PARK WEST – CHERRY ORCHARD

LOCAL AREA PLAN 2019

Strategic Environmental Assessment (SEA) Environmental Report

Prepared by

Dublin City Council

Planning and Property

Development Department

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Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

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MAPS, FIGURES, TABLES

Tables

Non-Technical Summary

Context

The Park West – Cherry Orchard Local Area Plan was adopted by the members of the City Council on the 7th October 2019. The LAP comes into effect four weeks from that date, on the 4th November 2019.

Introduction

This is the Non-Technical Summary of the Environmental Report of the Park West – Cherry Orchard Local Area Plan (LAP).

The Strategic Environmental Assessment (SEA) was carried out to comply with the provisions of the SEA Directive (Directive 2001/42/EC) and those regulations transposing the Directive into Irish Law.

The Environmental Report is at the heart of the SEA process. It is a key mechanism in promoting sustainable development, in raising awareness of the significant environmental issues and in ensuring that such issues are properly addressed. This Environmental Report is not the SEA, rather it documents the SEA process and is the key consultation document in the SEA process and facilitates interested parties to comment on the environmental issues associated with the LAP.

The SEA needs to be fully integrated with the various stages of the LAP preparation process in order to ensure that the environmental implications do not impact negatively upon the environment as a result of changes to policy.

The Environmental Report which follows has guided the preparation of key principles, objectives, and development scenarios for the Local Area Plan with an ultimate goal of achieving sustainable development in the LAP area without causing adverse harm to the environment.

This report was originally on display with the Draft LAP (11th June till 22nd July 2019 inclusive), and has subsequently being amended to take into account changes following this display period, and the adoption of the Plan as amended by the Elected Members.

SEA Screening

The Planning Authority undertook a screening of the proposed LAP for the purposes of determining whether an SEA was required and documented this in a screening report. Due to the size of the population within the LAP area (i.e. in excess of 5,000 persons), it was determined that an SEA was required.

SEA Scoping

Scoping is undertaken to ensure that the relevant environmental issues are identified allowing them to be addressed appropriately in the Environmental Report. A Scoping Issues Paper was prepared by the Planning Authority and initial consultation was carried out in April 2018 with the statutory consultees.

Vision and Key Principles of the Park West – Cherry Orchard LAP

The overall vision for the LAP is stated as: -

> *Part West – Cherry Orchard will be an attractive and identifiable place with a vibrant and active community. A good mix of residential typologies will cater for people across all spectrums of their lifecycle, and residents will have the benefit from the provision of local shops, schools, parks and community and recreational facilities. New commercial and enterprise space will provide opportunities for local employment and both residents and workers will benefit from a high quality integrated public transport network system, and a permeable and safe pedestrian environment.*

Relationship of the Plan with Other Relevant Plans and Programmes

The LAP and accompanying Environmental Report fit into a hierarchy of strategic legislation, plans and policy documents including national, regional and city planning policy. Park West – Cherry Orchard is identified as a Strategic Development and Regeneration Area within the Dublin City Development Plan 2016-2022. It is identified as a key future growth zone in the settlement strategy for Dublin City Council to accommodate residential and mixed uses close to public transport infrastructure. This is in keeping with national and regional plans to consolidate the urban form of Dublin City and promote higher densities along key public transport routes.

Summary of Baseline Environment (Section 3 of the Environmental Report)

Population and Human Health

Population and housing figures for the LAP are based on Census Electoral Division Wards of Cherry Orchard A and C. The LAP area has a total stated population of 7799 no. persons from the 2016 Census. This figure however includes the two prisons and the Cherry Orchard Hospital, which when omitted, shows a population of 6,304. This is a 2% increase on the figure from 2011. The 2016 census revealed that the majority of the LAP population believed that their health was very good (53%) or good (31%) while only 1% responded that their health was bad. The average household size in the area is 3.1 persons.

Biodiversity, Flora and Fauna

Much of the natural and semi-natural area of Park West and Cherry Orchard has been replaced by artificial surfaces associated with buildings and development (residential, office, institutional uses, roads etc.). The LAP area does however contain a number of parks and open spaces. The largest park in the area is Cherry Orchard Park, which is relatively new and contains a semi-natural wetland. The trees in the park are still at a young stage and there is limited shrubbery for ground floor cover. Of the other parks in the area, mowed grassland is the dominant feature, and many of the parks are mounded in nature. There is a well established band of planting to the M50, located in the vacant sites Nos. 3, 4, 7 & 8. Within Site no. 4 there are also remnants of old field boundaries traversing the site.

To the south of the LAP, adjoining the banks of the Grand Canal (a proposed Natural Heritage Area, pNHA) is an old water reservoir, Gallanstown Waterworks. Decommissioned from its role as a water supply this old reservoir and its surrounding

semi-natural landscape provides the greatest biodiversity resource to the LAP area. The Dublin City Biodiversity Action Plan 2015-2020 notes that the City's canals (the Royal and the Grand) support Opposite-leaved Pondweed, a species legally protected under the Flora Protection Order. The riparian zones, including the walls and bridges of the canal are equally important for biodiversity supporting fringing wetland habitats, such as marsh, tall herb swamp, riparian woodland and semi-natural grasslands. The Canal is also home to coarse fish species, including Pike, Rudd, Bream and Tench, and supports the Glutinous Snail, a very rare freshwater snail, while the riparian zones support other legally protected species, including otters, daubeton bats and kingfishers.

According to records of the City Council, bats are evident in Park West Business Park and in the vicinity of the Gallanstown Waterworks and along the Canal.

The Grand Canal is also known to be home to two invasive species; Nutall's waterweed and Japanese knotweed.

Air Quality and Noise

Air

Results from the Environmental Protection Agency (EPA) report on 'Air Quality in Ireland 2017' provides an overview of air quality in Ireland, which states that overall air quality in Ireland compares favourably with other EU Member States and all the parameters are below the EU limit and target values. However, when compared to the tighter WHO Air Quality Guideline values, it highlights some potential issues. Ireland exceeded the WHO guideline values in 2017 for the pollutants $PM_{10,}$ $PM_{2.5}$, ozone and $NO_{2.}$ Ireland is also above the EEA reference level for PAH. The report highlights the needs to tackle $PM_{2.5}$ levels as Ireland is consistently above the WHO Air Quality Guideline value. The transport sector has the greatest impact on NO_2 concentrations.

The closest permanent air-quality monitoring site to Park West - Cherry Orchard is Ballyfermot. This station continually monitors particulate matters ($PM_{2.5}$ and PM_{10}), for compliance with relevant EU directives. The annual mean concentrations for NO_2 in 2016 were 17.3 microgram's/cubic metre at Ballyfermot. There is an additional air quality monitoring site at Blanchardstown, on the west side of the M50. The data was reviewed from this station in order to provide a more beneficial representation of boundary conditions of the study area, as it is the closest station in Dublin to the M50. The annual mean concentrations for NO_2 in 2016 were 30.2 microgram's/cubic metre at Blanchardstown. Both values comply with the annual mean EU limit value of 40µg/m3. The measured PM_{10} levels for 2015 were 12 and 15µg/m3 at Ballyfermot and Blanchardstown respectively. Both values complied with the annual mean EU limit value of 40µg/m3.

The 'Design Manual for Roads and Bridges' (DMRB) air quality screening model was used to estimate NO_2 and PM_{10} concentrations within the study area (November 2017). An initial model run was used to calculate NO_2 and PM_{10} concentrations at approximately 35m from the edge of the M50. This calculation was based solely on the emissions from traffic flows on the M50. This produced a predicted concentration of NO_2 at 32.5µg/m3 and PM_{10} of 18.41µg/m3. Further screening runs were carried out at 100m and 200m distances from the M50. The 100m screening calculation indicated NO_2; PM_{10} values of 21.1; 15.7µg/m3. The screening model outputs indicate the likelihood of increased exposure to higher concentrations of NO_2 and PM_{10} the closer one is to the M50. These pollutant levels increase dramatically when one is less than 100m away from the road centre-line, although it is calculated that the levels would still be below the annual EU mean limit values at 35m from the road centre-line for 2016 traffic volumes.

Subsequent to the publishing of the Draft Local Area Plan, the EPA published an updated *"Urban Environmental Indicators"* report 2019, focusing on Nitrogen dioxide levels in Dublin. The report shows that while the majority of the City is well below the yearly limits

for NO2 (40 µg/m3) there are some areas which show modelled exceedances above this limit, including around the M50. The report further states that on the M50 the highest concentrations are within 10 metres of the motorway edge, with levels falling to background concentrations around a distance of 50 to 75 metres

Increasing volumes of traffic affect air quality and the acoustic environment. The main threat to air quality in Park West – Cherry Orchard comes mainly from the transport sector in the form of oxides of nitrogen, PM_{10} and $PM_{2.5}$. These emissions must be reduced by a modal shift to more sustainable modes of movement and transport, in particular a move away from the over-reliance on private cars to public transport options.

Noise

In general, sound levels in cities can range between 60-70 dB(A), with suburban levels between 50-60 dB(A). The World Health Organisation has set guideline levels for annoyance at 55 dB(A) representing daytime levels below which a majority of the adult population will be protected from a moderate or serious annoyance.

According to the Dublin Agglomeration Environmental Noise Action Plan 2013-2018 noise from transport is by far the most widespread source of noise exposure, causing the most annoyance, sleep disturbance and public health concerns. The main contributors to road traffic noise are cars, lorries and buses with motorcycles being minor contributions. Railway noise is the second most dominant source of environmental noise in Europe. Railway noise arises from engine noise, rolling noise and aerodynamic noise.

An assessment of the impact of traffic noise on the Park West – Cherry Orchard area was carried out using the Dublin City Council's 2017 Noise Maps and Noise Model. The dominant source of noise impacting on the environment in the study area originates from traffic – particularly traffic on the M50, Cherry Orchard and Park West Avenues and from Ballyfermot, Park West and Kileen Roads.

A main 'Heavy Rail' line is close to and passes through a section of the LAP area. An assessment has been carried out on the noise impact of trains passing along this line. It was found that the passage of trains on this line does not increase the calculated sound levels for the overall area. However, there may be potential for noise complaints arising from future residents residing close to the line, in particular in relation to train shunting due to proximity to Inchicore train depot. Currently less than 1% of existing dwellings within the LAP are exposed to undesirable night-time sound levels.

Climate

The EU commitments at the UN 21st Annual Conference of Parties to reduce green house gas emissions by 40% by 2030 have underpinned the enactment of the Climate Action and Low Carbon Development Act 2015 in Ireland. This Act has two main aims: -

(a) The creation of a national mitigation plan to reduce or prevent greenhouse emissions,

(b) The development of a national adaptation framework to reduce the negative effects of climate change.

The National Adaptation Framework and National Mitigation Plan put a statutory obligation on local authorities to create their own local adaptation framework and mitigation plan for their own area. To meet this obligation the four Dublin Local Authorities jointly prepared the first 'Strategy towards Climate Change Action Plans' in 2017. Following on from the publication of this Dublin City Council developed its own Climate Change Action Plan, adopted in May 2019.

The main risk areas identified in the plan for Dublin City are: -

- Sea level rise
- Flooding
- Extreme weather events (storms, heat waves etc.)

The Plan sets out how the Council will improve energy efficiency and reduce greenhouse gas emissions in its own buildings and operations, while making Dublin a more climate-resilient city.

The four key targets of the Plan are: -

- 33% improvement in the Council's energy efficient by 2020
- 40% reduction in the Council's greenhouse gas emissions by 2030
- To make Dublin a climate resilient region by reducing the impacts of future climate change-related events
- To actively engage and inform citizens on climate change

Water

Water quality is protected under the Water Framework Directive 2000/06/EC, which seeks to prevent deterioration and achieve at least good status in rivers, lakes, estuaries, coastal and ground water. The Water Framework Directive was transposed into Irish legislation through the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003). The Directive promotes integrated river basin management as the most efficient way to achieve its aims.

Dublin City has river water bodies monitored under the Water Framework Directive, including the Liffey, Tolka, Santry, Dodder and Camac rivers. The majority of the LAP lands fall within the River Camac Drainage Catchment, which runs just below the southern boundary of the LAP (i.e. to the south of the Grand Canal). In the Water Framework Directive status phase 2010-015 the Camac River is classified as 'at risk'. The ecological, biological and invertebrate status or potential are all classified as 'poor'.

On analysis of the existing surface water infrastructure within the lands, it has been concluded that the majority of the LAP lands are located within the catchment of the River Camac, with a small area located within the Lower Liffey Lyreen Ryewater catchment. A number of tributaries of the Camac River traverse the LAP lands; the Gallanstown and Blackditch streams which merge to the east of the LAP to form the Galback Stream. The Blackditch Stream which transverses Cherry Orchard in a culvert is piped underneath the railway line, and is a potential pinchpoint in the network. Further east of the LAP the Galback Stream is culverted as it travels south and passes under the Grand Canal where it eventually feeds into the Camac River.

An analysis of the existing foul drainage infrastructure within the LAP lands identifies two wastewater drainage sub-catchments, both of which are within the Ringsend WWTW Catchment. The LAP area is constrained by a number of hard boundaries such as the M50, Canal and Railway Line which are physical barriers which constrain the delivery of new drainage infrastructure and new drainage outfalls. Irish Water are currently undertaking studies and surveys to prepare a Drainage Area Plan and model for the area. The report and model will identify the main issues and propose solutions for same. It is estimated that the date for completion of this study is the end of 2020.

An analysis of the existing water supply infrastructure within the LAP lands identifies that the LAP lands are currently served by the Ballymore Eustace water supply via the Saggart reservoir and the Belgard reservoir. There are two main trunks serving the LAP lands; one traversing the M50 at Coldcut Road, and another west of the prisons. Feedback from Irish Water indicates that some of the existing older watermains from the 1950s/ 1960s may need upgrading.

Groundwater is water stored in the void spaces underground layers of rock, or aquifers. It is the part of the subsurface water that is in the saturated zone – the zone below the water table, the uppermost level of saturation in an aquifer at which the pressure is atmospheric, in which all pores and fissures are full of water. At a strategic level the groundwater

vulnerability within the majority of the LAP area is identified as moderate, however the lands adjacent to the M50 are identified as high.

Water quality in the Canal (an artificial water body), based on survey work by the EPA over the period 2015-2017, identified this stretch of the Grand Canal south of the LAP area as of 'Good' biological quality. In general, biological quality in the Grand and Royal Canals has shown an overall improvement since the 2013-2015 period.

As part of the preparation of the LAP, a Stage 1 Flood Risk Assessment has been prepared. The Park West – Cherry Orchard LAP area is located within "Zone C" as per the Department Guidelines, where the probability of flooding is low. All development within this zone is appropriate from a flood risk perspective. Care is needed to avoid adding extra water downstream on the Camac River which historically is prone to flooding, thus indicating the need for adequate SuDS and storm water attenuation on site.

Material Assets (Transport & Waste Management)

Transport

The existing street network in the area is dominated by a car led approach, with wide distributor type roads and little focus on pedestrian or cycle infrastructure. Physical connections with surrounding areas and within the LAP are limited with restricted access points onto Ballyfermot Road and over the railway line and the Canal. The enclosed nature of the larger institutional sites at Cherry Orchard Hospital and Wheatfield and Cloverhill Prisons form large impermeable blocks to the north and west, while the M50 to the west further restricts movement. The majority of the population aged 5 years and over travel to work, school or college by car (43.5%).

At present the Park West – Cherry Orchard area avails of a reasonable bus service provision with two Dublin Bus routes serving the LAP area. There are also two Express Bus Ltd bus routes from Park West serving the City Centre and Kylemore Road Luas stop. The Park West - Cherry Orchard railway station is located on the Dublin – Kildare main line which is served by commuter and inter-city services. The station has four platforms and is served by commuter and intercity services serving Heuston and Connolly stations. However, the infrequent services including during peak times currently do not make travel by train an attractive option. In examining the Census data rail users represent a very low 2%.

There is limited cycle infrastructure present throughout the LAP area. On and off-road cycle facilities exist along the majority of Park West Avenue and Ballyfermot Road however the lack of continuity along these routes results in a poor offer for cyclists and would benefit from upgrading. There is also a notable lack of cycling facilities provided in conjunction with the Train Station.

The Transport Strategy for the Greater Dublin Area 2016 – 2035 outlines proposals for the development of transport infrastructure in terms of road, rail, walking and cycling. With respect to the Park West – Cherry Orchard area, proposals include:

- Enhanced Heavy Rail provisions including the DART Expansion programme which identifies the provision of electrified services to Park West - Cherry Orchard.
- Enhanced Light Rail provisions including proposals for a new LUAS line linking Dublin City Centre to Lucan, via the Ballyfermot Road
- Bus Connects Radial Spine Route (Route G): The G spine is based on a combination of existing Routes 40 and 79/a in inner West Dublin. Southern Orbital Route (Route S4): The S4 Orbital Route would extend from Liffey Valley southeast through Ballyfermot, Kylemore, Crumlin, Terenure, Rathgar, Milltown, and Clonskeagh to end at UCD.

- Provision of a detailed cycle network with primary, secondary and greenway elements as part of the continued roll out of NTA Cycle Network Plan for the Greater Dublin Area. A number of these routes pass through the Park West, Cherry Orchard and Ballyfermot Area.

Waste

The Waste Framework Directive was transposed into Irish law by the European Communities (Waste Directive) Regulations 2011. This directive has set targets for household waste recycling and construction and demolition waste which will come into effect in 2020. The Directive has led to the provision of Waste Management Plans. The Eastern and Midlands Regional Waste Management Plan 2015-2021 sets out the strategic vision to re-think our approach to managing waste, by viewing our waste as valuable material resources (DCC is the lead authority for the Eastern-Midlands Region). The plan focuses on enhancing the collections of quality materials from discarded waste to build on the positive progress made in recycling.

Over the lifetime of the Eastern Midlands Regional Waste Plan, the main objectives are: -

- 1% reduction per annum per capita in the amount of household waste generated;
- Elimination of direct disposal of unprocessed residual municipal waste to landfill;
- Reuse/recycle target of 50% of municipal waste by 2020.

At a local level, there are two full Civic Amenity (recycling centres) operating within Dublin City at North Strand and Ringsend. Closer to the LAP area there is one Community Level Bring Centre located at Kylemore Park North, Ballyfermot. There are also two bottle banks at the Orchard Centre and at the Civic Centre, Ballyfermot Road.

Cultural Heritage

The National Inventory of Architectural Heritage (NIAH) have recommended the inclusion of a number of buildings at the Cherry Orchard hospital campus onto Dublin City Council's Record of Protected Structures. Subsequent to this, the City Council has commissioned a study of this site and its structures. The buildings include the group of ten detached former hospital wards that served as isolation wings to the hospital to combat against contagious diseases.

The Dublin City Industrial Heritage Record (DCIHR) survey also makes recommendations for sites to be added to the list of Protected Structures. There are a total of eight sites within/ adjoining the LAP that were identified within this record, most notably relating to the Grand Canal, its locks and tow paths, the Great Southern Railway and the Gallanstown Waterworks. The waterworks site contains old filter beds (now filled in), a covered storage reservoir (visible only as a slightly raised grass area), and a Stilling Pond (an open pond). Its unique underground reservoir and brick arches are considered to be of historic 'regional merit' and provide a unique and valuable industrial heritage.

There are limited known prehistoric sites or features within the LAP lands. One recorded national monument site (Ref: DU017-083) is present in the Park West area and is thought to be an Early Christian Burial mound. Other National Monument sites have been identified just outside the study area, in the south eastern corner of Le Fanu Park, once the location of Ballyfermot Castle.

Landscape & Soil/Geology

Park West – Cherry Orchard lies approx. 9k to the west of the City Centre, immediately inside the M50. The piecemeal development of the LAP area has meant that there are large open tracts of vacant land remaining for development. Some of these sites in Cherry Orchard are mounded up (e.g. site to west of Barnville), others are difficult to access and

are over-grown with burnt out cars and dumping on them (e.g. site to the south of the hospital) and others are below street level (e.g. site to north of train station). In comparison, the vacant sites in Park West are largely level and cleared. There are level differences between Cherry Orchard and Park West evident when travelling along Park West Avenue that will be challenging from urban design perspective and the creation of a street edge / presence.

Within the newly developed Park West Business Park and residential area, there is a water theme running throughout the new developments, interspersed by high quality public art sculptures, creating an attractive image.

Soil performs a number of key environmental, social and economic functions that are vital for life. It has a socio-economic and environmental role as a habitat and gene pool, a platform for human activities (including food production), landscape and heritage and as a provider of raw materials. Soil also functions as a carbon sink, and has other important ecological functions such as storing, filtering and transforming nutrients, species and genes. This vital resource is non-renewable, and measures for soil conservation are required to sustain its functions.

The majority of soils in Dublin City are characterised under the Soil Information System (undertaken by Teagasc in conjunction with the EPA) as 'urban' soils, i.e. soils which have been disturbed, moved and manipulated by human activities. Urban soils are generally overlain by a non-agricultural, man-made layer formed from mixing, infilling or contamination by industrial uses. At the fringes of the city, including the western edge of the LAP, the soil is characterised as fine, loamy drift with limestones and siliceous stones.

Environmental Protection Objectives (Section 4 of the Environmental Report)

SEA Environmental Protection Objectives (EPOs) are measures used to show whether the objectives of a Local Area Plan are beneficial to the environment, to compare the environmental effects of alternatives, or to suggest improvements. If complied with in full, the environmental objectives set should result in an environmentally neutral impact from implementation of the plan**.**

Objectives set have been adapted to the local circumstances and environmental issues of the LAP area and in some cases Dublin city (more strategic issues). The environmental protection objectives set for the SEA have been derived from environmental protection objectives which have been established in law at international, European Union, national and local level and from a review of baseline information and the environmental problems identified by the SEA team.

The table below details the Environmental Protection Objectives set for the protection of each of the environmental receptors. It should be noted that all environmental protection objectives set impact on population and human health.

Environmental Receptor	Environmental Protection Objective
Population and Human Health	**PHH** To create a sustainable compact city in which to live, work and/or visit.
Biodiversity, Flora & Fauna	**BFF** To protect and where appropriate enhance the diversity and range of habitats, species and their resources within the LAP area.

Air Quality & Noise	**AN1** To protect good air quality status and minimise all forms of air pollution (i.e. Nitrogen oxides & Particulate Matter). **AN2** To maintain and, where possible, improve the good acoustical quality for the current and future residents of the plan area.
Climatic Factors	**CF** To minimise emissions of greenhouse gases.
Water (Including Flooding)	**W1** To comply with EU Water Framework Directive to ensure and maintain good ecological status of all receiving water in the LAP area. **W2** To reduce and manage the risk of flooding. **W3** To provide adequate wastewater treatment, water distribution networks and drainage networks.
Material Assets (Transport & Waste Management)	**MA1** To reduce traffic levels by encouraging modal change from car to more sustainable modes of transport such as public transport, walking & cycling. **MA2** To reduce the generation of waste and adopt a sustainable approach to waste management.
Cultural Heritage (Archaeology & Architectural Heritage)	**CH** To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.
Landscape & Soils/Geology	**LS** To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchard's landscapes and soils

Identification of Alternatives (Section 6 & 7 of the Environmental Report)

Dublin City Council, as the plan-making authority, is obliged to consider alternative ways of achieving the objectives of the Local Area Plan. For the purposes of this Local Area Plan, three key sites/locations were examined: -

1. Site no. 5, Barnville Neighbourhood Site (south of Cherry Orchard Park)

2. Site no. 3a, M50 Cloverhill Site (west of Cloverhill Road)

3. Site no. 4, M50 – Cedarbook Avenue Site (north of the train station).

The alternatives for each site were: -

1. **Site no. 5, Barnville Neighbourhood Site** (south of Cherry Orchard Park) (see Ch. 5 in the LAP).

Alternative 1A – To develop the site as a neighbourhood centre (with convenience retail shopping).

Alternative 1B – To develop the site for predominantly residential use.

Alternative 1B was chosen as it will 'fill in' a prominent site adjoining existing residential estates. Residential use can more favourable protect the existing residential amenity as opposed to a neighbourhood centre which will bring its own use constraints – loading / servicing requirements, blank gables, traffic, long operating hours etc. Other sites were considered more suitable for retail facilities, adjoining existing local amenities at a local level, and adjoining the railway line at the higher convenience shopping level.

2. **Site no. 3a, M50 Cloverhill Site** (west of Cloverhill Road).

Alternative 2A – To develop the site for residential uses only.

Alternative 2B - To develop the site for enterprise and employment uses.

Alternative 2B was chosen, on the grounds that the site immediately abuts the M50 and the air and noise pollution concerns were too great to support residential development. Additionally given the amount of housing land available in the LAP area it is considered beneficial to provide land for enterprise and employment uses for the existing and future residents.

3. **Site no. 4, M50 – Cedarbook Avenue Site** (north of the train station).

Alternative 3A – To develop the residential portion for high density only.

Alternative 3B – To develop the residential portion for a mix / range of densities.

Alternative 3B was chosen in order to provide a more flexible development approach to assist this challenging area. Identifying this from the outset in a systematic and logical manner provides greater certainty for the market, state agencies and the local people.

Evaluation of the LAP (Section 8 of the Environmental Report)

The Environmental Report evaluates the key principles and objectives of the Local Area Plan and assesses each objective against the Environmental Protection Objectives (an Evaluation Matrix is set out in Section 8). The key principles and objective were found to largely have either 'an insignificant impact or no relationships with the environmental receptor', designated as a zero (0) in the evaluation matrix or 'a significant beneficial impact on the environmental receptor' designated as a plus (+) in the evaluation matrix or in some instances a combination of the two.

Mitigation (Section 9 of the Environmental Report)

Mitigation measures are the measures to prevent, reduce and as fully as possible offset any adverse environmental effects if there are found to be any adverse impacts as a result of implementing the LAP. The LAP proposes a number of measures under the headings of water and air & noise which if implemented will significantly (a) reduce the probability of surface water flooding and (b) reduce noise and air impacts from car travel.

No additional mitigation measures were considered necessary in order to implement the Park West - Cherry Orchard Local Area Plan. Indeed the provision of additional population and employment on brownfield sites, on a major public transport route is considered to have significant environmental benefits, encouraging sustainable travel patterns and offsetting the need to develop elsewhere outside the City on greenfield sites. The key principles and objectives of the LAP are fully in line with national and regional policy to consolidate and ensure a more compact city.

Monitoring (Section 10 of the Environmental Report)

For the purposes of the Strategic Environmental Assessment (SEA) of the Local Area Plan, the SEA in-house team developed environmental protection objectives, targets and indicators early on in the SEA process. These are set out in Section 10 of this report. Monitoring of the indicators is essential in order to track the impacts of the LAP on the environment.

1 Introduction

1.1 Overall Introduction

This is the Environmental Report prepared as part of the Strategic Environmental Assessment (SEA) of the Park West – Cherry Orchard Local Area Plan. Strategic Environmental Assessment is the formal, systematic evaluation of the likely significant environmental effects of implementing a plan before a decision is made to adopt the plan. SEA affords a high level of protection of the environment and contributes to the integration of environmental considerations at an early stage in the preparation of a plan with a view to promoting sustainable development. The SEA informed the plan of any significant environmental impacts.

This Environmental Report is not the SEA; rather it documents the SEA process and is the key consultation document with a view to facilitating comments from interested parties on the environmental issues associated with the LAP. This report was originally on display with the Draft LAP (11th June to 22nd July inclusive) and has subsequently being amended to take into account changes following this display period, the submissions received and the adoption of the Plan as amended by the Elected Members.

The LAP was adopted by the members of the City Council on the 7th October 2019 and takes effect from the 4th November 2019. It provides a statutory basis for future land-use planning in the area.

1.2 Legislative Context of SEA

Directive 2001/42/EC of the European Parliament and of the Council of Ministers, of 27th June 2001, on the Assessment of the Effects of Certain Plans and Programmes on the Environment, referred to hereafter as the SEA Directive, introduced the requirement that SEA be carried out on plans and programmes which are prepared for a number of sectors, including Land Use Planning.

The purpose of the SEA Directive is to "...*provide a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes what are likely to have significant effects on the environment".*

The SEA Directive was transposed into Irish Law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (Statutory Instrument Number (SI No. 435 of 2004) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004). Both sets of Regulations became operational on 21st July 2004. The Regulations have been amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (SI No. 200 of 2011) and the Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011 (SI No. 201 of 2011). (www.epa.ie)

Under this legislation member States of the EU are obliged to assess the likely significant environmental effects of Plans and Programmes prior to their adoption thus providing for the assessment of strategic environmental considerations at an early stage of the decision making process.

1.3 Complementary Environmental Assessment

Alongside the SEA process and the production of this Environmental Report, two complementary environmental assessments have been undertaken alongside the LAP: -

Appropriate Assessment (AA)

Article 6.3 of the European Union (EU) Habitats Directive (92/43/EEC) requires that Appropriate Assessment must be carried out to assess the potential effects of the proposed plan, on its own or in combination with other plans or projects, on protected European Sites/the Natura 2000 network.

The Natura 2000 network of sites across Europe includes those sites of the highest biodiversity importance for rare and threatened habitats and species. To help tackle issues of habitat destruction and degradation with consequent loss of biodiversity, the EU introduced the Birds and Habitats Directives to help safeguard key sits. The aim of both of these directives is to maintain, and where possible restore the favourable conservation status of natural habitats and species across Europe. Europe's most important wildlife sites are referred to as Natura 2000 sites, and legislation ensures that strong measures are put in place to protect them. Within Ireland the Natura 2000 network comprises Special Areas of Conservation (SACs, including candidate SACs), and Special Protection Areas (SPAs, including proposed SPAs).

The Birds and Habitats Directives require EU Member States to consider the possible nature conservation implications of any plan or project on the Natura 2000 site network prior to making a decision to allow that plan or project to proceed. This process of consideration is referred to as appropriate assessment (AA). When putting forward a plan, the local authority is firstly charged with "screening" the proposal, i.e. determining, on the basis of a preliminary assessment and objective criteria, whether the proposed plan, both 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. If the Screening stage concludes that the proposed project could give rise to likely significant impacts on any Natura 2000 site, then subsequent stages of the AA process are required, including the delivery of a Natura Impact Statement. However if no likely significant effects are identified during Screening, then the assessment process goes no further.

A Stage One Appropriate Assessment screening process was undertaken for the (draft) Park West – Cherry Orchard Local Area Plan which is available alongside this Environmental Report.

Strategic Flood Risk Assessment (SFRA)

In compliance with the Department of the Housing, Planning and Local Government/ Office of Public Works Guidelines & Technical Appendices, 'The Planning System and Flood Risk Management' (2009), Dublin City Council undertook a Stage 1 Strategic Flood Risk Assessment (SFRA) which accompanied the publication of the Draft Park West – Cherry Orchard Local Area Plan and is still available with the adopted LAP on the City Council website.

1.4 Stages of the SEA

The SEA process can be broken down into a number of key steps as follows: -

Step 1: Screening to determine if SEA is required.

Step 2: Scoping to ensure that the relevant environmental issues are identified so that they can be addressed appropriately in the Environmental Report. This step involves consultation with the statutory environmental authorities at an early stage in the process, ideally with the use of a Scoping Issues Paper, highlighting environmental areas of concern. This process informs the level of detail to be included in the Environmental Report.

Step 3: Preparation of a Draft Environmental Report (alongside the Draft LAP). The likely significant effects of implementing the LAP are identified, described and evaluated in the draft Environmental Report.

Step 4: Consultation with the general public and with environmental and planning authorities on the draft Environmental Report (alongside the Draft LAP).

Step 5: Adoption of the LAP and accompanying Environmental Report.

Step 6: Preparation of an SEA Statement summarising how environmental considerations have been integrated into the LAP and how the results of opinions expressed, submissions received and consultations carried out have been taken into account in the SEA process and the reasons for choosing the LAP as adopted. A non-technical summary of the environmental report must be available at this stage.

Step 7: Monitoring of significant environmental effects following adoption and implementation of the Plan.

1.5 SEA Guidance Documents

Appropriate consideration and reference has been made to a number of SEA guidance documents during this exercise including, but not limited to the following: -

- Integrating Climate Change into Strategic Environmental Assessment in Ireland – Guidance Note. Environmental Protection Agency (2015).
- Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland, Synthesis Report (EPA, 2003);
- SEA Scoping Guidance Document (EPA, 2010);
- SEA Environmental Report and Plan Template (EPA, 2010);
- SEA Process Checklist (Consultation Document) (EPA, 2010); Implementation of the SEA Directive (2001/42/EC), Assessment of the Effects of Certain Plans and Programmes on the Environment, Guidelines for Regional Authorities and Planning Authorities (Department of Environment, Heritage and Local Government (DOEHLG), 2004; Integrated Biodiversity Impact Assessment – Streamlining AA, SEA and EIA Processes: Practitioner's Manual, EPA, 2013.

2 Strategic Environmental Assessment Methodology

2.1 Key Stages Identified

The methodology used to carry out the Strategic Environmental Assessment (SEA) of the Draft Park West – Cherry Orchard Local Area Plan reflects the requirements of the SEA Directive (2001/42/EC) and SEA Regulations (S.I. 435 & 436 of 2004 and as amended by S.I. 200 & 201 of 2011) and other SEA guidance documentation. The requirements of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), have also been taken into account in implementing the Plan.

The chart below sets out how the SEA (including the Appropriate Assessment and SFRA) has been undertaken alongside the preparation of the Plan.

Park West – Cherry Orchard Local Area Plan and the SEA Stages

Preparation of the Draft Park West – Cherry Orchard Local Area Plan Commences

↓

SEA determined as mandatory

↓

SEA (AA and SFRA) Scoping and Consultation carried out

↓

SEA Environmental Report (AA Screening & SFRA) prepared alongside the Draft LAP

↓

Full integration of all recommendations of the SEA, AA & SFRA Processes into the Draft LAP

↓

Public display of Draft LAP/SEA/AA & SFRA documents and submissions invited

↓

Elected Members consider the Draft LAP/SEA/AA & SFRA & Chief Executive's Report on submissions

↓

Elected Members adopted Plan with non-material modifications

↓

The LAP comes into effect 4 weeks after it is adopted and the final SEA/(AA & SEA) Statement is prepared

As outlined above the Environmental Report, Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA) are all undertaken in tandem with the Local Area Plan, allowing for integration between each element from the outset. The Environmental Report has guided the preparation of objectives, and local area plan alternatives for the plan, and is an important part of the local area plan documentation.

2.2 Screening

The screening process is the first stage of the Strategic Environmental Assessment. Screening assesses the need to undertake a Strategic Environmental Assessment.

In accordance with SEA Directive 2001/42/EC, S.I No 436/2004 (as amended) Planning and Development (SEA) Regulations 2004 and the DEHLG document "Implementation of

SEA Directive 2001/42/EC Guidelines for Regional Authorities and Planning Authorities (Nov 2004)", the Planning Authority has determined that an SEA is required for the proposed draft LAP having considered the following: -

- The character of the area;
- The existing population of the study area, combined with the potential population capacity of the developing areas in the proposed amended plan, will have an overall target population in excess of 5,000 persons;
- The character of the study area location close to natural amenity areas;
- The provisions of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (as amended);
- The provisions of the DoEHLG "Implementation of SEA Directive 2001/42/EC Guidelines for Regional Authorities and Planning Authorities (Nov 2004)"; and
- The criteria of Schedule 2A of the Planning and Development Regulations 2001 (as amended).

2.3 Scoping & Summary of Feedback from the Environmental Authorities

Having established that SEA is mandatory for the Park West - Cherry Orchard LAP, the next step was scoping the contents of the Environmental Report (ER). Scoping is undertaken to ensure that the relevant environmental issues are identified allowing them to be addressed appropriately in the Environmental Report. This stage is undertaken early in the process to ensure that all relevant issues are identified and dealt with.

Under Article 6 of the SEA Directive, the competent authority, in this case Dublin City Council, preparing the plan is required to consult with specific environmental authorities (statutory consultees) on the scope and level of detail of the information to be included in the Environmental Report. Under S.I. 436 of 2004 and as set out in the Planning and Development (Strategic Environmental Assessment) Regulations 2004 and S.I. 201 of 2011 amending the Planning and Development (Strategic Environmental Assessment) Regulations 2004, the statutory consultees have been established as being: -

- Environmental Protection Agency (EPA)
- Department of Housing, Planning and Local Government
- Department of Agriculture, Food and the Marine
- Department of Communications, Climate Action and Environment
- Department of Culture, Heritage and the Gaeltacht

In addition to the above the City Council also has engaged with Waterways Ireland (due to the proximity of the Canal) and South Dublin County Council (adjoining local authority).

In line with best practice, a Scoping Issues Paper was prepared by the planning authority to facilitate the consultation process. Initial consultation was carried out in April 2018 with the issuing of the Scoping Issues Paper to the above-mentioned statutory environmental authorities. Written feedback was received and was taken on board.

Summary of Feedback from the Environmental Authorities

1. Department of Culture, Heritage and the Gaeltacht

- Grand Canal pNHA forms a boundary with the LAP. The Local Authority should ensure an adequate buffer is left along this waterway to ensure it continues to act as an ecological corridor as envisaged under article 10 of the Habitats Directive.

- Guidance provided in relation to nature conservation, Strategic Environmental Assessment and Appropriate Assessment and the making of the LAP

2. Environmental Protection Agency

Submission provided guidance as to the SEA process, with key aspects to be considered including:

- Supporting the national transition to a climate resilient low carbon economy and society
- Linking of development to the ability to provide adequate and appropriate critical service infrastructure
- Protecting environmental sensitivities within / adjacent to the Plan area, including national and European designated sites and associated ecological corridors.
- Ensuring consistency with key high level plans / programmes including the National Planning Framework (DHPLG), River Basin Management Plan for Ireland (DHPLG), Smarter Travel (DTTAS), National Mitigation Plan and National Adaptation Framework (DCCAE), Irish Water's Capital Investment Plan, Water Services Strategic Plan.

2.4 Environmental Baseline Data

The SEA process is led by the environmental baseline (i.e. the current state of the environment) to facilitate the identification, evaluation and subsequent monitoring of the effects of the LAP. Data was collected to describe the environmental baseline and its likely evolution without implementation of the LAP.

The SEA Directive (Annex I) requires that information is provided on 'any existing environmental problems which are relevant to the plan or programme'. Information is therefore provided on existing environmental problems which are relevant to the LAP, thus, helping to ensure that the LAP does not make any existing environmental problems worse.

The SEA Directive requires that information on the baseline environment be focused upon the relevant aspects of the environmental characteristics of areas likely to be significantly affected and the likely evolution of the current environment in the absence of the strategic action i.e. the LAP. Any information that does not focus upon this is surplus to requirements; therefore, the SEA focuses on the significant issues, disregarding the less significant ones. In addition, the SEA Directive aims to avoid duplication of the assessment whereby a strategic action forms part of a hierarchy. If certain matters are more appropriately assessed at different levels of the hierarchy in which the LAP is positioned, or, if certain matters have already been assessed by a different level of the hierarchy then additional assessment is not needed.

The existing environment of Park West - Cherry Orchard is characterised by way of a description of the environmental receptors as set out in SEA Directive: -

- Population and Human Health
- Biodiversity, flora and fauna
- Air Quality and Noise

- Climatic Factors
- Water (including flooding)
- Material Assets (transport and waste management)
- Cultural Heritage (including architectural and archaeological heritage)
- Landscape (including soil)

The full baseline data is presented in **Section 3 – Baseline Environment** of this report.

2.5 Environmental Protection Objectives

SEA objectives, referred to as Environmental Protection Objectives (EPO's), are a recognised way of testing the environmental effects of the local area plan. They serve a different purpose from the objectives of the local area plan, though in some cases they may overlap. The environmental protection objectives are used to demonstrate whether the local area plan will have a negative, positive or no impact on the environment, to compare the environmental effects of alternative plan scenarios and to suggest improvements if necessary.

