Waterman Moylan
Engineering Consultants

# Traffic & Transport Assessment

## Phase 2 – Proposed Residential Development at Tandy's Lane Village, Adamstown, Co. Dublin

April 2022

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## Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015 and BS EN ISO 14001: 2015)

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|---|---|---|---|---|
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**Comments**

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## Disclaimer

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This report is confidential to the Client, and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

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# 1. Introduction

## 1.1 Introduction

Waterman Moylan Engineering Consultants have been appointed by Quintain Developments Ireland Ltd. to prepare this Traffic and Transport Assessment (TTA) as part of the planning documentation for a proposed residential development on lands at Tandy's Lane Village, located within the Adamstown Strategic Development Zone (ASDZ), Co. Dublin.

The proposed development is labelled as Phase 2 of Tandy's Lane Village and consists of 352 no. houses distributed as per the schedule of accommodation shown in Table 1 below.

| 2-Bed Houses | 3-Bed Houses | 4-Bed Houses | Total |
|---|---|---|---|
| 15 | 256 | 81 | **352** |

***Table 1** | Proposed Schedule of Accommodation.*

## 1.2 Standards and Contents

This TTA has been prepared in accordance with Section 6.4.2 of the South Dublin County Council Development Plan 2016 – 2022 which specifies that a Traffic and Transport Assessment is *"required to support development proposals that have the potential to generate significant traffic movements"*.

Section 11.4.5 also requires that the TTA be prepared in accordance with the *'Traffic and Transport Assessment Guidelines (May 2014)'* published by the Transport Infrastructure for Ireland (TII) / National Road Authority (NRA).

The contents of the Traffic and Transport Assessment includes:

- Description of the proposed development.
- Description of the receiving environment including main roads and junctions, public transport, cycle facilities and pedestrian facilities.
- Description of the existing travel characteristics.
- Description of transportation improvements to nearby roads, junctions, public transport, cycle, and pedestrian facilities.
- Calculation of the trip generation for the proposed development.

This TTA is a comprehensive review of the potential transport impacts of the overall Tandy's Lane Village development, both under-construction and proposed.

References to the microsimulation carried out by Atkins for the full build out of the Adamstown SDZ is contained in this TTA as it already forms the transport strategy for the overall SDZ area.

## 1.3 Threshold for Transport Assessment

Section 2.1 of the Traffic and Transport Assessment Guidelines (May 2014) requires submission of a Transport Assessment where a proposed development meets one or more of the following criteria:

1- Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.

2- Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive.

3- Residential development more than 200 dwellings.

4- Retail and leisure development more than 1,000sqm.

5- Office, education, and hospital development more than 2,500sqm.

6- Industrial development more than 5,000sqm.

7- Distribution and warehousing more than 10,000sqm.

In the case of the subject development, threshold no. 2 and 3 is exceeded.

## 1.4 Programme

It is estimated that construction of the subject proposed development will commence in 2022 for completion in 2025.

## 1.5 Site Location and Description

The development lands are located within the Tandy's Lane Village Development Area 6 of the Adamstown Strategic Development Zone (ASDZ) and is situated on 2 No. sites separated by the permitted Tandy's Lane Phase 1 Development (SDCC Reg. Ref. SDZ19A/0011) with a total site area of c. 10.24 hectares at Tandy's Lane, in the townlands of Doddsborough and Finnstown, Adamstown, Lucan, Co. Dublin.

The western site (8.06 hectares) is generally bounded to the west by Adamstown Boulevard, to the north by Adamstown Drive (L1030), to the east by the Tandy's Lane Phase 1 Development which is currently under construction (SDCC Reg. Ref. SDZ19A/0011) and undeveloped lands, and to the south by Tandy's Lane which links Adamstown Boulevard with Adamstown Park Road.

The eastern site (2.18 hectares) is generally bounded to the west / north-west by the permitted Tandy's Lane Phase 1 Development, to the east by Adamstown Park Road and to the south by Tandy's Lane.

The subject site (proposed Phase 2) is situated mostly at the western side of Tandy's Lane Village and is divided into two sections by Phase 1 – See Figure 1 below. For exact site location please refer to the accompanying architect's drawings.

The site is sloped with a gradient of approximately 1.7% from the southern boundary to the north-western boundary with a natural fall of approximately 7.5m from the southern boundary to the north-western boundary. It is currently green field with a site compound in the northwest corner that was used during the construction of the surrounding roads.

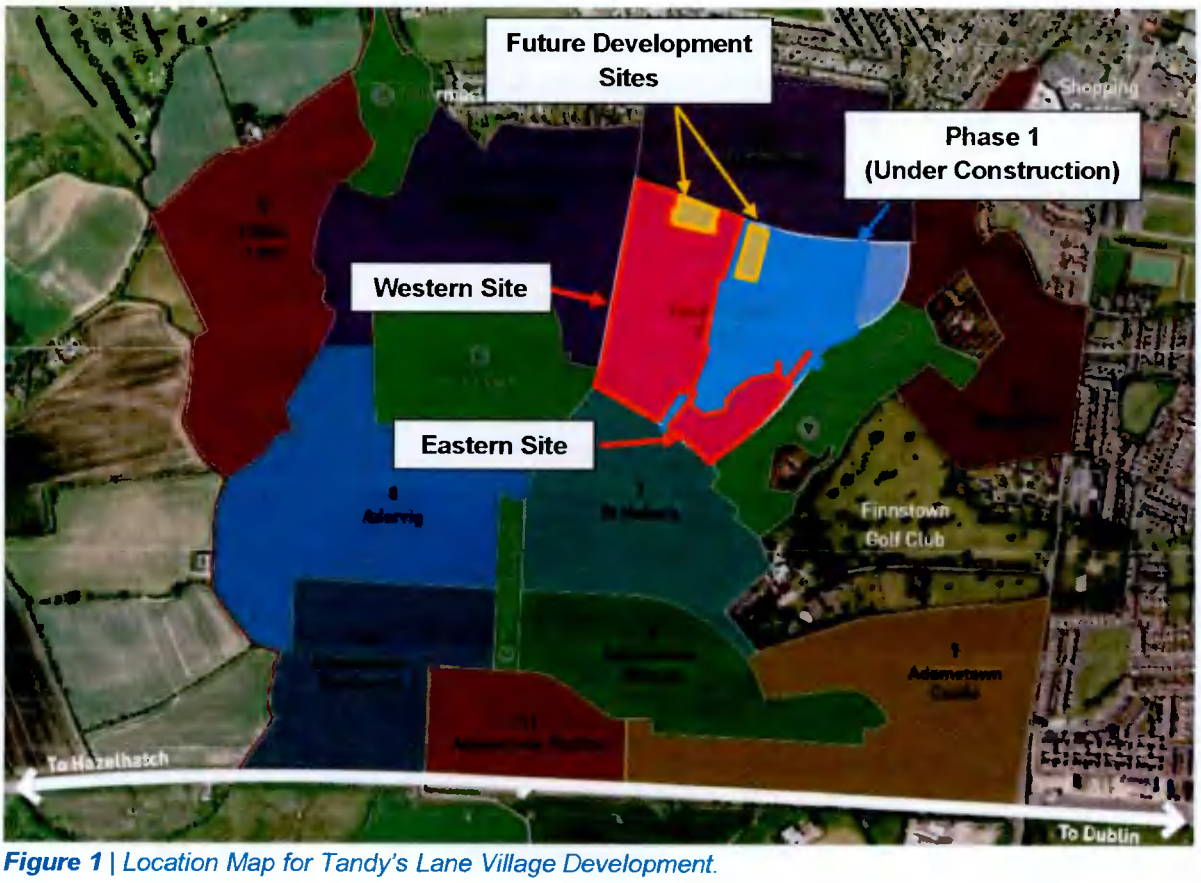


***Figure 1** | Location Map for Tandy's Lane Village Development.*

# 2. County Policy Framework

## 2.1 South Dublin County Council Development Plan (2016 – 2022)

The South Dublin County Council Development Plan (2016 – 2022) sets out the policies and objectives for the development of the County for the period of 2016 to 2022. The Plan seeks to improve and expand in a sustainable manner the social, economic, cultural and environments assets of the county. In the perspective of the subject development site and the proposed residential scheme, with regards to transport and mobility, some pertinent objectives include:

### 2.1.1 Transport & Mobility – Overarching Policies and Objectives

*"**TM1 Objective 1**: To support and guide national agencies in delivering major improvements to the transport network."*

*"**TM1 Objective 2**: To spatially arrange activities around, and improve access to, existing and planned public transport infrastructure and services."*

*"**TM1 Objective 3**: To focus on improvements to the local road and street network that will better utilise existing road space and encourage a transition towards more sustainable modes of transport, while also ensuring sufficient road capacity exists for the residual proportion on the trips which will continue to be taken by private vehicle."*

*"**TM1 Objective 4**: To prioritise new road construction that provides access to new communities and development areas and supports the economic development of the County."*

*"**TM1 Objective 5**: To balance the needs of road users and the local community with the need to support the development of a sustainable transportation network."*

*"**TM1 Objective 6**: To support the delivery of sufficient public transport and road capacity to facilitate sustainable new development in the County."*

### 2.1.2 Public Transport

*"**TM2 Objective 3**: To generate additional demand for public transport services through integrated land use planning and maximising access to existing and planned public transport services throughout the network."*

### 2.1.3 Walking and Cycling

*"**TM3 Objective 2**: To ensure that connectivity for pedestrians and cyclists is maximised in new communities and improved within existing areas in order to maximise access to local shops, schools, public transport services and other amenities, while seeking to minimise opportunities for anti-social behaviour and respecting the wishes of local communities."*

*"**TM3 Objective 3**: To ensure that all street networks are designed to prioritise the movement of pedestrians and cyclists within a safe and comfortable environment for a wide range of ages, abilities and journey types."*

*"**TM3 Objective 4**: To prioritise the upgrade of footpaths, public lighting & public realm maintenance and supporting signage on public roads/paths where a demonstrated need exists for busy routes used by runners & walkers."*

### 2.1.4 Strategic Road and Street Network

*"**TM4 Objective 3**: To ensure that developing areas have sufficient access to the County's Road network."*

### 2.1.5 Traffic and Transport Management

*"**TM5 Objective 1**: To effectively manage the flow of through traffic along the strategic road network and maximise the efficient use of existing road resources."*

*"**TM5 Objective 3**: To minimise the impact of new development on the County's Road and street network."*

### 2.1.6 Road and Street Design

*"**TM6 Objective 1**: To appropriately apply speed limits taking into account the characteristics of the surrounding area, the design of the street environment and the presence of vulnerable users."*

*"**TM6 Objective 2**: To ensure that all streets and street networks are designed to passively calm traffic through the creation of a self-regulating street environment."*

### 2.1.7 Car Parking

*"**TM7 Objective 1**: To carefully consider the number of parking spaces provided to service the needs of new development."*

*"**TM6 Objective 2**: To ensure that all streets and street networks are designed to passively calm traffic through the creation of a self-regulating street environment."*

# 3. Receiving Environment

In this section, a review of the existing transport network was undertaken. The review focused on:

- Existing Local Road Network (Main Roads and Junctions).
- Existing Public Transport Provision (Train and Bus).
- Existing Facilities for Active Modes (Cycle and Pedestrian).

## 3.1 Existing Local Road Network

### 3.1.1 Roads

The proposed development site is situated c.1km from the proposed Adamstown District Centre and c.1.5km from the centre of Lucan Village.

The existing main roads surrounding the proposed development site are the Adamstown Park (06A/5 & SDZ17A/0007) to the east, the Adamstown Drive (L1030) (SDZ18A/0004) to the north and the Adamstown Boulevard (Tandy's Lane) (SDZ18A/0009) to the west, as shown in Figure 2 below.


