a specific study area, providing an accurate understanding of movements over any time period. For example, it is possible to obtain information on where people are coming from/ going to by compiling information on the 'first time' a specific MAC address was seen and the 'last time' that same MAC address was seen. It is also possible to obtain information on whether or not they stopped within a specified cordon area by tracking the time elapsed between when the signal was first seen and last seen.

The measuring of the signals can be accurately focused to ensure signals are only collected from the user's area of interest i.e. specific road, car park area etc. Sample rates of between 15-40% can be achieved through Bluetooth scanning whilst Wi-Fi can add a further 20-30%. It should be noted that it is not possible to capture 100% of vehicle movements because not all vehicles travelling past the Bluetooth detector device data capture zone have an active Bluetooth device.

The unique MAC addresses of people/vehicles can be tracked at a number of scanning locations to assess routing on roads, or routing to/from a given destination e.g. car park, etc.. The units scan up to 1000 devices per minute and have an adjustable range of up to 500m which ensures any locations can be scanned.

For our study, eleven Bluetooth detector devices were installed at strategic locations within a defined cordon area (the cordon area was defined by the study area). Figure 3.3 shows the locations these Bluetooth devices were installed. Most of the devises were positioned in such a way to capture Bluetooth data for vehicles entering and exiting the Stillorgan Village cordon area. This meant calibrating the Bluetooth detector devices to pick up data from vehicles passing a specific point on a road at the periphery of the cordon.

Information was compiled showing the location at which a Bluetooth device was 'first seen' and 'last seen' to provide origin destination information (presented in matrix form) for trips made within the cordon. There were also a number of Bluetooth devices installed in the Main Shopping Centre Car Park. This provided information on car park usage patterns.

The Bluetooth surveys were conducted in Stillorgan Village between Wednesday 24th September 2014 and Saturday 27th September 2014. It should be noted that the first day (24th September) was used to calibrate the devices, with the data collected on 25th and 27th September used for analysis. Traffic surveys were also conducted for these two days. The Thursday am peak hour was recorded between 8am and 9am, the Thursday pm peak was recorded between 5pm and 6pm and the Saturday mid-day peak was recorded between 12pm and 1pm.

The traffic surveys were conducted for the same time period as the Bluetooth surveys in order to establish sample rates. For a given time period (e.g. AM peak), Bluetooth data collected for a section of road was compared with traffic volumes recorded at the same location. Once a sample rate was established, sample data was then factored up to match the traffic count data.

It was assumed that vehicles that took longer than 15 minutes to pass through the cordon (i.e. the time period between when the Bluetooth device was first seen entering the cordon and last seen exiting the cordon was greater than 15 minutes), stopped or had business in Stillorgan Village.

Similarly, it was assumed that trips that entered and exited the cordon in less than 15 minutes did not stop or have business in Stillorgan (i.e. these trips were through trips). Data on through traffic was compiled into matrices for the Thursday Am peak, Thursday PM peak and Saturday Midday Peak and these matrices were factored up in accordance with count data to obtain through traffic volumes. The results are tabulated in Tables 3.1, 3.2, and 3.3.

Table 3.1 corresponds to the Thursday AM peak period (8am-9am) and shows a matrix of traffic flows moving between six origin and six destination points. The origin and destination points are the same and are located at the entry/exit points to the cordon. As mentioned previously, it is assumed that any trip that enters and leaves the cordon area in less than 15 minutes (i.e. doesn't stop) is a through trip.

The matrix provides information on the following:

1. The number of through trips travelling between a specific origin-destination pair. For example, during the AM peak, 49 vehicles travel from 'Old Dublin Road North' (origin zone) to 'Upper Kilmacud Road' (destination zone), with a journey time of less than 15 minutes;

2. the total number of through trips from a given origin zone to any destination zone ('total'). For example, during the AM peak, 75 vehicles travel from 'Old Dublin Road North' to any of the six destination zones, with a journey time of less than 15 minutes;
3. the total number of trips from a given origin zone to any destination zone that are made within any time period ('traffic Count') – i.e. trips are not just confined to through trips. For example, during the AM peak, 247 vehicles travel from 'Old Dublin Road North' to any of the six destination zones, with a journey time of less than or more than 15 minutes;
4. the percentage through traffic travelling from a given origin zone to any destination zone ('% through traffic'). For example, 30.5% of the trips originating at Old Dublin Road North are through trips. This can be calculated by dividing the total though trips from that origin zone by the total number of trips originating in that origin zone –i.e. 75/247=30.5
5. Similar data on through trips, total trips and percentage through trips can be extracted from the matrix for destination zones.

Tables 3.2 and 3.3 provide similar origin-destination information for Thursday PM peak and Saturday Midday peak periods. Information from these three tables has been extracted and is presented graphically in Figure 3.3.

Figure 3.3 shows the percentage through traffic on a number of links, including through the study areas critical link (i.e. Lower Kilmacud Road in the vicinity of the Shopping Centre- shown in Blue). The larger text boxes show the peak hour traffic volume, the through traffic volume and the percentage through traffic for the AM, PM and Saturday midday peak periods. The data shows that the highest proportion of through traffic passes through the study area during the AM peak.

The text box highlighted in blue shows information for Lower Kilmacud Road, outside the shopping centre. During the AM peak period, 22% of eastbound traffic passing this point is through traffic. This can be compared to the PM and Saturday midday peak periods, when the through traffic percentage comprises 16, and 13% of the total,respectively.

During the AM peak period, 36% of westbound traffic passing this point is through traffic. This can be compared to the PM and Saturday midday peak periods, when the through traffic percentage comprises 24, and 18% of the total; respectively.

It is useful to know the proportion of through traffic as it gives an indicator of the proportion of trips that could potentially be diverted away from Stillorgan Village through soft and hard traffic management measures if required.

	Old Dublin Rd nth	Lwr Kilmacud Rd East	The Hill N11 Slip	St Bridgid's Church Rd	Upper Kilmacud Road	Lower Kilmacud Rd West	Total	Traffic Count	% Through Traffic
Old Dublin Rd Nth	4	4	0	4	49	13	75	247	30.5
Lwr Kilmacud Rd East	13	0	0	7	59	52	131	520	25.2
The Hill N11 Slip	85	39	0	0	0	46	170	273	62.4
Glenalbyn Rd	63	25	0	0	13	13	114	285	40.1
Upper Kilmacud Road	23	27	0	4	4	27	85	493	17.2
Lower Kilmacud Rd West	18	79	0	4	14	4	119	685	17.3
Total	207	174	0	19	139	155			
Traffic Count	554	524	1	71	629	601			
% Through Traffic	37.3	33.3	0.0	26.6	22.1	25.9			

***Table 3.1**: AM Peak Hour Origin – Destination Matrix (8-9am)*

	Old Dublin Rd nth	Lwr Kilmacud Rd East	The Hill N11 Slip	St Bridgid's Church Rd	Upper Kilmacud Road	Lower Kilmacud Rd West	Total	Traffic Count	% Through Traffic
Old Dublin Rd Nth	9	13	0	27	22	9	80	342	23.4
Lwr Kilmacud Rd East	0	7	0	33	72	59	171	512	33.4
The Hill N11 Slip	0	7	0	7	0	20	34	159	21.4
St Bridgid's Church Rd	4	4	0	0	4	4	16	131	12.2
Upper Kilmacud Road	23	31	0	4	4	27	89	549	16.2
Lower Kilmacud Rd West	14	39	0	4	14	0	71	461	15.3
Total	50	101	0	74	116	119			
Traffic Count	341	567	5	209	592	624			
% Through Traffic	14.6	17.8	0.0	35.6	19.6	19.1			

***Table 3.2**: PM Peak Hour Origin – Destination Matrix (5-6pm)*

	Old Dublin Rd nth	Lwr Kilmacud Rd East	The Hill N11 Slip	St Bridgid's Church Rd	Upper Kilmacud Road	Lower Kilmacud Rd West	Total	Traffic Count	% Through Traffic
Old Dublin Rd Nth	9	5	0	19	9	14	56	302	18.5
Lwr Kilmacud Rd East	0	18	0	12	48	42	120	492	24.4
The Hill N11 Slip	5	5	0	5	5	0	20	207	9.7
St Bridgid's Church Rd	4	5	0	0	0	5	14	152	9.2
Upper Kilmacud Road	14	15	0	0	0	9	38	512	7.4
Lower Kilmacud Rd West	6	59	0	4	26	4	99	498	19.8
Total	38	107	0	40	88	74			
Traffic Count	349	606	4	180	492	481			
% Through Traffic	10.9	17.7	0.0	22.0	17.9	15.4			

***Table 3.3**: Saturday Afternoon Peak Hour Origin – Destination Matrix (12-1pm)*

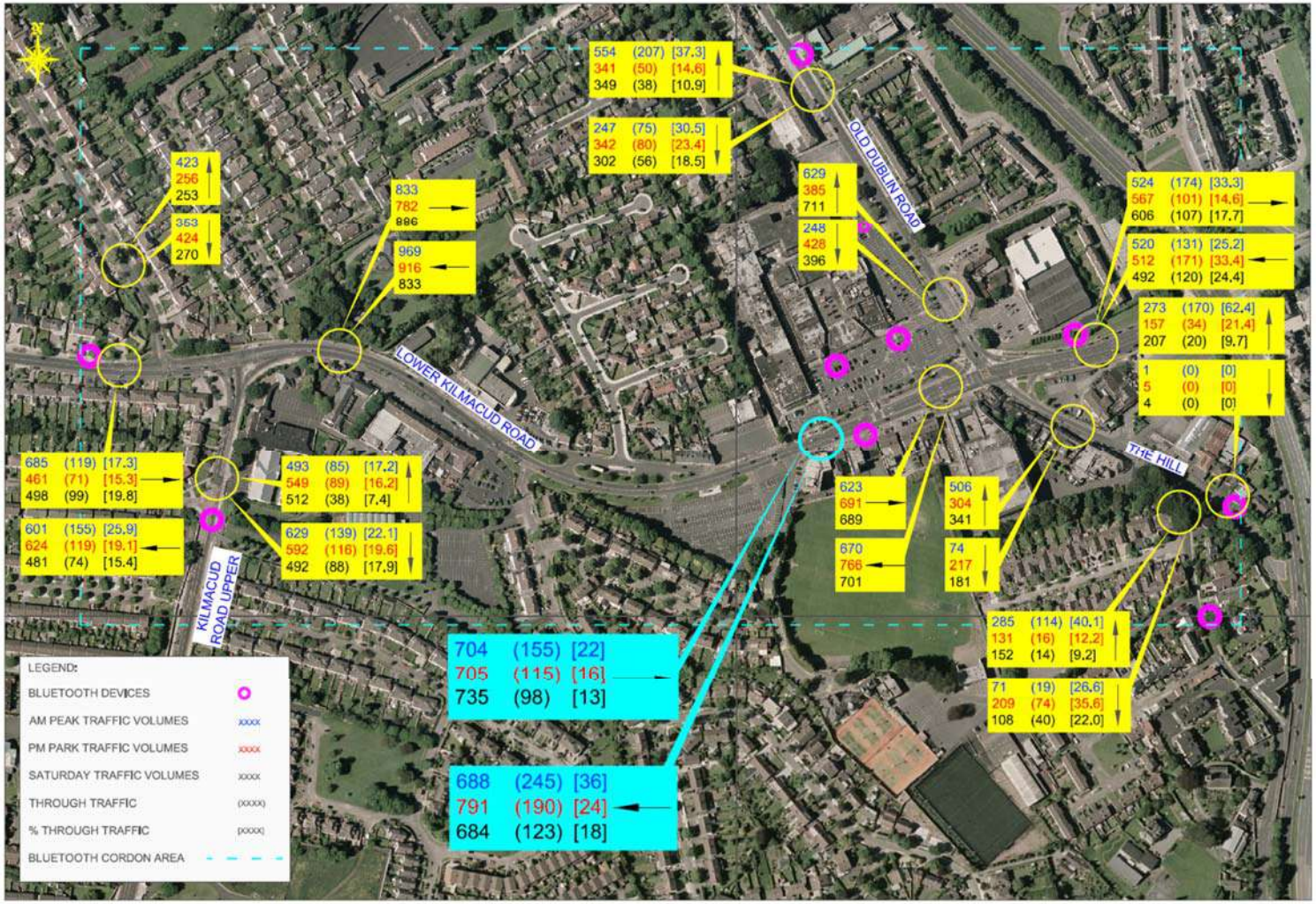


***Figure 3.3**: Bluetooth Survey Cordon Area showing through traffic volumes*

3.4 Public/ User Attitudes Survey

A public/user attitudes survey was conductied within Stillorgan Village on Thursday 25th September (9am-6pm) and Saturday 27th September (11am-3pm). The purpose of this survey was to gain a better understanding of travel patterns for people with business in Stillorgan and to get the publics opinion on what they like, dislike and would like to change about Stillorgan Village. The results of the survey were used to inform the study. The interview questionaire and results of the survey are included in *Appendix A* of the report.

3.5 Traffic Surveys

Traffic surveys were conducted on Thursday 25th September and Saturday 27th September 2014. The Thursday am peak hour was recorded between 8am and 9am, the Thursday pm peak was recorded between 5pm and 6pm and the Saturday mid-day peak was recorded between 12pm and 1pm.

Traffic surveys were undertaken at the following junctions on 25/27th September 2014:

- Lower Kilmacud Road, The Hill and Old Dublin Road (see Figure 3.4);
- Lower Kilmacud Road, Upper Kilmacud Road (R826) and South Avenue (see Figure 3.5);
- The Hill, Left Slip Lane from N11 and St Bridgid's Church Road;
- The N11 and Old Dublin Road;
- Main Shopping Centre Car Park Access and Lower Kilmacud Road (see Figure3.6);
- Old Dublin Road and Car Park Access, north of St Laurances Park; and
- Old Dublin Road and Car Park Access, south of St Laurances Park.

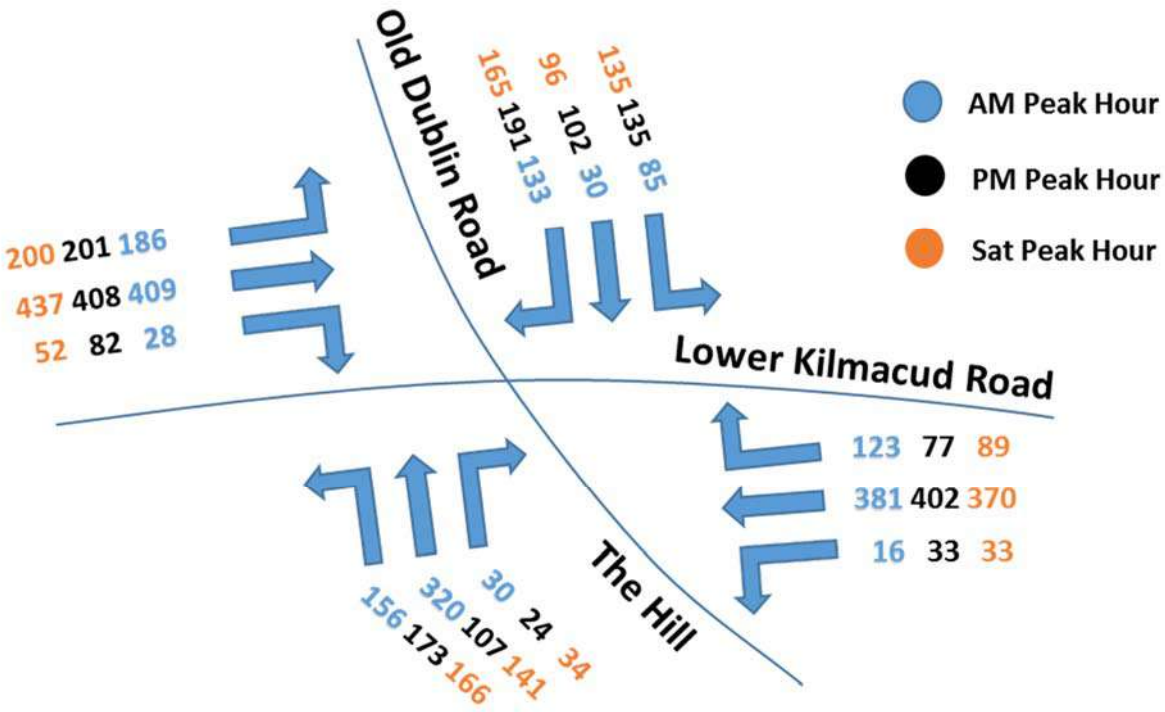


Figure 3.4 *Existing Peak Hour Classified Turning Counts (vehicles)*

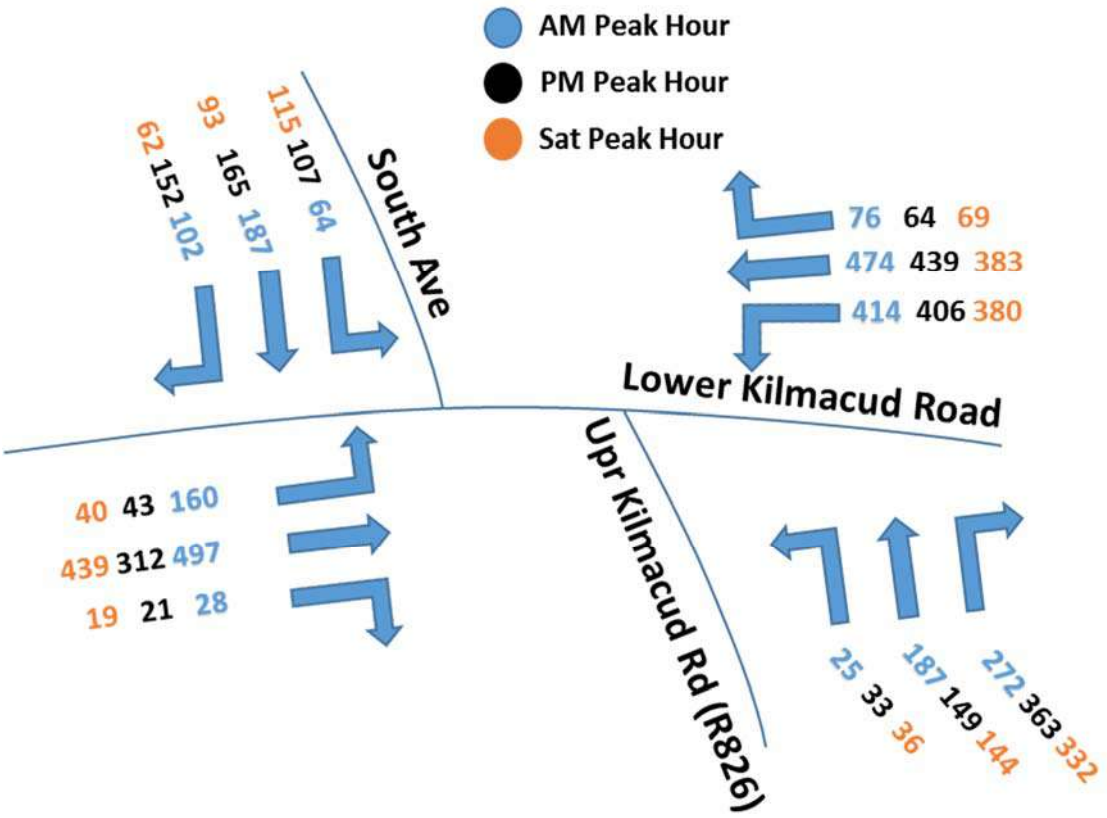


Figure 3.5 *Existing Peak Hour Classified Turning Counts (vehicles)*

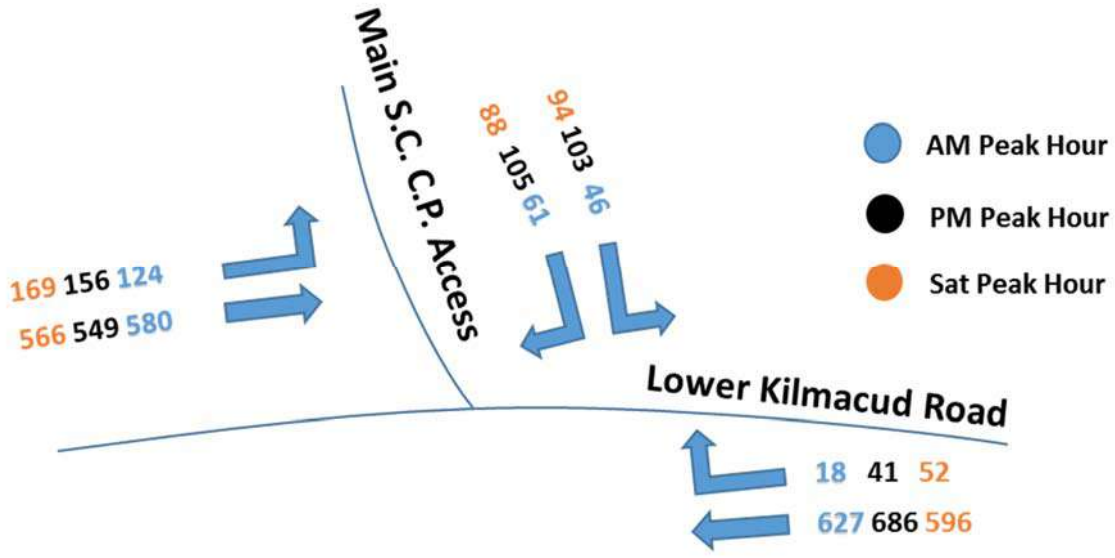


Figure 3.6 *Existing Peak Hour Classified Turning Counts (vehicles)*

A Traffic Survey was also undertaken at the following junction on Thursday 3rd October 2013:

- The N11, Stillorgan Park Road and Lower Kilmacud Road (see Figure 3.7);

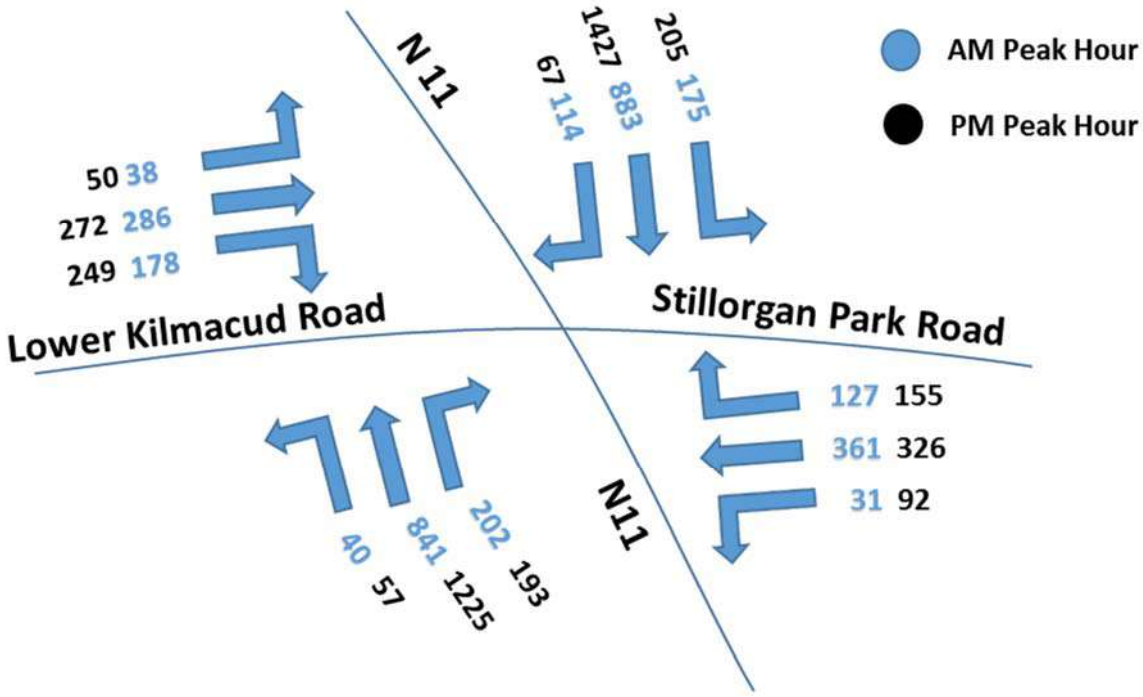


Figure 3.7 *Existing Peak Hour Classified Turning Counts (vehicles)*

3.6 Parking Surveys

Parking surveys were conducted at the Stillorgan Shopping Centre Main Car Park and Overflow Car Park on Thursday 25th October 2014 and Saturday 27th October 2014 on approximately a bi-hourly basis during the same period the Public/ User Attitudes Surveys were conducted. The results of these parking suveys are shown in Table 3.4.

Date	Time	Shopping Centre Car Park		Overflow Car Park	
		No. Cars	No. Vans/ (Trucks)	No. Cars	No. Vans/ (Trucks)
25/09	9.00	133	3	12	1
25/09	10.30	238	5	58	1
25/09	12.30	309	6	92	2
25/09	14.45	301	3	85	1
25/09	17.00	258	3 / (1)	60	1
27/09	11.00	301	2	140	1
27/09	12.45	318	1	127	1
27/09	14.15	310	4	120	2

***Table 3.4**: Shopping Centre Car Parking Survey Results*

3.7 Collision Survey

Table 3.7 shows collision data recorded within the study area between 2005 and 2013. Collision data was sourced from the RSA Irish Road Collision database (http://www.rsa.ie/RSA/Road-Safety/Our-Research/Collision-Statistics/Ireland-Road-Collisions/).

Twenty-six accidents were recorded during this period, including three (11.5%) fatal, one(3.8%) serious, and twenty-two (84.6%) minor (see Figure 3.8).

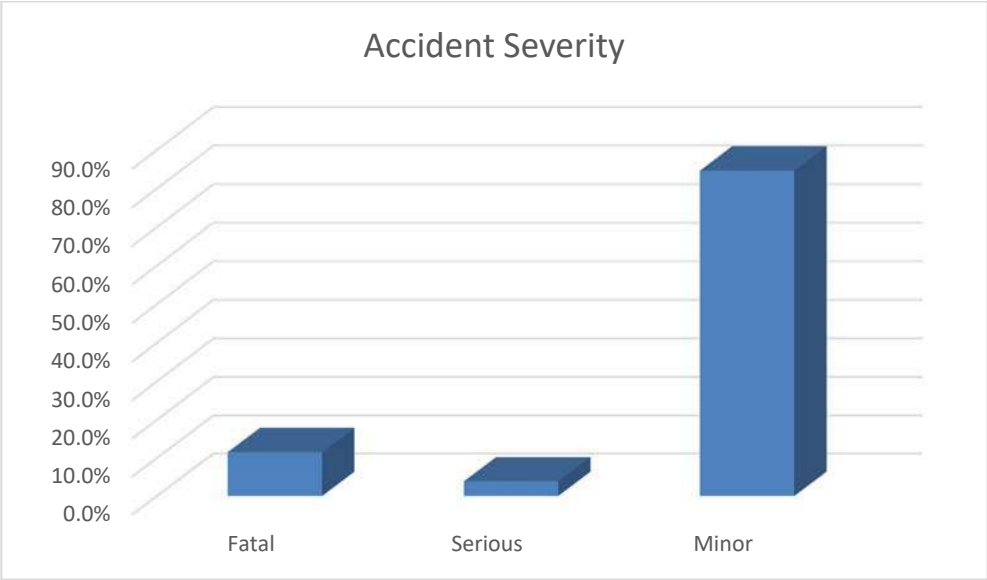


***Figure 3.8**: Accident Severity*

Figure 3.9 shows the type of accidents recorded in the area. Fourteen (54%) of these accidents involved a vehicle hitting a pedestrian. Of these pedestrian type collisions, three involved a pedestrian being stuck by a bus (two of which were fatal, one was minor), 10 involved a pedestrian being struck by a car (one serious, nine minor), and one involved a pedestrian being struck by an unknown vehicle (one fatal). This highlights the crucial need for improved pedestrian facilities in the area.

Five (19.2%) of these accidents involved a vehicle rear ending another vehicle whicle travelling straight. It should be noted that rear-end collisions often occur in congested road conditions. Three accidents were recorded involving right turning vehicles, including two 'head-on, right turn' and one 'angle, right turn' collisions. These accidents had a mean casulty rate of two casulties per collision, compared with one casulty per collision for all other collisions recorded in the study area for the specified period.

The remaining four collisions were classed as 'Other'. One involved a car, one a bus, one a bicycle and the vehicle involved in the fourth accident was not recorded by an Garda Síochana. All four 'Other' class accidents were minor in severity.

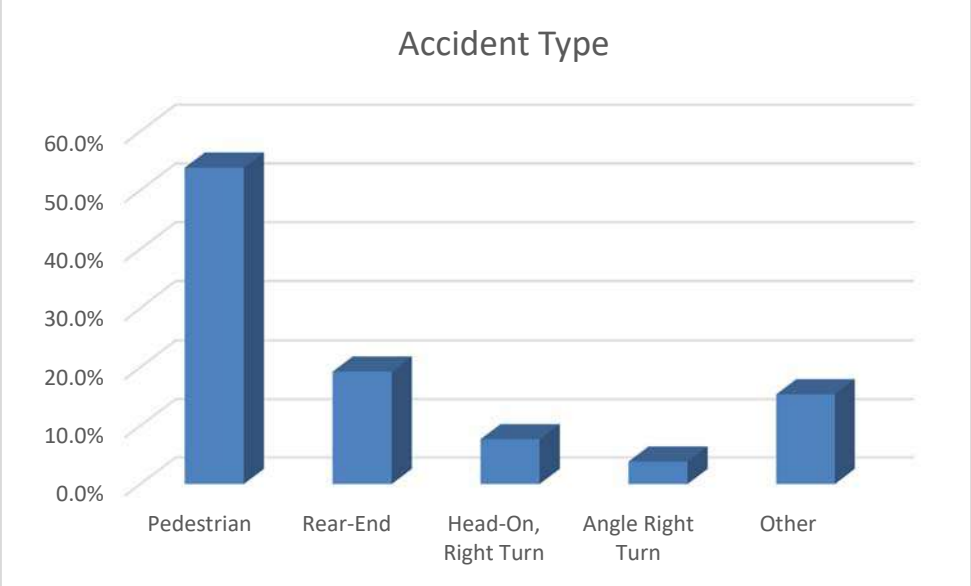


***Figure 3.9**: Accident Type*

Figure 3.10 shows the day of the week when each accident occurred. The highest proportion of accidents occurred on Thursday, with 26.9% of total accidents recorded on that day. Tuesdays and Saturdays also recorded relatively high proportions of total collisions at 19.2% and 15.4%; respectively.

The lowest proportion of accidents occurred on Wednesdays and Sundays, with 7.7% of the total recorded on each of these days. An equal number of accidents occurred on the remaining two days, with 11.5% recorded on Monday and 11.5% recorded on Friday.

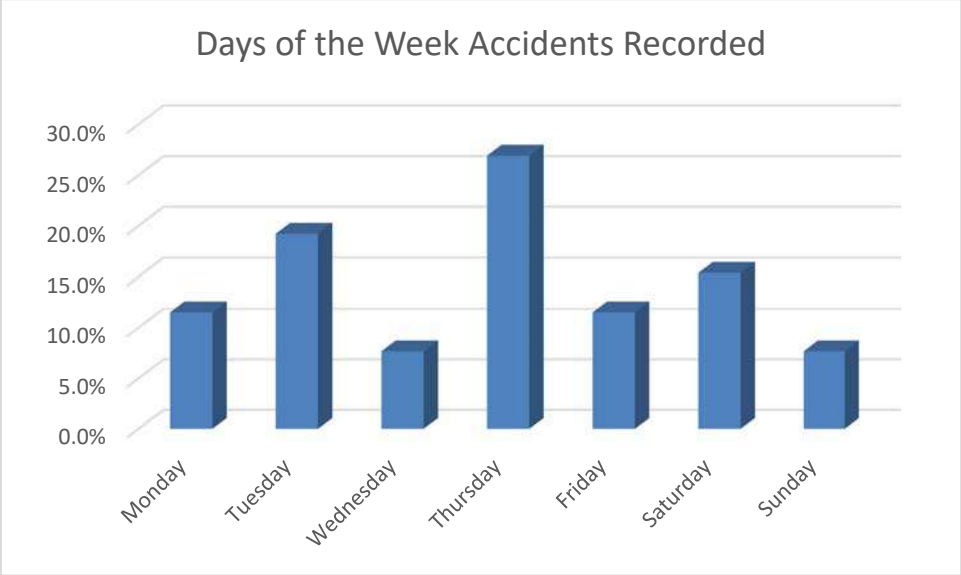


***Figure 3.10**: Days of week Accidents Recorded*

Figure 3.11 shows the time of day collisions in the study area occurred. Times are categorised into five time periods as follows:

- 03:00-07:00 (3 hrs)
- 07:00-10:00(3 hrs)
- 10:00-16:00 (6 hrs)
- 16:00-19:00 (3 hrs)
- 19:00-23:00 (4 hrs)

It should be noted that no accidents were recorded during the time period 23:00-03:00 and thus this time period was excluded from the graph in Figure 3.11. At 34.6%, the highest proportion of accidents occurred during the 10:00-16:00 time period. However, this was the longest time period, with an average accident rate of 5.8% per hour.

At 26.9%, the next highest proportion of accidents occurred during the 19:00-23:00 time period. This time period was 2 hours shorter than the 10:00-16:00 period and the accident rate was found to be the highest per hour at 6.7% during this period.

The accident rate per hour was the second highest for the 07:00-10:00 period at 6.4%. The accident rate per hour was lower during the remaining two time periods of 03:00-07:00 and 16:00-19:00 at 3.8% and 2.6%; respectively.

Time Period when Accidents Occurred	03:00-07:00	07:00-10:00	10:00-16:00	16:00-19:00	19:00-23:00
Percentage of total accidents recorded during time period	11.5%	19.2%	34.6%	7.7%	26.9%
Percentage of total accidents recorded per hour of specified time period	3.8%	6.4%	5.8%	2.6%	6.7%

***Table 3.6**: Time of Day Accidents Recorded*

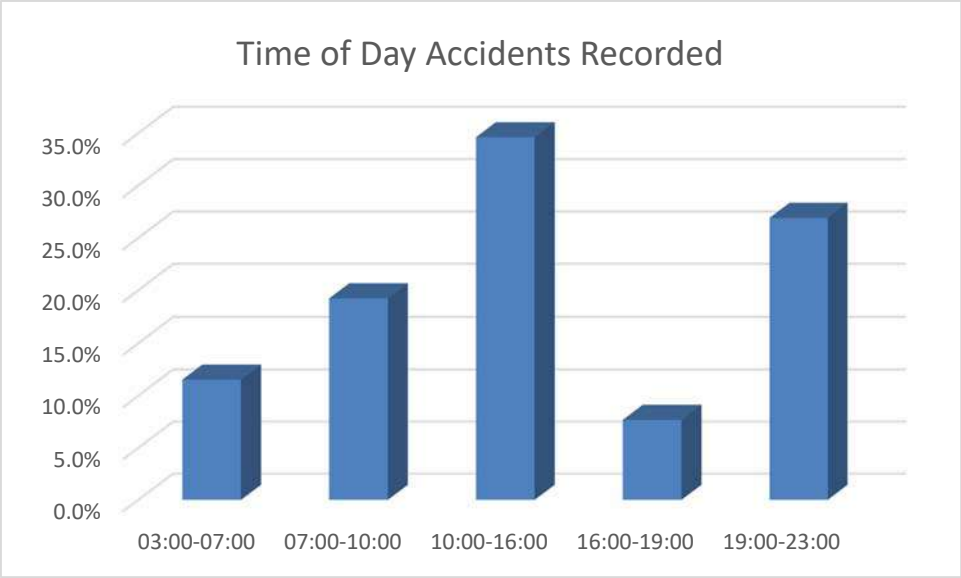


***Figure 3.11**: Time of Day Accidents Recorded*

Location	Severity	Road User(s)	Accident Type	No. Casualties	Year	Day	Time	Speed
Old Dublin Rd/St Laurence's Pk North	Minor	Unknown	Rear-end/straight	1	2007	Tues	7-11pm	50km/hr
Old Dublin Rd/ St Laurence's Pk South	Serious	Car/ Pedestrian	Pedestrian	1	2009	Thurs	3-7am	50km/hr
Old Dublin Rd/ Lwr Kilmacud Rd	Minor	Car	Angle/ Right Turn	2	2007	Fri	7-10am	50km/hr
Old Dublin Rd/ Lwr Kilmacud Rd	Minor	Car	Head on/Right turn	3	2006	Fri	7-11pm	50km/hr
Lwr Kilmacud Rd/ s.c. c/p access	Minor	Car/Pedestrian	Pedestrian	1	2012	Thurs	10-4pm	50km/hr
Lwr Kilmacud Rd/ s.c. c/p access	Minor	Car/Pedestrian	Pedestrian	1	2009	Sat	7-11pm	50km/hr
S.C. c/p adjacent to Lwr Kilmacud Rd access	Minor	Car/Pedestrian	Pedestrian	1	2012	Thurs	10-4pm	50km/hr
Lwr Kilmacud Rd/ Lidl access	Minor	Car/ Pedestrian	Pedestrian	1	2013	Sat	10-4pm	50km/hr
Lwr Kilmacud Rd/ Lidl access	Minor	Car/ Pedestrian	Pedestrian	1	2009	Thurs	3-7am	50km/hr
Lwr Kilmacud Rd @kilmacud Crokes access	Minor	Car	Head-on/right turn	1	2005	Tues	4-7pm	50km/hr
Lwr Kilmacud Rd, west of N11	Minor	Car	Rear end, straight	1	2012	Tues	10-4pm	100k/hr
Lwr Kilmacud Rd, west of N11	Minor	Car	Rear-end/straight	1	2012	Mon	10-4pm	60km/hr
Lwr Kilmacud Rd, west of N11	Minor	Bus/Pedestrian	Pedestrian	1	2005	Thurs	10-4pm	50km/hr
Lwr Kilmacud Rd/ N11	Minor	Car	Other	1	2005	Mon	7-10am	80km/hr
Lwr Kilmacud Rd/ N11	Minor	Car/Pedestrian	Pedestrian	1	2008	Wed	7-10am	60km/hr
Lwr Kilmacud Rd/ N11	Minor	Car/Pedestrian	Pedestrian	1	2006	Thurs	7-11pm	50km/hr
Lwr Kilmacud Rd/ N11	Minor	Bicycle	Other	1	2012	Thurs	4-7pm	30km/hr
Lwr Kilmacud Rd/ N11	Minor	Bus	Other	1	2010	Sat	7-11pm	60km/hr
Lwr Kilmacud Rd/ N11	Minor	Unknown	Other	1	2011	Tues	7-10am	50km/hr
Lwr Kilmacud Rd/ N11	Minor	Car/Pedestrian	Pedestrian	1	2008	Sat	10-4pm	60km/hr
Lwr Kilmacud Rd/ N11	Minor	Car	Rear End, straight	1	2013	Wed	10-4pm	60km/hr
Lwr Kilmacud Rd/ N11	Fatal	Veh /Pedestrian	Pedestrian	1	2013	Fri	7-11pm	60km/hr
Lwr Kilmacud Rd/ N11	Fatal	Bus/Pedestrian	Pedestrian	1	2011	Tues	7-10am	60km/hr
Lwr Kilmacud Rd/ N11	Fatal	Bus/Pedestrian	Pedestrian	1	2010	Sun	3-7am	60km/hr
Lwr Kilmacud Rd/South Ave/R826(sth approach)	Minor	Car	Rear End/ Straight	1	2010	Sun	10-4pm	50km/hr
Lwr Kilmacud Rd/South Ave/R826 (wst approach)	Minor	Car/Pedestrian	Pedestrian	1	2008	Mon	7-11pm	50km/hr

***Table 3.7**: Accident Data for Study Area*

4. Options Development

The Stillorgan Village Area Movement Framework Plan has been informed by a full assessment of the exiting urban structure, public space, and movement patterns, combined with detailed analysis of the planned and likely future land use and movement requirements within and surrounding the study area. In developing options for Stillorgan Village, the vision and strategic objectives of the *Stillorgan Village Local Area Plan 2012 – 2017*, of Land Use, Accessibility, Community and People, Urban Design and Public Realm, and Infrastructure, have been considered in full.

Movement infrastructure and urban structure are fundamentally linked. Movement infrastructure provides for access into and around the urban centre, and the urban structure establishes the nature, character and uses of the urban centre. The Stillorgan Village Area Movement Framework Plan considers the movement infrastructure and the urban structure requirements of Stillorgan in a fully integrated manner, so as to establish a framework for both that will advance the objectives of the Local Area Plan.

There are a number of high level pre-requisites for the future of Stillorgan that are implicit in the Local Area Plan and in the proper planning and sustainable development of the area:

1. Stillorgan Village will be consolidated over time through regeneration opportunities so as to develop as a more compact, dense and sustainable urban centre that can support economic growth;
2. Stillorgan Village must be re-positoinned as a distinctive destination and an appealing urban place, and incorporating a diverse and more intense range of retail, commercial, community and residential uses.
3. Sustainable transport, including walking, cycling and public transport, will play an increasingly imnportant role in the future of Stillorgan, with improved connectivity and multi-functional streets that balance movement, place and safety for all users within a traffic calmed environment;
4. The future of Stillorgan Village will be as a destination. Vehicular access will be catered for, including parking, and through traffic will be discouraged;

4.1 Existing Characteristics

Key to informing the Stillorgan Village Area Movement Framework Plan is understanding the existing characterisitcs of the study area in terms of:

- Urban Structure;
- Public Realm;
- Pedestrian Desire Lines and Road Network.

4.1.1 Existing Urban Structure

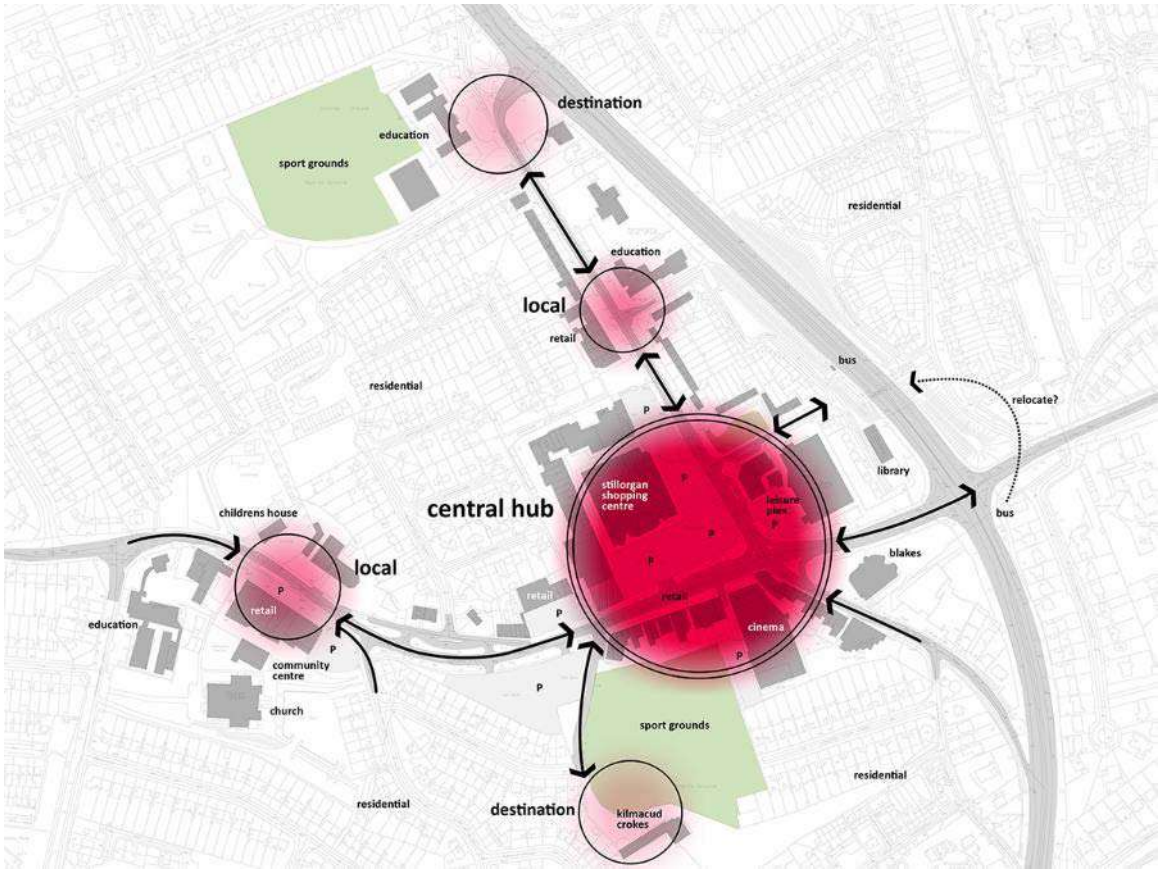


***Figure 4.1**: Existing Urban Structure*

1. Main retail and commercial core located around the junction of Lower Kilmacud Road and Old Dublin Road;
2. Additional local cores to the west and north;
3. Community facilities, including Kilmacud Crokes and Glenalbyn Pool, within the study area and within close proximity to the main and local cores.
4. Regerenation opportunity lands principally with and to the immediate east of the main core;
5. Primary Quality Bus Corridor on N11 immediately to the east, with local bus services.

4.1.2 Existing Public Realm

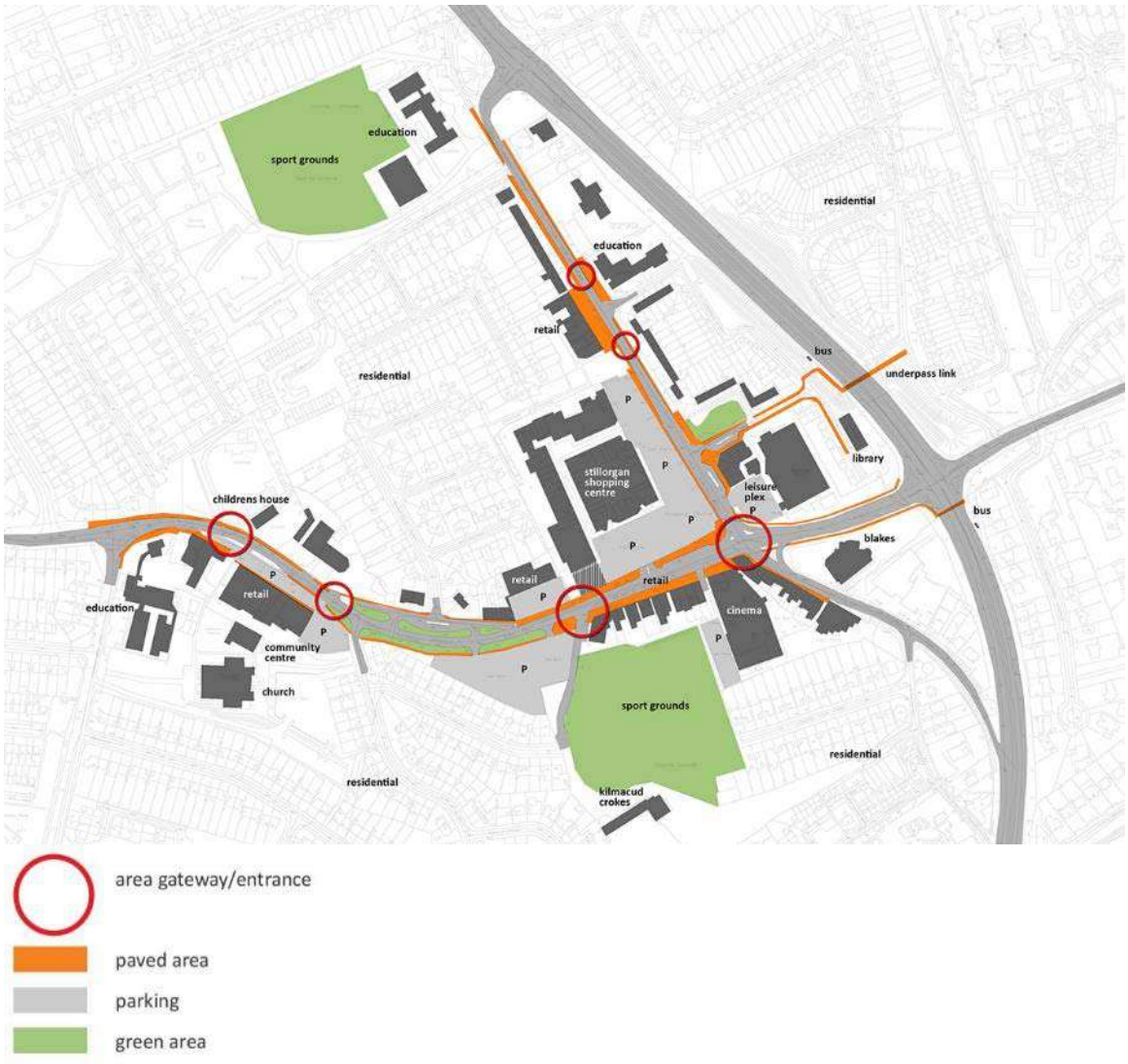


***Figure 4.2**: Existing Public Realm*

1. Primary gateway/entrances either side of the main core on the Lower Kilmacud Road;
2. Gateway/entrances to local cores on Lower Kilmacud and Old Dublin roads;
3. Pedestrian facilities variable in quality and dispersed;
4. Extensive surface parking and vehicular dominance at cores;
5. Building frontages generally set back significantly from road carriageways;
6. Roadways generally wide and vehicle-centric incorpoating extesive traffic management infrastructure and limited visual appeal.
7. Generally lacking streetscapes and human scale public space.

4.1.3 Existing Pedestrian Desire Lines and Road Network

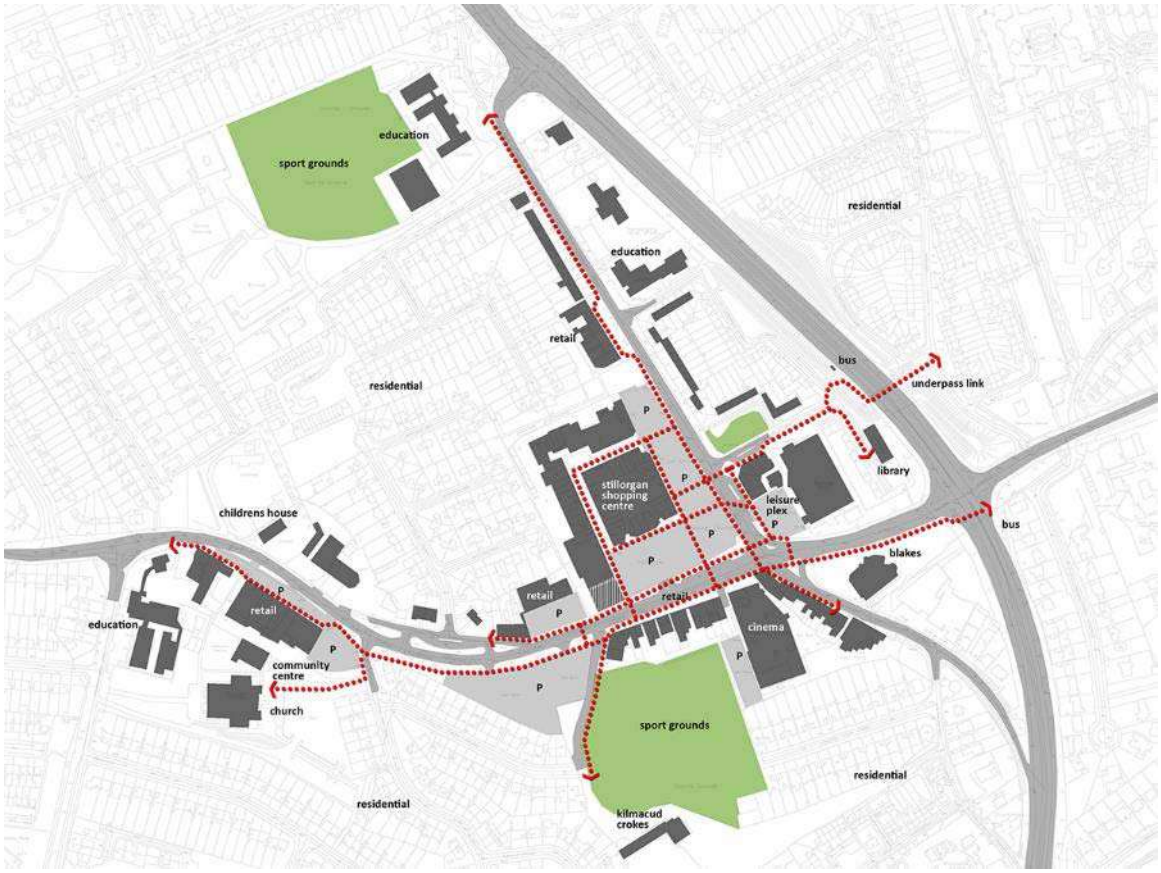


***Figure 4.3**: Existing Pedestrian Desire lines and Road Network*

1. Highest volumes of pedestrians in and around the shopping centre and the main core, with pedestrians crossing roads in numerous locations – whether crossing facilities present or not;
2. High volumes of pedestrian movement along Lower Kilmacud Road comprising movement between car parks and retail as well as local access;
3. Pedestrian movement on Old Dublin Road heavily influenced by school access;
4. Pedestrian routes from main core to N11 connect with north and southbound bus services;
5. Lower Kilmacud Road: Wide carriageway with high traffic volumes and almost no cycle provision;
6. Old Dublin Road: High traffic volumes, on-street parking and no cycle facilities;
7. N11 slipway and Old Dublin Hill: High traffic volumes, on-street parking, no cycle facilities and evidence of rat running to avoid N11 congestion at peaks hours.
8. Wide carriageways with large volumes of vehicular traffic;

4.2 The Village Core

In that context, the Stillorgan Village Area Movement Framework Plan anticipates future consolidation and growth of the core village area. It examines the most effective movement infrastructure for all modes that can serve both the existing, medium-term and long-term build-out of the village, and also where the focus of investment should be in terms of estblishing a strong identity for Stillorgan Village through the the enhancement of its public spaces and streets.