For the purposes of the environmental assessment of the local area plan, relevant environmental protection objectives were set having regard to environmental protection objectives established in law, policy, other plans or programmes and from an in-depth knowledge of existing environmental issues to be addressed. Each environmental receptor had between one and three associated environmental protection objectives. For each objective, a target was assigned along with measurable indicators which allows for monitoring.

Section 4 of this report sets out the Environmental Protection Objectives, Targets and Indicators.

2.6 Alternatives

Article 5 of the SEA Directive (and Article 13E of the SEA Regulations 2004) requires the plan-making authority to identify, describe and evaluate alternative ways of realising the objectives of the plan.

As stated in the Directive "*an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated*."

Taking into account the objectives and the geographical scope of the LAP, along with the Core strategy of the Dublin City Development Plan 2016-2022, alternatives were formulated in relation to the key development sites of the LAP.

Section 6 of this report sets out the details of the Alternatives identified;

Section 7 details the evaluations of the identified local area plan alternatives and the reasons for selecting the chosen alternatives.

2.7 Assessment of the Impact of the Park West - Cherry Orchard LAP on the Environment

In accordance with the SEA Directive, the likely significant effects on the environment of implementing the LAP must be assessed. In line with best practice, as set out in the SEA guidelines, the LAP team carried out the assessment of the likely significant effects of the plan by testing key principles and objectives contained within the local area plan against the environmental protection objectives devised by the SEA team. Key principles and objectives were determined to have 'A Significant Beneficial Impact', 'A Significant Adverse Impact', 'An Insignificant Impact / or No Relationship with' or an 'Uncertain Impact' on the environmental receptors.

Section 5 details the context and content of the Park West - Cherry Orchard Local Area Plan;

Section 8 carries out an evaluation of the LAP Objectives.

2.8 Mitigation

Annex I of the SEA Directive requires the Environmental Report to include measures envisaged to prevent, reduce and as fully as possible offset any significant adverse impacts on the environment of implementing the plan. These measures are referred to as 'mitigation' measures.

Section 9 of this report describes the measures devised to mitigate against any potential significant impacts of implementing the Park West - Cherry Orchard LAP.

2.9 Monitoring

The significant environmental effects of implementing the local area plan must be monitored in order to identify at an early stage unforeseen adverse effects and to allow appropriate remedial action to be undertaken. A monitoring programme has been devised having regard to the existing monitoring mechanisms currently in place in Dublin City Council.

Section 10 of this report sets out the Monitoring Programme.

2.10 The SEA Environmental Report

In this Environmental Report, which has been prepared alongside the LAP, the likely environmental effects of the LAP and the alternatives, are predicted and their significance evaluated while having regard to the environmental baseline. The Environmental Report provides the decision-makers, who decide whether to adopt the draft LAP - with or without modifications, with a clear understanding of the likely environmental consequences of decisions regarding the future accommodation of development in the Park West - Cherry Orchard area of Dublin City.

Mitigation measures to prevent or reduce significant adverse effects posed by the LAP, or to maximise any benefits arising, are integrated into the LAP and measures concerning monitoring are proposed.

This Environmental Report was updated following the consideration of public submissions on the Draft Plan, by the members of the City Council, to include minor amendments and the inclusion of additional LAP objectives, which have been assessed in Section 8 of this Report.

2.11 The SEA Statement

After the LAP is adopted by the Council a publically available SEA Statement is prepared. This document is required to include information on: -

- How environmental considerations have been integrated into the LAP - highlighting the main changes to the LAP which resulted from the SEA process;
- How the Environmental Report and consultations have been taken into account - summarising the key issues raised in consultations and indicating what action, if any, was taken in response;
- The reasons for choosing the LAP in the light of the other alternatives, identifying the other alternatives considered, commenting on their potential effects and explaining why the LAP was selected.

3 Baseline Environment

3.1 Introduction

The main purpose of describing the existing baseline environment of the LAP area is to provide an understanding of the main environmental issues being experienced in the area and to provide the basis for predicting and monitoring issues, and for setting environmental protection objectives.

In accordance with implementation of SEA Directive (2001/42/EC) "*Assessment of the Effects of Certain Plans and Programmes on the Environment – Guidelines for Regional Authorities and Planning Authorities",* (ec.europa.eu/environment/eia/sea-legalcontext.htm) an Environmental Assessment of Land Use Plans must examine the significant effects of the proposed plan on the environment including short, medium and long term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects on issues including: -

1. Population (including Human Health)
2. Biodiversity, Flora and Fauna
3. Air Quality & Noise
4. Climatic Factors
5. Water (Including Flooding)
6. Material Assets (transport and waste management)
7. Cultural Heritage (including architectural and archaeological heritage)
8. Landscape (including soil)

The SEA Directive requires that the information on the baseline environment is focused upon the relevant aspects of the environmental characteristics of areas likely to be significantly affected and the likely evolution of the current environment in the absence of the LAP. This section provides a strategic description of environmental components which have the greatest potential to be affected by implementation of the LAP.

Both Article 5 of the SEA Directive and the Planning and Development Regulations 2001 (as amended) (www.irishstatutebook.ie) state that the report shall include the information that may reasonably be required taking into account: -

- Current knowledge and methods of assessment;
- The contents and level of detail in the plan;
- The stage of the Plan in the decision-making process; and
- The extent to which certain matters are more appropriately assessed at different levels in the decision making process in order to avoid duplication of the assessment.

What this means in practice is, inter alia, with regard to Local Area Plans, that SEA involves collating currently available, relevant environmental data; it does not require major new research. Where data deficiencies or gaps exist, this should be acknowledged in the report. The baseline data establishes the current existing state of the environment and is the basis to assess and predict potential impacts.

This section deals with each of the eight issues/topics, under which the Plan is assessed, in the order as outlined above.

3.2 Population and Human Health

3.2.1 Introduction

The Greater Dublin Area (GDA) has experienced significant population increases over the past two decades with the majority of this increase occurring in the counties surrounding Dublin City where large areas of greenfield land can result in lower house construction prices. However, this has exacerbated car dependency, traffic congestion and undermined the efficient provision of public transport.

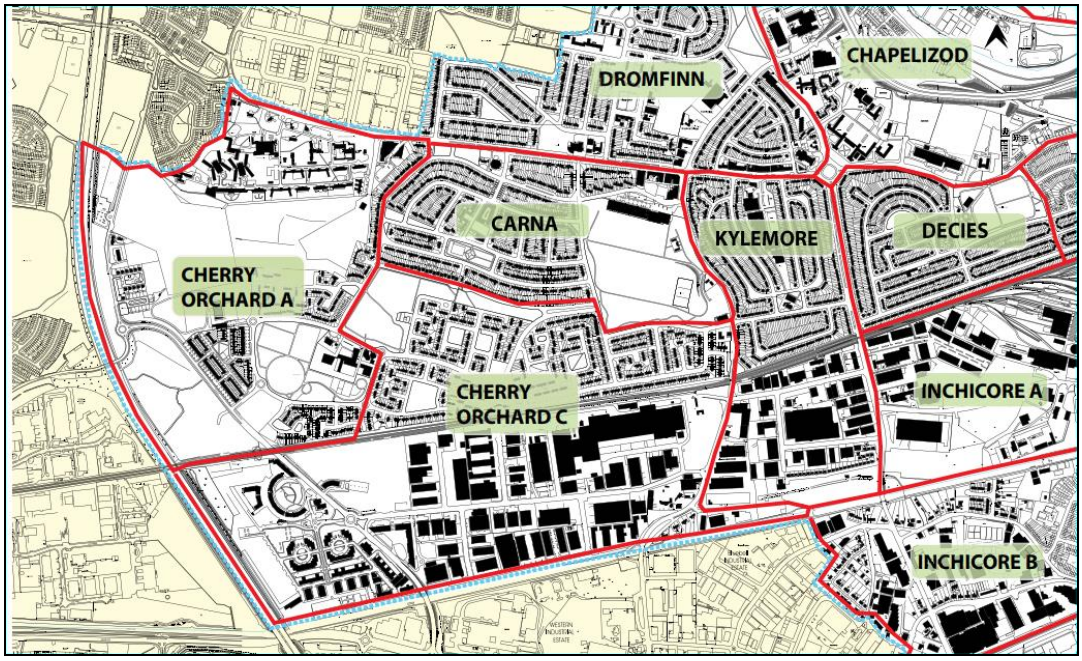
It is current Government policy to channel future projected population growth in a sustainable manner into high quality residential environments in urban locations to take advantage of increased investment in public transport provision, minimise car dependency and to take maximum and efficient advantage of coordinated public service and infrastructure provision.

3.2.2 Population and Demographic Profile

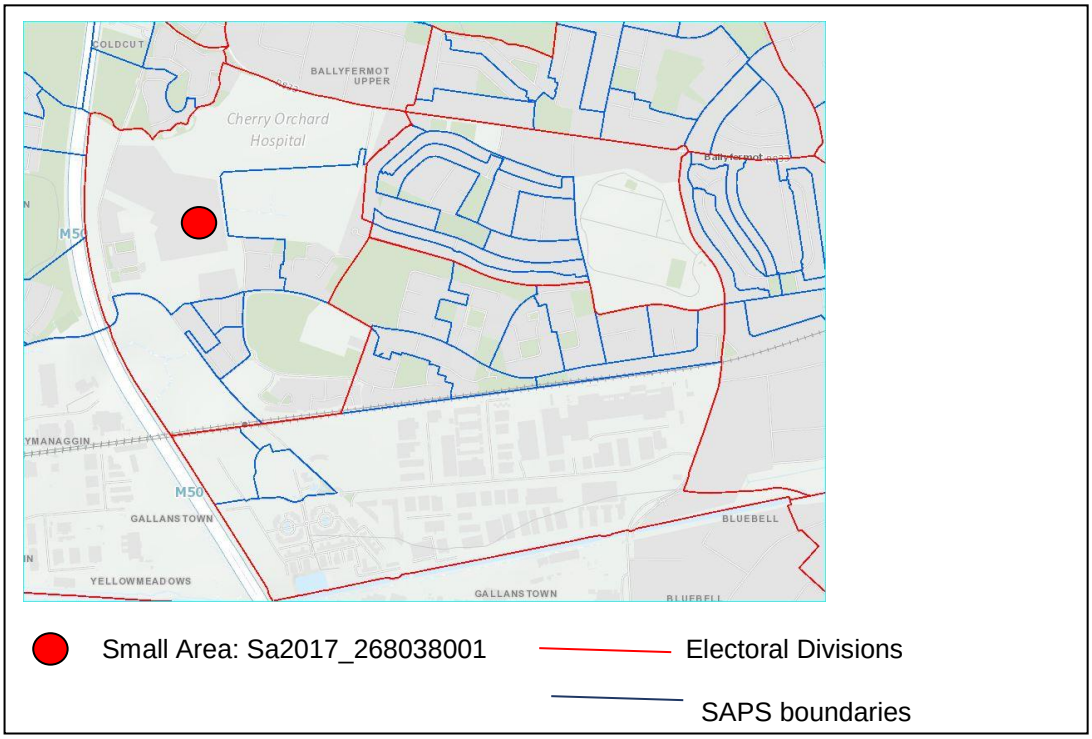
Overall the population of Ireland increased by 3.8% to 4,761,865 between the 2011 and 2016 Census with Dublin city and suburbs increasing by 5.6% to 1,173,179.

The proposed LAP area encompasses the two electoral divisions (EDs) of Cherry Orchard A and Cherry Orchard C, which have a combined population in 2016 of 7,799 persons. The EDs can be broken down to Small Area Population Statistics (SAPS) providing a useful tool for additional analysis of census figures. Cherry Orchard A includes the prison, hospital, traveller accommodation and Elmdale as a SAPS area (see Map 2). Given the variance in numbers that would be 'resident' in the prison and hospital on any given night the LAP **excludes this small area** from its detailed population analysis below. Omitting this small area (ref. Sa2017_268038001) from the census gives a population in 2016 of 6,304, slightly up from 6,196 in 2011 (2% increase). Of the 6,304 figures, 1,205 are from Park West and 5,099 from Cherry Orchard.

Map 1: Park West – Cherry Orchard District Electoral Divisions (DEDs)



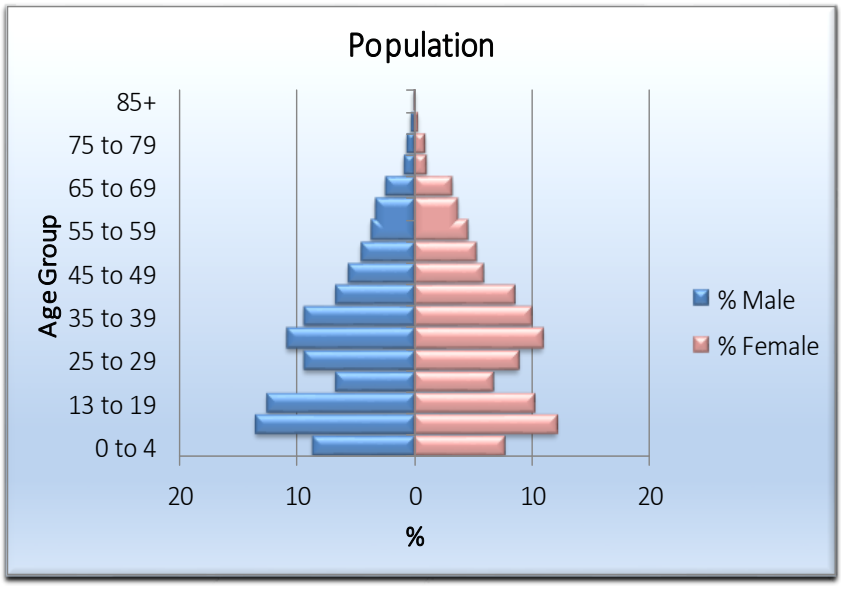
Map 2: Electoral Divisions with SAPS Boundaries.



Note: The boundary of ED Cherry Orchard C extends outside the LAP boundary, including lands of the Park West Industrial Estate. However as no-one resides in this area it is taken that the census figures refer only to those within the LAP area.

As can be seen from the population pyramid below (Fig 1), the population peaks between the ages of 5-12 and comprises 13% of the population. The 2nd largest cohort is the 13-19 age group who comprise 11% of the population. The majority of the population falls below the 40 years of age cohort (69%), with a particularly strong representation between the ages of 5-34 (51%) indicating a very young population with particular service requirements on demands for schools, childcare and housing. In contrast, there is only 5% of the population over 65 years of age.

Fig 1: Population Pyramid, LAP area



The two neighbourhoods of Park West and Cherry Orchard show very different population profiles in terms of nationality recorded by the census. In Cherry Orchard 92% of the population, normally resident in the area, are recorded as Irish nationals (Fig 2) compared to 52% in Park West (Fig 3) which has a far more diverse mix of nationalities.

Fig 2: Population by Nationality, Cherry Orchard

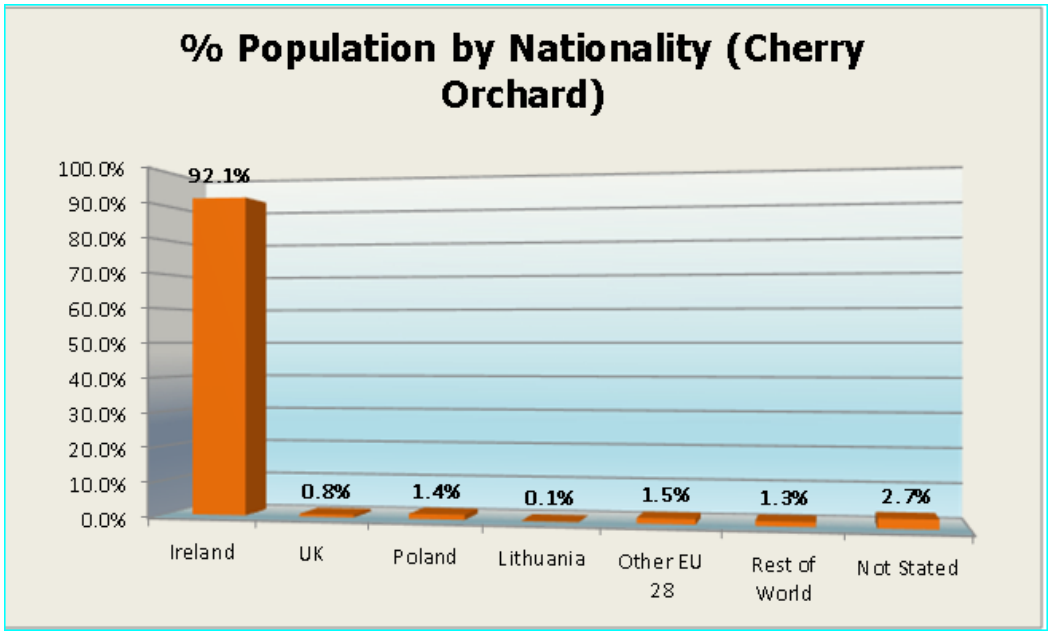
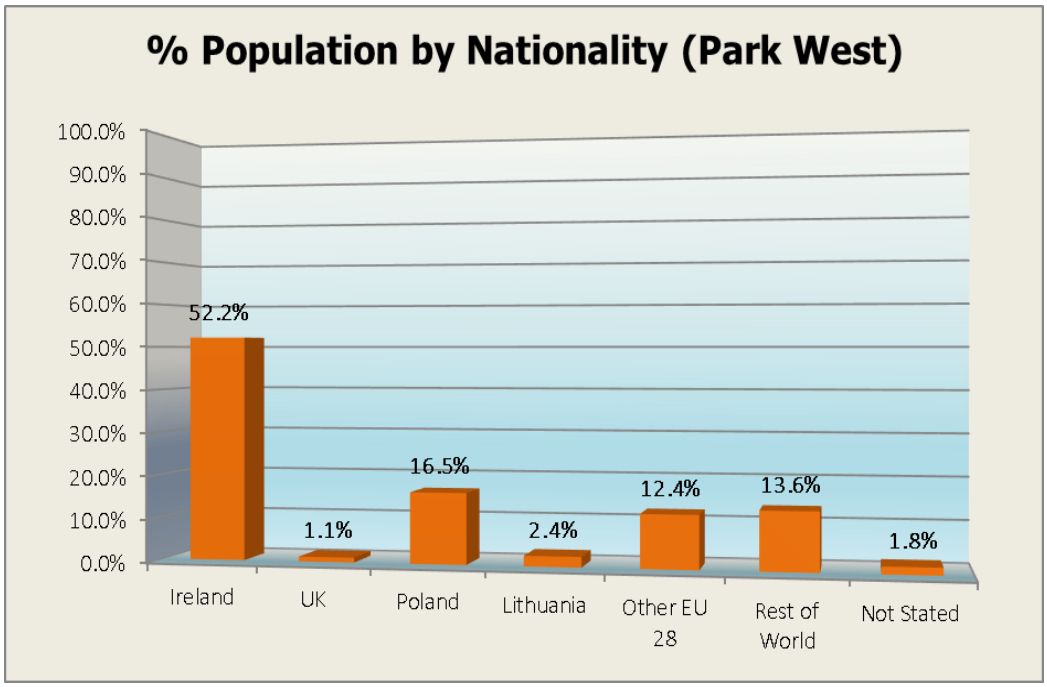


Fig 3: Population by Nationality, Park West



3.2.3 Housing Profile

Household Sizes

The average household size in the LAP area is 3.1 persons, which is above the average size for Dublin City of 2.4 persons per household. 28% of the total households are made up of two person households, with 21% making up three person households, closely followed by 18% making up 4 person households. However, if we look at the two areas of Park West and Cherry Orchard separately we can see that the average household size in the Park West area is 2.4 persons compared with average household size in the Cherry Orchard area which is 3.3 persons. These figures show that household sizes in the Park West area are in line with the Dublin City average while household sizes in the Cherry Orchard are considerably higher. Furthermore, figures show that 22.5% of the total households in Cherry Orchard are made up of five or more person households, while only 3.3% of the total households in Park West are made up of five or more person households.

Fig 4: Private Households by size, Park West

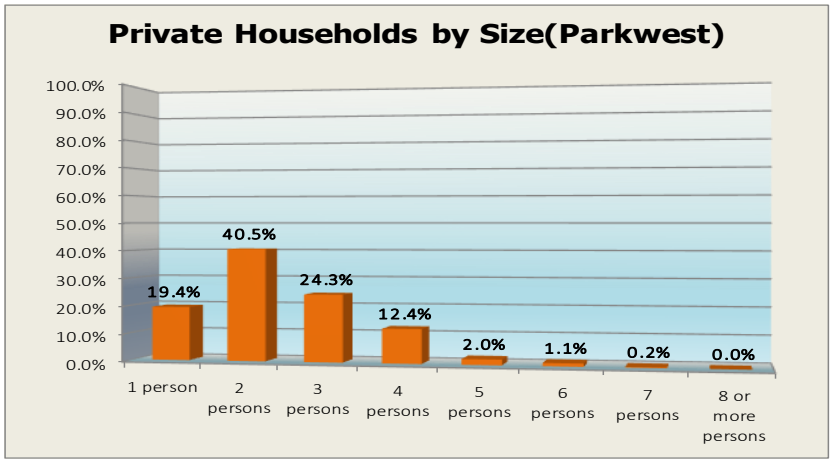
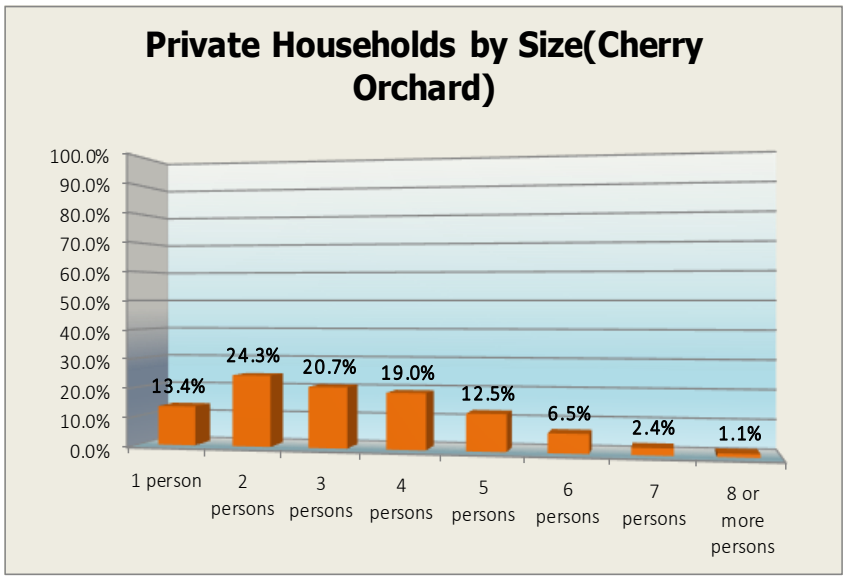


Fig 5: Private Households by size, Cherry Orchard



Household (Types of Families)

The largest single cohort of family type is that of 'adult' family (31.3%) while families with children at pre-school, early school, pre-adolescent and adolescent make up a combined 50.3%. In terms of household composition it is also noted that almost 20% of households are composed of lone mothers and children, twice that of Dublin City.

Fig 6: Private Households by Type, LAP area

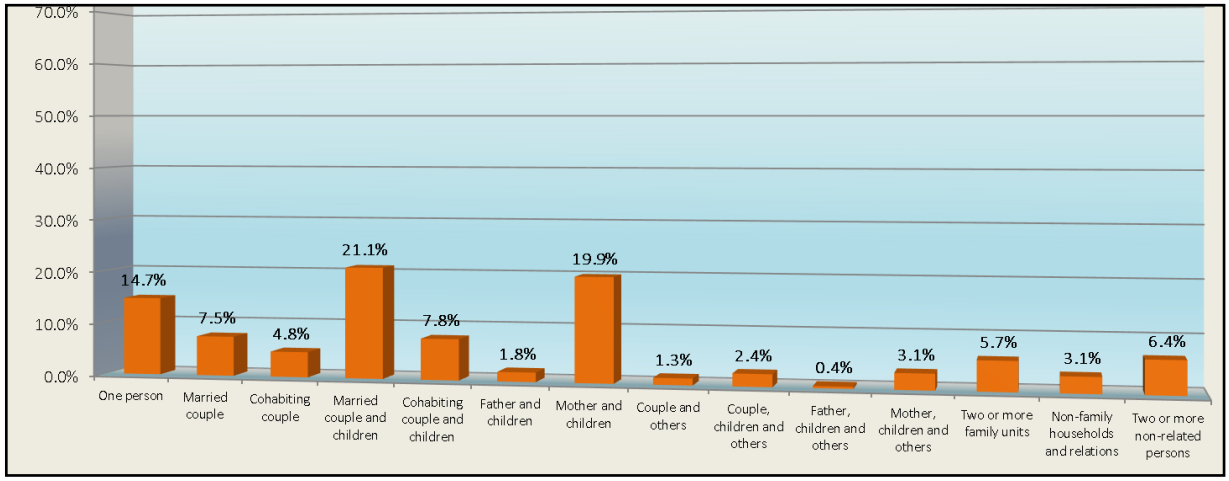
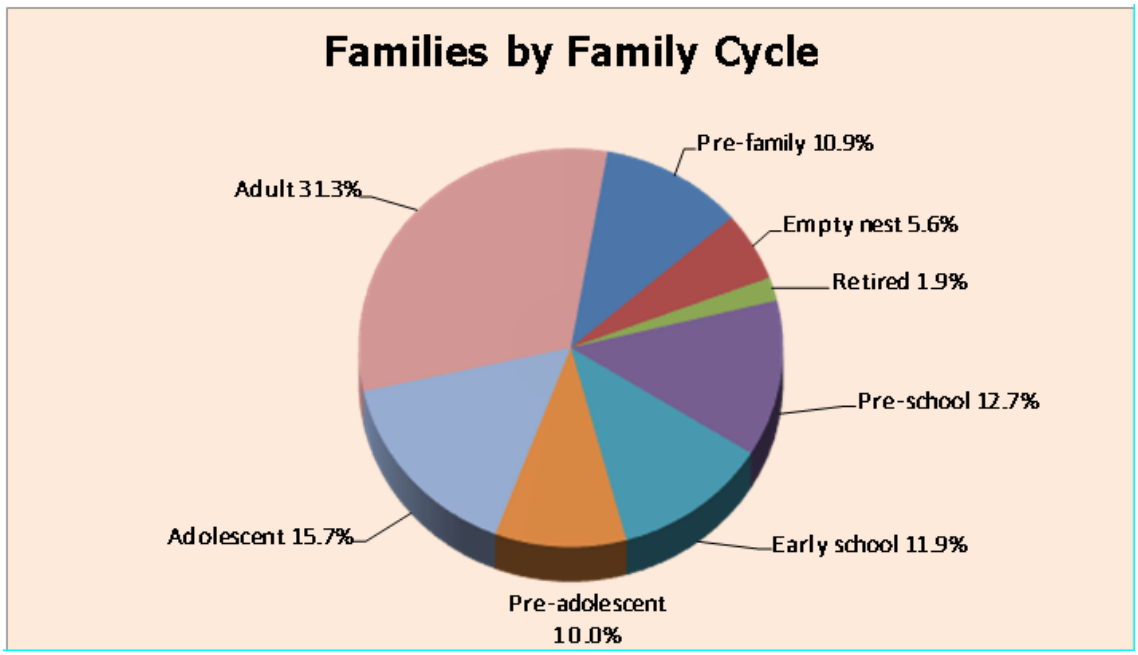


Fig 7: Families by Family Cycle, LAP area



Types of Accommodation

Across the entire LAP area 61.2% of households live in houses/bungalows and 36.6% in apartments. This is relatively consistent with Dublin City with 63.1% of households in houses/bungalows and 34.3% in apartments. However, if we look at the two areas of Park West and Cherry Orchard separately there is an obvious divergence with Park West households located in apartment living, whereas only 19% of households in Cherry Orchard live in apartments, with the remainder in houses/ bungalows.

Traveller Accommodation

The LAP area contains two adjoining traveller accommodation sites located to the west of the LAP on Cloverhill Road. To the north is Bridgeview, which contains 10 no. traveller accommodation housing units and a community/day centre; while to the south is St. Oilver's Park, which contains one house unit and 14 no. halting bays.

HSE Supported Accommodation

A 17-bed 'medium-support' communal residence is located adjoining Cherry Orchard Hospital, accessed off the new road from Ballyfermot Road, across from the Primary Care Centre. This newly built supported residential unit is designed to house mental health patients living independently, and to facilitate their rehabilitation back into society.

3.2.4 Human Health

The human health impacts of relevance to SEA are those which arise as a result of interaction with other environmental receptors e.g. an over-concentration of pollutants in the air can have severe impacts on human health; excessive noise levels can seriously impact upon quality of life; a safe and constant supply of good quality drinking water is a basic component of a liveable area; the conservation of biodiversity is intrinsic to well-being and food production and the availability of open spaces for recreational and sporting purposes can benefit human health.

Given the significant interrelationships between population & human health and all other environmental receptors, population & human health are explored in greater detail under all the other the environmental receptors including air (air quality and noise), water (quality and supply) etc.

Based on the 2016 census 53% of the LAP population indicated that their health was 'Very Good' which was by far the largest percentage, while 31% indicated that there health was 'Good'. 1% indicated that there health was 'Bad' to 'Very Bad'. The same figures for the overall city detailed that 56% felt their health was very good, 27% that there health was 'Good' while 0.4% felt there health was very bad, see Table 1 over.

Table 1: Census 2016 Park West – Cherry Orchard LAP: Health Indicators

Health	Males %	Females %	Total %
Very Good	53	52	53
Good	31	31	31
Fair	7	10	8
Bad	2	1	1
Very Bad	0	0	0
Not Stated	7	6	6

(Figures excluding small area Sa2017_268038001 which includes the prison and the hospital)

Also based on the 2016 census 904 no. persons (14% of the population) are classified as having a disability and 222 no. persons (3.5%) as careers. These figures increases to 1,282 and 268 respectively when we including the small area Ref. Sa2017_268038001, which includes the prison and the hospital. This is comparable with figures for Dublin City as a whole, where 14.69% are classified as having a disability.

3.2.5 Evolution of Population and Human Health in the absence of the LAP

An important aspect of the Local Area Plan is its hierarchy within various plans and policies – including the National Planning Framework, Regional Spatial and Economic Strategy, and the City Development Plan. The core strategy of the Dublin City Development Plan 2016 – 2022 focuses on the creation of a socially inclusive city of urban neighbourhoods, all connected by an exemplary public transport, cycling and walking system and interwoven with a quality bio-diverse green space network. In the absence of the LAP the City Development Plan forms the basis for all future development decisions in the area and residential and mixed-use development would occur on the zoned lands increasing population in the area.

The LAP includes objectives for quality of life initiatives such as the compact sustainable neighbourhood and places a strong emphasis on neighbourhoods that support thriving communities, recreational spaces, new linkages and biodiversity. The plan includes objectives for the provision of non-residential uses bordering the M50 and for the provision of quality commercial, retail and residential schemes, enhancement of biodiversity, parks and public realm improvements etc. The LAP allows for more detailed local objectives to be considered and for greater levels of public participation in the future development of the area.

3.2.6 Existing Environmental Issues relating to Population and Human Health

- The need to develop residential neighbourhoods catering for all sectors of society, at sustainable densities, with service provision to match.
- Develop a sustainable transport infrastructure particularly walking, cycling and public transport and ensure that is integrated and of practical benefit to the population.

3.3 Biodiversity (Flora and Fauna)

3.3.1 Introduction

Biodiversity is the degree of variation of life forms within a given species, ecosystem, biome, or an entire planet. The enhancement of biodiversity, preservation of natural amenities, integrity of wildlife corridors and protection of the natural environment are all important issues to be addressed in the preparation of the Park West – Cherry Orchard Local Area Plan and in this Environmental Report.

3.3.2 Introduction to Existing Green Network

Much of the natural and semi-natural area of Park West and Cherry Orchard has been replaced by artificial surfaces associated with buildings and development (residential, office, instructional uses, roads etc). The LAP area does however contain a number of parks and open spaces. The largest park in the area is Cherry Orchard Park, which is a relatively new park, containing a number of local community facilities and a semi-natural wetland. The trees in the park are still at a young stage and there is limited shrubbery for ground floor cover. Of the other parks in the area, mowed grassland is the dominant feature, and many of the parks are mounded in nature.

There is a well established band of planting to the M50, located in the vacant sites Nos. 3, 4, 7 & 8. Within Site no. 4 there are also remnants of old field boundaries traversing the site, (see map 3 below).

To the south of the LAP, adjoining the banks of the Grand Canal is an old water reservoir, Gallanstown Waterworks. Decommissioned from its role as a water supply this old reservoir and its surrounding semi-natural landscape provides the greatest biodiversity resource to the LAP area.

Just outside the LAP boundary are two key areas of open space of note:-

- The Grand Canal (see below)
- Le Fanu Park: located to the east of the LAP boundary is Le Fanu Park, which is comprised of wide open spaces, grassed playing fields and an open canopy of trees of varying maturity. Although, there are no species or areas of conservation value noted in the Park, the park is of local biodiversity interest and is a key feature of the area.

Image: Gallanstown Waterworks Site

Map 3: Existing Green Infrastructure

3.3.3 Designated Natural Heritage Areas

The Grand Canal pNHA (proposed Natural Heritage Area) sits immediately outside and adjoins the southern boundary of the Local Area Plan. The pNHA's are sites of significance for wildlife and habitats.

The Grand Canal runs along the entire southern boundary of Park West. In the 18th Century it was essential for industry and today it is a leisure amenity for water-craft, anglers, runners and cyclists. The canal forms a natural border to the south of the LAP and incorporates a green route; a recently upgraded 8.5km pedestrian and cycle path.

SITE NAME: GRAND CANAL

SITE CODE: 002104

The Grand Canal is a man-made waterway linking the River Liffey at Dublin with the Shannon at Shannon Harbour and the Barrow at Athy. The Grand Canal pNHA comprises the canal channel and the banks on either side of it. The canal system is made up of a number of branches - the Main Line from Dublin to the Shannon, the Barrow Line from Lowtown to Athy, the Edenderry Branch, the Naas and Corbally Branch and the Milltown Feeder. The Kilbeggan Branch is dry at present, but it is hoped to restore it in the near future. Water is fed into the summit level of the canal at Lowtown from Pollardstown Fen, itself a pNHA.

A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland.

The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods.

There are currently no groups of trees covered by Tree Protection Orders within the LAP lands.

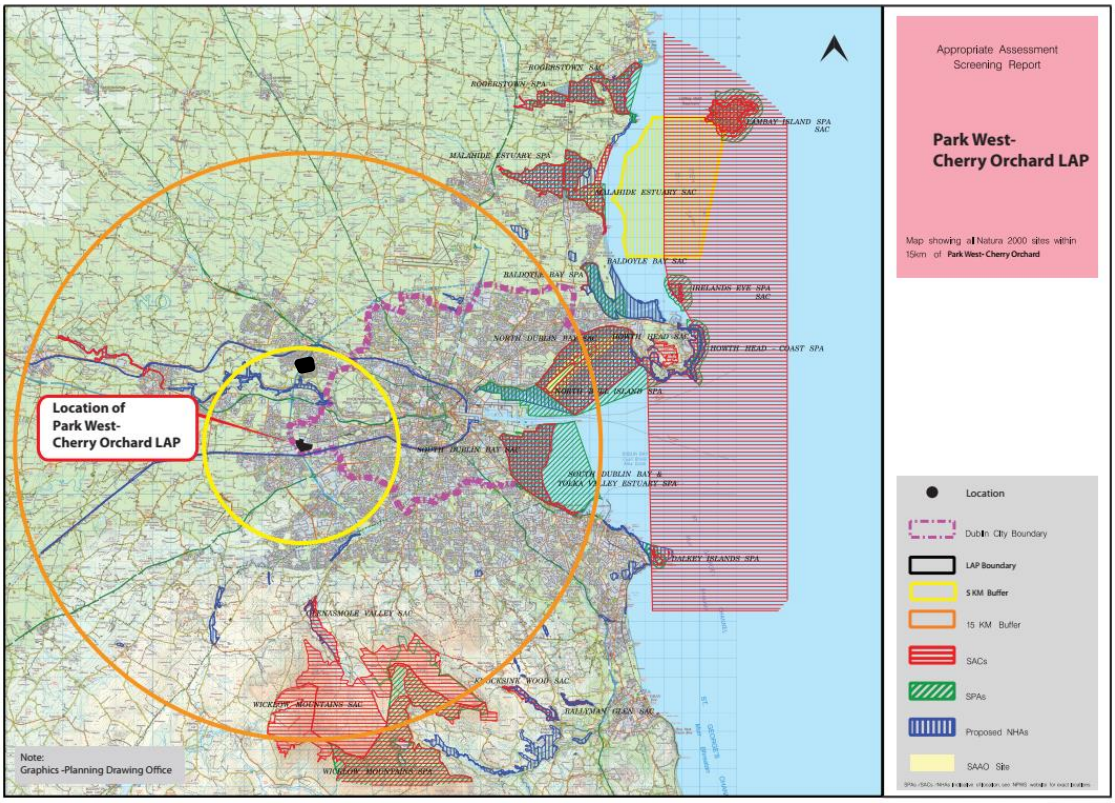
3.3.4 Natura 2000 sites

As part of the preparation of the LAP, an Appropriate Assessment of the Plan was undertaken under Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Fauna (commonly referred to as the Habitats Directive) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011). The purpose of Appropriate Assessment is to determine whether the LAP on its own, on in combination with other plans or projects, is likely to have any significant impacts on the conservation objectives or qualifying features of Designated European sites identified within its "zone of influence". These European Sites are referred to as

Natura 2000 sites and within Ireland include Special Areas of Conservation (SACs, including candidate SACs) and Special Protection Areas (SPAs, including candidate SPAs). The "zone of Influence" applied was 15km from the LAP.

The LAP area does not contain any Natura 2000 sites within its defined boundary, however within its zone of Influence there are eight Natura 2000 sites identified, see Map 4 below. The Appropriate Assessment screening exercise carried out concluded that due to existing mitigating measures in place, the LAP will **not impact** upon any Natura 2000 sites. The Appropriate Assessment Screening Report is available as a separate document in conjunction with the Local Area Plan.

Map 4: Natura 2000 Sites within Zone of Influence (i.e. 15km of Park West – Cherry Orchard LAP)



3.3.5 Flora

The Grand Canal is an important wildlife habitat, supporting rare plants and flora in addition to its function as a 'green corridor' connecting wildlife throughout the City (see figure below).

The Dublin City Biodiversity Action Plan 2015-2020 notes that the City's canals (the Royal and the Grand) support Opposite-leaved Pondweed, a species legally protected under the Flora Protection Order. The riparian zones, including the walls and bridges of the canal are equally important for biodiversity supporting fringing wetland habitats, such as marsh, tall herb swamp, riparian woodland and semi-natural grasslands.

The City's public parks are also important for supporting the City's biodiversity. The LAP area contains (new) Cherry Orchard Park which was developed in c. 2000's and is a relatively 'young' park in terms of biodiversity and flora and fauna. It has a playground, playing pitch and a SUDS attenuation area to the south; this is an excavated flood retention pond which is designed to take the 100 year flow from upstream apartments

(Cedar Brook). There is another small area of open space to the north of St. Ultan's primary school and to the south of the new housing by Co-operative Housing Ireland at Orchard Meadows. This area is mounded up and with limited biodiversity value. There are a number of small open space areas within the residential estates, all of varying quality, nature and character. Much of the LAP area is covered in hard surfaces associated with buildings (residential, office, institutional etc). Grassland either mown or wild is the most common type of wildlife habitat. Disturbed ground with varying degrees of grassland represents the dominate feature of the vacant sites identified in the LAP. Within Site no. 4 there are remnants of old field boundaries.

Immediately outside of the LAP boundary (to the east) is Le Fanu Park, which is older than the open space areas in Park West or Cherry Orchard. The park was developed by the County Council Park's Department in the 1970's in what was originally a large field containing a number of ruins. The ruins were of a castle (Ballyfermot Castle), a church/graveyard and walled garden/orchard. Traces of the historic buildings were covered in earth to protect them from vandalism in the 1970's. Their presence is only obvious as a mound in the south-east corner of the park.