***Figure 2** | Site Location and Surrounding Road Network & Main Junctions.*

**Adamstown Park** is a single carriageway road running south-north along the eastern boundary of the site. The carriageway of the Adamstown Park adjacent to the proposed development site is approximately 6.0m wide with dedicated cycle lanes and footpaths running along both sides of the road. The Adamstown Park terminates further north at a signalised junction with Adamstown Drive (L1030).

**Adamstown Drive (L1030)** is a single carriageway road running along the northern boundary of the site. At the section adjacent to the site, it comprises a 7.0m wide carriageway with 3.5m wide normal traffic lanes in both directions. A dedicated cycle lane is provided along the northern side of the road, whilst footpaths are provided along both sides. There are also parallel parking spaces on the northern side of the road which currently serve the existing residential developments to the north of the road.

**Adamstown Boulevard (Tandy's Lane)** is a double carriageway road running south-north along the western boundary of the site, which will comprise two vehicular access points to the proposed development. At the section adjacent to the site, Adamstown Boulevard/Tandy's Lane comprises two lanes in both directions, with dedicated 3.0m wide bus lanes and 3.0m wide normal traffic lanes. Footpaths and off road cycle lanes are provided along both sides of the road. Parking is not allowed along Adamstown Boulevard (Tandy's Lane).

### 3.1.2 Junctions

The primary junctions in the surrounding area which currently facilitate access to the proposed development are:

- **Junction A (Signalised)**: Adamstown Boulevard (Tandy's Lane) / Adamstown Drive (L1030).
- **Junction B (Signalised)**: Adamstown Drive (L1030) / Adamstown Park.
- **Junction C (Signalised)**: Adamstown Drive (L1030) / R120.

The location of these junctions in relation to the proposed development site were illustrated in Figure 2 above.

**Junction A** is a recently constructed signal-controlled crossroads located immediately northwest of the subject site. The southern approach (Adamstown Boulevard (Tandy's Lane)) currently comprises a straight/left turning lane and a dedicated right turning lane. The Adamstown Drive (eastern approach) comprises of a single typical lane which diverges into one straight/left turning lane and one dedicated right turning pocket lane just before approaching the junction. The western approach (Shackleton Drive) also comprises of the same lane configuration as the eastern approach. The Dodsborough Road (northern approach) comprises one dedicated bus lane and one typical lane which turn into one straight/left turning lane and one dedicated right turning lane just before approaching the junction. Dedicated signalised pedestrian crossings, incorporated into the traffic signal system, are provided on all approaches. These pedestrian crossings are supplied with dropped kerbs and tactile pavements which facilitate progression of all users. The existing junction's layout is shown in Figure 3 below.

**Junction B** is an existing signal-controlled T-junction located northeast of the subject site. The northern approach, which currently provides access to a construction site, will form the fourth signalised arm of the junction and it will then operate as a signalised crossroads. All approaches of the junction (southern, eastern, and western) currently comprise of one typical traffic lane which diverge into a straight/left turning lane and one dedicated right pocket turning lane just before approaching the junction. Dedicated signalised pedestrian crossings, incorporated into the traffic signal system, are provided on all approaches. These pedestrian crossings are supplied with dropped kerbs and tactile pavements. The existing junction's layout is shown in Figure 3 below.

**Junction C** is an existing signal-controlled crossroads located northeast of the subject site. All approaches of the junction currently comprise of one typical traffic lane which diverges into one straight/left turning lane and one dedicated right turning lane before approaching the junction. The southern right turning lane is

c.150m long and has capacity to accommodate c.26 vehicles. The western, eastern, and northern approaches are, c.45m, c.30m and c.40m long and have capacity to accommodate c.8, c.5 and c.7 vehicles, respectively. Dedicated pedestrian crossings, incorporated into the traffic signal system, are provided on all approaches of the junction. These pedestrian crossings are supplied with dropped kerbs and tactile pavements. The existing junction's layout is shown in Figure 3 below.

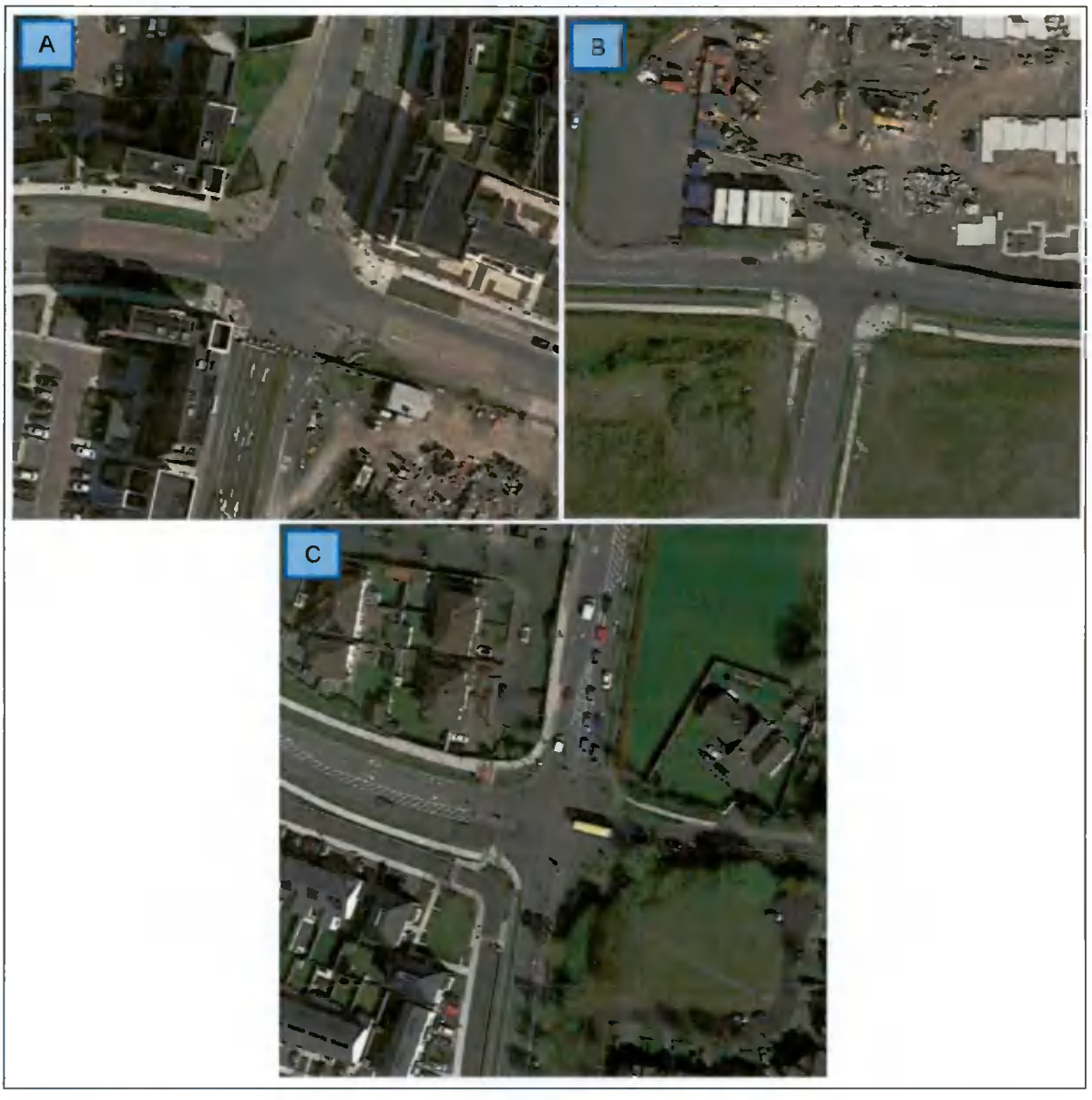


***Figure 3** | Existing Layouts of Major Surrounding Junctions A, B and C*

## 3.2 Existing Public Transport Provision

The review of the public transport provision provided in this section includes a) the description of the modes of transport available in the area, b) the ease of access to these facilities and c) the frequency of service currently available. The existing bus service along Newcastle Road (R120) and the Adamstown rail station are key elements already serving the area.

### 3.2.1 Train

Adamstown Train Station is located to the south of the site approximately 1.2 km away or 15 minutes walking as shown in Figure 4 below. It is served by Commuter and InterCity services and operates from 06:15 to 23:50 from Monday to Friday and from 10:00 to 21:00 on Sundays. The Commuter Rail service through Adamstown Station serves all stations from Heuston to Cork. The InterCity service operates from Dublin through Kildare to Portlaoise. Train frequency at Adamstown Station is generally 2 services per hour per direction throughout the day.

Currently there is a temporary Park and Ride facility serving the Adamstown station. A permanent Park and Ride facility at this location is a requirement set out in the Adamstown SDZ planning scheme. A public bicycle parking with 50 parking spaces is provided just outside Adamstown train station and currently provides residents with a good opportunity to commute on a bike-train combined journey.

### 3.2.2 Dublin Bus and Go Ahead

Public bus service in the locality is operated by Dublin Bus and Go Ahead. As can be seen in Figure 4 below, the closest bus stops serviced by public bus services are located on the Newcastle Road (R120) and on the L1011 c.1.1km away from the centre point of the site - approximately 14-minute walking. The bus routes which currently operate along the Newcastle Road (R120) and the L1011 together with their weekday operational frequencies are provided in Table 2. It is important to mention that the bus frequency data presented below was based on the time that buses leave the first bus stop. The below information was obtained by consultation of Dublin Bus and Go-Ahead websites.

| Bus Routes & Weekday (Monday to Friday) Operational Frequency | | | | | | |
|---|---|---|---|---|---|---|
| Route No. | Direction | 00:00 to 07:00 | 07:00 to 09:00 | 09:00 to 17:00 | 17:00 to 19:00 | 19:00 to 00:00 |
| C1 | to Sandymount | 15 services | 12 services | 18 services | 4 services | 8 services |
| | from Sandymount | 9 services | 6 services | 23 services | 10 services | 9 services |
| C2 | to Sandymount | 14 services | 10 services | 18 services | 4 services | 8 services |
| | from Sandymount | 10 services | 5 services | 23 services | 10 services | 8 services |
| P29 | to Ringsend Rd. | - | 4 services | - | - | - |
| | from Ringsend Rd. | - | - | - | 4 services | - |
| L51 | to Liffey Valley | 2 services | 2 services | 8 services | 2 services | 4 services |
| | from Liffey Valley | 2 services | 2 services | 8 services | 2 services | 4 services |
| L53 | to Liffey Valley | 3 services | 4 services | 16 services | 4 services | 8 services |
| | from Liffey Valley | 3 services | 4 services | 16 services | 4 services | 8 services |

***Table 2** | Dublin Bus & Go-Ahead Routes – Operational Weekday Frequency.*

Access from the subject site to the closest existing bus stops is via Adamstown Drive (L1030). A network of footpaths with dedicated pedestrian crossings is provided along the entire route towards the bus stops. These pedestrian crossings include dropped kerbs and tactile pavements which currently facilitate easy movement of all users.


***Figure 4** | Site Location and Routes to Existing Public Transport Services.*

In addition to the above existing public transport facilities, two NTA bus stops have been recently constructed along Adamstown Boulevard (Tandy's Lane) to the west and adjacent to the subject site. These bus stops are expected to be serviced by new bus routes, which, will directly serve the subject site and surrounding new developments. Refer to Bus Connects Section 4.1.2 later in this report.

There are also plans to construct an additional bus stop on the eastern side of Adamstown Boulevard, the location of which is shown on the accompanying architects site layout.

## 3.3 Existing Facilities for Active Modes

### 3.3.1 Cycle Facilities

***Greater Dublin Area Cycle Network Plan – NTA, 2013***

According to Sheet 5 (Dublin Mid-West) of the Existing Cycle Network Map within the GDA Cycle Network Plan published by the National Transport Authority (NTA) in December 2013, the immediate area surrounding the site had a limited provision of cycle facilities, which, at that time, included cycle tracks separated from the road along both sides of the Griffeen Avenue, cycle tracks separated from the road along both sides of the road adjacent to the railway line and a cycle trail (or greenway) running north-south between the R120 and the R139 (across Griffeen Valley Park). Figure 5 below shows the surrounding cycle network existent in the local area as extracted from Sheet 5 of the GDA Existing Cycle Network Map.