Key considerations include:

1. Re-balancing of the roadways to cater for pedestrians, cyclist and vehicles as appropriate;
2. Facilitating vehicular access to carpark facilities;
3. Passive traffic claming to enhance road safety and assist in creating a higher quality urban environment of human scale;
4. Safety for pedestrians and cyclists, including for crossings where demand identified;
5. Pedestrian connectivity to public transport services;
6. Location of taxi services;
7. Facilitating future regereation opportunities in a manner that delivers a strong urban structure;
8. Establish a hierarchy of public spaces and streetscapes to assist in giving identity to the village core;
9. Multi-functional spaces on streets;
10. Active frontage along streets, including loner term build-out of regeneration opportunities to street edges;
11. Identify appropriate public realm treatments, including materials, lighting, planting and street furniture, to reinforce the identity of the village core, enhance the quality of pedestrian connections in the wider study area, and deliver an attractive and safe urban street network.

The first task, and fundamental to the future function and identity of Stillorgan Village, is exploring options for re-balancing the carriageways – particualrly towards the core village area around the junction of Lower Kilmacud Road and the Old Dublin Road.

The following pages describe Options 1 to 4, and collectively illustrate the main configuration alternatives that were considered. While all Options shown illustrate both the Lower Kilmacud Road and the Old Dublin Road, the detail on the Old Dublin Road remains the same, and refelcts the maximum gain of pedestrian space, the optimum short to medium term adjustments to vehicular access to carparks, and optimum pedestrian crossing provision and location. The changes focus on the alternatives for the Lower Kilmacud Road.

It should be noted that the options to re-align the Hill and to stagger the junction as shown, was subsequently discounted as a viable option based on traffic modelling results. A further refined option is shown later in the Preferred Option.

4.2.1 Village Core Option 1 (streetscape configuration)

Figure 4.4: Village Core Option 1

1. Lower Kilmacud Road:
    a. Single lane traffic and dedicated cycle facility in both directions, with access (existing or modified) to parking and loading facilities;
    b. On-street taxi bay, bus bay and parking bays;
    c. Raised pedestrian crossings, signalised and uncontrolled, corresponding to key pedestrian desire lines.
2. Old Dublin Road:
    a. Single lane traffic, shared with cyclists, in directions, with right turn median slips at entrances/junctions;
    b. Raised pedestrian crossings, signalised and uncontrolled, corresponding to key pedestrian desire lines.
    c. Modified entry/exit points to shopping centre carpark. Southern entrance becomes left in only, and northern entrance caters for all movements;

3. Main Junction:
    a. Junction staggered (rationalised in Preferred Option – see Section 7);
    b. Increase in pedestrian/public space to anticipate corner frontage opportunities of future re-developments and establishment of gateway to Stillorgan Village.

4.2.2 Village Core Option 2 (streetscape configuration)

***Figure 4.5**: Village Core Option 2*

1. Lower Kilmacud Road:
    a. Single-lane traffic and dedicated cycle facility in both directions;
    b. Raised central median incorporating right tuning pockets to parking and loading facilities;
    c. On-street taxi bay, bus bay and parking bays;
    d. Raised pedestrian crossings, signalised and uncontrolled, corresponding to key pedestrian desire lines.
2. Old Dublin Road and Main Junction as per Option 1

Compared to Option 1

- Significant Advantage in that the central median reduces the perceived width of the road for pedestrians, and also facilitates a two-stage crossing if required. The median, whether raised or at grade, can be finished in a contrasting material to the main carriageway so as to visually reduce the width of the road over the whole village core.
- Right turning pockets reduce potential congestion on main carriageway.

4.2.3 Village Core Option 3 (streetscape configuration)

***Figure 4.6**: Village Core Option 3*

1. Lower Kilmacud Road:
    a. Two-lane traffic and dedicated cycle facility in both directions, with access (existing or modified) to parking and loading facilities;
    b. On-street taxi bay, bus bay and parking bays;
    c. Raised pedestrian crossings, signalised and uncontrolled, corresponding to key pedestrian desire lines.
2. Old Dublin Road and Main Junction as per Option 1

Compared to Options 1 & 2

- Significant Disadvantage in that the width of the road for pedestrians, and perceived safety, does not change much from the existing situation.
- Two lanes encourgaes through traffic and undermines overall aspirations of the Framework Plan.
- Longer pedestrian crossings require longer signal times and increase tailbacks.

4.2.4 Village Core Option 4 (streetscape configuration)

***Figure 4.7**: Village Core Option 4*

1. Lower Kilmacud Road:
    a. Single lane traffic and dedicated cycle facility in both directions, with access (existing or modified) to parking and loading facilities;
    b. On-street taxi and bus bay, off-street slip for parking bays (southern side);
    c. Raised pedestrian crossings, signalised and uncontrolled, corresponding to key pedestrian desire lines.
2. Old Dublin Road and Main Junction as per Option 1

Compared to Option 1

- Significant Disadvantage in that the off-street parking bay introduces additional conflict with cyclists, provides less parking spaces, and reduces the effective pedestrian space outside the retail units on the southern side of the street.

4.3 Overall Stillorgan Village Movement Framework Plan

Options 1 to 4 shown in *Sections 4.2.1 to 4.2.4* above examine the potential to address the combined movement needs of pedestrians, cyclists and vehicular traffic in the village core. The initial preferred option for the core area is Option 2, as it has overall advantages over Option 1 that Options 3 and 4 do not enjoy. Traffic modelling, detailed in Section 5 below, considers this area from a junction capacity point of view, and further informs the preferred option.

With the general arrangement of the village core established in principle, this was then expanded to the wider project area, and the issues of Urban Structure, Public Realm, and Pedestrian Desire Lines and Road Network identified in Section 4.1 examined further in the context of the Vision and Objectives for the *Stillorgan Village Local Area Plan 2012 – 2017*. The medium and longer term potential build out of Stillorgan Village is illustrated in *Section 4.3.1 and 4.3.2* below, and each incorporates, as appropriate:

Gateways/Focal Areas
Areas that mark the transition or entry points and are important in giving identity to the village.

Primary Public Realm
Areas that will be the primary public space in the medium and long term, and that will give definition to the expantion and consolidation of Stillorgan Village as it evolves.

Neighbourhood Public Realm
Areas include the two local cores on Lower Kilmacud Road and Old Dublin Road. Each of these areas are in need of more legible physical structure and enhancement of their streetscapes and facilities.

Village Public Realm
The area on The Hill that incorporates elements of the original village cottages which are still being used to facilitate a range of retail and services businesses. This area will be enhanced and secured as part of the overall and longer term future of the area by increasing pedestrian space and enhancing presentation. This will increase footfall and underpin the security and appeal of these units into the future.

Green Public Realm
The wide area of grass margin on Lower Kilmacud road that was provided as part of the last major road upgrade in the 1960's. This land was never developed to realise its potential amenity value for the area, and can be take advantage of in the current Movement Framework Plan to enhance the movement infrastructure along Lower Kilmacud Road.

Street Public Realm
Connections between areas of greater urban significance, but that are nonetheless important in themselves as they contribute to the overall public realm and pedestrian offer, and must be attractive and lend to a feeling of personal safety.

4.3.1 Medium Term Overall Concept

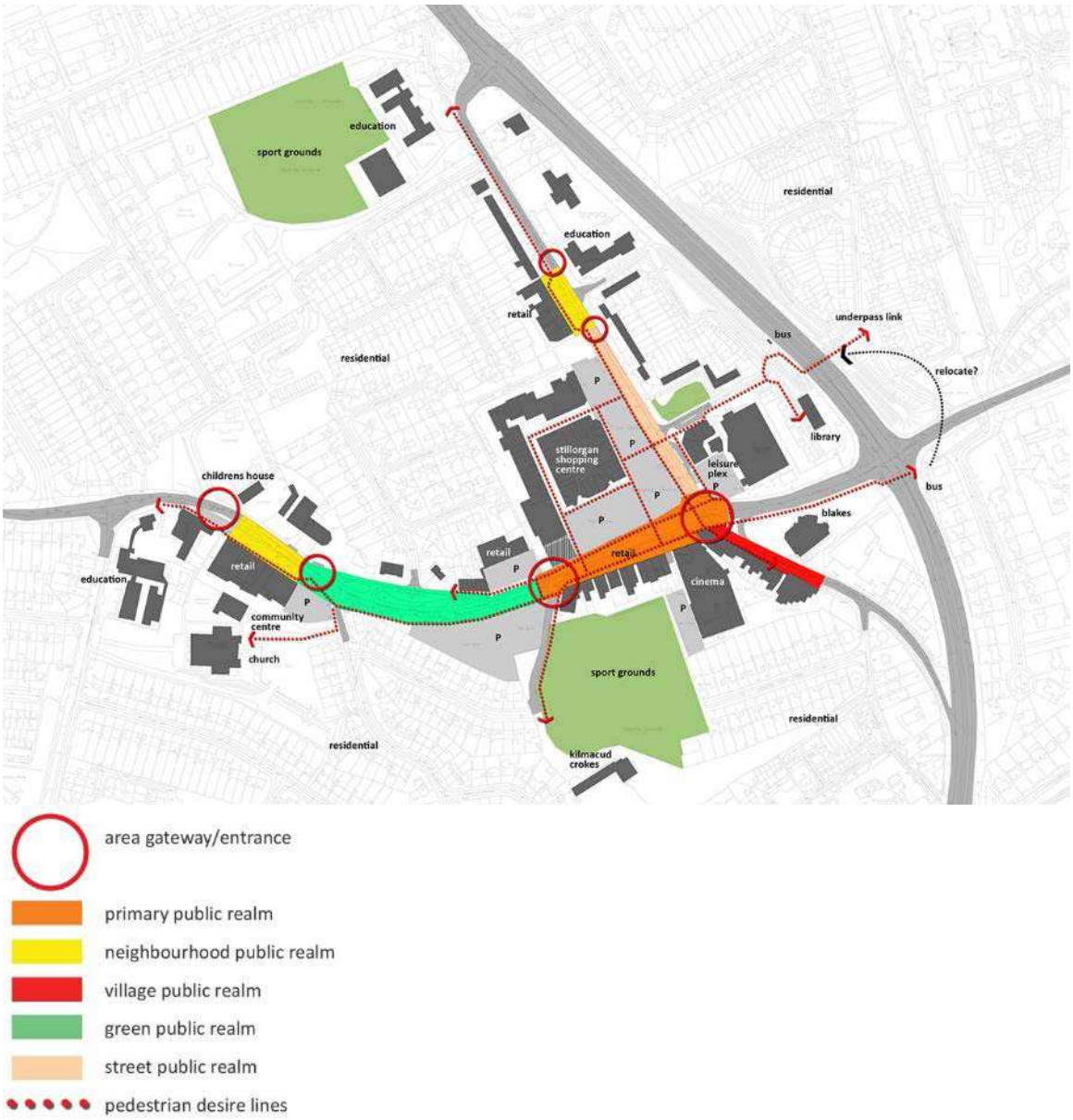


***Figure 4.8**: Medium Term Overall Concept*

The medium term includes the first suite of deliverables that will change the movement characteristics, and the visual quality of village area, without any of the re-generation opportunities being implemented. The key road infrastructure changes are delivered, together with public realm improvements, including:

1. Lower Kilmacud Road at village core;
2. Neighbourhood areas;
3. Connecting streets and green spaces.

4.3.2 Long Term Overall Concept

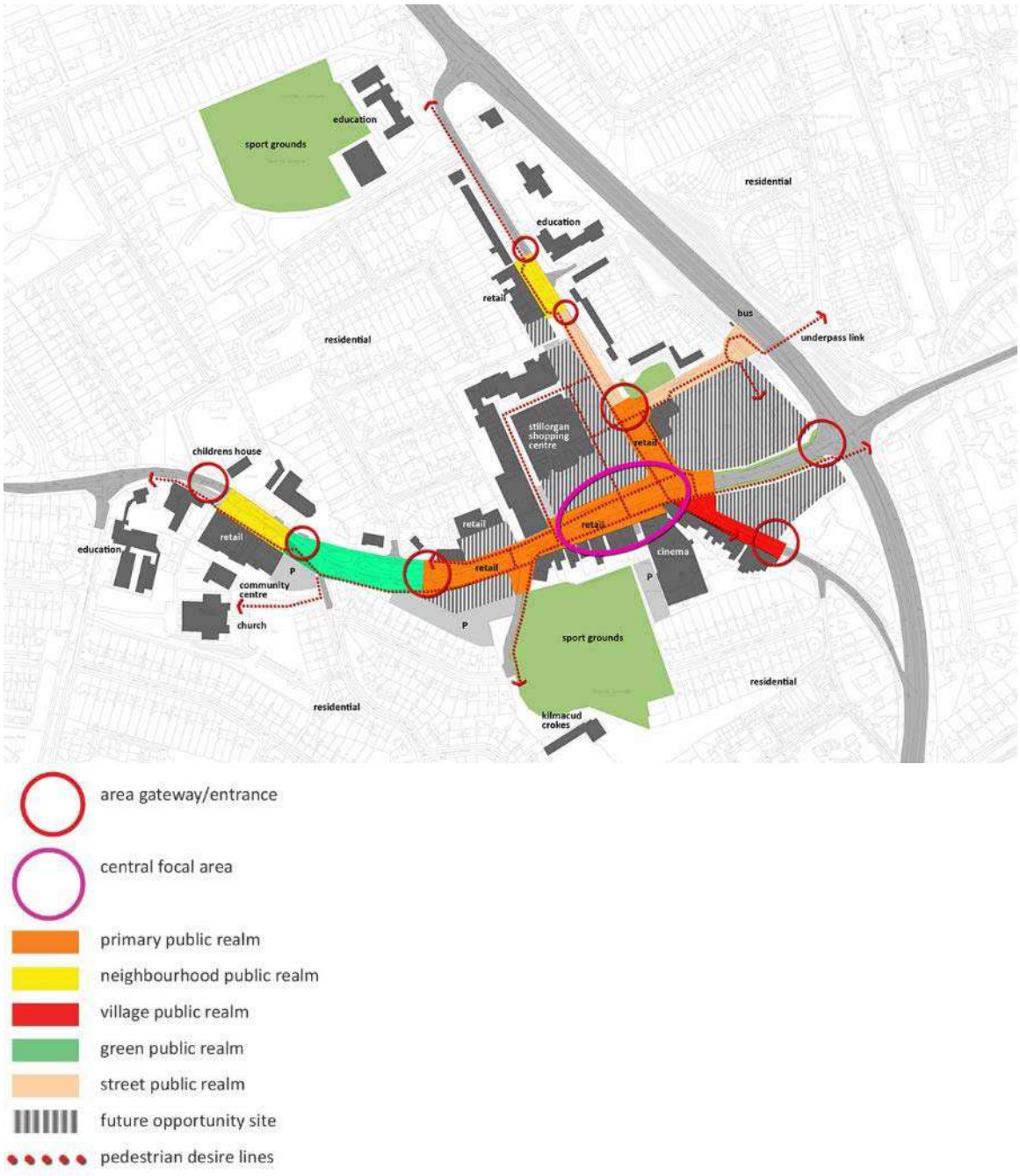


***Figure 4.9**: Long Term Overall Concept*

The long term plan integrates and interfaces with emerging re-generation sites. The core area in particular is expanded and consolidated, with significant additonal built frontage onto the streets. The enclosure and definition of the public space and streetsacpes – that give identity to the village – is reinforced, and it is likely that the primary public realm can be extended to include part of Old Dublin Road.

The expanded built environement will give rise to additional gateway entry points on the N11 and on The Hill.

5. Junction modifications and Model Testing

The proposed design options include modifications to the layout of a number of junctions. Key junctions in the study area include:

- Junction of Lower Kilmacud Road, The Hill and Old Dublin Road;
- Main Shopping centre car park access arrangements;
- Junction of Lower Kilmacud Road, Upper Kilmacud Road, and South Avenue; and
- Junction of Lower Kilmacud Road and N11 Stillorgan Road.

To inform the design process, the existing and proposed junction layouts were modelled using OSCADY, PICADY and LINSIG utilising traffic survey information outlined in Section 3.5. The modelling results are show in Appendix B.

This section provides information on the proposed options for each of the junctions listed above and also for the two access driveways on Old Dublin Road. It should be noted that the proposed designs have taken the modelling results into consideration.

5.1 Lower Kilmacud Road, The Hill and Old Dublin Road

The existing layout of the junction of Lower Kilmacud Road, Old Dublin Road and The Hill is shown in Figure 5.1. It has a wide geometry with large turning radii.

On the junction's north approach (Old Dublin Road), it provides a straight lane, right turn lane, a left slip lane and one exit lane. On its south approach (The Hill), it provides one combined straight and right tuning lane, a short left turning lane of approximately two car lengths and one exit lane. On its east approach (Lower Kilmacud Road), it provides one combined straight and left tuning lane, with the left lane diverging into a left slip lane, a right turning lane and two exit lanes. On its west approach (Lower Kilmacud Road), the junction provides one left slip lane, two straight lanes, one short right tuning lane and one exit lane.

Pedestrian crossings are provided on the north, south and west approaches to the junction. Despite this, the junction is wide and intimidating for pedestrians and cyclists. It should be noted that there are no cycle lanes provided through the junction.

The proposal for this junction sets out to create a less intimidating environment for pedestrians and cyclists whilst also striking a balance between improving pedestrian and cycle facilities and reducing traffic lane widths, and ensuring the proposed measures will not result in traffic queuing onto the N11.

The proposed junction layouts were modelled using OSCADY (Transport Research Laboratory UK software which provides data on capacity at signalised Junctions) for eight layout options. The lane arrangement shown in Figure 5.2 provided the best balance between maintaining functionality, while also providing pedestrian and cycle facilities. The maximum RFC achieved is 0.97 during the AM Peak (0.93 existing), 0.92 during the PM peak (vs 0.84 existing) and 0.95 during the Saturday Midday Peak (vs 0.85 existing). The worst case scenario result (AM peak) is within 4% of its current level. This option involves the closure of the left slip lane from the N11 onto the Hill and the redistribution of this traffic onto the east arm of the junction (i.e. Lower Kilmacud Road).

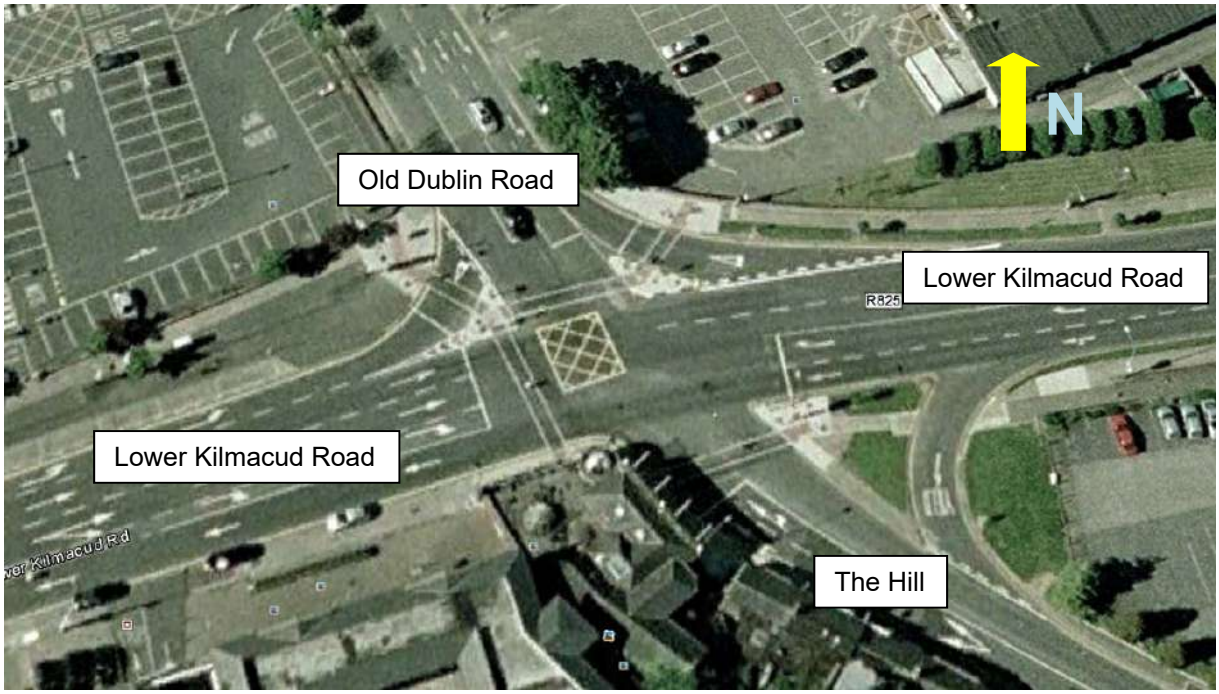


Figure 5.1: *Existing Junction Layout (Satellite)*

Figure 5.2 shows a sketch of the junction's new layout design. The following changes have been made to the junction:

- Junction narrowed;
- Turning radii reduced;
- Cycle lanes provided through the junction on Lower Kilmacud Road;
- The left slip lanes previously provided on three legs of the junction have been removed;
- Pedestrian crossings are provided on all approaches (i.e. new crossing on east approach);
- Additional space gained from tightening junction used to provide planting and urban design features on junction corners;

- North approach reduced from three (incl. left slip) to two lanes;
- South approach currently providing one long lane and a short left turning lane of two car lengths modified to increase the short left turning lane to five car lengths;
- East approach currently providing two wide approach lanes with a slip lane diverging from the straight lane in advance of the junction modified to maintain two (reduced width) traffic lanes, with no left slip lane and cycle lanes on both sides;
- West approach reduced from four (incl. left slip) to two approach traffic lanes, with cycle lanes on both sides.

Figure 5.2: *Proposed Junction Layout*

5.2 Shopping Centre Car Park Access

There are currently three access points to the Stillorgan Shopping Centre main car park, including one on Lower Kilmacud Road and two on Old Dublin Road.

Lower Kilmacud Road Car Park Access

The car park access on Lower Kilmacud Road is shown in Figure 5.3. It is the main access to the car park and permits all turning movements at its junction with Lower Kilmacud Road.

Two proposed junction layouts were modelled using PICADY, with the lane arrangement shown in Figure 5.4 providing the best balance between maintaining functionality, while also providing pedestrian and cycle facilities. Figure 5.4 shows a sketch of the junction's new layout design. The following changes have been made to the junction:

- The junction will be moved approximately 20 metres west of its current location;
- West approach has been reduced from two lanes to a single combined left/ through traffic lane.
- East approach modified from a combined straight/right turn lane to a long straight and short right turning lane.
- North approach provides one entry lane and two exit (right and left turn) lanes to the car park;
- Cycle lanes are provided on both sides of Lower Kilmacud Road through the junction.

Figure 5.3: *Existing Junction Layout (Satellite)*

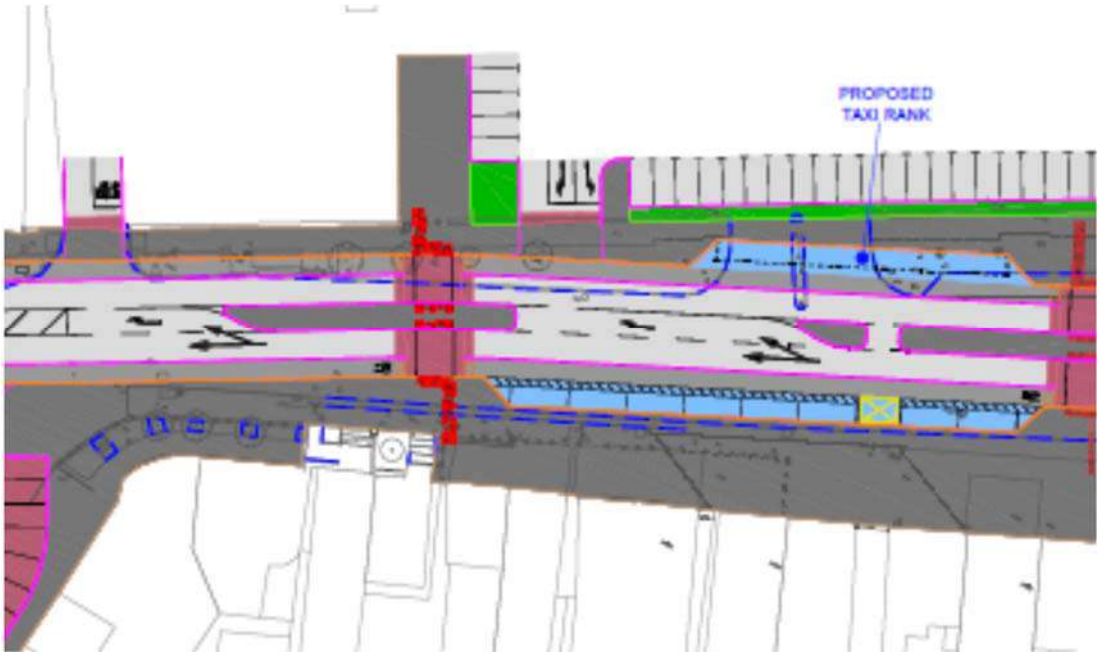


Figure 5.4 *Proposed Junction Layout*

Old Dublin Road Access - South of St Laurances Park

The car park access located south of St Laurance's Park on Old Dublin Road is shown in Figure 5.5. It is a secondary access to the car park and permits all turning movements at its junction with Old Dublin Road.

Figure 5.5 *Existing Junction Layout (Satellite)*

This shopping centre car park access is located on a wide section of carriageway on Old Dublin Road. The access currently provides two egress lanes - one right and one left turning lane and one entry lane. It should be noted that there is an access into the existing 'Leisure Plex' site located just south of this access on the opposite side of the road. It is also located less than 50 metres from Old Dublin Roads junction with Lower Kilmacud Road.

The positioning of these junctions so close together with all movements permitted creates a busy road environment with vehicles often pulling out of driveways across multiple traffic lanes. This makes this section of carriageway difficult to manouvre and reiterates the villages impression of car priority through this section.

Figure 5.6 shows a sketch of the junction's new layout design.

Figure 5.6 *Proposed Junction Layout*

The following changes have been made to the junction:

- Movements in and out of the car park will be restricted to left in, left out only;
- North approach to be reduced from two to one traffic lane (i.e. the proposed geometry will not facilitate access from the north approach)
- South approach will continue to provide a single traffic lane;
- Access driveway will be reduced from two to one traffic lane, and will allow left only movements out of the car park. .

Old Dublin Road Access North of St Laurance's Park

The car park access located north of St Laurance's Park on Old Dublin Road is shown in Figure 5.7. It currently permits exit movements only (via. Separte right and left turning lanes) at its junction with Old Dublin Road.

Figure 5.7 *Existing Junction Layout (Satellite)*

Figure 5.8 shows the junction's new layout design. The following changes have been made to the junction:

- The car park access will be widened to include an additional lane permitting vehicles on Old Dublin Road to turn into the driveway. The existing separate right and left turning approach lanes will be retained;

- This car park access is located at a less congested road environment than the access further south. Therefore, permitting right turning movements at this access will reduce congestion further south.
- North approach to be increased from two wide traffic lanes to three reduced width traffic lanes, including the addition of a right turning lane (to facilitate right turning movements into the car park), a straight traffic lane and an exit lane.
- South approach will continue to provide one traffic lane. However, left turning movements into the car park will be permitted;
- It should be noted that the pedestrian crossing currently located just north of St Laurence's Park, will be relocated such that it lines up with the internal pedestrian crossing route through the car park.

Figure 5.8: *Proposed Junction Layout*

5.3 Lower/ Upper Kilmacud Road Junction

The existing layout of the staggered junction of Lower Kilmacud Road, Upper kilmacud Road (R826) and South Avenue is shown in Figure 5.9.

On the junction's north approach (South Avenue), it provides a single approach lane which facilitates left, right and straight (i.e. left from South Avenue and right from the staggered section of the junction) movements.

On its south approach (Upper Kilmacud Road/ R826), the junction provides two approach lanes comprising one right and a combined left and straight lane.

On its east approach (Lower Kilmacud Road), the junction provides one combined straight/ left turning lane (left movements turn via a left slip lane which branches from this combined lane at the junction) and a right turning lane.

On its west approach (Lower Kilmacud Road), the junction provides a combined left/ straight lane, and a short right tuning lane.

The lane configuration on the internal section of the staggered junction comprises one straight and right turning lane in each direction.

Pedestrian crossings are provided on the south, east and west approaches to the junction, with no crossing facilities provided through the internal section of the junction.

Cycle lanes are provided on both sides of Upper Kilmacud Road (southern leg of the junction). There is also a cycle lane provided on the westbound lane of Lower Kilmacud Road on the east approach to the junction. This cycle lane facilitates movements onto Upper Kilmacud Road via the left slip lane, but fails to highlight potential cycle movements traveling straight through the junction. Cyclists are most at risk when crossing the left slip lane to travel straight. However, no cycle markings are provided at this location to raise drivers' awareness of cyclists travelling straight ahead.

The proposal for this junction sets out to create a less intimidating environment for pedestrians and cyclists whilst also striking a balance between improving pedestrian and cycle facilities and maintaining capacity through the junction.

Figure 5.10 shows the junction's new layout design. The following changes have been made to the junction:

- Turning radii have been reduced;
- Cycle lanes provided through the junction on Lower Kilmacud Road;
- Left slip cycle lane to be provided between the eastern and southern legs of the junction;
- The left slip lane previously provided on the eastern leg of the junction to be removed;
- Pedestrian central islands to be provided at the three pedestrian crossings to enhance pedestrian safety at these locations;

- East approach modified to provide a straight lane, a short right turning lane and a short left turning lane. Red surfacing is proposed to reduce conflicts with left turning vehicles by highlighting a straight cycle movement path through the junction.

Figure 5.9: *Existing Junction Layout (Satellite)*

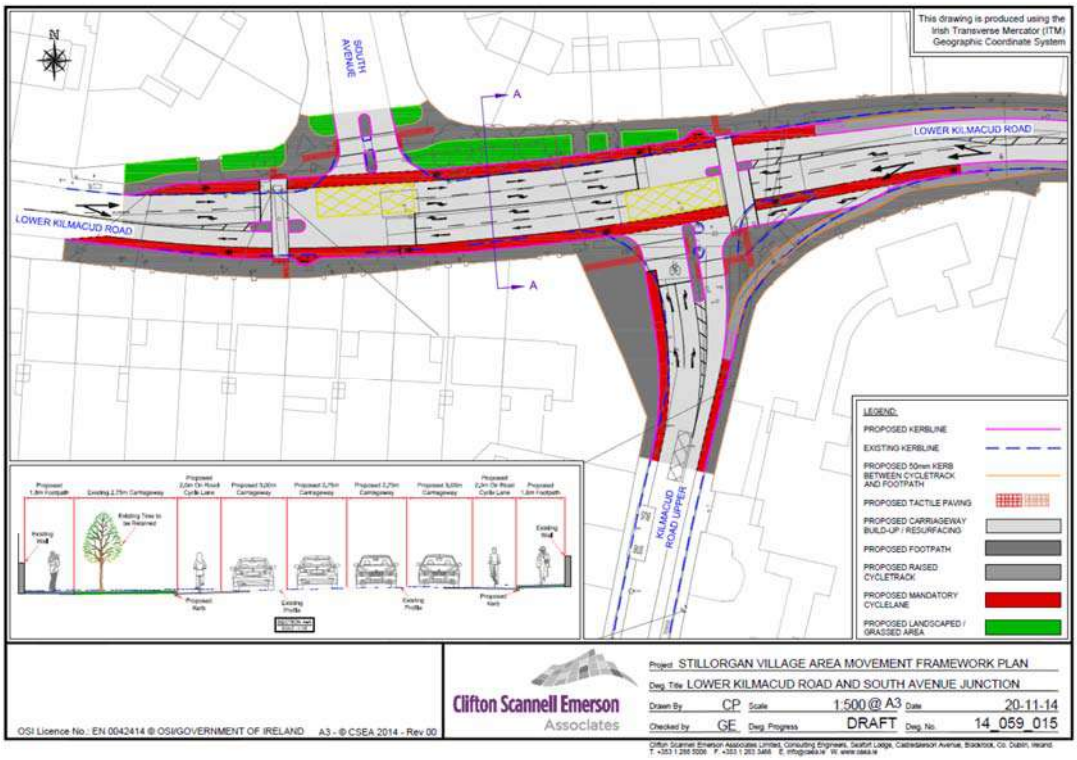


Figure 5.10*: Proposed Junction Layout*

5.4 Lower Kilmacud Road, Stillorgan Park Road and N11

The junction of Lower Kilmacud road, Stilorgan Park Road and the N11 will be upgraded as part of the N11 upgrade project. The existing layout and the proposed layout for the N11 scheme are shown in Figures 5.11 and 5.12; respectively.

The proposed junction layout includes the following modifications:

- Left-turn slip lane onto N11 from Lower Kilmacud Road to be removed
- Left-turn slip lane onto N11 from Stillorgan Park Road to be removed
- Existing traffic lanes on N11 to be reduced to a minimum of 3.25m in order to provide widened central islands on N11 at staggered pedestrian crossings.
- Cycle lanes to be provided on all approaches to the junction.

Figure 5.11: *Existing Junction Layout (Satellite)*

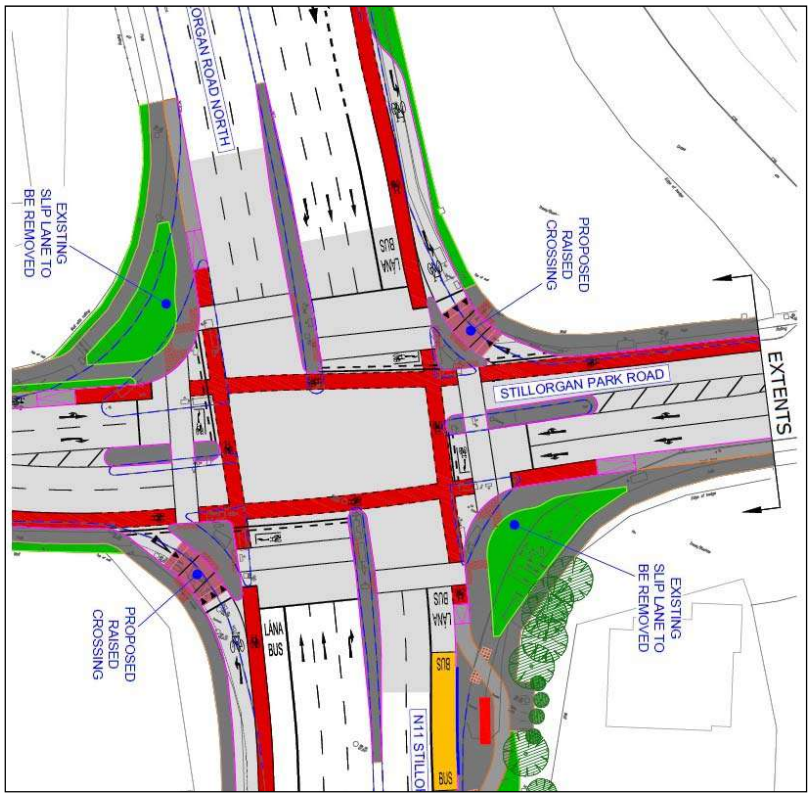


***Figure 5.12**: Proposed Junction Layout*

5.5 Traffic Re-Distribution

The origin destination surveys provided information on the proportion of traffic travelling though Stillorgan Village that comprised through traffic. Traffic travelling through Stillorgan that had business in Stillorgan was not considered through traffic.

Knowing the proportion of through trips is useful as it gives a good indication of the proportion of trips that could potentially be re-disributed onto other routes if the capacity through Stillorgan village was reduced.

The proportion of overall trips that comprised through trips varied throughout the day, with the highest proportion of through trips assocated with the AM peak. It should be noted that the junction of Lower Kilmacud Road, Old Dublin Road and the Hill performs at its worst (i.e. has the least amount of spare capacity) during the AM peak period.

The results of the O-D survey showed that, during the AM peak, the following proportions of overall traffic at the referenced location comprised through traffic (see Figure 5.13):

- 62.4% of the northbound traffic coming from the N11 onto the Hill;
- 40.1% of northbound traffic coming from St Bridgids Church Road onto the Hill;
- 37.3% of northbound traffic exiting the cordon on the northern end of Old Dublin Road;
- 30.5% of southbound traffic entering the cordon at the northern end of Old Dublin Road;
- 22% of eastbound traffic passing the main car park access; and
- 36% of westbound traffic passing the main car park access,

As mentioned previously, the junction of Lower Kilmacud Road, Old Dublin Road and The Hill is currently approaching capacity. However, the redesign of this junction is a critical element of the proposed scheme. In order to improve capacity through this junction, the closure of the Hill is recommended. It is likely that with the closure of the Hill, a relatively high proportion of the traffic using the Hill as a through route (in particular those cutting through Stillorgan Village in order to avoid queues on the N11) .

While it is likely a proportion of through traffic will redisrubute onto adjacent routes on the surrounding road network, the proposal was tested assuming no redistribution of though traffic out of the study area in order to reflect the worst case scenario.

However, redistribution of traffic will occur if the left slip lane from the N11 onto the Hill is closed (as shown in the preferred proposal). Traffic currently using the N11 slip lane will turn left at the junction of The N11 with Lower Kilmacud Road. An underutilised left slip lane is currently provided at this junction and therefore the additional traffic rerouted through this junction will have a negligible effect on capacity at this junction. From here, the traffic will redistribute through the junction of Lower Kilmacud Road with the Hill via the junctions east approach (as opposed to its south approach).

The junction of Lower Kilmacud Road, Old Dublin road and The Hill has been modelled with the redistribution of traffic induced by the closure of the left slip lane onto the Hill (see Appendix B). The results of the modelling found the performance of the junction improved significanty. This was due to the fact that the signal sequencing at the junction is currently dominated by the Hill. By reducing the traffic on the Hill, more time can be given to the main traffic flow on Lower Kilmacud Road and, for the same geometry, the overall capacity of the junction can be improved significantly. Furthermore, with the N11 slip lane closure onto the Hill, the junction can continue to operate within capacity for the proposed geometry, despite the proposed geometry providing a reduced number of lanes at the junction.

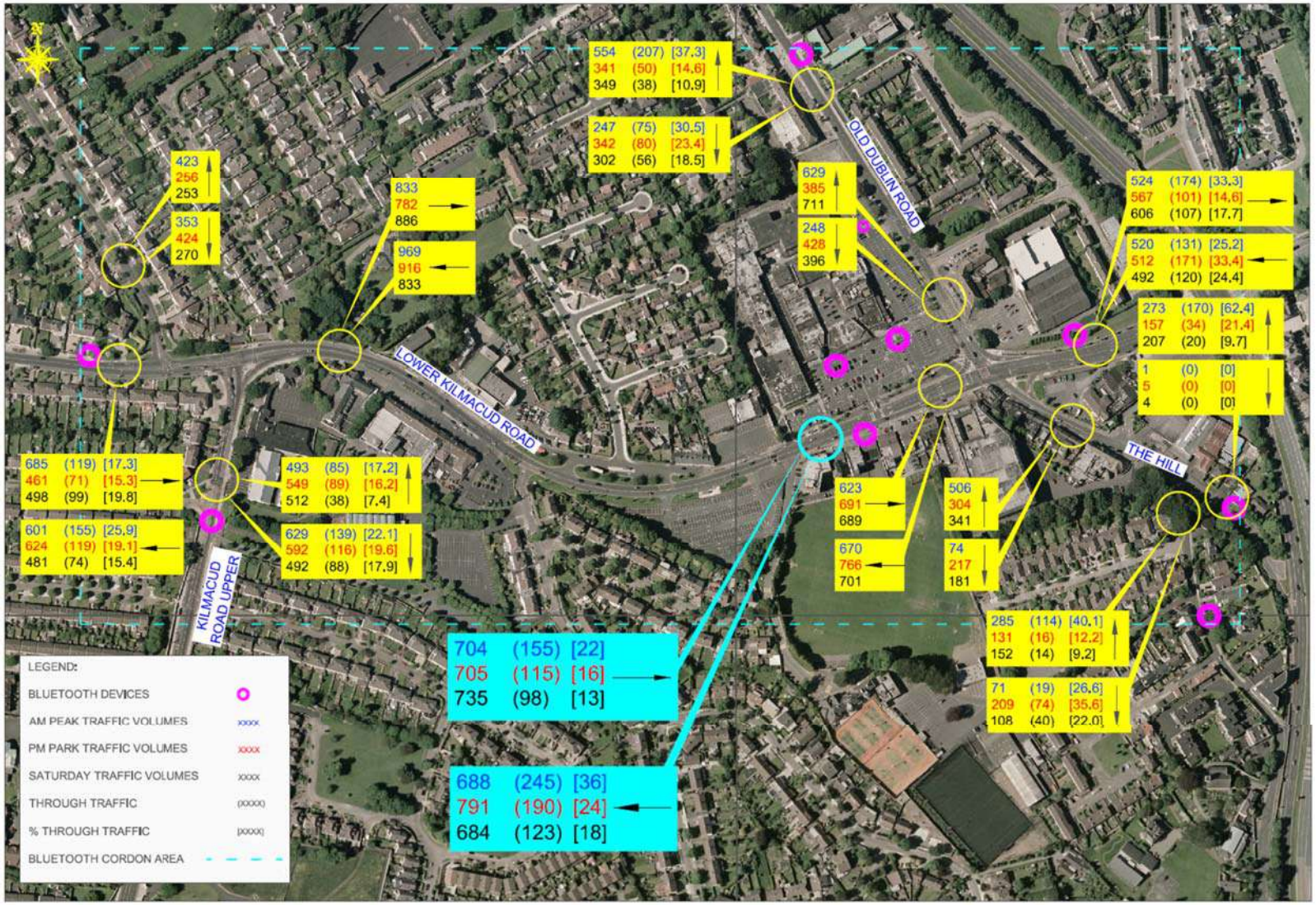


***Figure 5.13**: Through Traffic Volume Data*

5.6 Modal Shift

The existing urban environment gives an impression of car priority. This encourages car use and creates a busy urban environment.The proposed scheme provides improved pedestrian and cycle facilities, while also improving access to public transport facilities. By creating a pleasant and less imtimadating urban environment for soft modes, this will, in turn, encourage more people to walk, cycle and take public transport to and from Stillorgan.

The use of public transport, walking and cycling will be encouraged with respect to new development. High cycle parking provision will be important in encouraging modal shift and maximum parking rates will apply to new developments to discourage the use of the private car.

Results of the public attitudes survey showed that a high proportion of residents living within comfortable walking distance of Stillorgan Shopping Centre chose to drive to the centre. Many of those surveyed said they would walk if pedestrian facilites were improved. The proposal provides public realm improvements including a more pedestrian and cycle friendly urban environment. This will encourage some car users to change their travel mode to a sustainable transport mode.

6. Initial Consultations

At the early stages of the project, the key land stakeholders within the study area were identified and contacted in order to facilitate engagement with the framework development process and understanding of potential constraints and opportunities that might be present through their plans and objectives for their lands.

6.1 Stillorgan Shopping Centre

Kennedy Wilson, the new owners of the shopping centre, met with the project team. An outline of the objectives of the Framework Plan was put to them. An informative and constructive dialogue followed, in which the potential benefits of the Framework Plan to the Shopping Centre were identified, and also how the short, medium and long term potential development at the Shopping Centre could contribute to the succes of the Framework Plan and the Village.

The key points emerging included:

1. The short to medium term plan of the Shopping Centre was to upgrade the existing centre, with particular regard to the public spaces and pedestrian access into, out of, and through the centre, and also modifications to the car park layout to enhance the appearance of and facilities of the carpark.
2. The vehicular entrance and exit points were discussed, as well as potential modifications to the traffic movements and the physical location of each gateway. There were considerable synergies between the emerging details of the Framework Plan and those of the Shopping Centre, particularly with regard to moving the Lower Kilmacud Road entrance westwards and further from the Old Dublin Road junction, and also in changing the southern Old Dublin Road gateway to be an entrance only gateway, with the northern gateway catering for all movements. This arrangement is described later in *Section 7, Emerging Preferred Option.*
3. The nature and use of the over-flow car park is an important part of the Shopping Centre operation. A weakness of this facilitiy at present is its perceived remoteness from the Shopping Centre, and Kennedy Wilson were keen to consider options that might reinforce the connection, and perception of connection, between the two. A particular challenge in this regard was the poor standard of presentation of the area around the junction of Lower Kilmacud Road and the access to Kilmacud Crokes, and that most pedestrians opted to use the signalised crossing on the main road to get to the Shopping Centre – despite it not being as direct a route as it could be.

4. There had been dialogue between Kennedy Wilson and Kilmacud Crokes in relation to a planning application for revisions to the access roadway to their facility and also the re-orientation of their main playing pitch. The application had been appealed by third parties and was with An Bord Plenála, with one particular issue relating to the lack of pedestrian facility along the revised access route – arising from constrained site ownerhsip at the critical point. This is discussed in further detail below under *Kilmacud Crokes*.
5. The long term development potential of the Shopping Centre, and potentially of the overflow car park were also identified. The key points in that regard were ensuring capacity for access and egress to a multi-story car park in conjunction with a built-out over the existing surface car park, and flexibility of options for the overflow car park.

Engagement with Kennedy Wilson was positive and constructive, and the mutual benefits of a collaboration with other stakeholders recognised.

6.2 Kilmacud Crokes

Kilmacud Crokes facilitated a meeting where they presented their objectives including their desire to enhance their facilities and to secure the future of the club as a major community facility within Stillorgan and the wider catchment. Kilmacud Crokes is the largest GAA club in Ireland, and notwithstanding this, it is almost hidden away out of sight behind a row of two-storey commercial and retail premises.

The key points from this consultation with Kilmacud Crokes included:

1. The challenges they were facing with securing planning permission for their immediate requirements to increase the size of, and change the orientation of, their main pitch, and also upgrade the vehicular capacity of their entrance driveway, including for coach access.
2. Conflicting capacity requirements between access to Kilmacud Crokes and to the adjacent overflow carpark, making peak period access and egress very difficult, and not helped by the location of the signalised pedestrain crossing on Lower Kilmacud Road.
3. Site constriants, particuarly in close proximity to the overflow car park and Lower Kilmacud Road, that limited the ability to provide segregated access facilities for vehicles and pedestrians to the club.
4. Any development of the public realm and streetscape at Lower Kilmacud Road could enhance the sense of presence and visibility of the club as an important part of the village and community.

Engagement with Kilmacud Crokes was positive and constructive, and it was clear that there already had been collaboration with other stakeholders, and this was to be further welcomed.

6.3 Blakes Site and Lesureplex

While a number of proposals had been developed in the past for both the Blakes site and the Leisureplex site, there were no immediate plans to progress either. The professional consultants were in a position to articualte the constraints and opportunities previously encountered and considered. It was acknowledged that any interim changes in the village environment, particularly in relation to road access, might alter the relative importance or difficulties in the event of re-embarking on significant redevelopment plans.

The key points emerging included:

1. Vehicular access to the Leisureplex site: This could only remain as existing under current circumstances, but may be required to change in the event of significant redevelopment, and may require access to be relocated to the western or eastern side of the site.
2. Vehicular access to the Blakes site: This was dependent on both the junction with Lower Kilmacud Road and Old Dublin Road, and also on the slipway off the N11 onto The Hill. Depending on the details of the Framework Plan, there may be scope to review access arrangements that could be beneficial to the village and also to the sites.

Engagement with the professional consultants was positive and constructive, and the mutual benefits of a collaboration with other stakeholders acknowledged.

6.4 Overview of Collective Stakeholder Consultations

Consultation with the key stakeholders indicated enthusiasm for the Framework Plan, acknowledged the potential benefits it could bring to Stillorgan, and also highlighted a number of areas of mutual or common interest which might be facilitated, directly or indirectly, through the process.

Between stakeholders:

1. The boundary betwen the overflow car park and Kilmacud Crokes access. If any flexibility could be afforded at this location, it would greatly assist the establishement of segregated vehicular and pedestrian access to the club, as well as greater visibility of the club from the main street
2. The irregular shape of the overflow carpark gave rise to a sub-optimal car parking layout. A small adjustment along part of the boundary with Lower Kilmacud Road, if the cross section of the road was to be modified, could allow for an improved layout and less redundant space.
3. The latter, if it could be secured, might offer some flexibility along the eastern boundary to resolve the access issues to Kilmaud Crokes.
4. The main Shopping Centre car park is slightly constrained at the south eastern corner. If there was any modification to the cross section of the street, it might be possible to incorporate a minor adjustment to the effective boundary.

Framework Plan and Stakeholders

1. Recognition of the benefit of an enhanced streetscape and safer with a more managed traffic environment, and greater provision for safe movement of pedestrians throughout the village.
2. Acknowledgement of the changeing nature to streets in village [District Centre] environments, and the value of re-balancing streetscapes to make better pedestrian provision while maintaining appropriate vehicular access.
3. Overall alignment of the proposals with individual stakeholder objectives, including the short through to longer term objectives.

The outcomes of Stakeholder consultation have been considered in full in developing the details for the Framework Plan and are incorporated as possible in the *Preferred Option.*

7. Emerging Preferred Option

Lower Kilmacud Road/ Overflow Parking (existing)

***Figure 7.1**: Lower Kilmacud Road/ Overflow Car Park (Existing)*

***Figure 7.2**: Roadway character of Lower Kilmacud Rd, overflow car park and Kilmacud Crokes access*

Lower Kilamcud Road/ Overflow Parking (medium term proposal)

***Figure 7.3**: Lower Kilmacud Road/ Overflow Car Park (Indicative Medium Term Proposal)*

Key interventions

- Creation of high quality urban space at the entrance to Kilmacud Crokes to enhance the visibility of Kilmacud Crokes within Stillorgan, and also to improve the pedestrian offer and experince of movement between the shopping centre and the overflow car park.
- Lower Kilmacud Road transitions from west to east, from general carriageway to an urban centre, with slow speed environemnt and enhanced pedestrian facilities.
- Cycle facilities encorporated throughout.
- Southern side of street developed as stronger footpath / urban space to encourage greater east-west pedestrian movement, with the introduction of a new pedestrian crossing point that corresponds to established desire lines.
- Adjustment for boundary between overflow car park and Lower Kilmacud Road, and consequent rationalisation of car park layout, incorporating enhanced pedestrian offer and boundary landscaping.
- Incorporation of pavement facility along re-aligned access to Kilmacud Crokes.