This park comprises wide open spaces, grassed playing fields (with low biodiversity value) and an open canopy of trees of varying maturity. In 2004 Dublin City Council prepared a Habitat Management Plan for Le Fanu Park (prepared by Tubridy & Associates) which was followed up by a flora and vegetation study in 2017 (prepared by the City Council) and provides more up to date information on the park, such as: -

- Flowering Cotoneaster hedge near the park entrance
- No shrubs within the park
- Park has a variety of species of local botanical interest, particularly plants associated with cultivated or open ground; this may be due to its part use as allotments (1960's: space used for Cherry Orchard allotments)
- No species or areas of conservation value in the park

The challenge for the LAP is to balance the need for improved multi-functional areas of open space that have recreational and amenity uses alongside the need to promote opportunities for biodiversity.

Image: Cherry Orchard Park

Map 5: Strategic Green Network, as per Figure 14 of the Dublin City Development Plan 2016-2022

3.3.6 Fauna

The Grand Canal is an important wildlife habitat, supporting fish, river birds, mammals and invertebrates in addition to its function as a 'green corridor' connecting wildlife throughout the City (as per Map 5 above).

The Dublin City Biodiversity Action Plan 2015-2020 states that the City's canals (the Royal and the Grand) support coarse fish species, including Pike, Rudd, Bream and Tench. The canals also support the Glutinous Snail which is a very rare freshwater snail which requires pollution free, extremely clear, calm and calcium rich water. The riparian zones, including the walls and bridges of the canal are equally important for biodiversity supporting a number of legally protected species, including otters, daubeton bats and kingfishers.

All bat species are protected under the Wildlife Acts of 1976-2012 and listed on annex IV of the Habitats Directive for strict protection. Utilising the City Council's GIS system the following bats are evident in the area: -

Table 2: Bat Activity within the LAP area	
Location	**Bat Type**
Park West Business Park, near Joyce Way	Common Pipistrelle
Park West, waterworks site (artificial lake / pond)	Common Pipistrelle Soprano Pipistrelle
Grand Canal, near the 7th Lock	Daubentons bat

The following bats have also been found in locations outside of the LAP boundary: -

Table 3: Bat activity in the vicinity of the LAP	
Location	**Bat Type**
Le Fanu Park, in the hedgerow near the former farm buildings (likely to be feeding or flying along the line of the hedgerow)[1]	Brown long eared bat
Kylemore Drive, rear of houses	Common Pipistrelle
Grand Canal, 5th – 6th Lock	Leislers Bat Common Pipistrelle Soprano Pipistrelle

[1] Habitat Management Plan for Le Fanu Park 2004 (prepared by Tubridy & Associates)

Having regard to the above, the Grand Canal is an important green route for the bats, with the wetland area to the south of Joyce Way in Park West providing an additional activity area.

3.3.7 Invasive Species

One of the greatest threats to the City's biodiversity is from Invasive Species (IS). IS are plants and animals which have been introduced either accidentally or deliberately into natural environments where they are not normally found.

The '*Dublin City Invasive Alien Species Action Plan 2016-2020'* (www.dublincity.ie) sets out the legislative and environmental background to initiatives being undertaken to control the spread of Invasive Alien Species (IAS). The Plan includes specific responsibilities for contractors working for the Council, members of the public, collaboration strategies with adjoining Councils and community groups and specific requirements for planning consents.

There are 17 no. legally designated species of invasive species known to be present in Dublin city. The Action Plan risk assessed all of these species (see Table no. 1, Section 6 of Action Plan). The 'high risk' species are those that have a high ability to spread, are causing the most damage and which the City Council is placing particular emphasis on the need to monitor their impacts and ensure controls. Of the 'high risk species', the following two floras have been recorded near the LAP area.

Table 4: High Risk Invasive Species in the vicinity of the LAP area.

SPECIES	HIGH RISK	LAP LOCATION
Nuttall's waterweed (North American native which grows in slow flowing or still water)	Threat to public safety along waterways due to entanglement of boats and reduced passage width.	Grand Canal
Japanese knotweed (Eastern Asian native is prevalent along waterways)	Threat to built structures including houses. Legal consequences to its spread. Exceptional ability to spread and very difficult to eradicate once established, altering habitats	Grand Canal

3.3.8 Evolution of Biodiversity, Flora and Fauna in the absence of the LAP

In the absence of a Local Area Plan for Park West – Cherry Orchard, applications for development would be considered under the Dublin City Development Plan in operation at the time. The principal biodiversity area is the Grand Canal which is designated as a pNHA.

The Dublin City Development Plan includes policies for the protection and enhancement of biodiversity, flora and fauna and it aims to strengthen the recognition of green corridors

under the Habitats Directive. It will support measures for protection of important habitats and mitigation of impacts of construction and development.

Proposals to improve biodiversity, flora and fauna within the Plan include -

- Objective to seek the provision of three key "Green Corridors" notably:
  - Green link from Le Fanu park to the Grand Canal
  - Along the northern boundary of the Grand Canal
  - Along the boundary of the M50.
- Proposals for the creation of new parks / open spaces as part of the development of the available sites, linking into the green network.
- Objective to enhance the biodiversity value of the local area by protecting habitats, in particular historic hedgerows (Site 4) and along the Canal, and create opportunities for new habitats through appropriate landscaping schemes to integrate the natural environment into the existing and future urban environment
- Improvements in planting and biodiversity value of existing parks and in particular the existing Cherry Orchard Park.
- Objective to ensure that all new streets are appropriately landscaped and tree lined and where feasible seek the upgrading of existing streets to incorporate landscaping, appropriate tree planting and SuDS features.
- Objective to work in collaboration with all stakeholders including the National Park and Wildlife Service, Waterways Ireland and South Dublin County Council to protect and enhance the Grand Canal Green Corridor which is designated as a proposed Natural Heritage area.

3.3.9 Existing Environmental Issues relating to Biodiversity, Flora and Fauna

- Pressures on biodiversity potentially arise as a result on an increased commercial, residential and recreational use.
- Need to protect the Grand Canal, a proposed Natural Heritage Area
- Need to control Invasive Species in particular along the Grand Canal
- The existing wastewater treatment plant at Ringsend is operating at capacity. This could potentially lead to deterioration in water quality and associated ecological impacts in Dublin Bay, if no mitigation measures are put in place.
- Lack of mitigation on construction sites can lead to localised pollution of watercourses and negative impacts on existing flora and fauna.

3.4 Air (Quality & Noise)

3.4.1 Air Quality

"Air pollution presents one of the biggest environmental threats to public health and ecosystems across Europe. Recently the EEA have estimated that there were 1,510 premature deaths in Ireland in 2014 due to poor air quality, with a figure of 520,400 premature deaths across the wider EU (EEA 2017)" (EPA, 2016 Air Quality Report).

Standards regarding air quality in Ireland are framed by the Air Quality Framework Directive 96/62/EC (www.ec.europa.eu) which was transposed into Irish law by the Air Quality Standards Regulations 2002 and the Ozone Regulations 2004. The Air Quality Standards Regulations were subsequently replaced by the Clean Air for Europe (CAFÉ) Directive 2008 (2008/50/EC) which sets out the requirements for monitoring pollutants and the target values for each pollutant. The Clean Air Package announced by the European Commission in 2014 will involve a fundamental shift in tackling air emissions at source, with the possibility of introducing even tighter air quality standards from 2020 onwards. In this regard, the Dept. of Communications, Climate Action and Environment are currently preparing the National Clean Air Strategy with the intention of developing the necessary policies and measures to comply with new and emerging EU legislation and also tackle climate change. The Strategy is expected to be released in 2019.

Results from the Environmental Protection Agency (EPA) report on 'Air Quality in Ireland 2017' (published in 2018 and is the most up to date EPA report at the time of Draft LAP) provides an overview of air quality in Ireland for 2017 and is based on data obtained from 29 monitoring stations that form the national ambient air quality network. The report highlights: -

- No levels above the EU limit value were recorded at any of the ambient air quality network monitoring sites in Ireland in 2017
- World Health Organisation (WHO) guideline values were exceeded at a number of monitoring sites for particulate matter (PM_{10} and $PM_{2.5}$), ozone and NO_2:
  - PM_{10} 24hr guideline was exceeded at 11 monitoring sites
  - $PM_{2.5}$ 24hr guideline was exceeded at 9 monitoring sites and the annual guideline at 1 monitoring sites
  - Ozone guideline was exceeded at 9 monitoring sites
  - NO_2 1hr guideline was exceeded at 1 monitoring site
- European Environment Agency reference levels were exceeded as follows:
  - PAH at 4 reference level was exceeded monitoring sites
- 2017 dioxin survey shows that concentrations of dioxins and similar pollutants remain at a consistently low level in the Irish environment

Overall air quality in Ireland compared favourably with other EU Member States and all the parameters were below the EU limit and target values. However, when compared to the tighter WHO Air Quality Guideline values, it highlights some potential issues. Ireland exceeded the WHO guideline values in 2017 for the pollutants $PM_{10,}$ $PM_{2.5}$, ozone and $NO_{2.}$ Ireland is also above the European Environment Agency reference level for PAH.

The report highlights the needs to tackle $PM_{2.5}$ levels as Ireland is consistently above the WHO Air Quality Guideline value for fine particulate matter, $PM_{2.5.}$ This is the pollutant that the European Environment Agency (EEA) has highlighted as having responsibility for the

majority of premature deaths in Ireland. The predominant source of this pollutant is the use of solid fuels such as coal, peat and wood for home heating.

The transport sector has the greatest impact on NO_2 concentrations, particularly in urban areas which are above the WHO guideline value, approaching the EU limit value and could face exceedances of this EU limit in the future if traffic levels continue to rise or the country experiences weather conditions that are unfavourable to dispersion of air pollution for any extended period.

Air quality improvements can be tackled through: -

(a) Continued promotion of the shift from solid fuel as a method of home heating to cleaner alternatives as the key to tackling particulate matter levels in Ireland;

(b) Priority for public transport and reducing the number of journeys made using diesel and petrol vehicles.

3.4.2 Local Air Quality Results

There are currently thirteen active air quality monitoring stations located across Dublin, however they do not monitor all GHGs and particulate matter at each station. In recognition of the need for more robust data, Dublin City Council is currently working with the EPA to collect data on air quality in the Dublin Region under the new national Ambient Air Quality Monitoring Programme (AAMP). The use of sensors to collect localised, accessible, real-time data will assist in the development of policy to address air quality and pollutants, such as the National Clean Air Strategy, which is to be released in 2019.

The closest permanent air quality monitoring site to Park West - Cherry Orchard is Ballyfermot. This station continually monitors particulate matters ($PM_{2.5}$ and PM_{10}), for compliance with relevant EU directives. The annual mean concentrations for NO_2 in 2016 were 17.3 microgram's/cubic metre at Ballyfermot.

There is an additional air quality monitoring site at Blanchardstown, on the west side of the M50. The data was reviewed from this station in order to provide a more beneficial representation of boundary conditions of the study area, as it is the closest station in Dublin to the M50. The annual mean concentrations for NO_2 in 2016 were 30.2 microgram's/cubic metre at Blanchardstown.

Both values are in compliance with the annual mean EU limit value of 40µg/m3.

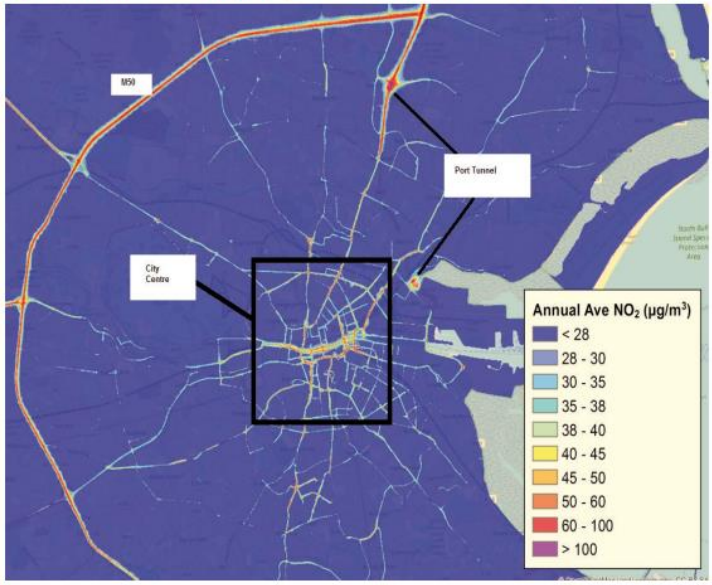
The measured PM_{10} levels for 2015 were 12 and 15µg/m3 at Ballyfermot and Blanchardstown respectively. Both values were in compliance with the annual mean EU limit value of 40µg/m3.

The 'Design Manual for Roads and Bridges' (DMRB) air quality screening model was used to estimate NO_2 and PM_{10} concentrations within the study area (November 2017). An initial model run was carried out to calculate NO_2 and PM_{10} concentrations at approximately 35m from the edge of the M50. This calculation was based solely on the emissions from traffic flows on the M50. This produced a predicted concentration of NO_2 at 32.5µg/m3 and PM_{10} of 18.41µg/m3. This is in line with the actual measured level of NO_2 of 30.2µg/m3 and PM_{10} of 15µg/m3 at Blanchardstown, which is located at a similar distance from the Blanchardstown Bye pass on the N3. Further screening runs were carried out at 100m and 200m distances from the M50. The 100m screening calculation indicated NO_2; PM_{10} values of 21.1; 15.7µg/m3. The closest existing residential dwelling is approximately 200m away from the M50. At this location a value for NO_2; PM_{10} was calculated at 18.5; 15.1µg/m3. Most of the existing residential dwellings fall between 200m and 300m from the M50. At this distance NO_2 and PM_{10} concentrations equate well with the actual measurements at Ballyfermot, with the screening model indicating little impact on NO_2; PM_{10} concentrations due to the M50.

The screening model outputs indicate the likelihood of increased exposure to higher concentrations of NO_2 and PM_{10} the closer one is to the M50. These pollutant levels increase dramatically when one is less than 100m away from the road centreline, although it is calculated that the levels would still be below the annual EU mean limit values at 35m from the road centreline for 2016 traffic volumes.

Subsequent to the publishing of the Draft Local Area Plan, the EPA published an updated *"Urban Environmental Indicators"* report 2019, focusing on Nitrogen dioxide levels in Dublin. The report shows that while the majority of the City is well below the yearly limits for NO2 (40 µg/m3) there are some areas which show modelled exceedances above this limit, including around the M50. The report further states that on the M50 the highest concentrations are within 10 metres of the motorway edge, with levels falling to background concentrations around a distance of 50 to 75 metres. Reference to this report was made in the Chief Executive's report responding to Councillor's consideration of the public submissions on the Draft LAP, firmly linking the landuse strategy of the LAP with the issue of air quality, with non-residential uses proposed along the M50 corridor.

Figure 5: Modelled annual average NO_2 concentrations for Dublin. The EU limit value is 40ug/m³



Extract from Urban Environmental Indicators, EPA 2019

Increasing volumes of traffic affect air quality and the acoustic environment. The main threat to air quality in Park West – Cherry Orchard comes mainly from the transport sector in the form of oxides of nitrogen, PM_{10} and $PM_{2.5}$. These emissions must be reduced by a modal shift to more sustainable modes of movement and transport, in particular a move away from the over-reliance on private cars to public transport options.

3.4.3 Noise

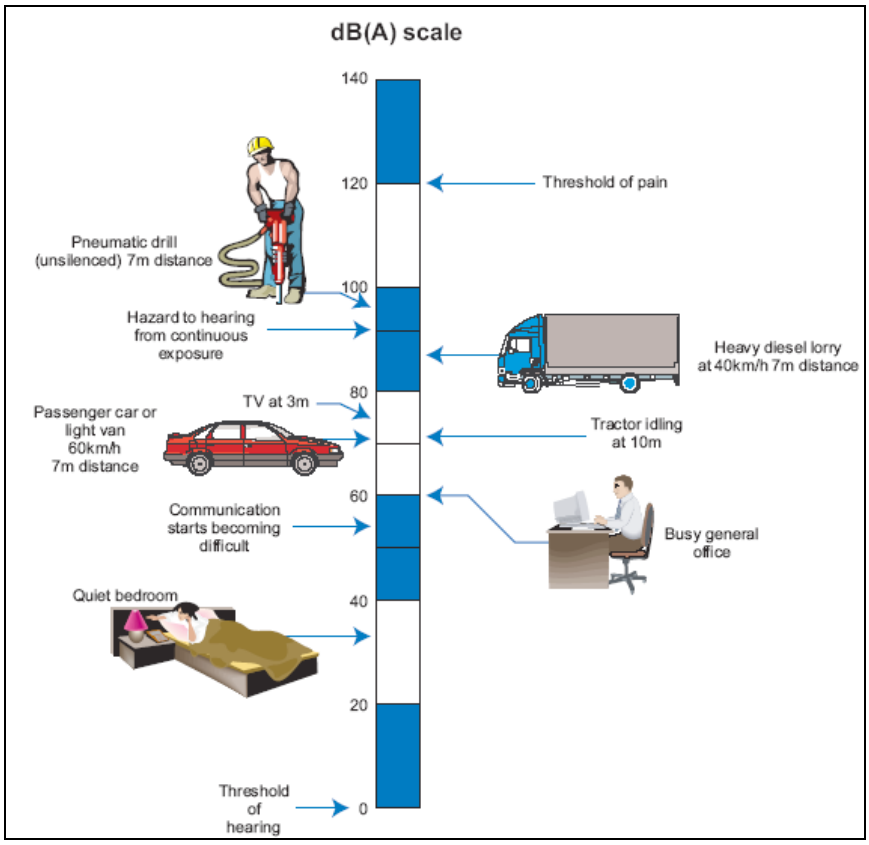
Environmental noise, commonly called noise pollution, is among the most frequent sources of complaint regarding environmental issues in Europe, especially in densely populated urban areas and residential areas near highways, railways and airports. Sound levels are expressed in decibels (dB) on a logarithmic scale, where 0 dB is nominally the "threshold of hearing" and 120 dB is nominally the "threshold of pain" (source: Dublin Agglomeration Environmental Noise Action Plan 2013-2018).

Noise contributes greatly to diminishing people's quality of life. Unwanted sound (noise) of sufficient intensity and duration can cause temporary and/or permanent hearing loss. It can also interfere with speech communication, the transmission of other auditory signals, can disturb sleep and act as a general source of annoyance or disturbance and interfere with the performance of complicated tasks and the opportunity for privacy. In particular, exposure of people to daytime noise levels above 65 dB(A) can cause severe health problems. In general, sound levels in cities can range between 60-70 dB(A), with suburban levels between 50-60 dB(A). The World Health Organisation has set guideline levels for annoyance at 55 dB(A) representing daytime levels below which a majority of the adult population will be protected from a moderate or serious annoyance (source: Dublin Agglomeration Environmental Noise Action Plan 2013-2018).

In 2009, WHO European Regional Office published the 'Night Noise Guidelines for Europe'. It presented new evidence on the health damage of night time sound exposure and recommended threshold values that, if breached at night, would threaten health. An annual average night exposure not exceeding 40 dB(A) outdoors is recommended in the guidelines. It is recommended that this level should be the target for night noise guidelines to protect the public, including the most vulnerable groups such as children, the chronically ill and the elderly. A night time level of 55 dB(A) is recommended as an interim target for countries that cannot meet these night noise guidelines in the short term and where policy-makers choose to adopt a stepwise approach.

Figure 8 provides an overview of common sound levels on the dB(A) scale as outlined in the NRA Guidelines for the Treatment of Noise and Vibration in National Road Schemes, 2004. From this, we can see that the sound in a bedroom is about 35 dB(A) and the sound in a busy office is about 60 dB(A).

Fig 8: Levels of Typical Common Sounds on the dB(A) Scale, (NRA, 2004)



According to the Dublin Agglomeration Environmental Noise Action Plan 2013-2018 noise from transport is by far the most widespread source of noise exposure, causing the most annoyance, sleep disturbance and public health concerns. The main contributors to road traffic noise are cars, lorries and buses with motorcycles being minor contributions.

Railway noise is the second most dominant source of environmental noise in Europe. Railway noise arises from engine noise, rolling noise and aerodynamic noise.

3.4.4 Noise Legislative Requirements – Noise Mapping

European Council Directive 2002/49/EC, commonly referred to as the Environmental Noise Directive (END), relates to the assessment and management of environmental noise. Directive 2002/49/EC has been transposed into Irish legislation through the Environmental Noise Regulations 2006 (S.I. No. 140 of 2006). In the context of the Regulations, environmental noise is defined as unwanted or harmful outdoor sound created by human activities, specifically noise emitted by means of transport (road, rail and air traffic) and from industry.

The aim of the Directive is *"to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise".*

There are three action stages set out in the END for the assessment and management of environmental noise, which are: -

- Undertake strategic noise mapping to determine the exposure to environmental noise using harmonised noise indicators Lden (day-evening-night equivalent level) and Lnight (night equivalent level). These maps are to be used to assess the number of people annoyed and sleep-disturbed respectively.
- Ensure information on environmental noise and its effects is made available to the public.
- Adopt action plans, based on the noise mapping results, with a view to preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and to preserving environmental noise quality where it is good.

3.4.5 Noise Action Plan

As set out above there is a legislative requirement under the Environmental Noise Directive (END) to produce Noise Action Plans following on from the production of Noise Maps. The 'Dublin Agglomeration Noise Action Plan 2013-2018' was prepared jointly by the four Local Authorities in the Dublin Agglomeration. The key objective is to avoid, prevent and reduce, where necessary, on a prioritised basis the harmful effects, including annoyance, due to long term exposure to environmental noise from road traffic, rail and aircraft. This will be achieved by taking a strategic approach to managing environmental noise and undertaking a balanced approach in the context of sustainable development.

3.4.6 Local Noise Mapping Results

An assessment of the impact of traffic noise on the Park West – Cherry Orchard area was carried out using the Dublin City Council's 2017 Noise Maps and Noise Model. The

dominant source of noise impacting on the environment in the study area originates from traffic – particularly traffic on the M50, Cherry Orchard and Park West Avenues and from Ballyfermot, Park West and Kileen Roads.

A main 'Heavy Rail' line passes through a section of the LAP area. An assessment has been carried out on the noise impact of trains passing along this line. It was found that the passage of trains on this line does not increase the calculated sound levels for the overall area. However there may be potential for noise complaints arising from future residents residing close to the line. Complaints in relation to shunting and the 'parking' of train engines with engines idling during the night and early morning, whilst being serviced from the Inchicore train depot, and the noise from trains while stopped at traffic control signals, before entering Heuston Station, have arisen from residents further down the track nearer Ballyfermot.

The key objective of the Dublin Agglomeration Noise Action Plan 2013 – 2018 is to 'avoid, prevent and reduce where necessary, the harmful effects, including annoyance, to people, due to long term exposure to environmental noise from road, rail and aircraft sound emissions'. A sub-objective is to maintain good ambient sound quality where it exists. To this end the Noise Action Plan sets out guidance levels in relation to what sound levels are considered desirable/undesirable within the Dublin City Council area. Daytime sound levels below 55dB(A) and night time levels below 50dB(A) are considered desirable whereas sound levels above 70dB(A) during the day and 55dB(A) at night are considered to be undesirable.

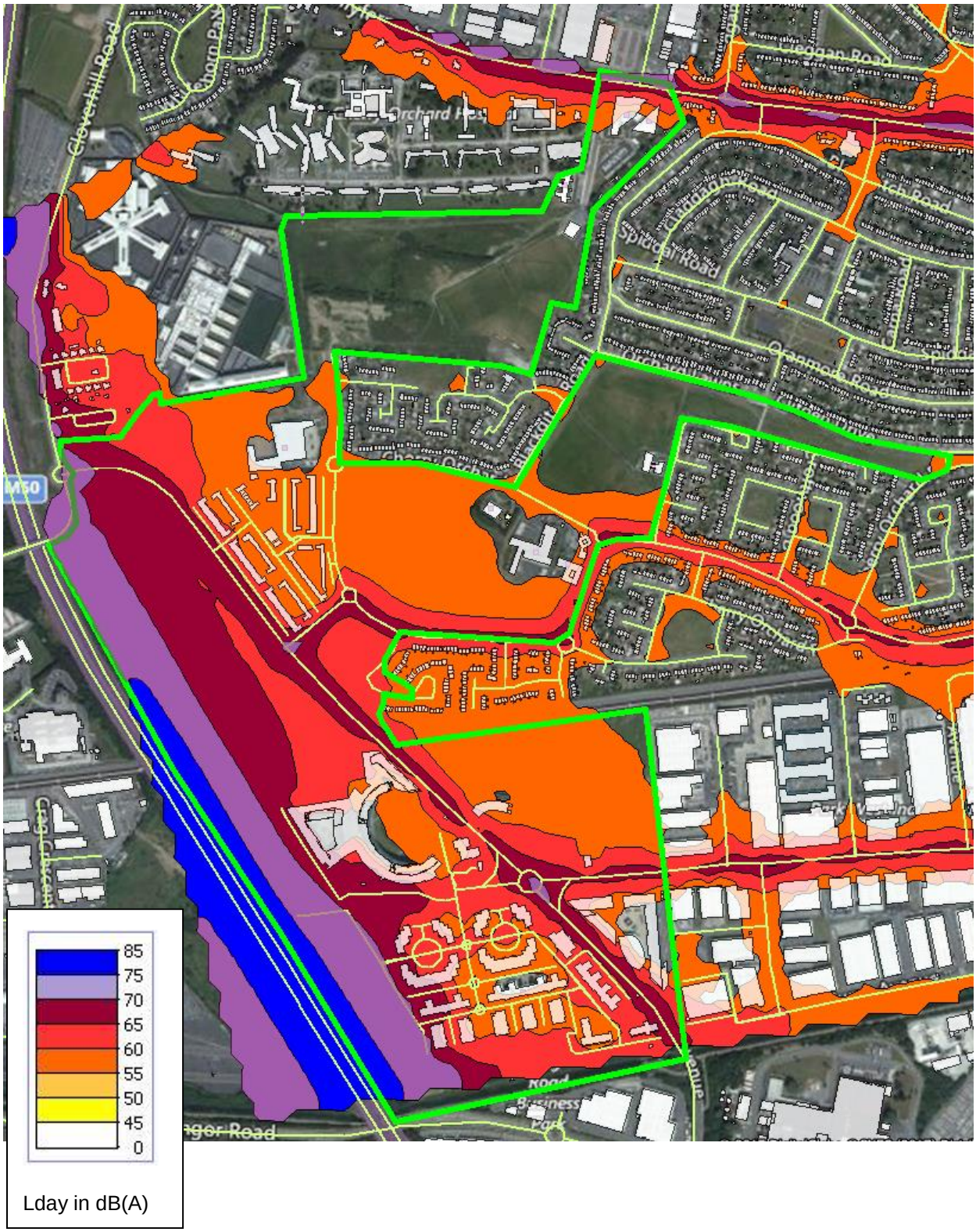
Table 5 sets out the estimated number of people and habitable dwellings exposed to the various bands of noise levels from traffic sources. As can be seen from this table, less than 1% of existing residential dwellings are exposed to undesirable night time sound levels. No dwellings fall within this description during the day.

The location of properties and their exposure to the various sound levels during the day and at night can be ascertained by referring to the relevant 'Daytime' and 'Night time' noise maps (Maps 6 & 7 below). These noise maps can also be used to identify the areas within the LAP (>55dB(A) day; >50dB(A) night) where mitigation measures should be adopted, through appropriate planning and good design of any new developments.

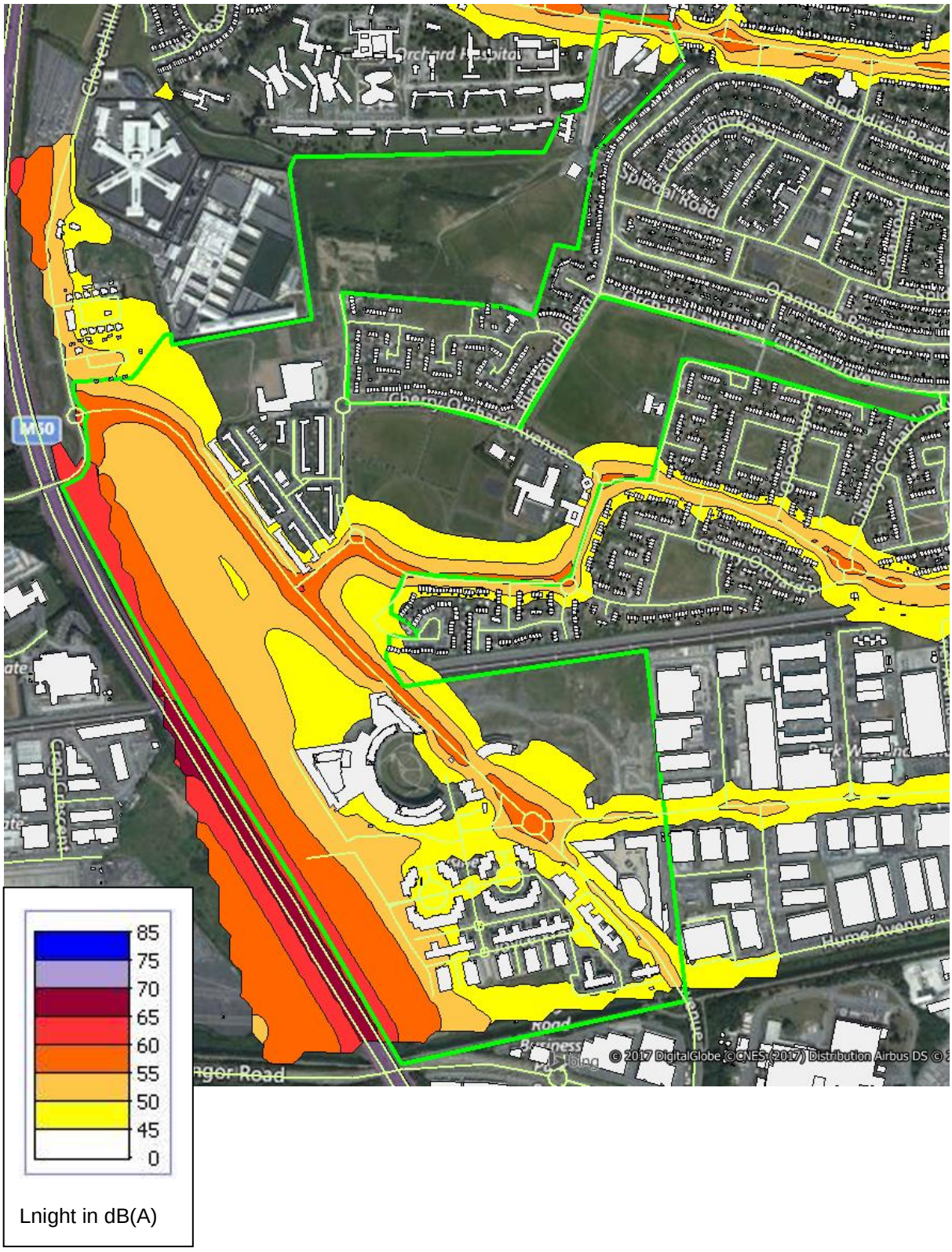
Table 5: Population exposure to traffic source emissions

All Road Sources Dublin City Council in dB(A)	Lden 24Hr All Road Values	Lday Day All Road Values	Lnight Night All Road Values	No. of Dwellings Exposed (Lden) All Road	No. of Dwellings Exposed (Lday) All Road	No. of Dwellings Exposed (Lnight) All Road
0-44	0	0	1297	0	0	645
45-49	0	0	404	0	0	200
50-54	8	4	28	3	1	14
55-59	1455	1426	8	724	710	4
60-64	261	297	0	129	147	0
65-69	14	10	0	7	5	0
70-74	0	0	0	0	0	0
>55	1729	1733	8	860	862	4
>65	14	10	0	7	5	0
>=70	0	0	0	0	0	0
>=75	0	0	0	0	0	0
Total	1737	1736	1736	863	863	863

Map 6: Daytime Noise Maps 2017, Traffic Sources (DCC Air Quality Monitoring and Noise Control Unit)



Map 7: Night Time Noise Maps 2017, Traffic Sources (DCC Air Quality Monitoring and Noise Control Unit)



3.4.7 Evolution of Air & Noise in the absence of the LAP

In the absence of the LAP for this area development of the key sites would be assessed under the City Development Plan in operation at the time of seeking panning consent. Without the LAP in place it is possible that sites would not be so forthcoming and population trends to the commuter belt would continue resulting in potential increases in noise and air pollution along the key road arteries. Opportunities for the provision of a higher quality public transport system may not be realised and this would result in increased shifts to private modes of transport with subsequent increases in noise levels and reductions in air quality.

The LAP provides greater guidance on the development for the sites adjoining the M50 having regard to the air and noise analysis of the SEA process. These sites are the most 'noise sensitive' section of the study area and the LAP is provided with an opportunity to guide the most suitable uses into this location.

Proposals to reduce the impact of traffic noise and air pollution within the draft LAP include: -

- LAP seeks non-noise sensitive uses along the M50, i.e. commercial uses including office and enterprise uses.
- Encourages high-density development in proximity to the train station to reduce non-sustainable means of travel.
- Reducing excessive driving speeds through the provision of appropriate traffic calming measures/ urban design principles.
- Enhanced pedestrian and cycle linkages to encourage sustainable modes of travel.
- Seeks a detailed noise and air assessment for development proposals adjoining the M50 and railway line, along with detailed mitigation strategy to reduce harmful effects.

3.4.8 Existing Environmental Issues relating to Air Quality & Noise

- Emission of air pollutants from road traffic remain the main threat to air quality. A modal shift from the private car to high quality public transport is therefore a priority.
- The levels of Nitrogen Oxide (NO_2) and Particulate Matter ($PM_{2.5}$ and PM_{10}) within the City remain a concern and will require attention in the coming years
- Implementation of the 'Dublin Agglomeration Action Plan relating to the Assessment and Management of Environmental Noise' is on-going.
- Evaluation of the most suitable types of uses for the noise sensitive sites within the Local Area Plan and Development Management process.

3.5 Climatic Factors

3.5.1 Introduction

The Intergovernmental Panel on Climate Change has concluded that human actions and activities are influencing the climate leading to warming of the oceans and atmosphere. Climate change is primarily associated with the increase in the global average temperature. The average global temperature in 2015 was 1ºC higher than the preindustrial levels. This record level follows three decades that were successively warmer than any preceding decade since 1850 (Source: Ireland's Environment – An Assessment 2016, EPA).

Ireland is 90% reliant on fossil fuels, for directly powering transport and machinery, and indirectly generating electricity and heat. 85% of the fossil fuels used in 2014 were imported into the country, at a cost of €5.7billion (Source: A Strategy towards Climate Change Action Plans, four Dublin Local Authorities & Codema). The emissions associated with this use of unsustainable energy contribute to the global rise in greenhouse gases and the subsequent increase in temperature that is changing weather patterns and sea levels. There is a need to both mitigate the impact of the city's activities on climate and to adapt to climate change. As there is no comprehensive data available at a local level for greenhouse gas emissions, climatic baseline data is provided at City level.

3.5.2 International Targets

Ireland is a signatory to the Kyoto Protocol (1997) and the later Climate Change conventions in which we have committed to reduce carbon emissions from the domestic economy. The most recent Climate Conference was held in Paris in 2015, referred to as the UN 21st Annual Conference of Parties (COP21). At this conference a new global agreement was reached to address climate change. The agreement aims to: -

- Hold the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C
- Increase the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas (GHG) emissions development in a manner that does not threaten food production
- Make finance flows consistent with a pathway towards low GHG emissions and climate-resilient development (Source: Ireland's Environment – An Assessment 2016, EPA).

The Paris Agreement is expected to enter into force in 2020. Progress will be determined by a regular global stock-take and inform subsequent EU actions.

3.5.3 European Targets

The EU 2030 Climate and Energy Framework (which was presented to the European Commission in January 2014, prior to the Paris Convention) proposes new targets and measures to make the EU's economy and energy system more competitive, secure and sustainable. It includes targets for reducing greenhouse gas emissions and increasing use of renewable energies: -

- Commitment to continue reducing GHG emissions with a reduction target of 40% by 2030 relative to 1990 levels

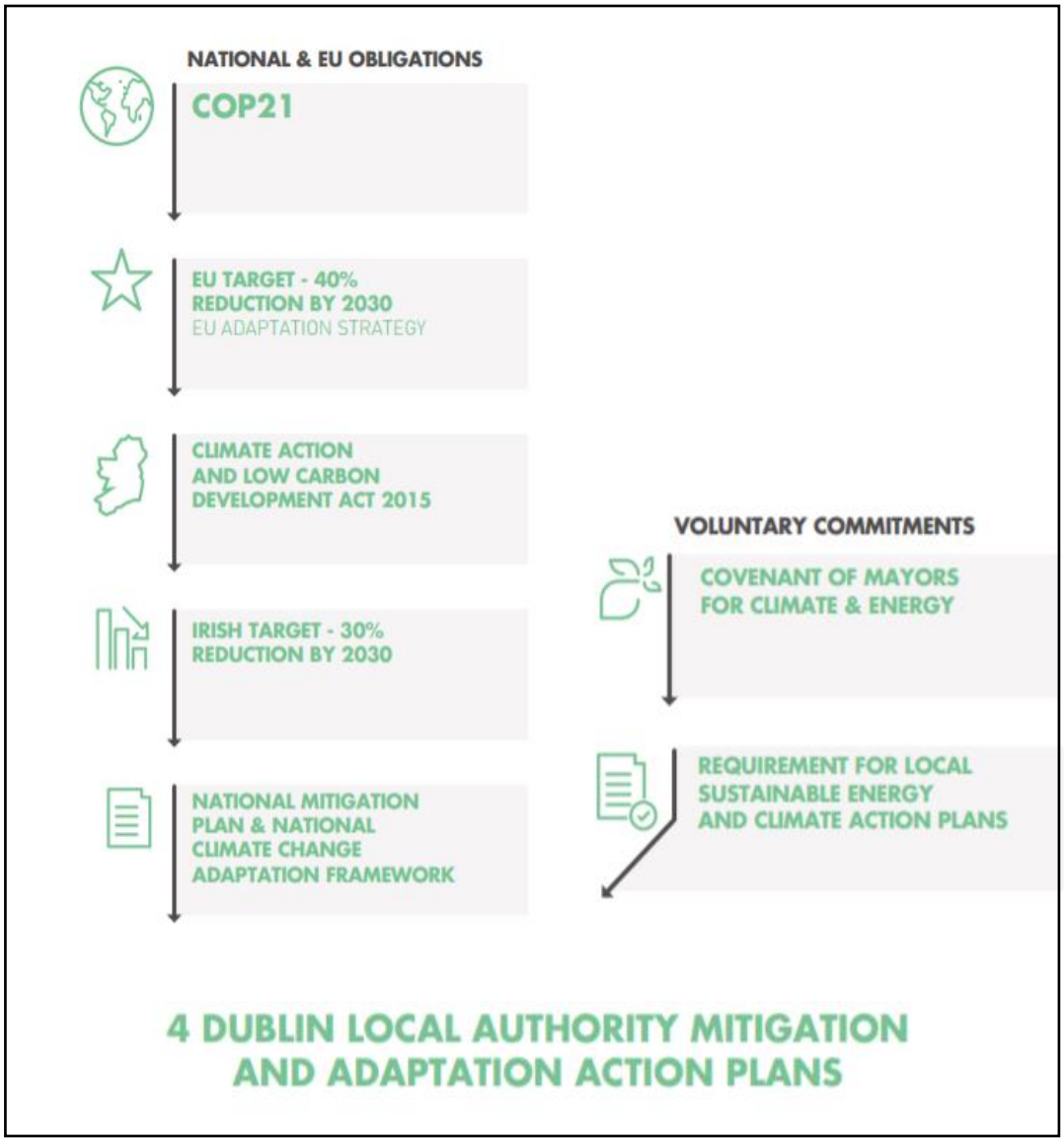
- Renewable energy target of at least 27% of energy consumption, with flexibility for member states to set national targets

Ireland has an EU-proposed national binding target to reduce its greenhouse gas emissions by 30% by the year 2030, relative to its 2005 emission, under the EU 2030 emissions targets published by the European Commission in July 2016. Ireland has received some margins for flexibility: -

- 4% flexibility through emissions trading, and
- 5.6% flexibility from land use (in agriculture)

which equates to a reduction requirement of a least 20.4% (source 'A Strategy towards Climate Change Action Plans, for the Dublin Local Authorities', four Dublin local authorities and Codema). For Dublin, this target translates into challenging reductions in fossil fuel use for transport (petrol/diesel) and for heating buildings (gas/oil).