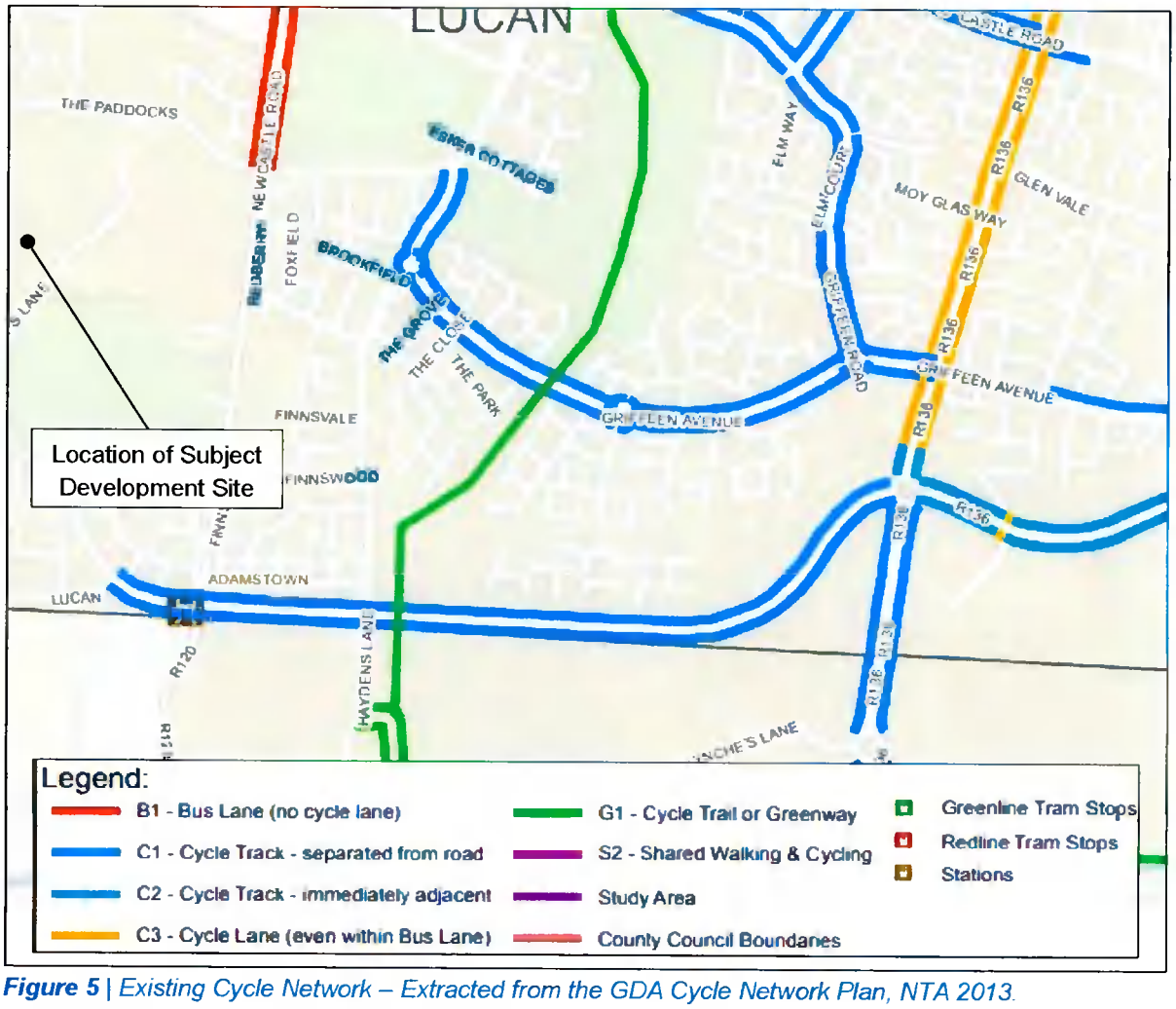


***Figure 5*** | *Existing Cycle Network – Extracted from the GDA Cycle Network Plan, NTA 2013.*

The cycle network in the Adamstown area has developed considerably since the GDA Cycle Network Plan was published in 2013. The **Adamstown Park** running to the east of the site, comprises of new off-road dedicated cycle lanes along both sides of the carriageway. The **Adamstown Drive (L1030)** to the north of the site, comprises of a dedicated off-road cycle lane along the northern side of the carriageway. These cycle lanes, which are in line with the requirements set out in *'Figure 2.22 – Pedestrian and Cyclist Permeability'* within the Adamstown Strategic Development Zone (SDZ) Planning Scheme 2014, already provide comfort and safety to those cyclists moving towards the outer network and to the local and strategic public transport system and educational developments. Further details of the cycle network proposals as set out in the Adamstown SDZ are provided later in this report.

***Bike Parking***

As described earlier in Section 3.2.1, public bicycle parking with 50 parking spaces is provided just outside Adamstown train station and currently provides residents with a good opportunity to commute on a bike-train combined journey.

### 3.3.2 Local Pedestrian Facilities

Near the proposed development, the Adamstown Park, the Adamstown Drive (L1030) and the Adamstown Boulevard (Tandy's Lane) incorporate good quality pedestrian facilities with street lighting and footpaths provided along both sides of the carriageways.

The signalised junctions surrounding the subject site (labelled Junctions A, B and C as described in Section 3.1.2) are equipped with signal-controlled pedestrian crossings facilities, which include dropped kerbs and tactile pavement. To the west of the site, along Adamstown Boulevard (Tandy's Lane), there is a dedicated signalised pedestrian crossing, which also include dropped kerbs and tactile pavement.

These pedestrian facilities in the immediate vicinity of the site currently provide easy, safe, and comfortable crossing for all users.

## 3.4 Existing GoCar

According to GoCar, *"carsharing is a sustainable service. By allowing multiple people to use the same vehicle at different times, car sharing reduces car ownership, car dependency, congestion, noise, and air pollution. It frees up land which would otherwise be used for additional parking spaces. Most GoCar users only use a car when necessary and walk and use public transport more often than car owners."*

GoCar estimates that each GoCar vehicle in a community has the potential to replace the journey of up to 15 private cars.

There are two GoCar bases located in the surrounding area within reasonable walking time, one to the south of the site close to the railway line and one to the north of the site at Gandon Crescent. The location of each GoCar base in relation to the subject site is illustrated in Figure 6. There is currently one vehicle available at each station.

Walking times from the subject site (at a centre point) is approximately 15 minutes to the GoCar base near the railway line and 5 minutes to the GoCar base at Gandon Crescent.

Additionally, there is a further GoCar base located near the Griffeen Valley Park, which also has one vehicle available. Walking time to this GoCar base is c. 25 minutes.

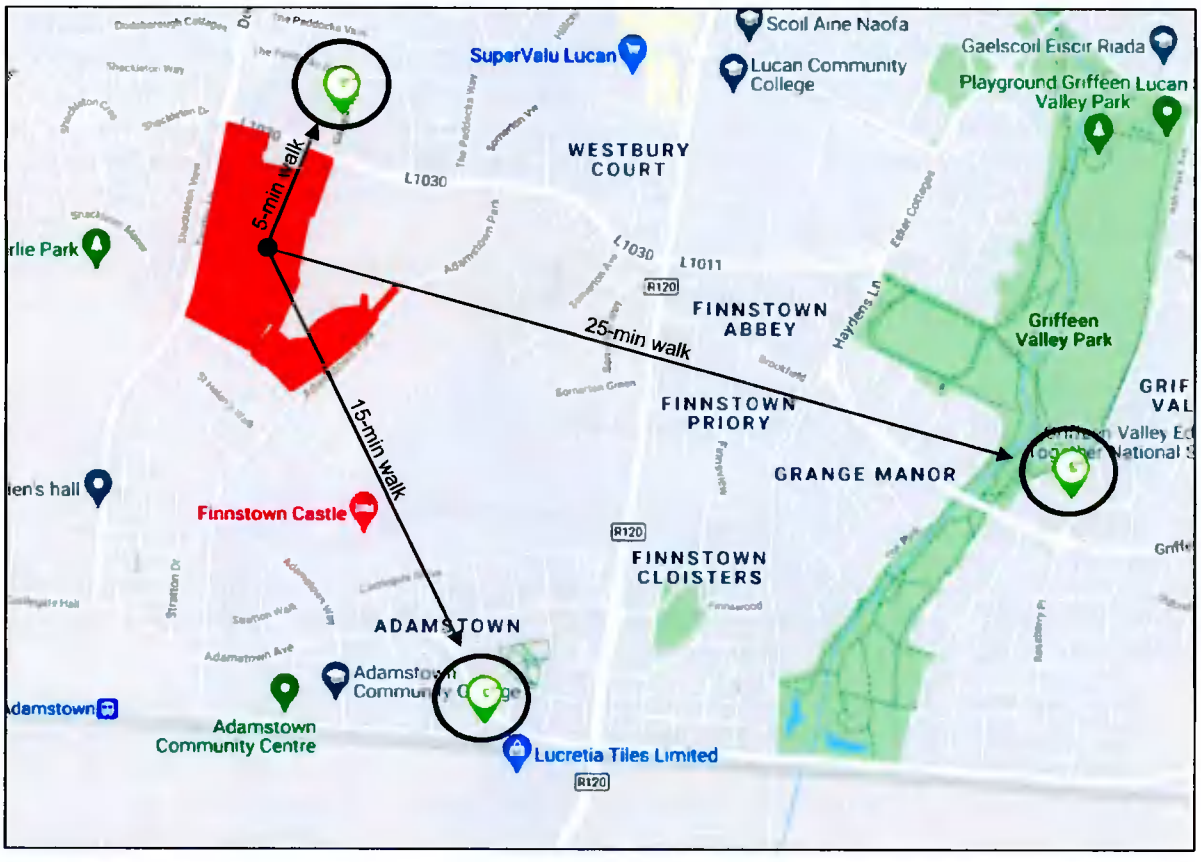


***Figure 6** | Location and Walking Times to Closest GoCar Bases.*

# 4. Transportation Improvements

## 4.1 Public Transport

### 4.1.1 Dart+ Southwest

Adamstown Station, located approximately 1.2km south of the proposed development site, is part of the southwestern route of the DART railway network. The DART+ Programme aims to improve current rail services across Dublin City and Greater Dublin, by modernising and providing an electrified and more frequent and reliable rail service, enhancing capacity on the rail corridor. The following improvements - extracted from the DART+ website, are included as part of the programme:

- *"Increase peak passenger capacity from 5,000 to 20,000 per hour per direction and increase train frequency between Hazelhatch & Celbridge Station and Dublin City – facilitating fast, frequent, and reliable transport to the surrounding communities.*
- *Enhance public transport opportunities for work, education, or leisure purposes.*
- *Facilitate the development and future growth of existing and new communities that will greatly benefit from the connectivity that the DART+ Southwest will deliver.*
- *Alleviate road congestion.*
- *Build a sustainable and connected city region, supporting the transition to a low carbon and climate resilient society.*
- *Facilitate people to make sustainable travel choices by encouraging a move away from private cars to reliable, efficient, and safe public transport network.*
- *Improve multimodal transport connectivity through interchange with the Luas at Heuston Station, Bus Connects and the proposed Metrolink.*
- *Improve journey time reliability."*

It is expected that an application for the DART+ Southwest programme will be made to An Bord Pleanála in summer/autumn 2022.