Lower Kilmacud Road/Old Dublin Road Junction/N11 (existing)

***Figure 7.4**: Lower Kilmacud Road/ Old Dublin Road/ N11 (existing)*

***Figure 7.5**:* Vehicle-centric roadways and outdated pedestrian provision

Lower Kilmacud Road/Old Dublin Road Junction/N11 (medium term proposal)

***Figure 7.6**: Lower Kilmacud Road/ Old Dublin Road/ N11 (Indicative Medium Term Proposal)*

Key interventions

- Re-align Lower Kilmacud Road/ Old Dublin Road junction to tighen corners and increase pavement/ public space to facilitate the establishment of focal public space as re-generation opportunities are implemented.
- Enhanced pedestrian crossings at junction to cater for pedestrian movement and also to signal transition to pedestrian / urban environment and passively manage driver bahaviour.
- Locate local bus stop at junction.
- Move shopping centre access northwards and change to left-in only, with all movements accomodated at northern gateway. This will reduce traffic queuing in proximity to junction in both directions and improve pedestrian safety.
- Modify carriageway to single lane in each direction, with a median incorpoating right turns and/or landscape as required.
- Focus usage of link to N11 for vehicular usage, incorporating cycle facilities.
- Establish strong pedestrian link along upgraded streetscape from shopping centre eastwards directly to QBC bus stop on N11.
- Enhance steps and ramps leading to bus stop.
- Re-location of southbound N11 bus stop northwards to be opposite the northbound bus stop, and incorporating an at-grade pedestrian crossing as an alternative to the underpass.

Old Dublin Road (existing)

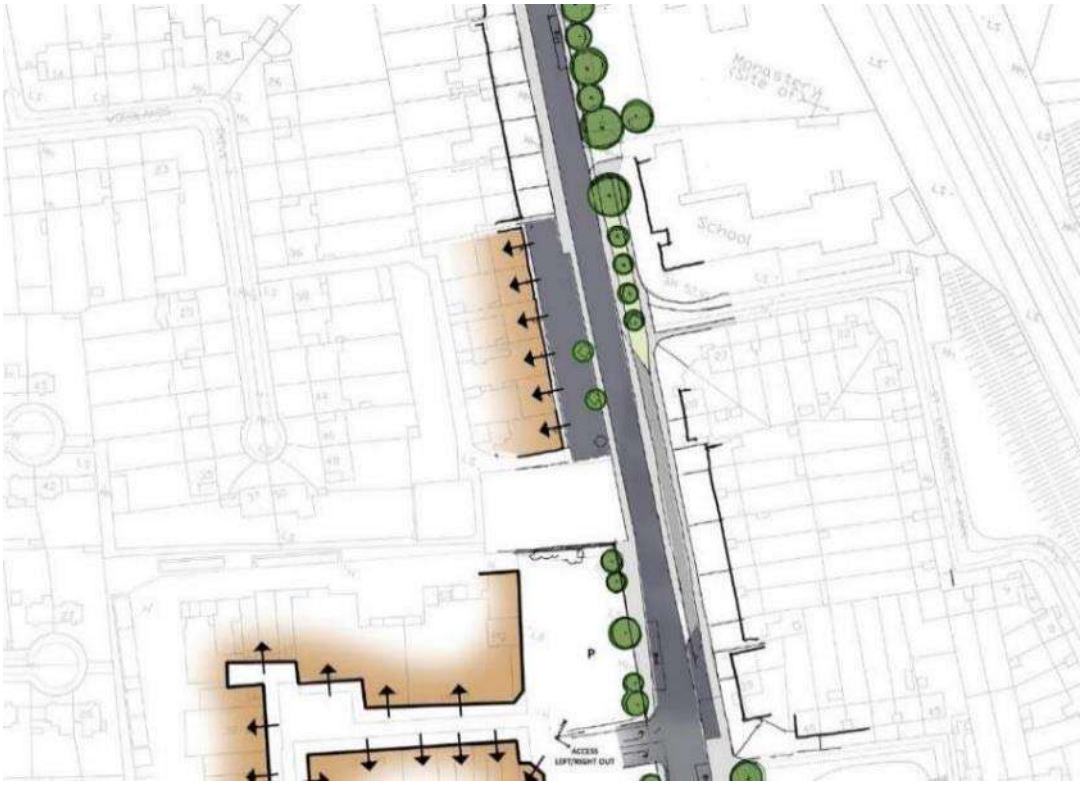


***Figure 7.7**: Old Dublin Road (Existing)*

***Figure 7.8**:* Vehicle-centric roadways, poor pedestrian provision and legibility.

Old Dublin Road (medium term proposal)

***Figure 7.9**: Old Dublin Road (Indicative Medium Term Proposal)*

Key interventions

- Rationalise roadway provision to one lane in each direction.
- Increase pavement space, particularly on western side of the road.
- Provision of high quality pedestrian crossings.
- Re-configuration of retail frontage and parking area at local centre.
- Enhanced landscape along Old Dublin Road
- Maintaining connectivity to adjoinig residential lands.

Lower Kilmacud Road at Mill House (existing)

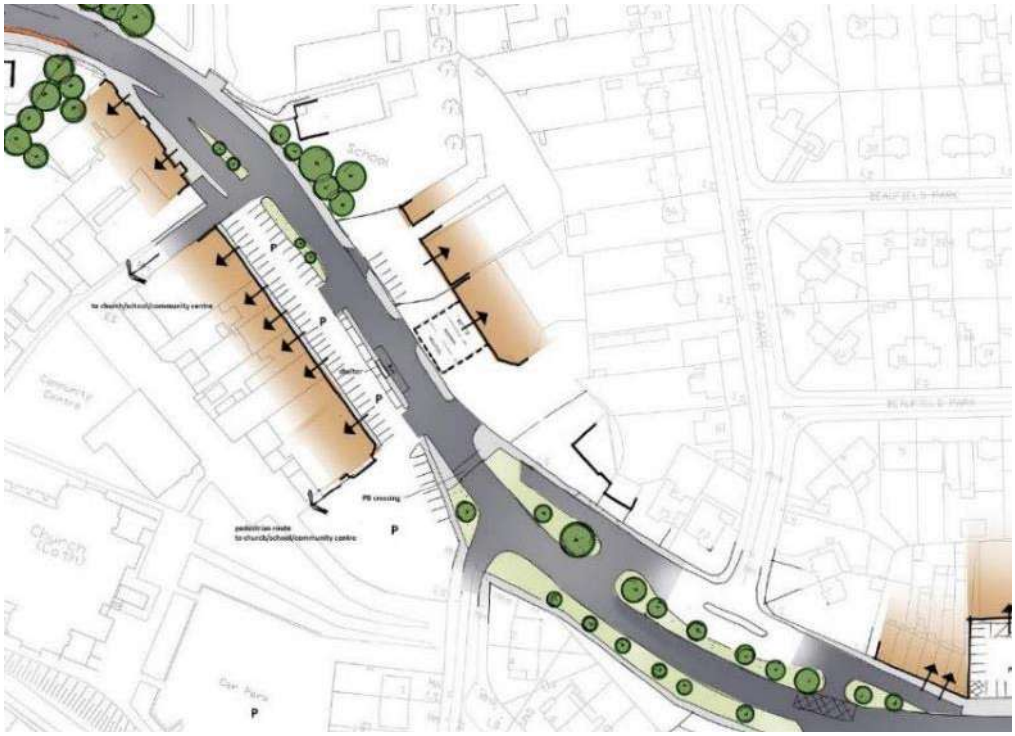


***Figure 7.10**: Lower Kilmacud Road at Mill House (Existing)*

***Figure 7.11**:* Opportunity for better utilisation of space, enhanced pedestrian provision and retail frontages

Lower Kilmacud Road at Mill House (medium term proposal)

***Figure 7.12**: Lower Kilmacud Road at Mill House (Indicative Medium Term Proposal)*

Key interventions

- Rationalise roadway provision to one lane in each direction, with continuous cycle facilities.
- Enhanced landscaping in green street connection between main core and local core.
- High quality pedestrian crossings at key desire lines.
- Re-configuration of retail frontage and parking area at local centre to include legible pedestrian routes through parking area.
- Maintaining and reinforcing connectivity to adjoining land uses.

Upper/Lower Kilmacud Road South Avenue Junction (existing)

***Figure 7.13**: Upper/ Lower Kilmacud Road, South Avenue Junction (Existing)*

***Figure 7.14**:* Limited footpath space, excessive road engineering and conflict betwen cyclists and vehicles.

Upper/Lower Kilmacud Road South Avenue Junction (medium term proposal)

***Figure 7.15**: Upper/ Lower Kilmacud Road, South Avenue Junction (Indicative Medium Term Proposal)*

Key interventions

- Rationalise roadway provision to one lane in each direction with continuous cycle facilities.
- Removal of left turn slip lane onto Upper Kilmacud Road and provision of a shared left turn lane to minimise cyclist / vehicular conflict.
- Increased pedestrian space to incorporate landscaping at junction to bring visual interest and human scale elements to streetscape.
- Single stage pedestrian crossings.

The Hill/ N11 Slip Lane (existing)

***Figure 7.16**: The Hill/ N11 Slip Lane (Existing)*

***Figure 7.17**:* Limited footpath space, excessive road engineering and lack of cycle facilities

The Hill/N11 Slip Lane (medium term proposal)

***Figure 7.18**: The Hill/ N11 Slip Lane (Indicative Medium Term Proposal)*

Key interventions

- Closing the left slip access from the N11 to eliminate rat-running and change the traffic regime – speed and volume – to a more pedestrian friendly environment that is safe and encourages walking and footfall
- Opportunity to establish more attractive residential frontages onto the street by virtue of new cul-de-sac profile.
- Facilitate pedestrian and cycle movement from N11 onto The Hill, and create pocket park at N11 junction.

Oatland College (existing)

***Figure 7.19**: Oatland College (Existing)*

***Figure 7.20**:* Limited footpath space, excessive road width

Oatland College (medium term proposal)

***Figure 7.21**: Oatland College (Indicative Medium Term Proposal)*

Key interventions

- Improved pedestrian crossing at Woodlands Avenue
- New Pedestrian crossing at top end of Dublin Road to N11 Bus Stop
- Widened and improved footpath along Oatland College boundary

8. Feedback from Public Information Period

Public information was provided on the emerging options from October to Devember, 2015. The proposed design drawings showing emerging options were put on public display and the public were invited to provide feedback on the proposal.

Table 8.1 provides a summary of the submissions recieved, with a response provided for each submission/ comment/ issue listed.

Ref. no.	Submission / comment	Response
1	30km/hr. speed limit requested on Old Dublin Road, Stillorgan.	It may not be possible to legally reduce the speed limit on the Old Dublin Road to 30km/hr. However the proposed moderations should result in the roadway becoming a 'Slow Zone.'
	Request for no through traffic for HGVs on Old Dublin Road.	HGVs will be restricted by the proposed modifications to the Old Dublin Road. However local access to businesses will need to be maintained.
2	Glenalbyn Road – existing footpaths are too narrow and need to be widened in the interest of health & safety, particularly for users of the HSE baby clinic.	It is acknowledged that the widths of the existing footpaths along Glenalbyn Road are very narrow. Surveys will be undertaken to see if the existing roadway can accommodate wider footpaths.
3	Feels that Stillorgan Village is vibrant and doesn't need to be altered	Noted
4	Stillorgan Village needs updating / modernisation, plus will ease traffic movements.	Noted
5	Replacement of trees bordering interface from St. Laurence Park and the Stillorgan Leisureplex site.	Proposals for both soft and hard landscaping will be developed as part of the overall Plan.
	Improvements to footpath interface between St. Laurence's Park and Stillorgan Leisureplex site.	Footpaths will be upgraded, altered or widen depending on their location, in line with the proposals in the Plan.
	Re-alignment of car parking outside retail units at junction of St. Laurence's Park and the Old Dublin Road, however concern with drivers parking on footpaths.	It is proposed that the parking area outside the retail units, at this location, will be completely revamped. Parking will be within indented bays. Parking on footpaths to be controlled by means of hard landscaping and street furniture.
	General upgrade requested of all footpaths within St. Laurence's Park Estate, due to the level of footfall through the area.	The Stillorgan Movement Framework Plan provided for the upgrade of all footpaths etc. within the areas of the Public Realm.

	Replacement of section of existing footpath along the Old Dublin Road with tree planting welcomed but concern that they don't overshadow residential houses.	All tree planting and landscaping proposed as part of the Stillorgan Movement Framework Plan will be chosen to suit the intended areas.
	Closure of the slip road from the N11 onto The Hill, Stillorgan acknowledged and welcomed.	Noted
	Final design to ensure no decrease in parking to front of shops at junction of St. Laurence's Park and Old Dublin Road.	The Stillorgan Movement Framework Plan is intended to improve the Public Realm and balance the needs of all users. Therefore it unlikely to be possible to maintain the existing level of parking at this location.
	Litter bins requested for outside Nimble Fingers / Joseph Kramer, Old Dublin Road.	The number and extent of litter bins required will be decided at detail design stage.
	Proposed Pedestrian crossing points, within St. Laurence's Park welcomed.	Noted
	Concern about illegal parking within St. Laurence's Park.	Illegal parking is a Garda Enforcement matter and doesn't form part of the Brief for the Stillorgan Movement Framework Plan
	Request for a yellow box junction on the Old Dublin Road, at the entrance to St. Laurence's Park.	The type and extent of new road markings required will be decided at detail design stage.
	Request that the location of the existing Pedestrian Crossing on the Old Dublin Road be reviewed, as it is felt to be too near the exit from the Stillorgan Shopping Centre.	Disagree. However it should be noted that increased safety will be provided by the modifications proposed for the Old Dublin Road.
	Request that the first phase of the Stillorgan Village Area Movement Framework Plan incorporate the area that includes St. Laurence's Park.	Phasing of the construction works for the Stillorgan Movement Framework Plan will be based on the maximum return / gains and the level of funding, combined with the co-operation of the relevant stakeholders.
6	Pedestrian lights requested on the slip lane at the Lower Kilmacud Road and Upper Kilmacud Road junction in the interest of safety, particularly for local school-children.	In the interest of improved safety, especially for school-children, it is proposed to completely remove the slip lane, as part of the total re-design of the Lower Kilmacud Road – Upper Kilmacud Road signalised junction.
	Request that no modifications are made to the green open space or trees at the junction of South Avenue / Lower Kilmacud Road as part of any junction upgrade works.	Noted.
7	Unsure how new layout will address traffic flows through Stillorgan Village.	The proposed Plan provided for one traffic lane in each direction along Lower Kilmacud Road for through traffic, as per the existing arrangement. However the proposed revised

		layout will impose greater control on internal traffic speeds and movements.
	Objections to any introduction of Pay & Display, as part of the proposed re-design of the Public Realm.	The introduction of Pay & Display is a Policy issue, to be decided at a later date, and therefore is not part of the proposals under consideration in the Stillorgan Movement Framework Plan.
	Request for reinstatement of old 46A Dublin Bus route through Stillorgan Village.	This is a matter for Dublin Bus, as the Bus Operator.
	Proposal that a local feeder bus service, (IMP bus system), be introduced to Stillorgan Village to serve the Luas and the residential estates along Lower and Upper Kilmacud Road, thus reducing the level of car use in the area.	The Purpose of the Stillorgan Movement Framework Plan is to develop the Public Realm within and around Stillorgan Village. The provision of a local bus service is a matter between the businesses and the residents.
8	Welcome for the proposals in attempting to improve safety for pedestrians, motorists and cyclists.	Noted
	Request for a signalised traffic junction, incorporating the existing Pedestrian Crossing, at the Lower Kilmacud Road / Allen Park Drive in order in order to improve access and egress to Merville Estate.	Noted and will be considered in developing the proposals for the Stillorgan Movement Framework Plan.
9	Dangerously narrow width, (0.6m – 1.0m), of existing footpaths on Glenalbyn Road needs to be addressed as part of the improvements to the Public Realm.	It is acknowledged that the widths of the existing footpaths along Glenalbyn Road are very narrow. This issue will be reviewed. However, it should be noted that Glenalbyn Road lies outside the extent of the study area.
10	Welcome for the proposed Pedestrian crossing point between The Children's House Montessori Primary School and the 'Fruit World' premises but request for traffic calming measures to be incorporated in order to increase safety.	The objective of the Plan is to provide an improved and safer environment for all users. Therefore the proposed measures in terms of narrower traffic lanes, cycle tracks, pedestrian crossing points, wider footpath etc. will provide for increased traffic calming in the area.
	Consideration that the existing drop off / pick up parking on the Lower Kilmacud Road, to serve The Children's House Montessori School, be allowed for in the new design for this section of roadway, also consideration for deliveries etc.	In order to provide for upgraded footpaths and new cycle tracks, combined with reduced traffic lanes widths, it won't be possible to allow on-road parking along any section of the Lower Kilmacud Road.
11	Welcome for the improved safety for families and children with the increased pavement widths, enhanced cycling facilities, single lane traffic and an island separating the lanes.	Noted

	Concerns about the continuing grid-lock caused by traffic accessing the Stillorgan Shopping Centre car park.	Traffic grid-lock within Stillorgan Village is currently an issue at certain times of the day. It is intended that measures will be incorporated into the final design to address, as best as possible, this problem.
	Query if cycle lanes could be moved away from edge of traffic lanes for safety consideration.	Available space doesn't allow for off-road cycle tracks. However the proposed cycle tracks will be vertically separated from the adjoining roadways, except at junctions, in line with the National Cycle Manual.
12	Objection to the closure of the slip road from the N11 onto The Hill, Stillorgan due to concerns about loss of business due to removal a link to the customer catchment area.	Objection noted and accepted from the local business interests. Further surveys will be undertaken before any final decision is made on closing the slip road from the N11.
13	Welcome for the proposals and looking forward to the completion and implementation of the Plan.	Noted
14	Supports proposals for the upgrade of roadways and pedestrian areas within the vicinity of Stillorgan Village but feels that the Public Consultation could have been better advertised.	Noted. The purpose of the Information Period was to receive some initial feedback on the emerging options from a cross-section of local businesses and residents. This we feel was achieved and will help to inform the approach and final layout of the Stillorgan Village Area Movement Plan.
15	Supportive of the measures in the Plan, in addressing traffic and parking arrangements in the Stillorgan area.	Noted
16	Reduction in traffic lanes will cause tailbacks and queuing for drivers assessing Stillorgan Village. Review Plan with a view to improving traffic flows.	While the traffic lanes particularly on the Lower Kilmacud Road will be reduced in width, two-way traffic flows will be maintained by preventing any on-road parking and improving junction design.
17	Smarter layout, especially for pedestrians. A pedestrian flyover on the N11 at the junction with Oaklands School would make it safer for pedestrians and allow traffic to exit the Old Dublin Road in a more organised manner.	Aside from the high cost involved, there is the insufficient land available to construct the required access ramps and pedestrian flyover infrastructure. There is a new Pedestrian crossing point, on the N11, included in the proposals.
18	Supportive of Plan but disappointed that there is very little proposed for the redesign of the Allen Park Road – Lower Kilmacud Road junction, very difficult to exit when turning right towards Stillorgan Village.	Noted and the installation of traffic lights at the Lower Kilmacud Road / Allen Park Road junction will be considered in the development of the Stillorgan Movement Framework Plan.
19	Impressed with the improvement in crossing points on the Lower Kilmacud Road and the installation of cycle lanes.	Noted.

	Request for cycle lanes to be included on the Old Dublin Road to serve Oaklands School, including the provision of cycle parking area.	The installation of cycle lanes on the Old Dublin Road will be considered in the development of the Stillorgan Movement Framework Plan. However it should be noted that this may require the removal of the existing on-road parking.
20	Welcomes the re-location of the out-bound bus stop on the N11, the proposed access from Patrician Villas and the new Pedestrian crossing on the N11.	Noted.
	Request for a Pedestrian crossing on South Avenue, at the junction with Lower Kilmacud Road and on Redesdale Road, at the junction with Lower Kilmacud Road in order to improve safety for children going to the local schools.	It is proposed, as part of the upgrade of the existing traffic lights at the Lower Kilmacud Road / South Avenue junction, to incorporate a Pedestrian crossing on South Avenue. In relation to Redesdale Road, it is not possible or safe to provide an isolated Pedestrian crossing on a side roadway.
21	The use of unclear technical jargon e.g. ‘‘modal shifts,’’ soft modes,’’ ‘’balance movement’’ and ‘‘place’’ makes the proposals very hard to follow and evaluate.	While sometimes technical jargon can be difficult to understand, the photographs, drawings and artist’s impressions were designed to fully convey the objectives and emerging options for the proposed Stillorgan Village Area Movement Framework Plan.,
	Creating a ‘’traffic calmed environment’’ with ‘’reduced lane widths’’ will result in traffic diverting through Mount Merrion to bypass Stillorgan Village. The Plan doesn’t consider the wider traffic management issues which are likely to result in the adjoining residential areas.	Extensive traffic surveys were undertaken and traffic modelling reviewed in order to inform the development of the proposals for the Stillorgan Village Area Movement Framework Plan. The proposals are designed to facilitate a level of throughput traffic, while restoring a village feel to the centre of Stillorgan.

Table 8.1: Summary of Submissions Received

9. Key Feedback Items

The key items requiring further investigation that emerged from the public information period on emerging options were as follows:

9.1 *Allen Park Drive:*

Submissions 8 and 18 refer to the difficulty drivers experience turning right from Allen Park Drive onto Lower Kilmacud Road and request consideration for the redesign of this junction as part of the scheme.

A survey was undertaken on Monday 27th June between 8:40 and 9:00 which recorded a maximum queue length on the approach to the junction of three passenger car units and a maximum delay of less than eighty seconds for right turning vehicles.

This indicates that signalisation of the junction is not appropriate at this location. However, in order to assist right turning vehicles exiting Allen Park Drive, the proposal has been modified to include a yellow box at the junction. It is also proposed to modify the operation of the pedestrian crossing located west of Allen Park Drive to increase its activation frequency during busy periods.

9.2 *Glenalbyn Road*

Submission 9 refers to 'dangerously narrow footpaths' on Glenalbyn Road. This issue was reviewed and upon preliminary investigation it appears that the existing carriageway widths are not sufficiently wide to accommodate the use of roadway space to increase the width of the footpath. It should be noted that Glenalbyn Road is outside the extent of the study area, and thus, a detailed assessment (i.e. land acquisition potential etc.) was not undertaken as part of this study.

9.3 *Closure of the left Slip lane from The N11 onto 'The Hill'*

The proposals provided for public consultation included the closure of the left slip lane from the N11 onto The Hill. During consultation concerns were raised with respect to the impact the closure of this slips lane would have on local businesses.

In particular, the Orchard Pub and 'Village Vets' veterinary practice were concerned regarding the impact it would have on their businesses. Traffic and parking surveys were conducted in order to quantify any potential impacts the closure of the Hill may have.

CSEA conducted these surveys on Friday 22nd January 2016, with observations made adjacent the junction of the Hill and Glenalbyn Road during three time periods as follows:

- 09:30 -11:30;
- 12:30 -14:30; and
- 16:00 -18:00.

The results of the survey can be found in Appendix C. The removal of direct access from the N11 left slip lane onto the Hill may deter a small percentage of customers from these local business as they would have to Access these business via. a left turn onto Lower Kilmacud Road and a second left turn onto the Hill. However, the redesign of Stillorgan Village as a more attractive vibrant town centre with the implementation of the scheme is likely to offset any negative impacts resulting from modified access arrangements.

Thus, it is not proposed to close The Hill initially but the operation of the junction of the Hill, Lower Kilmacud Road and Old Dublin Road will be reviewed following implementation of the scheme. If this junction becomes congested, it may be advisable to implement the Closure of the slip lane from the N11 in the medium to long term.

9.4 *Pedestrian Crossing at Oatlands College*

Further to review during the consultation period, it is proposed to provide a new controlled pedestrian crossing on Old Dublin Road. The pedestrian crossing will be located adjacent to Oatlands College on the west side of Old Dublin Road and a healthcare clinic on the east side of the road.

10. Proposal

This chapter shows the overall concept designs for the medium and long term proposals, focusing on the Village Core Area. Detailed engineering drawings of the proposal covering all areas of the scheme are provided in Appendix E and Chapter 10 should be read in conjunction with these drawings.

10.1 Existing Village Core

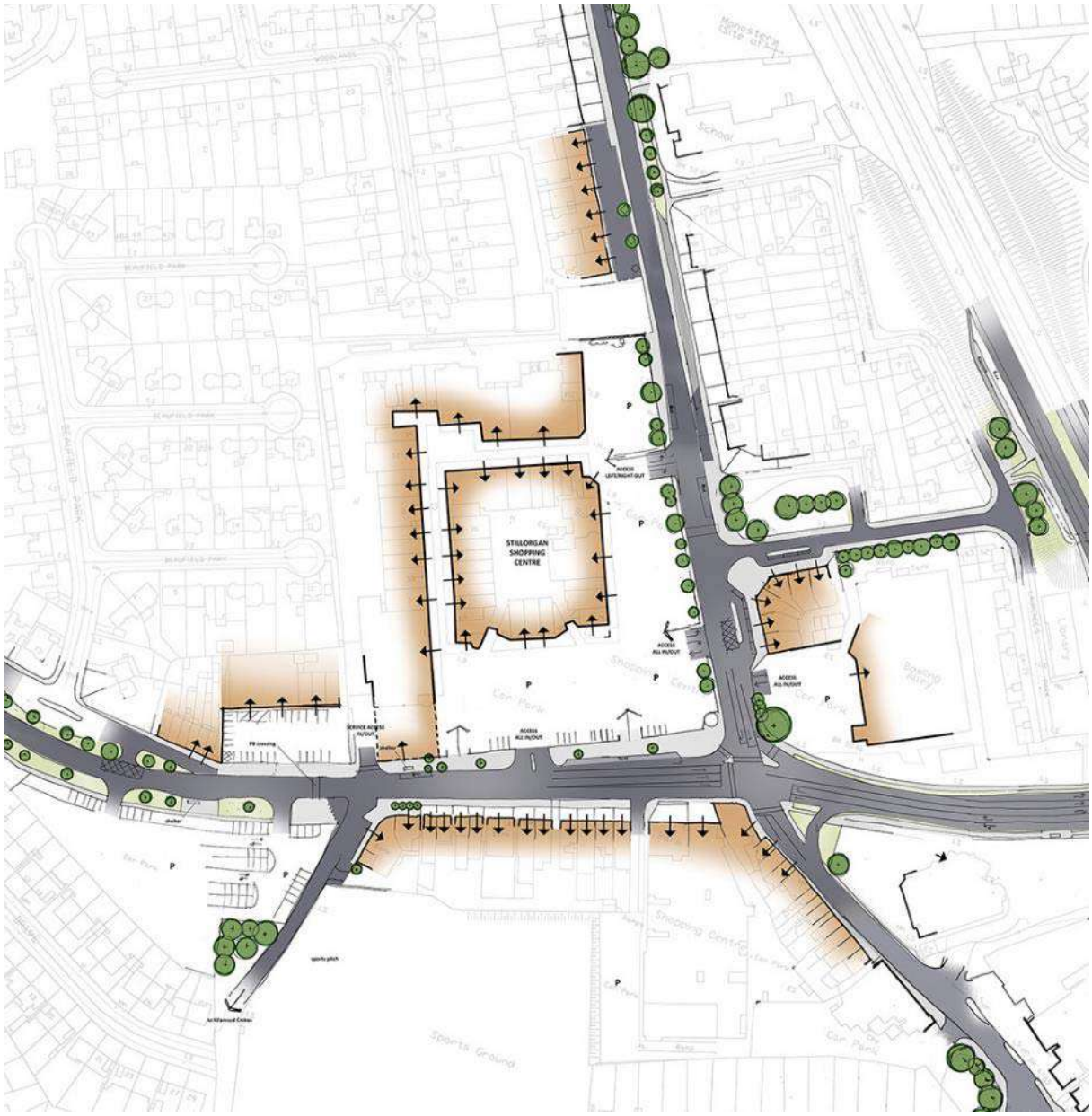


***Figure 10.1**: Existing Village Core*

Key Overall Issues:

- Disconnected village sections;
- Wide traffic lanes;
- Impression of car priority;
- Inadequate Pedestrian/ Cycle facilities;
- Extensive parking areas dominate landscape.

10.2 Village Core (Medium Term Proposal)

***Figure 10.2**: Village Core (Medium Term Proposal)*

Key Medium Term Objectives:

- Improved pedestrian connections between key urban spaces with potential to expand to future re-generation sites;
- Re-balancing of the roadways to cater for pedestrians, cyclist and vehicles as appropriate;
- Enhanced public realm treatments, including materials, lighting, planting and street furniture, to reinforce the identity of the village core and to decrease impression of car priority;
- Improved safety for pedestrians and cyclists, including for crossings where demand identified;
- Rationalising parking access points and proposing screening landscaping to boundaries.

10.3 Village Core (Long Term Proposal)

***Figure 10.3**: Village Core (Long Term Proposal)*

Key Long Term Objectives:

- Further Improvement and expansion of pedestrian connections between key urban spaces and re-generation sites;
- Re-balancing of the roadways around re-generation sites to cater for pedestrians, cyclist and vehicles as appropriate;
- Further improvement of public realm treatments around the core area which is expanded and consolidated, with significant additonal built frontage onto the streets;
- Enhanced safety for pedestrians and cyclists around re-generation sites;

- Further rationalising of car parks layouts, typologies, locations and access points in conjunction with regerenation opportunity lands.

10.4 Photomontages

***Figure 10.4**: Lower Kilmacud Road Currently (looking East)*

***Figure 10.5**: Lower Kilmacud Road Potential (looking East)*

***Figure 10.6**: Lower Kilmacud Road Currently (looking West)*

Lower Kilmacud Road Potential (looking West)

***Figure 10.7**: Lower Kilmacud Road Potential (looking West)*

***Figure 10.8**: Lower Kilmacud Rd / The Hill Junction Currently*

***Figure 10.9**: Lower Kilmacud Rd / The Hill Junction* Potential

***Figure 10.10**: Old Dublin Road Currently (South section)*

***Figure 10.11**: Old Dublin Road Potential (South Section)*

***Figure 10.12**: Old Dublin Road Currently (Middle section)*

***Figure 10.13**: Old Dublin Road Potential (Middle section)*

10.5 Indicative Sections through Lower Kilmacud Road

***Figure 10.14**: Section AA (as existing)*

***Figure 10.15**: Section AA (as proposed)*

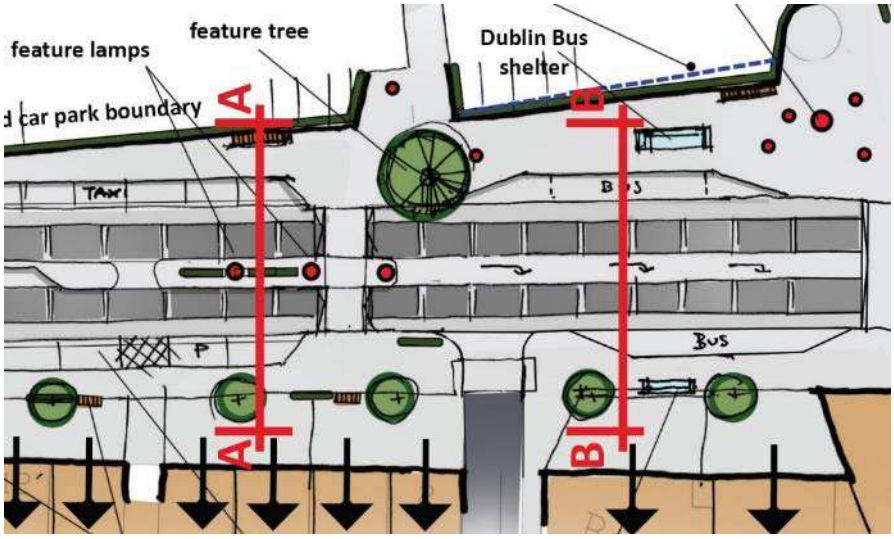


***Figure 10.16**: Section Location Plan*

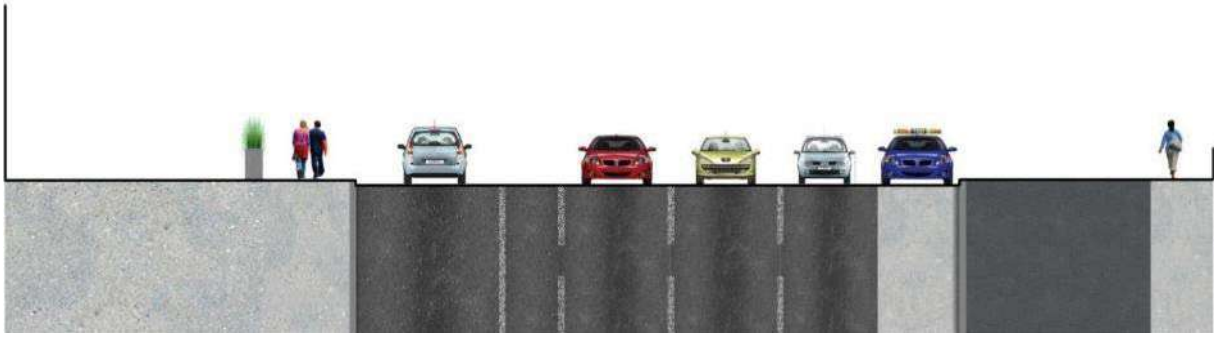


***Figure 10.17**: Section BB (as existing)*

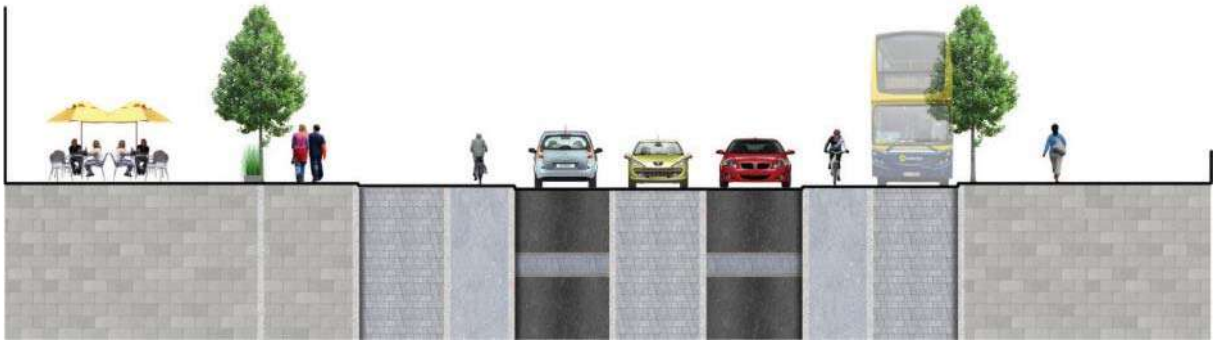


***Figure 10.18**: Section BB (as proposed)*

10.6 General Materials

***Figure 10.19**: numerical values indicating location of materials listed below*

1. Quality asphalt to carriageway
2. Exposed aggregate tarmac to cycle tracks/lanes
3. Grey concrete setts to pedestrian crossing and parking/taxi bays
4. Grey concrete/granite kerb
5. Light grey concrete flag paving to footpaths and other pedestrian areas
6. Granite/concrete planters with low planting
7. Semi-mature trees in tree grille
8. Selected modern ‘heritage’ style feature street lamps

11. Cost Estimate

The scheme can be broken down into a number of separate work packages, with each section costed individually. The extent of these sections and the costs associated with each package of work are shown graphically in Appendix D. It should be noted that Section 2, as indicated on the drawing, will be implemented as part of the N11 scheme and thus, this sum may be subtracted from the total cost of the scheme

Appendix A: Public/ User Attitudes Survey

File Note

Clifton Scannell Emerson Associates

Project	Stillorgan Framework – Phase 1	**File No.**	FN14_059_001
Subject	Interview Questionnaire	**Date**	21/10/2014

Survey Dates: Thursday 25th September (9am-6pm) & Saturday 27th September (11am-3pm) 2014.

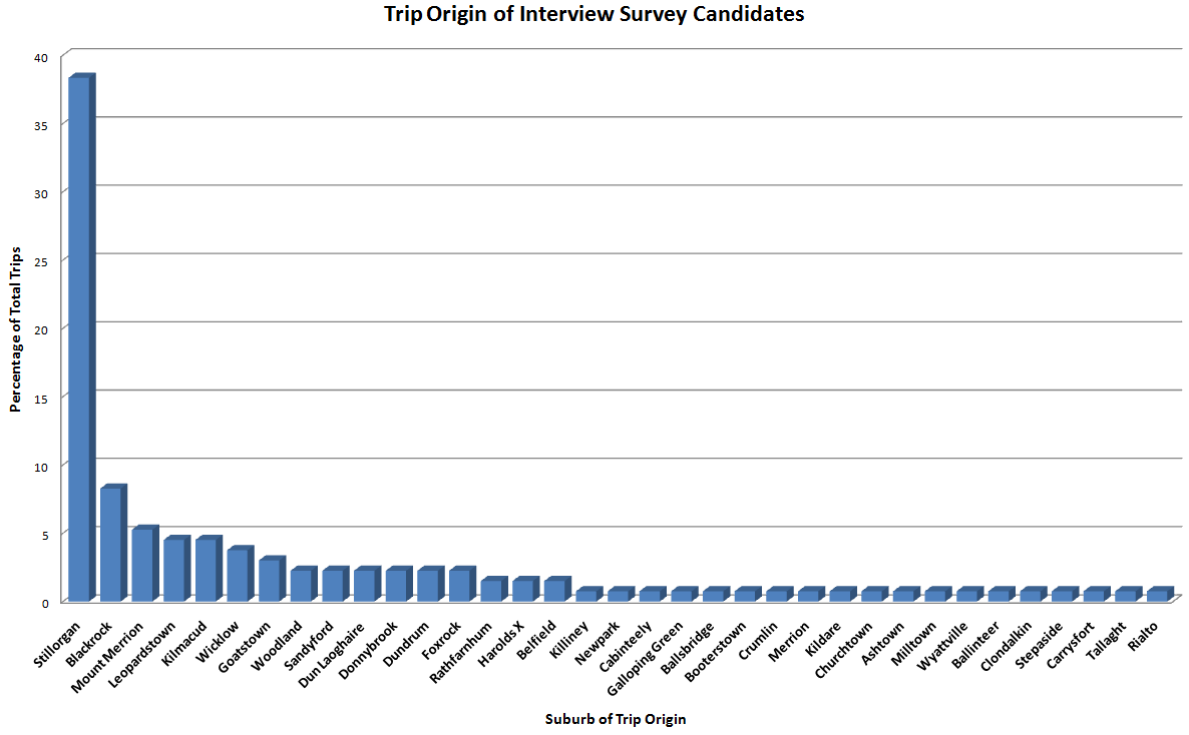
Surveys conducted:

- Within the shopping centre complex outside Tesco supermarket;
- Within the shopping centre complex outside Tesco Liquor Store;
- Along Old Dublin Road, opposite Stillorgan College of Further Education;
- Along Old Dublin Road, at its intersection with St. Laurence's Park;
- Along Old Dublin Road, at its intersection with Lower Kilmacud Road and the Hill;
- On the Hill, outside Boland's pub;
- On Lower Kilmacud Road, outside the AIB;
- On Lower Kilmacud Road, outside Centra.

Number of Responses: 133

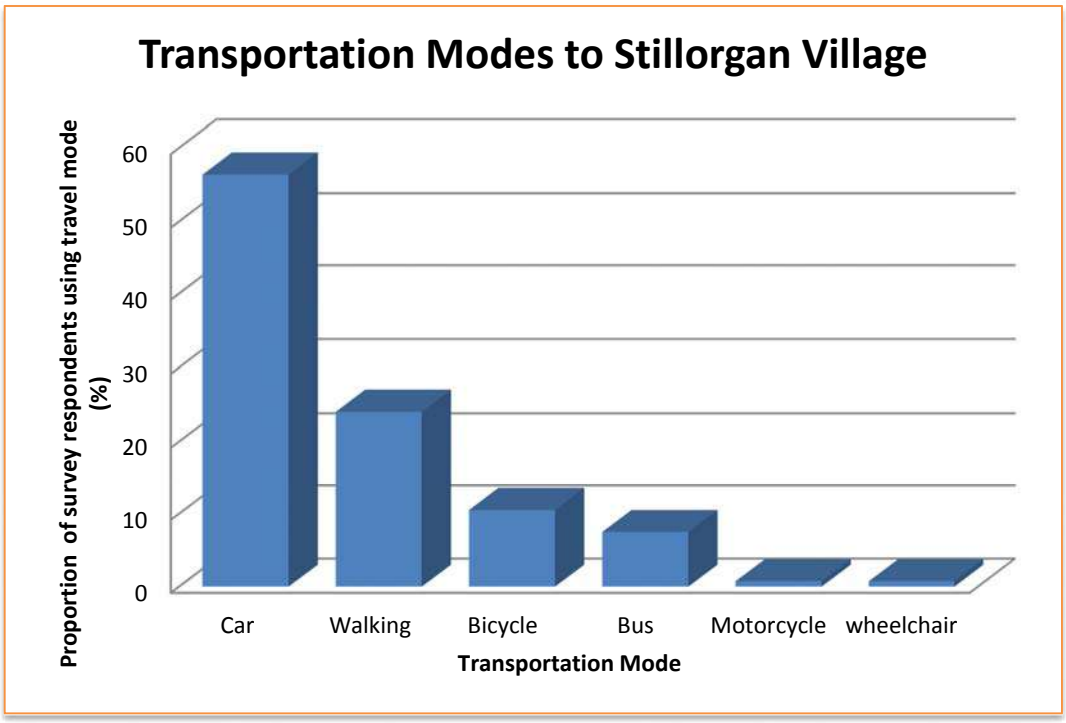
Interview Questions and Responses

1. **Where did your trip originate?** .....



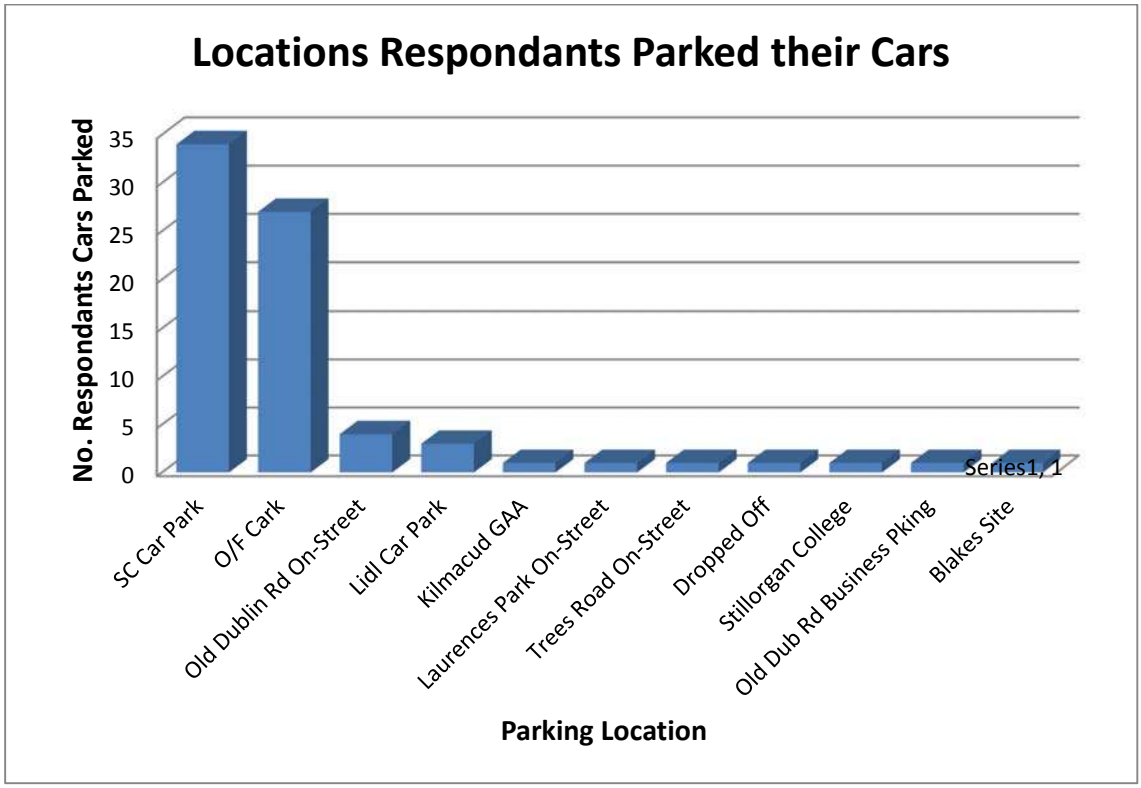
2. **Travel Mode** : Car □ Push Bike □ Bus □ Motorcycle □ Walking □ Other □

If other, specify .....

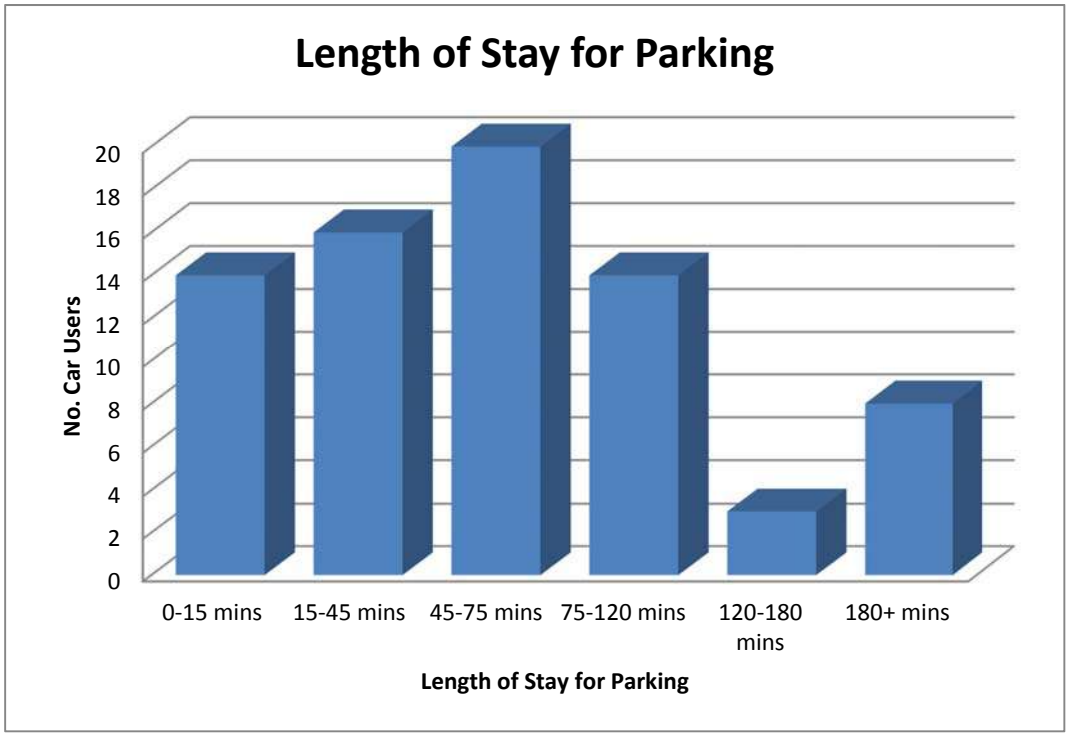


3. **If you travelled by car** (please ignore questions 4 & 5):

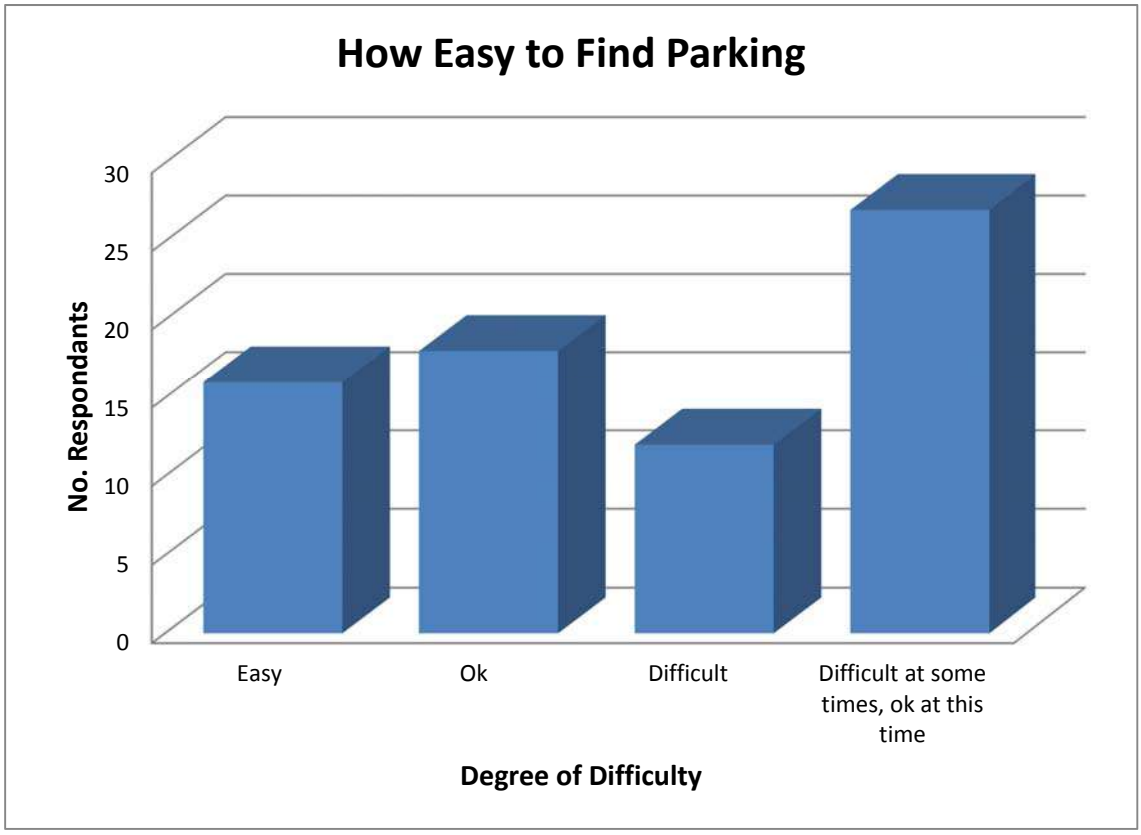
(i) Where did you park?.....



(ii) Length of stay?.....



(iii) How easy was it to find parking?.....



(iv) Would you ever consider cycling, walking or taking public transport to the shopping centre?

Would you consider walking, cycling, taking bus?					
yes				no	yes (not grocery shopping)
total	Walking	Cycling	Bus	32	2
38	21	6	10		

What improvements would you like to see in the area to encourage you to do so?

.....