Figure 9: Strategy towards Climate Change Action Plans Background and Influences (source 'A Strategy towards Climate Change Action Plans, four Dublin Local Authorities & Codema)



3.5.4 National Policy on Climate Change

The EU commitments at COP21 to reduce GHG emissions by 40% by 2030 have underpinned the enactment of the Climate Action and Low Carbon Development Act 2015 in Ireland. This Act has two main aims: -

(c) The creation of a national mitigation plan to reduce or prevent greenhouse emissions,

(d) The development of a national adaptation framework to reduce the negative effects of climate change.

The National Adaptation Framework and National Mitigation Plan put a statutory obligation on local authorities to create their own local adaptation framework and mitigation plan for their own area.

3.5.5 Dublin Policy on Climate Change

To assist in meeting the above the four Dublin Local Authorities (DLAs) jointly prepared the 'Strategy towards Climate Change Action Plans' in 2017. This strategy is the first step towards developing collaborative, transboundary Dublin climate change action plans that will help to prevent the harmful activities that are releasing greenhouse gases into the atmosphere and limit the impact of the effects that are inevitable.

It is a strategy document and does not include specific targets and actions, as these will be decided during the action plan development phase to be influenced by the National Adaptation Framework and the National Mitigation Plan. The strategy is aiming to synchronise the methodologies to complete Dublin regional energy and CO2 baselines and maps for energy use and associated CO2 emissions. This will facilitate a collaborative process between the Dublin Local Authorities, which will ultimately progress into the development of four separate action plans, one for each local authority (see section 3.5.6 below).

In January 2018 under the National Adaption Framework, the National Mitigation Plan and the Climate Act 2015 the Department of Communications, Climate Action and Environment announced the establishment of four Local Authority Climate Action Regional Offices (CAROs). The CAROs will establish centres of expertise that will be available to local authorities in the region to ensure consistency within the various local authority plans and deal with cross boundary issues within and across the regions. The regional teams will bring an element of cohesion to the multiplicity of agencies and relationships for the benefit of all sectors.

Each Regional Office will be established and operated by a single lead local authority. The Dublin Metropolitan Climate Action Region compromises the four Dublin Local Authorities. Dublin City Council is the lead Authority for the Dublin Metropolitan Climate Action Regional Office. The Dublin CARO will focus on risks particular to urban areas. The first priority of the office is the preparation of the Regional Adaption Plan that includes the establishment of baseline data and the identification of work parcels to further develop actions identified in the current Draft Climate Action Plan (see Section 3.5.6 below) to be carried into the Regional Plan.

3.5.6 Dublin City Policy on Climate Change: Climate Change Action Plan 2019-2024

Following on from the publication of the 'Strategy for Climate Change Action Plans for the Dublin Local Authorities' the City Council developed its own Climate Change Action Plan, which was approved by the members of the Council in May 2019.

The main risk areas identified in the plan for Dublin City are: -

- Sea level rise

- Flooding
- Extreme weather events (storms, heat waves etc.)

The Plan sets out how the Council will improve energy efficiency and reduce greenhouse gas emissions in its own buildings and operations, while making Dublin a more climate-resilient city.

The four key targets of the Draft Plan area: -

- 33% improvement in the Council's energy efficient by 2020
- 40% reduction in the Council's greenhouse gas emissions by 2030
- To make Dublin a climate resilient region by reducing the impacts of future climate change-related events
- To actively engage and inform citizens on climate change

This will be achieved by a series of actions that will be continually monitored and evaluated by a dedicated climate action team working across all Council departments. This team will be assisted by a new Dublin Metropolitan Climate Action Regional Office which will ensure that the overall plan is fully updated every five years.

3.5.7 Evolution of Climatic Factors in the Plan Area in the absence of the LAP

In the absence of a Local Area Plan for Park West – Cherry Orchard land use planning decisions are based upon the Dublin City Development Plan.

A priority of the 2016-2022 Development Plan's core strategy is the achievement of a socially inclusive city of urban neighbourhoods, all connected by an exemplary public transport, cycling and walking system and interwoven with a quality bio-diverse green space network. While the issue of climate change is a trans-boundary issue and largely outside the control of any one functional area or local authority, these positive policies and objectives of the City Development Plan core strategy assists is having an overall beneficial impact on climate change. The emphasis in the Development Plan on sustainable infrastructure will help to mitigate climate change.

The LAP states that all new developments must comply with the City Development Plan in terms of sustainable building and design standards. The LAP offers site specific guidance as to the proposed uses for key development sites, which aims to optimise land use, especially in proximity of the train station, and reduce opportunities for unsustainable travel patterns. It also includes measures to increase the level of planting locally in the area, in parks and along key green routes and streets, which can act as a carbon sink.

3.5.8 Existing Environmental Issues relating to Climatic Factors

The following broad range of issues can be identified, which include Citywide and wider more strategic issues: -

- A decrease in CO2 emissions is required
- Emissions of air pollutants, particularly from road traffic, remain one of the threats to global warming; modal shift from the private car to high quality public transport is required
- Holistic planning – siting considerations, inclusion of green infrastructure, SUDS etc.
- Promotion of the use of renewable energy sources
- Importance of city vegetation / landscape to act as a carbon sink.
- Rising sea levels
- Greater co-ordination with the other planning authorities in the Greater Dublin Region to respond to these shared regional issues set out

3.6 Water Services (including flooding)

3.6.1 Introduction

The issue of water is addressed under the following three sub-headings: -

3.6.2 Water Framework Directive and Water Quality

3.6.3 Water Services (including supply and drainage)

3.6.4 Flooding

3.6.2 Water Framework Directive

Water quality is protected under the Water Framework Directive 2000/06/EC, which seeks to prevent deterioration and achieve at least good status in rivers, lakes, estuaries, coastal and ground water.

The Water Framework Directive was transposed into Irish legislation through the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003). The Directive promotes integrated river basin management as the most efficient way to achieve its aims. For the purposes of implementing the Directive, Ireland was originally divided into eight river basin districts and a River Basin Management Plan (RBMPs) was prepared for each. The LAP area being located in the Eastern River Basin District (ERBD).

For the second cycle of River Basin Management Planning a new approach has been adopted with Ireland defined as a single River Basin District. In 2018, the Department of Housing, Planning and Local Government published the 'River Basin Management Plan for Ireland 2018-2021'.

River Basin Management Plan for Ireland 2018-2021

Water quality in Ireland has deteriorated over the past two decades. This Plan sets out the actions that Ireland will take to improve water quality and achieve 'good' ecological status in water bodies by 2027. The main actions of the Plan are: -

- Improved waste water treatment – Irish Water investment in over 250 waste water treatment projects between 2017-2021
- Conservation and leakage reduction – Irish Water will implement measures to reduce water leakage
- Scientific assessments of water bodies and implementation of local measures
- New collaborative Sustainability and Advisory Support Programme between the State and the dairy industry
- Dairy sustainability initiative to help improve water quality
- Development of water and planning guidance for local authorities to help consider risks to water quality during planning and development decision making
- Extension of the Domestic Waste Water Treatment Systems grant scheme
- Blue Dot Catchments Programme – new programme to create a network of excellent river and lake areas
- New Community Water Development Fund

Water Framework Directive (WFD) Protected Areas

Article 6 (Annex IV) of the Water Framework Directive requires each Member State to establish a register of protected areas for water bodies or parts of water bodies that must have extra controls on their quality by virtue of how their waters are used by people and wildlife. This register is split into five categories as outlined by the EPA[2]:

i. Areas designated for the abstraction of water intended for human consumption under Article 7;

ii. Areas designated for the protection of economically significant aquatic species (i.e. shellfish);

iii. Bodies of water designated as recreational waters, including areas designated as bathing waters under Directive 76/160/EEC;

iv. Nutrient-sensitive areas, including areas designated as vulnerable zones under Directive 91/676/EEC and areas designated as sensitive areas under Directive 91/271/EEC; and

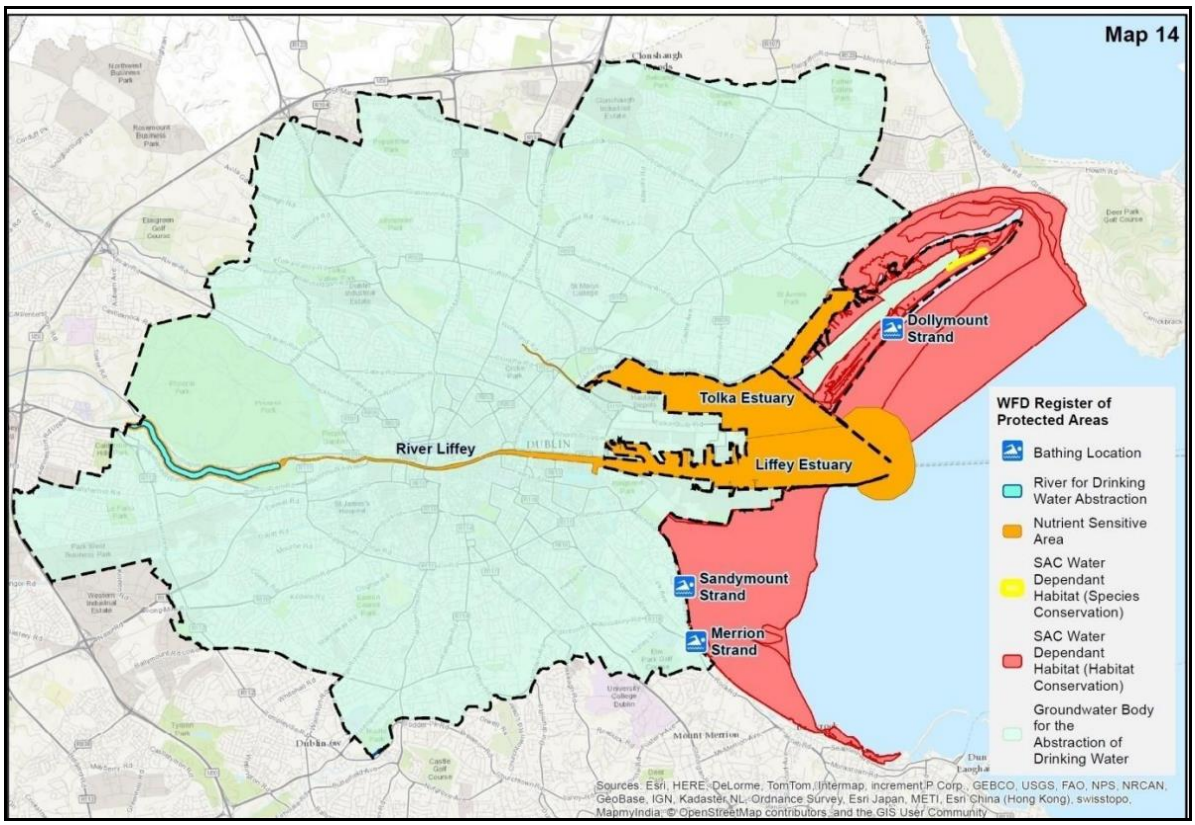
v. Areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection, including relevant European Sites (Natura 2000) designated under Directive 92/43/EEC (1) and Directive 79/409/EEC (2).

A number of these WFD protected areas are present within Dublin City Council administrative area, see Map 8 for the locations and distribution of these areas): -

- Bathing locations (Dollymount, Merrion Strand and Sandymount)
- Nutrient Sensitive Areas (River Liffey, Liffey Estuary and Tolka Estuary)
- Special Areas of Conservation; Water Dependent Habitat and Species Conservation Objectives (various water dependant habitats such as terrestrial wetlands, mudflats and sandflats, saltmarsh habitats and marine community types associated with North Dublin Bay SAC and South Dublin Bay SAC)
- Rivers for the abstraction of drinking water (River Liffey)
- The associated groundwater body for the abstraction of drinking water (Dublin Urban Groundwater body)

[2] WFD Register of Protected Areas Guidance Document and GeoDatabase. EPA (2015)

Map 8: Water Framework Directive, Protected Areas for Dublin City

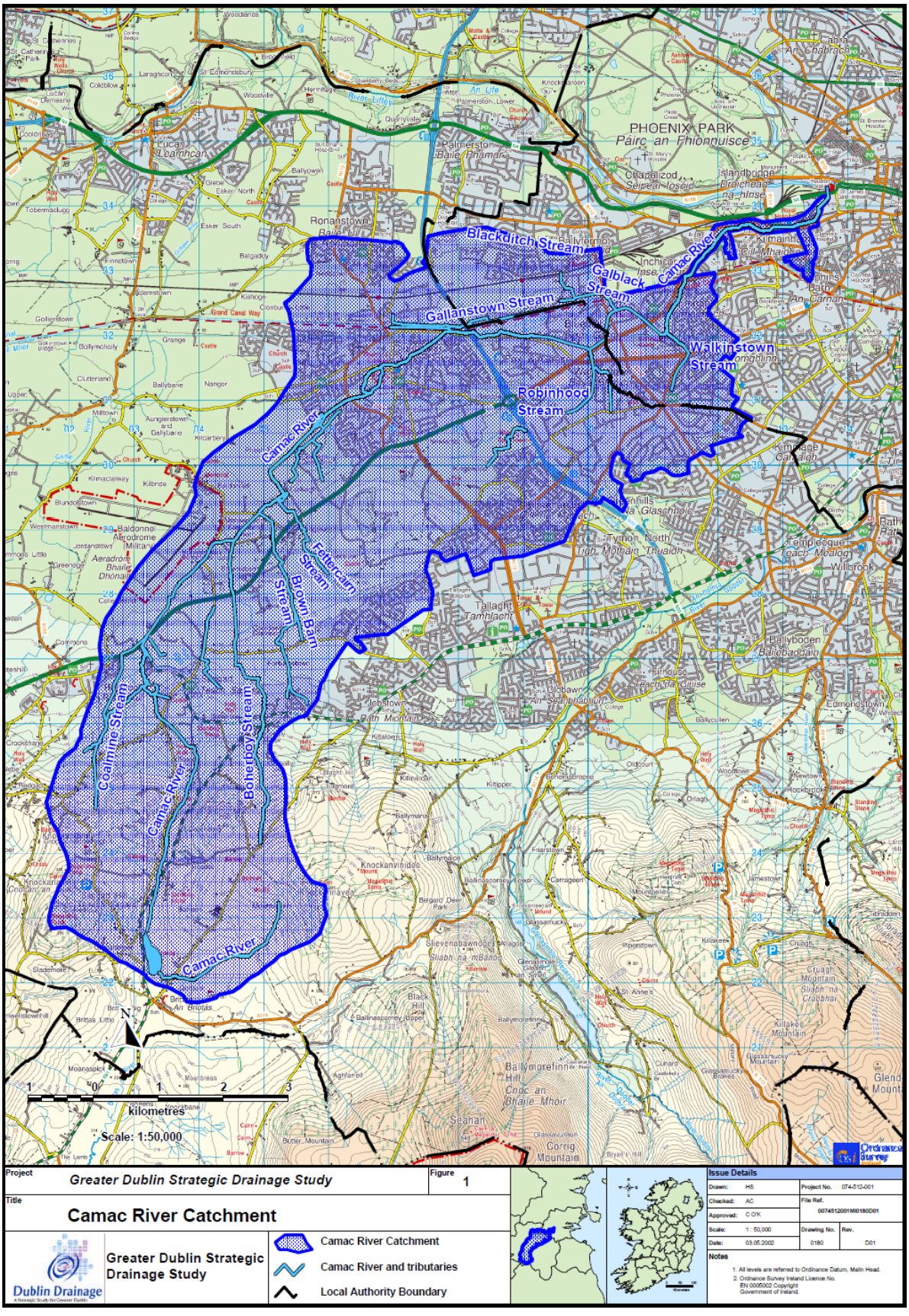


Quality of Water in Dublin's Rivers

Dublin City has river water bodies monitored under the Water Framework Directive, including the Liffey, Tolka, Santry, Dodder and Camac rivers. The majority of the LAP lands fall within the River Camac Drainage Catchment, which runs just below the southern boundary of the LAP (i.e. to the south of the Grand Canal), see Map 9 over. In the Water Framework Directive status phase 2010-2015 the Camac River is classified as 'at risk'. The ecological, biological and invertebrate status or potential are all classified as 'poor'.

Dublin City Councils Environmental Services section are currently examining the River Camac under the Water Framework Directive as part of implementing the Camac Greenway, with an objective to improve its status from "Poor Status" up to "Good Status".

Map 9: **Camac River Catchment** (from the Greater Dublin Strategic Drainage Study)



Dublin City Council's Water Framework Management Strategy provides the following guidelines for development proposals within the Camac Catchment.

Sites directly on the Camac River or tributaries must demonstrate how they are alleviating the confirmed pressures on the Camac Catchment:

i. *Hydromorphological interventions: 'daylighting' of culverts; renaturalising river banks, including providing space for river widening and channel re-profiling; re-establishing natural river floodplains; augmentation of riparian corridor; all and any natural water retention measure deemed necessary to manage flood risk within the catchment etc.*
ii. *Water quality: directing discharges to the river to a minimum of two stages of Sustainable Drainage Systems (SuDS) treatment prior to discharge to tackle diffuse urban pollution (including road run-off)… in addition to existing surface water management policies*
iii. *Green infrastructure to slow flows and maximise presence of natural land cover*
iv. *Possible groundwater monitoring: water quality and seasonal variations, where appropriate*

Sites in the Camac River Valley (within 200m of the Camac River or tributaries)

v. *Green infrastructure to address road run-off (and other diffuse urban run-off)*
vi. *Possible groundwater monitoring: water quality and seasonal variations, where appropriate*
vii. *Tagging proposed gullies with "Camac Valley"*

Quality of Water in Dublin's Canals

Canals are artificial water bodies that provide a habitat for many species including aquatic plants, insects, fish and birds. The EPA's 2017 water quality assessment[3] is primarily based on biological quality, through the surveying of aquatic plants and invertebrates. Biological quality is presented as either:

- Maximum
- Good
- Moderate
- Poor, or
- Bad.

Survey work during the 2015-2017 period, identified this stretch of the Grand Canal south of the LAP area as of 'Good' biological quality. In general biological quality in the Grand and Royal Canals has shown an overall improvement since the 2013-2015 period.

[3] Environmental Protection Agency (2018), '*Water Quality in 2017: An Indicators Report*

3.6.3 Water Services (including supply and drainage)

3.6.3.1 Introduction

From the 1st of January 2014 Irish Water became responsible for all public water services involving the supply of drinking water and the collection, treatment and disposal of wastewater. The Water Services Strategic Plan (2015) sets out the objectives for the delivery of water services over the next 25 years up to 2040.

In order to inform the LAP preparation process a high level opportunities and constraints study in relation to transport, drainage infrastructure and utilities was undertaken by ARUP consultants, the results from which are utilised in this report.

3.6.3.2 Drinking Water

Drinking water for the Dublin Region is currently finely balanced and there is a recognised need to identify a new major water supply to meet project demand in the long-term. Irish Water is pursuing a project of bringing water from the Parteen Basin, downstream of Lough Derg, (on the Shannon River), with water treatment nearby at Birdhill, and treated water distributed by a pipeline through the Midlands and Eastern Region, serving communities along the route to Dublin. This scheme is known as the Water Supply Project for the Eastern and Midlands Region (WSP) and is required to provide the GDA's water supply after 2025. Irish Water is proposing to submit a planning application for the WSP to An Bord Pleanála in 2019, with construction and commissioning commencing 2022-2025.

Until the WSP commences production (2025) the City is reliant on finite local sources of water, primarily from the River Liffey and the supply from the Varty. There is very modest headroom margin in the context of growth in demand (headroom of c. 2% which is not sufficient as noted during extreme emergency weather periods, such as Storm Emma, when the city experienced night time curtailments of service; 2018). As such Irish Water is targeting leakage savings in the short to medium term (7-10 years) to serve the development needs of the GDA region.

Drinking water quality in the City is monitored annually, and the 2018 results for the LAP area (Water Supply Zone; DCC Zone 1) are as follows: -

Table 6: Drinking Water Quality in the City, 2018

Parameter	Tests Undertaken	Exceedances	% of Tests within Exceedance Limit
Bacteria & Protozoa	968	1	99.90
Chemicals	635	0	100
Metals	796	5	99.37
Other	1961	121	93.83

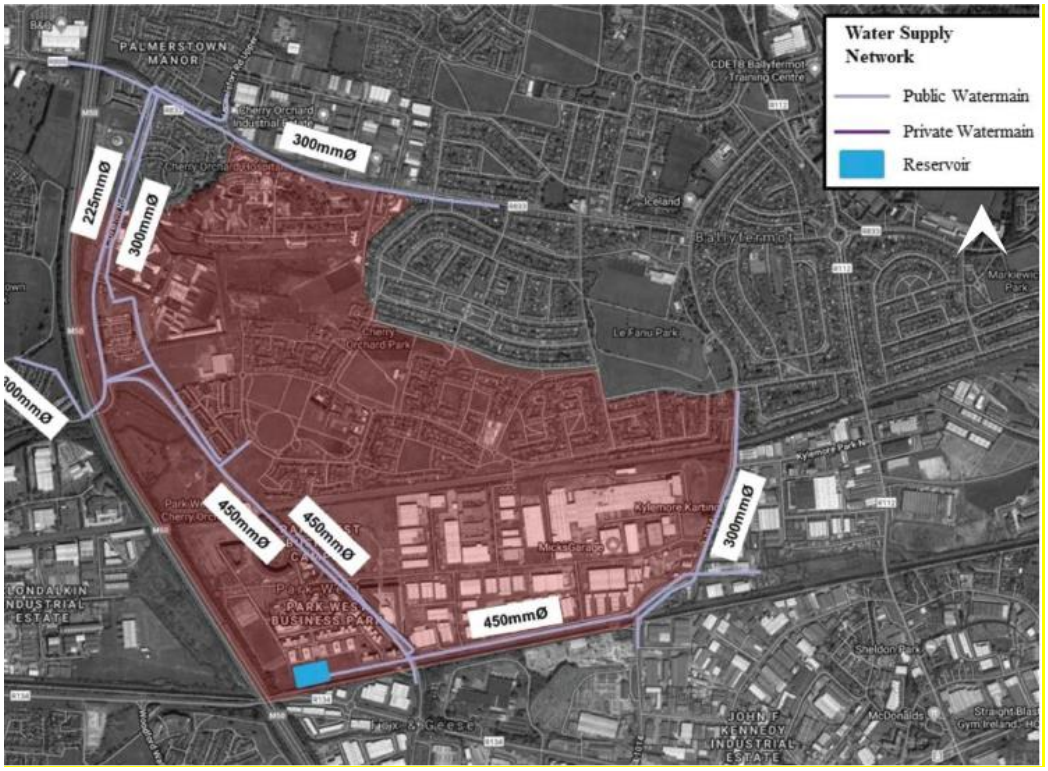
For the 'other' parameter the exceedances related to 'Free Residual Chlorine' that was exceeded 87 no. times and 'Total Residual Chlorine' which was exceeded 34 no. times. There is no regulatory limit for chlorine, however the EPA have set a recommended level to disinfect / kill harmful bacteria.

An analysis of the existing water supply infrastructure within the LAP lands identifies that the LAP lands are currently served by the Ballymore Eustace supply via the Saggart reservoir and the Belgard reservoir. There are two main trunks serving the LAP lands. A 300mm Ductile Iron trunk main traverses the M50 at Coldcut Road, north of the LAP lands and continues along Ballyfermot Road along the northern boundary of the LAP lands.

From the trunk main there is a 300mm asbestos main spur that branches off into the LAP lands west of Wheatfield and Cloverhill prisons, underneath Cloverhill road to serve the LAP lands.

In addition to the above, there is a 300mm trunk main traversing the M50 at Cloverhill Road, which connects to the 300mm asbestos main spur at the Cloverhill Road roundabout. From here a 450mm ductile iron main branches off and runs south along Park West Avenue, exiting the LAP lands at the southern boundary. Feedback from Irish Water indicates that some of the existing older watermains from the 1950s/ 1960s in the area may need upgrading.

Map 10: Existing Water Supply Infrastructure (ARUP Aug 2018**)**



3.6.3.3 Drainage Services – Waste Water

At a City level drainage services are close to capacity and Irish Water is progressing plans to upgrade and expand the Ringsend Wastewater Treatment Plant to meet future demand (i.e. increase capacity from 1.64 million PE to 2.1 million PE). On the 24th April 2019 An Bord Pleanála gave planning approval for a 10 year permission under section 37(E) of the Planning and Development Act (Strategic Infrastructure) for development at Ringsend Wastewater Treatment Plan and for a new Regional Biosoils Storage facility. This project on completion will represent a significant wastewater infrastructure development for the Greater Dublin Regional area, allowing it to cater for a growing population.

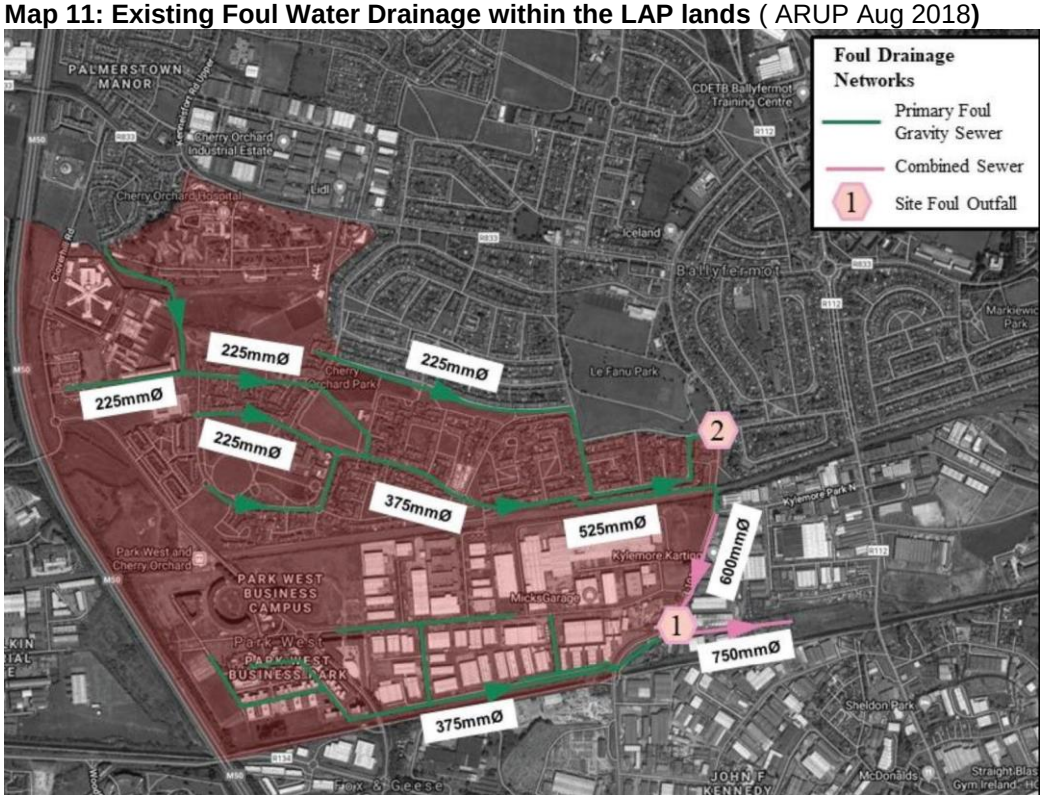
An analysis of the existing foul drainage infrastructure within the LAP lands identifies two wastewater drainage sub-catchments, namely the 9B trunk sewer to the South and West and the City Centre sub-catchment to the North and East both of which are within the Ringsend WWTW Catchment.

The LAP area is constrained by a number of hard boundaries such as the M50, Canal and Railway Line which are physical barriers which constrain the delivery of new drainage infrastructure and new drainage outfalls. Irish Water are currently undertaking studies and surveys to prepare a Drainage Area Plan and model for the area. The report and model

will identify the main issues and propose solutions for same. It is estimated that the date for completion of this study is the end of 2020. At present, the development of the LAP lands has the following known constraints: -

- The sewers in the area nearest the undeveloped land are generally small in size and may require upsizing
- The catchment is constrained by the capacity of the deep twin 300mm sewer crossing beneath the railway line; this is a critical crossing point
- Previous surveys have noted sewer surcharging in the Cherry Orchard Avenue area
- New model for the area draining to the 9B will be required to assess its development impact

Map 11: Existing Foul Water Drainage within the LAP lands (ARUP Aug 2018**)**



3.6.3.4 Drainage Services – Surface Water

On analysis of drainage catchments and the existing surface water infrastructure within the lands, it has been concluded that the majority of the LAP lands are located within the catchment of the River Camac, which rises in the Dublin Mountains, and runs in close proximity to the southern boundary of the lands, see Map 9 above. While a small area near the northern boundary of the LAP lands (mainly the Cherry Orchard Hospital lands), and another small area near the eastern boundary of the lands north of the railway line and adjacent to Killeen Road are located within the Lower Liffey Lyreen Ryewater catchment (see Map 12).

The lands within The River Camac Catchment drain to a single outfall (Outfall A) at the south-eastern corner of the Park West Industrial lands. The two smaller areas of land which lie within The Lower Liffey Lyreen Ryewater Catchment drain to two separate outfalls; lands within the northern section of the LAP in the vicinity of the Cherry Orchard

Hospital drains to (Outfall B) at Ballyfermot Road while the smaller area of land within the eastern section of the LAP drains to (Outfall C) at Le Fanu Road (Map 12).

A number of tributaries of the Camac River traverse the LAP lands. The Gallanstown stream rises west of the M50, is piped in a 1.7m diameter sewer beneath Hume Avenue in the Park West Business Park adjacent to the Grand Canal, and exits the LAP lands at Killeen Road at the south-east corner of the lands, where it meets with the piped Blackditch Stream. Once these two streams meet they are referred to as the Galback Stream (Map 13).

The entirety of the Park West area, south of the railway line, drains to the piped Gallanstown Stream, which exits the LAP lands at the south-east corner (Outfall A) and eventually drains to the Camac River. The majority of the Cherry Orchard area, north of the railway line, drains to the piped Blackditch stream, which also exits the LAP lands at their south-east corner (Outfall A) and eventually drains to the Camac River. As previously alluded to, a small portion of the Cherry Orchard area drains to Le Fanu Road, exiting the LAP lands at Outfall C. The area in the vicinity of the Cherry Orchard Hospital and the Ballyfermot Primary Care Centre drain to a 1.5m sewer which runs along the southern boundary of the hospital and exits the LAP lands at Outfall B (Map 14).

A network of surface water sewers feed into this strategic network which is well developed in the built-out areas of the Park West Industrial Estate and Business Campus and the Cherry Orchard residential area, however there is a lack of existing drainage infrastructure in the vicinity of some of the proposed development sites, in particular in the vicinity of the M50 at the western boundary of the LAP lands.

Compensatory Flood Volume Storage

Within Cherry Orchard Park there is a large compensatory flood volume storage area, which is believed to be relate to the adjoining Cedar Brook residential scheme. The LAP explores the relocation of this space, in particular along the southern boundary of the park in order to provide increased amenity space.

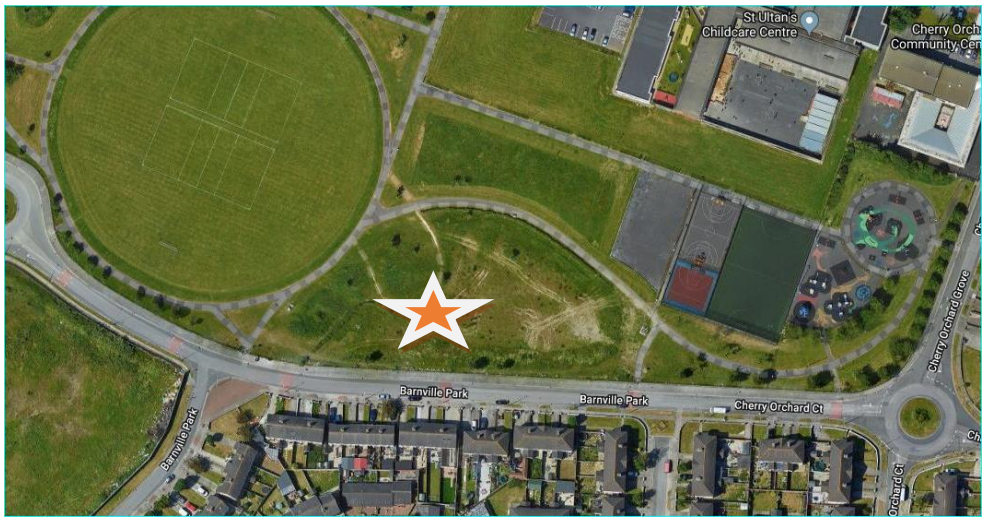
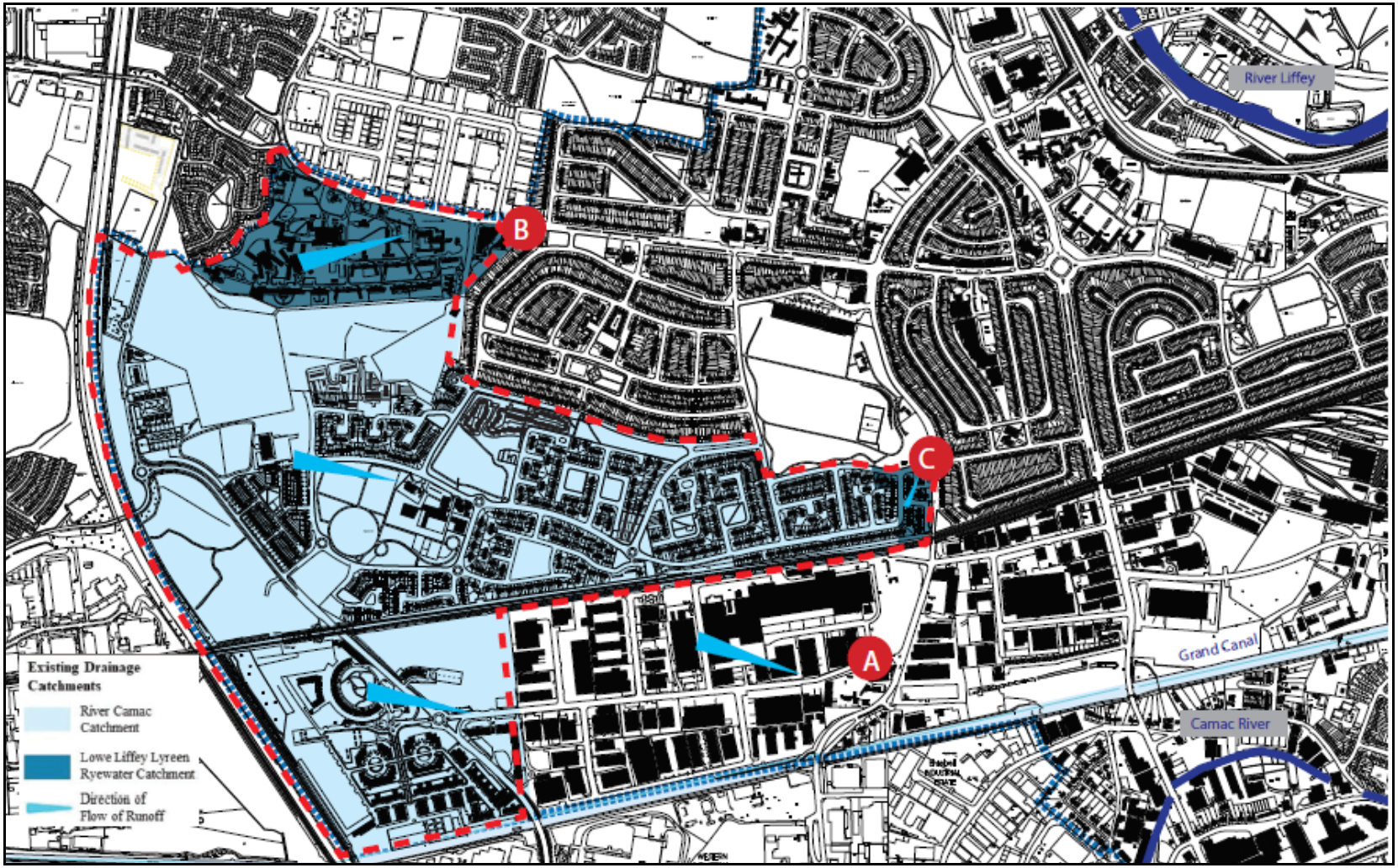
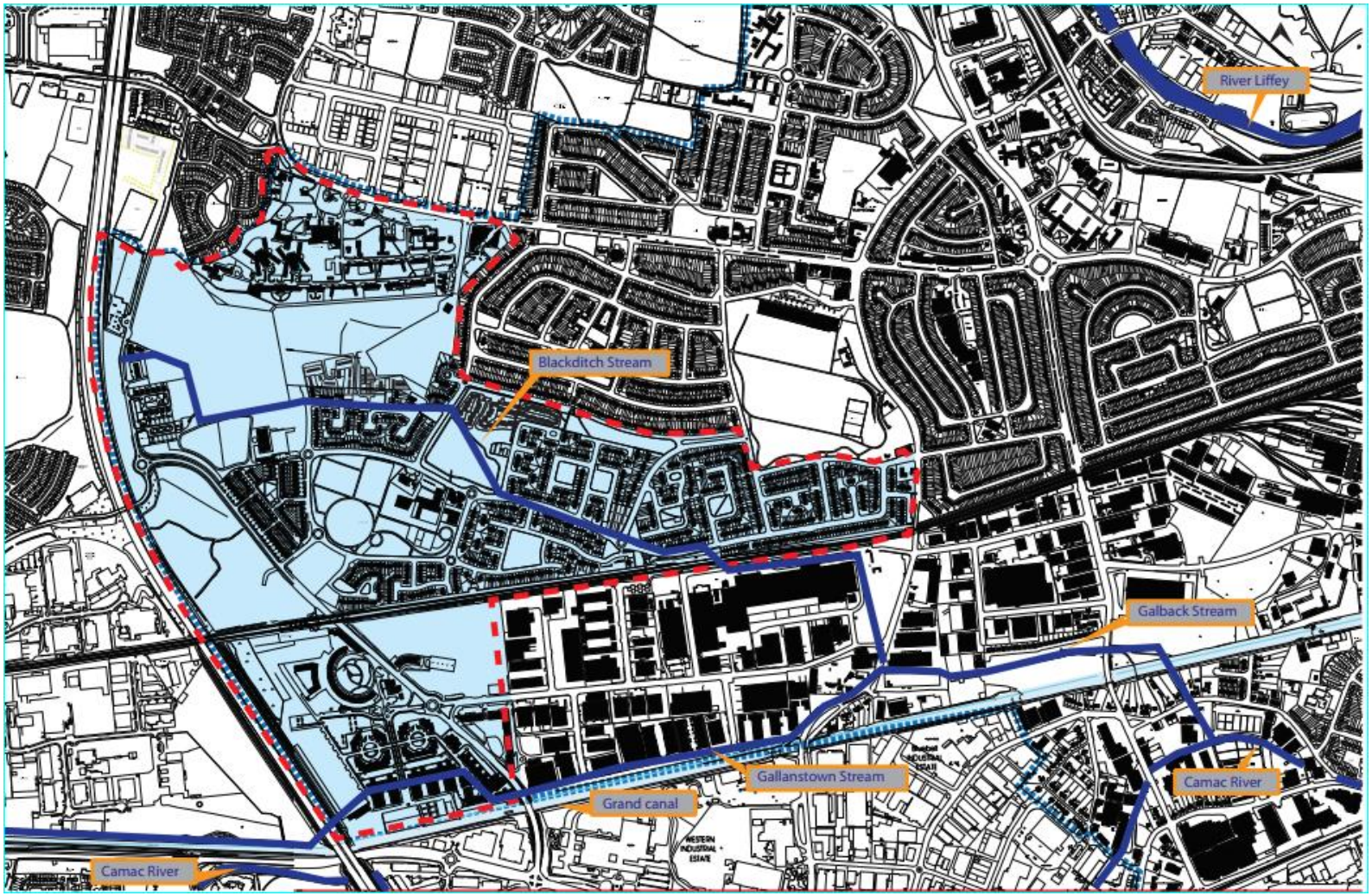


Image: Cherry Orchard Park showing flood storage area.