### 4.1.2 Bus Connects

The Bus Connects project currently being promoted by the National Transport Authority (NTA) aims to deliver a much-enhanced bus service to the Greater Dublin Area (GDA). The routes proposed to directly serve the subject development site are the following:

- **Spine Route C2**: Adamstown – City Centre – Sandymount.
- **Local Route L51**: Adamstown – Lucan Village – Esker – Liffey Valley and
- **Local Route L52**: Adamstown – Lucan Village – Clonsilla – Blanchardstown Shopping Centre.

In addition to the above, the four further routes are proposed for the Adamstown SDZ that depart from the Adamstown train station. These include:

- **Spine Route C1**: Adamstown – City Centre – Sandymount.
- **Local Route L53**: Adamstown – Balgaddy – Liffey Valley.
- **Peak Only Route P29**: Adamstown Road – City Centre – Ringsend and

- **Peak Only Route X30**: Dodsborough – Lucan Village – City Centre – UCD.

The weekday and weekend frequencies of each Bus Connects route listed above is proposed to operate are presented in Table 3 below.

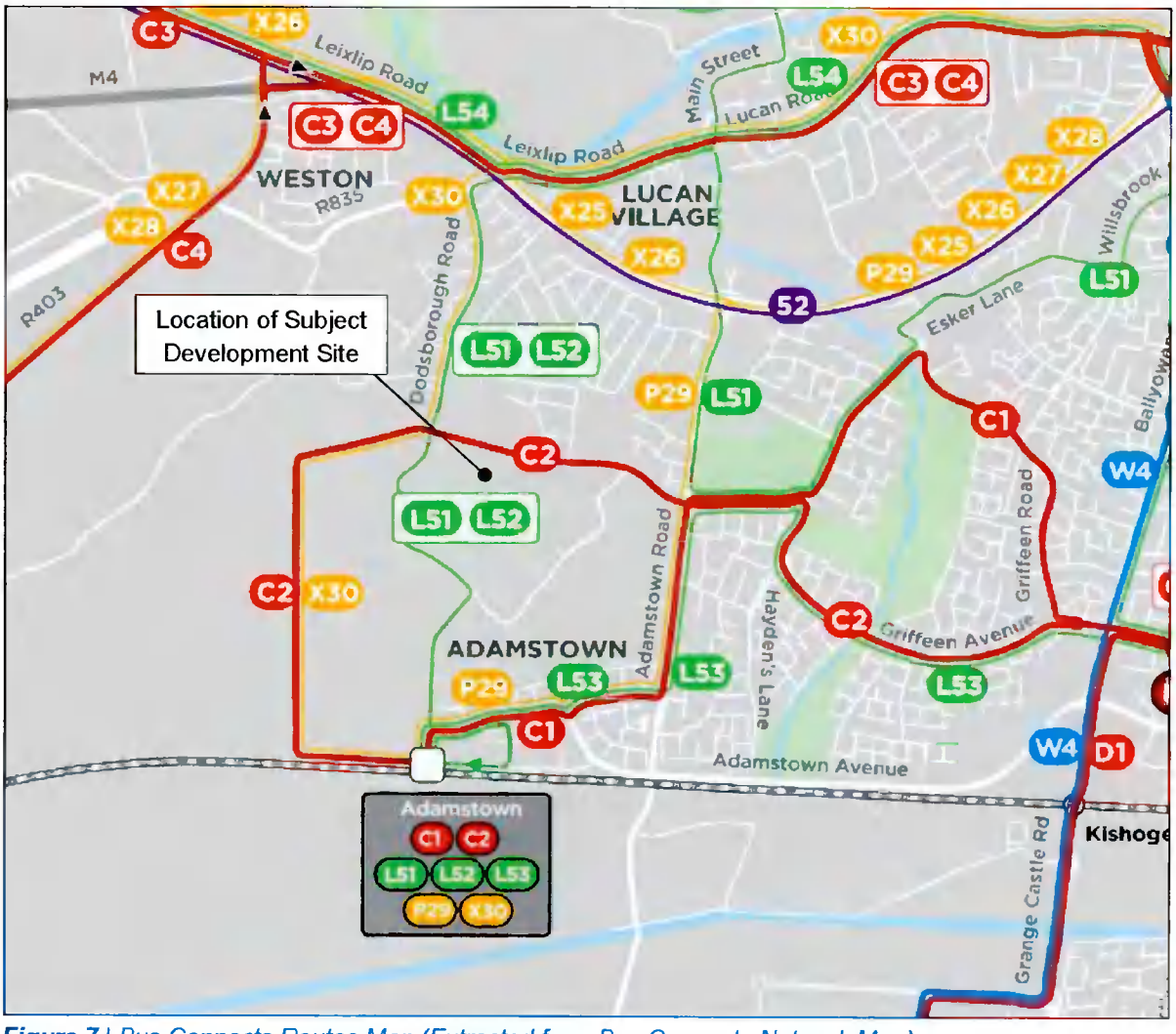


***Figure 7** | Bus Connects Routes Map (Extracted from Bus Connects Network Map).*

The background map as shown in Figure 7 above is outdated and therefore do not precisely indicate the current road network in the Adamstown SDZ area. However, as previously described in Section 3.2.2 and illustrated in Figure 4, new bus stops were recently constructed on the Adamstown Boulevard (Tandy's Lane) – the road bounding the site to the west. Therefore, Bus Connects routes L51 and L52 are expected to operate along this road and directly serve the proposed development.

| Weekday Frequency | | | | | |
|---|---|---|---|---|---|
| Route No. | Before 07:00 | 07:00 to 09:00 | 09:00 to 15:00 | 15:00 to 18:00 | After 18:00 |
| C1 | 30 to 60 min | 8 min | 30 min | 8 min | 30 to 60 min |
| C2 | 30 to 60 min | 8 to 15 min | 30 min | 8 to 15 min | 30 to 60 min |
| L51 | 60 min | 60 min | 60 min | 60 min | 60 min |
| L52 | 60 min | 60 min | 60 min | 60 min | 60 min |
| L53 | 30 min | 30 min | 30 min | 30 min | 30 to 60 min |
| P29 | - | 4 services | - | 4 services | - |
| X30 | - | 4 services | - | 3 services | - |
| **Saturday Frequency** | | | | | |
| Route No. | Before 07:00 | 07:00 to 09:00 | 09:00 to 15:00 | 15:00 to 18:00 | After 18:00 |
| C1 | 30 min | 30 min | 30 min | 30 min | 30 to 60 min |
| C2 | 30 min | 30 min | 30 min | 30 min | 30 to 60 min |
| L51 | 60 min | 60 min | 60 min | 60 min | 60 min |
| L52 | 60 min | 60 min | 60 min | 60 min | 60 min |
| L53 | 60 min | 30 min | 30 min | 30 min | 30 to 60 min |
| P29 | - | - | - | - | - |
| X30 | - | - | - | - | - |
| **Sunday Frequency** | | | | | |
| Route No. | Before 08:00 | 08:00 to 10:00 | 10:00 to 15:00 | 15:00 to 18:00 | After 18:00 |
| C1 | 30 min | 30 min | 30 min | 30 min | 30 to 60 min |
| C2 | 30 min | 30 min | 30 min | 30 min | 30 to 60 min |
| L51 | 60 min | 60 min | 60 min | 60 min | 60 min |
| L52 | 60 min | 60 min | 60 min | 60 min | 60 min |
| L53 | 60 min | 30 min | 30 min | 30 min | 30 to 60 min |
| P29 | - | - | - | - | - |
| X30 | - | - | - | - | - |

***Table 3*** | *Frequency of Bus Connects Routes (Source: Bus Connects).*

## 4.2 Cycle Infrastructure

### 4.2.1 Greater Dublin Area Cycle Network Plan, NTA 2013

Proposals for the Greater Dublin Area Cycle Network Plan were published by the National Transport Authority (NTA) in December 2013. The plan sets out a vision and a strategy for the construction and/or designation of a comprehensive network of cycling routes throughout the Greater Dublin Area (Counties Dublin, Meath, Kildare, and Wicklow).

The subject site in Adamstown SDZ lies within the *"Dublin West Sector"* as outlined within the Greater Dublin Area Cycle Network Plan. This sector *"extends southward from the N4 and River Liffey, to a line south of the N7 and the Ballymount and Walkinstown areas."*

An extract from Sheet N5 (Proposed Cycle Network – Dublin Mid-West), where the subject site is situated is reproduced in Figure 8 below.

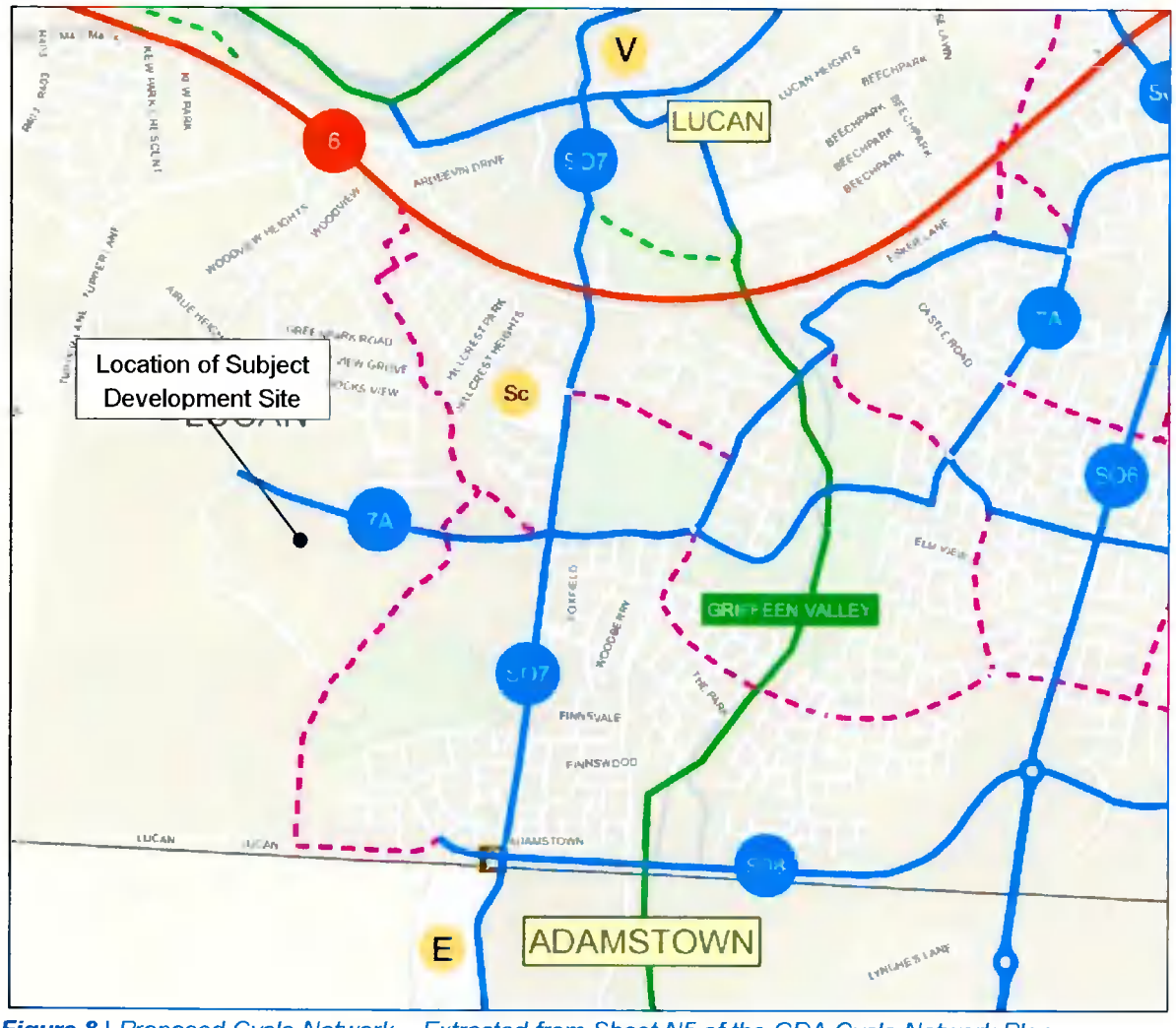


***Figure 8*** | *Proposed Cycle Network – Extracted from Sheet N5 of the GDA Cycle Network Plan.*

It can be noted that the background map in Figure 8 above is outdated and therefore do not precisely represent the current road network in the Adamstown SDZ area. However, route 7A – connecting the site to the wider cycle network to the east, is already substantially constructed and serving the residents of the Adamstown Area.