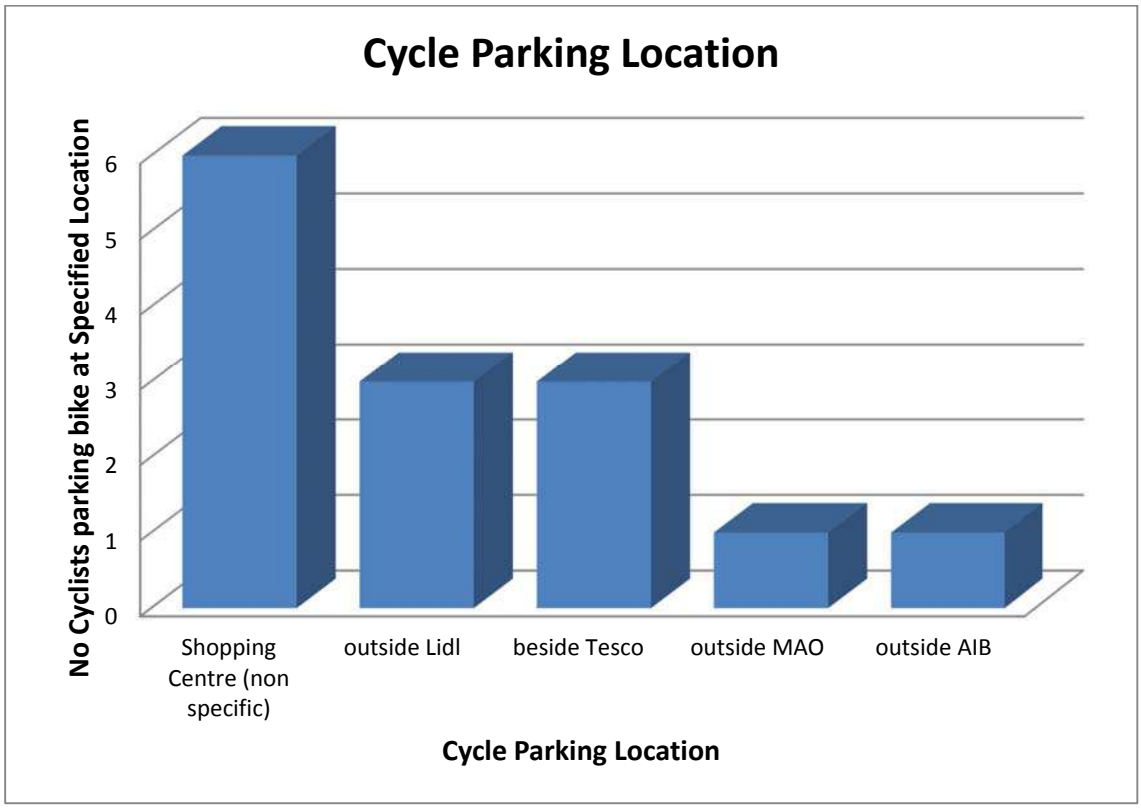
(main/ most useful data collected):

- More street furniture e.g. Benches

- Refurbish footpaths and provide better pedestrian crossings
- Bring No. 11 bus back into Stillorgan village
- provide better desognated cycle lanes along N11 that are not shared with busses
- bring 46A bus back into Stillorgan village
- more cycle Parking
- cycle lane improvements (e.g. from Goatstown)
- introduce Dublin Bikes to Stillorgan

4. **If you travelled by bicycle** (please ignore questions 3 & 5):

(i) Where did you park your bike?.....



(ii) Do you think there is enough conveniently located cycle parking in Stillorgan?

Enough conveniently located cycle parking?	
yes	5
No	9

If not, where would you like to see more cycle parking located?

……

- near CCTV and in busier locations
- near Nimble Fingers
- within shopping centre
- near McDonalds (sc)

(iii) Where would you like to see cycle lane improvements within Stillorgan?

……

- Improvements on N11
- Along Lower Kilmacud Road
- Along Old Dublin Road
- improve connection to N11 x 2 - make it safter/ trees block street light/ conflicts between pedestrians and cyclists.
- improve cycle links from Carrysfort Avenue and Kilmacud Road
- improve cycle track between Blackrock and Dun Laoghaire
- dedicated cycle lane from back of Kilmacud church to Stillorgan village, improve public lighting at back of church
- better lanes from Roebuck/Mount Merrion

5. **If you travelled by bus** (please ignore questions 3 & 4):

(i) Did you have a positive or negative experience? Explain why.

……

Positive	ok	Negative
7	3	0

Positive feedback	Negative feedback	improvement suggestions
App makes transportation by bus easier	n/a	make busses more comfortable
no 47 bus is frequent		provide more space on seats
appreciates WIFI x 2		

6. **Regarding the general layout of Stillorgan town centre;**

(a) What do you like?

.....

- Free parking
- Local feel
- Open layout of shopping centre
- Good Mix of shops
- Good amenities
- Nice cafes
- Familiarity
- Single storey shopping centre
- Easy to get around

(b) What do you dislike?

.....

- Traffic
- No village feel
- Not enough Parking
- Outside residential housing on Old Dublin Road, south of northern section of St Laurences Park, cars mount footpath on corner-dangerous for pedestrians
- no parking outside oakland school
- lack of street furniture
- dated-needs revamping and refurbishment
- not child friendly,
- lack of shelter
- car park spaces too narrow
- bus service very infrequent + dont go into stillorgan village
- Abandoned shops
- lack of crossings, more lights for pedestrains

- not sufficient time to cross at lights on Old Dublin Road for Elderly
- long wait for green light at pedestrian crossing connecting the overflow car park with the shopping cnetre

(c) What would you like to change?

.....

- zebra crossing on Lower kilmacud Rd
- more parking
- better street lighting
- better public transport – in particular bring bus services back into village (e.g. 46A)
- crossing to get to N11 bus stop
- more landscaping
- traffic calming
- play area for children e.g. at Blakes site
- plant trees and provide more cafes
- more shelter
- park with seating, water features and birds
- crossing at roundabout via orpen estate
- more crossings on Old Dublin Road
- occupy derelict sites
- public transport connection from Blackrock to Stillorgan
- improve accessibility for wheelchairs – provide refuges in middle of road
- make better bus stops (Old Dublin Rd near school)
- ped.crossing - St. Laurences Park, conflict at enterance/exit of SC
- better lighting at back of church
- more public toilets
- more public bins

(d) How do you think Stillorgan village could be made more vibrant?

……

……

- redirect the through traffic around the village
- covered-less cold
- hanging baskets and trees
- more pedestrian crossings
- community areas + more public playgrounds
- markets on Saturday
- landscape areas and refurbishment of existing
- attractions in evenings and weekend
- bridge accross N11-safer for users
- events for older people, geared for families
- outside eating areas, lighting, pedestrain areas
- more reasonably priced cafes
- more street furnature

Appendix B: Traffic Modelling Report

Clifton Scannell Emerson Associates

Stillorgan Village Area Movement Framework Plan

Junction Traffic Assessment

dlr Comhairle Contae County Council

Client: Dun Laoghaire-Rathdown County Council

Date: January 2015

Job Number: 14_059

CONSULTING ENGINEERS

Civil Engineering | Structural Engineering | Transport Engineering | Environmental Engineering | Project Management | Health and Safety

Clifton Scannell Emerson Associates Limited,
Consulting Engineers, Seafort Lodge, Castlesdawson Avenue, Blackrock, Co. Dublin, Ireland.
T. +353 1 2885006 F. +353 1 2833466 E. info@csea.ie W. www.csea.ie

Document Control Sheet

Project Name:	Stillorgan Village Area Movement Framework Plan
Project Number:	14_059
Report Title:	Traffic Analysis Report
Filename:	R14_059_001
Path:	\\Vfileserver\Archdata\DOCUMENTSTORE\14_059\Reports\R14_059_001.docx

Issue No.	Issue Status	Date	Prepared by	Checked by
D1	Draft	08/01/2015	EC	GE

Table of Contents

1. Introduction

CSEA has produced the following Traffic Analysis Report as part of the Preliminary Design Stage of the Stillorgan Village Area Movement Framework Plan.

The following junctions were assessed:

- Lower Kilmacud Road, The Hill and Old Dublin Road;
- Lower Kilmacud Road and south west shopping centre car park access;
- Lower Kilmacud Road and N11 Stillorgan Road; and
- Lower Kilmacud Road, Upper Kilmacud Road, and South Avenue (Staggered junction).

The existing and proposed junction layouts were modelled in OSCADY, PICADY and SIDRA using Thursday am and pm and Saturday midday peak-hour vehicle turning counts obtained from a classified 12-hour traffic count carried out at the junctions on 25th and 27th September 2014 and 3rd October 2013 (N11 junction). A summary of the OSCADY, PICADY and SIDRA analysis results is provided for each scenario along with a brief discussion on the traffic implications for the junctions.

2. Lower Kilmacud Road/ The Hill Junction

2.1 Existing Junction Layout

The existing junction layout is shown in Figures 2.1 and 2.2 below.

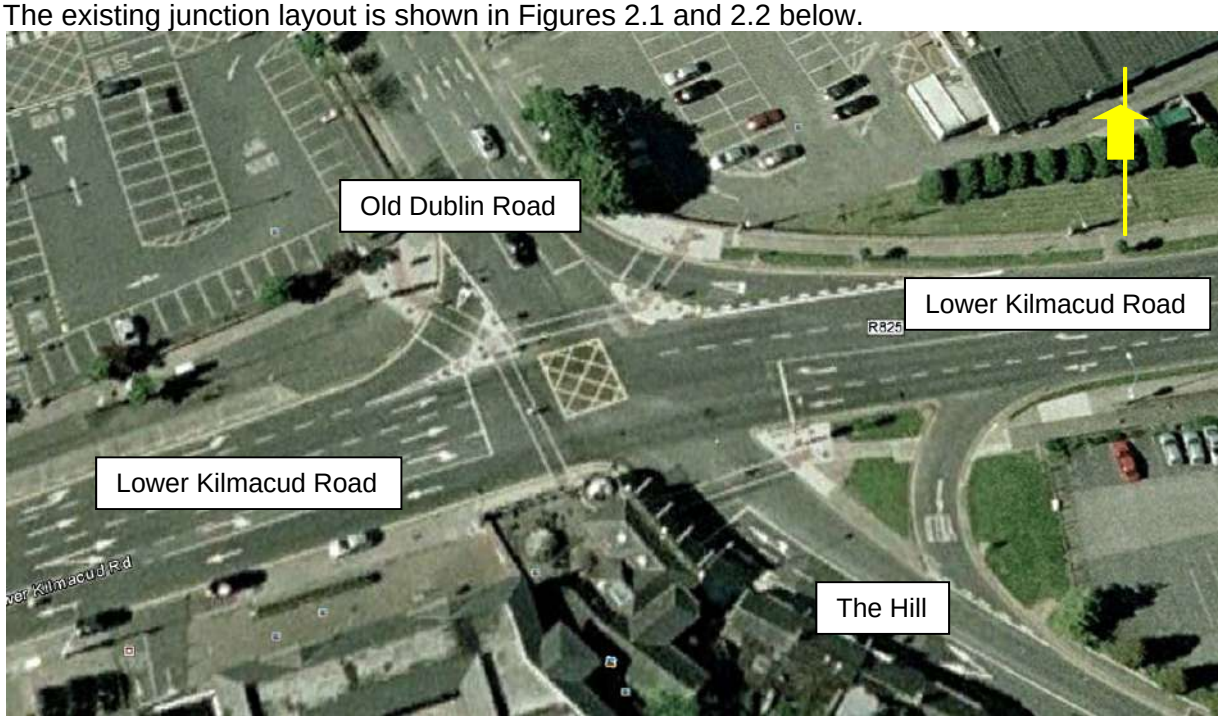


Figure 2.1 Existing Junction Layout (Satellite)

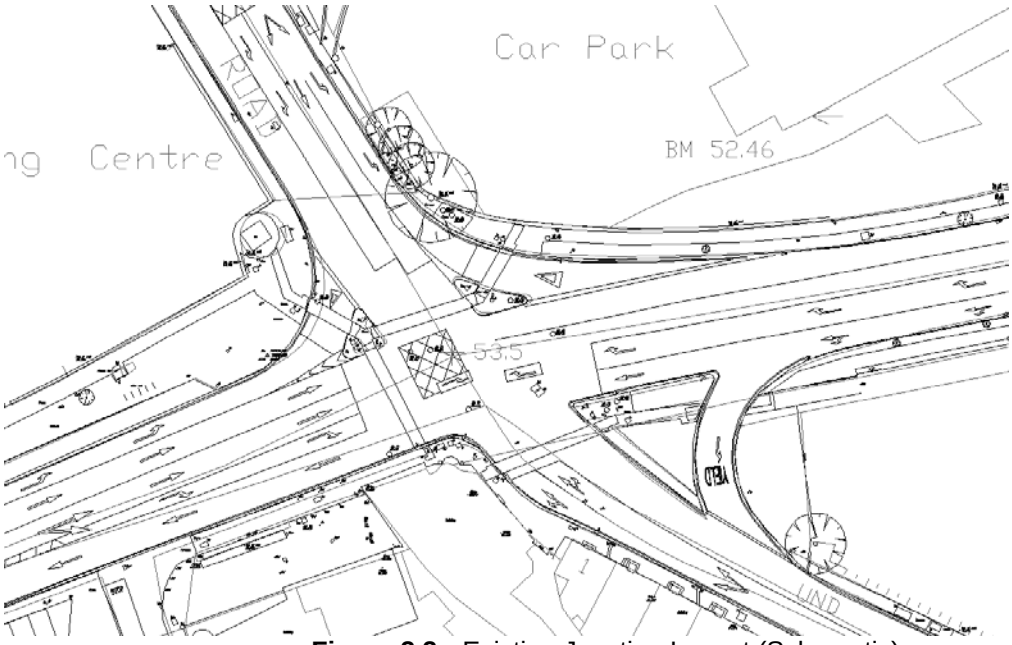


Figure 2.2 Existing Junction Layout (Schematic)

2.2 Existing Traffic Counts

Traffic surveys were conducted on Thursday 25th September and Saturday 27th September 2014. The Thursday am peak hour was recorded between 8am and 9am, the Thurrsday pm peak was recorded between 5pm and 6pm and the Saturday mid-day peak was recorded between 12pm and 1pm.

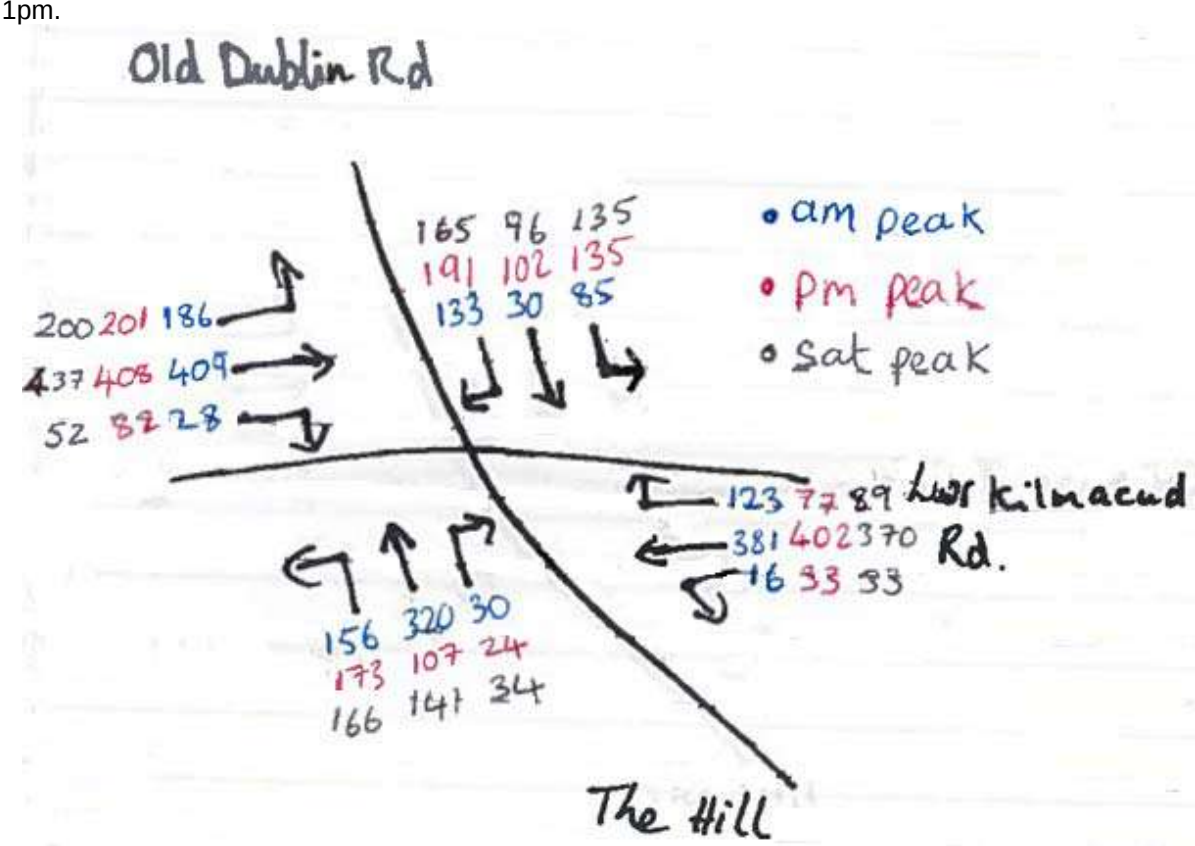


Figure 2.3 Existing Peak Hour Classified Turning Counts (vehicles)

2.3 Existing Traffic Signal Plan

Figure 2.3 is a screenshot from the SCATS intersection monitoring window for the junction showing the intersection layout and stage design. It shows that the existing junction has five stages and a cycle time of 120 seconds. Further information is provided in the Appendix on the phasing used for the traffic analysis, including minimum times required for each phase to accomodate pedestrian crossings.

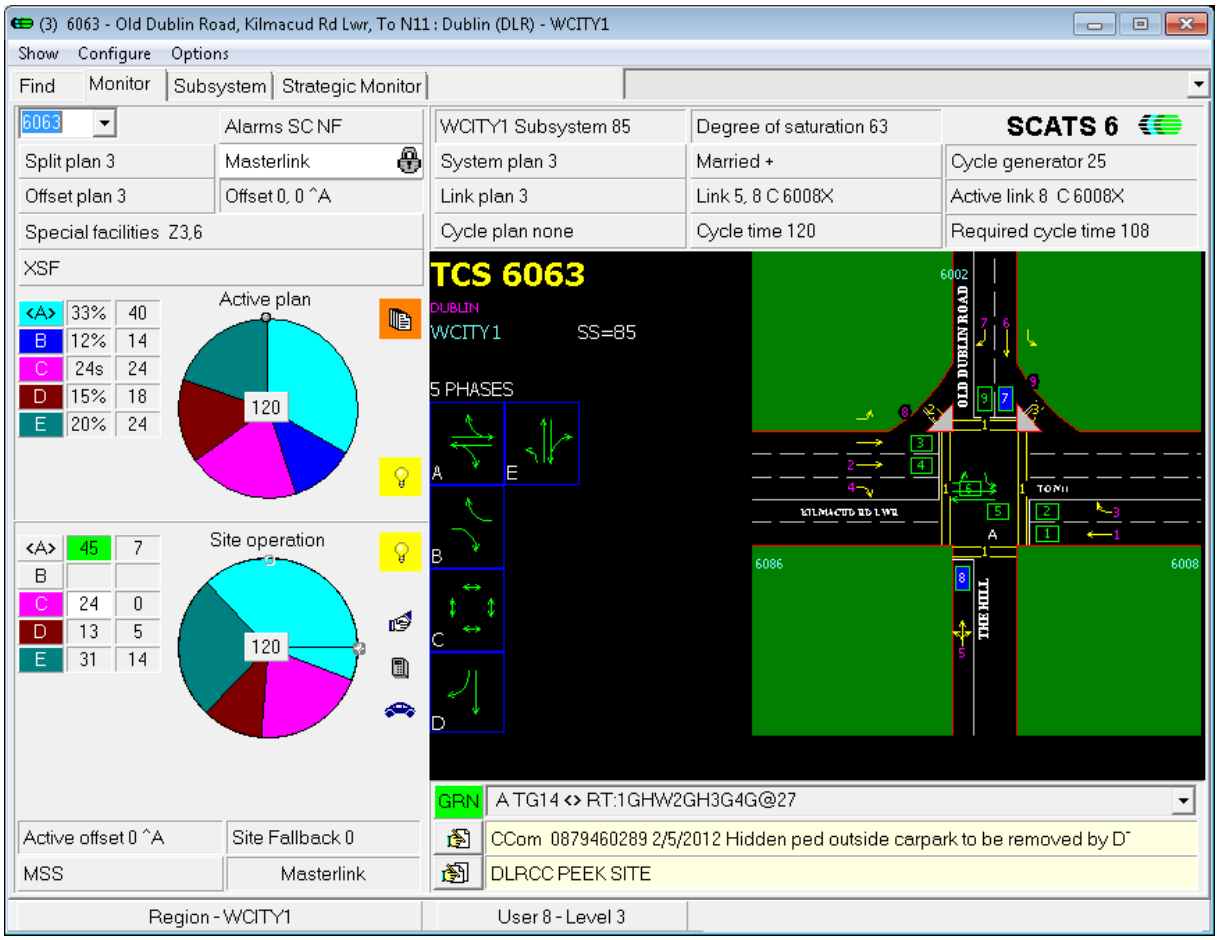


Figure 2.4 *Screenshot of SCATS main window*

2.4 Proposed Junction Layout Options

Eight case scenarios were tested for the junction as follows:

1. Non-Staggered, 3 lane approach from west, N11 slip open;
2. Non-Staggered, 2 lane approach from west, N11 slip open;
3. Non-Staggered, 3 lane approach from west, N11 slip closed;
4. Non-Staggered, 2 lane approach from west, N11 slip closed;
5. Staggered, 3 lane approach from west, N11 slip open;
6. Staggered, 2 lane approach from west, N11 slip open;
7. Staggered, 3 lane approach from west, N11 slip closed; and
8. Staggered, 2 lane approach from west, N11 slip closed.

Case Scenario 1

Figure 2.5 shows the junction layout for Case Scenario 1. It is a non-staggered intersection and includes one through traffic lane and left and right pockets on the Lower Kilmacud Road west approach and one traffic lane and a left pocket with capacity for five vehicles on The Hill (south approach). This option maintains the left slip lane from the N11 onto The Hill. It should be noted that pedestrian crossings will be provided on all legs of the intersection and 2 metre cycle lanes will be provided on Lower Kilmacud Road in both directions.

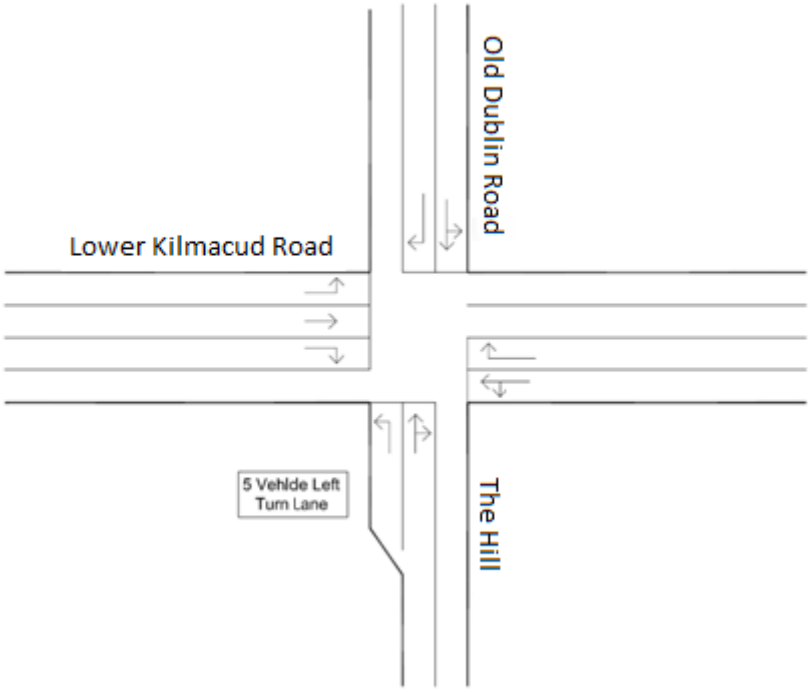


Figure 2.5 *Case Scenarios 1 & 3*

Case Scenario 2

Figure 2.6 shows the junction layout for Case Scenario 2. It is a non-staggered intersection and includes one left/through traffic lane and one through/right lane on the Lower Kilmacud Road west approach and one traffic lane and a left pocket with capacity for five vehicles on The Hill (south approach). This option maintains the left slip lane from the N11 onto The Hill. It should be noted that pedestrian crossings will be provided on all legs of the intersection and 2 metre cycle lanes will be provided on Lower Kilmacud Road in both directions.

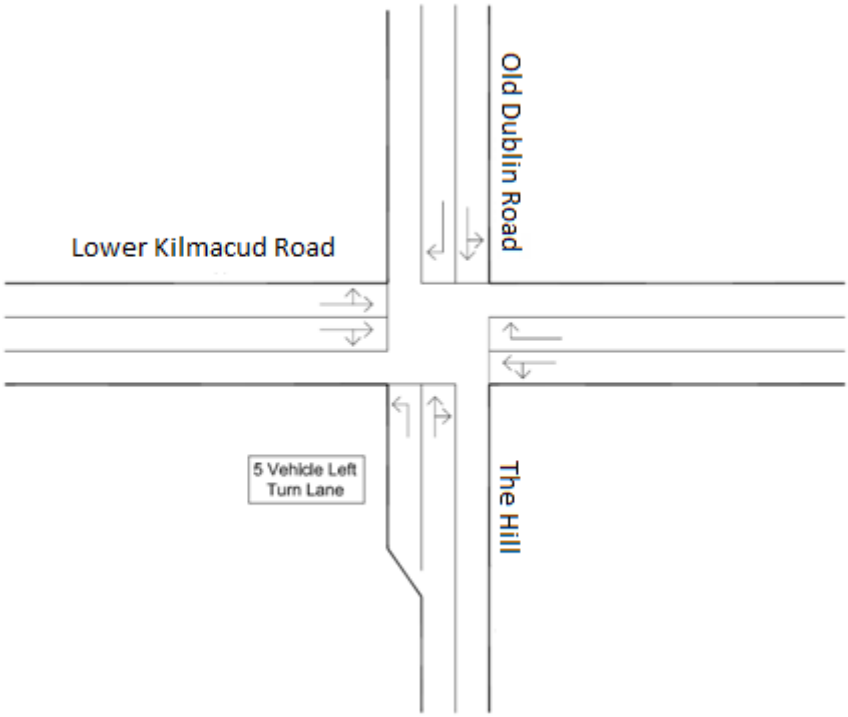


Figure 2.6 *Case Scenarios 2 & 4*

Case Scenario 3

Figure 2.5 shows the junction layout for Case Scenario 3. It is a non-staggered intersection and includes one through traffic lane and left and right pockets on the Lower Kilmacud Road west approach and one traffic lane and a left pocket with capacity for five vehicles on The Hill (south approach). This option involves the closure of the left slip lane from the N11 onto The Hill. It should be noted that pedestrian crossings will be provided on all legs of the intersection and 2 metre cycle lanes will be provided on Lower Kilmacud Road in both directions.

Case Scenario 4

Figure 2.6 shows the junction layout for Case Scenario 4. It is a non-staggered intersection and includes one left/through traffic lane and one through/right lane on the Lower Kilmacud Road west approach and one traffic lane and a left pocket with capacity for five vehicles on The Hill (south approach). This option involves the closure of the left slip lane from the N11 onto The Hill. It should be noted that pedestrian crossings will be provided on all legs of the intersection and 2 metre cycle lanes will be provided on Lower Kilmacud Road in both directions.

Case Scenario 5

Figure 2.7 shows the junction layout for Case Scenario 5. It is a staggered intersection and includes one through traffic lane and left and right pockets on the Lower Kilmacud Road west approach and one traffic lane and a left pocket with capacity for five vehicles on The Hill (south approach). This option maintains the left slip lane from the N11 onto The Hill. It should be noted that pedestrian crossings will be provided on all legs of the intersection and 2 metre cycle lanes will be provided on Lower Kilmacud Road in both directions.

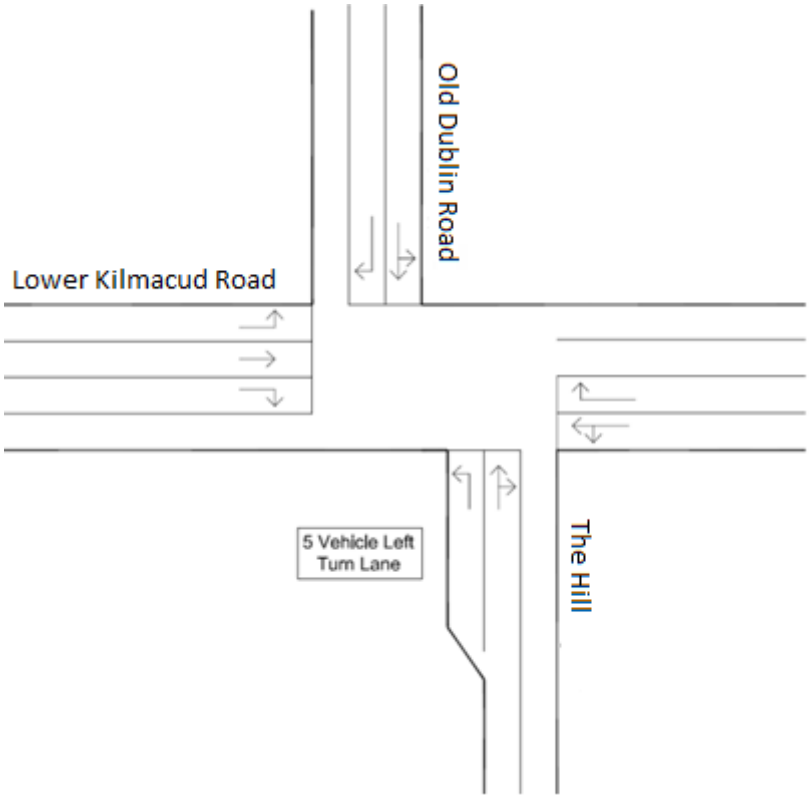


Figure 2.7 *Case Scenarios 5 & 7*

Case Scenario 6

Figure 2.8 shows the junction layout for Case Scenario 6. It is a staggered intersection and includes one left/through traffic lane and one through/right lane on the Lower Kilmacud Road west approach and one traffic lane and a left pocket with capacity for five vehicles on The Hill (south approach). This option maintains the left slip lane from the N11 onto The Hill. It should be noted that pedestrian crossings will be provided on all legs of the intersection and 2 metre cycle lanes will be provided on Lower Kilmacud Road in both directions.

Case Scenario 7

Figure 2.7 shows the junction layout for Case Scenario 7. It is a staggered intersection and includes one through traffic lane and left and right pockets on the Lower Kilmacud Road west approach and one traffic lane and a left pocket with capacity for five vehicles on The Hill (south approach). This option involves the closure of the left slip lane from the N11 onto The Hill. It should be noted that pedestrian crossings will be provided on all legs of the intersection and 2 metre cycle lanes will be provided on Lower Kilmacud Road in both directions.

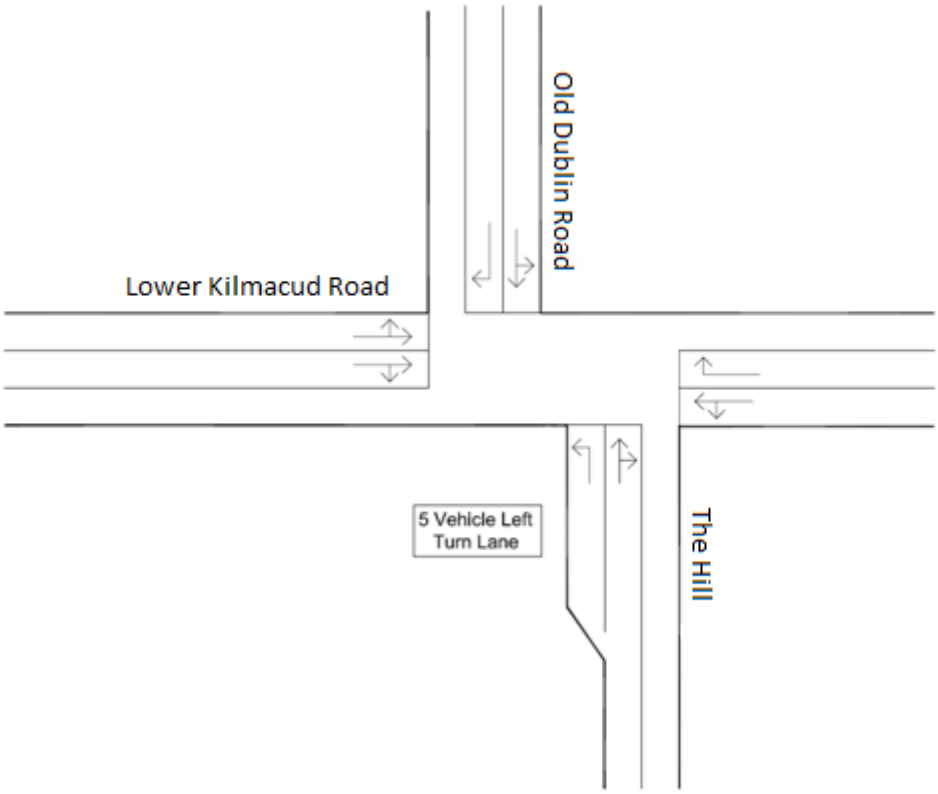


Figure 2.8 *Case Scenarios 6 & 8*

Case Scenario 8

Figure 2.8 shows the junction layout for Case Scenario 8. It is a staggered intersection and includes one left/through traffic lane and one through/right lane on the Lower Kilmacud Road west approach and one traffic lane and a left pocket with capacity for five vehicles on The Hill (south approach). This option involves the closure of the left slip lane from the N11 onto The Hill. It should be noted that pedestrian crossings will be provided on all legs of the intersection and 2 metre cycle lanes will be provided on Lower Kilmacud Road in both directions.

2.5 Proposed Traffic Signal Plan

Separate phasing diagrams are provided for the non-staggered (see Figure 2.9 (a)) and the staggered proposed junction layout options – see Figures 2.9 (a) and (b). Maximum cycle times of 120 seconds were applied to the models, with minimum all-traffic stage times set at 5 seconds and all-pedestrian stage times set at the time taken for a pedestrain to cross the widest crossing at a speed of 1.2 metres/ second. Intergreen times were set at 5 seconds for the non-staggered junction layouts and at 10 seconds for the staggered junction layouts. The increase in the intergreen time associated with the staggered junction layout would be used to compensate for the additional time required for vehicles to clear the intersection with the staggered geometry.

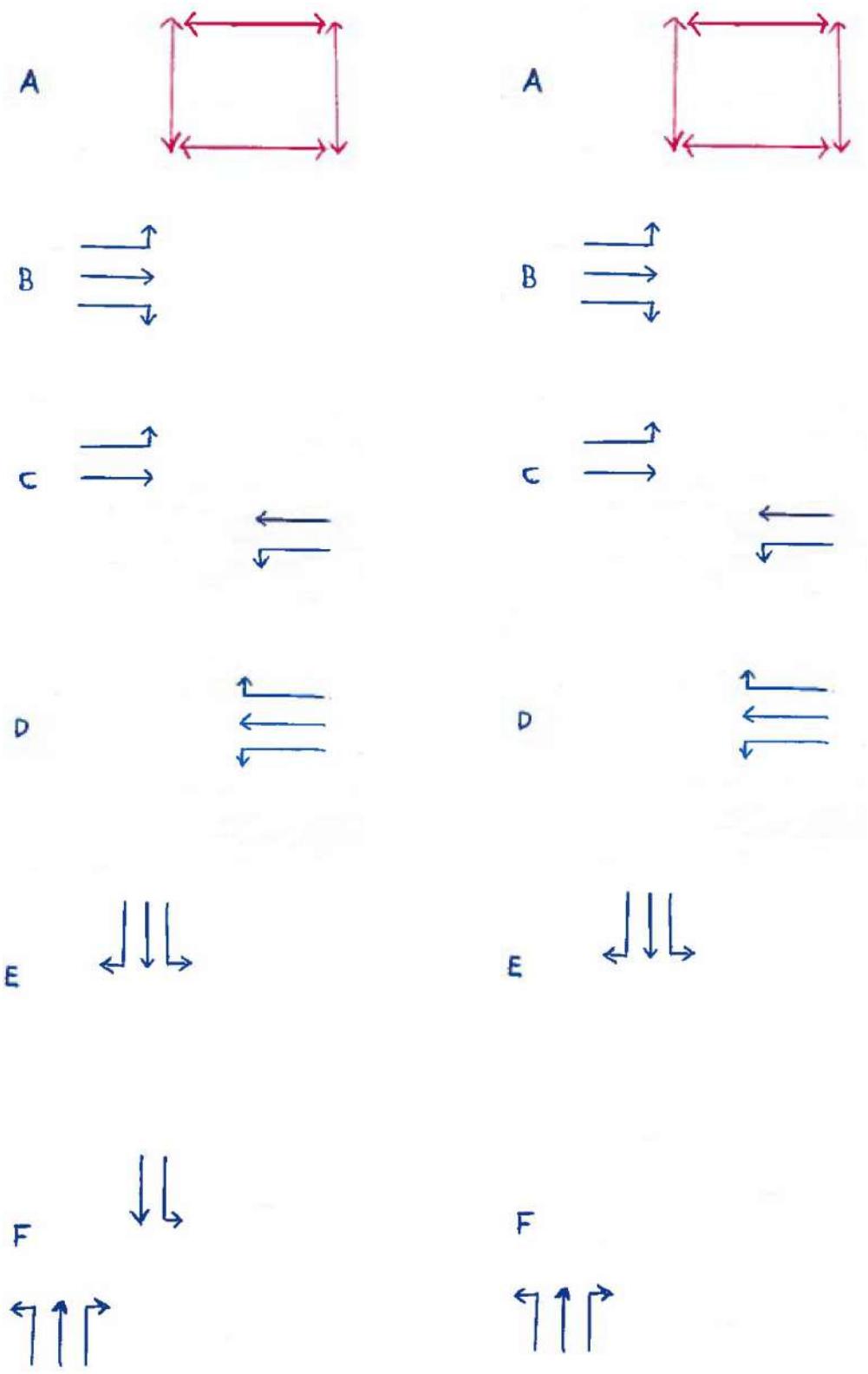


Figure 2.9 (a) non-staggered *(b) staggered*

2.6 Traffic Analysis

The results of the OSCADY traffic modelling are shown in Tables 2.1 and 2.2. These tables give values for degree of saturation, flow-capacity ratios and queue lengths. The complete OSCADY outputs are included in the Appendix.

Table 2.1 *OSCADY Outputs – Existing Layout (120s fixed cycle time, splits optimised)*

Period	Max. Degree of Saturation (%)	Max. RFC (ratio flow to capacity)	Max. Queue (vehs/lane)
am peak (08:00 – 09:00)	84.4	0.93	17.7
pm peak (17:00 – 18:00)	75.9	0.841	11.9
sat peak (12:00 – 13:00)	76.7	0.851	11.9

Table 2.1 shows that the existing junction is operating within capacity during the peak hours and has spare capacity to cater for additional demand.

Table 2.2 *OSCADY Outputs – Proposed Layout, Case Scenarios 1-8 (120s fixed cycle time, splits optimised)*

Case Scen.	Description	Max. Degree of Saturation (%)			Max. RFC (ratio flow to capacity)			Max. Queue (vehs/lane)		
		AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
1	NS, 3L, N11 open	86	76.7	77.5	0.952	0.848	0.868	20.3	12.1	12.0
2	NS, 2L, N11 open	99.1	88.9	90.3	1.096	0.979	1.010	46.9	24.0	26.9
3	NS, 3L, N11 closed	73.9	74.8	70.5	0.800	0.824	0.776	12.1	11.4	10.6
4	NS, 2L, N11 closed	88.2	83.9	86.2	0.971	0.924	0.949	22.7	18.3	20.6
5	S, 3L, N11 open	105.7	102.2	101.9	1.171	1.125	1.129	60.0	43.4	43.3
6	S, 2L, N11 open	128.0	123.4	129.0	1.417	1.359	1.420	144.3	131.1	157.3
7	S, 3L, N11 closed	94.1	93.4	90.5	1.036	1.029	0.996	31.9	30.4	24.8
8	S, 2L, N11 closed	112.6	117.5	124.8	1.239	1.294	1.374	86.9	108.5	142.0

Table 2.2 shows the results for the eight options described in Section 2.4. All four staggered intersection options (Options 5 – 8) operated above capacity during the peak hours. Of the non-staggered options, Option 2 (two approach lanes on the west leg of the intersection and N11 slip lane open) was also found to operate above capacity.

The results show that non-staggered junction layout Options 1, 3, and 4 operate within capacity during the peak hours and, out of the eight options, are the only acceptable solutions from an operational point of view.

Therefore, the staggered intersection layout is not feasible and it is necessary to either provide three lanes on the junctions west approach or to close the N11 slip lane on the Hill approach or implement both of these measures to achieve an acceptable level of junction operation.

3. Lower Kilmacud Road Car Park Access junction

3.1 Existing Junction Layout

The existing junction layout is shown in Figure 3.1 below.

Figure 3.1 *Existing Junction Layout*

3.2 Existing Traffic Counts

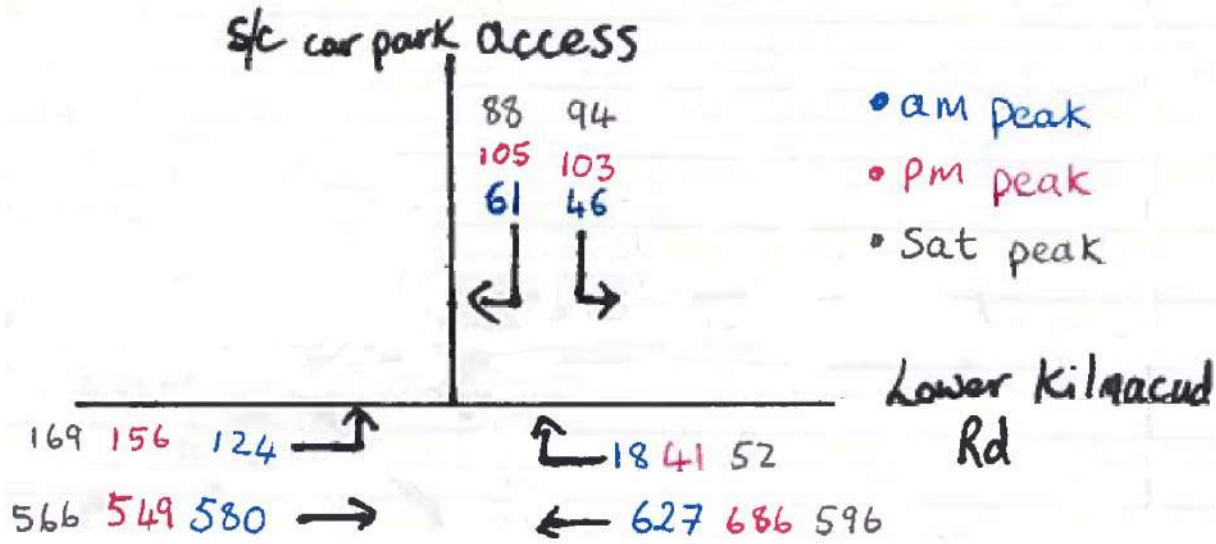


Figure 3.2 *Existing Peak Hour Classified Turning Counts (vehicles)*

3.3 Proposed Junction Layout Options

Two junction layout options were modelled using PICADY as follows:

1. Option 1 (shown in Figure 3.3) to include:
   - West approach: one left/though traffic lane;
   - East approach: one through traffic lane and one right turning pocket; and
   - North approach: one left and one right turning lane.

2. Option 2 to include:
   - West approach: one left/though traffic lane;
   - East approach: one through/right turning lane; and
   - North approach: one left and one right turning lane.

Traffic and cycle lanes along Lower Kilmacud Road would be three and two metres wide, respectively.

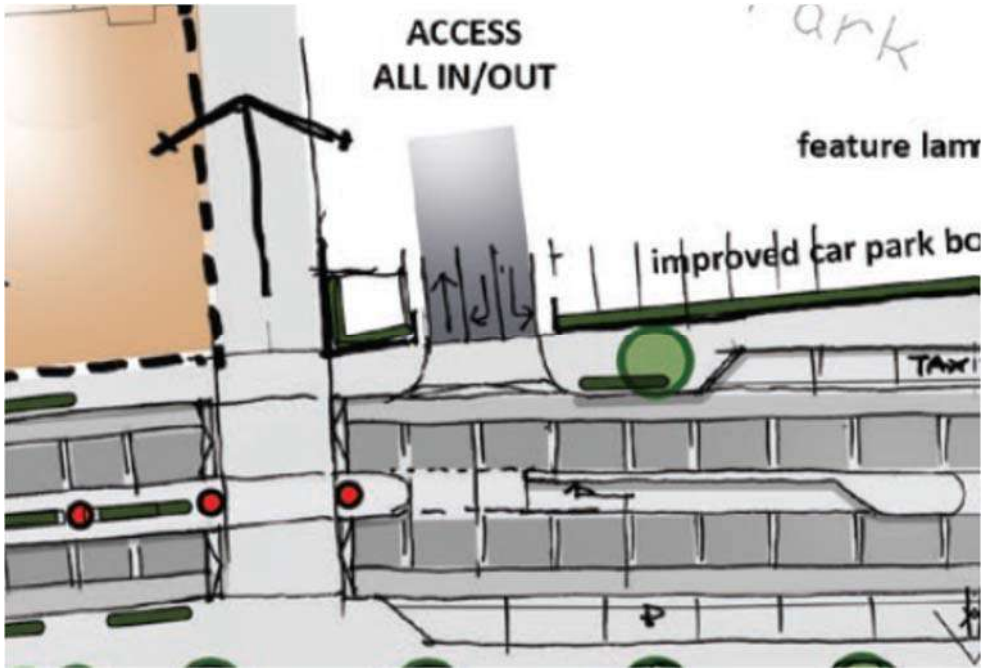


Figure 3.3 *Proposed Junction Layout – Option 1*

3.4 Traffic Analysis

The results of the PICADY traffic modelling are shown in Tables 3.1 and 3.2.

Table 3.1 *PICADY Outputs – Option 1*

Period	Max. RFC (ratio flow to capacity)	No. Right turning veh	Delay for traffic on Lwr Kilmacud Rd turning right into car park (sec/veh)	No. Vehs travelling straight through	Delay for through traffic travelling west on Lwr Kilmacud Rd (sec/veh)	Total Delay (sec)
am peak (08:00 – 09:00)	0.403	18	7.8	627	0	140
pm peak (17:00 – 18:00)	0.455	41	7.8	686	0	320
sat peak (12:00 – 13:00)	0.456	52	8.4	596	0	437

Table 3.1 shows that the junction is operating within capacity during the am, pm and Saturday peak hours for Option 1, with spare capacity to cater for additional demand and the total delay at the junction is relatively low.

Table 3.2 *PICADY Outputs – Option 2*

Period	Max. RFC (ratio flow to capacity)	No. Right turning vehs	Delay for traffic on Lwr Kilmacud Rd turning right into car park (sec/veh)	No. Vehs travelling straight through	Delay for through traffic travelling west on Lwr Kilmacud Rd (sec/veh)	Total Delay (sec)
am peak (08:00 – 09:00)	0.473	18	7.2	627	7.2	4644
pm peak (17:00 – 18:00)	0.542	41	11.4	686	11.4	8288
sat peak (12:00 – 13:00)	0.535	52	12.6	596	12.6	8165

Table 3.2 shows that the junction is operating within capacity during the am, pm and Saturday peak hours for Option 2, with spare capacity to cater for additional demand. However, the delay at the junction is substantially greater for Option 2 than for Option 1.

Therefore, Option 1 is recommended at the junction.

4. Stillorgan Junction

4.1 Existing Junction Layout

The existing junction layout is shown in Figure 4.1 below.

Figure 4.1 Existing Junction Layout

4.2 Existing Traffic Counts

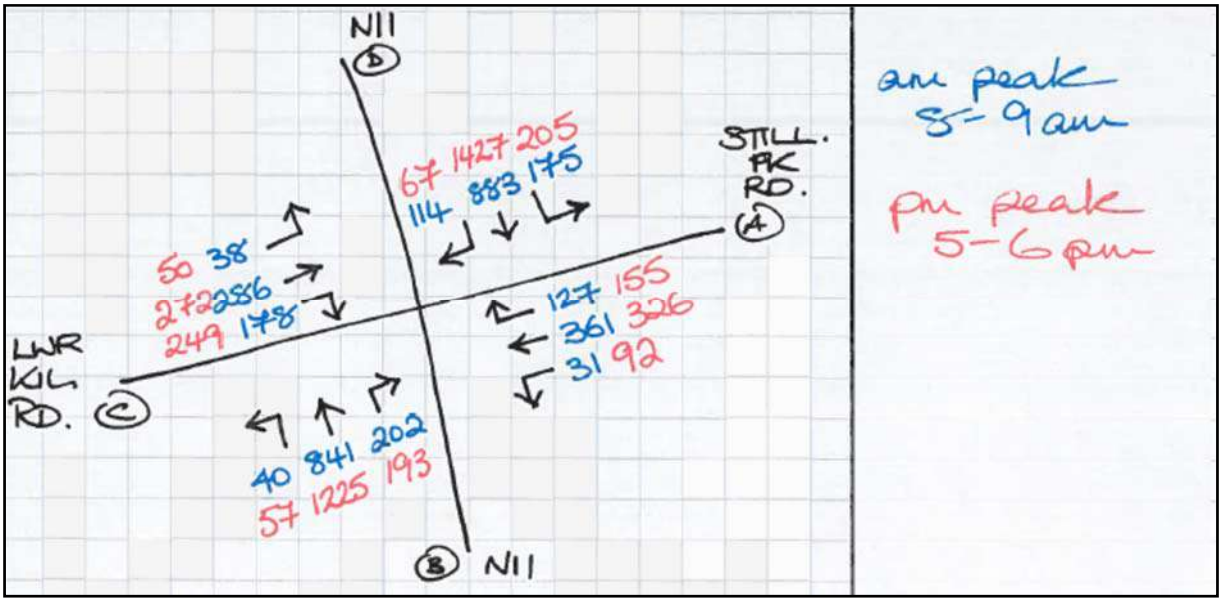


Figure 4.2 *Existing Peak Hour Classified Turning Counts (vehicles)*

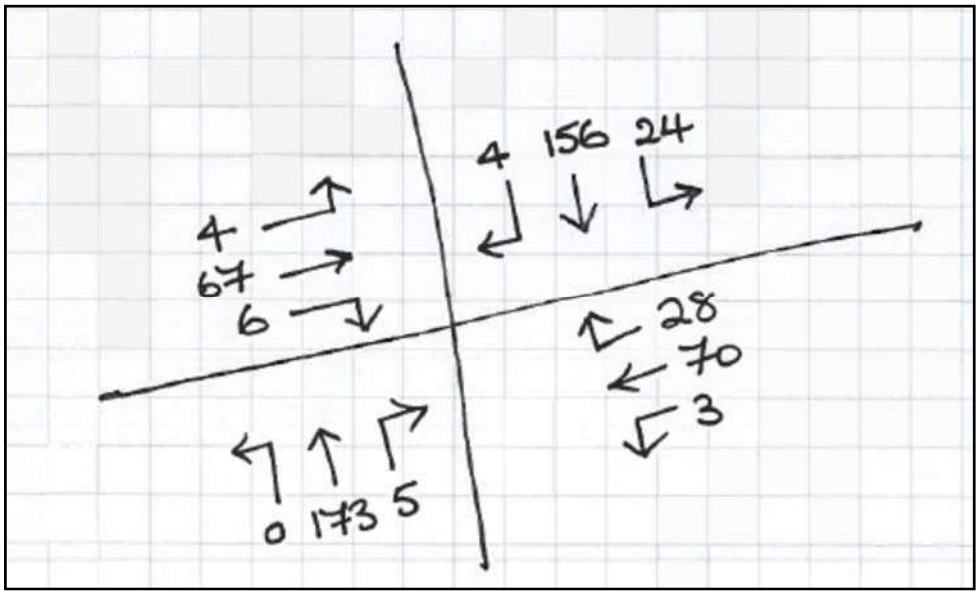


Figure 4.3 *Existing 12-hour Bicycle Turning Counts*

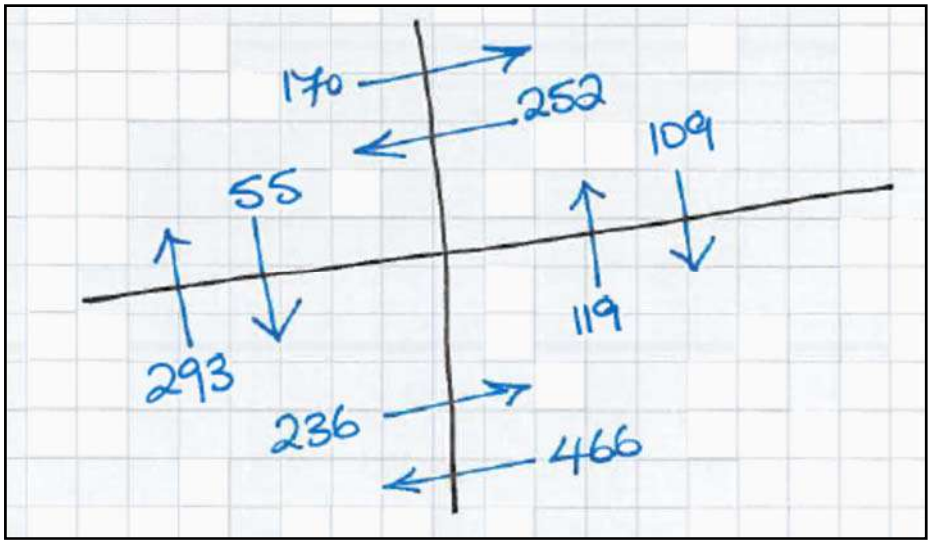


Figure 4.4 *Existing 12-hour Pedestrian Crossing Counts*

4.3 Existing Traffic Signal Plan

- Five stages
- 120s cycle time

Figure 4.5 *Existing Traffic Signal Plan*

4.4 Proposed Junction Layout

The junction layout proposed as part of the N11 scheme includes the following:

- Left-turn slip lane onto N11 from Lower Kilmacud Road to be removed
- Left-turn slip lane onto N11 from Stillorgan Park Road to be removed
- Existing traffic lanes on N11 to be reduced (to a minimum of 3.25m) in order to provide widened central islands on N11 at staggered pedestrian crossings.