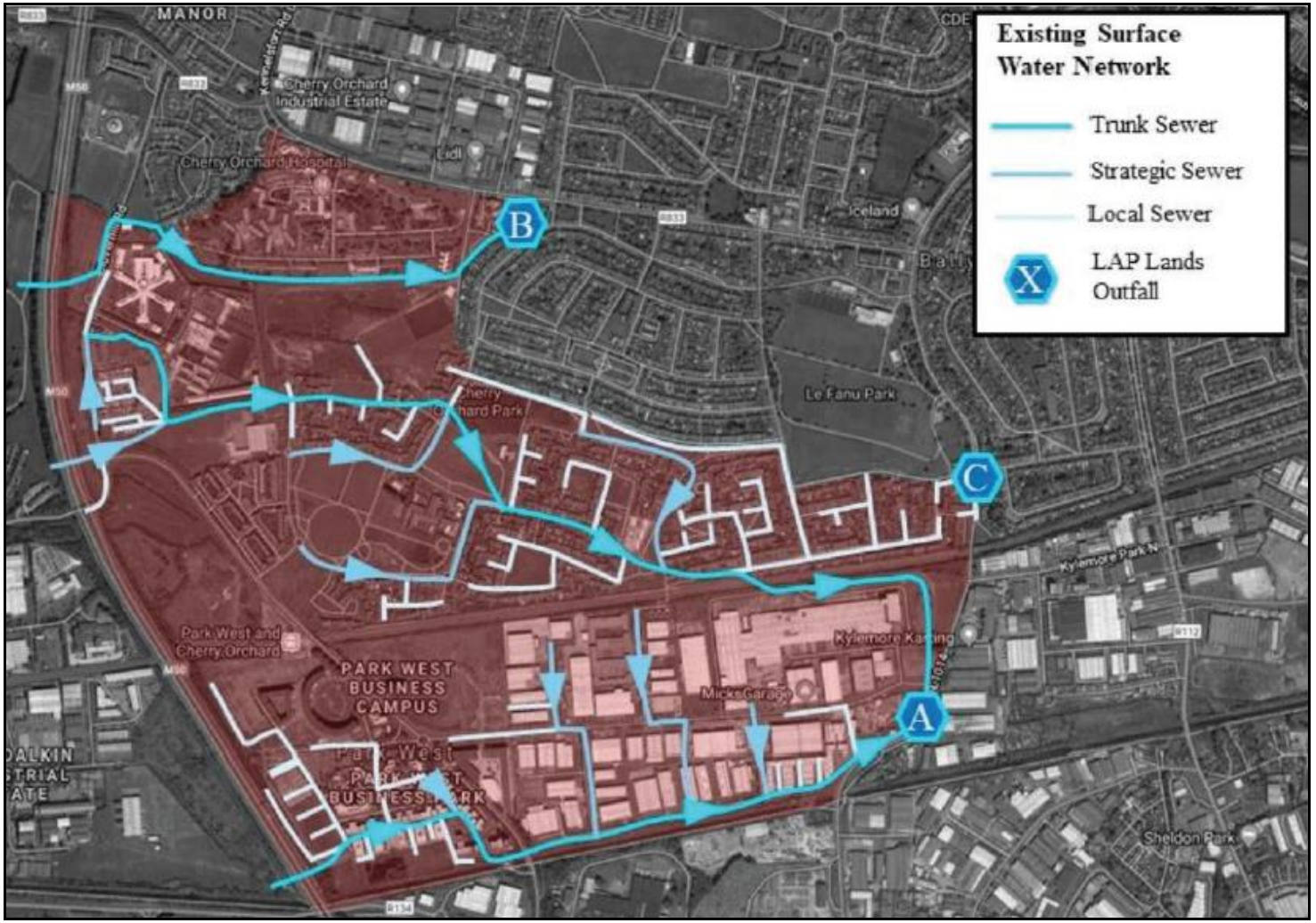
Map 12: Existing Surface Water Catchments (ARUP Aug 2018)



Map 13: Existing Watercourses (ARUP Aug 2018)



Map 14: **Existing Surface Water Network** (ARUP Aug 2018)

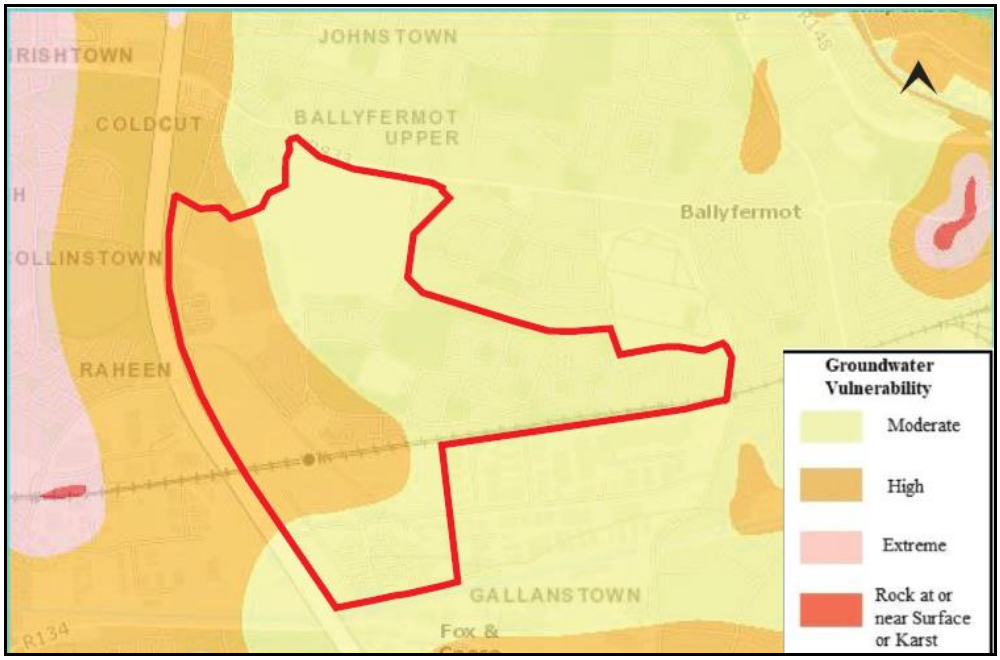


Ground Water Vulnerability

Groundwater is stored in the void spaces underground layers of rock, or aquifers. These aquifers are permeable, allowing both the infiltration of water from the soils above them and the yielding of water to surface and coastal waters. Groundwater is the part of the subsurface water that is in the saturated zone – the zone below the water table, the uppermost level of saturation in an aquifer at which the pressure is atmospheric, in which all pores and fissures are full of water.

The Geological Survey of Ireland rates aquifers based on their hydrological characteristics as well as on the value of the groundwater resource. At a strategic level the groundwater vulnerability within the majority of the LAP area is identified as moderate, however the lands adjacent to the M50 are identified as high, see Map 15. Any development within the LAP lands, particularly within the area identified as having High groundwater vulnerability, will need to carefully consider groundwater impacts. It is recommended that further ground investigations are carried out at each of the proposed development sites in order to determine the suitability of each area for the incorporation of SuDS mechanisms.

Map 15: Groundwater Vulnerability (source, GSI)



3.6.4 Flood Risk

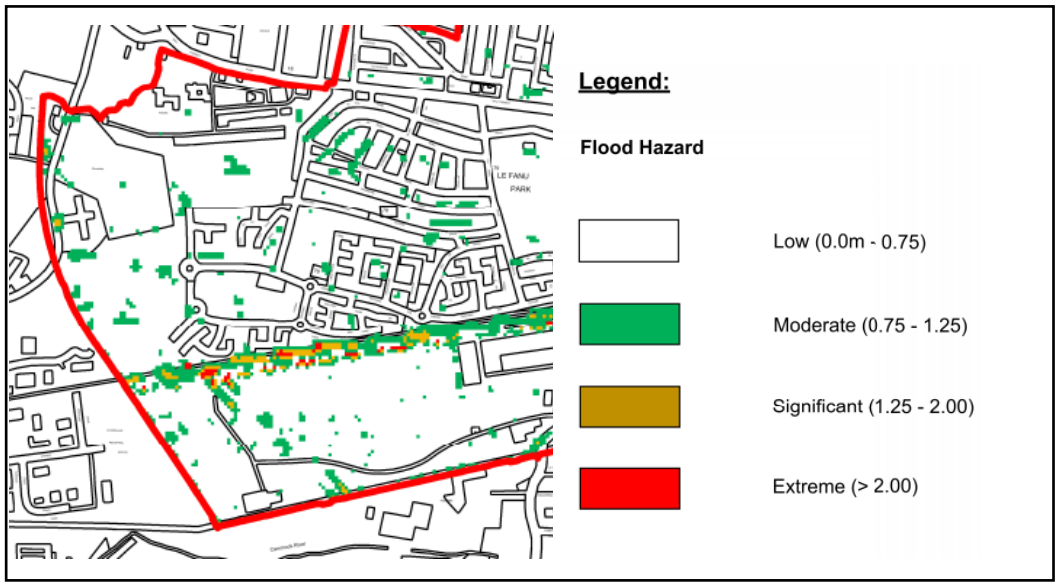
'*The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices, 2009'*, were issued under Section 28 of the Planning and Development Act 2000 as amended, and require Planning Authorities to introduce flood risk assessment as an integral and leading element of their development planning functions. It sets out that development plans and local area plans, must establish the flood risk assessment requirements for their functional area.

Flooding is a natural process which cannot be prevented entirely but it can generally be managed to reduce its social and economic consequences and to safeguard the continued functioning of services and infrastructure.

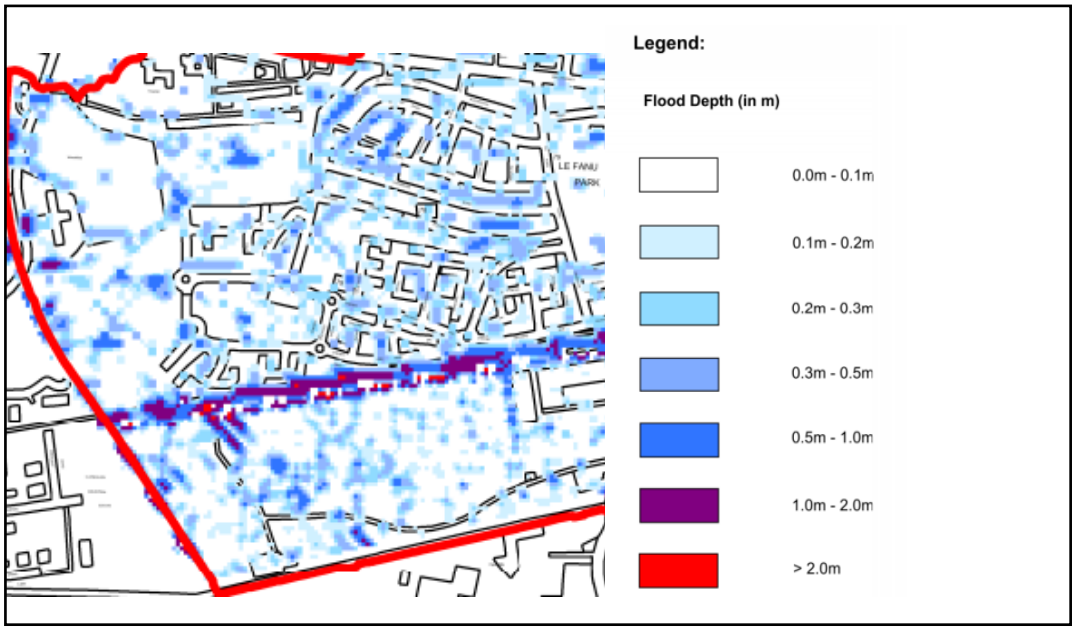
As part of the preparation of the LAP, a Stage 1 Flood Risk Assessment has been prepared in accordance with the guidelines and is included as a separate document. The Park West – Cherry Orchard LAP area is located within "Zone C" as per the Department Guidelines, where the probability of flooding from rivers and sea is low. All development within this zone is appropriate from a flood risk perspective.

As part of the Strategic Flood Risk Assessment for the Dublin City Development Plan 2016-2022 Flood Hazard and Flood Depth maps were produced. See Maps 16 and 17 below for reference to the LAP area.

Map 16: Type 1 Pluvial Flood Hazard Map (1% AEP Event – 3 Hr Duration Model)



Map 17: Type 1 Pluvial Flood Depth Map (1% AEP Event – 3 Hr Duration Model)



3.6.5 Evolution of Water in the Absence of LAP

The pure storm (surface) water system is managed by Dublin City Council. The combined storm (surface) water and foul system and foul drainage system are managed by Irish Water. Current indications are that investment is required to upgrade the storm (surface) water system in order to cope with projected increased in rainfall due to climate change and possible developments in Dublin City and adjoining County Councils to the year 2100. It is DCC's intention to develop a plan for these networks in liaison with Irish Water where required.

In the absence of the LAP land use planning decisions and planning applications will be guided by the Dublin City Development Plan in operation at the time. The current Dublin City Development Plan 2016 – 2022 contains numerous policies and objectives in relation to water management to help meet statutory criteria set down under the Water Framework Directive. The Planning Authority will have regard to the Strategic Flood Risk Assessment carried out as part of the Development Plan, in particular with regard to Chapter 9 which deals with sustainable environmental infrastructure and to any pertinent Flood Risk Assessment submitted with a planning application.

Furthermore it is a requirement that any application for new development either with or without the LAP, demonstrates that the discharge of wastewater from a proposed development, in conjunction with existing discharges would not cause non-compliance with the Regulations.

3.6.6 Existing Environmental Issues relating to Water

Including localised as well as more strategic issues: -

- Maintaining and/or improving the water quality of water bodies in/traversing the plan area in line with the River Basin Management Plan for Ireland 2018-2021.
- Ensuring the availability of necessary water infrastructure to ensure adequate capacity, drainage and treatment to accommodate the existing and future quantum of development and economic growth envisaged by the LAP.
- Exploit opportunities to improve discharged water quality and reduce opportunities for pluvial flooding by the implementation of SUDS in new developments.
- Requirement to conserve water.

3.7 Material Assets (Transport & Waste Management)

3.7.1 Transport

3.7.1.1 Transport Policy

Smarter Travel – A Sustainable Transport Future 2009 – 2020

The overarching aim of this document is that by 2020 future population and economic growth will occur predominantly in sustainable compact locations. It sets out how the government's vision of sustainable travel and transport in Ireland by year 2020 can be achieved. A target of reducing car based commuting from 65% to 45% nationally by 2020 is set. Five key goals of 'Smarter Travel – A Sustainable Transport Future' are to:-

1. Reduce dependency on car travel and long distance commuting
2. Increase public transport modal share and encourage cycling and walking
3. Improve quality of life and accessibility for all
4. Improve economic competitiveness through increased efficiency of the transport system, and
5. Reduce green house gas emissions and dependency on fossil fuels.

The document promotes the use of consolidation as a planning approach to deliver these key goals by making more sustainable modes of travel viable and available.

Transport Strategy for the Greater Dublin Area 2016 – 2035

In April 2016, the Transport Strategy released by the National Transport Authority (NTA) was adopted by the Minister. The Strategy will guide decisions on transport throughout the region and will contribute to the economic, social and cultural progress of the Greater Dublin Area (GDA) by providing for the efficient, effective and sustainable movement of people and goods. For the Metropolitan Area, development will be consolidated to achieve a more compact urban form. The Strategy is consistent with the public transport funding priorities and projects set out under the National Development Plan 2018-2027.

This transport strategy outlines proposals for the development of transport infrastructure in terms of road, rail, walking and cycling. With respect to the Park West – Cherry Orchard area, proposals include:

- Enhanced Heavy Rail provisions including the DART Expansion programme which identifies the provision of fast, high-frequency electrified services to Park West - Cherry Orchard and onwards to Celbridge/Hazelhatch.
- Enhanced Light Rail provisions including proposals for new LUAS line linking Dublin City Centre to Lucan, via the Ballyfermot Road
- Bus Connects Radial Spine Route (Route G): The G spine is based on a combination of existing Routes 40 and 79/a in inner West Dublin. Southern Orbital Route (Route S4): The S4 Orbital Route would extend from Liffey Valley southeast through Ballyfermot, Kylemore, Crumlin, Terenure, Rathgar, Milltown, and Clonskeagh to end at UCD.
- Provision of detailed cycle network with primary, secondary and greenway elements as part of the continued roll out of NTA Cycle Network Plan for the Greater Dublin Area. A number of these routes pass through the Park West, Cherry Orchard and Ballyfermot Area.

The Strategy places a great emphasis on the integration of land use and transport as a means of:

- Reducing the need to travel;
- Reducing the distance travelled;
- Reducing the time taken to travel;
- Promoting walking and cycling; and
- Promoting public transport use.

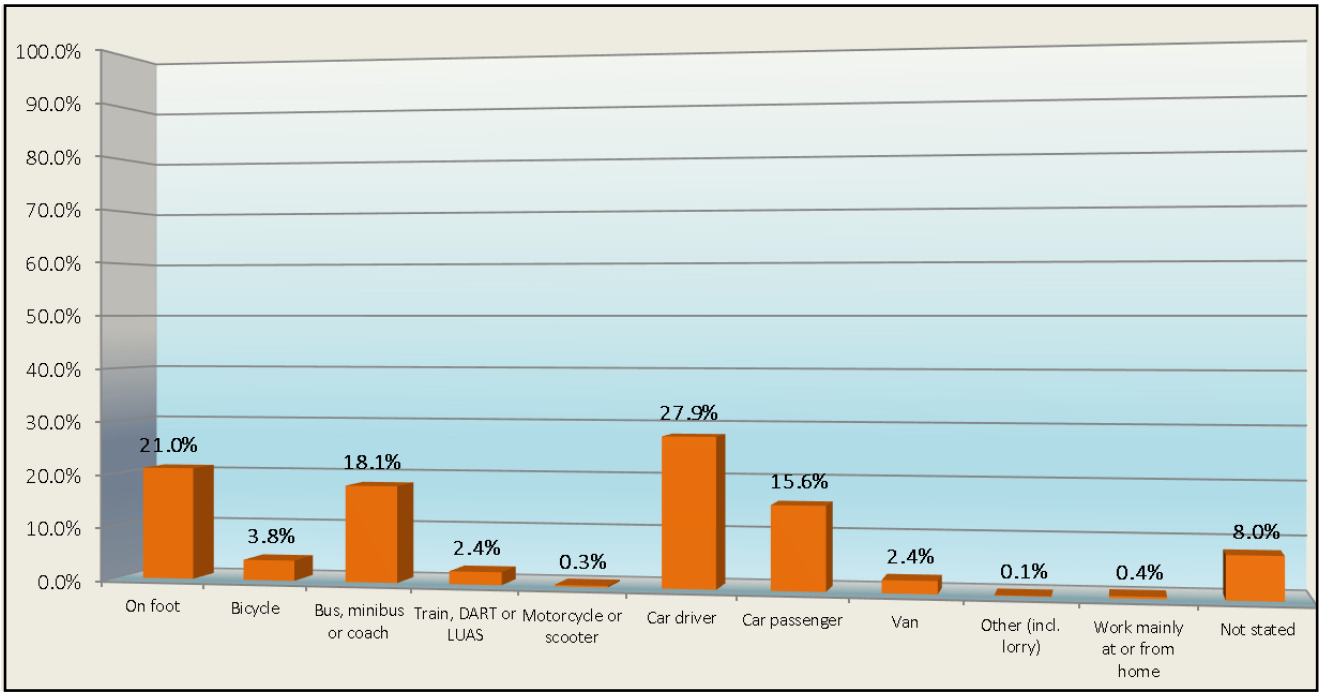
Plans at the local level should promote walking, cycling and public transport, with new development fully permeable for walking and cycling and providing filtered permeability for private vehicles, that is, with access available but restricting or discouraging through trips.

As required under the Planning and Development Act, the Park West – Cherry Orchard LAP must be consistent with the 'Transport Strategy for the Greater Dublin Area'.

3.7.1.2 Existing Transport Provision

The existing street network in the area is dominated by a car led approach, with wide distributor type roads and little focus on pedestrian or cycle infrastructure. Physical connections with surrounding areas and within the LAP are also extremely limited with restricted access points onto Ballyfermot Road and over the railway line and the Canal. The enclosed nature of the larger institutional sites at Cherry Orchard Hospital and Wheatfield and Cloverhill Prisons form large impermeable blocks to the north and west, while the M50 to the west further restricts movement.

Fig 10: Means of Travel to work, school or college, Census 2016



The car dominated environment is born out in the census figures in terms of means of travel for the local population. The majority of the population aged 5 years and over travel to work, school or college by car (43.5%). This is followed by those travelling on foot (21%) and bus or train (20.5%). Only 3.8% travel by bicycle. In comparison to the rest of the city where travel on foot (25.5%) or bicycle (9.6%) accounts for 35% of all journeys.

Bus

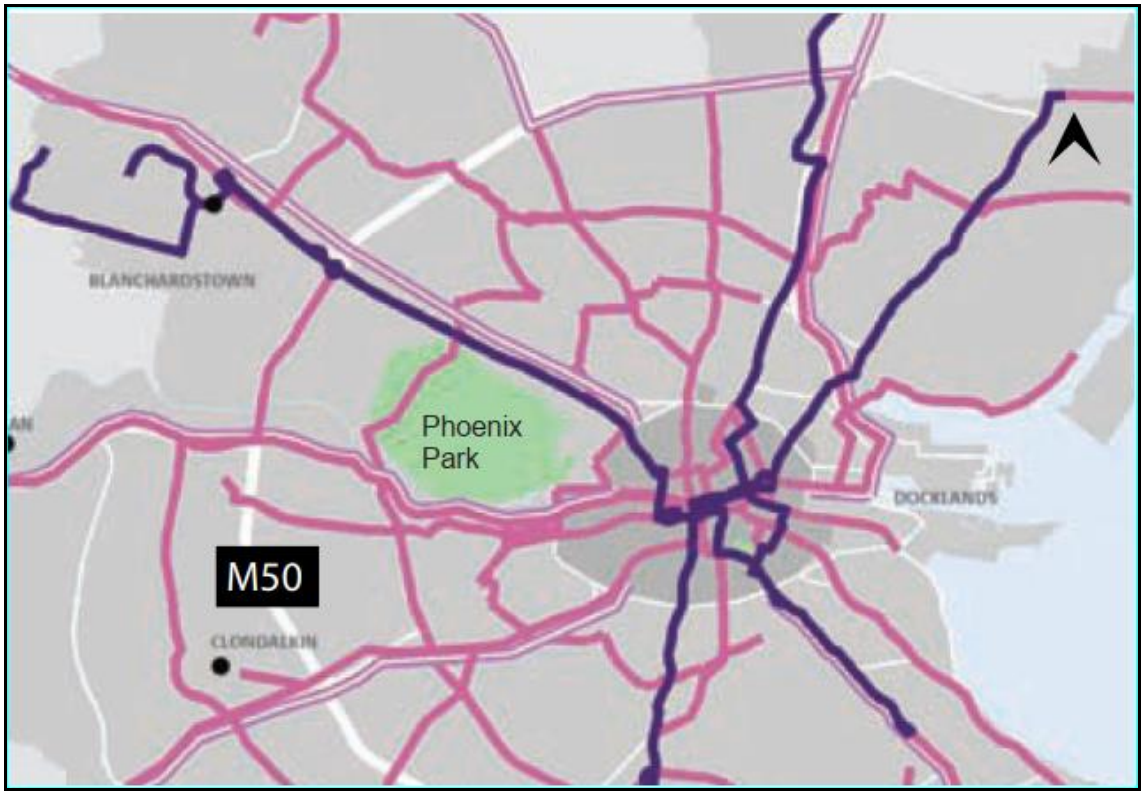
At present the Park West – Cherry Orchard area avails of a reasonable bus service provision. There are two Dublin Bus routes which directly serve the LAP area; the 79 and 79a. In addition, there are a number of other Dublin Bus routes running along the Ballyfermot Road and Nangor Road where bus priority measures are in place. There are also two Express Bus Ltd bus routes from Park West serving the City Centre and Kylemore Road Luas stop.

The National Transport Authority (NTA) is in the process of redesigning Dublin's bus system under the 'Bus Connects' project which seeks to identify a network of high quality radial and orbital bus corridors. The project which aims to overhaul the current bus network system in the Dublin region has implications for the Park West – Cherry Orchard area which is scheduled to avail of a high frequency bus network better connecting the area to the City Centre and other areas of the city such as University College Dublin. While there are a number of strands to the Bus Connects programme, it is the (Core Bus Corridors (CBC) and the Metropolitan Bus Network Review that are most relevant.

The Liffey Valley (CBC) project, as currently conceived, will deliver full bus priority along Ballyfermot road running along the northern boundary of the LAP delivering benefits to the Plan area by delivering reduced journey times. Design and planning work is ongoing for this project and an application to An Bord Pleanála is expected in 2020.

In addition the ongoing Metropolitan Bus Network Review is seeking to enhance the level of service within the plan area in relation to the existing 79/A bus service providing improved links to the Cherry Orchard train station. A revised second draft (to be published in September 2019) is likely to further improve the offer for the Plan area in terms of frequency and connectivity to the city centre, heavy rail and LUAS. The revised network will also be more adaptable than the existing network in terms of its ability to expand and serve developing areas such as Parke West Cherry Orchard making use of emerging new links / roads as proposed within the LAP.

Map 18: Overall Core Bus Network, NTA 2016-2035

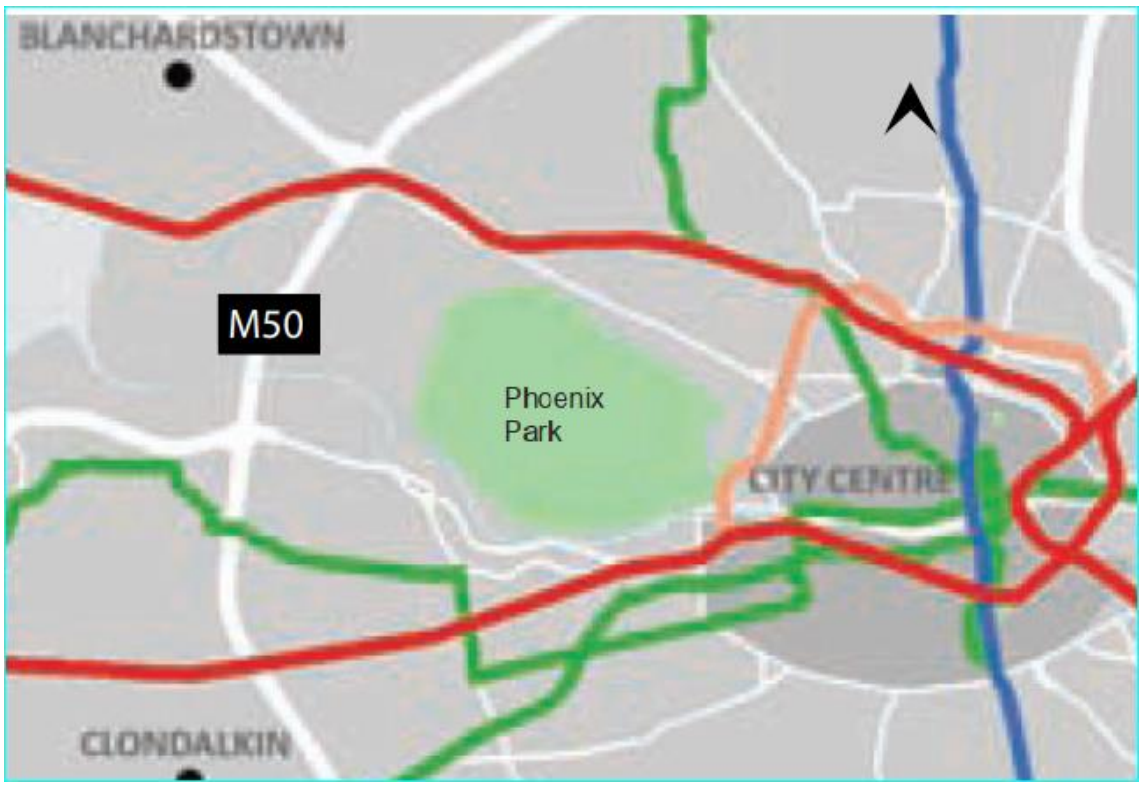


Rail

Centrally located between the two areas is the Park West - Cherry Orchard railway station which opened in 2008 replacing the former Cherry Orchard Station further east. The station, which has four platforms, is located on the Dublin – Kildare main line which is served by commuter and inter-city services. However despite the provision of this new station, the infrequent services including during peak times currently do not make travel by train an attractive option. In examining the Census data and the breakdown of sustainable modes of transport, rail users represent a very low 2%. This is despite its central location and despite 2,550 people having access to the station within a 15 minute walk.

The National Transport Authority's (NTA) Transport Strategy for the Greater Dublin Area 2016 – 2035 identifies a number of future rail infrastructure projects which would further develop the light rail infrastructure within and surrounding the Park West – Cherry Orchard area. The Strategy identifies the provision of fast, high-frequency electrified services to Park West – Cherry Orchard and onwards to Celbridge / Hazelhatch on the Kildare line (i.e. DART expansion programme) as well as the long term proposal for a new Luas line to Lucan along the Ballyfermot Road linking Lucan to the City Centre.

Map 19: Overall Metropolitan Heavy and Light Rail Network Proposed, NTA 2016-2035



Cycling

There is limited cycle infrastructure present throughout the LAP area. On and off-road cycle facilities exist along the majority of Park West Avenue and Ballyfermot Road however the lack of continuity along these routes results in a poor offer for cyclists and would benefit from upgrading. There is also a notable lack of cycling facilities provided in conjunction with the Train Station. The lack of cycle infrastructure in reflected in the poor uptake in cycling among local residents and workers. Census data indicates that only 4% of people living in the Park West – Cherry Orchard area use cycling as their preferred mode of transport compared to the rest of the city where cycling accounts for 10%.

The NTA Greater Dublin Area Cycle Network plan identifies a number of primary and secondary cycle routes in the area surrounding Park West and Cherry Orchard:

- Primary cycle route 7A along Ballyfermot Road connecting to Bridgefoot Street to Lucan South and passing via Kilmainham, Inchicore and Liffey Valley Shopping Centre.
- Primary cycle route 7B (and National Route 10 towards Cork) along Grand Canal connecting Dublin City Centre to Rialto, Clondalkin and Adamstown via Grand Canal.
- Secondary cycle route 8C along Park West Avenue and Cloverhill Road providing cross-links to Ballymount and Crumlin via Nangor Road and Long Mile Road with spur 8C1 connecting to Route 7A at Palmerstown and Spur 8C2 to Grange Castle.
- Secondary orbital route SO4 along Kylemore Road connecting to Chapelizod Hill
- In addition to the above there are a number of feeder routes along Le Fanu Road, Park West Road, Cherry Orchard Avenue, Blackditch Road, Clifden Road and through new Cherry Orchard Park

Map 20: Greater Dublin Area Cycle Network Plan, for LAP area.

3.7.2 Waste Management

The generation and management of waste is an everyday challenge, which people, businesses, industry and institutions must recognise and address. In our daily lives, we produce non-hazardous, hazardous and sometimes toxic wastes. These wastes have the potential to impact negatively on our communities, our health, and our environment and future generations if not managed appropriately.

The Waste Framework Directive was transposed into Irish law by the European Communities (Waste Directive) Regulations 2011. This directive has set targets for household waste recycling and construction and demolition waste which will come into effect in 2020. It will be a challenge for Ireland to reach these targets as household recycling rate has stayed relatively static since 2012 (Source EPA National Waste Statistics 2018). Contamination of kerbside dry recyclable bins is impacting on the recycling potential of waste collected and this problem is being addressed by the waste industry and local authorities through public education programmes.

The amount of residual waste exported for energy recovery has increased significantly in recent years. At the same time, the quantity of residual waste disposed to landfill decreased as did the number of operational landfills. There has been a significant shift away from land filling as a waste disposal option, in the Eastern-Midlands Region and nationally.

In addition to the above the EU Waste Framework Directive has led to the provision of Waste Management Plans. The Eastern and Midlands Regional Waste Management Plan 2015-2021 sets out the strategic vision to re-think our approach to managing waste, by viewing our waste as valuable material resources (DCC is the lead authority for the Eastern-Midlands Region). The plan focuses on enhancing the collections of quality materials from discarded waste to build on the positive progress made in recycling.

Over the lifetime of the Eastern Midlands Regional Waste Plan, the main objectives are: -

- 1% reduction per annum per capita in the amount of household waste generated;
- Elimination of direct disposal of unprocessed residual municipal waste to landfill;
- Reuse/recycle target of 50% of municipal waste by 2020.

The plan includes a range of collaborative measures between the local authorities and industry to achieve these objectives, including: -

- Commit to a minimum expenditure on waste prevention activities each year
- Encourage more reuse and repair activities in the region, particularly at civic amenity facilities
- Increase level of source-segregated kerbside collections in the region, with a focus on three bin system becoming commonplace at household and commercial levels
- Implement and regulate the new national pay by weight charging system
- Plan and develop higher quality waste treatment infrastructure including new reprocessing biological treatment, thermal recovery and pre-treatment facilities
- Support the development of thermal recovery in the region which meets the needs of the region and the State in reducing the export of residual wastes for treatment abroad

Food waste is also key concern. Under the United Nations Sustainable Development Goals Ireland must halve per capita food waste at the retail and consumer level by 2030. Ireland has had commercial food waste regulations in place since 2009 and household food waste regulations since 2013 and while there has been an increase in municipal food

waste segregated and sent for composting/anaerobic digestion, there is scope for further diversion. This is a priority action for the Waste Enforcement Regional Lead Authorities. The EPA, through the 'STOP Food Waste' initiative, supported the introduction of a Food Waste Charter for Ireland in 2017 to encourage businesses to take action on reducing food waste (Source, EPA National Waste Statistics 2018).

Any Brexit related changes to waste legislation and the border with Northern Ireland will impact on Ireland's waste management industry and has the potential to impact on Ireland meeting waste legislative targets. Ireland has a high dependence on UK facilities for recycling glass and metal wastes and there is cross-border activity for organic waste, waste electrical and electronic equipment, waste oils and dry recyclables.

At a local level, there are two full Civic Amenity (recycling centres) operating within Dublin City at North Strand and Ringsend. Closer to the LAP area there is one Community Level Bring Centre located at Kylemore Park North, Ballyfermot. There are also two bottle banks at the Orchard Centre and at the Civic Centre, Ballyfermot Road.

3.7.3 Evolution of Material Assets (Transport & Waste Management) in the absence of the LAP

Land use transport decisions for the area are largely determined at City / regional level, dictated by National Policy. A priority of the City Development Plan's core strategy is connecting the city through an integrated land-use and transportation strategy to arrive at a situation where the city is more people-focused, less polluted, and more accessible and allows for ease and safety of movement. Making Dublin accessible allows it to intensify and grow. In the creation of this more sustainable city, a modal shift from private modes of transport to public transport, cycling and walking is required along with the implementation of travel plans. It also requires a recasting of the public domain in favour of pedestrians, cyclists and mobility impaired as well as a network of strategic green routes. While transport management is a transboundary issue and largely outside the control of any one functional area or local authority, these positive objectives of the core strategy assists in having an overall beneficial impact on sustainable transport objectives.

Specific to the LAP is the objective to support sustainable transport forms of travel, with enhanced permeability and locating higher densities along key public transport routes. New connections over the railway and canal are sought, in addition to a key new connector road linking Ballyfermot Road and the train station.

Delivery of the objectives of the DCC Waste Management Plan will be implemented through the development management process by accommodating recycling facilities for new residential and commercial developments. The LAP includes a specific objective to provide more recycling facilities within the build out of the higher density Park West lands.

3.7.4 Existing Environmental Issues relating to Material Assets

- To support the principles of good waste management and to reduce the amount of waste being generated in the LAP area through education and waste prevention strategies (i.e. increase recycling and separation of waste)
- To support the use of construction and demolition plans for new builds to prevent waste arising
- To promote the use of renewable materials in future developments
- The provision of sufficient quantity and quality of recycling facilities located conveniently for collection

- To provide improved linkages within the area to enhance permeability, in particular Ballyfermot to Cherry Orchard and Cherry Orchard to Park West.
- To facilitate bus movements through / adjoining the area as part of Bus Connects

3.8 Cultural Heritage (Architectural & Archaeological Heritage)

3.8.1 Protected Structures

The Planning and Development Act, 2000 (as amended) defines 'Protected Structures' as structures or parts of structures which form part of the architectural heritage and which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. The Planning and Development Act 2000 (as amended) requires each planning authority to compile and maintain a Record of Protected Structures (RPS). This record is a mechanism for the statutory protection of the architectural heritage and forms part of each planning authority's development plan. The National Inventory of Architectural Heritage (NIAH) survey may result in further revisions to the RPS.

Further to the above the NIAH have recommended to the City Council the inclusion of a number of buildings at the Cherry Orchard hospital campus (www.buildingsofireland.ie): -

- Group of ten detached north-facing multiple-bay single-storey former hospital wards and admissions building, built 1953, with Units 1-7 arranged in a line from west to east, and Units 9-11 located to the north, from east to west.
- Detached L-plan four-bay single-storey mortuary, built 1953.
- Freestanding single-cell Church/Chapel.
- Detached six-bay single-storey gate lodge, built 1953, having taller block to centre, flanked by lower blocks, built to a curved plan with convex front (north) elevation and concave rear (south) elevation, with projecting porter's lodge to front elevation, screen walls to east and west, and gates to west to Cherry Orchard Hospital.
- Rectangular cast-iron post box, erected c.1955, comprising single aperture, side-hung door and 'P & T' monogram over aperture.
- Detached irregular-plan multiple-bay single- and two-storey former fever hospital, built 1953, with rectangular-plan seven-stage water tower to north-east corner, and two-bay single-storey porch to south-east corner.

Section 53(2) of the Planning and Development Act 2000, as amended states that the *"planning authority shall have regard to any recommendations made to it under this section".* The addition of these structures to the Record of Protected Structures will be undertaken in accordance with the Strategic Approach set out in Section 11.1.4 of Ch 11 of the Dublin City Development Plan, including having regard to the recommendations of the Minister and the NIAH.

3.8.2 Industrial Heritage

The City's industrial heritage refers to industrial activities of the past such as Poolbeg power station and includes a range of buildings, artefacts, features and ancillary features such as the Guinness Storehouse and the Jameson Centre. To aid in the preservation of this unique heritage and in recognition of the role of industry in the development of Dublin, the City Council in partnership with the Heritage Council commissioned a survey of the industrial heritage of the city area culminating in the Dublin City Industrial Heritage Record.

The Dublin City Industrial Heritage Record (DCIHR) survey makes recommendations for sites to be added to the list of Protected Structures and should be consulted in the preparation of LAP's as per the Development Plan Objective CHCO10(6). The consideration of the addition of structures of industrial heritage to the RPS will be undertaken in accordance with the 'Strategic Approach' set out in Section 11.1.4 of Chapter 11 of the Development Plan.