The north-south feeder route (dotted pink line crossing route 7A) is also almost fully constructed. To the south of its junction with route 7A, the feeder route is provided in the form of an off-road cycle lane running along both sides of the Adamstown Park. Further south along this road, the feeder route becomes a shared cycle-vehicle route.

## 4.3 Adamstown Strategic Development Zone (SDZ) – SDCC, December 2014

In December 2014, South Dublin County Council published the 'Adamstown Strategic Development (SDZ)' with the *"aim to create sustainable communities rather than just housing developments"* in the Adamstown area.

### 4.3.1 Road Improvements Outside the SDZ

Several road improvements outside the Adamstown SDZ have been carried out to support the development of the area. These improvements included:

- Completion of the Outer Ring Road from the N4 to the N81.
- Completion of 2.2km of the Adamstown Link Road connecting to the Outer Ring Road.
- Realignment of Hayden's Lane.
- Upgrades to the R120 adjacent to the SDZ.
- Construction of two signal-controlled access junctions into the SDZ.
- Construction of the R120 bridge over the Adamstown Link Road and Railway Line.
- Improvements to the N4 between the M50 and Leixlip Interchange.
- Completion of the Celbridge/Leixlip West interchange on the N4.

### 4.3.2 Busway/Quality Bus Corridor (QBC)

From the Adamstown SDZ, "*it is an objective of planning scheme to both increase bus capacity to serve Adamstown at each phase of development and improve bus journey times between Adamstown/Lucan area and the City Centre.*"

To enhance the overall bus network in Adamstown to better serve the existing and future residents of the area, the following improvements have been set out in the Adamstown SDZ:

1. Provision of a north south QBC busway through the centre of the Adamstown SDZ lands between the railway station and the existing N4 QBC, which shall include both on-site and off-site bus priority measures comprising of road markings, bus gates and/or bus priority signals.
2. Provision of additional bus services from the Adamstown transport interchange serving Lucan, Liffey Valley, Blanchardstown, and Tallaght.

The proposed main roads and busway network surrounding the subject site are illustrated in Figure 9 below – reproduced from *'Figure 2.16 Main Road and Busway Network'* of the Adamstown SDZ.

As mentioned previously in this report, the north south QBC required for the Adamstown SDZ is already constructed and runs along the western boundary of the site via the Adamstown Boulevard (Tandy's Lane).

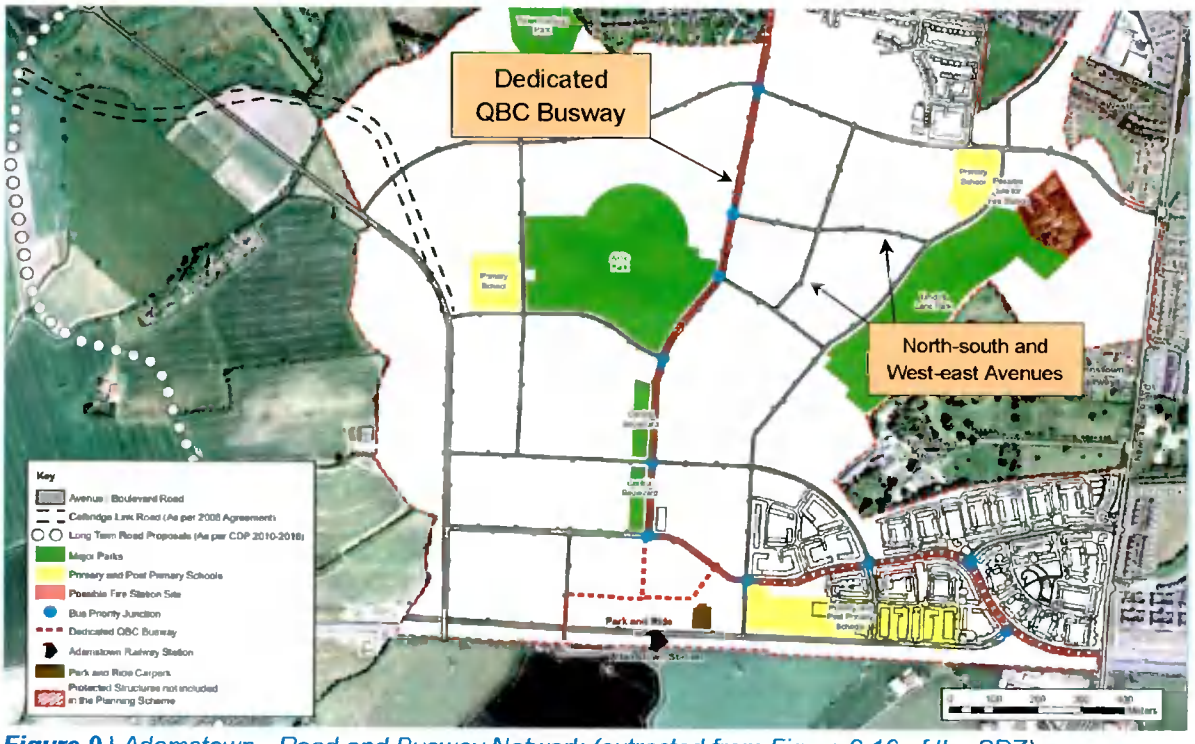


***Figure 9** | Adamstown - Road and Busway Network (extracted from Figure 2.16 of the SDZ).*

It can be seen from Figure 9 above that the proposal for the Tandy's Lane Village (including the approved Phase 1 and the proposed Phase 2) includes a north-south and a west-east Avenue which intersect at a relatively centre point of the site and form a four-armed junction. Details of the road hierarchy proposed under the Adamstown SDZ for the Tandy's Lane Village is provided in Section 4.3.3 below.

### 4.3.3 Tandy's Lane Village – Road Hierarchy and Indicative Layout

Figure 10 below reproduces the road hierarchy and the indicative road layout for the Tandy's Lane Village as extracted from the Adamstown SDZ in comparison with the proposed road layout for the overall Tandy's Lane Village - which includes the approved Phase 1 and the proposed Phase 2 road layouts.


***Figure 10** | Comparison of Tandy's Lane Village Road Hierarchy (SDZ vs. Proposed)*

The internal road hierarchy proposed as part of the subject application (Tandy's Lane Phase 2) has been developed based on the layout set out in the Adamstown SDZ, but with some adjustments to fit the road layout approved as part of Tandy's Lane Phase 1.

The approved road layout for the Tandy's Lane Phase 1 includes the complete north-south Avenue across the Tandy's Lane Village site; the eastern portion of the west-east Avenue; and Side Streets and Back Streets with connection points to the existing and approved surrounding Avenues.

The proposed road layout for the Tandy's Lane Phase 2 includes the construction of the western section of the west-east Avenue, which, with the approved road layout for Phase 1 in place, will form a four-armed junction between the north-south and the west-east Avenues. This is in line with the SDZ proposal.

It can be noted that the alignment of both north-south and west-east Avenues (approved and proposed under Phases 1 and 2 of the Tandy's Lane) differ slightly from the alignment set out in the SDZ - which is relatively a straight line. However, given the land use proposed for the area (mostly residential), the approved/proposed layout is considered more appropriate in terms of pedestrian and cyclists' safety. The approved/proposed road layout will require drivers to reduce their vehicle speed in a residential area which will therefore provide comfort and a better sense of safety for pedestrian and cyclists.

The specific location of side streets and back streets through the site as well as the number of vehicular accesses onto Adamstown Boulevard to the west and the north south avenue to the east also differ slightly to those set out in the SDZ. The number of vehicular access have reduced in favour of providing pedestrian friendly Homezones and prioritising pedestrian and cyclist permeability in line with the objectives set out in DMURS. The Road Hierarchy can be seen in the accompanying Architects report.

### 4.3.4 Walking and Cycling Network

*"Figure 2.22: Pedestrian and Cyclist Permeability"* of the Adamstown SDZ, which is reproduced in Figure 11 below, sets out a comprehensive walking and cycling network proposed internally throughout Adamstown lands and its connection points to the existing wider network.


***Figure 11** | Pedestrian and Cyclist Permeability (Figure 2.22 of the Adamstown SDZ).*

Paragraph 2.4.17 of the Adamstown SDZ sets out that *"future developments are required to maximise pedestrian and cyclist access to services and facilities and, the local and strategic public transport network. This is to be achieved through the provision of a network of direct, safe, secure, and pleasant pedestrian and cycle routes."* These pedestrian and cycle routes are illustrated in Figure 11 above.

As mentioned in Section 3.3.1 of this report, the cycle network in the Adamstown area has developed considerably since the GDA Cycle Network Plan and the Adamstown SDZ were published in 2013 and 2014, respectively.

The **Adamstown Park** running to the east of the site, comprises of new off-road dedicated cycle lanes along both sides of the carriageway. The **Adamstown Drive (L1030)** to the north of the site, comprises of a dedicated off-road cycle lane along the northern side of its carriageway. These cycle lanes, which are in line with the requirements set out in *'Figure 2.22 – Pedestrian and Cyclist Permeability'* (Figure 11 above) already provide comfort and safety to those cyclists moving towards the outer network and to the local and strategic public transport system and local educational developments.

Dedicated cycle lanes are not proposed internally within the Tandy's Lane Village site, however priority measures for cyclists and pedestrians will be provided in the form of a dedicated signalised toucan crossing (approved under Phase 1 at Adamstown Park. See Figure 12 below – extracted from Phase 1 application documents and in line with the pedestrian permeability proposals set out in the Adamstown SDZ), road markings and raised surfaces where appropriate.

The toucan crossing facility in Figure 12 approved under Phase 1 of Tandy's Lane Village, is located on Adamstown Park (to the east of the site) just south of its intersection with the approved west-east Avenue

within Tandy's Lane Village. This facility will provide safety and comfort for pedestrians and cyclists on their crossing from Tandy's Lane Village to Tandy's Lane Park.