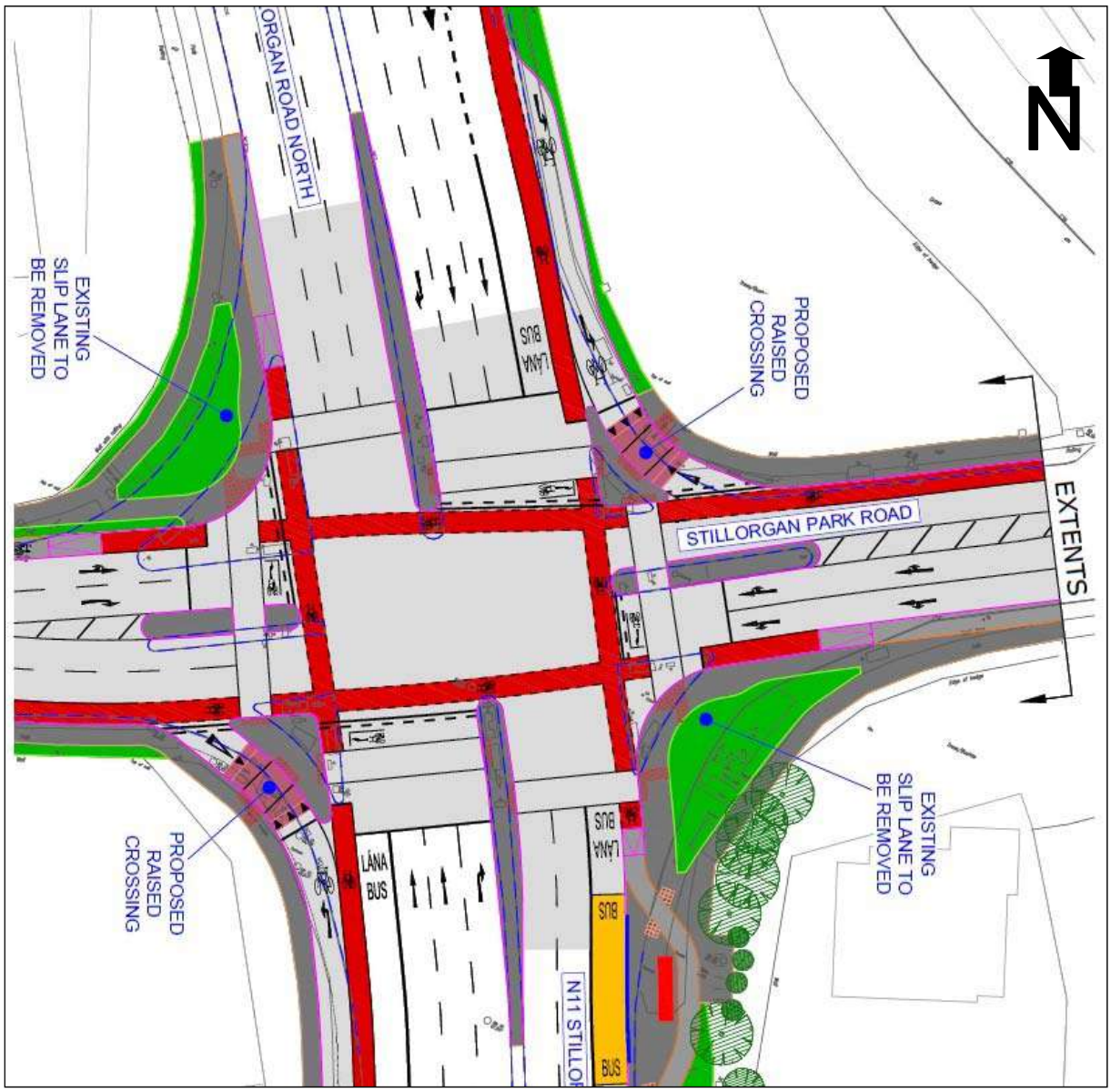


Figure 2.6 Proposed Junction Layout

4.5 Proposed Traffic Signal Plan

Existing signal plan to be retained.

4.6 Traffic Analysis

The results of the OSCADY traffic modelling are shown in the following tables. The tables give values for degree of saturation, flow-capacity ratio and queue lengths.

Table 4.1 *OSCADY Outputs – Existing Layout (120s fixed cycle time, splits optimised)*

Period	Max. Degree of Saturation		Max. RFC (ratio flow to capacity)		Max. Queue (vehs/lane)	
	Existing traffic	With reassigned traffic	Existing traffic	With reassigned traffic	Existing traffic	With reassigned traffic
am peak (08:00 – 09:00)	74.0%	74.8%	0.814	0.894	11	11.2
pm peak (17:00 – 18:00)	83.9%	84.0%	0.917	0.922	18	17.9

The table above shows that the existing junction is operating within capacity during the peak hours and has spare capacity to cater for additional demand.

Table 4.2 *OSCADY Outputs – Proposed Layout (120s fixed cycle time, splits optimised)*

Period	Max. Degree of Saturation		Max. RFC (ratio flow to capacity)		Max. Queue (vehs/lane)	
	Existing traffic	With reassigned traffic	Existing traffic	With reassigned traffic	Existing traffic	With reassigned traffic
am peak (08:00 – 09:00)	80.6%	81.2%	0.888	0.894	13	12.9
pm peak (17:00 – 18:00)	89.7%	89.7%	0.988	0.988	24	24

The table above shows that, due to the N11 scheme, the degree of saturation at the proposed junction has increased. This is due to the shortened left-turn pockets and the removal of the slip lanes on the Lower Kilmacud Road and Stillorgan Park Road approaches to the junction. There is reserve capacity in the am peak. However, the junction is reaching capacity in the pm peak.

These tables also show that the impact of the additional left turning traffic (reassigned traffic) associated with the closure of the N11 slip lane onto the Hill has a negligible impact on the performance of the junction.

Clifton Scannell Emerson Associates Limited, Civil & Structural Consulting Engineers
Seafort Lodge, Castledawson Avenue, Blackrock, Co. Dublin, Ireland.

T. +353 1 288 5006 F. +353 1 283 3466 E. info@csea.ie W. www.csea.ie

Appendix C: Parking and Traffic Surveys on The Hill

Parking and Traffic surveys on the Hill

While the data collected in sections 3.1 to 3.7 was used to inform the initial design of the options, the surveys described in this section were conducted following consultation with local businesses. The initial and emerging preferred design options are described in detail in Chapters 4 and 7, with one proposed design option involving the closure of the N11 slip lane onto the Hill. In order to establish the potential impact this could have on local businesses – in particular on a veterinary practise on St Bridgid's Church Road and on the Orchard Pub – parking and traffic surveys were conducted in the vicinity of the Hill.

CSEA conducted traffic and parking surveys on Friday 22nd January 2016, with observations made adjacent the junction of the Hill and Glenalbyn Road during three time periods as follows:

- 09:30 -11:30;
- 12:30 -14:30; and
- 16:00 -18:00.

It should be noted that the surveys were conducted on a Friday to reflect the Orchard pubs busiest weekday.

The following information was gathered from the surveys:

1. The number of vehicles parked in 4 separate parking areas; the Veterinary Practice, On-Street Parking (both side of the Hill), Orchard Pub Car Park and Blakes Car Park (See Table 1). It also provides information on the direction from which they came (i.e. The Hill, Glenalbyn Road, N11 Slip Road).
2. The number of Pedestrians entering the Orchard Pub and the direction from which they came (i.e. The Hill, Glenalbyn Road). See Table 1 below.
3. The amount of traffic approaching the survey area from the N11 Slip lane that continued through the junction of the Hill, Lower Kilmacud Road and Old Dublin Road without stopping in any of the 4 parking areas listed above, and traffic from the N11 that continued onto Glenalbyn Road without stopping in any of the 4 parking areas listed above (See Table 2).

Orchard Pub

Table 1 shows the results of the parking survey. With respect to vehicles and pedestrians entering the Orchard Car Park/ Pub during the 6 hour survey period; 12% of vehicles/pedestrians entered the pub between 9:30-11:30, 46% between 12:30-14:30 and 42% between 16:00-18:00.

21% of total trade during these 6 hours comprised vehicles coming from the N11, 28% comprised trade coming from Glenalbyn Road (94% of which were vehicles, 6% were pedestrians), and 51% comprised trade coming from The Hill (67% of which were vehicles, 33% were pedestrians).

Blakes Car Park

The results of the parking survey showed that, with respect to the Blakes Car Park; 53% of vehicles recorded during the 6 hour survey period entered the car park between 9:30-11:30, 28% between 12:30-14:30 and 19% between 16:00-18:00.

22% of vehicles entering the car park during these 6 hours comprised vehicles coming from the N11, 33% comprised vehicles coming from Glenalbyn Road, and 45% comprised vehicles coming from The Hill.

Veterinary Practice

The results of the parking survey showed that, with respect to parking at the veterinary practice; 55% of vehicles recorded during the 6 hour survey period entered this parking area between 9:30-11:30, 15% between 12:30-14:30 and 30% between 16:00-18:00.

15% of vehicles entering the car park during these 6 hours comprised vehicles coming from the N11, 30% comprised vehicles coming from Glenalbyn Road, and 55% comprised vehicles coming from The Hill.

On-Street Parking.

The results of the parking survey showed that, with respect to on-street parking located on both sides of The Hill; 28% of vehicles recorded during the 6 hour survey period entered on-street parking spaces between 9:30-11:30, 32% between 12:30-14:30 and 40% between 16:00-18:00.

17% of vehicles entering on-street parking spaces during these 6 hours comprised vehicles coming from the N11, 32% comprised vehicles coming from Glenalbyn Road, and 51% comprised vehicles coming from The Hill.

Table 1: Parking survey results detailing number of vehicles parked in 4 parking areas and direction from which they came

Parking Area	**Time Period**	**Road of Origin**						**Notes**
		N11 Slip		**Glenalbyn Road**		**The Hill**		
		No. Veh	*% business Origin N11*	*No. Veh*	*No. Ped*	*No. Veh*	*No. Ped*	
Orchard Pub Car Park	09:30-11:30	5	25%	6	0	6	3	1 veh from Glenalbyn Road bin truck
	12:30-14:30	16	21%	22	3	24	11	
	16:00-18:00	13	19%	16	0	26	14	1 veh from the Hill = motorbike; 13 veh from N11 incl. 1 veh parked on-street carrying pub patrons
Total	**6 hours**	**34**	**21%**	**44**	**3**	**56**	**28**	
Blakes Site Car Park	09:30-11:30	4	21%	8	0	7	0	
	12:30-14:30	3	30%	2	0	5	0	
	16:00-18:00	1	14%	2	0	4	0	
Total	**6 hours**	**8**	**22%**	**12**	**0**	**16**	**0**	
Veterinary Practice	09:30-11:30	1	9%	2	0	8	0	1 veh from Glenalbyn Rd = delivery
	12:30-14:30	2	67%	1	0	0	0	
	16:00-18:00	0	0%	3	0	3	0	
Total	**6 hours**	**3**	**15%**	**6**	**0**	**11**	**0**	
On-street Parking	09:30-11:30	6	24%	7	0	12	0	
	12:30-14:30	6	21%	11	0	11	0	
	16:00-18:00	3	9%	10	0	22	0	4 vehicles parked on-street from N11 but 1 discounted as it carried pub patrons – counted above
Total	**6 hours**	**15**	**17%**	**28**	**0**	**45**	**0**	

Traffic approaching survey area from N11 Slip Road

Table 2 shows the results of the traffic survey. It focused on obtaining information with respect to travel patterns of traffic approaching the survey area from the N11 slip road.

The results show that 360 vehicles entered the survey area from the N11 slip road from 09:30-11:30. 94% of these vehicles passed through the junction of The Hill, Old Dublin road and Lower Kilmacud Road without stopping to park in any of the parking areas listed above. A further 2% continued along Glenalbyn Road without stopping to park, with the remaining 4% stopping to park in one of the four parking areas listed above.

Similarly, 397 vehicles entered the survey area from the N11 slip road from 12:30-14:30. 90% of these vehicles passed through the junction of The Hill, Old Dublin Road and Lower Kilmacud Road without stopping to park in any of the parking areas listed above. A further 3% continued along Glenalbyn Road without stopping to park, with the remaining 7% stopping to park in one of the four parking areas listed above.

And finally, 339 vehicles entered the survey area from the N11 slip road from 16:00-18:00. 90% of these vehicles passed through the junction of The Hill, Old Dublin road and Lower Kilmacud Road without stopping to park in any of the parking areas listed above. A further 5% continued along Glenalbyn Road without stopping to park, with the remaining 5% stopping to park in one of the four parking areas listed above.

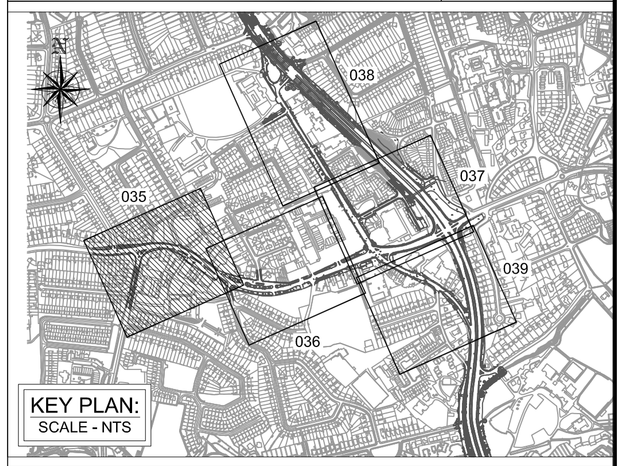
Table 2: Travel patterns of traffic approaching survey area from the N11 slip road

Time Period	N11 traffic that continues along/Passes through/ stops at						Total
	Glenalbyn Road		Junction of the Hill/Old Dublin Rd/Lwr Kilmacud Rd		Parking area listed above		
	No. veh	Proportion of total	No. veh	Proportion of total	No. veh	Proportion of total	
09:30-11:30	6	2%	338	94%	16	4%	360
12:30-14:30	10	3%	360	90%	27	7%	397
16:00-18:00	17	5%	304	90%	18	5%	339

Appendix D: Cost Estimate

This drawing is produced using the Irish Tranverse Mercator (ITM) Geographic Coordinate System

A1



LEGEND:

- EXISTING KERBLINE
- PROPOSED KERBLINE
- PROPOSED 50mm KERB BETWEEN CYCLETRACK AND FOOTPATH
- PROPOSED TACTILE PAVING
- PROPOSED KASSEL KERBLINE
- PROPOSED CARRIAGEWAY BUILD-UP / RESURFACING
- PROPOSED ARCHITECTURAL CARRIAGEWAY SURFACE
- PROPOSED ARCHITECTURAL CARRIAGEWAY SURFACE STRIP
- PROPOSED SHARED SURFACE
- PROPOSED RAISED CYCLETRACK
- PROPOSED MANDATORY CYCLELANE
- PROPOSED LANDSCAPED / GRASSED AREA
- PROPOSED RAMP / RAISED CROSSING AREA
- PROPOSED BUS STOP / LANE
- PROPOSED FOOTPATH
- PROPOSED PAVED ENTRANCE
- PROPOSED WALL
- EXISTING WALL
- PROPOSED TREE PLANTING
- EXISTING TREE
- PROPOSED PLANTER
- PROPOSED BENCH

Revision	Description	Initials	Date

Clifton Scannell Emerson Associates

Clifton Scannell Emerson Associates Limited
Consulting Engineers,
Seafort Lodge,
Castledawson Avenue,
Blackrock, Co. Dublin,
Ireland.

T: +353 1 288 5006
F: +353 1 283 3466
E: info@csea.ie
W: www.csea.ie

BRADY SHIPMAN MARTIN

Landscape Architects Planners
Environmental Consultants
Block 6, Belfield Office Park,
Dublin 4

T: +353(0)1 2081900
F: +353(0)1 2081911
E: mail@bsmconsult.com

DUN LAOGHAIRE RATHDOWN COUNTY COUNCIL

Client

STILLORGAN VILLAGE AREA
MOVEMENT FRAMEWORK PLAN

Project

PROPOSED STILLORGAN VILLAGE AND N11 LAYOUT
SHEET 1 OF 5

Dwg. Title

Drawn By: CP | Date: APRIL 2017

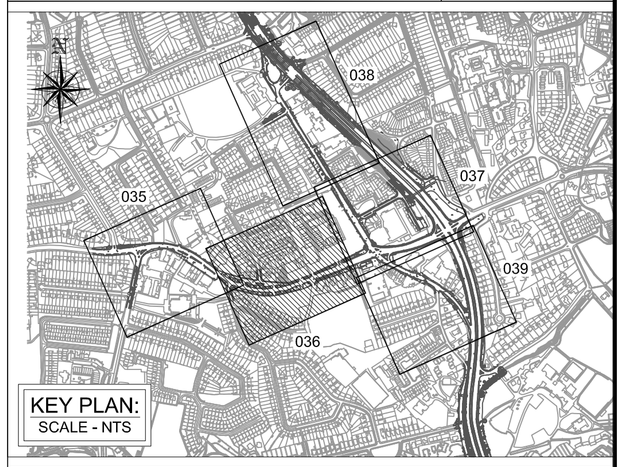
Checked by: GE | Scale: 1:500 @ A1

Dwg. Progress: DRAFT

Dwg. No.: 14_059_035

This drawing is produced using the Irish Tranverse Mercator (ITM) Geographic Coordinate System

A1



KEY PLAN:
SCALE - NTS

TEXACO SERVICE STATION

KINGSTOWN MOTORS

PETER-MARK

EDDIE ROCKETS

STILLORGAN VILLAGE CENTRE

MC DONALDS

STARBUCKS

TESCO

EXISTING PEDESTRIAN CROSSING TO BE UPGRADED TO TOUCAN CROSSING

2.00m FOOTPATH
2.10m PARKING
4.00m CARRIAGEWAY
10.37m GRASS VERGE
2.00m CYCLETRACK
3.00m CARRIAGEWAY
2.75m RIGHT TURN LANE
3.00m CARRIAGEWAY
2.00m CYCLETRACK
2.91m GRASS VERGE
2.52m FOOTPATH
6.00m GRASS VERGE

LOWER KILMACUD ROAD

POSSIBLE FUTURE POCKET PARK (SHOWN HATCHED)

PROPOSED RELOCATED BUS STOP

4.62m FOOTPATH
2.00m CYCLETRACK
3.41m CARRIAGEWAY
2.02m ISLAND
3.00m CARRIAGEWAY
2.00m CYCLELANE
3.00m GRASS VERGE
3.00m FOOTPATH

PROPOSED FUTURE TESCO EXTENSION

2 WAY PEDESTRIAN ACCESS

INWARD VEHICLE MOVEMENTS PERMITTED AT ENTRANCE SHOWN BY RED ARROWS

NEW VEHICLE ENTRANCE

PROPOSED TAXI RANK

PROPOSED UNCONTROLLED TOUCAN CROSSING

LOWER KILMACUD ROAD

IMAGE 2

IMAGE 1

FUTURE 2ND ACCESS TO CARPARK

EXISTING CARPARK ENTRANCE REMOVED

EXISTING BUS STOP UPGRADED

VEHICLE MOVEMENTS PERMITTED AT ENTRANCE SHOWN BY RED ARROWS

KBC BANK

PROPOSED UNCONTROLLED TOUCAN CROSSING

9.77m FOOTPATH
2.85m PARKING
2.00m CYCLETRACK
3.41m CARRIAGEWAY
2.75m RIGHT TURN LANE
3.00m CARRIAGEWAY
2.00m CYCLETRACK
2.85m TAXI PARKING
2.29m FOOTPATH

3.54m FOOTPATH
2.00m CYCLETRACK
3.41m CARRIAGEWAY
2.75m RIGHT TURN LANE
3.00m CARRIAGEWAY
2.00m CYCLETRACK
3.12m FOOTPATH

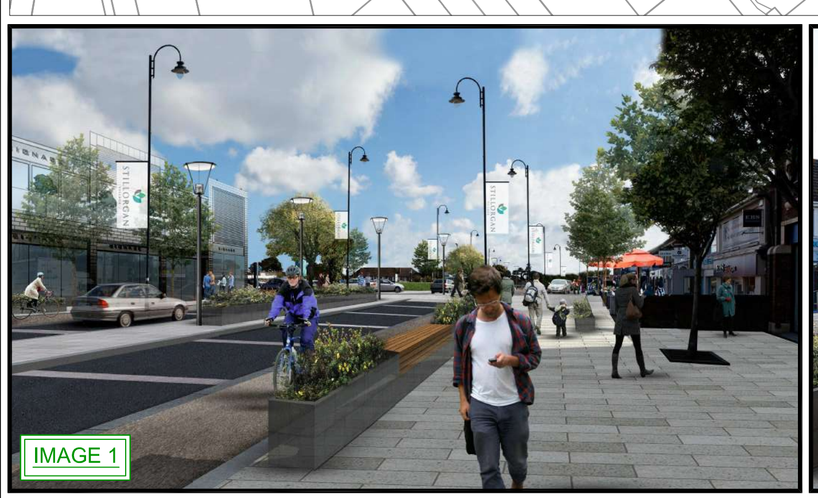


IMAGE 1


IMAGE 2

LEGEND:

- EXISTING KERBLINE
- PROPOSED KERBLINE
- PROPOSED 50mm KERB BETWEEN CYCLETRACK AND FOOTPATH
- PROPOSED TACTILE PAVING
- PROPOSED KASSEL KERBLINE
- PROPOSED CARRIAGEWAY BUILD-UP / RESURFACING
- PROPOSED ARCHITECTURAL CARRIAGEWAY SURFACE
- PROPOSED ARCHITECTURAL CARRIAGEWAY SURFACE STRIP
- PROPOSED SHARED SURFACE
- PROPOSED RAISED CYCLETRACK
- PROPOSED MANDATORY CYCLELANE
- PROPOSED LANDSCAPED / GRASSED AREA
- PROPOSED RAMP / RAISED CROSSING AREA
- PROPOSED BUS STOP / LANE
- PROPOSED FOOTPATH
- PROPOSED PAVED ENTRANCE
- PROPOSED WALL
- EXISTING WALL
- PROPOSED TREE PLANTING
- EXISTING TREE
- PROPOSED PLANTER
- PROPOSED BENCH

Revision	Description	Initials	Date

Clifton Scannell Emerson Associates

Clifton Scannell Emerson Associates Limited
Consulting Engineers,
Seafort Lodge,
Castledawson Avenue,
Blackrock, Co. Dublin,
Ireland.

T: +353 1 288 5006
F: +353 1 283 3466
E: info@csea.ie
W: www.csea.ie

BRADY SHIPMAN MARTIN

Landscape Architects Planners
Environmental Consultants
Block 6, Belfield Office Park,
Dublin 4

T: +353(0)1 2081900
F: +353(0) 1 2081911
E: mail@bsmconsult.com

DUN LAOGHAIRE RATHDOWN COUNTY COUNCIL

Client

STILLORGAN VILLAGE AREA
MOVEMENT FRAMEWORK PLAN

Project

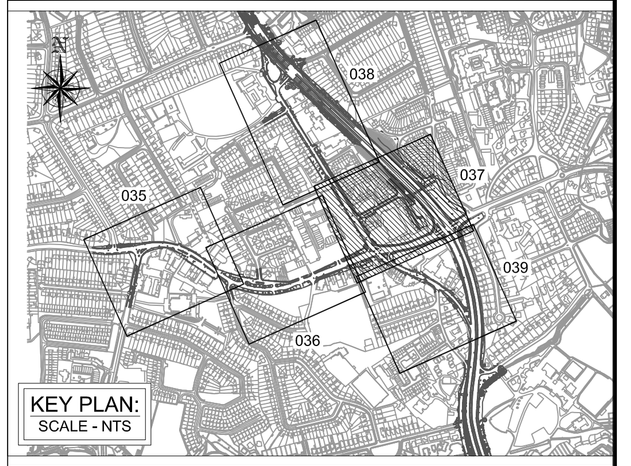
PROPOSED STILLORGAN VILLAGE AND N11 LAYOUT
SHEET 2 OF 5

Dwg. Title

Drawn By: CP
Date: APRIL 2017
Checked by: GE
Scale: 1:500 @ A1
Dwg. Progress: DRAFT
Dwg. No.: 14_059_036

This drawing is produced using the Irish Tranverse Mercator (ITM) Geographic Coordinate System

A1



KEY PLAN:
SCALE - NTS

EDDIE ROCKETS

MC DONALDS

OLD DUBLIN ROAD

EXISTING BUS STOP UPGRADED

3.00m FOOTPATH
3.00m CARRIAGEWAY
3.00m RIGHT TURN LANE
3.00m CARRIAGEWAY
4.76m FOOTPATH
3.09m CARRIAGEWAY
1.80m FOOTPATH

EXISTING PEDESTRIAN CROSSINH UPGRADED TO TOUCAN CROSSING

INWARD VEHICLE MOVEMENTS PERMITTED AT ENTRANCE SHOWN BY RED ARROWS

EXISTING BUS STOP UPGRADED

9.98m FOOTPATH
3.00m CARRIAGEWAY
3.00m CENTRAL ISLAND
3.00m CARRIAGEWAY
3.00m FOOTPATH

VEHICLE MOVEMENTS PERMITTED AT ENTRANCE SHOWN BY RED ARROWS

ST. LAURENCES PARK

EXISTING BUS STOP TO BE UPGRADED

2.43m CYCLETRACK
3.63m FOOTPATH
3.00m BUS BAY
3.25m BUS LANE
3.25m CARRIAGEWAY
3.25m CARRIAGEWAY
2.81m GRASSED ISLAND
3.25m CARRIAGEWAY
3.25m CARRIAGEWAY
3.25m BUS LANE
2.00m CYCLETRACK
2.30m FOOTPATH

2.66m FOOTPATH
3.10m CARRIAGEWAY
2.10m PARKING
2.35m FOOTPATH

PROPOSED BUS STOP

PROPOSED STEPS

EXISTING PEDESTRIAN AND CYCLIST RAMP AND STEPS FROM EXISTING UNDERPASS

EXISTING UNDERPASS

1.09m GRASS VERGE
2.00m FOOTPATH
2.00m CYCLETRACK
3.25m BUS LANE
3.25m CARRIAGEWAY
3.25m CARRIAGEWAY
1.72m GRASSED ISLAND
3.00m RIGHT TURN LANE
3.25m CARRIAGEWAY
3.25m CARRIAGEWAY
3.25m BUS LANE
2.00m CYCLETRACK
2.00m FOOTPATH
1.00m GRASS VERGE

1.00m GRASS VERGE
2.02m FOOTPATH
3.00m CARRIAGEWAY
3.00m CARRIAGEWAY
5.00m PARKING
4.21m FOOTPATH

PEDESTRIAN LINK ROUTE

LEISUREPLEX STILLORGAN

LIBRARY

11.03m FOOTPATH
2.85m PARKING
3.00m CARRIAGEWAY
3.00m RIGHT TURN LANE
3.00m CARRIAGEWAY
3.00m FOOTPATH

PROPOSED UNCONTROLLED TOUCAN CROSSING

IMAGE 4

VEHICLE MOVEMENTS PERMITTED AT ENTRANCE SHOWN BY RED ARROWS

POSSIBLE STATUE / STREET ART

PROPOSED BUS STOP

OLD DUBLIN ROAD

LOWER KILMACUD ROAD

2.00m FOOTPATH
2.00m CYCLETRACK
3.00m CARRIAGEWAY
2.75m RIGHT TURN LANE
2.75m RIGHT TURN LANE
3.00m CARRIAGEWAY
2.00m CYCLETRACK
2.56m FOOTPATH

EXTENTS

EXISTING BUS STOP UPGRADED

PROPOSED ZEBRA CROSSING

PROPOSED BUS STOP

IMAGE 3

11.15m FOOTPATH
3.00m BUS BAY
2.00m CYCLELANE
3.00m CARRIAGEWAY
2.75m RIGHT TURN LANE
3.00m CARRIAGEWAY
2.00m CYCLELANE
3.00m BUS BAY
8.77m FOOTPATH

3.23m FOOTPATH
2.10m PARKING
3.00m CARRIAGEWAY
3.00m CARRIAGEWAY
2.00m FOOTPATH

2.80m FOOTPATH
2.10m PARKING
2.88m CARRIAGEWAY
3.00m CARRIAGEWAY
3.00m CARRIAGEWAY
2.00m FOOTPATH

VEHICLE MOVEMENTS PERMITTED AT ENTRANCE SHOWN BY RED ARROWS

WIDTH REQUIRED FROM EXISTING KERB TO BACK OF PROPOSED FOOTPATH = 13.70m

EXTENTS

N11 STILLORGAN ROAD NORTH

N11 STILLORGAN ROAD SOUTH

PATRICIAN VILLAS

LEGEND:

- EXISTING KERBLINE
- PROPOSED KERBLINE
- PROPOSED 50mm KERB BETWEEN CYCLETRACK AND FOOTPATH
- PROPOSED TACTILE PAVING
- PROPOSED KASSEL KERBLINE
- PROPOSED CARRIAGEWAY BUILD-UP / RESURFACING
- PROPOSED ARCHITECTURAL CARRIAGEWAY SURFACE
- PROPOSED ARCHITECTURAL CARRIAGEWAY SURFACE STRIP
- PROPOSED SHARED SURFACE
- PROPOSED RAISED CYCLETRACK
- PROPOSED MANDATORY CYCLELANE
- PROPOSED LANDSCAPED / GRASSED AREA
- PROPOSED RAMP / RAISED CROSSING AREA
- PROPOSED BUS STOP / LANE
- PROPOSED FOOTPATH
- PROPOSED PAVED ENTRANCE
- PROPOSED WALL
- EXISTING WALL
- PROPOSED TREE PLANTING
- EXISTING TREE
- PROPOSED PLANTER
- PROPOSED BENCH

Revision	Description	Initials	Date

Clifton Scannell Emerson Associates

Clifton Scannell Emerson Associates Limited
Consulting Engineers,
Seafort Lodge,
Castledawson Avenue,
Blackrock, Co. Dublin,
Ireland.

T: +353 1 288 5006
F: +353 1 283 3466
E: info@csea.ie
W: www.csea.ie

BRADY SHIPMAN MARTIN

Landscape Architects Planners
Environmental Consultants
Block 6, Belfield Office Park,
Dublin 4

T: +353(0)1 2081900
F: +353(0)1 2081911
E: mail@bsmconsult.com

DUN LAOGHAIRE RATHDOWN COUNTY COUNCIL

Client

STILLORGAN VILLAGE AREA
MOVEMENT FRAMEWORK PLAN

Project

PROPOSED STILLORGAN VILLAGE AND N11 LAYOUT
SHEET 3 OF 5

Dwg. Title

Drawn By CP Date APRIL 2017

Checked by GE Scale 1:500 @ A1

Dwg. Progress DRAFT

Dwg. No. 14_059_037

This drawing is produced using the Irish Tranverse Mercator (ITM) Geographic Coordinate System

A1

LEGEND:

- EXISTING KERBLINE
- PROPOSED KERBLINE
- PROPOSED 50mm KERB BETWEEN CYCLETRACK AND FOOTPATH
- PROPOSED TACTILE PAVING
- PROPOSED KASSEL KERBLINE
- PROPOSED CARRIAGEWAY BUILD-UP / RESURFACING
- PROPOSED ARCHITECTURAL CARRIAGEWAY SURFACE
- PROPOSED ARCHITECTURAL CARRIAGEWAY SURFACE STRIP
- PROPOSED SHARED SURFACE
- PROPOSED RAISED CYCLETRACK
- PROPOSED MANDATORY CYCLELANE
- PROPOSED LANDSCAPED / GRASSED AREA
- PROPOSED RAMP / RAISED CROSSING AREA
- PROPOSED BUS STOP / LANE
- PROPOSED FOOTPATH
- PROPOSED PAVED ENTRANCE
- PROPOSED WALL
- EXISTING WALL
- PROPOSED TREE PLANTING
- EXISTING TREE
- PROPOSED PLANTER
- PROPOSED BENCH

N11 STILLORGAN ROAD SOUTH

N11 STILLORGAN ROAD NORTH

EXTENTS

STILLORGAN COLLEGE OF FURTHER EDUCATION

1.80m FOOTPATH
3.83m GRASS VERGE
2.00m FOOTPATH
3.00m CARRIAGEWAY
3.00m CARRIAGEWAY
2.10m PARKING
2.00m FOOTPATH
3.94m GRASS VERGE
4.00m CARRIAGEWAY
2.04m PARKING
2.38m FOOTPATH

2.00m FOOTPATH
3.00m CARRIAGEWAY
3.00m CARRIAGEWAY
2.10m PARKING
3.16m FOOTPATH

EXISTING BUS STOP UPGRADED

OLD DUBLIN ROAD

IMAGE 5

PROPOSED TOUCAN CROSSING

3.54m FOOTPATH
3.00m CARRIAGEWAY
3.00m CARRIAGEWAY
3.16m FOOTPATH

OLD DUBLIN ROAD

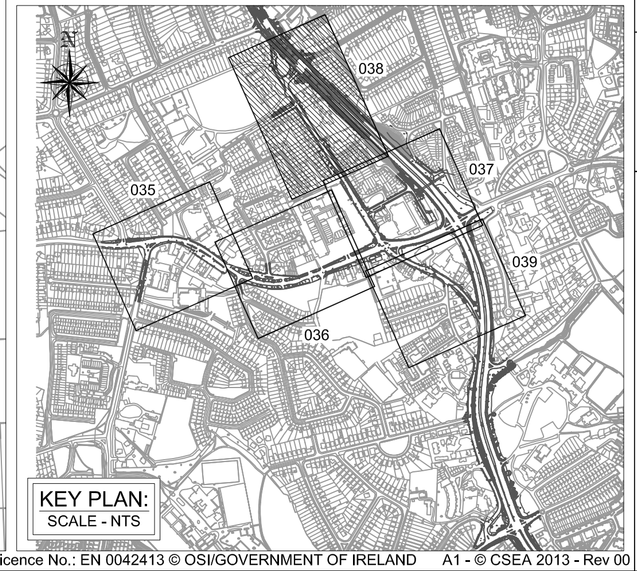
STOP

PROPOSED PEDESTRIAN CROSSING

EXISTING BUS STOP UPGRADED

WOODLANDS AVENUE

OATLANDS COLLEGE



KEY PLAN:
SCALE - NTS

Revision	Description	Initials	Date

Clifton Scannell Emerson Associates

Clifton Scannell Emerson Associates Limited
Consulting Engineers,
Seafort Lodge,
Castledawson Avenue,
Blackrock, Co. Dublin,
Ireland.

T: +353 1 288 5006
F: +353 1 283 3466
E: info@csea.ie
W: www.csea.ie

BRADY SHIPMAN MARTIN

Landscape Architects Planners
Environmental Consultants
Block 6, Belfield Office Park,
Dublin 4

T: +353(0)1 2081900
F: +353(0)1 2081911
E: mail@bsmconsult.com

Client: DUN LAOGHAIRE RATHDOWN COUNTY COUNCIL

Project: STILLORGAN VILLAGE AREA
MOVEMENT FRAMEWORK PLAN

Dwg. Title: PROPOSED STILLORGAN VILLAGE AND N11 LAYOUT
SHEET 4 OF 5

Drawn By: CP | Date: APRIL 2017

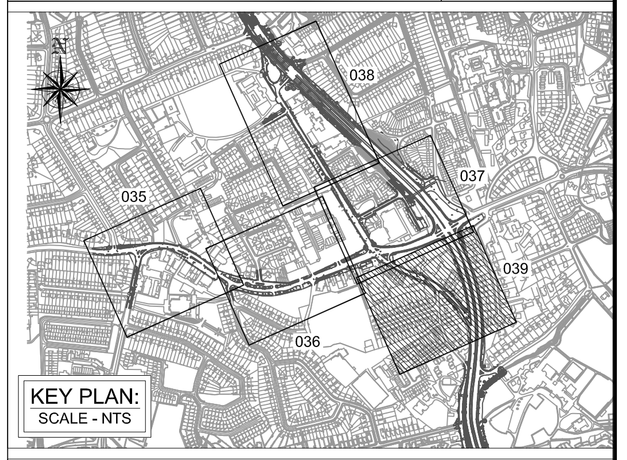
Checked by: GE | Scale: 1:500 @ A1

Dwg. Progress: DRAFT

Dwg. No.: 14_059_038

This drawing is produced using the Irish Tranverse Mercator (ITM) Geographic Coordinate System

A1



KEY PLAN:
SCALE - NTS

WIDTH REQUIRED FROM EXISTING KERB TO BACK OF PROPOSED FOOTPATH = 13.70m

WIDTH REQUIRED FROM EXISTING KERB TO BACK OF PROPOSED FOOTPATH = 10.75m

WIDTH REQUIRED FROM EXISTING KERB TO BACK OF PROPOSED FOOTPATH = 12.01m

2.80m FOOTPATH
2.10m PARKING
5.19m CARRIAGEWAY
3.00m CARRIAGEWAY
2.05m FOOTPATH

4.88m FOOTPATH
2.10m PARKING
3.00m CARRIAGEWAY
3.00m CARRIAGEWAY
1.80m FOOTPATH

3.00m FOOTPATH
3.00m CARRIAGEWAY
3.00m CARRIAGEWAY
2.10m PARKING
1.80m FOOTPATH

1.00m GRASS VERGE
2.00m FOOTPATH
5.00m CARRIAGEWAY
2.10m PARKING
2.00m FOOTPATH
1.00m GRASS VERGE

THE STILLORGAN ORCHARD

VEHICLE MOVEMENTS PERMITTED AT ENTRANCE SHOWN BY RED ARROWS

PROPOSED RAISED PLATFORM

EXISTING ACCESS FROM THE N11 IS TO REMAIN OPEN IN THE SHORT TERM

THE HILL

GLENALBYN ROAD

N11 STILLORGAN ROAD SOUTH

N11 STILLORGAN ROAD NORTH

LÁNA BUS

BUS

STOP

LEGEND:

EXISTING KERBLINE	
PROPOSED KERBLINE	
PROPOSED 50mm KERB BETWEEN CYCLETRACK AND FOOTPATH	
PROPOSED TACTILE PAVING	
PROPOSED KASSEL KERBLINE	
PROPOSED CARRIAGEWAY BUILD-UP / RESURFACING	
PROPOSED ARCHITECTURAL CARRIAGEWAY SURFACE	
PROPOSED ARCHITECTURAL CARRIAGEWAY SURFACE STRIP	
PROPOSED SHARED SURFACE	
PROPOSED RAISED CYCLETRACK	
PROPOSED MANDATORY CYCLELANE	
PROPOSED LANDSCAPED / GRASSED AREA	
PROPOSED RAMP / RAISED CROSSING AREA	
PROPOSED BUS STOP / LANE	
PROPOSED FOOTPATH	
PROPOSED PAVED ENTRANCE	
PROPOSED WALL	
EXISTING WALL	
PROPOSED TREE PLANTING	
EXISTING TREE	
PROPOSED PLANTER	
PROPOSED BENCH	

Revision	Description	Initials	Date

Clifton Scannell Emerson Associates

Clifton Scannell Emerson Associates Limited
Consulting Engineers,
Seafort Lodge,
Castledawson Avenue,
Blackrock, Co. Dublin,
Ireland.

T: +353 1 288 5006
F: +353 1 283 3466
E: info@csea.ie
W: www.csea.ie

BRADY SHIPMAN MARTIN

Landscape Architects Planners
Environmental Consultants
Block 6, Belfield Office Park,
Dublin 4

T: +353(0)1 2081900
F: +353(0)1 2081911
E: mail@bsmconsult.com

DUN LAOGHAIRE RATHDOWN COUNTY COUNCIL

Client

STILLORGAN VILLAGE AREA
MOVEMENT FRAMEWORK PLAN

Project

PROPOSED STILLORGAN VILLAGE AND N11 LAYOUT
SHEET 5 OF 5

Dwg. Title

Drawn By: CP
Date: APRIL 2017
Checked by: GE
Scale: 1:500 @ A1
Dwg. Progress: DRAFT
Dwg. No.: 14_059_039

STILLORGAN VILLAGE MOVEMENT FRAMEWORK PLAN

PRELIMINARY CONCEPT PLAN (LONG TERM)

Údarás Náisiúnta Iompair
National Transport Authority

dlr
Comhairle Contae County Council

N

Widened & Improved footpath
Pedestrian crossing
BUS Stop
BUS Stop
Pedestrian crossing
Flush surface
Improved pedestrian access
EXIT only
ONE-WAY
ACCESS only
FUTURE MIXED USE
Improved pedestrian access
ACCESS ALL IN/OUT
STILLORGAN SHOPPING CENTRE
restricted service access
raised table
BUS Stop
raised table
ACCESS ALL IN/OUT
feature tree + seating
FUTURE MIXED USE
PLAZA
raised table
proposed pedestrian crossing
proposed pedestrian crossing
proposed pedestrian crossing
raised table
POTENTIAL ACCESS LEFT IN/OUT ONLY
removed slip lane
removed slip lane
relocated bus stop
FUTURE MIXED USE
ACCESS ALL IN/OUT
PB crossing
plaza /loading
one way street? to church/school/community centre
improved bus island
PB crossing
pedestrian route to church/school/community centre
FUTURE MIXED USE
ACCESS ALL IN/OUT
FUTURE MIXED USE
ACCESS ALL IN/OUT
feature lamps
feature tree
PLAZA
welcome sculpture
Dublin Bus shelter
feature tree + seating
FUTURE MIXED USE
feature tree + seating
raised table
seating
loading / parking
Dublin Bus shelter
pedestrian route
realigned sports pitch
to Kilamuod Crokes

SCALE 1:1000 @ A0

BRADY SHIPMAN MARTIN Clifton Scannell Emerson Associates

www.bradyshipmanmartin.com www.csea.ie

STILLORGAN VILLAGE MOVEMENT FRAMEWORK PLAN

PRELIMINARY CONCEPT PLAN (LONG TERM)

Údarás Náisiúnta Iompair National Transport Authority

dlr Comhairle Contae County Council

BRADY SHIPMAN MARTIN Clifton Scannell Emerson Associates

www.bradyshipmanmartin.com www.csea.ie

SCALE 1:1000 @ A0

Stillorgan

Draft Local Area Plan 2018 - 2024

Appendix II - Strategic Environmental Assessment Screening Report
Appendix III - Appropriate Assessment Screening Report
Appendix IV - Strategic Flood Risk Assessment

dlr
Comhairle Contae County Council

Appendix II

Draft Stillorgan Local Area Plan

Strategic Environmental Assessment Screening Report

TABLE OF CONTENTS

LIST OF FIGURES

ABBREVIATIONS

AA	-	Appropriate Assessment
ACA	**-**	Architectural Conservation Area
CDP	-	County Development Plan
CFRAM	-	Catchment Flood Risk Assessment Management
DAFM	-	Department of Agriculture, Food and the Marine
DAHG	**-**	Department of Arts, Heritage and the Gaeltacht
DCENR	**-**	Department of Communications Energy, and Natural Resources
DECLG	-	Department of Environment, Community and Local Government
DLRCC	-	Dún Laoghaire-Rathdown County Council
EIA	-	Environmental Impact Assessment
EPA	-	Environmental Protection Agency
FRA	**-**	Flood Risk Assessment
LAP	-	Local Area Plan
NHA/pNHA	-	Natural Heritage Area / proposed Natural Heritage Area
NPWS	-	National Parks and Wildlife Service
OPW	**-**	Office of Public Works
RBD	-	River Basin District
SAC	-	Special Area of Conservation
cSAC	-	Candidate Special Area of Conservation
SEA	-	Strategic Environmental Assessment
SEO	**-**	Strategic Environmental Objective
SPA	-	Special Protection Area
SuDS	-	Sustainable Drainage System

1 STRATEGIC ENVIRONMENTAL ASSESSMENT - SCREENING

1.1 INTRODUCTION

Dún Laoghaire-Rathdown County is preparing the Draft Stillorgan Local Area Plan (LAP) 2017-2023 in accordance with Part II, Sections 18, 19 and 20 of the Planning and Development Act 2000-2011, which set out the provisions for the preparation of Local Area Plans.

The Stillorgan Draft LAP is being prepared as a result of an objective contained within the Dún Laoghaire-Rathdown County Development Plan (DLRCDP) 2016-2022 and in accordance to the policies and objectives contained within the DLRCDP. The DLRCDP is the overarching statutory framework for the development of the County and the Stillorgan Draft LAP must be consistent with the objectives of the DLRCDP 2010-2016 under the Planning and Development Acts.

The DLRCDP identifies Stillorgan as an area for 'Development and Regeneration' where the vision is '*to address local issues facing Stillorgan including traffic volumes and congestion and aims to promote a more pedestrian friendly environment. The Plan identifies a vision for redevelopment of Stillorgan as a District Centre and Neighbourhood Centre with a strong sense of place.'*

The planning process is iterative and therefore this document includes the Strategic Environmental Assessment Screening of the Draft LAP (chapters 1 to 4) and the Final LAP, including the amendments stage (chapter 5).

1.2 PURPOSE OF THE LOCAL AREA PLAN

As outlined, the Stillorgan Draft LAP 2017-2023 has been prepared in accordance with the Planning and Development (Amendment) Act 2000 as amended. Section 20 states that *"…a local area plan may be prepared in respect of any area or an existing suburb of an urban area, which the planning authority considers suitable and, in particular, for those areas which require economic, physical and social renewal".* The Draft LAP will be in effect for a six year period following its adoption but may be extended up to 10 years under the mechanisms of the Planning and Development (Amendment) Act, 2000 (as amended).

LAPs take a detailed look at a specific area, identifying and analysing the various issues of relevance, before establishing and setting out principles for the future development in the defined area. These issues include among others:

- Infrastructure and Services;
- Economic Development and Employment;
- Natural Heritage;
- Built Heritage;

- Social and Community Facilities;
- Recreation, Leisure and Tourism; and
- Urban Development.

The main aim of the Stillorgan Draft LAP is to set out a framework for the physical regeneration of the area to allow for growth in a co-ordinated, sensitive and orderly manner while conserving the area's built and cultural heritage. The Draft LAP strives to inform the general public, statutory authorities, developers and other interested bodies of the policy framework, objectives and land-use proposals for the Stillorgan area.

The Stillorgan Draft LAP is being prepared with careful consideration of existing services, land-uses, infrastructure, planning proposals and outstanding planning permissions. Environmental considerations and the concept of sustainable development underpin all the aims, policies and objectives of the plan, based on an analysis of social, economic, infrastructural, environmental and heritage data.

The emphasis of the Plan is to enhance the sense of place and community within Stillorgan, improving its vitality and viability as a District Centre. The Plan strategy is to seek a transformative improvement in the quality of the public realm where priority movement for pedestrians, cyclists and public transport will be ensured and the creation of high quality spaces will be a prerequisite. The influence and impact of the private car on the environs of the District Centre will be moderated.

The high-quality regeneration and redevelopment of key sites in Stillorgan District Centre will be encouraged, in tandem with a radically improved public realm, to provide a coherent and balanced urban environment in respect of scale, design and layout. Stillorgan will successfully perform its role as a high-quality, accessible retail and commercial centre serving the needs of the wider community.

New residential development in Stillorgan will assist in improving the diversity of the housing mix in the area and reversing the long-term trends of population decline in the area. The residential amenity of established residential areas on the fringes of the District Centre is to be protected and, where possible, enhanced through the successful integration of future developments with the existing built fabric of Stillorgan.

The development of the Stillorgan Draft LAP has been iterative, in tandem with the mandatory Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) screening processes.

1.3 PURPOSE OF SEA SCREENING

The purpose of this Screening Report is to consider whether the Stillorgan Draft LAP requires a Strategic Environmental Assessment (SEA). SEA is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan/ programme before a decision is made to adopt the plan/ programme; the procedures for which are set out in the Planning and Development (SEA) Regulations 2004 (as amended by S.I. 201 of 2011). The preparation of a full SEA is not mandatory for LAPs with a population, or target population, of less than 5,000 persons, such as the Stillorgan Draft LAP. However, in accordance with the above SEA Regulations, the planning authority of Dún Laoghaire-Rathdown County Council must determine whether or not the

implementation of such a Plan would be likely to have significant effects on the environment and therefore require an SEA.

Screening is the process for deciding whether a particular plan, in this case the Stillorgan Draft LAP, other than those for which SEA is mandatory, would be likely to have significant environmental effects, and would thus warrant SEA.

2 SCREENING METHODOLOGY

2.1 SEA DIRECTIVE

Articles 2 and 3 of *Directive 2001/42/EC of the European Parliament and the Council on the assessment of the effects of certain plans and programmes on the environment* (SEA Directive), set out the criteria to be used to determine the need for SEA. In making this decision the primary concern in the SEA process (as set out in Article 3 of the Directive) is to determine whether the Plan is likely to have significant environmental effects. This determination should be made having regard to the criteria set out in Annex II of the SEA Directive and through consultation with the statutory government authorities according to Article 6.

In regard to the Stillorgan Draft LAP it directly falls within the criteria stated in Article 2 of the SEA Directive, which states that plans and programmes requiring SEA are those:

- *which are subject to preparation and / or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by parliament or government; and*

- *are required by legislative, regulative or administrative provisions.*

Article 3 of the SEA Directive details the type of 'plans and programmes' to which the provisions of the Directive shall apply, by way of their purpose and likely effects. According to Article 3, environmental assessment is required for plans and programmes which:

- *are likely to have significant environmental effects;*

- *are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land-use and which set the framework for future development consent of projects listed in Annexes I and II to Directive 85/337/EC (EIA Directive);* and

- *in view of the likely effects on sites, have been determined to require an assessment pursuant to Article 6 or 7 of Directive 92/43/EEC (Habitats Directive).*

2.2 PLANNING AND DEVELOPMENT (SEA) REGULATIONS

As previously stated, the SEA Directive, as transposed into Irish Law under the Planning and Development (Strategic Environmental Assessment) Regulations 2011, (S.I. No. 201 of 2011), amending the Planning and Development Regulations 2004 (S.I. No. 436 of 2004) provides the legal basis for the undertaking of strategic environmental assessments in Ireland. In addition, the Department of the Environment, Community and Local Government Circular (PSSP 6/2011) 'Further Transposition of the EU Directive 2001//42/EC on SEA' outlines the updated requirements as a result of the 2011 Regulations.