There are a total of eight sites within / adjoining the LAP that were identified including structures of the railway line, the Grand Canal, Gallanstown waterworks and Ballyfermot Bridge (further east along the Canal). Of these surveyed sites it was found that: -

- 5 no. are of national merit
- 3 no. are of regional merit
- 4 no. held no remains

The 'national merit' sites are linked to the Great Southern and Western Railway line, which was opened in 1846. Both the locks and Ballyfermot Bridge are also listed on the National Inventory of Architectural Heritage, recommending protection.

Table 7: Dublin City Industrial Heritage Record: Recommended Sites of Industrial Interest/Merit

DCIHR Ref:	Name/Location	Description	Interest/Merit	Significance	Date
17 12 001	Great Southern Railways	Railway	Historic/Industrial Heritage/Social/Technical	National	c.1845
17 16 001	Great Southern Railways	Railway	Historic/Industrial Heritage/Social/Technical	National	c.1845
17 16 007	Ballyfermot Bridge	Single-arch masonry bridge	Architectural/Industrial Heritage	Regional	c. 1770
17 16 005	7th Lock	Canal Lock	Historic/Industrial Heritage/Social/Technical	National	c. 1770
17 16 003	Grand Canal	Canal	Historic/Industrial Heritage/Social/Technical	National	c. 1763-79
17 16 004	Towing Path	Canal tow path	Historic/Industrial Heritage/Social/Technical	Regional	c. 1763-79
17 16 008	8th Lock	Canal Lock	Historic/Industrial Heritage/Social/Technical	National	c. 1770
17 16 009	Former Water Works	Waterworks	Historic/Industrial Heritage/Social/Technical	Regional	c.1862-63

Of particular note for the LAP is the former Gallanstown Waterworks located to the south of the existing Park West development, adjoining the Canal, and within the LAP lands. The site contains old filter beds (now filled in), a covered storage reservoir (visible only as a slightly raised grass area), and a Stilling Pond (an open pond). Its unique underground reservoir and brick arches are considered to be of historic 'regional merit' and provide a unique and valuable industrial heritage feature with the potential to make a significant contribution to the physical, social and economic regeneration of the area.

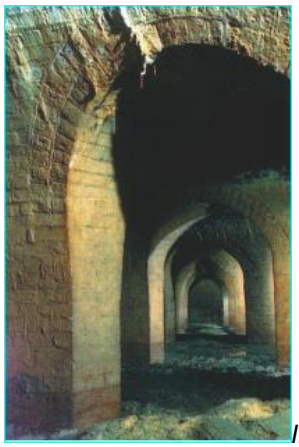


Image: *Gallanstown arches/ water reservoir*

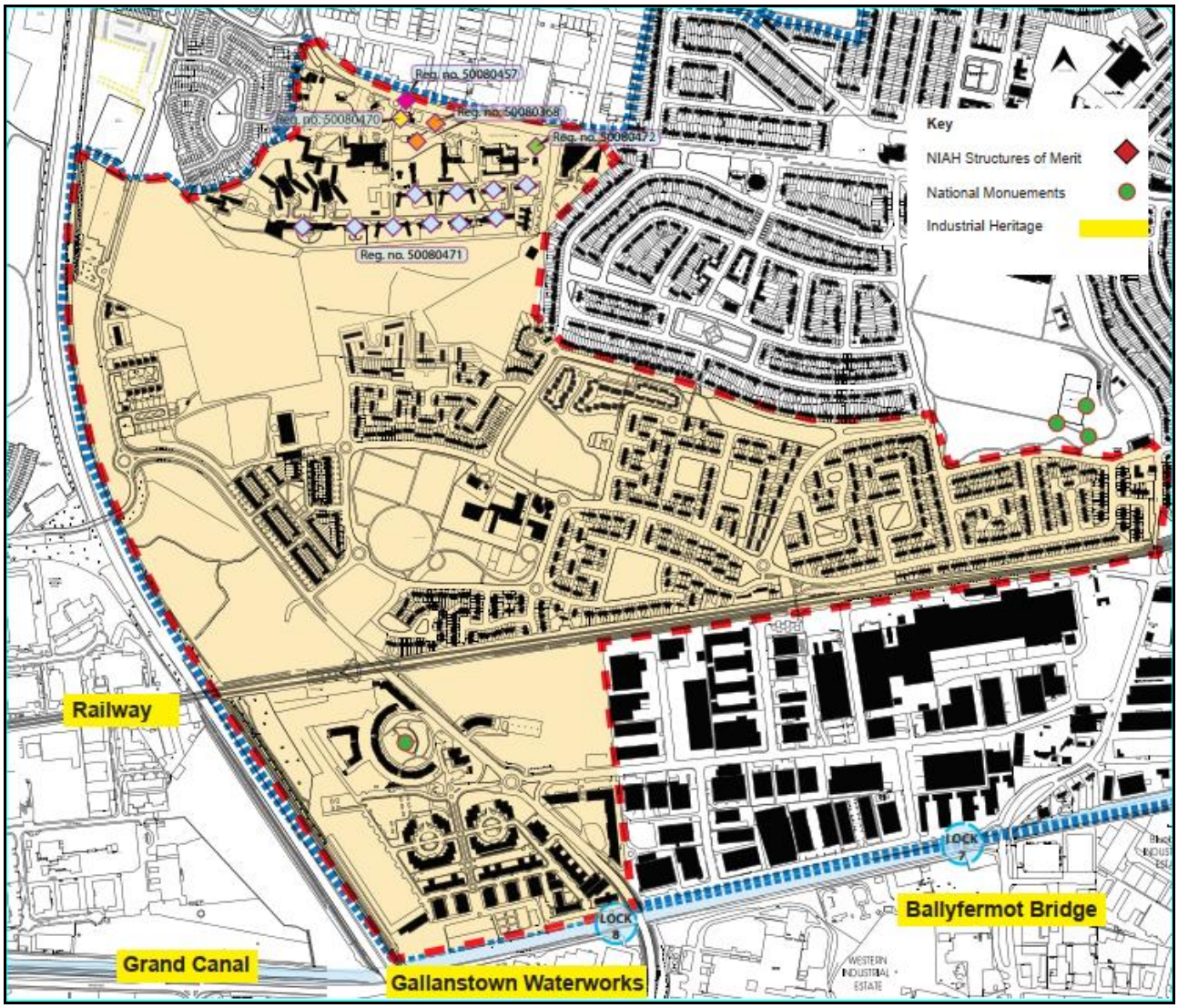
3.8.3 Archaeology

There are limited known prehistoric sites or features within the LAP lands. One recorded national monument site (Ref: DU017-083) is present in the Park West area (Gallanstown townland) and is thought to be an Early Christian Burial mound. The original mound which measured approximately 60m x 80m (report submitted by Coilin O'Drisceoil to DCC in March 1999), is located roughly under the circular open space to the front of the Crescent apartment buildings in Park West. Human remains were found on this site in excavation works carried out in 1999 during the preparatory works for Park West.

Three other National Monument sites have been identified just outside the study area, in the south eastern corner of Le Fanu Park and are listed along with their SMR number: -

- DU018-031001: Castle – Tower House, Ballyfermot Upper Townland
- DU018-031003: Church, Ballyfermot Lower Townland
- DU018-031004: Graveyard, Ballyfermot Upper Townland

Map 21: Local Heritage Features



3.8.4 Evolution of Cultural Heritage (Archaeology & Architectural Heritage) in the absence of the LAP

The LAP affords an opportunity to utilise heritage assets in line with Development Plan policy, to develop and identity a sense of place. Heritage assets can be used to frame future development and can become memorable focal points, thereby giving legibility to the area. Structures of architectural and/or historical importance can also have potential for integration into the emerging urban fabric in a manner which safeguards their long-term survival. Buildings and structure of archaeological and architectural heritage are well protected under the City Development Plan.

The Local Area Plan includes a specific objective to explore the re-use of the Gallanstown Wasterworks, with potential to play a key role in the City's tourism as well as local recreation and/or cultural use.

3.8.5 Existing Environmental Issues relating to Cultural Heritage

- To protect and enhance the cultural heritage of the plan area including the built environment, industrial heritage and archaeological assets.
- To ensure any cultural heritage is not lost during the development process.

3.9 Landscape and Soils/Geology

3.9.1 Landscape Character

Park West – Cherry Orchard lies approx. 9k to the west of the City Centre, immediately inside the M50. The piecemeal development of the LAP area has meant that there are large open tracts of vacant land remaining for development. Some of these sites in Cherry Orchard are mounded up (e.g. site to west of Barnville), others are difficult to access and are over-grown with burnt out cars and dumping on them (e.g. site to the south of the hospital) and others are below street level (e.g. site to north of train station). In comparison the vacant sites in Park West are largely level and cleared. There are level differences between Cherry Orchard and Park West evident when travelling along Park West Avenue which will be challenging from urban design perspective and the creation of a street edge / presence.

Within the newly developed Park West Business Park and residential area, there is a water theme running throughout the new developments, interspersed by high quality public art sculptures, creating an attractive image.

Significant elements in relation to the LAP's strategic location vis-à-vis the City and the wider west Dublin area are: -

- **Road Connections**: Plan area is located immediately inside the M50 and c. 8k from the City Centre.
- **Train Line**: Cherry Orchard and Park West are divided by the Dublin – Kildare train line which is served by commuter and inter-city services. The NTA's Transport Strategy identifies the provision of fast, high-frequency electrified services to Park West – Cherry Orchard and onwards to Celbridge / Hazelhatch on the Kildare line (i.e. DART expansion programme).
- **Potential Development Land**: The largest development tracts exist to the east of the M50, both in Cherry Orchard and Park West.

Image: The Wave Sculpture in Park West

3.9.2 Soils / Geology

Soil performs a number of key environmental, social and economic functions that are vital for life. It has a socio-economic and environmental role as a habitat and gene pool, a platform for human activities (including food production), landscape and heritage and as a provider of raw materials. Soil also functions as a carbon sink, as has other important ecological functions such as storing, filtering and transforming nutrients, species and genes. This vital resource is non-renewable, and measures for soil conservation are required to sustain its functions.

While the EU adopted a Soil Thematic Strategy in 2012 which set out the proposal for a Soil Framework Directive, in May 2014 the European Commission decided to withdraw this directive. The Seventh Environment Action Program has asserted that degradation of soil is a serious problem, both for member states and globally. It is proposed that by 2020 all land in the EU should be managed sustainably and soils afforded protection, with remediation of contaminated sites also a priority.

The existing baseline of data on soils in Dublin City is being developed by the Geological Survey of Ireland, in cooperation with Dublin City Council. Initial sampling work took place between 2009 and 2010 under the SURGE Project, (www.gsi.ie/Surge), which sought to highlight the importance of urban soils to environmental health in European cities. Under this Europe-wide initiative of the Geological Surveys of Europe, the Geological Survey of Ireland, in partnership with the Geological Survey of Norway, undertook systematic geochemical mapping of soils in the greater Dublin area in order to compile a baseline dataset of heavy metals (such as arsenic, aluminium and lead) and persistent organic pollutants in Dublin's soils. Over 1000 samples were taken across the greater Dublin area, including the sampling of 368 points within Dublin City's public parks and open spaces.

Results show that inner city soils typically have higher levels of potentially harmful elements and organic pollutants than areas towards the outer city; this is a pattern seen in many cities around the world and can be tied to historical industrial activities as well as fossil fuel burning and use of leaded paints and fuels. Polycyclic aromatic hydrocarbons (PAHs) are also present in the soil, reflecting historic coal burning and other historic industrial emissions, as well as more modern transport-related emissions. The presence of polychlorinated biphenyls (PCBs) is likely associated with historic industrial activities and paint particles in the soil.

The majority of soils in Dublin City are characterised under the Soil Information System (undertaken by Teagasc in conjunction with the EPA) as 'urban' soils i.e. soils which have been disturbed, moved and manipulated by human activities. Urban soils are generally overlain by a non-agricultural, man-made layer formed from mixing, infilling or contamination by industrial uses. At the fringes of the city, the soil is characterised as fine, loamy drift with limestones and siliceous stones, particularly underlying the Phoenix Park, with river and lake alluviums in the Tolka and Liffey valleys. See Map 21 for the distribution and types of soils within the city.

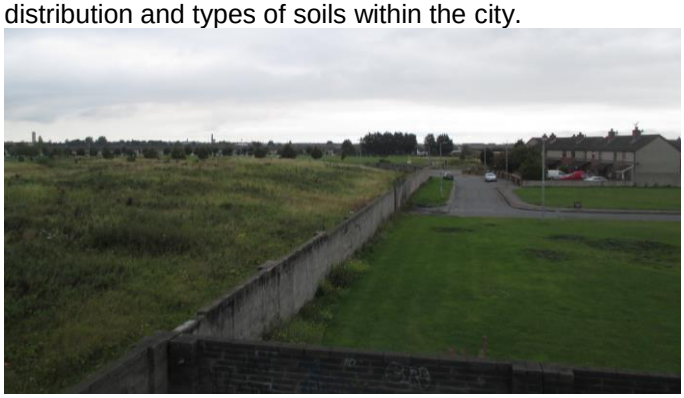
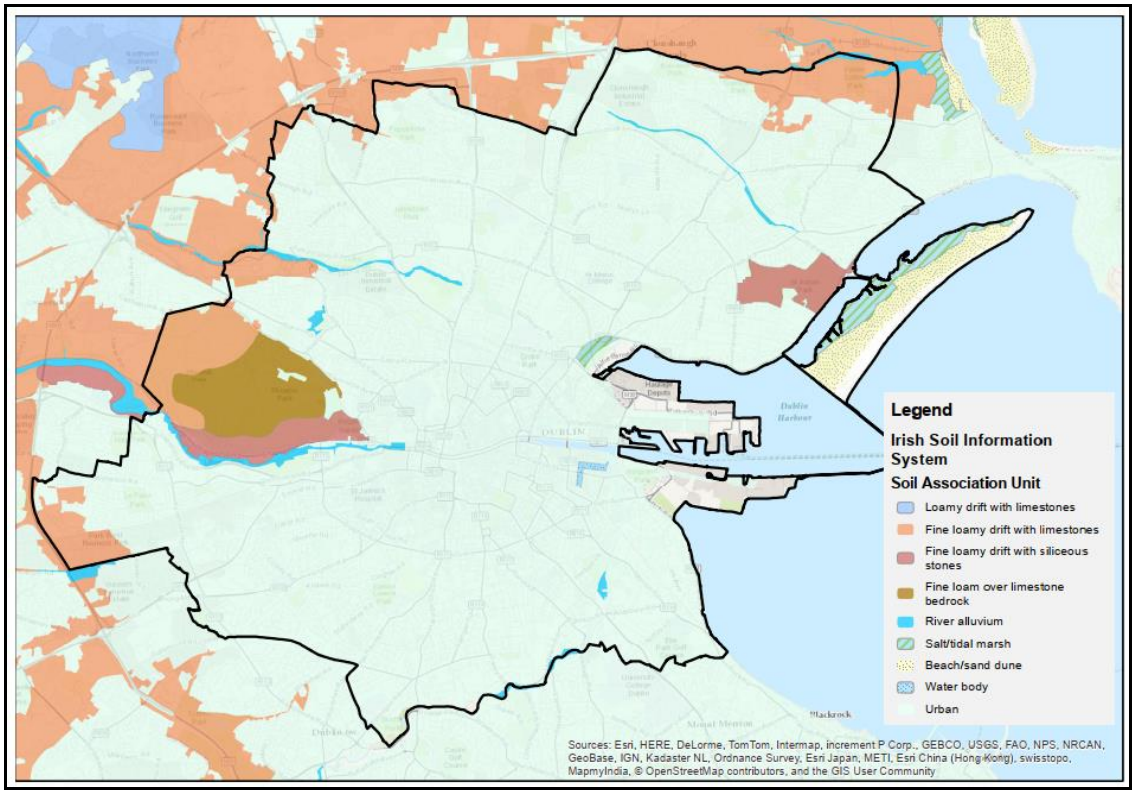


Image: Mounded earth onto Site No. 5 to the left of image.

Map 22: Soil Types, Dublin City



The map above shows the LAP area is covered by two soil types: -

- Fine loamy drift with lime stones
- Urban

Some of the vacant sites in the LAP are overgrown or located adjacent to the M50 where level differences and mounding exist. Prior to the development of these particular sites, site investigations and geotechnical examinations may be required to investigate subsurface conditions.

3.9.3 Evolution of Landscape and Soils/Geology in the absence of the LAP

The LAP identifies a large number of sites which are available for redevelopment. In the absence of the LAP these sites will be subject to compliance with the City Development Plan, and the need to integrate Sustainable Urban Drainage Systems in proposals. Developing these sites within an urban area such as Park West – Cherry Orchard helps alleviate pressure on greenfield sites within the wider Dublin area.

The LAP seeks to provide greater guidance for each site, setting out appropriate heights, densities and uses. It also provides specific guidance as to the provision of additional green spaces.

3.9.4 Existing Environmental Issues Relating to Landscape and Soils/Geology

- The development of vacant sites within Park West – Cherry Orchard helps reduce the demand for “Greenfield” sites outside the City.
- Contamination of soils by burning of cars, waste disposal or M50 soil run-off during expansion of M50
- Any contaminated soils may place technical or financial pressures on development.

3.10 Interrelationship between Environmental Receptors

The majority of environmental receptors interact with one another to some degree however only those interrelationships of significance were considered during this process. Table 8 identifies the main interrelationships arising in this SEA. In carrying out the environmental assessment these interrelationships have been taken into account during the assessment of the various alternatives, and also formed a central consideration during the assessment of the potential impacts that may result from the Plan. The interrelationships between environmental topics have been addressed in the Environmental Report as they arise between each environmental receptor.

Table 8: Key Interrelationships Identified between Environmental Receptors.

Environmental Receptor	**PHH**	**BFF**	**AQ**	**CF**	**W**	**MA**	**CH**	**L**
Population and Human Health (PHH)		X	X	X	X	X	/	X
Biodiversity, Flora & Fauna (BFF)	X		X	X	X	X	X	X
Air Quality & Noise (AQ)	X	X		X	/	X	/	/
Climatic Factors (CF)	X	X	X		X	X	/	/
Water Services (Incl. Flooding) (W)	X	X	/	X		X	X	X
Material Assets (Transport & Waste Management) (MA)	X	X	X	X	X		X	X
Cultural Heritage (Archaeology & Architectural Heritage) (CH)	/	X	/	/	X	X		X
Landscape & Soils/Geology (L)	X	X	/	/	X	X	X	
x Significant Interrelationship **/** Insignificant Interrelationship								

3.11 Environmental Sensitivity Mapping

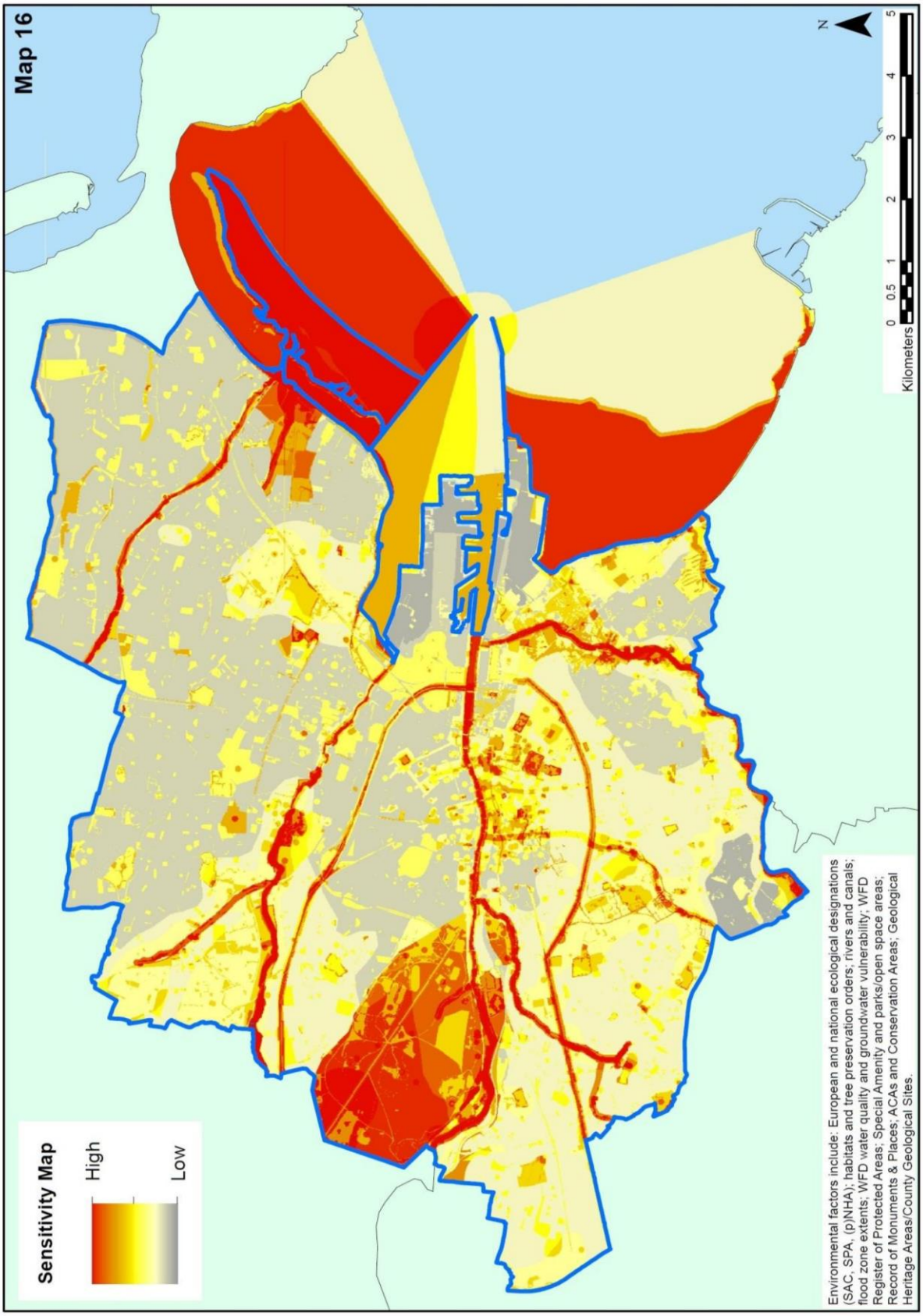
As part of the SEA for the Dublin City Development Plan environmental sensitivity mapping (ESM) was undertaken at a city-wide level (see Section 4.21.1 of the SEA for the Dublin City Development Plan 2016-2022). The environmental factors which were considered in compiling the ESM for Dublin City are summarised below and cover a range of categories from biodiversity and water to landscape and cultural heritage: -

- European ecological designations including Special Areas of Conservation (SACs) Special Protection Areas (SPAs);
- National ecological designations such as proposed Natural Heritage Areas (pNHAs);
- Dublin City Parks Biodiversity Survey and habitat mapping;
- Tree preservation orders (TPOs);
- Rivers and canals;
- Flood zone ('A' and 'B') extents;

- Water quality and groundwater vulnerability;
- WFD Register of Protected Areas;
- Special Amenity areas and parks/open spaces;
- Record of Monuments and Places (RMP);
- Architectural Conservation Areas (ACAs); and
- Geological Heritage Areas (GHAs) and County Geological Sites (CGCs).

The environmental factors above were assigned to a weighting category of High, Medium or Low, and the weighted data was brought in to a geographic information system (GIS) to allow a spatial overlay and calculation of the overall sensitivity. The colour scheme gives an indication of the relative sensitivity of the environment with darker red indicating high sensitivity and greys representing areas better able to absorb change. While it is acknowledged that there are limitations and an element of subjectivity to ESM, where there is a concentration of sensitive areas or overlap it becomes readily apparent where increased development in such areas could cause deterioration of the environment without appropriate mitigation measures being taken. Map 23 shows the ESM prepared for the City. Park West – Cherry Orchard is shown to have a low - medium environmental sensitivity, with the medium category covering many of the vacant key sites.

Map 23: Sensitivity Map for Dublin City (SEA of Development Plan 2016-2022)



4 Environmental Protection Objectives, Targets and Indicators

4.1 Environmental Protection Objectives (EPOs)

SEA Environmental Protection Objectives are measures used to show whether the objectives of a local area plan are beneficial to the environment, to compare the environmental effects of alternatives, or to suggest improvements. If complied with in full, the environmental objectives set should result in an environmentally neutral impact from implementation of the plan. The environmental protection objectives, which usually express a desired direction of change, are established for each of the environmental receptors and are often aspirational in nature. They serve a different purpose from the objectives of the local area plan, though they may overlap with them in some cases.

The SEA Directive requires the identification of objectives relevant to the plan. Objectives set have been adapted to the local circumstances and environmental issues of the Park West – Cherry Orchard area and in some cases Dublin City (more strategic issues). The environmental protection objectives set for the SEA have been derived from environmental protection objectives which have been established in law at international, European Union, national and local level and from a review of baseline information and the environmental problems identified during the compilation of the baseline environment. Table 9 below details the Environmental Protection Objectives set for the protection of each of the environmental receptors. All environmental protection objectives set are considered to impact on population and human health.

Table 9: Environmental Protection Objectives

Environmental Receptor	Environmental Protection Objective
Population and Human Health	**PHH** To create a sustainable compact city in which to live, work and/or visit. *(other EPOs relating to population and human health are covered under each of the environmental headings below)*
Biodiversity, Flora & Fauna	**BFF** To protect and where appropriate enhance the diversity and range of habitats, species and their resources within the LAP area.
Air Quality & Noise	**AN1** To protect good air quality status and minimise all forms of air pollution (i.e. Nitrogen oxides & Particulate Matter). **AN2** To maintain and, where possible, improve the good acoustical quality for the current and future residents of the plan area.
Climatic Factors	**CF** To minimise emissions of greenhouse gases.
Water (Including Flooding)	**W1** To comply with EU Water Framework Directive to ensure and maintain good ecological status of all receiving water in the LAP area. **W2** To reduce and manage the risk of flooding. **W3** To provide adequate wastewater treatment, water distribution networks and drainage networks.

Material Assets (Transport & Waste Management)	**MA1** To reduce traffic levels by encouraging modal change from car to more sustainable modes of transport such as public transport, walking & cycling. **MA2** To reduce the generation of waste and adopt a sustainable approach to waste management.
Cultural Heritage (Archaeology & Architectural Heritage)	**CH** To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.
Landscape & Soils/Geology	**LS** To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchards' landscapes and soils

4.2 EPO Targets and Indicators

In addition to the Environmental Protection Objectives, associated targets and indicators were developed. The overall purpose of the indicators in the SEA process is to provide a way of measuring the environmental effect of implementing the LAP once it is adopted. Indicators are also used to track the progress in achieving the aspirational targets set in the SEA as well as the Local Area Plan. The proposed Indicators were selected bearing in mind the availability of data and the feasibility of making direct links between any changes in the environment and the implementation of the Plan.

Targets were considered over the duration of the scoping phase, baseline data collection and assessment in order to ensure relevance to the Environmental Protection Objectives as well as the objectives of the Plan. The targets and indicators associated with each SEA Objective are outlined in Table 10 below.

Table 10: Environmental Protection Objectives, Targets & Indicators					
Environmental Receptor	**Environmental Protection Objective**	**Target**	**Indicator**	**Frequency of Reporting**	**Department Responsible**
Population and Human Health	***PHH To create a sustainable compact city in which to live, work and/or visit.***	Sustainable densities achieved in new residential/ mixed use schemes.	Average density of new residential development for LAP area.	Mid-LAP	Planning and Property, Development Department
		Increase in the number of residential properties.	Number of residential units commenced on site/ completed within LAP.	Mid-LAP	Planning and Property, Development Department
		Increased population within the LAP area.	Percentage increase in population based on CSO.	Mid-LAP based on planned 2021 census results	Planning and Property, Development Department
Biodiversity, Flora & Fauna	***BFF To protect and where appropriate enhance the diversity and range of habitats, species and their resources within the LAP area.***	No losses of relevant habitats species or their sustaining resources as a result of implementing the LAP.	Survey and monitor bird population.	Mid-LAP	Parks & Landscape Services
			Survey and monitor distribution of bat populations.	Mid-LAP	Parks & Landscape Services
			Evidence of recorded Protected Species.	Mid-LAP	Parks & Landscape Services
			Survey and monitor extent and distribution of invasive species.	Mid-LAP	Parks & Landscape Services
		All streets to be tree-lined.	No. of new trees planted in the LAP area.	Mid-LAP	Parks & Landscape Services
		New local parks provided or upgrade of existing parks	No. of new parks provided / upgrade to Cherry Orchard Park and other local parks	Mid-LAP	Parks & Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Air Quality and Noise	***AN1 To protect good air quality status and minimise all forms of air pollution (i.e. Nitrogen oxides & Particulate Matter).***	Maintain air quality status and meet value targets for named pollutants in line with Air Quality Framework Directives.	Values of monitored pollutants in the air, including the levels of Nitrogen Oxides (NO_x) and Particulate matter (PM_{10}) not in breach of regulation limits.	Mid-LAP	Roads & Traffic – Noise & Air Section
		An increase in the population travelling to work or school by public transport or non-mechanical means.	% of population within the plan area travelling to work or school by public transport or non-mechanical means.	Mid LAP - To be based on 2021 Census results	Roads & Traffic Planning and Property, Development Department
	AN2 To maintain and, where possible, improve the good acoustical quality for the current and future residents of the plan area.	Minimise noise pollution.	% of residents exposed to noise levels above undesirable levels.	Mid-LAP	Roads & Traffic – Noise & Air Section
Climate Factors	***CF To minimise emissions of greenhouse gases.***	Decrease greenhouse gas emissions in line with national targets.	Average energy consumption of new residential housing stock Tonnes of CO2/Capita/Year.	Mid-LAP	Environment and Engineering Department in association with Codema

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Water (including flooding)	***W1 To comply with EU Water Framework Directive to ensure and maintain good ecological status of all receiving water in the LAP area.***	All water bodies to meet targets set in River Basin Management Plan for Ireland 2018-2021'	Ecological status of water bodies.	Mid-LAP	Environment and Engineering Department – Water Division
	W2 To reduce and manage the risk of flooding.	Compliance with the OPW's Guidelines for Planning Authorities – The Planning System and Flood Risk Management.	Percentage of planning applications incorporating flood risk assessment and conditions requiring appropriate flood resilient measures for new developments.	Mid-LAP	Environment and Engineering Department (Planning and Property, Development Department)
		Provide Sustainable Urban Drainage Systems in all new developments.	Number of Sustainable Urban Drainage Systems implemented in new planning applications, and in public areas.	Mid-LAP	Environment and Engineering Department (Planning and Property, Development Department)
	W3 To provide adequate wastewater treatment, water distribution networks and drainage networks	Provision of adequate water, wastewater treatment and drainage infrastructure.	Capacity of water supply and wastewater infrastructure versus demand.	Mid-LAP	Environment & Engineering – Water Division (in association with Irish Water)

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Material Assets (transport and waste management)	***MA1 To reduce traffic levels by encouraging modal change from car to more sustainable modes of transport such as public transport, walking & cycling.***	Extension and improvement of the cycling and walking network in the area.	Length of new cycling paths/lanes and walking routes developed and permeability linkages created.	Mid-LAP	Roads & Traffic Department
		Bus Connects to serve the area.	Bus Connects operational.	Mid-LAP	Roads & Traffic Department
		DART services available in area.	DART expansion programme operational	Mid-LAP	Roads & Traffic Department
	MA2 To reduce the generation of waste and adopt a sustainable approach to waste management.	Increased recycling.	% of waste recycled.	Mid-LAP	Environment & Engineering – Waste Division

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Cultural Heritage	***CH To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.***	Ensure that the cultural heritage of the LAP area is maintained and protected from damage or deterioration	No. of archaeological sites investigated/ number of planning applications with input from or screened by the City Archaeologist.	Mid-LAP	Planning and Property, Development Department
			Monitor the City Council's additions to the Record of Protected Structures for the National Inventory of Architectural Heritage NIAH recommendations for Cherry Orchard Hospital and the Dublin City Industrial Heritage Record (DCIHR) recommendations for Industrial Heritage.		
Landscape (including soil)	***LS To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchard's landscapes and soils.***	Develop brownfield lands and vacant sites	Total area of brownfield lands and vacant sites developed/ granted planning permission.	Mid-LAP	Planning and Property, Development Department
		Develop new areas of open space	Number of new parks/ open spaces, green link through the LAP lands.	Mid-LAP	Parks & Landscape Services (Planning and Property, Development Department)

5 Context and Content of Park West – Cherry Orchard Local Area Plan

5.1 Introduction

Park West – Cherry Orchard is situated approximately 9km west of Dublin City Centre (from O'Connell Street) and immediately east of the M50. While all of the Local Area Plan lands are located in the administrative area of Dublin City Council, it is noted that the lands to the immediate north (part of), south and west are within South Dublin County Council's administrative area.

The plan area includes or is close to: -

- The M50 motorway
- Park West and Cherry Orchard train station
- Grand Canal
- Cherry Orchard Hospital
- Wheatfield and Cloverhill Prisons, and Courthouse.
- Employment generating lands of Park West business park (within LAP), and Park West Industrial estate (just outside).
- Employment and enterprise lands of South Dublin County Council subject of recent rezoning from 'Employment' to 'Regeneration' – Variation no. 3)
- Liffey Valley Shopping Centre
- Ballyfermot Village and Park West neighbourhood centre

These wider and local factors need to be considered along with the build-out of the vacant sites when assessing the potential issues and opportunities for the LAP area.

In preparing the LAP, regard has been had to the hierarchy of statutory plans and guidance documents which exist, which inform and guide development in the area, in particular the Dublin City Development Plan, Regional Spatial and Economic Strategy and the National Planning Framework.

In reviewing the LAP regard was had to each of the following plans: -

- National Planning Framework: Ireland 2040 – Our Plan
- National Adaption Framework: Planning for a Climate Resilient Ireland 2018
- Smarter Travel – A Sustainable Transport Future 2009 – 2020
- Regional Spatial and Economic Strategy , 2019
- Transport Strategy for the Greater Dublin Area 2016-2035
- Retail Strategy for the Greater Dublin Area 2008-2016
- Dublin City Development Plan 2016-2022
- South Dublin County Development Plan 2016-2022

A brief synopsis of each of the above plans is provided within the LAP. In summary the over-arching theme of national planning policy which informs this LAP is the consolidation and sustainable use of land in urban areas, particularly urban environments inside the

M50 and well served by public transport. Urban consolidation is a key component in the achievement of sustainable development, economic competitiveness, community well-being, environmental protection, and in order to achieve full economic value from investment in public infrastructure.

The LAP is being prepared to guide development over a wide range of sites identified within the Park West – Cherry Orchard area for which development opportunities have been identified. It provides a guide to help consolidate this urban area in a sustainable and meaningful way.

5.2 Summary of Draft LAP

The Park West – Cherry Orchard Local Area Plan 2019 is divided into chapters, each briefly summarised below. The objectives which are outlined below are those which were chosen following the consideration of a number of alternatives which are outlined and evaluated in Sections 6 and 7 of this Report.

Chapter 1: Introduction & Policy Context: The Park West – Cherry Orchard LAP is a statutory plan under the Planning and Development Act 2000 (as amended) with a stated 6-year life-span. There is c. 46ha of undeveloped land available for a mix of residential, enterprise and employment development within the Park West – Cherry Orchard LAP area. The LAP provides a strategic guidance document for developing these sites.

Chapter 2: Local Area Context and Analysis: In order to inform objectives for the area, a site context and analysis was undertaken, examining factors such as population and housing profile, and examining roads and drainage infrastructure. An audit of all existing community, educational, recreation and childcare facilities was also carried out. This work allowed for the identification of the 'key challenges' for the LAP to address.

Chapter 3: Vision and Key Principles: The vision for Park West – Cherry Orchard is :

"Part West – Cherry Orchard will be an attractive and identifiable place with a vibrant and active community. A good mix of residential typologies will cater for people across all spectrums of their lifecycle, and residents will have the benefit from the provision of local shops, schools, parks and community and recreational facilities. New commercial and enterprise space will provide opportunities for local employment and both residents and workers will benefit from a high quality integrated public transport network system, and a permeable and safe pedestrian environment."

A series of nineteen over-riding principles to guide the LAP development strategy are set out under the headings of vacant sites; housing and tenure diversity; place making; economic development and employment; open space and recreational facilities; transport and movement; infrastructure delivery and implementation and green infrastructure and biodiversity.

CHAPTER 4: LAP Development Strategy: This Chapter sets out the key aims and objectives for Park West – Cherry Orchard under the following headings: -

- Economic Development and Employment
- Housing and Tenure
- Access and Movement
- Public Transport
- Urban Form and Design

- Community and Social Infrastructure
- Green Infrastructure, Heritage and Biodiversity
- Physical Infrastructure and Services (Drainage and Water)

Chapter 5: Site Briefs: The LAP identifies a total of 8 no. vacant sites available for development: -

1. Elmdale-Hospital Site
2. North of Cherry Orchard Avenue
3. 3a M50-Cloverhill Site (Local Enterprise Units)

   3b. M50-Cloverhill Site (Housing Units)
4. M50-Cedarbrook Avenue Site
5. Barnville Site
6. Park West Avenue/Road Site
7. M50-Park West Site (north)
8. M50-Park West Site (south)

Each site is described in terms of its overall site area, ownership and zoning, with guidance given as to appropriate uses, heights, estimated capacity and additional supporting information and/ or site constraints detailed.

In addition 2 no. Amenity development sites are identified as follows:

A. Cherry Orchard Park

B. Gallenstown Waterworks /Canal Basin

Chapter 6: Phasing & Implementation: The LAP aims to be a flexible working framework document which can respond to the evolving needs of the community and market forces. The City Council, as a major landowner and the local authority will undertake an active land management approach to progress and secure the objectives of the LAP to achieve the proper planning and sustainable development of the area in line with the vision set out in Chapter 3.

6 Identification & Description of Alternative Plan Scenarios

6.1 Introduction to Alternative Scenarios

Article 5 of the SEA Directive requires the environmental report to consider '*reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme'* and the significant effects of the alternatives selected. Alternatives must be realistic and capable of implementation and should present a range of different approaches within the statutory and operational requirements. The following section documents the process of considering alternatives relating to the LAP.

The consideration of LAP alternatives is a real-world exercise that recognises that the plan must work within an existing context of National and Regional Strategic Plans, climate change, and an Irish and European legislative framework that has sustainable development at its core. It is not an '*open-book'* exercise, where every conceivable option/alternative is examined.

The "Do Nothing" scenario was not considered a feasible alternative, as the members of Dublin City Council have voted to prepare a Local Area Plan for Park West – Cherry Orchard, as a key component in implementing the policies and objectives of the Dublin City Development Plan 2016-2022. As part of the active land management policy approach of the City, it is Council policy to develop lands within the City to provide sustainable neighbourhoods and communities. A do-nothing approach would be contrary to this policy.

This following section of this Environmental Report sets out: -

- The legislative context for the consideration of alternatives;
- Parameters for selecting alternatives;
- Identification of alternatives.

Section 7 of this Environmental Report provides an environmental evaluation of the alternatives.

6.2 Legislative Context

The consideration of alternatives is a requirement of the SEA Directive (2001/42/EC). It states under Article 5(1) that: -

"Where an environmental assessment is required under Article 3(1), an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated. The information to be given for this purpose is referred to in Annex I".

Annex 1 (h) of the Directive clarifies that the information to be provided on alternatives under Article 5(1), is *inter alia* an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.

Article 9 of the Directive requires that a statement shall be prepared providing information on the reasons for choosing the plan as adopted, in the light of the other reasonable alternatives dealt with.

Annex 1 (f) details the environmental topics to be considered in the evaluation of the alternatives, which is the same as that addressed in the assessment of the plan itself: -

"…biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors".