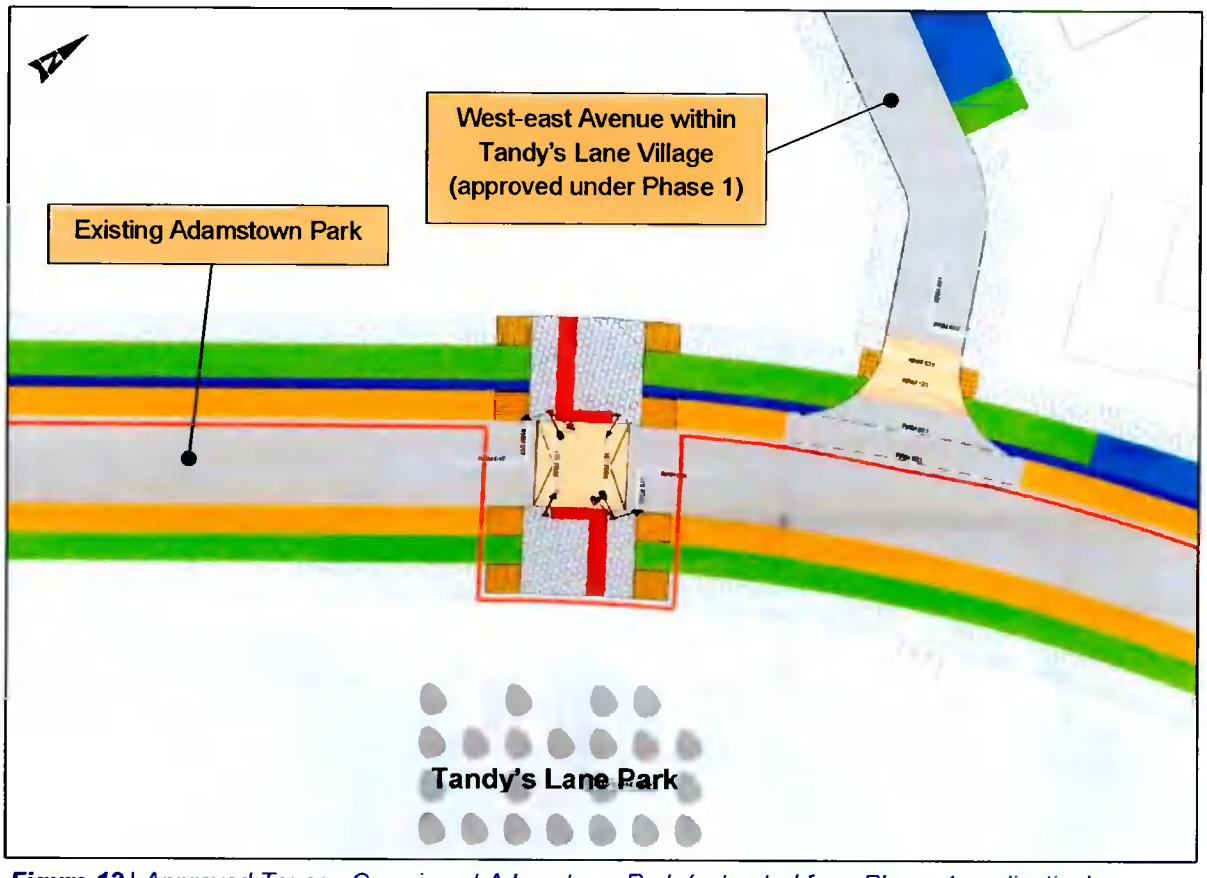


***Figure 12** | Approved Toucan Crossing at Adamstown Park (extracted from Phase 1 application).*

# 5. Proposed Development

## 5.1 Site Location and Description

The development lands are located within the Tandy's Lane Village Development Area 6 of the Adamstown Strategic Development Zone (ASDZ) and is situated on 2 No. sites separated by the permitted Tandy's Lane Phase 1 Development (SDCC Reg. Ref. SDZ19A/0011) with a total site area of c. 10.24 hectares at Tandy's Lane, in the townlands of Doddsborough and Finnstown, Adamstown, Lucan, Co. Dublin.

The western site (8.06 hectares) is generally bounded to the west by Adamstown Boulevard, to the north by Adamstown Drive (L1030), to the east by the Tandy's Lane Phase 1 Development which is currently under construction (SDCC Reg. Ref. SDZ19A/0011) and undeveloped lands, and to the south by Tandy's Lane which links Adamstown Boulevard with Adamstown Park Road.

The eastern site (2.18 hectares) is generally bounded to the west / north-west by the permitted Tandy's Lane Phase 1 Development, to the east by Adamstown Park Road and to the south by Tandy's Lane.

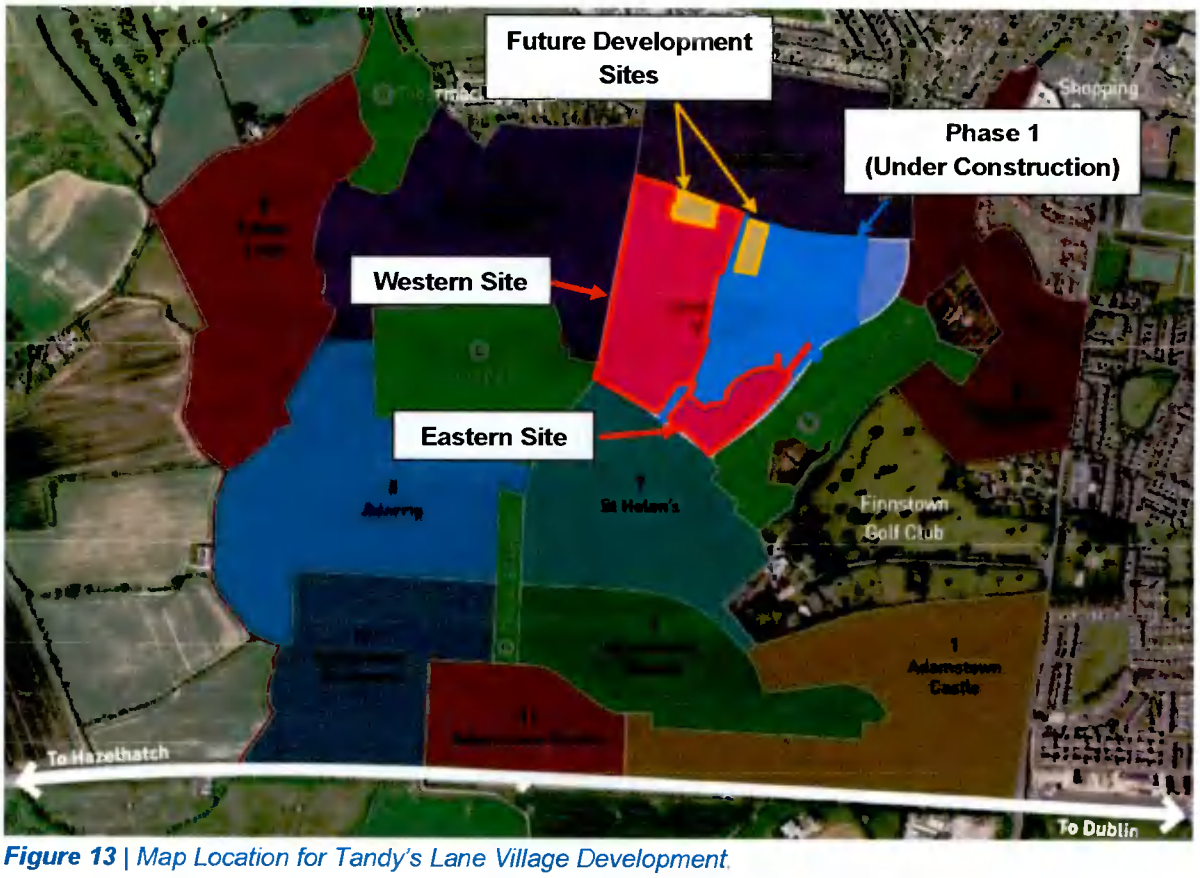


***Figure 13** | Map Location for Tandy's Lane Village Development.*

The site is sloped with a gradient of approximately 1.7% from the southern boundary to the north-western boundary with a natural fall of approximately 7.5m from the southern boundary to the north-western boundary. It is currently green field with a site compound in the northwest corner that was used during the construction of the surrounding roads.

## 5.2 Development Description

The proposed development is labelled as Phase 2 of Tandy's Lane Village and consists of 352 no. houses in a mixture of terraced, semi – detached and detached houses that are distributed between two sites, namely the western site (8.06 hectares) and the eastern site (2.18 hectares) – See Figure 13 above.

The proposed schedule of accommodation for the overall Tandy's Lane Phase 2 is shown in Table 4 below.

| 2-Bed Houses | 3-Bed Houses | 4-Bed Houses | Total |
|---|---|---|---|
| 15 | 256 | 81 | **352** |

***Table 4** | Proposed Schedule of Accommodation.*

## 5.3 Vehicular Access Points

The proposed main development site (western site) will benefit from multiple access points as shown in Figure 14. These include two vehicular accesses from Adamstown Boulevard to the west, one vehicular access from Adamstown Drive to the north, one vehicular access from Tandy's Lane to the south, and three vehicular accesses from the North-south Avenue that splits the subject development and Phase 1 of Tandy's Lane Village tile. The proposed eastern site will benefit from two vehicular accesses from the Adamstown Park to the west and one vehicular access from the Tandy's Lane to the south.

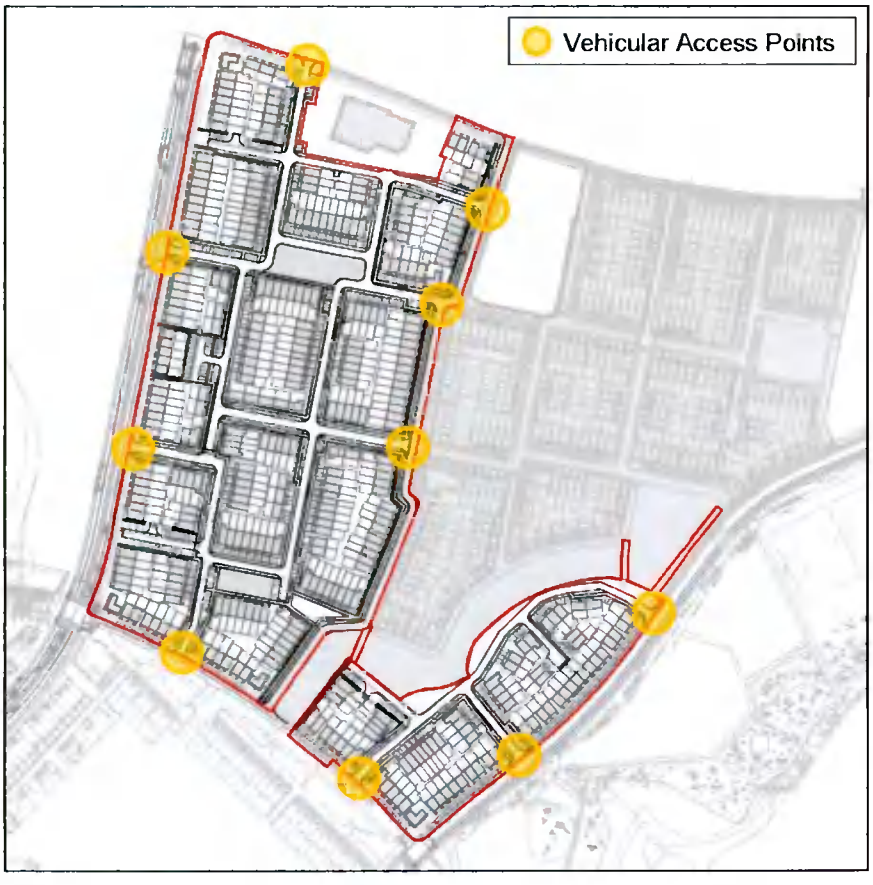


***Figure 14** | Vehicular Access Points.*

The visibility splay requirements for these vehicular access points are based on the 50kph design speed limit. The sightline requirements for new priority junctions on 50kph roads are identified within the Design Manual for Urban Roads and Streets (DMURS) which recommends a visibility splay of 49m x 2.4m on roads with bus routes and 45m x 2.4m on roads without bus routes. Details of the designed sightlines for the proposed site access junctions are shown on Waterman Moylan Drawings 21-058-P120, P121 and P123 accompanying the documentation package.

## 5.4 Internal Layout

As recommended by both DMURS and outlined in the ASDZ road widths have been minimised to encourage reduced vehivular speeds. Side streets are 5.5m wide, backstreets are a minimum of 4.8m wide, and footpaths throughout the site are 2.2m wide. Carriageways within the 'homezones'/shared surface areas are 6.0m (4.8m wide with a 1.2m wide services strip/pedestrian refuge on one side of the carriageway). Details of the road cross sections are shown on Waterman Moylan Drawing No's 21-058-P180-P181 accompanying the documentation package.

All intersections within the development itself will be priority junctions with raised tables where appropriate. The low design speeds combined with traffic calming measures will ensure the safe operation of these junctions and a safe and comfortable environment for pedestrians and cyclists.