Article 14A of the 2004 Regulations, as amended, states:

> *"Where a planning authority proposes to prepare or amend a local area plan referred to in sub-article (1), the planning authority shall, prior to giving notice under section 20(3) of the Act, consider whether or not implementation of the local area plan or amended plan would be likely to have significant effects on the environment, taking account of relevant criteria set out in Schedule 2A.*

The proposed Stillorgan Draft LAP has been considered in the context of the County Development Plan and in whether or not its implementation would be likely to have significant effects on the environment, taking into account the relevant criteria set out in Schedule 2A of the SEA Regulations. In making an overall assessment on whether SEA was required, each of the criteria in Schedule 2A was considered.

The 2011 SEA Regulations included a number of key amendments for land use plans and outline that SEA is required for LAPs whose population or target population are over 5.000 persons or whose plan area is greater than 50km^2. A determination, known as a Screening Process, is also required for a local area plan that falls below these thresholds.

The Stillorgan Draft LAP area is quite limited in area and comprises predominantly retail and commercial lands. There are approximately 12 occupied residential dwellings within the Draft Plan area with an estimated existing population of c. 30 persons. The total projected population for the Draft Plan area is potentially c.1,000 for Stillorgan Draft LAP. The area of Stillorgan Draft LAP is approximately 16.5ha in area therefore, in accordance with the regulations there is not a statutory requirement for SEA for this particular plan, however SEA Screening is required.

2.3 APPROPRIATE ASSESSMENT

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as "The Habitats Directive", provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000. These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/ECC) as codified by Directive 2009/147/EC and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000 sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment (AA):

> *Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

Article 6(4) states:

> *If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

These Articles mean that where the implementation of the plan, in this case the Stillorgan Draft LAP, has potential to have a significant effect on a Natura 2000 site, the relevant Local Authority (Dún Laoghaire-Rathdown County Council) must ensure that an appropriate assessment is carried out in view of that site's conservation objectives. The Stillorgan Draft LAP can be approved by DLRCC only if it has been ascertained that it will not adversely affect the integrity of the Natura 2000 site(s) concerned, or in the case of a negative assessment and where there are no alternative solutions, the scheme can only be approved for reasons of overriding public interest.

Appropriate Assessment Screening has been undertaken on the Stillorgan Draft LAP to ensure that the policies and objectives contained within said plan are not likely to result in significant adverse effects on the Natura 2000 network. The likely impacts that will arise from the Stillorgan Draft LAP have been examined in the context of a number of factors that could potentially affect the integrity of the Natura 2000 network. No Natura 2000 site(s) within 15km of the Draft LAP area will be adversely affected. On the basis of the findings of the Screening for Appropriate Assessment of Natura 2000 sites, it was concluded that the Stillorgan Draft LAP will not have a significant effect on the Natura 2000 network and a Stage 2 Appropriate Assessment is not required.

2.4 CONSULTATIONS

This SEA Screening Statement will be issued to the statutory consultees to provide them with an opportunity to comment on whether or not they consider that there would be significant effects on the environment arising from the Stillorgan Draft LAP. The amended regulations identifies the bodies to be consulted, which are outlined in Article 13A (4) (a) of S.I. 201 of 2011, as follows;

(i) the Environmental Protection Agency;

(ii) the Minister for the Environment, Community and Local Government;

(iii) where it appears to the planning authority that the plan or programme or modification of the plan or programme, might have significant effects on fisheries or the marine environment, the Minister for Agriculture, Marine and Food, and the Minister for Communications, Marine and Natural Resources;

(iv) where is appears to the competent authority that the plan or programme or amendment to a plan or programme, might have significant effects in relation to the architectural or archaeological heritage or to nature conservation, the Minister for Arts, Heritage and Gaeltacht Affairs; and

(v) any adjoining planning authority whose area is contiguous to the area of a planning authority which prepared a draft plan, proposed variation or local area plan.

The Environmental Protection Agency and the Department of Communications, Energy and Natural Resources provided responses to the SEA Screening Report. These submissions outlined a number of comments in relation to the Draft Plan and the full responses have been included in **Appendix A** of this Screening Report. Their comments have been taken on board in this SEA Screening Report.

3 STILLORGAN DRAFT LAP

The Plan area is bounded to the east by the N11, to the North by the residential developments of St. Laurence's Park, Woodlands and Beaufield. To the South, the Plan area is bounded by the residential developments of Glenalbyn, Linden Lea Park and Allen Park and to the West by the Kilmacud Road Upper and the residential area of Cherry Garth.

Figure 1 provides and outline of the location of the Stillorgan Draft LAP.

3.1 LOCAL CONTEXT

The District Centre is dominated by a two storey Shopping Centre at the junction of the Kilmacud Road Lower and Old Dublin Road which is in need of redevelopment. Elsewhere, there is a prevalence of poor quality 1960's, 1970's and 1980's architecture, whereby the structures appear unsympathetic to the original urban form, eroding the character and identity of the area.

The area is traversed by a heavily trafficked road network and dominated by a major traffic node at the junction of the Kilmacud Road Lower, Old Dublin Road and 'The Hill'. The landscape is dominated by traffic and surface car parking.

There are no Landscape High Amenity Zone designations within the Draft LAP, or in close proximity to the Draft LAP. No Historic Landscape Character Assessments have been conducted for the Draft LAP or are proposed to be conducted within the Draft LAP.

There are no Protected Structures, Architectural Conservation Areas or Recorded Monuments located within the Plan area. A Recorded Monument in the form of an Ecclesiastical Site is located just outside the Plan area to the north at Tyne Villa on the Old Dublin Road, which is now a private residential dwelling. There is also a Recorded Monument located just outside the Plan area to east in the form of a 16th/17th Century House at Park House in Stillorgan Park, which is now the New Horizons Resource Centre. Park House is also a Protected Structure.

To the south of the Plan area are Recorded Monuments in the form of a Church Site, Graveyard and Ecclesiastical Enclosure off St Brigid's Church Road. Saint Brigid's Church, the Rectory and the Old Schoolhouse, which is now home to Saint Brigid's Parish Playschool, are also Protected Structures. All of these designated Recorded Monuments lie within zones of archaeological potential.

Population

The population within the Draft Plan area is small – estimated at approximately 30 persons, with only a small number of occupied dwellings within the area occupied. The Draft LAP area contains a number of key opportunity areas for redevelopment such as lands at the former Blakes restaurant site and the Leisureplex site.

Surface Water

The Draft LAP is located within the Eastern River Basin District (ERBD). The Carysfort Maretimo Stream is the main watercourse which flows on the fringes of the Draft LAP boundary. This stream, which is extensively culverted, originates in the Tree Rock

Mountains and flows under the M50 and across the heavily urbanised areas of Sandyford, Leopardstown and Stillorgan before discharging into Dublin Bay at Blackrock.

The Environmental Report carried out as part of the Carysfort Maretimo Stream Improvement Scheme found that there was no evidence of fish or invertebrate species of conservation importance within the stream; all species found within the stream were identified as common. The river is not known for populations of salmon, trout or lamprey as significant culverting has not made it suitable for many fish species.

Water Services

Stillorgan is served by the Sandyford High Level Water Supply Scheme (SHLWSS) and wastewater is via the West Pier Pumping Station which pumps the waste across Dublin Bay to the Ringsend Waste Water Treatment Plant.

Stillorgan is located within the Dún Laoghaire West Pier Drainage catchment which encompasses some 2,300 hectares of urban and suburban areas including Stillorgan. The drainage system is a combined foul and surface water system. The current system varies greatly which can result in occasional storm water overflows at various locations during severe rain events. The Greater Dublin Strategic Study (2005) states that the existing system is capable of meeting the current and future projected populations in the catchment up to the 2031 design horizon.

Flooding

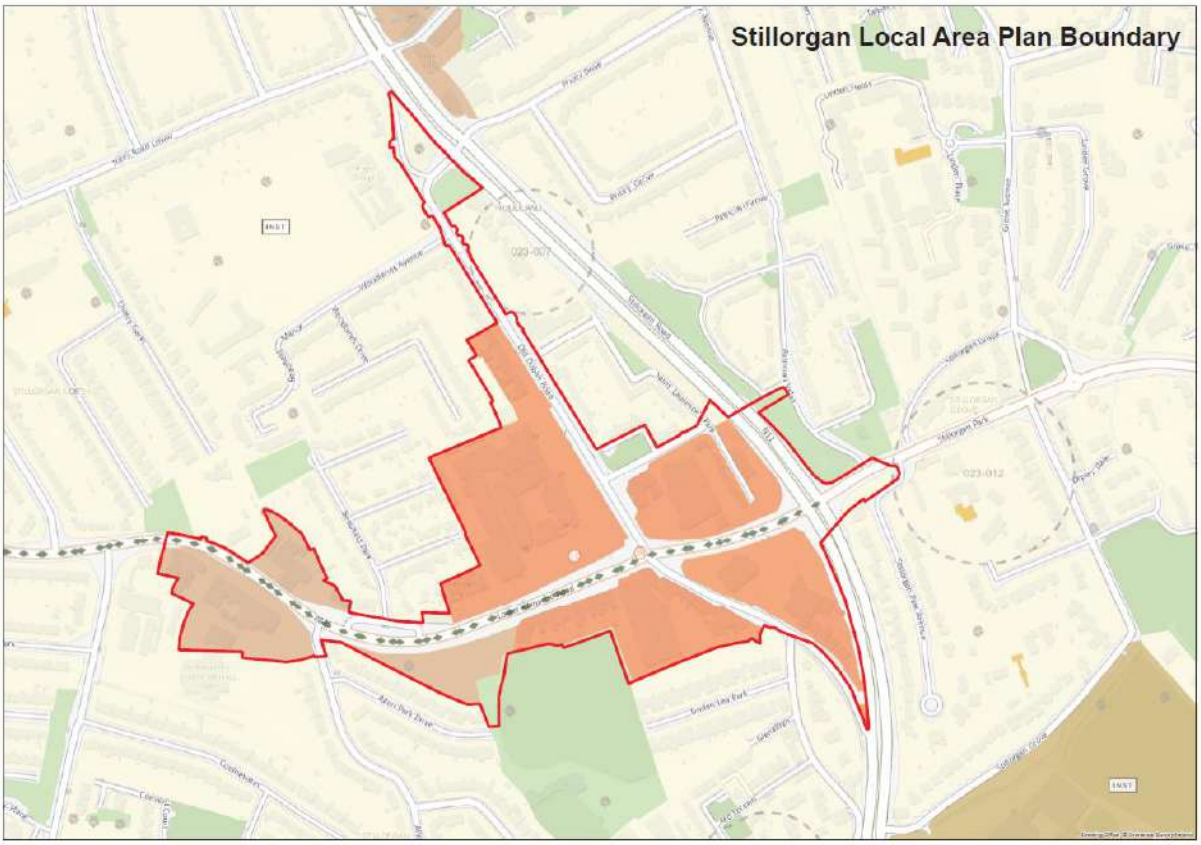
Stillorgan lies within the Eastern Catchment Flood Risk Assessment and Management (ECFRAM). CFRAM is a national programme for the medium to long-term strategy for the reduction and management of flood risk in Ireland. It will deliver on core components of the National Flood Policy and on the requirements of the EU Flood Directive. The Office of Public Works is the lead agency for flood risk management in Ireland and is working in partnership with all the local authorities to deliver the objectives of this programme. These CFRAM studies will produce Flood Risk Management Plans along with a strategy for implementation.

Carysfort Maretimo

The CFRAM shows flood risk along the majority of the Carysfort Maretimo River, being a combination of Flood Zone A and B and covering a range of land existing land uses, including open space, residential and office and enterprise (Figure 5-7). In particular, flooding is indicated at Blackrock Bypass, Brookfield, Carysfort Avenue, Avondale Lawn, Carysfort Hall, Avoca Park, Grove Paddock, Stillorgan Grove, Stillorgan Road and Brewery Road, Blackthorn Avenue and Blackthorn Road, Corrig Road, Blackthorn Drive, Lakelands, Moreen Estate, along M50 at Sandyford Interchange, Sandyford Park, Coolkill, Sandyford Downs and Sandyford Village (15). Where there is existing residential housing, and supporting infrastructure, Part 1 and 2 of the Justification Test have been applied and passed and flood risk can be managed through nonstructural responses. Future development within Flood Zone A and B should be limited to extensions, changes of use and small scale infill and flood risks can be managed through a site specific FRA, which should include consideration of culvert blockage (where appropriate) and the impact this could have on flood risk at lower return periods. The majority of flood risk highlighted in the Sandyford Business District and surrounding area is shown to be Flood Zone B, with small pockets indicated to be Flood Zone A. Where less vulnerable development is proposed within or near Flood Zone A or B a site specific flood risk assessment should be

undertaken with the aim of a) refining the delineation of flood risk based on local topography and surface water systems; b) demonstrating that the proposed development will not increase flood risk to neighbouring lands; and c) developing flood management measures appropriate to the development proposed. There is a length of defence along this watercourse which runs parallel to Rockfield Park (16). These defences are of robust construction, although consideration of the impacts of overtopping, either through higher return period events or with the impact of climate change on river flows, should be taken into account in any site specific flood risk assessment. Breach assessment is unlikely to be required.

Figure 1: Stillorgan Draft LAP Study Area



Natural Heritage

There are no Special Areas of Conservation (SAC), Special Protection Area (SPA), Natural Heritage Areas (NHA) or proposed Natural Heritage Areas (pNHA) within the Draft LAP area.

South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code 004024), South Dublin Bay candidate Special Area of Conservation (Site Code 000210), South Dublin Bay pNHA (Site Code 000210) and Booterstown Marsh pNHA (Site Code 001205) are located to the north of the Draft LAP.

The Dalkey Coastal Zone and Killiney Hill pNHA and the Rockabill to Dalkey Island SAC (Site Code 003000) are located to the south east of the Draft LAP. The Appropriate Assessment Screening report undertaken on the Stillorgan Draft LAP outlines other SPAs and SACs within 15km of the Draft LAP.

3.2 DLR COUNTY DEVELOPMENT PLAN (2016-2022)

There are a number of overarching policies from the DLRCDP (2016-2022) that directly relate to the Stillorgan Draft LAP. They include;

- Encourage potential redevelopment as higher density, urban mixed-use centre in accordance with general provisions of the adopted Local Area Plan. Limited expansion of convenience and comparison retail floorspace.

- To promote the future redevelopment of Stillorgan as a multi-faceted, mixed-use sustainable District Centre having regard to the broad objectives of the adopted Stillorgan Local Area Plan.

- The regeneration and redevelopment of Stillorgan District Centre should create an urban context in respect of scale, design and layout.

- Good quality residential development shall be encouraged to ensure vitality and animation both day and night.

- The creation of quality spaces and enhanced public realm will be a prerequisite.

These policies have been taken into account in the drafting of the Stillorgan Draft LAP.

4 SEA SCREENING CONCLUSION OF DRAFT LAP

4.1 INTRODUCTION

The following assessment has been conducted in accordance with the Planning and Development (Strategic Environmental Assessment) Regulations 2004, as amended. The Screening of the proposed Stillorgan Draft LAP is undertaken using specified criteria for determining the likely significant environmental impacts of a Plan as set out in Schedule 2a of the SEA Regulations (S.I. 436 of 2004).

4.2 CHARACTERISTICS OF THE PLAN HAVING REGARD, IN PARTICULAR, TO:

(i) The degree to which the Plan sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources.

The Stillorgan Draft LAP has provided a framework for the proper planning and sustainable development of Stillorgan and its environs for a duration of six years, spanning from 2017-2023, unless amended. It contains objectives, policies, site framework strategies and land use zonings within the defined Draft LAP area based on the principles of sustainable development. The Draft LAP provides for the conservation and enhancement of the natural and physical environment within and surrounding Stillorgan.

The development of the Stillorgan Draft LAP has been in line with the Core Strategy of the County Development Plan to ensure that the Draft LAP is consistent with national and regional guidelines and adopts an evidence based approach to the zoning of land. Therefore, the framework for development in the Stillorgan Draft LAP shall be of a nature and scale appropriate to the District Centre.

The Stillorgan Draft LAP provides a framework for development of projects within the plan area having regard to location, type, size and operation. It is possible that specific areas such as the Blakes site, the Leisureplex site and potentially the Stillorgan Shopping Centre site will eventually fall under the title of a project and be subject to an environmental impact assessment under the EIA Directive and affiliated legislation. The Draft LAP has a number of general objectives one of which is PP3 which states that *"it is an objectives of the Council that the EU Directives for Strategic Environmental Assessment (SEA), the Planning and Development Strategic Environmental Assessment Regulations (SI. 436 of 2004) as amended by (SI. 201 of 2011) and Environmental Impact Assessment (EIA) are the fundamental policy framework of environmental protection measures and legislation for the delivery of the policies within this document and full compliance with the EIA and SEA Directives shall be provided".* Therefore, these specific areas will be developed in compliance with the relevant environmental assessment processes.

(ii) The degree to which the Plan influences other plans, including those in a hierarchy.

The Stillorgan Draft LAP 2017-2023, provides a land-use planning framework at a local village level. It is located at the bottom of the statutory land-use planning hierarchy, and

therefore, is not likely to influence other statutory plans so as to have any significant environmental impact.

(iii) The relevance of the Plan for the integration of environmental considerations in particular with a view to promoting sustainable development.

The Stillorgan Draft LAP has been prepared under the Planning and Development Act 2000 (as amended), and therefore, must confine itself to the proper planning and development of the Draft LAP area. All strategies, objectives and policies of the Draft LAP have been informed by the principles of sustainable development. The Draft LAP is subject to higher level international, national, regional and county environmental protection policies, and therefore must be consistent with these policies and implement them at a local level. For example the preparation of the Stillorgan Draft LAP was guided by the overall strategies, objectives and policies of the Dún Laoghaire-Rathdown County Development Plan (2016-2022).

During the development of the Stillorgan Draft LAP both the SEA and the AA Environmental Teams provided input into the Draft LAP in the form of suggested policies for the protection of the environment. These policies were included within the Draft LAP to ensure that the Stillorgan Draft LAP is in compliance with the required Environmental Directives.

The Draft LAP will provide for sustainable growth and will regulate pressures from urban development, especially through the promotion of infill development in close proximity of frequent public transport services. Sustainable mobility has been addressed within the Stillorgan Draft LAP through the promotion of walking and cycling, including the provision of associated infrastructure. Some existing roads already include bus lanes, cycle lanes and footpaths, which promote sustainable travel. The Draft LAP has taken onboard the measures outlined in the Greater Dublin Area Transport Strategy (NTA).

(iv) Environmental problems relevant to the Plan.

It is considered that the Stillorgan Draft LAP will not result in any strategic environmental problems due to the implementation of the Draft LAP and associated proposed development, including site framework strategies. Should local environmental issues develop they will be dealt with through the comprehensive environmental policies and objectives contained within the Draft LAP.

A strategic flood risk assessment (SFRA) was undertaken for the Stillorgan Draft LAP. Several flooding issues have been identified in the Draft LAP. The *'Planning System and Flood Risk Management Guidelines for Planning Authorities',* outline that *"flood risk issues and its impact on deliverability of zoned land should be addressed in the development plan primarily".* The DLRCDP identified flood risk issues for the Carysfort Maretimo Stream and alleviation measures have been implemented in some places along the length of this stream catchment through the aforementioned improvement works.

The Draft Stillorgan LAP identifies that flood risk assessments are required for individual planning applications should the application be in an area where flooding may be present.

Stillorgan is located within the Dún Laoghaire West Pier Drainage catchment. The drainage system is a combined foul and surface water system. As outlined in the Stillorgan Draft LAP the current system varies greatly which can result in occasional storm water overflows at various locations during severe rain events. The Greater Dublin

Strategic Study (GDSS, 2005) states that the existing system is capable of meeting the current and future projected populations in the catchment up to the 2031 design horizon. The Stillorgan Draft LAP states that "the existing foul and surface water drainage networks are generally adequate to satisfy current demand and infill growth. More detailed investigations would, however, have to be carried out on the capacity of the network for any proposal which would have a significant impact on the drainage network. Any network improvements required to address deficiencies identified by these investigations require to be advanced by Irish Water."

To ensure that adequate services are provided for future development within Stillorgan the Draft LAP contains an Objective (SI2) which states that *"it is an objective of the Council to support Irish Water in the provision of adequate water and waste water treatment infrastructure to serve the needs of the existing and future population of the Plan area and ensuring that such infrastructure is provided prior to, or in tandem with, new development"* and an Objective (SI3) which states that *"it is an objective of the Council to facilitate Irish Water in ensuring that all wastewater generated is collected, treated and discharged after treatment in a safe and sustainable manner, having regard to the standards and requirements set out in EU and national legislation and guidance"*.

The Draft LAP clearly states that all new developments will be in compliance with the GDSS in relation to sustainable urban drainage systems (SuDS). There is an Objective (SI6) to ensure that new development is in line with SuDS which states *"it is an objective of the Council to ensure that Sustainable Drainage Systems (SuDS) is applied to any development in Stillorgan and that site specific solutions to surface water drainage systems are developed which meet the requirements of the Water Framework Directive and associated River Basin Management Plans. SuDS measures may include green roofs, permeable paving, detention basins, water butts, infiltration etc".*

(v) The relevance of the plan for the implementation of European Union legislation on the environment (e.g. plans linked to waste-management or water protection).

The Stillorgan Draft LAP does not have the direct purpose of implementing EU legislation; however, it is influenced by and must comply with relevant EU environmental policies and regulations, and will contribute towards the national implementation of these EU environmental policies and regulations. Environmental policies and objectives have been incorporated into the Draft LAP to ensure that full account is taken of European legislation. It is an intention of the Draft Plan that any development within the Local Area Plan boundary shall be in accordance with the requirements of the EU Directives and associated legislation, (National and Regional Guidelines) and County Development Plan policy provisions.

In addition the Stillorgan Draft LAP contains an Objective (SI10) which states that "*It is an objective of the Council that all plans or projects within the Local Area Plan that are likely to give rise to significant effects on the Natura 2000 Sites will be subject to Appropriate Assessment Screening in accordance with Article 6(3) of the Habitats Directive".* Further, it is an Objective (SI7) of the Draft Plan "to ensure the protection of groundwater resources within the Draft Stillorgan Local Area Plan boundary and associated habitats and species in accordance with the EU Groundwater Directive. All new planning applications within the Stillorgan Local Area Plan boundary shall have regard to the likely impacts the proposed development may have on groundwater resources".

4.3 CHARACTERISTICS OF THE EFFECTS AND OF THE AREA LIKELY TO BE AFFECTED, HAVING REGARD, IN PARTICULAR, TO:

(i) The probability, duration, frequency and reversibility of the effects.

In the case of the Stillorgan Draft LAP the effects may be considered to include various land uses, including residential development, employment and infrastructural improvements. Uncontrolled development in the Draft LAP could result in significant impacts on the environment such as development near or adjacent to the Natura 2000 sites, which could potentially affect the qualifying interests of the sites. However, the Stillorgan Draft LAP in tandem with the DLRCDP (2016-2022) provides significant measures to avoid adverse impacts arising from proposed development through stringent policies and objectives.

The target population for the Stillorgan Draft LAP will increase the demand on provisions for drinking water supply. Both existing and future populations within the Draft LAP area should continue to have access to adequate high quality clean drinking water. Water for Stillorgan comes from the Sandyford High Level Water Supply Scheme (SHLWSS) and this is capable of catering for future developments in the area. There are no particular constraints in terms of supplying water to future development within the Draft LAP lands. Any medium to large scale development in the area may be required to upgrade sections of the existing network to ensure adequate security of supply as deemed necessary. The existing water network is generally adequate for current demand and small infill growth; however more detailed investigations would have to be carried out on the capacity of the network for any proposal which would generate significant water usage.

Stillorgan is served by the Ringsend Waste Water Treatment Plant which has over recent years been upgraded with increased capacity. Compliance with the Waste Water Discharge Licence issued under Regulation 28(1) of the Waste Water Discharge (Authorisation) Regulations 2007 is required for the Draft LAP area. Development within Stillorgan Draft LAP shall be preceded by sufficient capacity in the public waste water treatment plants and appropriate extensions in the existing public waste water treatment catchments. The relevant recommendations set out in *'Focus on Urban Waste Water Discharges in Ireland (Report for the years 2008-2011)* (EPA, Office of Environment Enforcement, 2012) will be complied with.

Improvements to the transport network within the Stillorgan Draft LAP along with the promotion of sustainable travel will have a positive impact on the environment. A number of positive measures have been outlined in the Draft LAP such as improvements to public transport provision, improvements to the pedestrians and cyclists experience within Stillorgan and provision of solutions to manage the movement of motor vehicles within the centre of the urban village.

(ii) The cumulative nature of the effects.

The Stillorgan Draft LAP is a land-use plan that is based on a strategic framework and adheres to the Core Strategy contained within the DLRCDP (2016-2022), to ensure proper phased development of the village and its surroundings.

It is not considered that the cumulative effect of development will have a significant environmental impact as appropriate environmental protection policies have been integrated into the Draft LAP.

(iii) The transboundary nature of the effects.

The effects from the Stillorgan Draft LAP are likely to be confined to Stillorgan village and its immediate environs. Therefore, there is likely to be no significant national or regional transboundary effects as the Stillorgan Draft LAP will have orderly and planned growth. Strategies in the form of objectives and policies have been implemented within the Draft LAP to preserve the environment, and therefore, ensure no significant transboundary effects.

It is important to note that transport infrastructure has a transboundary character. The Draft LAP area is bisected by the important regional road and public transport links, namely the N11 road and QBC. The proposals of the Draft LAP do not have a significant impact on the operations of these links as regional and national infrastructure.

(iv) The risk to human health or the environment (e.g. due to accidents).

There are no designated SEVESO sites or significant industrial operations within Stillorgan Draft LAP. The Draft LAP contains site framework strategies for residential development along with strategies for retail development and transport improvements. Stillorgan is a long established District Centre and provides a centre of employment for surrounding residential communities. The centre of Stillorgan is zoned District Centre and the main sources of employment are retail with some smaller scale office based services. Therefore, it is not considered that there will be any significant risk to human health or the environment in implementing the Stillorgan Draft LAP.

(v) The magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected).

As noted above, the population of the Stillorgan Draft LAP is approximately 30 persons. The Draft LAP contains certain key opportunity areas for redevelopment such as lands at the Blake's site, the Leisureplex site and the Stillorgan Shopping Centre Site.

The DLRCDP (2016-2022) sets out an overall strategy for the county which contains an objective for evidence base for zoning decisions. The Planning and Development (Amendment) Act 2010 introduced the requirement for an evidence-based Core Strategy to be incorporated as part of all County Development Plans. The purpose of a Core Strategy is to articulate a medium-to-longer term quantitatively based strategy for the spatial development of the area of the Planning Authority, and, in so doing, to demonstrate that a Development Plan and its policies and objectives are entirely consistent with national and regional development objectives as set out in the National Spatial Strategy 2002-2022 (NSS) and the Regional Planning Guidelines 2010-2022 (RPGs).

The Core Strategy seeks to ensure a level of equilibrium between residential land supply in the County and forecast household growth. The Draft LAP lands, which are predominantly zoned 'District Centre', and therefore have a mixed-use focus as opposed to a purely residential one, form a part of the Council's medium-to-long term residential land supply and are highlighted in the Core Strategy as such.

It is not considered that the development of the zoned lands including the Site Framework Strategies and the achievement of the population targets will result in significant environmental impacts.

(vi) The value and vulnerability of the area likely to be affected due:

(a) Special natural characteristics or cultural heritage

Stillorgan Draft LAP does not lie in an area that has a rich architectural/archaeological heritage. There are no protected structures or recorded monuments and places within the Draft LAP. There are no candidate Architectural Conservation Areas (cACA) or Architectural Conservation Areas (ACA) contained within the Draft LAP area.

There are no nationally or internationally designated sites for nature conservation within the boundary of the Stillorgan Draft LAP.

Appropriate Assessment Screening has been undertaken on the Stillorgan Draft LAP and it is not considered that the Draft LAP will have any significant negative effect on the Natura 2000 network.

A number of objectives are contained within the Draft LAP to ensure the protection and conservation of the natural heritage within and adjacent to the Draft LAP boundary. It is not considered that the development of the Draft LAP lands will result in significant environmental impacts on the natural heritage of this area.

(b) Exceeded environmental quality standards or limit values

It is not expected that environmental quality standards will be exceeded or that the value of vulnerable areas will be limited as a result of the Stillorgan Draft LAP. Environmental policies and objectives contained within the Stillorgan Draft LAP ensure that the impact of any proposed developments on existing habitats, species and the value of the existing landscape are kept to a minimum. Development proposals within the Draft LAP boundary will be subject to assessment as part of a planning application and will also be required to demonstrate compliance with the relevant legislation and environmental quality standards and limits.

(c) Intensive land-use

The focus of the Draft LAP, in line with the DLRCDP objectives, is the potential for development of sites that are presently unoccupied or less intensively used. The development of these sites will intensify the land-use, however not to a degree that would adversely impact upon the existing natural and built environment.

(vii) The effects on areas or landscapes which have a recognised European Union or international protection status.

As previously identified there are no nationally or internationally designated sites for nature conservation within the boundary of the Stillorgan Draft LAP. However, Appropriate Assessment Screening has been undertaken in accordance with the European Union Habitats Directive. It concluded that Stillorgan Draft LAP will not have a significant effect on the Natura 2000 network and a Stage 2 Appropriate Assessment is not required.

There are no Landscape High Amenity Zones within the Stillorgan Draft LAP or in close proximity to it. The policies contained within the Stillorgan Draft LAP will ensure that it

does not have a significant effect on landscapes which have a European or International protection status.

4.4 SCREENING CONCLUSION

Taking into account the aforementioned criteria it is concluded that the Stillorgan Draft LAP (2017-2023) is not likely to have significant effects on the environment. The key strategies, objectives and policies of the Dún Laoghaire-Rathdown County Development Plan (2016-2022) have been embraced during the preparation of the Stillorgan Draft LAP (2017-2023). Its implementation with regard to residential, economic, transport and community development is perceived not to have any direct adverse effects on international or national designated sites of environmental protection.

It is therefore considered that a full Strategic Environmental Assessment is not required in respect of the Stillorgan Draft LAP. Any localised environmental effects as a result of any proposed development carried out on the land within the Draft LAP area can be dealt with through the assessment of individual planning applications.

Appendix III

Draft Stillorgan Local Area Plan

Appropriate Assessment Screening Report

dlr
Comhairle Contae County Council

Table of Contents

List of Figures

1 Introduction

1.1 Background

This report forms the Screening of Appropriate Assessment (AA) of the Stillorgan Draft Local Area Plan 2017 – 2023 in accordance with the requirements of Article 6(3) of the EU Habitats Directive and in accordance with Part XAB in the Planning & Development Acts 2000-2011.

The obligation to undertake appropriate assessment derives from Article 6(3) and 6(4) of the Habitats Directive and both involve a number of steps and tests that need to be applied in sequential order.

Article 6(3) is concerned with the strict protection of sites, while Article 6(4) is the procedure for allowing derogation from this strict protection in certain restricted circumstances. Each step in the assessment process precedes and provides a basis for other steps. The results at each step must be documented and recorded carefully so there is full traceability and transparency of the decisions made.

The first test is to establish whether, in relation to a particular plan or project, appropriate assessment is required. This is termed Screening for Appropriate Assessment. Its purpose is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in combination with other plans or projects, could have significant effects on a Natura 2000 site in view of the site's conservation objectives. The need to apply the precautionary principle in making any key decisions in relation to the tests of AA has been confirmed by European Court of Justice case law. Therefore, where significant effects are likely, uncertain or unknown at screening stage, AA will be required.

Circular Letter SEA 1/08 & NPWS 1/08 issued by the Department of Environment, Heritage and Local Government requires that, as a result of European Court of Justice Case 418/04 EC Commission v Ireland, any draft land use plan (or amendments or variations) proposed under the Planning & Development Act 2000 (as amended) must be screened for any potential impact on areas designated as Natura 2000 sites. The results of the screening should be recorded and made available to the public.

It should be noted that a Strategic Environmental Assessment Screening Report has been prepared for the Stillorgan Draft Local Area Plan 2017 – 2023.

1.2 Legislative Context

Article 6 of the 'Habitats' Directive (92/43/EEC) plays a crucial role in the management of Natura 2000 sites and determines the relationship between the conservation of the habitats and species and other types of land use within these designated areas. It has three main sets of provisions. Article 6(1) makes provision for the establishment of the necessary conservation measures. Article 6(2) makes provision for avoidance of habitat deterioration and significant species disturbance. Its emphasis is therefore preventive. Article 6(3) and 64) set out a series of procedural and substantive safeguards governing plans and projects likely to have a significant effect on a Natura 2000 site. Within this structure, it can be seen that there is a distinction between Article 6(1) and (2) which define a general regime and Article 6(3) and 6(4) which define a procedure applying to specific circumstances.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

> "Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent

national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

Article 6(4) deals with the steps that should be taken when it is determined, as a result of Appropriate Assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case. Article 6(4) states:

> "If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.
>
> Where the site concerned hosts a priority natural habitat type and / or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of the Habitats Regulations, 1997 (S.I. No. 94 of 1997) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 / 2011).

Part XAB of the Planning & Development Acts was first inserted by Section 57 of the Planning & Development (Amendment) Act 2010. This Section was subsequently amended by the Environment (Miscellaneous Provisions) Act 2013 and further amended by the European Union (Environmental Impact Assessment & Habitats) Regulations 2011. Part XAB introduces the requirement into primary legislation, for an assessment of the likely significant effects of a proposed land use plan or proposed development on a European site.

1.3 Guidance

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DEHLG) (2009). The methodology followed in relation to this AA screening has had regard to the following guidance:

- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of Environment, Heritage and Local Government.
- Managing Natura 2000 Sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC, referred to as MN2000, European Commission 2000;
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, referred to as the "EC Article 6 Guidance Document (EC2000);
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission.

1.4 Methodology

There are four main stages in the Appropriate Assessment process (see Figure 1-1 below); the requirements for each depending on likely impacts to European Sites (SAC/SPA).

Stage 1: Screening for Appropriate Assessment
The initial, screening stage of the Appropriate Assessment is to determine:

a. whether the proposed plan or project is directly connected with or necessary for the management of the European designated site for nature conservation
b. if it is likely to have a significant adverse effect on the European designated site, either individually or in combination with other plans or projects

For those sites where potential adverse impacts are identified, either alone or in combination with other plans or projects, further assessment is necessary to determine if the proposals will have an adverse impact on the integrity of a European designated site, in view of the sites conservation objectives (i.e. the process proceeds to Stage 2).

Stage 2: Appropriate Assessment
This stage requires a more in-depth evaluation of the plan or project, and the potential direct and indirect impacts of them on the integrity and interest features of the European designated site(s), alone and in-combination with other plans and projects, taking into account the site's structure, function and conservation objectives. Where required, mitigation or avoidance measures will be suggested.

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where mitigation cannot be achieved, then alternative solutions will need to be considered (i.e. the process proceeds to Stage 3).

Stage 3: Alternative Solutions
Where adverse impacts on the integrity of Natura 2000 sites are identified, and mitigation cannot be satisfactorily implemented, alternative ways of achieving the objectives of the plan or project that avoid adverse impacts need to be considered. If none can be found, the process proceeds to Stage 4.

Stage 4: Imperative Reasons of Overriding Public Interest (IROPI)
Where adverse impacts of a plan or project on the integrity of Natura 2000 sites are identified and no alternative solutions exist, the plan or project will only be allowed to progress if imperative reasons of overriding public interest can be demonstrated. In this case compensatory measures will be required.

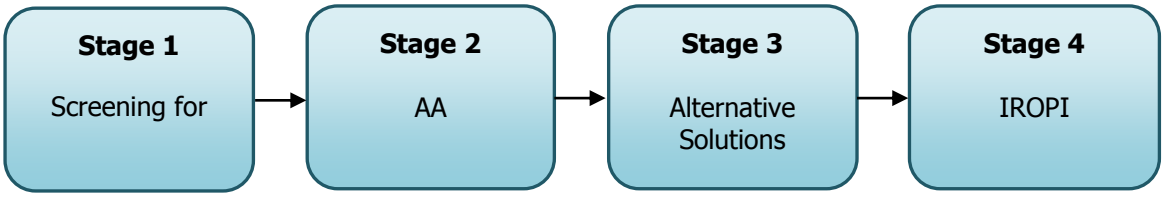


Figure 1-1: The Appropriate Assessment Process (from: Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, DEHLG, 2009)

The process only proceeds through each of the four stages for certain plans or projects. For example, for a plan or project, not connected with management of a site, but where no likely significant impacts are identified, the process stops at stage 1. Throughout the process, the precautionary principle must be applied, so that any uncertainties do not result in adverse impacts on a site. This report is for Stage 1 Screening for Appropriate Assessment.

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. First, the plan should aim to avoid any impacts on European Sites by identifying possible impacts

early in the plan-making process and writing the plan in order to avoid such impacts. Second, mitigation measures should be applied, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If the plan is still likely to result in impacts on European Sites, and no further practicable mitigation is possible, then it must be rejected. If no alternative solutions are identified and the plan is required for imperative reasons of overriding public interest (IROPI test) under Article 6(4) of the Habitats Directive, then compensation measures are required for any remaining adverse effect.

1.4.1 Source-Pathway-Receptor Model

In ecological and environmental impact assessment, for an impact to occur there must be a risk enabled by having a 'source' (e.g. discharges or emissions), a 'receptor' (e.g. a Natura 2000 site or other ecologically sensitive feature), and a pathway between the source and the receptor (i.e. a watercourse which connects the Natura 2000 sites or to its supporting features).

Therefore the Draft LAP, as a potential Source and any links or Pathways that may provide a route of significant impacts on the Receptor i.e. Natura 2000 sites, are examined in this screening. The zone of impact and distance is established from this source-pathway-receptor model.

Ecological impact assessment of potential impacts on European Sites is conducted following a standard source-pathway-receptor model, where, in order for an impact to be established all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance.

- Source(s) – e.g. pollutant run-off from proposed works.
- Pathway(s) – e.g. groundwater connecting to nearby qualifying wetland habitats.
- Receptor(s) – qualifying aquatic habitats and species of European Sites.

In the interest of this report, receptors are the ecological features which are known to be utilised by the qualifying interests or special conservation interests of a European Site. A source is any identifiable element of the Draft Plan provision which is known to have interactions with ecological processes. The pathways are any connections or links between the source and the receptor. This report determines if direct, indirect and cumulative adverse effects (however minor) will arise from the proposed development.

1.4.2 Zone of Influence

Following the source-pathway-receptor model, a Zone of Influence (ZOI) will be determined based on the characteristics of the development and the foreseen distribution of likely effects through any pathways identified. Once the ZOI is established, all European Sites within it will be assessed with specific reference to the sensitive receptors of each site and pathways for effect that relate to the ecological integrity of the site.

1.5 Relationship between the Appropriate Assessment process and the Plan

The Appropriate Assessment process needs to be fully integrated with the various stages of the development of the Draft LAP in order to ensure that the ecological implications of the plan do not affect any Natura 2000 sites. As the AA process has been managed by the Forward Planning team, interaction has occurred with the Biodiversity Officer from the early stages of writing of the Draft Plan to raise awareness of the importance of protection of Natura 2000 sites and that the plan must be formulated to avoid adverse impacts on these sites.

In addition, the Strategic Environmental Assessment process has been taken into account in the appropriate assessment process.

2 Description and Background of the Stillorgan Draft Local Area Plan

2.1 Receiving Environment

Stillorgan is a residential suburban district of Dublin, approximately 7 Kilometres south of the city centre, within the heart of Dun Laoghaire Rathdown County. At its core, Stillorgan has a long established commercial/retail centre, servicing the surrounding residential areas. The Draft Local Area Plan has a relatively limited spatial area and is confined predominantly to the District Centre. The District Centre is well connected by public transport to the city along the N11 Quality Bus Corridor and by the LUAS, and with easy access to the M50 motorway.

2.2 Stillorgan Draft Local Area Plan Description

The Stillorgan Draft Local Area Plan covers an area of approximately 16.5 hectares and is located in the centre of the County, between Blackrock to the east and Dundrum to the west. The Draft LAP area encompasses the lands around the intersection at Lower Kilmacud Road, Old Dublin Road and The Hill and includes a number of strategic sites including the Stillorgan Shopping Centre, Leisureplex, the former Blakes site, the Stillorgan Shopping Centre overflow car park, Kilmacud Crokes GAA club lands and existing retail and commercial development on Lower Kilmacud Road.

The Stillorgan Draft LAP is being prepared as a result of an objective contained within the Dún Laoghaire-Rathdown County Development Plan (DLRCDP) 2016-2022 and in accordance to the policies and objectives contained within the DLRCDP. The DLRCDP is the overarching statutory framework for the development of the County and the Stillorgan Draft LAP must be consistent with the objectives of the DLRCDP 2010-2016 under the Planning and Development Acts.

The DLRCDP identifies Stillorgan as an area for 'Development and Regeneration' where the vision is "to address local issues facing Stillorgan including traffic volumes and congestion and aims to promote a more pedestrian friendly environment. The Plan identifies a vision for redevelopment of Stillorgan as a District Centre and Neighbourhood Centre with a strong sense of place."

2.3 Draft Plan Vision

The emphasis of the Draft Plan is to enhance the sense of place and community within Stillorgan, improving its vitality and viability as a District Centre. The Plan strategy is to seek a transformative improvement in the quality of the public realm where priority movement for pedestrians, cyclists and public transport will be ensured and the creation of high quality spaces will be a prerequisite. The influence and impact of the private car on the environs of the District Centre will be moderated.

The high-quality regeneration and redevelopment of key sites in Stillorgan District Centre will be encouraged, in tandem with a radically improved public realm, to provide a coherent and balanced urban environment in respect of scale, design and layout. Stillorgan will successfully perform its role as a high-quality, accessible retail and commercial centre serving the needs of the wider community.

New residential development in Stillorgan will assist in improving the diversity of the housing mix in the area and reversing the long-term trends of population decline in the area. The residential amenity of established residential areas on the fringes of the District Centre is to be protected and, where possible, enhanced through the successful integration of future developments with the existing built fabric of Stillorgan.

2.4 Relationship with other Relevant Plans and Programmes

The Draft LAP sits within a hierarchy of strategic actions such as plans and programmes, including those listed below. The Draft LAP must comply with relevant higher level strategic actions and may, in turn, guide lower level strategic actions.

2.4.1 Draft National Planning Framework

At national level, the most important recent publication has been the Draft National Planning Framework (NPF) 'Ireland 2040 – Our Plan' which was on public display in November 2017. The Plan forms the "spatial expression of Government policy" and will provide a National Planning Framework to guide national, regional and local planning and investment decisions for the years ahead, building on and co-ordinating the existing regional and local authority planning processes. The Framework is a strategic high level Plan and the practical implications of the policy will be implemented through the finer grained 'Regional Spatial and Economic Strategies' – yet to be published.

2.4.2 Regional Spatial and Economic Strategies

Regional Spatial and Economic Strategies (RSESs) will be prepared by the Regional Assemblies and must be in accordance with the NPF. In addition, the preparation of Metropolitan Area Strategic Plans (MASPs) for the five cities, including Dublin - in the form of 12 year planning frameworks crossing administrative boundaries - will be a key feature of the RSES's.

2.4.3 Dún Laoghaire-Rathdown County Development Plan 2016-2022

The County Development Plan 2016-2022 provides the overarching planning framework for the County and sets out the zoning 'hierarchy' for the County. The 2016-2022 County Development Plan aims to continue to facilitate appropriate levels of sustainable development predicated on the delivery of high quality community, employment and recreational environments - allied to the promotion of sustainable transportation and travel patterns - but all the while protecting Dún Laoghaire–Rathdown's unique landscape, natural heritage and physical fabric, to ensure the needs of those living and working in the County can thrive in a socially, economically, environmentally sustainable and equitable manner.

2.4.4 Core Strategy

The Planning and Development (Amendment) Act 2010 introduced the requirement for an evidence-based Core Strategy to be incorporated as part of all County Development Plans. The purpose of a Core Strategy is to articulate a medium-to-longer term quantitatively based strategy for the spatial development of the area of the Planning Authority, and, in so doing, to demonstrate that a Development Plan and its policies and objectives are entirely consistent with national and regional development objectives as set out in the National Spatial Strategy 2002-2022 (NSS) and the Regional Planning Guidelines 2010-2022 (RPGs).

The Core Strategy seeks to ensure a level of equilibrium between residential land supply in the County and forecast household growth. The Draft LAP lands, which are predominantly zoned 'District Centre', and therefore have a mixed-use focus as opposed to a purely residential one, form a part of the Council's medium-to-long term residential land supply and are highlighted in the Core Strategy as such.

2.4.5 Environmental Protection Objectives

The Draft Plan is subject to a number of high level environmental protection policies and objectives with which it must comply. Examples of Environmental Protection Objectives include the aims of the EU Habitats Directive which is to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of Member States and the purpose of the Water Framework Directive which is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which, among other things, prevents deterioration in the status of all water bodies and protects, enhances and restores all waters with the aim of achieving good status.

3 Screening for Appropriate Assessment

3.1 Introduction to Screening

3.1.1 Background to Screening

This stage of the process identifies any likely significant affects to European Sites from a project or plan, either alone or in combination with other projects or plans. The screening phase was progressed in the following stages. A series of questions are asked during the Screening Stage of the Appropriate Assessment process in order to determine:

a. whether the proposed plan or project is directly connected with or necessary for the management of the European designated site for nature conservation
b. if it is likely to have a significant adverse effect on the Natura 2000 sites, either individually or in combination with other plans or projects

The screening stage of the Appropriate Assessment takes account of the elements detailed above with regard to the details and characteristics of the project or plan to determine if potential for effects to the integrity of the European Site are likely. The characteristics of the draft plan were designed through in iterative process, as a result the Natura 2000 Sites which are screened below may differ from those of high level plans, due to refinements in the methods/project details available.

3.1.2 Desktop Studies

The desktop study completed for this Screening for Appropriate Assessment includes a review of data available relating to Natura 2000 sites including:

- Identification of Natura 2000 Sites within 15km with identification of potential pathways links for specific sites (if relevant) greater than 15km from the proposed development study area;
- Review of the NPWS site synopsis and conservation objectives for Natura 2000 Sites with identification of potential pathways from the Draft LAP, if any; and
- EU Annexed Habitats and Species.

Site synopses, which are summary descriptions of the key conservation interests of sites, Natura 2000 standard data forms and conservation objectives documents for the relevant Natura 2000 sites were obtained from the NPWS website. Other information and data, that was considered pertinent in terms of supporting information was obtained from other sources for example, EPA Envision website and Geological Survey Ireland, Geohive website.

Other information examined from the NPWS website included Species Action Plans, Conservation Management Plans, Freshwater Pearl Mussel sub-basin management plans, and species reports.

3.2 Identification of Relevant Natura 2000 Sites

This section involves an examination of what Natura 2000 sites might be affected. These sites have been identified and listed below, and have considered the potential for a plan or project, whether it is within or outside a Natura 2000 site, to have direct, indirect or cumulative effects, and has taken a precautionary approach so that a site is included if doubt exists. Natura 2000 sites are included that occur within the Zone of Influence of the Draft LAP, and this recognises the sites that occur beyond the Draft LAP may be affected depending upon the connectivity to the site through pathways such as land, air and water pathways.

The DoEHLG (2009) Guidance on Appropriate Assessment recommends a 15km buffer zone be considered around the site. Natura 2000 sites that occur within 15km of the Plan Area or that were identified to have hydrological pathways to the Draft LAP are listed in Table 3-1 and illustrated in Figure 3-1 below. Details of the qualifying interests of each European Site are also identified in Table

3-2. There are sixteen (16) sites in all, nine (9) SACs and seven (7) SPAs. No Natura 2000 site lies within the boundary of the Draft LAP area.

In order to determine the potential for effects from the Draft LAP, information on the qualifying interests, known vulnerabilities and threats to site integrity relevant to any potentially affected Natura 2000 Sites were examined. The information on threats to individual sites and vulnerability of habitats and species that was used during this assessment included the following:

- Ireland's Article 17 Report to the European Commission 'Status of EU Protected Habitats and Species in Ireland' (NPWS, 2013);
- Site Synopses;
- NATURA 2000 Standard Data Forms; and
- Conservation Objectives and Supporting Documents (where available).

Since the conservation objectives for the European Sites focus on maintaining the favourable conservation condition of the qualifying interests of each site, the screening process concentrated on assessing the potential effects of the Draft LAP against the qualifying interests and conservation objectives of each site.