Therefore, the Directive emphasises that the SEA process must consider alternatives that are '*reasonable*', and take into account '*the objectives'* of the plan, and '*the geographical scope of the plan'*.

The term '*reasonable'* is not defined in the legislation. Good practice points to the analysis of '*alternatives*' as being a constructive and informative exercise for the policy makers, and that only '*possible*' options for policy are examined. Plan scenarios that run counter to European environmental directives, the National Planning Framework (NPF), Ministerial Guidelines or Regional Planning Guidelines (RPG) would not be considered reasonable.

Alternatives are required to take into account the objectives of the plan. The alternatives study therefore must operate within the strategic objectives set out for the plan, and provide an examination of alternative means of implementing the plan.

Section 3.14 of the SEA DECLG Guidelines notes that the higher the level of the plan, the more strategic the options which are likely to be available such as that for a Development Plan. Conversely, lower tier plans, such as LAPs, will be framed in a policy context set by the level(s) above them, and strategic options may be limited.

6.3 Parameters for Selecting Alternatives

The consideration of reasonable alternatives must take into account '*the geographical scope of the plan'* area and the key strategic influences.

Park West – Cherry Orchard is an existing suburb located to the west of the city centre, immediately abutting the M50 with the Dublin-Kildare train line dividing the two areas into two. There is an existing mix of residential, commercial and institutional uses in the LAP area. The question therefore that arises is not whether or not the area is suitable for development, but rather what type of development is most suited to particular locations, and what is the appropriate level of development, density and/or height. The need to consolidate towns and cities and the metropolitan core of Dublin City is the primary context of national, regional and city planning, within which the local area plan must operate. Strategic objectives from higher order plans are summarised below.

National Planning Framework

The NPF now represents the overarching national planning policy document and provides a spatial and strategic expression of Government policy and provides a National Planning Framework to guide national, regional and local planning. The NPF is linked to the ten-year National Development Plan (NDP) for capital investment which puts together one plan to guide strategic development and infrastructure investment at a national level.

One of the primary goals of the NPF is to deliver 'Compact Growth'. In particular, the NPF indicates that: -

"Carefully managing the sustainable growth of compact cities, towns and villages will add value and create more attractive places in which people can live and work. All our urban settlements contain many potential development areas, centrally located and frequently publicly owned that are suitable and capable of re-use to provide housing, jobs, amenities and services, but which need a streamlined and co-ordinated approach to their development, with investment in enabling infrastructure and supporting amenities, to realise their potential. Activating these strategic areas and achieving effective density and consolidation, rather than more sprawl of urban development, is a top priority".

Park West – Cherry Orchard has significant potential to deliver 'compact growth' and become a sustainable urban neighbourhood. The NPF is a high level strategic plan and it is intended that the practical implications and the rollout of the Framework will be implemented through the Regional Spatial and Economic Strategy (RSES) and Dublin Metropolitan Area Strategic Plan (MASP).

Regional Spatial and Economic Strategy (RSES)

The Eastern and Midland Regional Assembly issued a draft Regional Spatial and Economic Strategy for public consultation in November 2018. The report was approved on 3rd May 2019 and came into effect on the 28th June 2019. The principal statutory purpose of the RSES is to support the implementation of Project Ireland 2040 - The National Planning Framework (NPF) and National Development Plan (NDP), and the economic policies and objectives of the Government by providing a long-term strategic planning and economic framework for the development of the region. As required under the NPF the Regional Spatial and Economic Strategy for the Eastern and Midlands area includes a specific Metropolitan Area Strategic Plan (MASP) for the Dublin area. This statutory plan acts as a twelve year strategic planning and investment framework for the Dublin City Metropolitan Area.

The Growth Strategy for the Eastern and Midland Region will:

• Support the continued growth of Dublin as our national economic engine

• Deliver sustainable growth of the Metropolitan Area through the Dublin Metropolitan Area Strategic Plan (MASP).

The RSES supports the consolidation and re-intensification of infill/brownfield sites to provide high density and people intensive uses within the existing built up area of Dublin city and suburbs and ensure that the development of future development areas is co-ordinated with the delivery of key water infrastructure and public transport projects.

To achieve ambitious compact development targets of at least 50% of all new homes within or contiguous to the existing built up area in Dublin and 30% in other settlements, the MASP identifies strategic residential, employment and regeneration development opportunities along with the requisite infrastructure investment needed to ensure a steady supply of sites in tandem with the delivery of key public transport projects as set out in the NDP.

The MASP identifies strategic residential and employment development corridors based on their capacity to achieve compact sustainable and sequential growth along key public transport corridors, existing and planned to achieve the creation of sustainable compact communities with improved housing choice, access to social and economic opportunities, enhanced services and amenities for a resident population of some 1.65m people in the metropolitan area by 2031.

The Park West – Cherry Orchard LAP lands form part of the City Centre and South Western strategic corridors. Within the city centre, industrial and underutilised lands are identified for the creation of new sustainable communities that support the continued growth of Dublin as the primary business and retail core. The consolidation and western expansion of the city can be achieved through the development of strategically located sites, linked to increased capacity and electrified services on the Kildare rail corridor, to be delivered by 2027. In this context, the LAP seeks to support the delivery of the RSES.

Smarter Travel – A Sustainable Transport Future 2009–2020

The overarching aim of this document is that by 2020 future population and economic growth will occur predominantly in sustainable compact locations. It sets out how the government's vision of sustainable travel and transport in Ireland by year 2020 can be achieved. A target of reducing car based commuting from 65% to 45% nationally by 2020 is set.

Five key goals of 'Smarter Travel – A Sustainable Transport Future' are to: -

1. Reduce dependency on car travel and long distance commuting
2. Increase public transport modal share and encourage cycling and walking
3. Improve quality of life and accessibility for all
4. Improve economic competitiveness through increased efficiency of the transport system, and
5. Reduce greenhouse gas emissions and dependency on fossil fuels.

The document promotes the use of consolidation as a planning approach to deliver these key goals by making more sustainable modes of travel viable and available

Greater Dublin Area Transport Strategy 2016-2035

In April 2016, the Transport Strategy released by the National Transport Authority (NTA) was adopted by the Minister. The Strategy will guide decisions on transport throughout the region and will contribute to the economic, social and cultural progress of the Greater Dublin Area (GDA) by providing for the efficient, effective and sustainable movement of people and goods. For the Metropolitan Area, development will be consolidated to achieve a more compact urban form.

With respect to the Park West – Cherry Orchard area, the Strategy includes proposals for DART expansion programme providing fast, high frequency, electrified services to Park West – Cherry Orchard and onwards to Celbridge / Hazelhatch.

Dublin City Development Plan 2016-2022

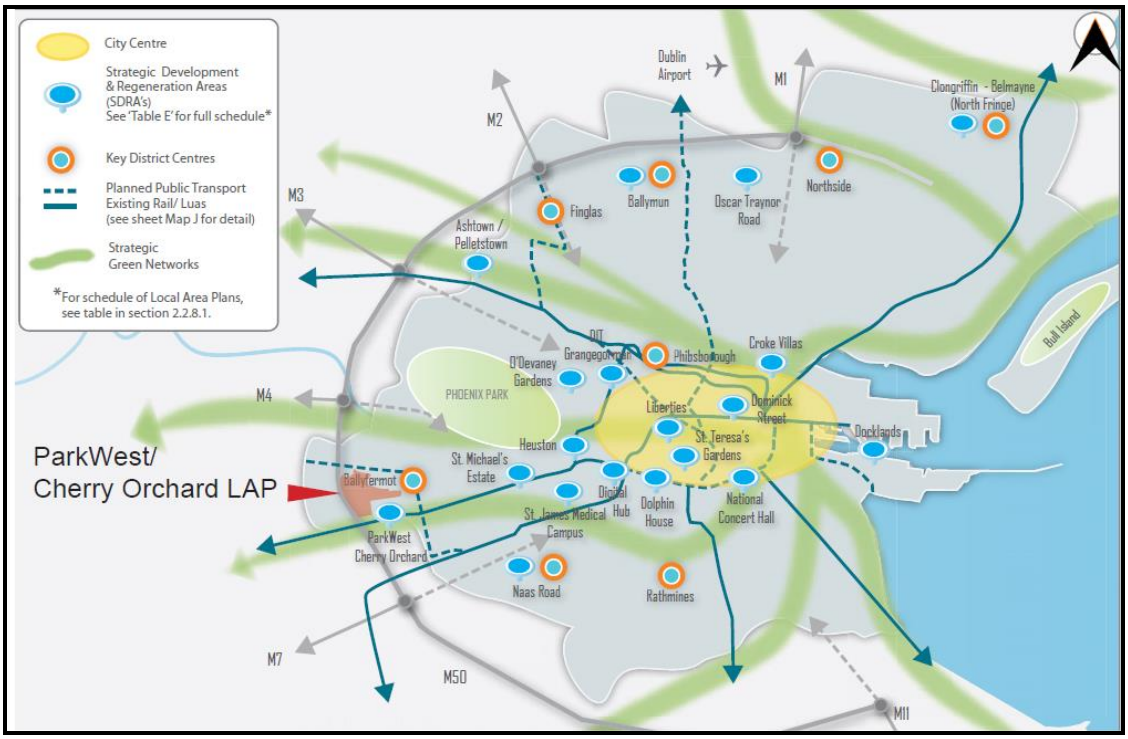
The Dublin City Development Plan 2016–2022 provides a clear spatial framework to guide the future growth and development of the city in a coherent, orderly and sustainable way, framed on a vision of sustainable city living and a core strategy seeking the creation of a socially inclusive city of urban neighbourhoods, all connected by an exemplary public transport, cycling and walking system and interwoven with a quality bio-diverse green space network, see Map 24.

The Development Plan strategy for the city has a strong policy emphasis on the need to gain maximum benefit from existing assets such as public transport and social

infrastructure, through the continuation of consolidation and increasing densities within the existing built footprint of the city.

This is in line with the regional planning guidelines policy of consolidation of the metropolitan core. A further key aspect is that future expansion whether housing or mixed uses, occurs in tandem with high-quality rail based public transport and within the context of local area plans.

Map 24: Core Strategy Map, Dublin City Development Plan 2016-2022.



Park West – Cherry Orchard is designated as a Strategic Development and Regeneration Area (SDRA) in the Dublin City Development Plan. There are eighteen SDRA areas of the city that have been identified as being capable of significant mixed use developments to regenerate their respective areas. The SDRA guiding principles for the development of Park West – Cherry Orchard encompass: -

- To create a vibrant and sustainable new urban area with work, living and recreational opportunities, based around high-quality public transport nodes.
- To create a place with distinctive urban character based on urban design principles with strong physical and psychological linkages to the city.
- To provide for sufficient densities of development, to sustain public transport and a viable mix of uses.
- To provide for an integrated public transport system, with bus and commuter rail as the main components.
- To provide for the integration of the new community with the established community.
- To provide for a balanced mix of residential tenure.

- To develop a coherent spatial framework, incorporating the following elements: -

  (a) Two axial routes, defined by buildings, providing the main structuring components, linking the proposed new rail station with Ballyfermot Road to the north and Park West Road to the south.

  (b) A Main Street at the intersection of the two axial routes, providing a safe and vibrant mixed-use environment, incorporating provision of a supermarket and associated retail and service facilities.

  (c) A new civic space next to the main street, linking to the civic place adjacent to the rail station, creating a high profile for public transport and a strong sense of place for the local resident and working population.

- To enhance the new identity of the area by providing for 2-3 mid-rise buildings at nodal spaces in the vicinity of the railway station or adjoining the M50 to act as place markers.

- That in the creation of the 'new town' in the Park West/Cherry Orchard area as a policy and priority that the key historic and existing deficits with regard to layout, community under-development, policing, anti-social activity, lack of provision for childcare etc. be factored in to be provided for in the new proposed development and that a new charter for Cherry Orchard be articulated and become an integral part of the overall plans and initiatives for the area.

- To provide for a supermarket and other local shopping.

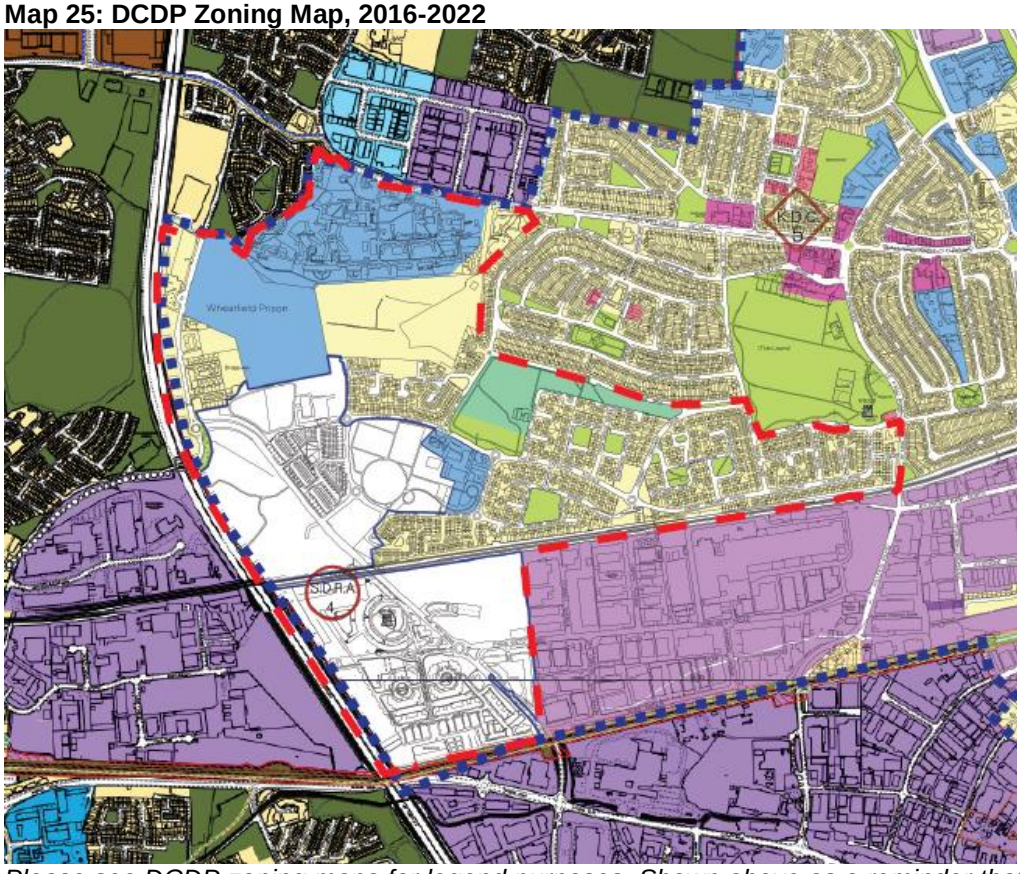
6.4 Identification of Alternatives

Dublin City Council, as the plan-making authority, is obliged to consider alternative ways of achieving the objectives of the LAP for Park West – Cherry Orchard. The alternatives considered must be reasonable, realistic and capable of implementation while operating within the planning hierarchy. The alternatives considered for the Park West – Cherry Orchard Local Area Plan are focused upon 3 no. sites and the scope of opportunities which they offer. These have been selected as they offer a variety of development alternatives.

As stated earlier the alternatives are required to consider the objectives/vision of the LAP which in turn is contingent on and restrained by the objectives of higher tier strategic plans. As such the number of alternatives reflects this. The main considerations for Park West – Cherry Orchard are the: -

- provision high quality housing;
- attracting inward investment;
- creation of new job opportunities;
- provision of supporting community, sporting, educational and cultural facilities and services , to serve both communities;
- the creation of community focal points;
- providing new connections through and between the two areas.

Map 25: DCDP Zoning Map, 2016-2022



Please see DCDP zoning maps for legend purposes. Shown above as a reminder that the LAP much be in accordance with the zoning objectives of the DCDP.

6.4.1 Alternative No. 1: Barnvile site

Location: Site 5, Barnville Park (see Chapter 5 of the LAP)

Site Description: 1.5 ha located to the west of Barnville Park and east of Cedar Brook

Zoning: Z14 – To seek the social, economic and physical development and / or rejuvenation of an area with mixed use of which residential and "Z6" would be the predominant uses.

Context: This site is under the ownership of DCC. Development options considered as part of the LAP process included:

(1) To develop it as a neighbourhood centre site as per the SDRA key development principles, or

(2) To develop the site for residential use and provide an alternative location for the neighbourhood centre uses.

The LAP supports the second option on the basis of consolidating local neighbourhood centre uses on an alternative site within the heart of Cherry Orchard adjoining existing community, social and civic uses, and providing supermarket shopping adjoining the railway line.

Map 26: Location, Site No. 5

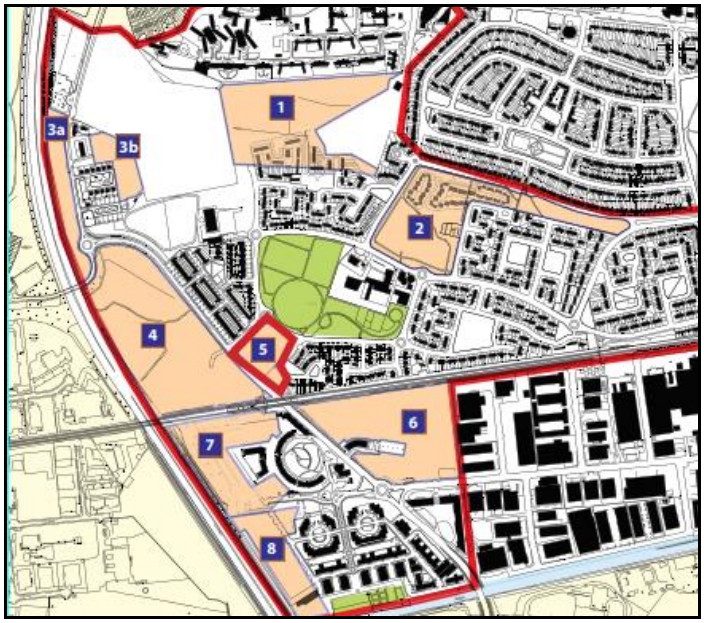
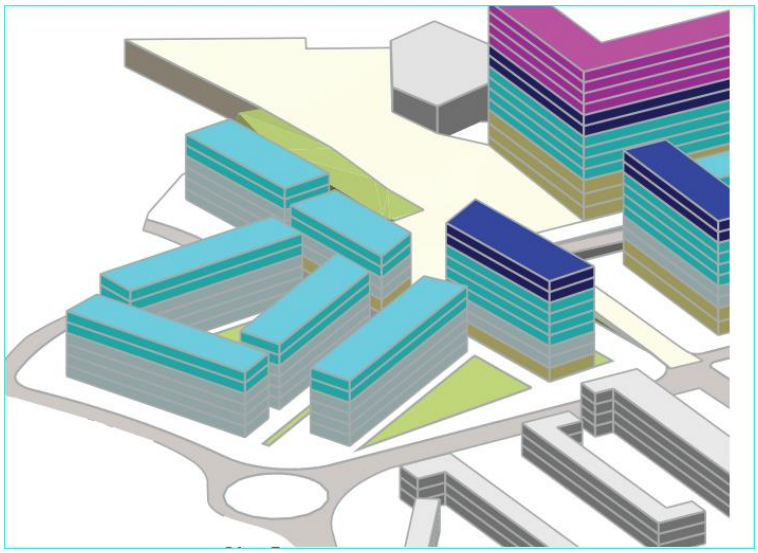


Fig 11: LAP Indicative Layout and Massing for Site No. 5



Key

- Existing Building
- 0-4 Storey Residential Building
- 5-8 Storey Residential Building
- 9-10 Storey Residential Building
- Landmark Building
- 0-4 Storey Commercial / Enterprise / Non Residential Use
- 5-8 Storey Commercial / Enterprise / Non Residential Use
- Public Plaza

Alternative 1A: Develop the site as a neighbourhood centre

The SDRA has identified this site and the site opposite, on Park West Avenue, north of the train line as the sites most suitable for 'neighbourhood centre' development. This option would encompass a supermarket and associated retail and service facilities.

The site is a prominent development site, addressing Park West Avenue, Barnville Park, Cedar Brook residential estate and Cherry Orchard Park. A supermarket and neighbourhood centre by its nature requires car parking, service/delivery area and often has at least one blank gable/ service entrance. In this regard, a neighbourhood centre development would have to 'work hard' to address these important boundaries and to protect the existing residential amenities of the adjoining residential developments. On balance, this site adjoining existing residential uses is not considered the most favourable location for a neighbourhood centre / supermarket development.

Alternative 1B: Develop the site for predominantly residential uses

The alternative would see residential development forming the dominant use (80%) of the site, with some element of commercial and retail uses to serve local needs, in particular fronting onto Park West Avenue. It is estimated that this site could deliver in the range of 120-180 apartments in buildings of 4-8 storeys in height. The height differences allow the development to more favourable address the level differences and also the existing adjoining residential developments. The development would also align with the objectives of the LAP and the City Development Plan core strategy to provide sustainable residential densities in the city, within proximity to public transport, services and amenities.

Alternative Chosen:

Taking into account the prominent position of the subject site addressing the train station, adjoining existing residential developments and the level differences between Cherry Orchard Park and Park West Avenue it is considered that residential development is a more suitable use for the site. Residential development can more favourably addresse these site constraints as opposed to a neighbourhood centre / supermarket development which will bring its own design restrictions – i.e. loading/servicing requirements, blank gables, traffic considerations, long operating hours etc. It is also considered that more suitable sites are available locally to provide local and convenience shopping needs.

6.4.2 Alternative No. 2: M50- Cloverhill site

Location: Site 3a, Cloverhill Road (see Chapter 5 of the LAP)

Site Description: 2.1 ha located to the east of the M50 and west of Cloverhill Road

Zoning: Z1 – To protect, provide and improve residential amenities.

Context: This site is under the ownership of DCC. Development options considered as part of the LAP process included

(1) To develop it for residential use, or

(2) To develop it for enterprise and employment uses.

The LAP supports the second option on the grounds that the site is not desirable for residential uses on the grounds of noise and air quality.

Map 27: Location, Site no. 3a

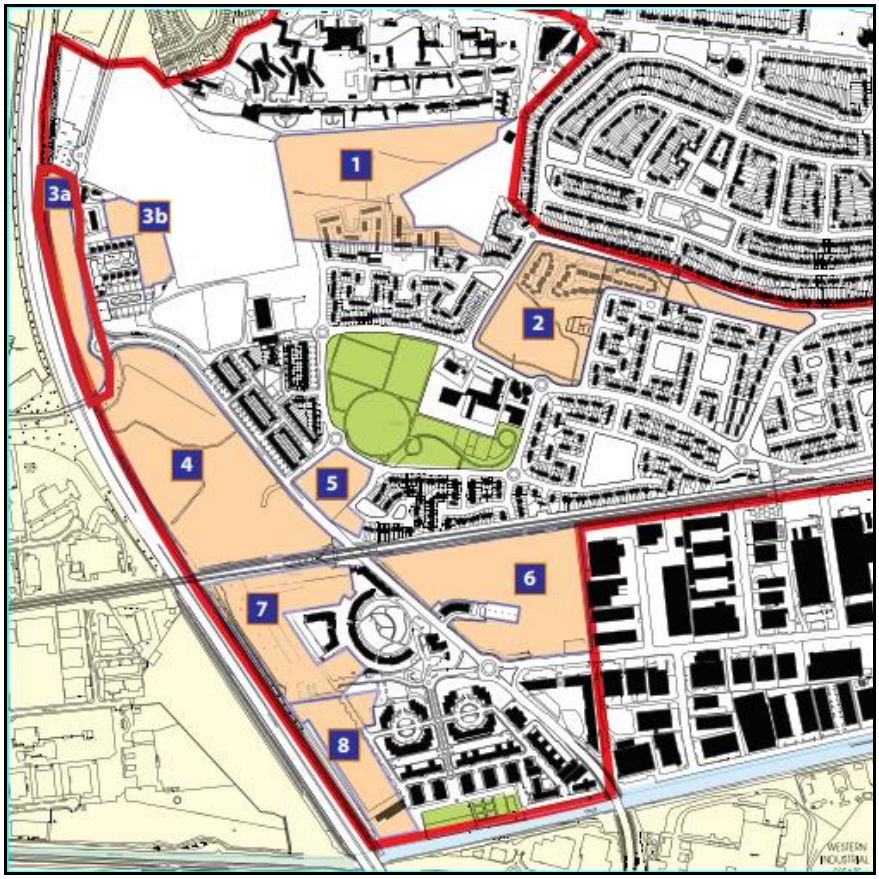
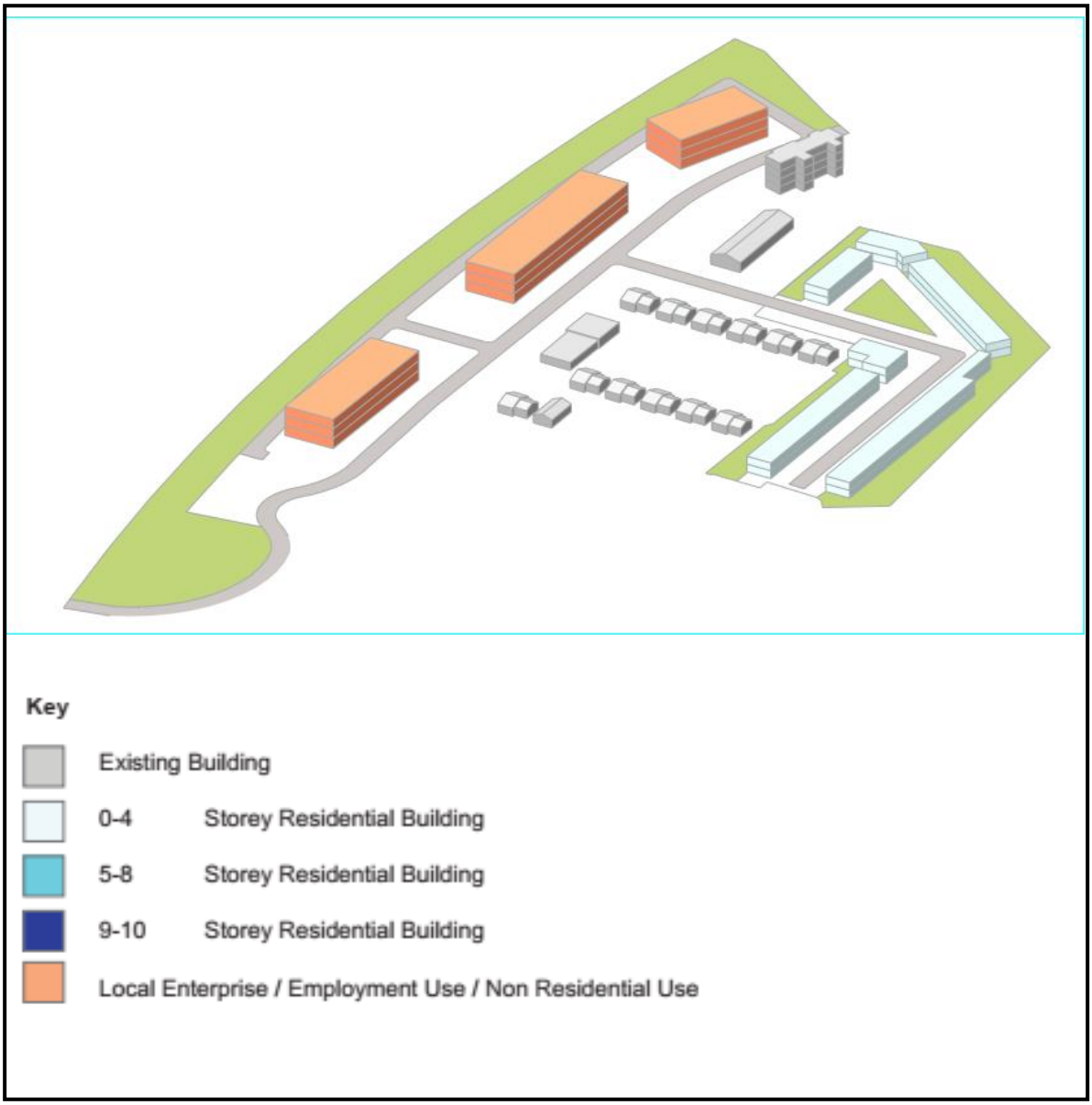


Fig 12: LAP indicative layout and massing for Site 3a



Alternative 2A: Develop the site for residential uses only

This alternative would see residential development across the site in line with the land-use zoning. This site is a long relatively narrow strip of land buffering the M50. It is estimated that the site could accommodate c. 70 no. residential units of 4-storeys (double duplex unis). The height, location and siting of the residential units on the site is driven by increasing the separation distance from the M50, a significant noise generator and source of air pollution for the study area. The noise and air quality issues relating to the M50 are set out in Section 3.4 of this SEA report. Having regard to these fundamental health concerns it is not considered that this site is suitable for residential development.

Alternative 2B: Develop the site for enterprise / employment uses

This alternative would seek to provide enterprise and employment uses for the site. In preparing the SEA and the LAP it became clear that noise and air pollution are serious issues to consider when developing the site briefs and development strategies for the sites immediately adjoining the M50. In reviewing the prevailing uses adjoining the M50 generally, it was noted that the majority of uses are of a commercial, enterprise, industry or sporting nature. As such given the environmental information obtained during the SEA and Draft LAP preparation it is considered that non-residential uses are more suitable for the site.

Alternative Chosen:

Given the concerns regarding the proximity of this site to the M50, the prevailing uses currently along the M50 (industry, big box, commercial and sporting uses) and the need for local employment uses it is considered that the site is more suitable for enterprise uses. The site is estimated to have the capacity to deliver in the order of 120,000 sq.ft. of commercial space, in buildings of 2-3 storey in height, while retaining a quality green belt to the M50.

(Additional Note: While this alternative is provided for the subject site it is noted that the noise and air pollution concerns have also feed into the design considerations for sites 4, 7 and 8 which also adjoin the M50.

6.4.3 Alternative No. 3: Density, Site 4

Location: Site 4, M50 – Cedarbrook Avenue Site (see Chapter 5 of the LAP)

Site Description: 11.5 ha and is located to the east of the M50 and west of Park West Avenue and to the north of the train station

Zoning: Z14 – To seek the social, economic and physical development and / or rejuvenation of an area with mixed use of which residential and "Z6" would be the predominant uses

Context: This site is under the ownership of DCC. Development options considered as part of the LAP process included

(1) To develop the residential portion for high density, or

(2) To develop it the residential portion for a mix/range of densities.

The LAP supports the second option on the grounds that this large site is capable of providing a mix of densities and that a wider density range is more suitable to 'kick-start' development in the LAP area.

Map 28: Location, Site no. 4

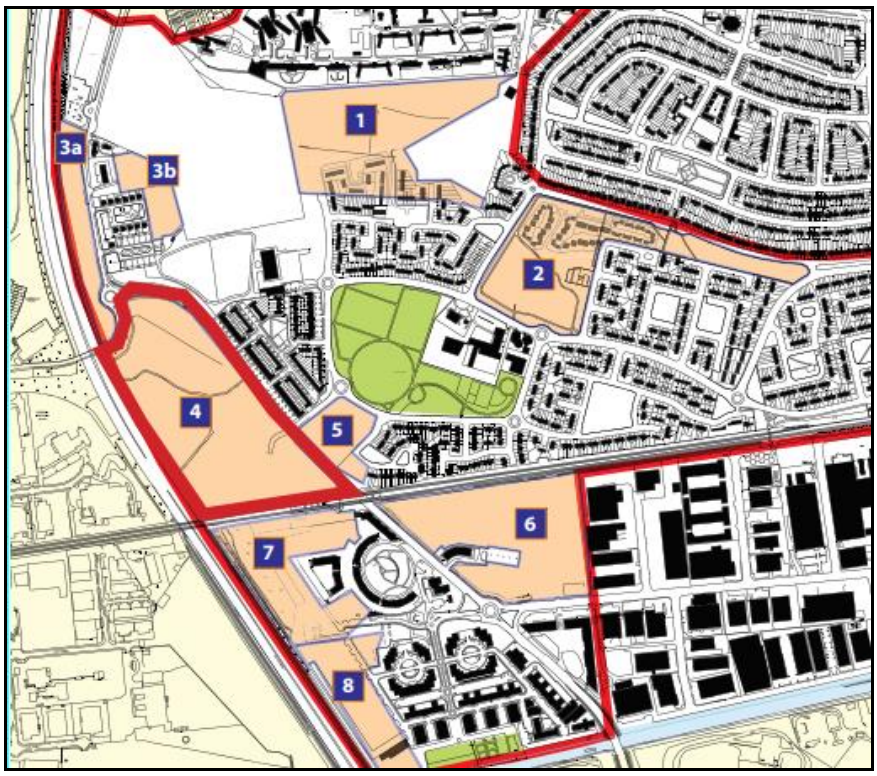
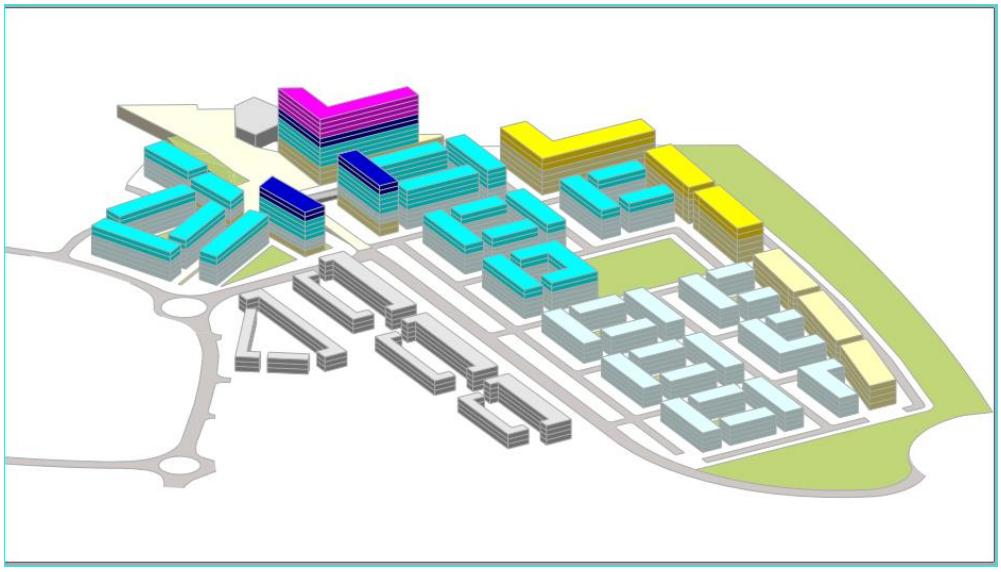


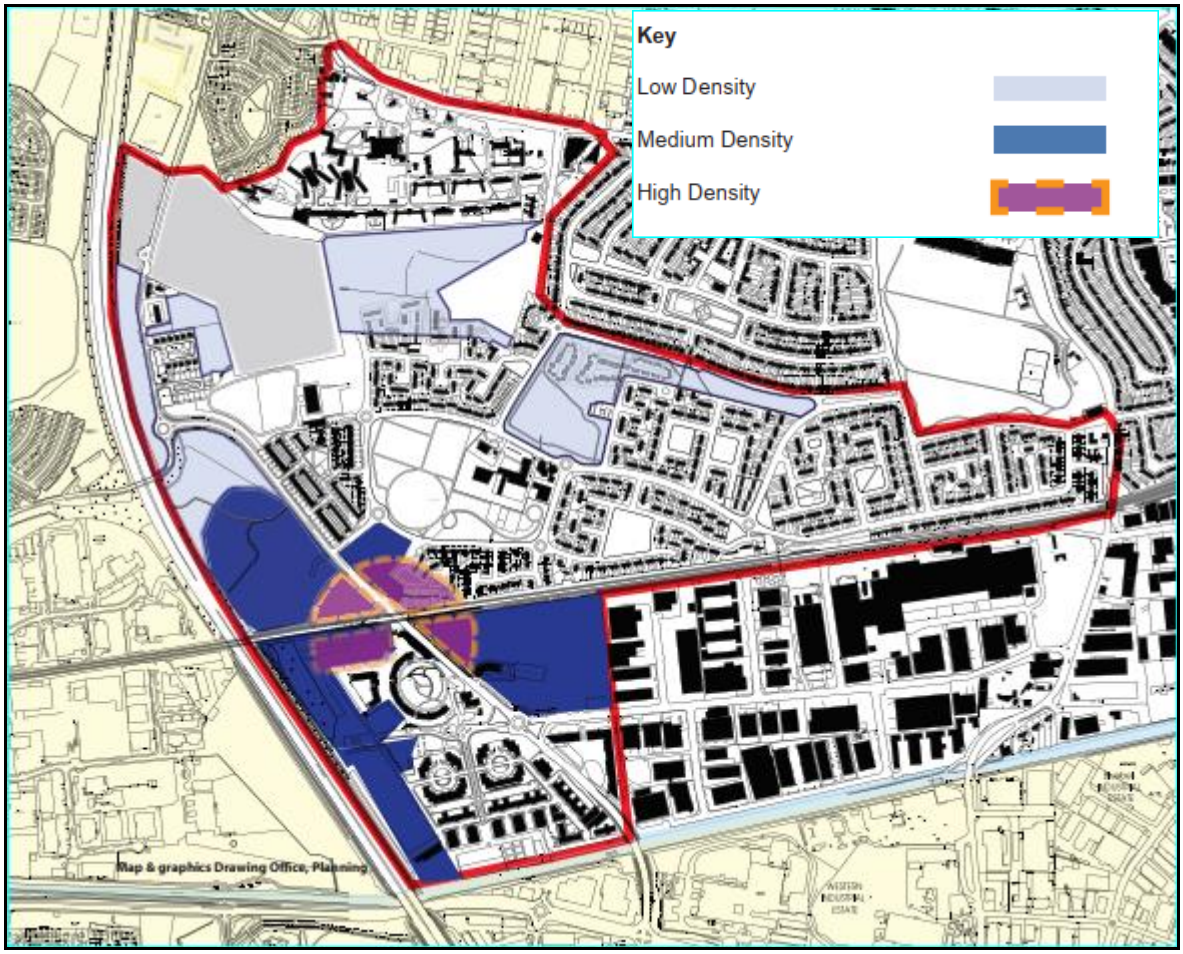
Fig 13: LAP indicative layout and massing for Site for 4 (and 5 shown)



Key

- Existing Building
- 0-4 Storey Residential Building
- 5-8 Storey Residential Building
- 9-10 Storey Residential Building
- Landmark Building
- 0-4 Storey Commercial / Enterprise / Non Residential Use
- 5-8 Storey Commercial / Enterprise / Non Residential Use

Map 26: LAP Density Strategy



Alternative 3A: Develop the residential portion for high density only

This alternative would see only high density residential development on this site. The provision of high and dense residential units makes the best use of the land and is in line with the strategic and statutory policy objectives to consolidate development within the M50 and in proximity to public transport, services and amenities. By maximising the number of people living in such close proximity to the train station, the site would reduce the need for urban sprawl and increase sustainable means of travel.

Alternative 3B: Develop the residential portion for a mix/range of densities

As part of addressing the housing imbalance, there is a need for people to be able to buy or rent in the area at different market levels, with different house / apartment types to accommodate those at various stages of their lifecycle. While it is important that higher densities are achieved on this site it is equally important that a reasonable level of lower density homes are provided in order to attract and retain working households in the area. In current economic circumstances, the financial viability of higher density projects in locations such as Park West – Cherry Orchard which are outside of the city centre or outside of mature high-value residential locations is questionable. Having regard to the prevailing economic and social circumstances in the area, it is considered important that greater flexibility is warranted in the early stages of new larger-scale developments in

Cherry Orchard in order to 'kick start' a valuable project that might otherwise not be market-viable. The Dublin City Development Plan 2016-2022 notes the benefits of 'kick-starting' developments as outlined in the Government's Construction 2020 document. This however shall be 'plan-led' and clearly identified in the LAP. It shall only be appropriate on larger sites and those furthest from the train station. In this regard, the subject site is considered of a size and scale that warrants a mix of densities to facilitate its re-development for the overall betterment of the LAP area.