Proposed radii at junctions as reflected in DMURS recommendations has been increased by South Dublin County Council (SDCC) in recent planning conditions with a radius of 4.5m between Local Streets and a radius of 6.0m between Link Streets and Local Streets.

All internal footpaths are proposed are 2.2m in width. This is in accordance with Section 4.3.1 of the DMURS which suggests that a minimum 1.8 footpath should be provided.

Crossing points will be located along desire lines at various points within the development such that unimpeded pedestrian movement is facilitated. These crossings will be equipped with dropped kerbs and tactile paving's, which will facilitate progression of all users.

The design and layout of the proposal has been prepared to fully comply with the current relevant design standards and specifications applicable to this form of development.

## 5.5 Access to Refuse Vehicles and Fire Tenders

The proposed development of Tandy's Lane Village Phase 2 will be accessible for refuse vehicles/fire tenders. Turning path layout is shown on the Waterman Moylan Drawings No. 21-058-P130 and P131 accompanying the documentation package.

## 5.6 Car Parking

### 5.6.1 South Dublin County Council Development Plan 2016 – 2022

Car parking rates for new residential developments are set out in Section 11.4.2 and Table 11.24 of the current South Dublin County Council Development Plan. See Table 5 below – extracted from the Development Plan. Parking rates are divided into the following categories with regards to residential developments:

- *"**Zone 1**: General rate applicable throughout the County.*

- ***Zone 2**: More restrictive rates for application within town and village centres, within 400 metres of a high-quality public transport service (including train station, Luas's station, or bus stop with a high-quality service)."*

Table 11.24: **Maximum Parking Rates (Residential Development)**

| DWELLING TYPE | NO. OF BEDROOMS | ZONE 1 | ZONE 2 |
|---|---|---|---|
| **Apartment** | 1 Bed | 1 space | 0.75 space |
| **Duplex** | 2 bed | 1.25 space | 1 space |
| | 3 bed+ | 1.5 spaces | 1.25 space |
| **House** | 1 Bed | 1 space | 1 space |
| | 2 Bed | 1.5 space | 1.25 |
| | 3+ bed | 2 space | 1.5 |

***Table 5** | County Development Plan 2016 - 2022, Maximum Car Parking Standards*

Note that the parking rates set out above are maximum standards. As stated in the Development Plan, *"the maximum provision should not be viewed as a target and a lower rate of parking may be acceptable"* subject to several criteria and agreement with the Council.

### 5.6.2 Adamstown Strategic Development Zone (SDZ) - 2014

Car parking standards for new residential developments in Adamstown are set out in Table 2.12 of the Adamstown SDZ. See Table 6 below – extracted from the Adamstown SDZ.

**Table 2.12** Car Parking Standards

| Development Type | Car Parking Standard |
|---|---|
| **Residential** | |
| Dwelling with 1 bedroom | 1 space per dwelling |
| Dwelling with 2 bedrooms | 1.5 spaces per dwelling |
| Dwelling with 3 or more bedrooms | 2 spaces per dwelling |

***Table 6** | Adamstown SDZ 2014. Maximum Car Parking Standards*

As can be seen from the above, the maximum car parking standards for residential developments set out in the Adamstown SDZ are equal to the standards from the South Dublin County Council Development Plan 2016 – 2022 set out for new houses in the Zone 1. In this regard, the proposed number of car parking spaces to serve the subject proposed development complies with both the current Development Plan and the Adamstown SDZ planning scheme. Refer to Section 5.6.3 below.

### 5.6.3 Proposed Car Parking

Table 7 below shows the breakdown of the number of car parking spaces allowed by the Adamstown SDZ planning scheme for the subject site.

| Land use | No. of units | Parking Standard (Max) | Max Parking Allowed |
|---|---|---|---|
| House with 2 bedrooms | 15 | 1.5 spaces per dwelling | 23 |
| House with 3+ bedrooms | 337 | 2 spaces per dwelling | 674 |
| | | **Total** | **697** |

***Table 7*** | *Parking Standard Layout*

It is proposed to provide 535 no. car parking spaces to serve the proposed development which is less than the maximum allowed number of spaces as per the ASDZ and more than the minimum requirement of 1 No. car parking space per dwelling as stipulated in Paragraph 2.4.28 of the Adamstown SDZ.

Paragraph 2.4.22 of the Adamstown SDZ states that *"no more than 60% of the residential car parking spaces shall be provided as private in-curtilage parking spaces in any development area."* Accordingly, a mixture of parallel and perpendicular on-road parking spaces is proposed throughout the development. It is proposed to provide 186No. parking spaces as in-curtilage which equates to 35% of the total parking spaces. The North-south and the West-east Avenues will comprise of parallel parking only, whilst most of the car parking spaces on the Back Roads and on the Side Roads will be perpendicular. Additionally, of the 349 No. off-curtilage car parking spaces 35 No. spaces will act as visitor and electric vehicle (EV) spaces while all on curtilage spaces are proposed to be ducted for EV charging. For details on car parking provision please refer to the accompanying architects drawing package.

## 5.7 Bicycle Parking

### 5.7.1 South Dublin County Council Development Plan 2016 - 2022

There are no bicycle parking requirements for new houses in the South Dublin County Council Development Plan 2016 – 2022.

### 5.7.2 Adamstown Strategic Development Zone (SDZ) - 2014

Similarly, there are no bicycle parking requirements for new houses in the Adamstown Strategic Development Zone (SDZ) – 2014.

### 5.7.3 Proposed Bicycle Parking

As the proposed development consists of only houses and there is no specific requirement for this type of development within the current Development Plan or the Adamstown SDZ, it is considered that all bicycle parking spaces will be provided internally within the curtilage of each house.

# 6. Existing Travel Patterns – Census 2016

Census 2016 was carried out by the Central Statistics Office on the 24th of July 2016.

## 6.1 Statistical Small Area

With the objective to obtain information on local travel patterns (modal split and car ownership), the Statistical Small Area (No. 267103004), where the major portion (western portion) of the subject proposed development site is located, has been consulted.

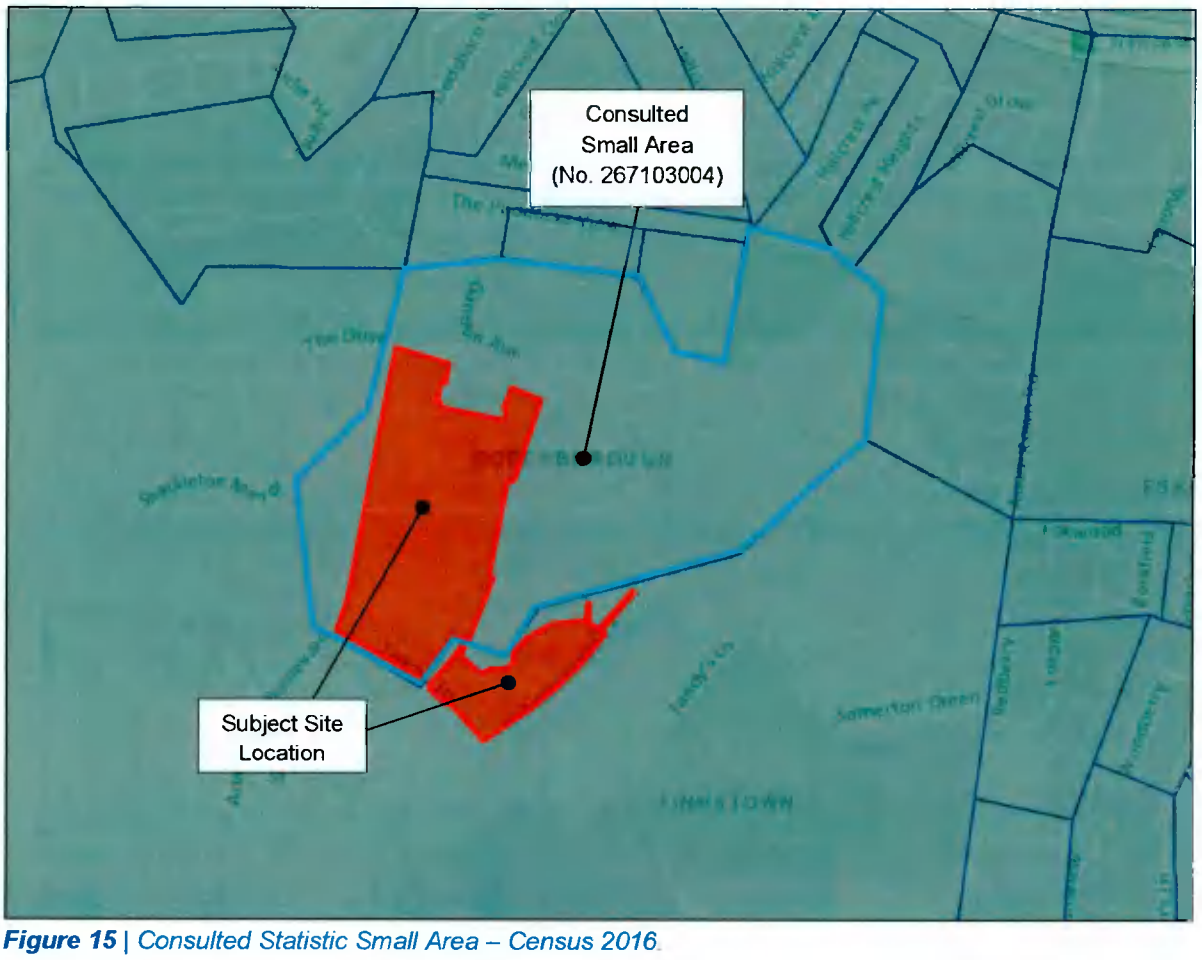


***Figure 15** | Consulted Statistic Small Area – Census 2016*

## 6.2 Modal Split

The surveyed 'modal split for the journey to work, school or college' by the residents at the consulted Statistic Small Area as surveyed in Census 2016 recorded that some 80% of the 288-population living in the subject Small Area generated 230 trips for the journey to work, school, or college. The results of the surveyed modal split are presented in Table 7 below.

| Mode | No. of Trips | Modal Split | Modal Split excluding 'Other and not stated ' |
|---|---|---|---|
| On foot | 13 | 6% | 6% |
| Bike | 4 | 2% | 2% |
| Public transport | 43 | 19% | 20% |
| Car driver | 97 | 42% | 46% |
| Car passenger | 55 | 24% | 26% |
| Other or not stated | 18 | 7% | - |
| Total | 230 | 100% | 100% |

***Table 8** | Census 2016 – Surveyed Modal Split for the Journey to Work, School, or College.*

The data above shows that in the consulted Small Area, the percentage of commuters that travel by green modes of transport was below 30%, which suggests that green modes, in 2016, were not a highly attractive and viable option for residents living in the area. Green modes of transport include those commuting by foot, by bike, or by public transport including train and bus.

One of the four approaches for environmental sustainability as set out in Section 2.5 of the Adamstown Strategic Development Plan is *"encouraging high levels of use of sustainable modes of transport by promoting walking, cycling and public transport."*

As presented previously in this report, the Adamstown area has advanced significantly in the past years with the construction of new residential developments, and the pedestrian and cycle facilities and connections to public transport that were built along with these developments are currently a viable and more attractive option for residents, which will encourage residents to shift away from private car usage and towards sustainable modes of transport.

## 6.3 Car Ownership

The results of the Census for car ownership in the consulted Statistic Small Area is presented in Table 8.