Table 3-1: European Sites which occur within 15 km of the Draft Local Area Plan or with hydrological links to the site (list in accordance to proximity to the Draft LAP boundary)

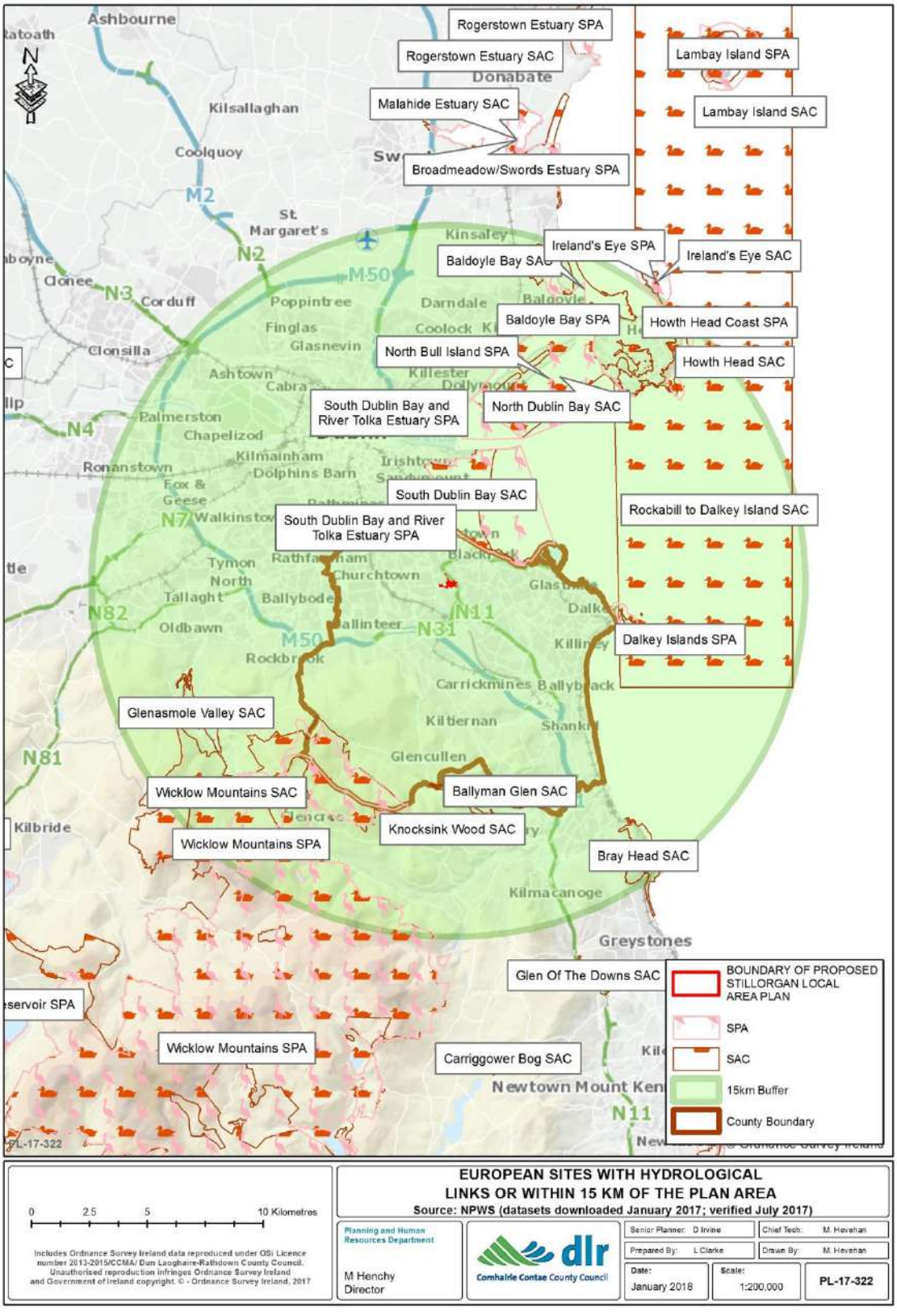
Site Code	Site Name	Distance (km)	Site Synopsis and Existing Threats or Sensitivities
000713	Ballyman Glen SAC	9.03	Ballyman Glen contains a small strip of alkaline fen which is associated with petrifying spring/seepage areas that have given rise to thick deposits of marl. There is an area of broadleaved woodland on the steeper southern slopes of the glen. This is under threat from invasion of species such as Sycamore (Acer pseudoplatanus). An area of land that slopes towards the fen has been used as a landfill site for domestic refuse. The site is also used for a clay pigeon shoot and shattered clay pigeons are scattered throughout the area. These activities pose a threat to the integrity site due to potential water quality issues.
000714	Bray Head SAC	12.296	Dry heath is the principal habitat over much of Bray Head. The heath communities which occur on the dry slopes above the sea cliffs, especially those south-facing, are more open in character and dominated by grasses rather than dwarf shrubs. Calcareous dry grassland, typically species-rich, occurs on deposits of glacial till. Rocky sea cliffs, another Annex I habitat, form most of the seaward boundary at this site and extend for approximately 2 km. Steep clay cliffs extend southwards for a further 1 km, with a small area of clay cliff also at the northernmost part of site. A stand of mostly native woodland occurs in the northern part of the site. Bray Head has an important seabird colony. Peregrine Falcon, an Annex I species of the E.U. Birds Directive, breeds at the site, as do Raven and Kestrel. The heath and grassland habitats at this site are threatened by reclamation for agriculture and also by frequent burning. The site is a popular recreational area and is especially used by walkers.
000725	Knocksink Wood SAC	8.405	Some of the slopes of Knocksink Wood are dominated by Sessile Oak (Quercus petraea), with a sparse shrub layer of Holly (Ilex aquifolium) and Hazel (Corylus avellana). A notable feature of the wooded slopes are the frequent and extensive springs and seepage areas, and there is tufa formation in several places. Associated with the springs and the river are stands of wet alluvial forest. These areas are dominated by Ash and Alder (Alnus spp.), and are assigned to the group Carici remotae-Fraxinetum. This site has one of the most diverse woodland invertebrate faunas in Ireland, including some wet woodland organisms which are threatened at an international level. No site-specific threats have been identified by the NPWS and the site is run as a nature reserve with an education centre.
004172	Dalkey Islands SPA	6.698	Dalkey Islands SPA is both a breeding and a staging site for Sterna terns. Common Tern is the most common species, usually outnumbering Arctic Tern by at least 3:1. The site, along with other parts of south Dublin Bay, is used by the three-tern species as a major post-breeding/pre-migration autumn roost area. The site also provides nesting areas for other breeding

			wader species such as Oystercatchers and Shelducks. There are no site-specific threats identified by the NPWS however the special conservation interest species are sensitive to noise pollution as a form of disturbance.
003000	Rockabill to Dalkey Island SAC	6.912	Reef habitat is uncommon along the eastern seaboard of Ireland due to prevailing geology and hydrographical conditions. These reefs are subject to strong tidal currents with an abundant supply of suspended matter resulting in good representation of filter feeding fauna such as sponges, anemones and echinoderms. The area selected for designation represents a key habitat for the Annex II species Harbour Porpoise within the Irish Sea. The site also supports Common Seal and Grey Seal, for which terrestrial haul-out sites occur in immediate proximity to the site. Bottlenosed Dolphins has also occasionally been recorded in the area. A number of other marine mammals have been recorded in this area including Minke, Fin and Killer Whales and Risso's and Common Dolphins. The NPWS have not identified site specific threats for this site.
002122	Wicklow Mountains SAC	7.687	The vegetation over most of Wicklow Mountains SAC is a mosaic of heath, blanket bog and upland grassland, stands of dense Bracken (Pteridium aquilinum), and small woodlands mainly along the rivers. The two dominant vegetation communities in the area are heath and blanket bog. Due to the underlying rock strata, the water of the rivers and streams is acid rather than alkaline. The water is generally oligotrophic and free from enrichment. Alpine vegetation occurs on some of the mountain tops, notably in the Lugnaquilla area, and also on exposed cliffs and scree slopes elsewhere in the site. Old lead mine workings at Glendasan support an estimated 3.6 hectares of Calaminarian Grassland. Small areas of old oakwood (Blechno-Quercetum petraeae type) occur on the slopes of Glendalough and Glenmalure, near Lough Tay and Lough Dan, with native Sessile Oak (Quercus petraea) trees, many of which are 100-120 years old. Large areas of the site are owned by the National Parks and Wildlife Service (NPWS) and are managed for nature conservation based on traditional land uses of upland areas. The most common land use is traditional sheep grazing, but others include turf cutting, mostly hand-cutting but some machine-cutting also occurs. These land uses pose potential threats to the integrity of the site.
004040	Wicklow Mountains SPA	7.812	Traditionally a ground-nesting species, Merlin in the Wicklow Mountains are usually found nesting in old crows nests in conifer plantations. The open peatlands provide excellent foraging habitat for Merlin with small birds such as Meadow Pipit being their main prey. The cliffs and crags within the site also provide ideal breeding locations for Peregrine. Disturbance from recreational use is thought to be the greatest threat to the special qualifying interest species.
000210	South Dublin Bay SAC	1.754	Several small, sandy beaches with incipient dune formation occur in the northern and western sectors of the site, notably at Poolbeg, Irishtown and Merrion/Booterstown. The formation at Booterstown is very recent. Drift line vegetation occurs in association with the embryonic and incipient fore dunes. The bed of Dward Eelgrass (Zostera noltii) found below Merrion Gates is the largest stand on the east coast. South Dublin Bay is an important site for waterfowl. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there. Water quality concerns for the Wetland habitats and recreational uses are the main threats to the site. At low tide the inner parts of the south bay are used for amenity purposes. Baitdigging is a regular activity on the sandy flats. At high tide some areas have windsurfing and jet-skiing.
004024	South Dublin Bay and River Tolka Estuary SPA	1.727	In the south bay, the intertidal flats extend for almost 3km at their widest. The sediments are predominantly well-aerated sands. Several permanent channels exist, the largest being Cockle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dún Laoghaire. The landward boundary is now almost entirely artificially embanked. There is a bed of Dwarf Eelgrass (Zostera noltii) below Merrion Gates which is the largest stand on the east coast. The site is an important site for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex. The site is of ornithological importance as it supports an internationally important population of Light-bellied Brent Goose and nationally important populations of a further nine wintering species. The site is sensitive to alterations to sediment quality and disturbances such as noise pollution to avian species.

004006	North Bull Island SPA	6.701	Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. The island shelters two intertidal lagoons which are divided by a solid causeway. These lagoons provide the main feeding grounds for the wintering waterfowl. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. The North Bull Island SPA is an excellent example of an estuarine complex and is one of the top sites in Ireland for wintering waterfowl. It is of international importance on account of both the total number of waterfowl and the individual populations of Light-bellied Brent Goose, Black-tailed Godwit and Bar-tailed Godwit that use it. Sediment and disturbance are the main threats identified by the NPWS for the site.
000206	North Dublin Bay SAC	6.703	North Bull Island is a sandy spit which formed after the building of the South Wall and Bull Wall in the 18th and 19th centuries. It now extends for about 5 km in length and is up to 1 km wide in places. A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes. About 1 km from the tip of the island, a large dune slack with a rich flora occurs, usually referred to as the 'Alder Marsh' because of the presence of Alder trees (Alnus glutinosa). The water table is very near the surface and is only slightly brackish. Saltmarsh extends along the length of the landward side of the island. The edge of the marsh is marked by an eroding edge which varies from 20 cm to 60 cm high. The island shelters two intertidal lagoons which are divided by a solid causeway. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. Three rare plant species which are legally protected under the Flora (Protection) Order, 1999 have been recorded on the North Bull Island. The main land uses of this site are amenity activities and nature conservation. Sediment quality and disturbance through recreational activities are the main threats to this site.
004113	Howth Head Coast SPA	12.404	Howth Head Coast SPA is of high ornithological importance as it supports a nationally important population of Kittiwake. It is also a traditional nesting site for Peregrine Falcon, a species that is listed on Annex I of the E.U. Birds Directive. The site is easily accessible and has important amenity and educational value due to its proximity to Dublin City.
004016	Baldoyle Bay SPA	12.355	Baldoyle Bay is an important site for wintering waterfowl, providing good quality feeding areas and roost sites for an excellent diversity of waterfowl species. It supports an internationally important population of Light-bellied Brent Goose, and has a further five species with nationally important populations. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Shelduck, Ringed Plover, Golden Plover, Grey Plover and Bar-tailed Godwit. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland and Waterbirds.
002193	Ireland's Eye SAC	14.733	Situated c. 1.5 km north of Howth, Ireland's Eye is a small uninhabited island. The underlying geology is Cambrian greywhackes and quartzites. These rocks form impressive cliffs along the northern and eastern sides of the island, reaching up to 69 m. Elsewhere the island is covered by glacial drift. A sandy beach, backed by shingle and low sand hills, occurs at Carrigeen Bay on the western shore. An extensive area of bedrock shore is exposed at low tide to the south of the island. The main habitat on the island is a mix of dry grassland and bracken. Owing to its proximity to the mainland, the island is popular with day-trippers and also has educational value. The island has a small, though significant, example of vegetated stony or shingle habitat of the type which fringes sandy beaches. It also contains an example of vegetated sea cliffs and has two Red Data Book species, Crambe maritima and Hyoscyamus niger. Excellent diversity of breeding seabirds (up to 12 species), with four species in numbers of national importance and also a recently established gannet (Sula bassana) colony, the only one on the east coast. Traditional site for Falco peregrinus.
004117	Ireland's Eye SPA	14.733	Ireland's Eye is an important seabird colony, with 11 species breeding regularly. It has nationally important populations of Phalacrocorax carbo, Larus argentatus, Larus marinus, Rissa tridactyla, Uria aalge and Alca torda. In addition, the island has a recently established colony of Sula bassana, which is one of only five in the country and the only one on the East coast. It also has regionally important populations of Fulmarus glacialis, Phalacrocorax aristotelis, Cepphus grylle and a small colony of Fratercula

			arctica only. It is a traditional site for Falco peregrinus, though this species breeds in some years. It supports two Red Data Book plant species, Crambe maritima and Hyoscyamus niger. The seabird colony is monitored annually.
001209	Glenasmole Valley SAC	11.26	Glenasmole Valley lies at the northern foothills of the Dublin and Wicklow Mountains. It is a glaciated valley, with drift deposits, consisting of fluvioglacial sands and gravels of varying thickness and rich in Carboniferous limestone, occurring on the slopes. Spring lines occur along both sides of the northern part of the valley. The River Dodder flows through the valley and within the site the river has been impounded to form two reservoirs. Associated with the reservoirs are areas of swamp and marsh vegetation. The valley is heavily wooded, mostly with mixed woodland of both deciduous and coniferous species but also some native woodland. Dry calcareous pasture grassland, improved to varying degrees, is a main habitat of the valley sides and occurs in association with wet grassland and, in places of seepage, fen or marsh type vegetation. The site has important examples of petrifying springs. The physical and chemical properties of the springs have been studied. Good examples of orchid rich calcareous grassland, including Pseudorchis albida (legally protected) and Orchis morio (Red Data Book species) are found. The quality of grassland is variable owing to agricultural improvement. Molinia meadows are also represented. Several other Red Data Book plant species occur, along with a host of rare or scarce plant species for Co. Dublin. The botany of this site has been well studied since the 19th century. The site has Alcedo atthis, and is important for bats, with four Red Data Book species present (Pipistrellus pipistrellus, Nyctalus leisleri, Myotis daubentoni, Plecotus auritus).

Figure 3-1: Natura Sites 2000 with hydrological links or within 15 km of the Draft Plan Area
Source: NPWS (January 2018)



3.2.3 Elements of the Draft Plan with Potential to Give Rise to Effects

The Stillorgan Draft Local Area Plan contains policies and objectives which have the potential to give rise to effects on Natura 2000 Sites. The Draft Plan contains provisions for the renewal and redevelopment of key sites identified within the Draft Plan area through the implementation of the site-specific Site Framework Strategies. The Draft Plan also contains provisions for comprehensive improvements to the public realm, through the phased implementation of the Stillorgan Village Area Movement Framework Plan. In this regard, the Council will have regard to its responsibilities in relation to the requirements of the Habitats Directive, and any development proposal within the vicinity of or potentially having an effect on a designated site will be subject to an Appropriate Assessment. In addition, elements of the Draft Plan, such as the objectives set out in Section 4.6 pertaining to 'Sustainable Infrastructure', will have, it is thought, a positive ecological effect on the area.

3.3.3 Identification of Potential Likely Significant Effects

This section documents the final stage of the screening process. It has used the information collected on the sensitivity of each Natura 2000 Site and describes any likely significant effects resulting from the Draft LAP. This assumes the absence of any controls, conditions, or mitigation measures. In determining the potential for significant effects, a number of factors have been taken into account. Firstly, the sensitivity and reported threats to the European Site. Secondly, the individual elements of the Draft LAP and the potential effect they may cause to the site were considered. The elements of the Draft LAP with potential to cause effect to Natura 2000 Sites are presented in Table 3 2 below.
Sites are screened out based on one or a combination of the following criteria:

- where it can be shown that there are no pathways or links between activities of the Draft LAP, and the site to be screened;
- where the site is located at such a distance from Draft LAP that effects are not anticipated;
- where known threats or vulnerabilities at a site cannot be linked to potential impacts that may arise from the Draft LAP; and
- where there are no significant 'in combination' effects.

The following parameters are described when characterising impacts (following CIEEM (2016), EPA (2002) and NRA (2009)):

Direct and Indirect Impacts – An impact can be caused either as a direct or as an indirect consequence of a proposed development.

Magnitude – Magnitude measures the size of an impact, which is described as high, medium, low, very low or negligible.

Extent – The area over which the impact occurs – this should be predicted in a quantified manner.

Duration – The time for which the effect is expected to last prior to recovery or replacement of the resource or feature:

- Temporary: Up to 1 Year;
- Short Term: The effects would take 1-7 years to be mitigated;
- Medium Term: The effects would take 7-15 years to be mitigated;
- Long Term: The effects would take 15-60 years to be mitigated;
- Permanent: The effects would take 60+ years to be mitigated.

Likelihood – The probability of the effect occurring taking into account all available information:

- Certain/Near Certain: >95% chance of occurring as predicted;

- Probable: 50-95% chance as occurring as predicted;
- Unlikely: 5-50% chance as occurring as predicted;
- Extremely Unlikely: <5% chance as occurring as predicted.

The Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines for ecological impact assessment (CIEEM 2016) define an ecologically significant impact as an impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographic area. The integrity of a site is the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified (CIEEM, 2016).

The Habitats Directive requires the focus of the assessment at this stage to be on the integrity of the site as indicated by its Conservation Objectives. It is an aim of the NPWS to draw up conservation management plans for all areas designated for nature conservation. These plans will, among other things, set clear objectives for the conservation of features of interest within a site.

Site-specific conservation objectives (SSCOs) have been prepared for a number of European Sites. These detailed SSCOs aim to define favourable conservation condition for the qualifying habitats and species at that site by setting targets for appropriate attributes which define the character habitat. The maintenance of the favourable condition for these habitats and species at the site level will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a species can be described as being achieved when "population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis."

Favourable conservation status of a habitat can be described as being achieved when "its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable."

Generic Conservation Objectives for cSACs have been provided as follows:

- To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.
- One generic Conservation Objective has been provided for SPAs as follows:
- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

The European Commission Environment DG document 'Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC' outlines the types of effects that may affect European sites. These include effects from the following activities:

- Land take
- Resource Requirements (Drinking Water Abstraction Etc.)
- Emissions (Disposal to Land, Water or Air)
- Excavation Requirements
- Transportation Requirements
- Duration of Construction, Operation, Decommissioning

In addition, the guidance document outlines the following likely changes that may occur at a designated site, which may result in effects on the integrity and function of that site:

- Reduction of Habitat Area
- Disturbance to Key Species
- Habitat or Species Fragmentation
- Reduction in Species Density
- Changes in Key Indicators of Conservation Value (Water Quality Etc.)
- Climate Change

The elements detailed above were considered with specific reference to each of the European Sites identified in Tables 3-1 and 3-2.

Table 3-2: Screening assessment of European Sites within 15km or with significant hydrological links to the Draft LAP boundary

Site Code	**Site Name**	**Distance (km)**	**Qualifying Interests (Sensitive Receptors)**	**Relevant environmental conditions that support Site Integrity**	**Pathways**	**Pathway for Significant Effects**	**Potential for In-Combination Effects**
000713	Ballyman Glen SAC	9.03	Petrifying springs with tufa formation (Cratoneurion) [7220] Alkaline fens [7230]	Water quality and quantity and alterations in the water table/chemistry.	The SAC is upstream of the Draft LAP. Therefore, there are no pathways or hydrological links between the Draft LAP and this SAC. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No
000714	Bray Head SAC	12.296	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] European dry heaths [4030]	Flat topography on coastal cliff bedrock. High pH influence of sands and seabird guano.	There are no pathways for effects to the qualifying interests listed for this SAC. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No
000725	Knocksink Wood SAC	8.405	Petrifying springs with tufa formation (Cratoneurion) [7220] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	Water quality and quantity and alterations in the water table/chemistry.	There are no pathways or hydrological links between the Draft LAP and this SAC. There are no likely effects foreseen as a result of the implementation	No	No

					of the Draft Plan.		
004172	Dalkey Islands SPA	6.698	Roseate Tern (Sterna dougallii) [A192] Common Tern (Sterna hirundo) [A193] Arctic Tern (Sterna paradisaea) [A194]	The qualifying features of this SPA are most sensitive to direct disturbance due to noise and/or increased activity on site. Water quality and key resources e.g. food source prey items such as fish, crustaceans etc. upon which tern species depend.	The impact of increased visitor pressure to Dalkey Island is unlikely as a result of the Draft LAP. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No
003000	Rockabill to Dalkey Island SAC	6.912	Phocoena phocoena (Harbour Porpoise) [1351] Reefs [1170]	Human activities and disturbance. Artificial barriers may restrict their range. Water quality and key resources e.g. food source upon which harbour porpoises depend. Water quality and habitat quality of reefs.	The impact of increased visitor pressure to Dalkey Island is unlikely as a result of the Draft LAP. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No
002122	Wicklow Mountains SAC	7.687	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110] Natural dystrophic lakes and ponds [3160] Northern Atlantic wet heaths with Erica tetralix [4010] European dry heaths [4030] Alpine and Boreal heaths [4060] Calaminarian grasslands of the Violetalia calaminariae [6130] Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] Blanket bogs (* if	Water quality and habitat quality.	The SAC is upstream of the Draft LAP. Therefore, there are no pathways or hydrological links between the Draft LAP and this SAC. There are no likely effects foreseen as a result of the implementation of the Draft Plan	No	No

			active bog) [7130] Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani) [8110] Calcareous rocky slopes with chasmophytic vegetation [8210] Siliceous rocky slopes with chasmophytic vegetation [8220] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Lutra lutra (Otter) [1355]				
004040	Wicklow Mountains SPA	7.812	Merlin (Falco columbarius) [A098] Peregrine (Falco peregrinus) [A103]	Disturbance and habitat quality.	The SAC is upstream of the Draft LAP. Therefore, there are no pathways or hydrological links between the Draft LAP and this SAC. There are no likely effects foreseen as a result of the implementation of the Draft Plan	No	No
000210	South Dublin Bay SAC	1.754	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Embryonic shifting dunes [2110]	Water quality and habitat quality.	There are no pathways or hydrological links between the Draft LAP and this SAC. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No
004024	South Dublin Bay and River Tolka Estuary SPA	1.727	Light-bellied Brent Goose (Branta bernicla hrota) [A046] Oystercatcher (Haematopus ostralegus) [A130] Ringed Plover (Charadrius hiaticula) [A137] Grey Plover (Pluvialis	Disturbance, water quality and habitat quality.	There are no pathways or hydrological links between the Draft LAP and this SPA. There are no likely effects foreseen as a result of the implementation	No	No

			squatarola) [A141] Knot (Calidris canutus) [A143] Sanderling (Calidris alba) [A144] Dunlin (Calidris alpina) [A149] Bar-tailed Godwit (Limosa lapponica) [A157] Redshank (Tringa totanus) [A162] Black-headed Gull (Chroicocephalus ridibundus) [A179] Roseate Tern (Sterna dougallii) [A192] Common Tern (Sterna hirundo) [A193] Arctic Tern (Sterna paradisaea) [A194] Wetland and Waterbirds [A999]		of the Draft Plan.		
004006	North Bull Island SPA	6.701	Light-bellied Brent Goose (Branta bernicla hrota) [A046] Shelduck (Tadorna tadorna) [A048] Teal (Anas crecca) [A052] Pintail (Anas acuta) [A054] Shoveler (Anas clypeata) [A056] Oystercatcher (Haematopus ostralegus) [A130] Golden Plover (Pluvialis apricaria) [A140] Grey Plover (Pluvialis squatarola) [A141] Knot (Calidris canutus) [A143] Sanderling (Calidris alba) [A144] Dunlin (Calidris alpina) [A149] Black-tailed Godwit (Limosa limosa) [A156] Bar-tailed Godwit (Limosa lapponica) [A157] Curlew (Numenius arquata) [A160] Redshank (Tringa totanus) [A162] Turnstone (Arenaria interpres) [A169] Black-headed Gull (Chroicocephalus	Disturbance, water quality and habitat quality.	There are no pathways or hydrological links between the Draft LAP and this SPA. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No

			ridibundus) [A179] Wetland and Waterbirds [A999]				
000206	North Dublin Bay SAC	6.703	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] Mediterranean salt meadows (Juncetalia maritimi) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Humid dune slacks [2190] Petalophyllum ralfsii (Petalwort) [1395]	Disturbance, water quality and habitat quality.	There are no pathways or hydrological links between the Draft LAP and this SAC. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No
004113	Howth Head Coast SPA	12.404	Kittiwake Rissa tridactyla [A188]	Disturbance, water quality and habitat quality.	There are no pathways or hydrological links between the Draft LAP and this SPA. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No
004016	Baldoyle Bay SPA	12.355	A046 Brent Goose Branta bernicla hrota A048 Shelduck Tadorna tadorna A137 Ringed Plover Charadrius hiaticula A140 Golden Plover Pluvialis apricaria A141 Grey Plover Pluvialis squatarola A157 Bar-tailed Godwit Limosa lapponica A999 Wetlands	Disturbance, water quality and habitat quality.	There are no pathways or hydrological links between the Draft LAP and this SPA. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No

002193	Ireland's Eye SAC	14.733	A200 Alca torda A103 Falco peregrinus A204 Fratercula arctica A009 Fulmarus glacialis A017 Phalacrocorax carbo A188 Rissa tridactyla A016 Sula bassana A199 Uria aalge	Disturbance, water quality and habitat quality.	There are no pathways or hydrological links between the Draft LAP and this SAC. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No
004117	Ireland's Eye SPA	14.733	A017 Cormorant Phalacrocorax carbo A184 Herring Gull Larus argentatus A188 Kittiwake Rissa tridactyla A199 Guillemot Uria aalge A200 Razorbill Alca torda	Disturbance, water quality and habitat quality.	There are no pathways or hydrological links between the Draft LAP and this SPA. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No
001209	Glenasmole Valley SAC	11.26	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] Petrifying springs with tufa formation (Cratoneurion) [7220]	Surface and groundwater quality and flows.	There are no pathways or hydrological links between the Draft LAP and this SAC. There are no likely effects foreseen as a result of the implementation of the Draft Plan.	No	No

3.4 Other Plans and Programs

The E.C. Habitats Directive and the Irish Habitats Regulations 2011 require that the impacts on Natura 2000 sites be assessed from the plan or project in question and also in the presence of other plans and projects that could affect the same Natura 2000 sites. Projects and/or plans that have potential to act in combination with the Draft LAP and potentially result in adverse impacts on European Sites are listed below. This Section identifies if these plans/projects have undergone an Appropriate Assessment themselves as it is assumed that if a plan/project has been adopted following an AA then it cannot pose likely significant adverse effects on Natura 2000 sites.

The characteristics of the Draft LAP are foreseen to have very low effects to any European Sites. Therefore, the in-combination effects do not need to be considered, as per the CIEEM 2016 guidelines. It is thought that the proposed Draft LAP in-combination with the plans and projects listed below are not likely to have significant effects on any European Site. However, following a

precautionary approach relevant plans and projects have been assessed. A list of the plans and projects considered are as follows:

- Dún Laoghaire – Rathdown County Development Plan 2016-2022
- Dublin City Development Plan 2016-2022;
- Wicklow County Development Plan 2016-2022;
- South Dublin County Development Plan 2016-2022;
- Cherrywood SDZ Planning Scheme 2014 (to be read in conjunction with Approved Amendments 1-4 June 2017);
- Greater Dublin Area Draft Transport Strategy, 2011-2030;
- Smarter Travel: A Sustainable Transport Future, A new Transport policy for Ireland, 2009-2020;
- Greater Dublin Strategic Drainage Study 2002-2031;
- Dún Laoghaire Harbour Masterplan (2011);
- Eastern RBD Management Plan 2009-2015;
- Sandyford Urban Framework Plan 2016-2022;
- Woodbrook-Shanganagh Local Area Plan 2017-2023;
- Blackrock Local Area Plan 2015-2021;
- Deansgrange Local Area Plan 2010-2020;
- Goatstown Local Area Plan 2012-2018;
- Kiltiernan/Glenamuck Local Area Plan 2013-2019;
- Glencullen Local Area Plan 2008-2018;
- Water Supply Project Eastern and Midland Region.

Table 3-3 outlines plans or projects that were considered which may interact with the Draft LAP to cause in-combination effects to European Sites.

Table 3-3: Plans and projects likely to cause in-combination effects

Plan or project	**Status**	**Overview**	**Possible significant effects from plan or project**	**Possible significant in-combination effects**	**Risk of significant in-combination effects with the Stillorgan Local Area Plan**
Draft National Planning Framework: Ireland 2040 Our Plan	The Pre-Draft Consultation period ended on the 10th November 2017. Review of submissions and preparation of the final National Planning Framework is currently underway.	The Draft Plan As a strategic development framework, Ireland 2040 - Our Plan sets the long-term context for our country's physical development and associated progress in economic, social and environmental terms and in an island, European and global context. Ireland 2040 will be followed and underpinned by supporting policies	Yes However, iterative AA and SEA processes were conducted. Review of submissions and preparation of the final AA and SEA is currently underway.	Yes However, iterative AA and SEA processes were conducted. Review of submissions and preparation of the final AA and SEA is currently underway.	Mitigation Measures proposed within the Draft Planning Framework are robust. Development proposals which arise as a result of the final Planning Framework will be subject to Appropriate Assessment. This will provide specific project level detail to ensure no adverse significant effects

		and actions at sectoral, regional and local levels.			to European Sites.
Dún Laoghaire-Rathdown County Development Plan 2016-2022	Published	The Plan sets out Dún Laoghaire-Rathdown County Council's policies for the sustainable development of the County from 2016 to 2022.	No Stage 1 Appropriate Assessment carried out.	No Potential impacts are to be avoided through mitigatory policies in the Development Plan.	Mitigation Measures proposed within the Plan are robust. Development proposals which arise as a result of the Development Plan are subject to Appropriate Assessment. This will provide specific project level detail to ensure no adverse significant effects to European Sites.
Dublin City Development Plan 2016-2022	Published	The Dublin City Development Plan sets out policies and objectives for Dublin City. This plan guides how and where development will take place in the city over the next 6 years. This includes SDRA sites including the Poolbeg Peninsula.	Yes Appropriate Assessment carried out.	No Potential impacts are to be avoided through mitigatory policies in the Development Plan.	Major projects within the Dublin City Development Plan will be subject to an Environmental Impact Assessment and all statutory requirements, including a public consultation process, by the relevant authorities. An Appropriate Assessment of the proposed project is also required in accordance with the Habitats Directive.
Wicklow County Development Plan 2016-2022	Published	The Plan sets out Wicklow County Council's policies for the sustainable development of the County from 2016-2022.	Yes Appropriate Assessment carried out.	No Potential impacts are to be avoided through mitigatory policies in the Development Plan.	Mitigation Measures proposed within the Plan are robust. Development proposals which arise as a result of the Development Plan are subject to Appropriate Assessment. This will provide specific project level detail to ensure no adverse significant effects to European

					Sites.
South Dublin County Development Plan 2016-2022	Published	The Plan sets out South Dublin County Council's policies and objectives for the continued development of the County from 2016 to 2022.	No Stage 1 Appropriate Assessment carried out.	No Potential effects are to be avoided through avoidance policies in the Development Plan.	South Dublin County Development Plan has generally been formulated to ensure that uses, developments, and effects arising from permissions based upon the Plan (either individually or in combination with other plans or projects) shall not give rise to significant adverse impacts on the ecological integrity of any European sites.
Cherrywood SDZ Planning Scheme 2014 (to be read in conjunction with Approved Amendments 1-4 June 2017)	Published	The Planning Scheme sets out the strategic framework for the provision, including the phasing and delivery, of a major new residential and employment settlement with all associated social and physical infrastructure.	Yes However, iterative AA and SEA processes were conducted as part of the process. Robust mitigation measures were put in place.	Yes However, iterative AA and SEA processes were conducted as part of the process. Robust mitigation measures were put in place.	The mitigation measures proposed within the AA limit the potential of the Planning Scheme on the integrity of European Sites. The potential likely effects from the Draft LAP are thought to be very-low (as detailed above). Therefore, it is not likely that significant in combination effects to the integrity of any European Site will arise.
Greater Dublin Area Draft Transport Strategy 2011-2030	Published	The Transport Strategy provides a framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area (GDA) for the next two decades.	No Stage 1 Appropriate Assessment carried out.	No Potential effects are to be avoided through avoidance policies in the Strategy.	The potential effects of the Strategy were assessed to be negligible by the AA Screening report. Therefore, no in-combination effects are foreseen.
Smarter Travel: A Sustainable Transport Future, A new Transport policy for Ireland 2009-2020	Published	Smarter Travel is a framework for actions aimed at ensuring that alternatives to the car are more widely available, mainly through a	No Stage 1 Appropriate Assessment carried out.	No Potential effects are to be avoided through avoidance policies in the Strategy.	The overall aim of this strategy is to reduce the use of cars to move towards a more sustainable ethos. Therefore, in combination

		radically improved public transport service and through investment in cycling and walking; actions aimed at improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies; and actions aimed at strengthening institutional arrangements to deliver the targets.			effects are not foreseen.
Greater Dublin Strategic Drainage Study 2002-2031	Published	The Greater Dublin Drainage (GDD) initiative aims to provide strategic drainage infrastructure required for the Greater Dublin Area (GDA) to continue to develop. It is also required to protect the environment and ensure compliance with EU and national legislative requirements. The project involves the provision of a 26km pipeline, a wastewater treatment plant (WwTP) located at Clonshagh (Clonshaugh) and a marine outfall 6km out to sea from Baldoyle Bay. The project is being led by Fingal County Council, on behalf of Dublin City Council, Dún Laoghaire-Rathdown County Council, and South Dublin County Council, in partnership with Kildare and Meath County Councils.	Yes However, iterative Ecological Assessments and SEA processes were conducted as part of the process. Robust mitigation measures were put in place.	Yes However, iterative Ecological Assessments and SEA processes were conducted as part of the process. Robust mitigation measures were put in place.	The mitigation measures proposed within the AA limit the potential of the Strategy on the integrity of European Sites. The potential likely effects from the Draft LAP are thought to be very-low (as detailed above). Therefore, it is not likely that significant in combination effects to the integrity of any European Site will arise.
Dún Laoghaire	Published	The non-statutory	No	No	Minimal

Harbour Masterplan 2011		Masterplan sets out policies in relation to the management of the harbour, with particular reference to heritage protection, is an important part of this plan. The policies have been developed with regard to the identification and retention of character, the enhancement of the public realm, the repair of historic fabric and the addition of new interventions.	SEA Screening Statement and Environmental Reports were prepared. No AA was undertaken.	SEA Screening Statement and Environmental Reports were prepared. No AA was undertaken.	development is possible within this area and the plan largely relates to maintenance and progression of socio economic factors. Therefore, no in-combination effects are foreseen.
Eastern River Basin District Management Plan 2009-2015	Published	The ERBD Management Plan describes the actions that are proposed to ensure the necessary protection of our waters over the coming years. There is a second phase of the management plan due to be created.	No Appropriate Assessment carried out.	No Screening for potential effects under Habitats Directive Article 6 process is put in place once details of the implementation of the programme of Measures (POMs) under the ERBD are known.	The actions and objectives in relation to the Water Framework Directive and the ERBD Management plan are to protect and restore Protected Areas.
Sandyford Urban Framework Plan 2016-2022	Published	The overall purpose of this Framework Plan is to set out a strategy for the proper planning and sustainable development of the plan area.	No AA and SEA processes were conducted as part of the process. Robust mitigation measures were put in place.	No AA and SEA processes were conducted as part of the process. Robust mitigation measures were put in place.	Minimal development is possible within this area and the plan largely relates to maintenance and progression of socio economic factors. Therefore, no in-combination effects are foreseen.
Woodbrook-Shanganagh Local Area Plan 2017-2023	Published	The overall purpose of this Local Area Plan is to set out a strategy for the proper planning and sustainable development of the plan area.	No Stage 1 Appropriate Assessment carried out.	No AA and SEA processes were conducted as part of the process. Robust mitigation measures were put in place.	Mitigation Measures proposed within the Draft LAP are robust. Development proposals which arise as a result of the Draft LAP are subject to Appropriate Assessment. This will provide

					specific project level detail to ensure no adverse significant effects to European Sites.
Blackrock Local Area Plan 2015-2020	Published	The overall purpose of this Local Area Plan is to set out a strategy for the proper planning and sustainable development of the plan area.	No Stage 1 Appropriate Assessment carried out.	No AA and SEA processes were conducted as part of the process.	Robust mitigation measures were put in place. Mitigation Measures proposed within the Draft LAP are robust. Development proposals which arise as a result of the Draft LAP are subject to Appropriate Assessment. This will provide specific project level detail to ensure no adverse significant effects to European Sites.
Deansgrange Local Area Plan 2010-2020	Published	The overall purpose of this Local Area Plan is to set out a strategy for the proper planning and sustainable development of the plan area.	No No AA was undertaken.	No No AA was undertaken	Minimal development is possible within this area and the plan largely relates to maintenance and progression of socio economic factors. Therefore, no in-combination effects are foreseen.
Goatstown Local Area Plan 2012-2018	Published	There are a very limited number of sites within the Plan area that have any significant or realistic development / redevelopment potential. The principle challenge for the Local Area Plan is therefore, to encourage and guide future development that enhances Goatstown and strengthens the area's overall sense of place	No No AA was undertaken.	No No AA was undertaken.	Minimal development is possible within this area and the plan largely relates to maintenance and progression of socio economic factors. Therefore, no in-combination effects are foreseen.

		whilst at the same time protecting the residential amenity of existing residents.			
Kiltiernan/Glenamuck Local Area Plan 2013 - 2019	Published	The overall purpose of this Local Area Plan is to set out a strategy for the proper planning and sustainable development of the plan area.	No AA Screening was undertaken and the effects were deemed to be negligible. An SEA processes was conducted as part of the process. Robust mitigation measures were put in place.	No AA Screening was undertaken and the effects were deemed to be negligible. An SEA processes was conducted as part of the process.	Robust mitigation measures were put in place. The potential effects of the Draft LAP were assessed to be negligible by the AA Screening report. Therefore, no in-combination effects are foreseen.
Glencullen Local Area Plan 2008 – 2018	Published	The overall purpose of this Local Area Plan is to set out a strategy for the proper planning and sustainable development of the plan area.	No No AA was undertaken.	No No AA was undertaken.	Minimal development is possible within this area and the plan largely relates to maintenance and progression of socio economic factors. Therefore, no in-combination effects are foreseen.
Water Supply Project Eastern and Midland Region	Feasibility; Under Assessment	The project aims to fulfil the growing demand for fresh drinking water within the Dublin Region. The current emerging preferred option is for abstraction from the Parteen Weir Site controlled by the ESB. An underground pipeline would connect the abstraction point to a terminal point in west Dublin.	Yes Appropriate Assessment is currently being carried out.	No Mitigation measures will be put in place to minimise effects.	There is no hydrological link between the abstraction point and the zone of influence of Stillorgan Draft LAP. Therefore, only possible local effects were considered in addition to abstraction volume. Mitigation measures are being formulated within the WSP to ensure that the Water Table remains consistent through interactions with the ESB pumping station at Parteen.

4 Conclusions

Stage 1 Screening for AA of the Stillorgan Draft Local Area Plan has been carried out. It has been demonstrated that implementation of the Plan is not foreseen to have any likely significant effects on any European Site.

The Draft LAP is not located within or directly adjacent to any European Site. The Appropriate Assessment screening process considered potential effects which may arise during all phases of the Plan as a result of the implementation of the Draft LAP. Through an assessment of the pathways for effects and an evaluation of the Draft LAP characteristics, taking account of the processes involved and the distance of separation between European Sites in the wider area, it has been evaluated that there are no likely significant adverse effects on the qualifying interests and the conservation objectives of any designated Natura 2000 sites. The ecological integrity of the relevant Natura 2000 Sites is not foreseen to be significant effected by the Draft LAP.

It is concluded that it is unlikely that the Draft LAP will give rise to any significant adverse effects on designated Natura 2000 sites, alone or in combination with other plans or projects. This evaluation is made in view of the conservation objectives of the habitats or species for which these Natura 2000 sites have been designated. Consequently, a Stage 2 – Natura Impact Statement is not required for the Draft LAP.

Appendix IV

Draft Stillorgan Local Area Plan

Strategic Flood Risk Assessment

Comhairle Contae County Council

Table of Contents:

Appendices to SFRA

1.1 Introduction

This Flood Risk Assessment (FRA) of the Draft Stillorgan Local Area Plan 2017-2023 (LAP) has been prepared and informed having regard to *'The Planning System and Flood Risk Management Guidelines for Planning Authorities', 2009* (DEHLG & OPW) and the Strategic Flood Risk Assessment (SFRA) undertaken at County level for Dún Laoghaire-Rathdown prepared as part of the Dún Laoghaire-Rathdown County Development Plan 2016-2022 (Appendix 13).

The Planning System and Flood Risk Management Guidelines state that Planning Authorities are required to introduce flood risk assessment as an integral and leading element of their Development Plan functions. It sets out that Development Plans and Local Area Plans must establish the flood risk assessment requirements for their functional area. The Guidelines further state that flood risk management should be integrated into spatial planning policies at all levels to enhance certainty and clarity in the overall planning process.

A Strategic Flood Risk Assessment is an area-wide assessment of the existing risks of flooding and the impact of those risks arising from proposed spatial planning decisions. A staged approach has been adopted in the preparation of this FRA, as advocated under the Guidelines.

Stage 1: Identifies if the area is at risk of flooding and if so, the principal sources of flooding.

Stage 2: Flood Risk Assessment confirms sources of flooding that affect the Plan area and involve the preparation of a flood zone map, based on best available data. This assessment will also detail a flood management strategy for the Plan area, if necessary.

Stage 3: Where a detailed Flood Risk Assessment is required to assess flood risk areas in sufficient detail and to provide quantitative appraisal of potential flood risk to a proposed or existing development, a Stage 3 Flood Risk Assessment will be carried out.

The Guidelines require the planning system at National, Regional and Local levels to:

A: Avoid developments in areas at risk of flooding, particularly flood plains, unless there are proven wider sustainability grounds that justify appropriate development and where the flood risk can be reduced or managed to an acceptable level without increasing flood risk elsewhere.

B: Adopt a sequential approach to flood risk management when assessing the location for new development based on avoidance, reduction and mitigation of flood risk, and incorporate flood risk assessment into the process of making decisions on planning applications and planning appeals.

1.2 Flooding & Strategic Environmental Assessment (SEA)

The Planning System and Flood Risk Management Guidelines, 2009, set out best-practice in terms of integrating SFRA and SEA. In this regard, Section 3.10 of the Guidelines states that, '*The SEA Process provides a good practice framework for scoping and considering a range of planning and environmental issues, including flooding in the plan making process'* and that '*Flood risk assessments carried out in response to these Guidelines, should be integrated with the SEA process'*.

The Guidelines further state that, '*Where SEA and the environmental report is required, flood risk assessment should be undertaken as early as possible in the process so that the SEA is fully informed of the flood risks and impacts of the proposed zoning or development (See Appendix A)'.*

Accordingly, this SFRA for the Draft Stillorgan LAP has been prepared at the very outset of the plan-making process, as a working document to align with the initial scoping stage for the SEA. In this way, it is envisaged that the SFRA may be integrated into the parallel SEA Process.

1.3 Flood Risk Management – Development Plan Policy

Section 5.2.5.2 of the Dún Laoghaire Rathdown County Development Plan, Policy CC15, relates to Flood Risk Management and states that *'It is Council policy to support, in cooperation with the OPW, the implementation of the EU Flood Risk Directive (2007/60/EC) on the assessment and management of flood risks, the Flood Risk Regulations (SI No 122 of 2010) and the Department of the Environment, Heritage and Local Government and the Office of Public Works Guidelines on 'The Planning System and Flood Risk Management, (2009)' and relevant outputs of the Eastern District Catchment and Flood Risk Assessment and Management study (ECFRAMS Study).'*

Section 5.2.5.2 further states that the Council will ensure the implementation of the Planning System and Flood Risk Management Guidelines and Planning Circular PL2/2014 (or any updated / superseded document) in relation to flood risk management within the County. It refers to the Strategic Flood Risk Assessment of the County undertaken as part of the County Development Plan process (Appendix 13), and that the implementation of the Guidelines will include, *inter alia*, the following:

- Avoid, reduce and / or mitigate, as appropriate in accordance with the Flood Risk Management Guidelines, the risk of the flooding within the flood risk areas that may be identified during the period of the Plan or in relation to a planning application.
- Flood Risk Management and Strategic Flood Risk Assessment (SFRA) shall be incorporated into the preparation of all Local Area Plans and any other lower tier plans.
- Regard shall be had to any future flood hazard maps, flood risk maps and flood risk management plans prepared as part of the Eastern District Catchment Flood Risk Assessment and Management Study and future iterations of other similar studies of impacts of climate change.

Having regard to the Planning System and Flood Risk Management Guidelines, 2009, and County Development Plan policy, a Flood Risk Assessment (FRA) has been prepared for the Draft Stillorgan LAP.

1.4 Stillorgan Local Area Plan – Statutory Context

The Stillorgan LAP is being prepared as a result of and in accordance with the policies and objectives contained within the Dún Laoghaire-Rathdown County Development Plan 2016-2022, the overarching statutory framework for the development of the County. The County Development Plan states that spatially-based Local Area Plans have been, and will continue to be, prepared by the Council primarily targeted at new development nodes and areas of the County in need of redevelopment and/or regeneration. The Stillorgan Local Area Plan 2007 expired on the 7th October 2017 and in this regard the County Development Plan contained an objective to review the LAP during the lifetime of the County Development Plan.

In accordance with Section 10(2)(h) of the Planning and Development Act 2010 (as amended), Stillorgan was considered to contain lands in need of regeneration / renewal. While it is acknowledged that there are differing definitions of regeneration in urban planning, in this instance, it is taken to mean the integrated local redevelopment of the area. The Stillorgan LAP is being prepared in accordance with Sections 18-20 of the Planning and Development Act, 2000 (as amended). The parallel environmental assessments, namely, the Strategic Environmental Assessment, Appropriate Assessment and the Strategic Flood Risk Assessment are being undertaken in tandem, as iterative processes, informing the preparation of the Draft Stillorgan Local Area Plan.

1.5 Description of the Plan Area

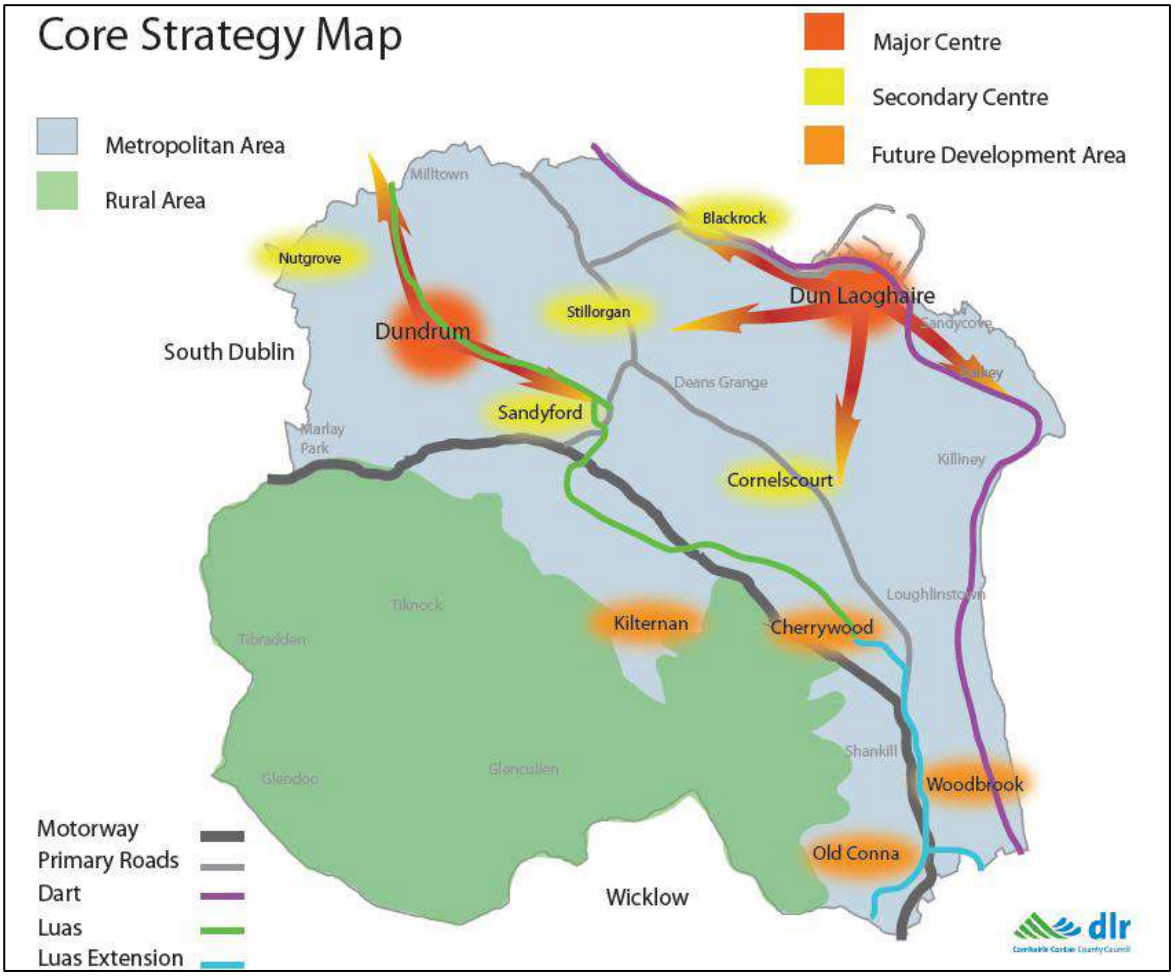
Stillorgan is a residential suburban district of Dublin, located approximately 7 Kilometres south of the city centre, within the heart of Dun Laoghaire Rathdown County between Blackrock to the east and Dundrum to the west. The Stillorgan LAP covers an area of approximately 16.5 hectares and encompasses the lands around the intersection at Lower Kilmacud Road, Old Dublin Road and the Hill Road.

At its core, Stillorgan has a long established shopping district, servicing the surrounding residential areas. It is this District Centre that primarily forms the LAP area. The area includes a number of strategic sites including the Stillorgan Shopping Centre, the Leisureplex site, the former Blakes and Esmonde Motors sites, the Stillorgan Shopping Centre overflow car park and existing retail and commercial development on Lower Kilmacud Road. Stillorgan is well connected by public transport to Dublin City along the N11 Quality Bus Corridor and by the LUAS, and has easy access to the M50 motorway.

Stillorgan is designated under the Core Strategy of the County Development Plan as a *'Secondary Centre'* in the County (see Figure 2 overleaf). The LAP lands are primarily zoned Objective DC *'To protect, provide for and/or improve mixed-use district centre facilities'* and Objective NC *'To protect, provide for and/or improve mixed-use neighbourhood centre facilities'.*

Fig 1: Stillorgan LAP - Plan Boundary Area

Fig 2: Core Strategy Map - Dún Laoghaire-Rathdown County Development Plan 2016-2022



1.6 Identification of Flood Risk

i. Strategic Flood Risk Assessment - County Development Plan 2016-2022

A Strategic Flood Risk Assessment was undertaken for the Dún Laoghaire-Rathdown County Development Plan 2016-2022, the purpose of which was to provide sufficient information to allow proper planning decisions to be made on sites at risk of flooding over the lifetime of the Plan, and to ensure that the necessary information with regard to flooding, the *'Sequential Approach'* and the *'Justification Test',* was available as part of the decision-making process of the County Development Plan.

As recommended in the Planning System and Flood Risk Management Guidelines, 2009, the SFRA for the County Development Plan undertook a two-stage assessment of flood risk for the entire County area.

The first stage identified flood risk and developed flood zone maps which confirmed that a proportion of zoned lands are at flood risk. The second stage, and the main purpose of the SFRA report, highlighted development areas that require more detailed assessment on a site specific level. The SFRA also provides guidelines for development within areas at potential risk of flooding, and specifically looks at flood risk and the potential for development across the County.

The SFRA for the County Development Plan provides a background to flood risk in Dún Laoghaire-Rathdown, including a review of available flood risk information and a summary of sources of flooding. It also provides an overview of flood management policy which includes details of development which may be appropriate in certain areas and the expected content of site specific FRAs. The Justification Test was applied across the County, with particular regard to the major growth areas as identified under the Core Strategy.

The SFRA for the County Development Plan sets out the definition of the Flood Zones as per the Planning System and Flood Risk Management Guidelines, with reference to the high, moderate or low-risk of flooding from fluvial or tidal sources, being based on an undefended scenario which does not take into account the presence of existing or proposed flood protection structures such as flood walls or embankments. The set of supplementary maps categorises the entire county area according to these flood zones (Flood Zones A-C).

ii. Data and Flood Zone Maps of the County Development Plan 2016-2022

The SFRA undertaken for the County Development Plan utilised a number of datasets relating to historical and predicted flood extents. The Identification of Flood Risk (Stage 1), identified flood risk based on the data available, including historical records and a range of data sources (see Appendix 13 (p9) of the County Development Plan).

The Catchment Flood Risk Assessment and Management (CFRAM) for the Eastern Region, which includes Dún Laoghaire-Rathdown, was being finalised at the time of the Draft Plan process. Notwithstanding the draft status, the flood extent maps which were available at the time of the SFRA had been the subject of several iterations throughout the CRFRAM process and were considered to be of high quality in most locations including the Stillorgan LAP area.

This information was compiled into the flood zone maps that formed the basis of the SFRA for the County Development Plan, which in turn guided Development Plan policy and informed the application of the Justification Test. However, the SFRA cautions that

the input data was developed at a point in time and that, as a result, there may be changes in the catchment that means a future study, or more localised assessment of risk, may result in a change in either flood extent or depth. In this regard the SFRA notes that a site specific flood risk assessment may result in more locally accurate information which could show a greater or less level of risk than is included in the flood zone maps of the County Development Plan.

The Eastern CFRAM process commenced in 2011 to (i) assess flood risk through identification of flood hazard areas, (ii) identify viable structural and non-structural measures and options for managing the flood risk, and (iii) prepare a Flood Risk Management Plan (FRMP) and Strategic Environmental Assessment that sets out the measures and policies that should be pursued. The CFRAM studies were used as the basis of the SFRA for the higher level County Development Plan.

The Council acknowledges that the CFRAM studies are a work in progress, with public consultation undertaken in October 2016 by the OPW, as the lead agency. In this regard, Section 6.2.5.1, Policy CC14: Catchment Flood Risk Assessment and Management (CFRAM), of the County Development Plan, states as follows: '*It is Council policy to assist the Office of Public Works (OPW) in the preparation of the Regional Catchment Flood Risk Assessment (CFRAM) Study being carried out for the Eastern District. Any recommendations and outputs arising from the CFRAM study for the Eastern District that are relevant for Dún Laoghaire Rathdown will require to be incorporated into the Development Plan'.* Accordingly, the SFRA of the Stillorgan LAP may require to be subsequently revised, if necessary.

iii. Flood Zone Maps – SFRA of County Development Plan

Utilising the CFRAM Studies and other data sources, flood zone maps for the entire County were prepared as part of the SFRA for the County Development Plan. The flood zone maps show Flood Zones A, B, and C and also show historical and predicted flooding hotspots in the County.

iv. Definition of Flood Zones

Flood Zone	Description
Zone A **High Probability of Flooding**	This zone defines areas with the highest risk of flooding from rivers (i.e. more than 1% probability or more than 1 in 100) and the coast (i.e. more than 0.5% probability or more than 1 in 200)
Zone B **Moderate Probability of Flooding**	This zone defines areas with a moderate risk of flooding from rivers (i.e. 0.1% to 1% probability or between 1 in 100 and 1 in 1000) and the coast (i.e. 0.1% to 0.5% probability or between 1 in 200 and 1 in 1000)
Zone C **Low Probability of Flooding**	This zone defines areas with a low risk of flooding from rivers and the coast (i.e. less than 1 in 1000)

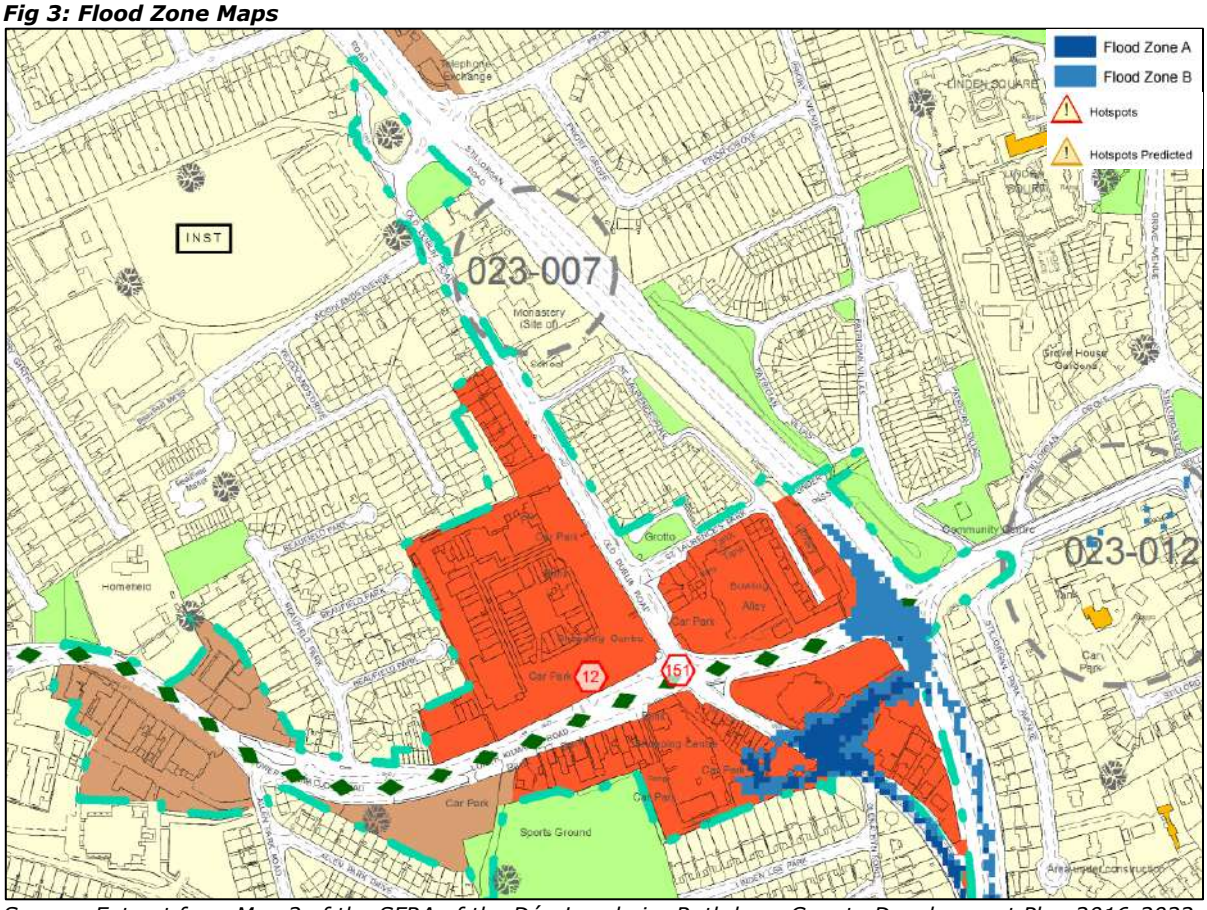
1.7 Stillorgan LAP – Identification of Flood Risk

i. Flood Zone Maps

Dún-Laoghaire Rathdown County Development Plan 2016-2022 - SFRA
Flood zone maps were developed as part of the SFRA for the County Development Plan. Map 2 of the SFRA relates to the Stillorgan LAP area and an extract from same is set out in Figure 3 below. It shows that the Stillorgan LAP lands are primarily located within Flood Zone C (low probability); with some lands to the east of the Plan area located within Flood Zones A and B (high probability and moderate probability). These lands primarily relate to existing developed lands that include the former Blakes and Esmonde Motors sites, the Stillorgan Orchard pub and adjacent lands, and both Hill Road and the Stillorgan Road (N11).

In addition to identifying Flood Zones A, B and C, the flood zone maps also identify historical and predicted flooding hotspots in the County. Historical surface water hotspots are those where Dún Laoghaire-Rathdown County Council has a record of a flood occurring, although in some cases work has been carried out to remediate the issue. The predicted hotspots are based on modelling and indicate where surface water has the potential to pond to depths of greater than 0.3m. It is noted that there are no historical or predicted flooding hotspots identified within the Stillorgan LAP area, and specifically the Flood Zone A and B lands.

Fig 3: Flood Zone Maps



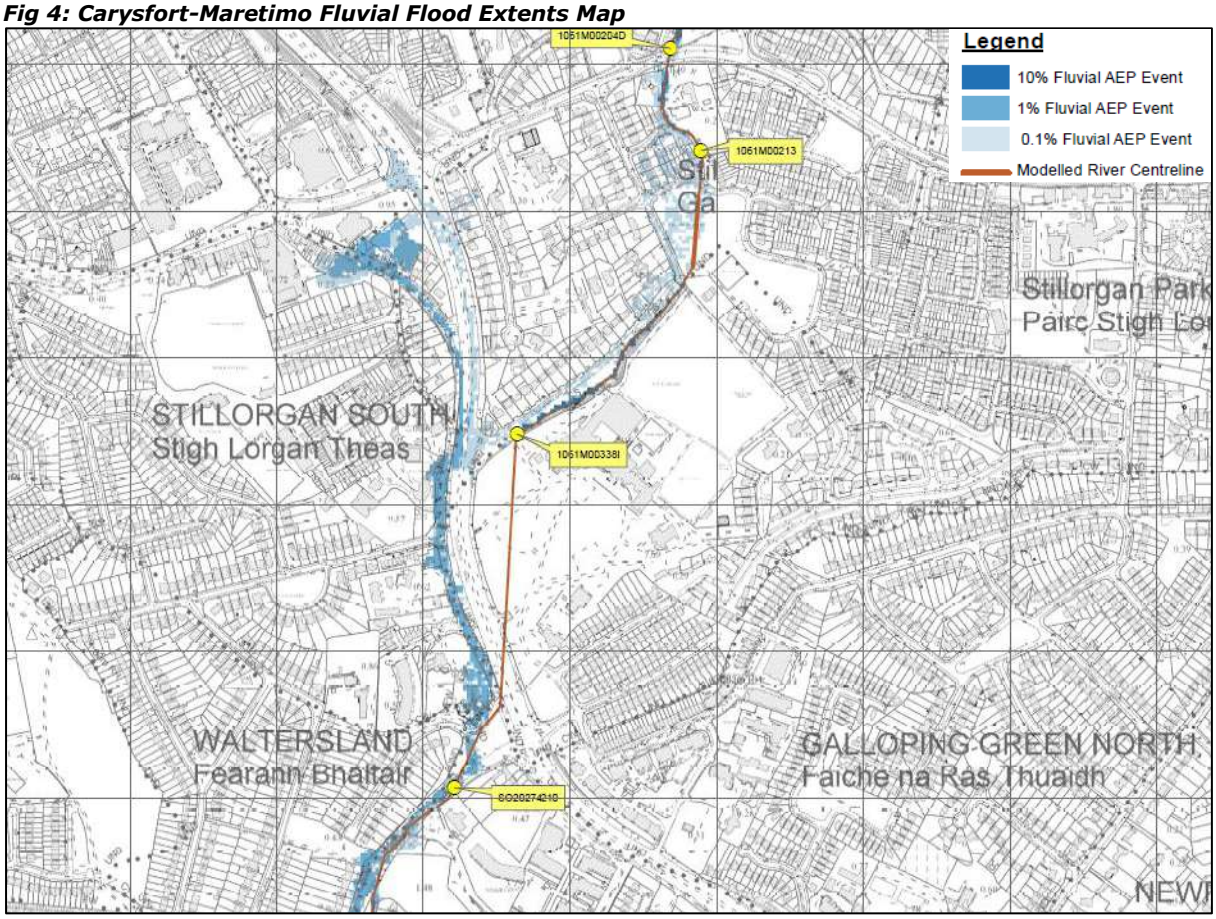
Source: Extract from Map 2 of the SFRA of the Dún Laoghaire Rathdown County Development Plan 2016-2022

Eastern CFRAM Fluvial Flood Extents Map (2016)

The OPW are the lead Authority on flooding in the Country and in 2011 they commenced a National Catchment Flood Risk Assessment and Management programme. As set out above in Section 1.6(ii) the CFRAMs for the Eastern Region were still being finalised at the time of developing the flood zone maps for the SFRA of the County Development Plan. However it is highlighted that advanced drafts of the flood extent maps were available and in the public domain at the time of making the Plan and as such there is a high degree of correlation between the flood zone maps developed for the SFRA of the County Development Plan and the final fluvial flood extents maps for the Eastern CFRAM.

The Carysfort-Maretimo fluvial flood extents maps for the Eastern CFRAM were finalised in 2016, subsequent to the adoption of the County Development Plan, and an extract of same is set out in Figure 4 below. The finalised fluvial flood extent maps have been assessed as part of the SFRA for the Draft Stillorgan LAP.

Fig 4: Carysfort-Maretimo Fluvial Flood Extents Map



Source: Final Flood Hazard and Risk Maps, 2016 (Eastern CFRAM)

ii. Watercourses

The primary source of fluvial flooding relating to the aforementioned Flood Zone A and Flood Zone B lands in the Stillorgan LAP area relates to the Carysfort Maretimo stream that starts in the Three Rock Mountains and flows through the urbanised areas of Sandyford, Leopardstown, Stillorgan and Blackrock before discharging into Dublin Bay. The Carysfort Maretimo stream's catchment area of 9.55sq.km is almost entirely urbanised (91%) with only a small upland catchment outside of the urban footprint. The stream has in the past been extensively culverted at various locations along its length. It is noted that while the Stillorgan LAP lands fall within the catchment boundary of the Carysfort Maretimo, the stream itself does not traverse the LAP lands. The stream runs to the east of the LAP area adjacent to Brewery Road, the Stillorgan Road (N11) and

Stillorgan Grove, as shown in Figure 5 below. A second watercourse, the Priory Stream, is located to the north east of the LAP area at a considerable lower elevation. The Kilmacud stream also traverses the area, in culvert.

Fig 5: Watercourses in the Stillorgan LAP Area

iii. Historical Flooding Records

The following sets out an overview of the main historical flooding events, and causes where known, that are relevant to the Stillorgan LAP area.

- **2002 Flood Event – Stillorgan Hill (Flood ID No. 2024):** Flooding to the basement of a shop premises on Hill Road caused by a localised blockage of a culvert. The location of this flooding event is identified by the 'flood symbol' illustrated in Figure 5 overleaf.

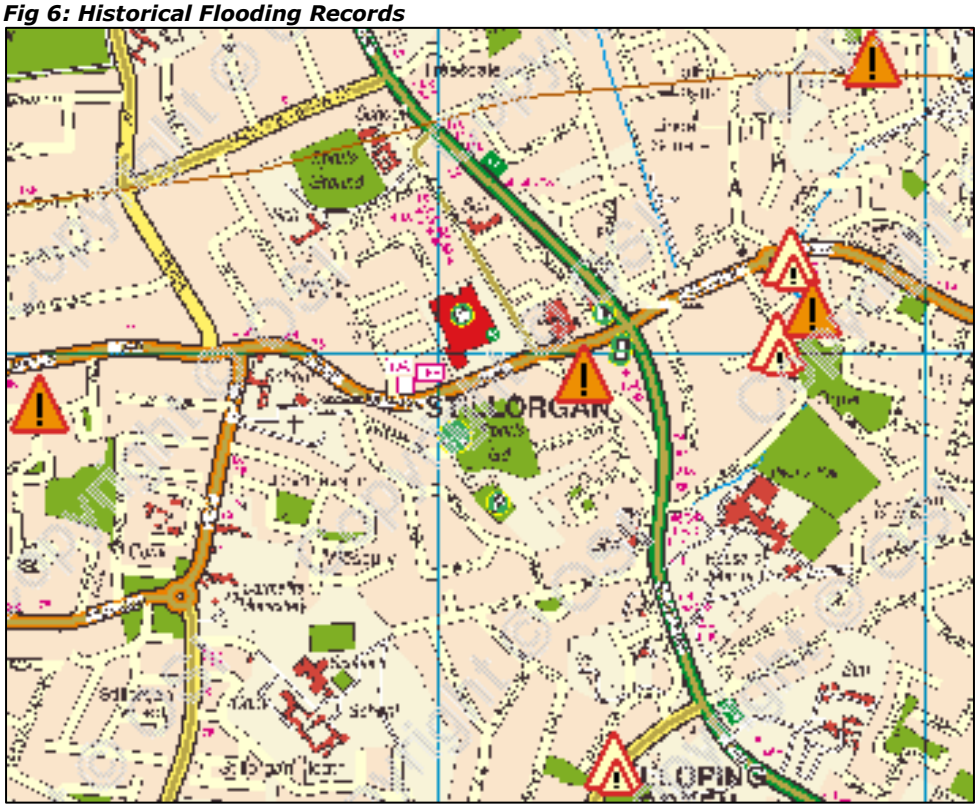
- **2002 Flood Event – Stillorgan Road:** Blocked/broken culvert along the central median of Stillorgan Road (N11) causes some road flooding.

Outside of the Stillorgan LAP area the most significant historical flooding records relate to incidences caused by the flooding of the Carysfort Maretimo stream. Upstream at Brewery Road the stream has overflowed on a number of separate occasions usually caused by screens becoming blocked by storm debris. The overflowing of the stream has caused water to run down Brewery Road along the 'Old Bray Road' causing flooding in the vicinity of St. Brigid's National School. It is noted that Hill Road and adjacent properties would be vulnerable to such a flow route if flood waters continued northwards.

As illustrated in Figure 6 there have been a number of historical flooding events in the area of Stillorgan Grove and Orpen Dale caused by the overtopping of the Carysfort

Maretimo stream. However, it is noted that these flooding events are located downstream and at a considerable lower elevation to the Stillorgan LAP area.

Fig 6: Historical Flooding Records



Source: National Flood Hazard Mapping, OPW (www.floodmaps.ie)

1.8 The Sequential Approach & Justification Test

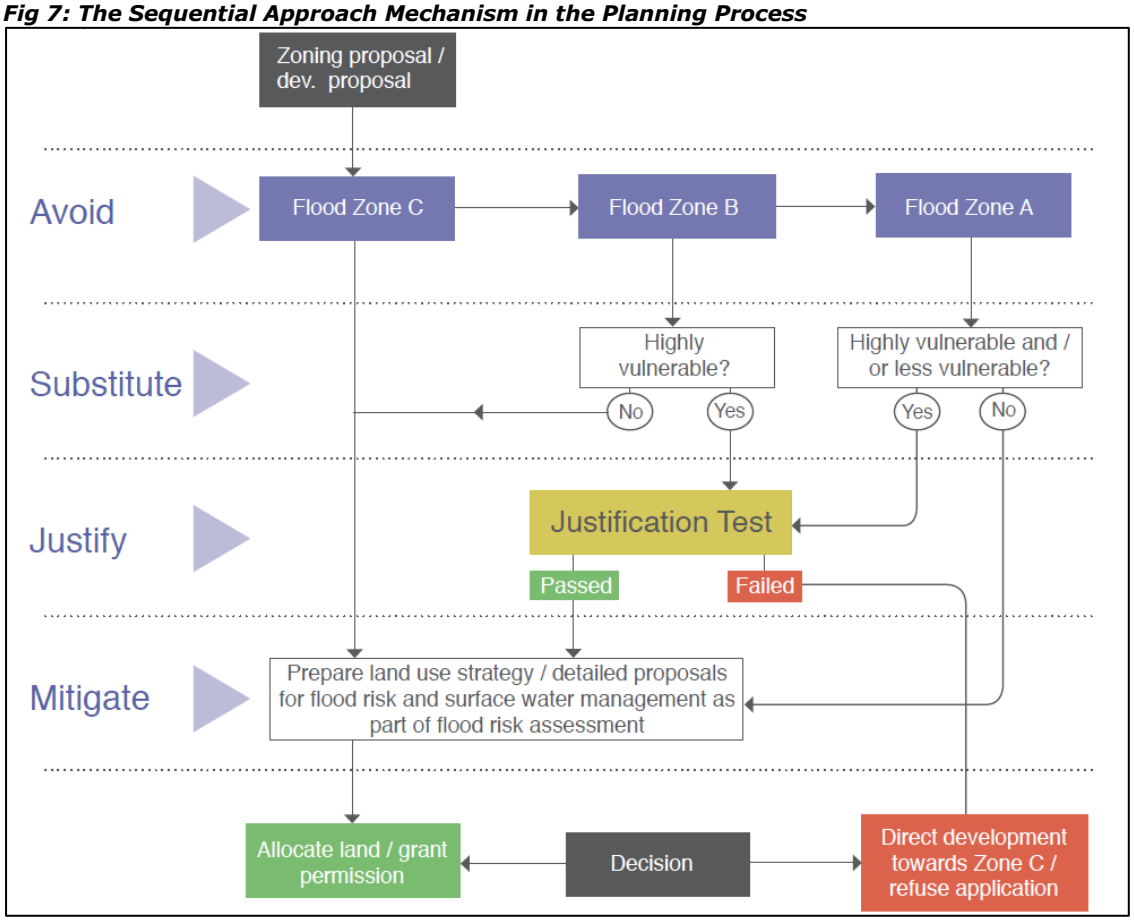
The key principles of the risk-based sequential approach is managing flood risk in the preparation of plans, as set out in Chapter 3 of the Planning System and Flood Risk Management Guidelines, and these principles are adhered to in the Draft Stillorgan LAP.

This is the key tool in the decision-making process of preparing plans to ensure that development is first and foremost directed towards land that is at low risk of flooding. This approach makes use of existing Flood Risk Assessments (FRAs) and other data identifying flood zones for rivers, coastal and fluvial flooding and the classification of the vulnerability of flooding of different types of development. The sequential approach in terms of flooding is based on the following principles:

- The primary objective of the sequential approach is that development is primarily directed towards land that is at low risk of flooding (AVOID).
- The next stage is to ensure that the type of development proposed is not especially vulnerable to adverse impacts of flooding (SUBSTITUTION).
- The Justification Test is designed to rigorously asses the appropriateness, or otherwise, of particular developments that, for various reasons, are being considered in areas of moderate or high flood risk (JUSTIFICATION).

- The Justification Test comprises of two processes, namely, the Plan-Making Justification Test and the Development Management Justification Test.

Fig 7: The Sequential Approach Mechanism in the Planning Process



(Source: The Planning System and Flood Risk Management – Guidelines for Planning Authorities, 2009)

i. Justification Test for the Stillorgan LAP Area

The SFRA undertaken for the County Development Plan indicated that there were existing, developed and zoned areas within the LAP area that were at risk of flooding (Flood Zone A and Flood Zone B). Having reviewed the level of flood risk within the County through the preparation of flood zone maps, and determined appropriate measures for assessing and managing risks to high and low vulnerability development in Flood Zones A, B and C, a more detailed assessment of sites and areas was carried out through the Plan-Making Justification Test. The Plan-Making Justification Test was undertaken having regard to the guidance set out in Planning Circular PL2/2014 that states the following:

'Notwithstanding the need for future development to avoid areas at risk of flooding, it is recognised that the existing urban structure of the country contains many well established cities and urban centres which will continue to be at risk of flooding. At the same time such centres may also have been targeted for growth in the National Spatial Strategy, Regional Planning Guidelines and the various City and County Development Plans taking account of historical patterns of development and their national and strategic value. In addition, development plans have identified various strategically located urban centres and particularly city and town centre areas whose continued consolidation, growth, development or regeneration, including for residential use, is being encouraged in order to bring about compact and sustainable urban development...'.

ii. Plan-Making Justification Test (Part 1 & 2)

The SFRA for the County Development Plan applied Part 1 and Part 2 of the Plan-Making Justification Test to lands in the County with zoning objectives A, A1, A2, NC, DC, MTC, E,TLI, MH, MIC, MOC, OE, W that were already developed (excluding areas with very low intensity development) and included existing vulnerable uses that were in Flood Zone A and/or B.

The relevant Flood Zone A and Flood Zone B lands within the Stillorgan LAP are zoned 'District Centre', and were thus assessed as part of the Plan-Making Justification Test contained in the SFRA for the County Development Plan. Table 1 below sets out the findings of Part 1 and Part 2 of the Plan-Making Justification Test undertaken.

Table 1: County Development Plan – Plan Making Justification Test (Part 1 and 2)

	Criteria	**Response**
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, as amended.	The National Spatial Strategy 2002-2022 is a twenty year plan for the Country and consolidating the Greater Dublin Area, a Gateway, is a primary policy of this Strategy. The Regional Planning Guidelines for the Greater Dublin Area 2010 – 2016 show the entire built up area of the County of Dun Laoghaire Rathdown as falling within the Metropolitan Area as illustrated in Figure 12 (p89 of Development Plan).
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and, in particular:	
2(i)	Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement.	All of these areas are developed areas that include suburban housing and are essential in order to support the continued viability of the urban centres in the County.
2(ii)	Comprises significant previously developed and/or under-utilised lands.	All the lands in question contain existing development and are therefore previously developed lands.
2(iii)	Is within or adjoining the core of an established or designated urban settlement.	The lands in question fall within the Metropolitan Area of the GDA.
2(iv)	Will be essential in achieving compact and sustainable urban growth.	As the lands in question contain existing development in the County they are already essential in achieving compact and sustainable urban growth.
2(v)	There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	There are no suitable alternative lands identified within the County.

iii. Plan Making Justification Test (Part 3)

Part 3 of the Plan-Making Justification Test was applied to lands throughout the County including lands within the catchment of the Carysfort-Maretimo stream. As outlined in Section 1.7 above, it is the Carysfort-Maretimo stream that is the primary source of flooding that impacts the Flood Zone A and Zone B lands within the Stillorgan LAP area. In this regard, the Plan-Making Justification Test undertaken for the County Development Plan stated the following:

Carysfort Maretimo
The CFRAM shows flood risk along the majority of the Carysfort Maretimo River, being a combination of Flood Zone A and B and covering a range of land existing land uses, including open space, residential and office and enterprise (Figure 5-7).

In particular, flooding is indicated at Blackrock Bypass, Brookfield, Carysfort Avenue, Avondale Lawn, Carysfort Hall, Avoca Park, Grove Paddock, Stillorgan Grove, Stillorgan Road and Brewery Road, Blackthorn Avenue and Blackthorn Road, Corrig Road, Blackthorn Drive, Lakelands, Moreen Estate, along M50 at Sandyford Interchange, Sandyford Park, Coolkill, Sandyford Downs and Sandyford Village (15).

Where there is existing residential housing, and supporting infrastructure, Part 1 and 2 of the Justification Test have been applied and passed and flood risk can be managed through non-structural responses. Future development within Flood Zone A and B should be limited to extensions, changes of use and small scale infill and flood risks can be managed through a site specific FRA, which should include consideration of culvert blockage (where appropriate) and the impact this could have on flood risk at lower return periods.

The majority of flood risk highlighted in the Sandyford Business District and surrounding area is shown to be Flood Zone B, with small pockets indicated to be Flood Zone A. Where less vulnerable development is proposed within or near Flood Zone A or B a site specific flood risk assessment should be undertaken with the aim of a) refining the delineation of flood risk based on local topography and surface water systems; b) demonstrating that the proposed development will not increase flood risk to neighbouring lands; and c) developing flood management measures appropriate to the development proposed.

There is a length of defence along this watercourse which runs parallel to Rockfield Park (16). These defences are of robust construction, although consideration of the impacts of overtopping, either through higher return period events or with the impact of climate change on river flows, should be taken into account in any site specific flood risk assessment. Breach assessment is unlikely to be required.

iv. Stillorgan Local Area Plan – Flood Zones A & B

The aim of the assessment undertaken in the SFRA for the County Development Plan was to apply the Plan-Making Justification Test, taking into account Planning Circular PL2/2014 in relation to existing development. In terms of undeveloped land, the Justification Test found that:

'With the exception of zoned Major Town Centres, ***District Centres*** *and Sandyford Business District, new development within Flood Zones A or B does not pass the Justification Test and will not be permitted. This applies to undeveloped areas which are zoned for development but are currently undeveloped and to areas of existing low intensity development. Whilst lands may have retained a zoning objective which would include development, applying the guidance in Section 4 means such development is restricted to Flood Zone C, with water compatible uses located within Zone A and B.'*

It is therefore considered that the Flood Zones A & B lands within the Stillorgan LAP that are zoned District Centre are thus deemed to have passed the Plan-Making Justification Test (Parts 1, 2 & 3). Notwithstanding this, the subject lands will be subject to the findings of Part 3 of the Plan-Making Justification Test (set out above) and all applicable flood management requirements set out in the SFRA for the County Development Plan

and the Planning System and Flood Risk Management Guidelines (to include the Development Management Justification Test).

1.9 Flood Risk Management - Policy Response

This Section sets out the policy response relating to the management of flood risk within the Stillorgan LAP area. This Section should be read in conjunction with the overarching guidance set out in the SFRA for the County Development Plan and that contained in the Planning System and Flood Risk Management Guidelines.

A summary of flood risks associated with the primary zoning objectives of the Stillorgan LAP area is provided in Table 2 below. It should be noted that this Table is intended as a guide only and that when planning applications are being considered not all uses will be appropriate on flood risk grounds, hence the need to work through the Justification Test for Development Management on a site by site basis.

Table 2: Zoning objective vulnerability

Zoning Objective		**Indicative Primary Vulnerability**	**Flood Risk Commentary**
DC	To protect, provide for and-or improve mixed-use district centre facilities.	Less / highly vulnerable	A mix of uses within this zoning objective is possible. Flood risk should be assessed and managed in accordance with the SFRA (of both the County Development Plan and the Stillorgan LAP), and applying the sequential approach.
NC	To protect, provide for and-or improve mixed-use neighbourhood centre facilities.	Highly / less vulnerable	A mix of uses within this zoning objective is possible. Flood risk should be assessed and managed in accordance with this SFRA (of both the County Development Plan and the Stillorgan LAP), and applying the sequential approach.

i. Requirements for a Flood Risk Assessment - Overview

For proposals within the Stillorgan LAP area an appropriately detailed flood risk assessment will be required in support of all planning applications. The level of detail will vary depending on the risks identified and the proposed land use. At a minimum, all proposed development, including that in Flood Zone C, must consider the impact of surface water flood risks on drainage design. In addition, flood risk from sources other than fluvial should be reviewed.

For sites within Flood Zone A or B, a site specific 'Stage 2 - Initial FRA' will be required, and may need to be developed into a 'Stage 3 - Detailed FRA'. The extents of Flood Zone A and B for the Stillorgan LAP area are delineated in the SFRA for the County Development Plan (see Figure 3 above) and the Carysfort-Maretimo Fluvial Flood Extents Map (see Figure 4 above), however, it is acknowledged that future studies may refine the extents (either to reduce or enlarge them) and as such a comprehensive review of available data should be undertaken once a FRA has been triggered.

Within the FRA the impacts of climate change and residual risk (including culvert/structure blockage) should be considered and remodelled where necessary, using an appropriate level of detail, in the design of FFL. Further information on the required

content of the FRA is provided in the Planning System and Flood Risk Management Guidelines.

Any proposal that is considered acceptable in principle shall demonstrate the use of the sequential approach in terms of the site layout and design and, in satisfying the Justification Test (where required), the proposal will demonstrate that appropriate mitigation and management measures are put in place.

ii. Development Proposals in Flood Zone C

The majority of lands in the Stillorgan LAP area are located within Flood Zone C. Where a site is within Flood Zone C, but adjoining or in close proximity to Flood Zone A or B there could be a risk of flooding associated with factors such as future scenarios (climate change) or in the event of failure of a defence, blocking of a bridge or culvert. Risk from sources other than fluvial must also be addressed for all development in Flood Zone C. At a minimum in such a scenario, a flood risk assessment should be undertaken which will screen out possible indirect sources of flood risk and where they cannot be screened out it should present mitigation measures.

iii. Applications for Minor Developments in Areas at Risk of Flooding (Flood Zones A & B)

In an extension to Section 5.28 of the Planning System and Flood Risk Management Guidelines, two classes of 'Minor developments' were defined as part of the SFRA undertaken for the County Development Plan. These are:

- Class 1 - Works directly associated with existing developments, such as extensions, renovations and rebuilding within the footprint of the existing development, and changes of use.

- Class 2 - Works in relation to infill development, which may include development of previously unused (greenfield) land, or building within the curtilage of an existing development, but outside the footprint of the building.

Consideration of Class 1 minor development works is relevant given the urbanised and developed status of lands that are at risk of flooding within the Stillorgan LAP area. In the case of Class 1, the 'Sequential Approach' and 'Justification Test' will not apply as they relate to existing buildings. However, an assessment of the risks of flooding should accompany such applications to demonstrate that they would not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities.

For Class 2 minor developments, construction of new buildings on what would otherwise be greenfield, or undeveloped land, has generally been found to generate an un-justifiable level of risk, either through introducing additional people into the floodplain, blocking surface water and overland flow paths or requiring works which are likely to have a negative impact on flood risk elsewhere. For this reason, new, standalone development is not permitted within Flood Zone A or B for highly vulnerable uses or in Flood Zone A for less vulnerable uses.

The following sets out a checklist of what is required for planning applications for minor development works in areas at risk of flooding in the Stillorgan LAP area:

Planning Application Checklist
• Consideration of minor works classification (Class 1 or Class 2).
• Assessment of flood risk carried out by an appropriately qualified Engineer with relevant FRA

experience (as deemed acceptable by the Planning Authority).
• Flood resilient design.
• Access, egress and emergency plans must be in place which are appropriate to the vulnerability of the development and its occupiers, the intensity of use and the level of flood risk.

iv. Applications for Larger Developments in Areas at Risk of Flooding (Flood Zones A & B)

Highly Vulnerable Development in Flood Zones A and B
Development which is highly vulnerable to flooding includes *inter alia* dwelling houses, residential care homes, hospitals, emergency services and primary strategic transport and utilities infrastructure (as defined in the Planning System and Flood Risk Management Guidelines).

As per the SFRA prepared for the County Development Plan it is not appropriate for new, highly vulnerable development to be located on greenfield land in Flood Zones A or B, particularly outside the core of a settlement and where there are no flood defences. Such proposals do not pass the Justification Test and instead, a less vulnerable use should be considered.

Stillorgan is a designated District Centre under the County Development Plan containing lands in need of regeneration / renewal. With regard to existing developed areas, Planning Circular PL2/2014 states that '*notwithstanding the need for future development to avoid areas at risk of flooding, it is recognised that the existing urban structure of the country contains many well established cities and urban centres which will continue to be at risk of flooding. In addition, development plans have identified various strategically important urban centres … whose continued consolidation, growth, development or generation, including for residential use, is being encouraged to bring about compact and sustainable growth.'*

As set out in Section 1.8, lands within the Stillorgan District Centre that are located in Flood Zones A & B are deemed to have passed the Plan-Making Justification Test (Parts 1, 2 & 3). Notwithstanding this, any planning applications for large highly vulnerable development on Flood Zone A and/or B lands will be subject to the findings of Part 3 of the Plan-Making Justification Test (set out in Section 1.8(iii)) and all applicable flood management requirements set out in the SFRA for the County Development Plan and the Planning System and Flood Risk Management Guidelines (to include the Development Management Justification Test). Of prime importance is the requirement to manage risk to the development site and not to increase flood risk elsewhere.

As part of the SFRA undertaken for the County Development Plan, small scale infill housing, extensions and changes of use were considered and, subject to site specific flood risk assessment, can generally be considered appropriate provided they constitute a continuation of the existing level of development.

Less Vulnerable Development in Flood Zones A and B
Less vulnerable development includes *inter alia* retail, leisure, warehousing and secondary strategic transport and utilities infrastructure. This category includes less vulnerable development in all forms, including refurbishment or infill development, and new development both in defended and undefended situations.

The design and assessment of less vulnerable development should begin with 1% AEP fluvial or 0.5% tidal events as standard, with climate change and a suitable freeboard included in the setting of finished floor levels.

The presence or absence of flood defences informs the level of flood mitigation recommended for less vulnerable developments in areas at risk of flooding. In contrast with highly vulnerable development, there is greater scope for the developer of less vulnerable uses to accept flood risks and build to a lower standard of protection, which is still high enough to manage risks for the development in question. However, any deviation from the design standard of 1%/0.5% AEP, plus climate change, plus freeboard, needs to be fully justified within the FRA.
Major developments may be located in areas with a higher likelihood of flooding, provided the risks are understood, and accepted, and operability and emergency response is clearly defined; this may allow construction to a finished floor level which is lower than the 'ideal' starting point.

The following sets out a checklist of what is required for planning applications for larger developments in areas at risk of flooding in the Stillorgan LAP area:

Planning Application Checklist
• Development Management 'Justification Test' has been passed.
• FRA in accordance the Dún Laoghaire-Rathdown SFRA and the Planning System and Flood Risk Management Guidelines, to be carried out by an appropriately qualified Engineer with relevant FRA experience (as deemed acceptable by the Planning Authority).
• Flood resilience statement to be submitted.
• Compliance with the Greater Dublin Strategic Drainage Study and inclusion of SuDS.
• Assessment of the potential impacts of Climate Change and the adaptive capacity of the development.
• Access, egress and emergency plans must be in place which are appropriate to the vulnerability of the development and its occupiers, the intensity of use and the level of flood risk.

1.10 Conclusions and Recommendations

It is the strategy of Dún Laoghaire-Rathdown Council, in accordance with the Planning System and Flood Risk Management Guidelines, to reduce the potential risk to people, property and the environment, caused by flooding, through a hierarchy of avoidance, followed by substitution of lower vulnerability uses and, only if avoidance and substitution are not possible, reduction and management of the risks through a variety of techniques.

Having regard to the SFRA undertaken for the County Development Plan 2016-2022, the majority of lands within the Stillorgan LAP are located within Flood Zone C (lowest probability); while some lands to the east of the Plan area are located within Flood Zone A & B (high probability and moderate probability). The lands within Flood Zone A and B are zoned Objective 'DC' District Centre. The Plan-Making Justification Test was carried out; taking into account Planning Circular PL2/2014 and it was found that:

'With the exception of zoned Major Town Centres, ***District Centres*** *and Sandyford Business District, new development within Flood Zones A or B does not pass the*

Justification Test and will not be permitted. This applies to undeveloped areas which are zoned for development but are currently undeveloped and to areas of existing low intensity development. Whilst lands may have retained a zoning objective which would include development, applying the guidance in Section 4 means such development is restricted to Flood Zone C, with water compatible uses located within Zone A and B.'

The Flood Zone A and Flood Zone B lands located within the Stillorgan District Centre are deemed to have passed the Plan-Making Justification Test (Parts 1, 2 & 3). Notwithstanding this, the lands in question will be subject to the requirements of Part 3 of the Plan-Making Justification Test (set out in Section 1.8(iii)) and all applicable flood management requirements set out in the SFRA for the County Development Plan and the Planning System and Flood Risk Management Guidelines (to include the Development Management Justification Test).

Furthermore, it is provided that all proposals for new development in the Stillorgan LAP Area shall have regard to the following:

- All planning applications for proposed development within the LAP Area should include a site-specific Flood Risk Assessment (FRA).

- Until the Eastern CFRAM Studies are completed and the flood protection and management options are finalised, the flood map should only be taken as indicative. All planning applications will be required to submit a site-specific flood risk assessment addressing risks from all sources of flooding, using the best available data. All new development will be required to comply with the Greater Dublin Strategic Drainage Study for surface water management, with possible provision for the Eastern CFRAMS High End Future Scenario.

- Flood Risk Management Objectives, as incorporated into the Draft LAP will apply (See Appendix 1)

- Full SUDS measures will be incorporated into future development proposals (See Appendix 2)

1.11 Disclaimer

It is important to note that compliance with the requirements of Planning System and Flood Risk Management Guidelines, 2009, and the Floods Directive 2007 60/EC is a work in progress and is currently based on emerging and incomplete data as well as estimates of the locations and likelihood of flooding. In particular, the assessment and mapping of areas of flood risk awaits the finalisation of Catchment Based Flood Risk Assessment and Management Plans (CFRAMP). As a result, this guide for Flood Risk Assessment is based on best available information and may require revision as new information becomes available.

Accordingly, all information in relation to flood risk is provided for general policy guidance only. It may be altered in light of future data and analysis. As a result, all landowners and developers are advised that Dún Laoghaire-Rathdown County Council accepts no responsibility for losses or damages arising due to the vulnerability to flooding of lands, uses and developments. It remains the principal responsibility of owners, users and developers to take all reasonable measures to assess the vulnerability to flooding of lands in which they have an interest prior to making planning or development decisions.

The indicative flood zone map (see Figure 3) for the Stillorgan LAP area does not show indicative flood hazard associated with any of the following:

- Extreme fluvial dominated combinations with pluvial flows
- Extreme pluvial events
- Blocked drains
- High ground water level conditions
- Other unforeseen events, e.g. bridge /culvert collapse etc.

Dún Laoghaire-Rathdown County Council makes no representations, warranties or undertakings about any of the information provided in this Draft SFRA for the forthcoming Stillorgan LAP, including without limitation, on its accuracy, completeness, quality or fitness for any particular purpose. To the fullest extent permitted by applicable law, neither Dún Laoghaire-Rathdown County Council nor any of its members, officers, associates, consultants, employees, affiliates, servants, agents or other representatives shall be liable for loss or damage, arising out of or in connection with, the use of, or the inability to use, the information provided in this plan, including but not limited to, indirect or consequential loss or damages, loss of data, income, profit, or opportunity, loss or, or damage to, property and claims of third parties, even if Dún Laoghaire-Rathdown County Council has been advised of the possibility of such losses or damages, or such losses or damages were reasonably feasible. Dún Laoghaire-Rathdown County Council reserves the right to change the content and / or presentation of any of the information provided in this report at its sole discretion, including these notes and disclaimer. This disclaimer shall be governed by, and construed in accordance with, the laws of the Republic of Ireland. If any provision of this disclaimer shall be unlawful, void or for any reasons unenforceable, that provision shall be deemed severable and shall not affect the validity and enforceability of the remaining provisions.

APPENDICES TO SFRA

APPENDIX 1: Flood Risk Management Strategy Objectives

(*See Section 4.6 Sustainable Infrastructure of Draft LAP*)

SI9:	To require all proposed developments to carry out a Site-Specific Flood Risk Assessment (SSFRA) that shall demonstrate compliance with: • The Planning System and Flood Risk Management, Guidelines for Planning Authorities (DEHLG / OPW, 2009), as may be revised and/or updated. • The prevailing Dún Laoghaire-Rathdown County Development Plan. • Any SSFRA shall <u>not</u> be required to carry out a Plan-Making Justification Test, given that this exercise was already carried out at County Development Plan-level. A review of this process was also undertaken as part of the preparation of this Local Area Plan (LAP). • The SSFRA shall pay particular emphasis to site-specific mitigation measures and any necessary management measures, as per Appendix B4 of the above 2009 National Guidelines. • Attention shall be given in the SSFRA to the incorporation of SuDS design measures into the public realm and open space provision.
SI8:	It is an objective of the Council that all proposed flood protection or alleviation works will comply with the requirements of Article 6 of the EU Habitats Directive to ensure there are no likely significant effects on the integrity, defined by the structure and function, of any Natura 2000 sites and that the requirements of Article 6 of the EU Habitats Directive are met.
SI7:	It is an objective of the Council to ensure the protection of groundwater resources within the Draft Stillorgan Local Area Plan boundary and associated habitats and species in accordance with the EU Groundwater Directive. All new planning applications within the Stillorgan Local Area Plan boundary shall have regard to the likely impacts the proposed development may have on groundwater resources
SI6:	That green roofs shall be provided in accordance with the County Development Plan Green Roofs Guidance Document. SI6 It is an objective of the Council to ensure that Sustainable Drainage Systems (SuDS) is applied to any development in Stillorgan and that site specific solutions to surface water drainage systems are developed which meet the requirements of the Water Framework Directive and associated River Basin Management Plans. SuDS measures may include green roofs, permeable paving, detention basins, water butts, infiltration etc
SI5	It is an objective of the Council to ensure the implementation of the surface water legislation Environmental Objectives (Surface Waters) Regulations 2009 S.I. No 272 of 2009 and the EPA report Water Quality in Ireland 2007-2009 in order to ensure that development permitted would not have an unacceptable impact on water quality including surface waters, ground water, river corridors, estuarine waters, bathing waters, coastal and transitional waters.

APPENDIX 2: SuDS Measures for New Development

It is an objective to promote Sustainable Drainage Systems (SuDS) to manage surface and ground water regimes sustainably. The following measures are key elements of the SuDS solution proposed for the LAP Area in the public realm areas, i.e. those areas not within private developments.

SuDS in the Public Realm: Options for Consideration Include:

Ponds: These will provide storage to meet attenuation requirements for the 1 in 100 year criterion. Ponds provide the final stage of treatment for water runoff prior to discharge to the watercourses. Ponds also provide amenity and biodiversity benefits in accordance with best design practice.

Detention Basins: These are vegetated surface storage basins that provide flow control through attenuation of stormwater runoff. They also facilitate some settling of particulate pollutants. They are normally dry and in most cases can accommodate soft landscaping and contribute to local amenity.

Infiltration Basins: Located at carefully selected locations in the detention basins. These are vegetated depressions designed to store run off and infiltrate it gradually into the ground. These are very effective at pollutant removal and contribute to groundwater recharge.

Infiltration Trenches & Engineered Swales: These can be **l**ocated throughout public realm spaces and along selected routes including green routes and cycle routes. These are narrow excavations (1 to 2 m depth) filled with selected stone that create temporary subsurface storage for infiltration of stormwater runoff.

Underground Modular Systems: These have a high void ratio (e.g. Stormtech system or similar) and can be used subject to agreement with the Local Authority in any suitable locations of open spaces and parks subject to level and ready access to provide below ground storage and infiltration.

Tree Root Structural Cell Systems: (e.g. Silva Cell) are subsurface tree and stormwater systems that hold large soil volumes while supporting traffic loads beneath paving and hardscapes. It is proposed that these will be used throughout the LAP area to assist with attenuation and groundwater recharge.

SuDS in Development Sites

Run-off from all sites must pass through at least one level of treatment using a SuDS component prior to the final level of treatment in the public realm areas. The various SuDS measures that are required for different development types include:

Green Roofs: As well as providing environmental benefits, the installation of green roofs allows for more efficient use of space. Properly placed roof terraces and gardens visible from residential units or within a building enhance the aesthetic experience of the building and open up additional space for amenity, recreational and commercial use. Internal courtyards, terraces and roof tops can serve as multi-functional spaces.

Pervious Paving / Permeable Surfacing: Where courtyards and walkways in landscaped areas are proposed, it is suggested that permeable surfacing is considered. A variety of new durable permeable surfacing solutions are now available on the market

(proposals where surface water accesses the underground storage via gaps in interlocking paving will not be permitted – grilles, gullies, or similar, that are easily maintained are only permitted).

Infiltration Trenches: See Above

Detention Basins: See Above

Swales: Swales are shallow, flat bottomed vegetated open channels designed to convey, treat and attenuate surface water runoff. For design guidance refer to Chapter 17 of the CIRA SuDS Manual 2015.

Water Butts: Large containers used for collecting and storing rainwater for use on the property. Generally plastic and located to the rear of a property and connected to the downpipe.

Tree Root Structural Cell Systems: See Above

Rain Water Harvesting: Rainwater is collected from a roof or paved surface in an underground or over ground tank for use on the site. Depending on its intended usage the system may include treated elements, for design guidance refer to Chapter 11 of the CIRIA SuDS Manual 2015.

APPENDIX 3: Glossary of Terms

Annual Exceedance Probability (AEP) - Likelihood or probability of flooding or a particular flood event is classified by its annual exceedance probability (AEP) or return period (in years). A 1% AEP flood indicates the flood event that will occur or be exceeded on average once every 100 years and has a 1 in 100 chance of occurring in any given year.

Catchment - The area that is drained by a river or artificial drainage system.

Catchment Flood Risk Assessment and Management Studies (CFRAMS) - A catchment-based study involving an assessment of the risk of flooding in a catchment and the development of a strategy for managing that risk in order to reduce adverse effects on people, property and the environment. CFRAMS precede the preparation of Flood Risk Management Plans.

Flood Risk - An expression of the combination of the flood probability or likelihood and the magnitude of the potential consequences of the flood event. Flood Risk Assessment (FRA) can be undertaken at any scale from the National down to the individual site and comprises three stages: flood risk identification, initial flood risk assessment and detailed flood risk assessment.

Flooding (or inundation) – Flooding is the overflowing of water onto land that is normally dry. It may be caused by overtopping or breach of banks or defences, inadequate or slow drainage of rainfall, underlying groundwater levels or blocked drains and sewers. It presents a risk only when people, human assets and ecosystems are present in the areas that flood.

Flood Defence – A man-made structure (e.g. embankment, bund, sluice gate, reservoir or barrier) designed to prevent flooding of areas adjacent to the defence.

Flood Risk Assessment (FRA) - An examination of the risks from all sources of flooding of the risks to and potentially arising from development on a specific site, including an examination of the effectiveness and impacts of any control or mitigation measures to be incorporated in that development.

Flood Zones - A geographic area for which the probability of flooding from rivers, estuaries or the sea is within a particular range as defined within these Guidelines.

Fluvial Flooding - Flooding from a river or other watercourse.

Groundwater Flooding – Flooding caused by groundwater escaping from the ground when the water table rises to or above ground level.

Initial Flood Risk Assessment - A qualitative or semi-quantitative study to confirm sources of flooding that may affect a Plan area or proposed development site, to appraise the adequacy of existing information, to provide a qualitative appraisal of the risk of flooding to development, including the scope of possible mitigation measures, and the potential impact of development on flooding elsewhere, and to determine the need for further detailed assessment.

'Justification Test' - An assessment of whether a development proposal within an area at risk of flooding meets specific criteria for proper planning and sustainable development and demonstrates that it will not be subject to unacceptable risk nor increase flood risk elsewhere. The 'Justification Test' should be applied only where

development is within flood risk areas that would be defined as inappropriate under the screening test of the sequential risk based approach adopted by this guidance.

Likelihood (probability of flooding) – A general concept relating to the chance of an event occurring. Likelihood is generally expressed as a probability or frequency of a flood of a given magnitude or severity occurring or being exceeded in any given year. It is based on the average frequency estimated, measured or extrapolated from records over a large number of years and is usually expressed as the chance of a particular flood level.

Mitigation Measures - Elements of a development design which may be used to manage flood risk to a development, either by reducing the incidence of flooding both to the development and as a result of it and/or by making the development more resistant and/or resilient to the effects of flooding.

Precautionary Approach - The approach to be used in the assessment of flood risk which requires that lack of full scientific certainty, shall not be used to assume flood hazard or risk does not exist, or as a reason for postponing cost-effective measures to avoid or manage flood risk. River Basin Management Plan (RBMP) is required by the EU Water Framework Directive (2000/60/EC). These plans will establish a strategic plan for the long-term management of the River Basin District, set out objectives for water bodies and in broad terms, identify what measures are planned to meet these objectives, and act as the main reporting mechanism to the European Commission.

Pluvial Flooding - Usually associated with convective summer thunderstorms or high intensity rainfall cells within longer duration events, pluvial flooding is a result of rainfall-generated overland flows which arise before run-off enters any watercourse or sewer. The intensity of rainfall can be such that the run-off totally overwhelms surface water and underground drainage systems.

Return Period - The return period is means of expressing the likelihood or probability of flooding or a particular flood event occurring and is comparable to the AEP of the event. A 1% AEP flood indicates the flood event that will occur or be exceeded on average once every 100 years and has a 1 in 100 chance of occurring in any given year.

'Sequential Approach' - The 'Sequential Approach' is a risk-based method to guide development away from areas that have been identified through a flood risk assessment as being at risk from flooding.

Site Specific Flood Risk Assessment – An examination of the risks from all sources of flooding of the risks to and potentially arising from development on a specific site, including an examination of the effectiveness and impacts of any control or mitigation measures to be incorporated in that development.

Strategic Flood Risk Assessment (SFRA) - The assessment of flood risk on a wide geographical area against which to assess development proposed in an area (Region, County, Town).

Surface Water Management – This activity focuses on the assessment and management of flood risk within the urban environment from sources primarily resulting from intense rainfall. Surface water management should understand the performance of the urban drainage network, where exceedance flow routes would form and what impact this would have. Solutions to surface water flood risk can involve green infrastructure provision to capture and direct these excessive flows to lower vulnerable areas or open space. New development can provide solutions to reducing run-off not only from the proposed development also from existing areas. This should be considered in the SFRA in critical areas where development is planned upstream of flooding hotspots**.**

Sustainable Drainage Systems (SuDS) - A form of drainage that aims to control run-off as close to its source as possible using a sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques.

Source: Definitions are for the most part sourced from the DEHLG / OPW Guidelines for Planning Authorities on 'The Planning System and Flood Risk Management, 2009'.