The survey recorded that the population of 288 persons living in the consulted Small Area had a car ownership of 134 vehicles equivalent to 1 car per 2.15 persons or 1.37 car per residential unit.

| Population | Housing | Number of households with cars | | | | | | Total Cars | Total Cars/ Housing |
|---|---|---|---|---|---|---|---|---|---|
| | | 0 car | 1 car | 2 car | 3 cars | 4+ cars | Not Stated | | |
| 288 | 98 | 10 | 46 | 36 | 4 | 1 | 1 | 134 | 1.37 |

***Table 9** | Census 2016 - Car Ownership.*

# 7. Trip Generation and Traffic Assessment

### 7.1.1 TRICS Car Trip Rates

The traffic generation potential of the proposed development has been estimated using the TRICS software modelling database. TRICS is the national standard of trip generation and analysis in Ireland. It is a database system which allows users to identify representative trip rates and to establish potential levels of trip generation for a wide variety of developments.

Full trip rates, which were sourced from the TRICS Database Version 7.8.4, have been provided in Appendix A. Morning and evening peak hour trip rates are shown in Table 9 below. The below criteria were selected during TRICS consultation:

- Sites located in UK and Ireland.
- Sites categorised as Suburban or Edge of Town.
- Car ownership between 1.1 and 1.5 per residential unit.

| Land Use | Calculation Factor | AM Peak Hour (08h00 – 09h00) | | PM Peak Hour (17h00 – 18h00) | |
|---|---|---|---|---|---|
| | | Arrival | Departure | Arrival | Departure |
| **Houses Privately Owned** | Per Unit | 0.121 | 0.354 | 0.364 | 0.167 |

***Table 10*** | *TRICS – Car Trip Rates for Houses Privately Owned – AM & PM Peak Hours.*

### 7.1.2 Car Trip Generation – Proposed Development

The potential peak hour car trip generation for the proposed Tandy's Lane Phase 2 development is presented in Table 10. It has been calculated based on the proposed 352 no. houses and the TRICS trip rates set out above.

| Land Use | No. Units | AM Peak Hour (08h00 – 09h00) | | PM Peak Hour (17h00 – 18h00) | |
|---|---|---|---|---|---|
| | | Arrivals | Departures | Arrivals | Departures |
| **Houses** | 352 | 43 | 125 | 128 | 59 |

***Table 11*** | *Car Trip Generation, Proposed Development – AM & PM Peak Hours.*

As can be seen from the calculations above, it is estimated that the proposed development will generate a total of 168 car trips in the AM peak hour (43 arrivals and 125 departures) and 187 car trips in the PM peak hour (128 arrivals and 59 departures).

### 7.1.3 Construction Traffic

The nature of the construction process is such that the traffic generated will comprise short periods of intense activity interspersed with longer periods with relatively low level of truck movements into and out of the site.

The subject planning application for the proposed development is accompanied by a dedicated Construction Management Plan (CMP).

The Plan addresses the impact of construction related traffic on the surrounding road network during the construction stage.

One of the objectives of the Plan will be to ensure that the construction traffic for the proposed development can be accommodated on the surrounding road network without significant impact on pedestrian, cyclists, and other road users.

### 7.1.4 Traffic Assessment

Atkins were commissioned to prepare a microsimulation model of the entire Adamstown SDZ area. That model assumed the full build out of the Adamstown SDZ lands as per the SDZ Plan and included all development areas (including Tandy's Lane Village – where the subject site is located) and planned infrastructure such as new avenues and streets (including the north-south and west-east avenues within the Tandy's Lane Village tile) and links to the external network. The proposed development is in accordance with the SDZ plan, and the microsimulation model carried out by Atkins and therefore, it is our understanding that no further traffic analysis would be required for this application.

# 8. Conclusion

Waterman Moylan has been appointed by Quintain Developments Ireland Ltd. to prepare this Traffic and Transport Assessment for a proposed residential development located on the Tandy's Lane Village tile in Adamstown SDZ.

The proposed development is the Phase 2 of the Tandy's Lane Village and consists of 352 no. houses in a mixture of terraced, semi – detached and detached houses that are distributed between two sites, namely the western site (8.06 hectares) and the eastern site (2.18 hectares). The proposal includes 15 no. of 2-bedroom houses, 256 no. 3-bedroom houses and 81 no. 4-bedroom houses.

Vehicular accesses to the proposed development sites (western site and eastern site) are proposed from Adamstown Boulevard to the west, from Adamstown Drive to the north, from Tandy's Lane to the south, from Adamstown Park to the west and from the North-south Avenue that splits the subject development and Phase 1 of Tandy's Lane Village tile. In total there will 7 no. vehicular accesses and 13 no. cyclist and pedestrian access points to the Phase 2 development, which will make the site highly permeable.

Car parking for the proposed development has been designed in accordance with the requirements set out in the Adamstown SDZ and is in line with both Adamstown SDZ planning scheme and current South Dublin County Council Development Plan. Bicycle parking is proposed within the curtilage of each house.

The subject site is located within reasonable walking time to Adamstown train station (1.2 km or 15-minutes' walk away) and to bus stops along Newcastle Road (R120) to the west of the site (1.1 km or 14-minutes' walk). There are also newly constructed bus stops on Adamstown Boulevard which are expected to be in operation before the proposed development is occupied.

Near the subject site new cycle and pedestrian facilities have been constructed to serve the area. These include dedicated pedestrian crossings with dropped kerbs and tactile paving's on all major junctions and dedicated cycle lanes along Adamstown Boulevard, Adamstown Park, and Adamstown Drive. These cycle lanes link up with the wider network and facilitate access to public transport services and surrounding amenities and educational facilities.

Based on TRICS trip rates, it is estimated that the proposed development will generate a total of 168 car trips in the AM peak hour (43 arrivals and 125 departures) and 187 car trips in the PM peak hour (128 arrivals and 59 departures).

The proposed development is in accordance with the Adamstown SDZ plan and the microsimulation model carried out by Atkins and therefore, for the purpose of this TTA it was understood that no further traffic analysis would be required for this application.

# Appendix

## A. TRICS Output Report

Calculation Reference: AUDIT-561501-220310-0328

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
**CARS**

*Selected regions and areas:*

| | | | |
|---|---|---|---|
| **02** | **SOUTH EAST** | | |
| | KC | KENT | 2 days |
| **04** | **EAST ANGLIA** | | |
| | NF | NORFOLK | 1 days |
| **13** | **MUNSTER** | | |
| | WA | WATERFORD | 1 days |

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

**Primary Filtering selection:**

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

Parameter: No of Dwellings
Actual Range: 266 to 363 (units: )
Range Selected by User: 250 to 500 (units: )

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 23/09/21

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

*Selected survey days:*

| | |
|---|---|
| Tuesday | 1 days |
| Wednesday | 2 days |
| Thursday | 1 days |

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

*Selected survey types:*

| | |
|---|---|
| Manual count | 4 days |
| Directional ATC Count | 0 days |

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

*Selected Locations:*

| | |
|---|---|
| Suburban Area (PPS6 Out of Centre) | 1 |
| Edge of Town | 3 |

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

*Selected Location Sub Categories:*

| | |
|---|---|
| Residential Zone | 4 |

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

**Secondary Filtering selection:**

*Use Class:*

| | |
|---|---|
| C3 | 4 days |

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

*Population within 500m Range:*

All Surveys Included

*Population within 1 mile:*

| | |
|---|---|
| 5,001 to 10,000 | 2 days |
| 10,001 to 15,000 | 1 days |
| 20,001 to 25,000 | 1 days |

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

*Population within 5 miles:*

| | |
|---|---|
| 5,001 to 25,000 | 1 days |
| 50,001 to 75,000 | 3 days |

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

*Car ownership within 5 miles:*

| | |
|---|---|
| 1.1 to 1.5 | 4 days |

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

*Travel Plan:*

| | |
|---|---|
| Yes | 1 days |
| No | 3 days |

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

*PTAL Rating:*

| | |
|---|---|
| No PTAL Present | 4 days |

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

*LIST OF SITES relevant to selection parameters*

| | | | | |
|---|---|---|---|---|
| **1** | **KC-03-A-06** | **MIXED HOUSES & FLATS** | | **KENT** |
| | MARGATE ROAD | | | |
| | HERNE BAY | | | |
| | Suburban Area (PPS6 Out of Centre) | | | |
| | Residential Zone | | | |
| | Total No of Dwellings: | | 363 | |
| | *Survey date: WEDNESDAY* | | *27/09/17* | *Survey Type: MANUAL* |
| **2** | **KC-03-A-07** | **MIXED HOUSES** | | **KENT** |
| | RECULVER ROAD | | | |
| | HERNE BAY | | | |
| | Edge of Town | | | |
| | Residential Zone | | | |
| | Total No of Dwellings: | | 288 | |
| | *Survey date: WEDNESDAY* | | *27/09/17* | *Survey Type: MANUAL* |
| **3** | **NF-03-A-30** | **MIXED HOUSES** | | **NORFOLK** |
| | BRANDON ROAD | | | |
| | SWAFFHAM | | | |
| | Edge of Town | | | |
| | Residential Zone | | | |
| | Total No of Dwellings: | | 266 | |
| | *Survey date: THURSDAY* | | *23/09/21* | *Survey Type: MANUAL* |
| **4** | **WA-03-A-04** | **DETACHED** | | **WATERFORD** |
| | MAYPARK LANE | | | |
| | WATERFORD | | | |
| | Edge of Town | | | |
| | Residential Zone | | | |
| | Total No of Dwellings: | | 280 | |
| | *Survey date: TUESDAY* | | *24/06/14* | *Survey Type: MANUAL* |

*This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
**CARS**
**Calculation factor: 1 DWELLS**
**BOLD print indicates peak (busiest) period**

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. Days | Ave. DWELLS | Trip Rate | No. Days | Ave. DWELLS | Trip Rate | No. Days | Ave. DWELLS | Trip Rate |
| 00:00 - 01:00 | | | | | | | | | |
| 01:00 - 02:00 | | | | | | | | | |
| 02:00 - 03:00 | | | | | | | | | |
| 03:00 - 04:00 | | | | | | | | | |
| 04:00 - 05:00 | | | | | | | | | |
| 05:00 - 06:00 | | | | | | | | | |
| 06:00 - 07:00 | | | | | | | | | |
| 07:00 - 08:00 | 4 | 299 | 0.064 | 4 | 299 | 0.242 | 4 | 299 | 0.306 |
| 08:00 - 09:00 | 4 | 299 | 0.121 | **4** | **299** | **0.354** | 4 | 299 | 0.475 |
| 09:00 - 10:00 | 4 | 299 | 0.109 | 4 | 299 | 0.154 | 4 | 299 | 0.263 |
| 10:00 - 11:00 | 4 | 299 | 0.095 | 4 | 299 | 0.140 | 4 | 299 | 0.235 |
| 11:00 - 12:00 | 4 | 299 | 0.119 | 4 | 299 | 0.155 | 4 | 299 | 0.274 |
| 12:00 - 13:00 | 4 | 299 | 0.178 | 4 | 299 | 0.147 | 4 | 299 | 0.325 |
| 13:00 - 14:00 | 4 | 299 | 0.166 | 4 | 299 | 0.140 | 4 | 299 | 0.306 |
| 14:00 - 15:00 | 4 | 299 | 0.204 | 4 | 299 | 0.175 | 4 | 299 | 0.379 |
| 15:00 - 16:00 | 4 | 299 | 0.275 | 4 | 299 | 0.157 | 4 | 299 | 0.432 |
| 16:00 - 17:00 | 4 | 299 | 0.280 | 4 | 299 | 0.170 | 4 | 299 | 0.450 |
| 17:00 - 18:00 | **4** | **299** | **0.364** | 4 | 299 | 0.167 | **4** | **299** | **0.531** |
| 18:00 - 19:00 | 4 | 299 | 0.285 | 4 | 299 | 0.204 | 4 | 299 | 0.489 |
| 19:00 - 20:00 | | | | | | | | | |
| 20:00 - 21:00 | | | | | | | | | |
| 21:00 - 22:00 | | | | | | | | | |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 2.260 | | | 2.205 | | | 4.465 |

*This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.*

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

# UK and Ireland Office Locations