Alternative Chosen: Both of these alternatives were considered during the LAP preparation process, and both are considered to have significant benefits for the local population. It is however considered that a more flexible development approach should be afforded in this challenging area. Identifying this from outset in a systematic and logical manner provides greater certainty for the market, state agencies and local people.

7 Evaluation of Alternative Plan Scenarios

7.1 Introduction

Article 5 of the SEA Directive requires the Environmental Report to evaluate the alternatives identified.

The alternatives identified in **Section 6** have each been assessed against the Environmental Protection Objectives previously identified and outlined in **Section 4** above and set out again below.

Environmental Protection Objectives	
ENVIRONMENTAL RECEPTOR	**ENVIRONMENTAL PROTECTION OBJECTIVE**
Population and Human Health	**PHH** To create a sustainable compact city in which to live, work and/or visit. *(other EPOs relating to population and human health are covered under each of the environmental headings below)*
Biodiversity/Flora & Fauna	**BFF** To protect and where appropriate enhance the diversity and range of habitats, species and their resources within the LAP area.
Air Quality & Noise	**AN1** To protect good air quality status and minimise all forms of air pollution (i.e. Nitrogen oxides & Particulate Matter). **AN2** To maintain and, where possible, improve the good acoustical quality for the current and future residents of the plan area.
Climatic Factors	**CF** To minimise emissions of greenhouse gases.
Water	**W1** To comply with EU Water Framework Directive to ensure and maintain good ecological status of all receiving water in the LAP area. **W2** To reduce and manage the risk of flooding. **W3** To provide adequate wastewater treatment, water distribution and drainage networks.
Material Assets	**MA1** To reduce traffic levels by encouraging modal change from car to more sustainable modes of transport such as public transport, walking & cycling. **MA2** To reduce the generation of waste and adopt a sustainable approach to waste management.
Cultural Heritage	**CH** To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.

Landscape & Soils	**LS** To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchard landscapes and soils.

The impact of each alternative is assessed against the Environmental Protection Objectives, using the following assessment key: -

SYMBOL	IMPACT ON THE ENVIRONMENTAL PROTECTION OBJECTIVE
+	Significant Beneficial Impact
?	Uncertain impact
x	Significant Adverse Impact
0	No Relationship, or Insignificant Impact

Tables 11 – 13 below evaluate the alternatives considered against each of environmental protection objectives.

7.2 Evaluation of Alternatives

Table 11: Evaluation of Alternative No.1 Barnville Site (site 5)

EPO	Alternative 1A To develop the site as a neighbourhood centre	Alternative 1B To develop the site for predominantly residential uses
PHH To create a sustainable compact city in which to live, work and/or visit.	+ New and existing residents will benefit from enhanced neighbourhood centre facilities.	+ New housing would be provided in an existing urban area in proximity to schools, parks and train station
BFF To protect and where appropriate enhance the diversity and range of habitats, species and their resources within the LAP area.	+ Redevelopment of the site would provide opportunities for integrating biodiversity measures into the new development – street trees, landscaping etc.	+ Redevelopment of the site would provide opportunities for integrating biodiversity measures into the new development – gardens, street trees, landscaping etc.
AN1 To protect good air quality status and minimise all forms of	+ / x The provision of a neighbourhood centre development will reduce the number of housing units provided	+ The provision of residential development in an already urban setting would lessen the need for

air pollution (i.e. Nitrogen oxides & Particulate Matter).	and with that local pollution sources. However it may force new housing developments to greenfield sites, requiring greater travel distances. Alternatively the provision of these facilities in an existing urban area will be of benefit for existing and future residents as it will reduce travel outside of the area to access these facilities.	development in a greenfield setting.
AN2 To maintain and, where possible, improve the good acoustical quality for the current and future residents of the plan area.	x The provision of a neighbourhood centre development by virtue of its use is likely to generate additional noise for the existing adjoining residents.	0 A development such as this is not likely to generate significant noise levels within an existing residential setting.
CF To minimise emissions of greenhouse gases.	+ / x The construction period would result in increased CO2 emissions for a temporary (short-term) duration. All new developments (buildings) will be required to have high levels of energy efficiency.	+ / x The construction period would result in increased CO2 emissions for a temporary (short-term) duration. All new residential developments will be required to have high levels of energy efficiency.
W1 To comply with EU Water Framework Directive to ensure and maintain good ecological status of all receiving water in the LAP area.	+ Redevelopment offers the opportunity to introduce new SuDS measures into the site.	+ Redevelopment offers the opportunity to introduce new SuDS measures into the site.
W2 To reduce and manage the risk of flooding.	+ The site is located within Flood Zone C within which all development is acceptable. Redevelopment for a neighbourhood centre offers the opportunity to introduce SuDS measures into the site.	+ The site is located within Flood Zone C within which all development is acceptable. Redevelopment for housing offers the opportunity to introduce SuDS measures into the site and any associated open space area.
W3 To provide adequate wastewater treatment, water distribution networks and	+ / x Redevelopment offers the opportunity to introduce SUDS measures into the site. Waste from the new development must be capable of being treated by the	+ / x Redevelopment offers the opportunity to introduce SUDS measures into the site. Waste from the new development must be capable of being treated by the

drainage networks	Ringsend Wastewater Treatment Plant.	Ringsend Wastewater Treatment Plant.
MA1 To reduce traffic levels by encouraging modal change from car to more sustainable modes of transport such as public transport, walking & cycling.	+ Providing new neighbourhood centre facilities in the centre of Cherry Orchard within walking and cycling distance of existing housing allows opportunities to commute sustainably. Redevelopment also offers opportunities to improve the level of passive surveillance for Barnville Park and Park West Avenue thereby improving this route's legibility and usability for walking and cycling.	+ Providing new residential development in existing urban areas within walking distance of bus and train services allows opportunities to commute sustainably. Redevelopment also offers opportunities to improve the level of passive surveillance for Barnville Park and Park West Avenue thereby improving this route's legibility and usability for walking and cycling.
MA2 To reduce the generation of waste and adopt a sustainable approach to waste management.	0 All new developments will be required to meet Development Plan Standards for waste management and recycling within new schemes.	0 All new developments will be required to meet Development Plan Standards for waste management and recycling within new schemes.
CH To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.	0 There are no recorded features of notable heritage value.	0 There are no recorded features of notable heritage value.
LS1 To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchard's landscapes and soils.	+ The development of the site will help consolidate the city and reduces the need for developing greenfield sites while also providing an area suitable for biodiversity enhancement.	+ The development of the site will help consolidate the city and reduces the need for developing greenfield sites while also providing an area suitable for biodiversity enhancement.

Table 12: Evaluation of Alternative No.2: M50 – Cloverhill Site (3a)

EPO	Alternative 2A To develop the site for residential uses only	Alternative 2B To develop the site for enterprise and employment uses
PHH To create a sustainable compact city in which to live, work and/or visit.	+ New housing would be provided in an existing urban area in proximity to schools, parks and train station.	+ New and existing residents will benefit from enhanced enterprise and employment opportunities.
BFF To protect and where appropriate enhance the diversity and range of habitats, species and their resources within the LAP area.	+ / x Redevelopment of the site would provide opportunities for integrating biodiversity measures into the new development – gardens, street trees, landscaping etc. However it would likely result in a reduction in habitat on the current site, as it is currently overgrown and vacant.	+ / x Redevelopment of the site would provide opportunities for integrating biodiversity measures into the new development – street trees, landscaping etc. However it would likely result in a reduction in habitat on the current site, as it is currently overgrown and vacant.
AN1 To protect good air quality status and minimise all forms of air pollution (i.e. Nitrogen oxides & Particulate Matter).	+ / x The provision of residential development in an already urban setting would lessen the need for development in a greenfield setting. The closer to the M50 the higher the levels of air pollutants experienced by residents.	+ / x The provision of enterprise facilities will reduce the number of housing units provided and with that local pollution sources. However it may force new housing developments to greenfield sites, requiring greater travel distances. Alternatively the provision of these facilities in an existing urban area will be of benefit for existing and future residents as it will reduce travel outside of the area to access these facilities.
AN2 To maintain and, where possible, improve the good acoustical quality for the current and future residents of the plan area.	x The noise maps shown in Section 3 show the M50 as being a significant source of noise pollution. Locating a residential development immediately beside this source would not improve the acoustical quality of the future residents.	+ The noise maps shown in Section 3 show the M50 as being a significant source of pollution. The noise generated by the provision of enterprise uses will be internalised in the units and is not likely to generate significant noise levels for current and future residents of the plan area.

CF To minimise emissions of greenhouse gases.	+ / x The construction period would result in increased CO2 emissions for a temporary (short term) duration. All new residential developments will be required to have high levels of energy efficiency.	+ / x The construction period would result in increased CO2 emissions for a temporary (short term) duration. All new developments (buildings) will be required to have high levels of energy efficiency.
W1 To comply with EU Water Framework Directive to ensure and maintain good ecological status of all receiving water in the LAP area.	+ Redevelopment offers the opportunity to introduce new SuDS measures into the site.	+ Redevelopment offers the opportunity to introduce new SuDS measures into the site.
W2 To reduce and manage the risk of flooding.	+ The site is located within Flood Zone C within which all development is acceptable. Redevelopment for residential and associated open space offers the opportunity to introduce SuDS measures into the site.	+ The site is located within Flood Zone C within which all development is acceptable. Redevelopment for enterprise uses offers the opportunity to introduce SuDS measures into the site.
W3 To provide adequate wastewater treatment, water distribution networks and drainage networks.	+ / x Redevelopment offers the opportunity to introduce SUDS measures into the site. Waste from the new development must be capable of being treated by the Ringsend Wastewater Treatment Plant.	+ / x Redevelopment offers the opportunity to introduce SUDS measures into the site. Waste from the new development must be capable of being treated by the Ringsend Wastewater Treatment Plant.
MA1 To reduce traffic levels by encouraging modal change from car to more sustainable modes of transport such as public transport, walking & cycling.	+ Providing new residential development in existing urban areas within walking distance of bus and train services allows opportunities to commute sustainably. Redevelopment also offers opportunities to improve the level of passive surveillance on Cloverhill Road thereby improving this route's legibility and usability for walking and cycling.	+ Providing new enterprise uses in existing urban areas within walking distance of bus and train services allows opportunities for local employment and for people to commute sustainably. Redevelopment also offers opportunities to improve the level of passive surveillance and activity on Cloverhill Road thereby improving this route's legibility and usability for walking and cycling.

MA2 To reduce the generation of waste and adopt a sustainable approach to waste management.	0 All new developments will be required to meet Development Plan Standards for waste management and recycling within new schemes.	0 All new developments will be required to meet Development Plan Standards for waste management and recycling within new schemes.
CH To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.	0 There are no recorded features of notable heritage value.	0 There are no recorded features of notable heritage value.
LS To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchard landscapes and soils.	+ The development of the site will help consolidate the city and reduces the need for developing greenfield sites while also providing an area suitable for biodiversity enhancement.	+ The development of the site will help consolidate the city and reduces the need for developing greenfield sites while also providing an area suitable for biodiversity enhancement.

Table 13: Evaluation of Alternative No. 3: Density, Site 4

EPO	Alternative 3A To develop the residential portion for high density only	Alternative 3B To develop the residential portion for a mix/range of densities
PHH To create a sustainable compact city in which to live, work and/or visit.	+ New housing would be provided in an existing urban area in proximity to schools, parks and train station	+ New housing would be provided in an existing urban area in proximity to schools, parks and train station
BFF To protect and where appropriate enhance the diversity and range of habitats, species and their resources within the LAP area.	+ Redevelopment of the site would provide opportunities for integrating biodiversity measures into the new development – gardens, street trees, landscaping etc.	+ Redevelopment of the site would provide opportunities for integrating biodiversity measures into the new development – gardens, street trees, landscaping etc.
AN1 To protect good air quality status and minimise all forms of air pollution (i.e. Nitrogen oxides & Particulate Matter).	+ The provision of residential development in an already urban setting would lessen the need for development in a greenfield setting	+/ x The provision of residential development in an already urban setting would lessen the need for development in a greenfield setting. Provision of a mix / range of densities may force additional new housing development to greenfield sites, requiring greater travel distances.
AN2 To maintain and, where possible, improve the good acoustical quality for the current and future residents of the plan area.	+ The noise maps shown in Section 3 show the M50 as being a significant source of noise pollution. The Draft LAP is thus positioning the residential development at the furthest point on the site with a commercial development between the residential development and the M50. The provision of residential development in an already urban setting would lessen the need for development in a greenfield setting.	+ The noise maps shown in Section 3 show the M50 as being a significant source of noise pollution. The Draft LAP is thus positioning the residential development at the furthest point on the site with a commercial development between the residential development and the M50. The provision of residential development in an already urban setting would lessen the need for development in a greenfield setting.
CF To minimise emissions of greenhouse gases.	+ / x The construction period would result in increased CO2 emissions for a temporary (short term) duration.	+ / x The construction period would result in increased CO2 emissions for a temporary (short term) duration.

	All new residential developments will be required to have high levels of energy efficiency.	All new residential developments will be required to have high levels of energy efficiency.
W1 To comply with EU Water Framework Directive to ensure and maintain good ecological status of all receiving water in the LAP area.	+ Redevelopment offers the opportunity to introduce new SuDS measures into the site.	+ Redevelopment offers the opportunity to introduce new SuDS measures into the site.
W2 To reduce and manage the risk of flooding.	+ The site is located within Flood Zone C within which all development is acceptable. Redevelopment for a neighbourhood centre offers the opportunity to introduce SuDS measures into the site.	+ The site is located within Flood Zone C within which all development is acceptable. Redevelopment for housing offers the opportunity to introduce SuDS measures into the site and any associated open space area.
W3 To provide adequate wastewater treatment, water distribution networks and drainage networks.	+ / x Redevelopment offers the opportunity to introduce SUDS measures into the site. Waste from the new development must be capable of being treated by the Ringsend Wastewater Treatment Plant.	+ / x Redevelopment offers the opportunity to introduce SUDS measures into the site. Waste from the new development must be capable of being treated by the Ringsend Wastewater Treatment Plant.
MA1 To reduce traffic levels by encouraging modal change from car to more sustainable modes of transport such as public transport, walking & cycling.	+ Providing new residential development in existing urban areas within walking distance of bus and train services allows opportunities to commute sustainably. Redevelopment also offers opportunities to improve the level of passive surveillance along Park West Avenue thereby improving this route's legibility and usability for walking and cycling.	+ / x Providing new residential development in existing urban areas within walking distance of bus and train services allows opportunities to commute sustainably. Redevelopment also offers opportunities to improve the level of passive surveillance along Park West Avenue thereby improving this route's legibility and usability for walking and cycling. Provision of a mix / range of densities may force additional new housing development to greenfield sites, requiring greater travel distances.

MA2 To reduce the generation of waste and adopt a sustainable approach to waste management.	0 All new developments will be required to meet Development Plan Standards for waste management and recycling within new schemes.	0 All new developments will be required to meet Development Plan Standards for waste management and recycling within new schemes.
CH To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.	0 There are no recorded features of notable heritage value.	0 There are no recorded features of notable heritage value.
LS To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchard landscapes and soils.	+ The development of the site will help consolidate the city and reduces the need for developing greenfield sites while also providing an area suitable for biodiversity enhancement.	+ The development of the site will help consolidate the city and reduces the need for developing greenfield sites while also providing an area suitable for biodiversity enhancement.
CH To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.	0 There will be no significant impact.	0 There will be no significant impact.
LS To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchard landscapes and soils	0 There will be no significant impact.	0 There will be no significant impact.

7.3 Preferred Alternative Scenarios

7.3.1 Alternative No. 1: Barnville Site

Table 14 below summarises the environmental assessment of the alternatives considered for Site No. 5, Barnville Park, to the south of Cherry Orchard Park.

Table 14: No. 1 Alternative, Summation of Evaluation

EPO	Alternative 1A To develop the site as a neighbourhood centre	Alternative 1B To develop the site for residential uses only
PHH	+	+
BFF	+	+
AN1	+ / x	+
AN2	x	0
CF	+ / x	+ / x
W1	+	+
W2	+	+
W3	+ / x	+ / x
MA1	+	+
MA2	0	0
CH	0	0
LS	+	+

Alterative Chosen 1B: Given the location of the site along the adjoining existing residential developments of Barnville Park and Cedar Brook and facing the existing Cherry Orchard Park, the LAP favours residential use for this site. This will 'fill' in this important and visible site and improve the legibility of the adjoining residential estates, while also protecting the existing residential amenities by relocating the neighbourhood centre and commercial uses to more favourable sites.

7.3.2 Alternative No. 2: M50 – Cloverhill Road Site

Table 15 below summarises the environmental assessment of the alternatives considered for Site 3a, M50 Linear Strip, site to the east of M50 and west of prison.

Table 15: No. 2 Alternative, Summation of Evaluation

EPO	Alternative 2A To develop the site for residential uses only.	Alternative 2B To develop the site for enterprise and employment uses.
PHH	+	+
BFF	+ / x	+ / x
AN1	+ / x	+ / x
AN2	x	+
CF	+ / x	+ / x
W1	+	+
W2	+	+
W3	+ / x	+ / x
MA1	+	+
MA2	0	0
CH	0	0
LS	+	+

Alternative Chosen 2B: Having regard to the site's location immediately adjoining the M50 and the noise and air pollution information from Section 3 of the SEA, the LAP does not support the use of this site for residential development. Positioning houses right beside the M50 would negatively impact the future residents' health and well-being. Furthermore taking account the need to create additional local employment and availability of housing land in the LAP it is considered that this site should be utilised for enterprise and employment uses.

7.3.3 Alternative No. 3: Densities

Table 16 below summarises the environmental assessment of the alternatives considered for the largest development site, to the north of the train station, site No. 4, M50- Cloverhill Road Site.

Table 16: No. 3 Alternative, Summation of Evaluation

EPO	Alternative 3A To develop the residential portion for high density only.	Alternative 3B To develop the residential portion for a mix/range of densities.
PHH	+	+
BFF	+	+
AN1	+	+/ x
AN2	+	+
CF	+/ x	+/ x
W1	+	+
W2	+	+
W3	+/ x	+/ x
MA1	+	+ / x
MA2	0	0
CH	0	0
LS	+	+

Alternative Chosen 3B: During the LAP preparation process all of the vacant sites in Park West – Cherry Orchard were reviewed. Given the amount of housing land available in the area and the lack of development in this area of the city it is considered that the LAP should support the a mix or range of densities on a large, key site to 'kick-start' development in the area and leverage the existing services and facilities.

8 Evaluation of LAP Objectives

8.1 Introduction

This section of the Environmental Report evaluates the objectives of the Draft Local Area Plan and should be read in conjunction with the Evaluation Matrix set out in 8.3. This evaluation assesses the likely or potential significant effects on the environment, i.e. on biodiversity, human health, fauna, flora, soil, water air, climatic factors, material assets, cultural heritage (including architectural heritage) and soils & landscape of implementing the Park West – Cherry Orchard Local Area Plan. These effects include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative impacts and these will be highlighted where relevant. It should be noted that the Local Area Plan is a land use plan for the Park West – Cherry Orchard area that sits within the Dublin City Development Plan. It does not replace the policies and objectives of the Development Plan but rather compliments them.

8.2 Evaluation Methodology

The assessment of the likely significant effects on the environment of implementing the local area plan was carried out, in accordance with best practice methodology. The methodology employed was the accepted and commonly used methodology of creating a matrix (detailed below in 8.3). The objectives of the local area plan were tested against the Environmental Protection Objectives developed earlier in the SEA process (Chapter 4 and detailed below). Such a process details potential beneficial/adverse impacts that have been identified in line with the requirements of the SEA Directive. Potential effects have been categorised as having the potential to have: -

- A 'Significant Beneficial Impact'
- An 'Uncertain Impact' on Environmental Receptor
- A 'Significant Adverse Impact' on Environmental Receptor
- An 'Insignificant Impact' or 'No Relationship'

Table 17: Environmental Protection Objectives

ENVIRONMENTAL RECEPTOR	ENVIRONMENTAL PROTECTION OBJECTIVE
Population and Human Health	**PHH** To create a sustainable compact city in which to live, work and/or visit. *(other EPOs relating to population and human health are covered under each of the environmental headings below)*
Biodiversity/Flora & Fauna	**BFF** To protect and where appropriate enhance the diversity and range of habitats, species and their resources within the LAP area.

Air Quality & Noise	**AN1** To protect good air quality status and minimise all forms of air pollution (i.e. Nitrogen oxides & Particulate Matter). **AN2** To maintain and, where possible, improve the good acoustical quality for the current and future residents of the plan area.
Climatic Factors	**CF** To minimise emissions of greenhouse gases.
Water	**W1** To comply with EU Water Framework Directive to ensure and maintain good ecological status of all receiving water in the LAP area. **W2** To reduce and manage the risk of flooding. **W3** To provide adequate wastewater treatment, water distribution and drainage networks.
Material Assets	**MA1** To reduce traffic levels by encouraging modal change from car to more sustainable modes of transport such as public transport, walking & cycling. **MA2** To reduce the generation of waste and adopt a sustainable approach to waste management.
Cultural Heritage	**CH** To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.
Landscape & Soils	**LS** To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchard's landscapes and soils.

Table 18: Environmental Protection Objectives Evaluation Criteria

Will the implementation of the alternative serve to have: -	
A significant beneficial impact on the Environmental Receptor	+
A significant adverse impact on the Environmental Receptor	x
An uncertain impact on the Environmental Receptor	?
An insignificant impact or no relationship with the Environmental Receptor	0

8.3 Draft Park West – Cherry Orchard LAP Objectives & Evaluation Matrix

The LAP contains a series of high level Key Principles within Chapter 3, which are seen as essential to deliver the "vision" of the area as set out in the Plan. The overall development strategy in then set out in detail in Chapter 4, with a series of objectives set out under the headings of :

- Economic Development and Employment
- Housing and Tenure
- Access and Movement
- Urban Form and Design

- Community and Social Infrastructure
- Heritage
- Green Infrastructure and Biodiversity
- Physical Infrastructure and Services (Drainage and Water)

Both the key principles and objectives are set out below. The tables includes minor modifications to the Draft Plan, as made by the members of the Council upon consideration of the public submissions to the Draft LAP. These modifications were considered to be non-material in nature.

Key Principles (Chapter 3)

Vacant Sites

KP1 Develop the remaining vacant sites in the area in a sustainable manner to create a vibrant sustainable new (neighbourhood) Urban Area.

Housing & Tenure Diversity

KP2 Deliver new residential units in a mix of unit types and tenures to cater for people across all spectrums of their lifecycle, with higher densities sought in proximity to the railway station.

Place making

KP3 Create a local neighbourhood focal point within Cherry Orchard neighbourhood enhancing existing services and amenities.

KP4 Create a new commercial destination in the vicinity of the train station, with landmark buildings and civic spaces.

KP5 Improve the appearance and image of the area and create a content, caring and vibrant sustainable community which integrates the new community with the existing established community.

Economic Development & Employment

KP6 Facilitate the provision of local retail provision as part of enhancing the neighbourhood centre within Cherry Orchard.

KP7 Create a new mixed use environment incorporating a supermarket and other commercial/ employment opportunities in the vicinity of the train station.

KP8 Support opportunities and initiatives which promote education and aim to address unemployment supporting economic activity through the provision of existing and future services and businesses in the area.

KP9 Support and facilitate the provision of additional school places to serve the existing and emerging communities.

KP10 Support and facilitate the development of a community and social enterprise hub.

KP11 Support the provision of mixed-employment uses in proximity to the M50 boundary.

Open Space and Recreational Facilities

KP12 Consolidate and improve the existing sports and recreation facilities and promote the provision of new recreational facilities.

KP13 Enhance existing open space areas and develop a connected network of green spaces and green infrastructure to maximise their potential use by the existing and future generations.

Transport and Movement

KP14 Enhance accessibility and connectivity both within the Park West - Cherry Orchard area and to the surrounding areas to service the remaining development sites.

KP15 Promote sustainable modes of transport by making them convenient and attractive (including walking and cycling) through the implementation of a well connected, permeable, coherent street network with high levels of accessibility to an integrated public transport network with improved infrastructure to maximise its potential use.

Infrastructure Delivery and Implementation

KP16 Ensure timely provision and investment in infrastructure including water and drainage provision, public transport, telecommunications network etc.to support new development opportunities

KP17 Underground overhead ESB pylons where-ever possible to enhance the urban form of this part of the city.

Green Infrastructure & Biodiversity

KP18 To protect and promote the natural and built heritage of the area and provide a network of well maintained parks and civic spaces connected by tree lined streets taking the opportunity to incorporate best practice SuDS infrastructure as appropriate.

KP19 Support the aims and objectives of the Water Framework Directive for the Camac River Catchment, particularly in relation to hydromorphology and improvements in water quality and the streams that drain the LAP lands.

Table 19: LAP Objectives, Chapter 4

Economic Development Objectives	
It is an objective of Dublin City Council:-	
ED01	To seek the provision of local retail shops along Cherry Orchard Avenue to consolidate existing neighbourhood centre uses.
ED02	To seek the provision of supermarket retailing to the immediate north of the Park West – Cherry Orchard Train Station, and other retail opportunities in the vicinity of the train station.
ED03	To support the existing retail at “The Plaza” in Park West, and in particular any amendments that improve the interface with Part West Avenue and Park West Road.
EDO4	To seek the provision of “turn-key” ground floor retail units within Site 2 and along Park West Avenue.

ED05	To support the development of additional office space including own-door office units and enterprise space on lands adjoining the M50 motorway, and in proximity to the train station.
ED06	To facilitate employment and training uses to include for micro-enterprise and start up units on lands adjoining the M50 Motorway.
ED07	To support the development of a new community and social enterprise hub within the LAP lands north of the train line.
ED08	To explore and support the development of potential tourism, recreational and leisure related facilities, in particular those linked to development along the Grand Canal and at the Gallanstown Waterworks site.
ED09	To liaise and work with agencies and organisations working in the Park West – Cherry Orchard area to maximise education opportunities and support access to employment for local residents of Park West – Cherry Orchard and the surrounding area.
ED10	To require social labour clauses in any City Council projects, and to aspire to and encourage them in other projects.
ED11	To support the implementation of the employment and training objectives (ET1-ET6) of the *making Cherry Orchard Better Action Area Plan* (2017).
Housing Objectives	
It is an objective of Dublin City Council:-	
H01	To develop the vacant lands earmarked for residential use within the LAP area to address the shortfall of housing supply in the Dublin area.
H02	To provide high quality, environmentally sustainable, adaptable homes, providing for a range of housing typologies.
H03	To create a socially integrated neighbourhood which encourages tenure diversity and creates a good mix of housing typologies integrated into the area.
H04	To promote/ provide purpose built housing for senior citizens within the LAP area.
H05	To work with the HSE and other voluntary bodies as appropriate to provide disabled persons housing.
H06	To provide for new social / voluntary housing via the Part V requirement under the Planning and Development Acts.
H07	To promote the development of affordable housing within the LAP area including collaborations with co-operative housing bodies.
H08	To ensure that new residential development is effectively integrated into the existing environment in terms of design, layout, scale and connectivity.
H09	To encourage a mix of dwelling types and quality design that will aid legibility and way finding throughout the area.
H10	To ensure that new housing is supported by appropriate levels of community and social infrastructure.
H11	To promote housing layouts that encourage successful community integration both in terms of large-scale physical planning and also in

	regard to access to supporting services such as retail, leisure, and community uses.
H12	To examine the potential for in-fill housing schemes within Cherry Orchard, to address local housing need.
Movement Objectives	
It is an objective of Dublin City Council:-	
MO1	To seek the development of a new north-south roadway linking Ballyfermot Road and Cherry Orchard Green (delivered as part of Site No. 1).
MO2	Seek future pedestrian/ cycle linkages between Site No. 1 and Cherry Orchard Hospital.
MO3	Allow provision for future vehicular connection between site no. 1 and lands to the rear of Cherry Orchard Court House.
MO4	To provide a "green" walking and cycling route connecting Cherry Orchard Park to Le Fanu Park as part of the delivery of Site No. 2.
MO5	To work in collaboration with the relevant local stakeholders including landowners, and Irish Rail to prepare a co-ordinated approach to the development of additional crossing points on the Dublin Kildare Railway. In particular to seek a road reservation in Cherry Orchard; at the interface of Cherry Orchard Drive, Cherry Orchard Parade and Cherry Orchard Avenue, to facilitate a new bridge connection over the railway line in the future
MO6	To work in collaboration with the relevant local stakeholders including landowners, South Dublin County Council and Waterways Ireland to prepare a co-ordinated approach to the development of additional pedestrian crossing points on the Canal, in particular in the vicinity of the old reservoir, to provide direct access to the Green way.
MO7	To co-operate and liaise with the NTA in relation to securing appropriate improvements to existing public transport infrastructure and the continued roll out of new public transport infrastructure within the LAP area
MO8	To work with the NTA to ensure that the DART upgrade and Bus Connects projects are successfully delivered in the LAP area and surrounding areas.
MO9	To liaise with the NTA to support the delivery of key strategic cycle routes within the NTA GDA Cycle Network Plan which serve the LAP area.
MO10	To provide a high quality pedestrian and cycle network within the LAP area with high levels of connectivity and permeability, passive surveillance and supervision to ensure safe, attractive, legible and direct links to key local destinations are provided.
MO11	To ensure that all new developments are designed with accessibility and permeability in mind and deliver layouts which are pedestrian and cycle friendly.
MO12	To support and engage with St. Ultan's NS with the aim of achieving a transport flag under the Green Schools Initiative.
MO13	To ensure that all development proposals for new roads, streets and residential layouts comply with the 'Design Manual for Urban Roads and

	Streets' (DMURS, 2013) and the NTA National Cycle Plan focusing on the needs of pedestrians, cyclists and public transport users.
MO14	To explore the potential for car parking facilities including local Park and Ride near Park West – Cherry Orchard train station.
MO15	To support the development of an integrated transport interchange hub next to the train station.
MO16	To seek the provision of electric vehicular charging points across each of the key development sites at appropriate locations, in particular next to Dublin City Council community facilities.
Urban Design & Form Objectives	
It is an objective of Dublin City Council:-	
UD1	To make Park West – Cherry Orchard an attractive and successful place by creating a legible and coherent spatial pattern of development reinforcing and enhancing the existing urban structure.
UD2	To seek enhanced pedestrian connectivity to, and animation of the commercial plaza in Park West, and how it relates to the surrounding public streets.
UD3	To seek the provision of a new local centre within Site No. 2, delivering local retail facilities and new civic/ open space, framed within an appropriate urban context.
UD4	To design or redesign streets to reflect their status within a clear hierarchy of streets, creating a clearly legible well connected permeable network of streets that are tree-lined and pedestrian and cycle friendly.
UD5	To carry out enhancements (both amenity and biodiversity) to a number of local greens following an analysis of these spaces for in-fill residential development where appropriate (as per Objective H12).
UD6	To seek the undergrounding of overhead EBS pylons throughout Park West and at Site 5.
UD7	To safeguard the amenity of the Grand Canal while simultaneously exploiting its value adjacent to new developments.
UD8	To disperse densities throughout the LAP area in a sustainable manner that accounts for proximity to transport and services and takes into account local conditions and aspirations.
UD9	To create urban blocks/streets with a distinctive and varied architectural character within the overall housing and commercial areas to avoid blandness and promote identity as part of place making.
UD10	To intensify development in key areas in order to generate a critical mass of development that is needed to promote a sustainable and lively neighbourhood centre.
UD11	To promote energy efficiency in new buildings and support the use of renewable energy sources.
UD12	To allow for the inclusion of 2-3 tall land-mark buildings that will contribute to the creation of a high quality public realm.
UD13	To ensure that all new buildings are designed and finished to a high standard.

UD14	To seek the submission of detailed assessment and mitigation strategy for noise and/or air quality, for all development proposals adjoining the M50 and railway line, as part of future planning applications.
UD15	To implement urban design objectives set out in detail across the key development sites (see Chapter 5).
UD16	To work with the Cherry Orchard Development Group to explore options and to deliver a local market in the LAP area.
UD17	To ensure that all new buildings and spaces take account of the need to design out opportunities for crime, having regard to the Safety and Security Design Guidelines of the Dublin City Development Plan.
Community and Social Infrastructure Objectives	
It is an objective of Dublin City Council:-	
CS1	To maximise the use of Cherry Orchard Park for the whole community by undertaking a redesign and physical enhancements to the Park in consultation with local clubs and stakeholders.
CS2	To support the provision of an enhanced sporting hub within Cherry Orchard Park.
CS3	To carry out a play assessment and strategy for the area.
CS4	To explore the use of the Gallanstown Waterworks and immediate environs as a new recreational amenity for local clubs and as part of a City wide tourism attraction.
CS5	To continue to support the development of the Cherry Orchard Equine centre and the Horse Power Project, and to consider proposals for community stabling on Site 3a, subject to further detailed analysis, including governance.
CS6	To seek the provision of a new primary school within Site No. 6, and the provision of additional primary school resources adjoining/ part of St. Ultan's NS, in conjunction with the Department of Education and Skills.
CS7	To require an updated community audit for all developments of over 50 residential units, along with an analysis of need and proposals for community provision.
CS8	To seek the provision of additional community facilities including childcare, healthcare, place of worship and community centre, as an integral part of proposals for new residential development, and having regard to existing facilities in the area.
CS9	To continue to seek funding for and to implement the actions set out within the 'Making Cherry Orchard Better' action plan.
CS10	To support the development of a community and school arts programme as per Objective CC6 of the *Making Cherry Orchard Better Action Area Plan.*
CS11	To liaise with Dublin Fire Brigade and An Garda Siochana to ascertain future requirements for the LAP and wider area.

Heritage Objectives	
It is an objective of Dublin City Council:-	
H1	To protect and conserve the special character of all built heritage features both within the plan area as well as those within the immediate surrounding areas.
H2	To safeguard known National Monument sites and to agree strategies for the protection of potential future sites in conjunction with the City Archaeologist, with particular reference to Sites 6, 7 and 8.
H3	To protect the buildings, structures and features of industrial heritage within the Park West – Cherry Orchard LAP area along with their related artefacts and plant where appropriate.
H4	To undertake a feasibility appraisal for the former Gallanstown waterworks which features an underground brick arched reservoir and to explore and identify a compatible, sustainable and viable future use which will ensure the conservation of the built fabric and add to the amenity and vibrancy of the area.
Green Infrastructure & Biodiversity Objectives	
It is an objective of Dublin City Council:-	
GI1	To encourage the development of opportunities for green infrastructure, both within the LAP area and connecting to the surrounding lands.
GI2	To enhance the planting and biodiversity value of existing local parks and other incidental areas of open space/ grassland.
GI3	To seek the provision of "Green Corridors" as per the Green Infrastructure Strategy of the LAP, notably: • Green link from Le Fanu park to the Grand Canal • Along the northern boundary of the Grand Canal • Along the boundary of the M50.
GI4	To enhance the biodiversity value of the local area by protecting habitats, in particular historic hedgerows and along the Canal, and create opportunities for new habitats through appropriate landscaping schemes to integrate the natural environment into the existing and future urban environment.
GI5	To work in collaboration with all stakeholders including the National Park and Wildlife Service, Waterways Ireland and South Dublin County Council to protect and enhance the Grand Canal Green Corridor which is designated as a proposed Natural Heritage area.
GI6	To ensure that all new streets are appropriately landscaped and tree lined and where feasible seek the upgrading of existing streets to incorporate landscaping, appropriate tree planting and SuDS features.
GI7	To seek the provision of green roofs where feasible as part of a green infrastructure and SuDS strategy for future developments.
GI8	To continue to support the Cherry Orchard Community Garden and adjoining allotments.

Infrastructure Objectives	
It is an objective of Dublin City Council to:-	
INF1	Support opportunities to upgrade the existing surface water and foul drainage systems to relieve potential constraints in the existing drainage systems and to future proof the drainage infrastructure required to support the full development of the LAP lands.
INF2	Support opportunities to upgrade the existing potable water supply network to future proof water supply to support the full development of the LAP lands.
INF3	Support the Water Framework Directive for the rehabilitation of the Camac River through implementation of best practice SuDS infrastructure throughout the LAP lands in order to improve quality and control of outflow to the river Camac from the LAP land.
INF4	Support opportunities to upgrade the existing combined drainage systems to provide separate storm and foul drainage networks.
INF5	Support the undergrounding of existing high voltage overhead power lines and pylons in Barnville and throughout Park West.
INF6	Support the delivery of additional connections and links to the Grand Canal and Grand Canal Greenway
INF7	Ensure provision is made for recycling facilities within the LAP area, and in particular new provision within Park West.

8.4 LAP Objectives - Evaluation Matrix

Table 20: Draft LAP Objectives, Evaluation Matrix

EPOs	PHH	BFF	AN1	AN2	CF	W1	W2	W3	MA1	MA2	CH	LS
Key Principles/ Objectives												
Key Principles												
KP1	+	+	+	+	+	+	+	+	+	+	+	+
KP2	+	0	+	0	+	0	?	0	+	0	0	x
KP3	+	0	+	0	+	0	x	0	+	0	0	x
KP4	+	0	+	0	+	0	x	0	+	0	0	+
KP5	+	+	0	0	0	0	0	0	+	0	+	+
KP6	+	0	+	0	+	0	0	0	+	0	0	+
KP7	+	0	+	0	+	0	0	0	+	0	0	+
KP8	+	0	+	0	+	0	0	0	+	0	0	+
KP9	+	0	+	0	+	0	0	0	+	0	0	0
KP10	+	0	+	0	+	0	0	0	+	0	0	+
KP11	+	?	+	+	+	0	0	0	+	0	0	?
KP12	+	0	+	0	+	0	0	0	+	0	0	+
KP13	+	+	+	+	+	+	+	0	+	0	+	+
KP14	+	0	+	0	+	0	0	0	+	0	0	?
KP15	+	0	+	0	+	0	0	0	+	0	0	0
KP16	+	0	0	0	0	+	+	+	+	+	0	0
KP17	+	0	0	0	0	0	0	0	0	0	+	+
KP18	+	+	+	+	0	0	0	0	0	0	+	+
KP19	+	+	0	0	0	+	+	+	0	0	0	+

Draft LAP Objectives												
EPOs	**PHH**	**BFF**	**AN1**	**AN2**	**CF**	**W1**	**W2**	**W3**	**MA1**	**MA2**	**CH**	**LS**
Economic Development Objectives												
ED01	+	0	+	0	+	0	x	+	+	0	0	x
ED02	+	0	+	0	+	0	x	0	+	0	0	+
ED03	+	0	+	0	+	0	x	0	+	0	0	+
ED04	+	0	0	0	0	0	0	0	0	0	0	0
ED05	+	0	+	+	+	0	0	0	+	0	0	+
ED06	+	0	+	+	+	0	0	0	+	0	0	+
ED07	+	0	0	0	0	0	0	0	0	0	0	0
ED08	+	x	0	0	0	0	0	0	0	0	+	+
ED09	+	0	+	0	+	0	0	0	+	0	0	0
ED10	+	0	0	0	0	0	0	0	0	0	0	0
ED11	+	0	0	0	0	0	0	0	0	0	0	0
Housing Objectives												
H01	+	?	+	0	+	0	x	x	+	0	0	+
H02	+	0	+	+	+	0	0	0	0	+	0	0
H03	+	0	0	0	0	0	0	0	0	0	0	0
H04	+	0	0	0	+	0	0	0	+	0	0	0
H05	+	0	0	0	0	0	0	0	0	0	0	0
H06	+	0	0	0	0	0	0	0	0	0	0	0
H07	+	0	0	0	0	0	0	0	0	0	0	0
H08	+	0	0	0	0	0	0	0	+	0	0	+
H09	+	0	0	0	0	0	0	0	0	0	0	+
H10	+	0	0	0	+	0	0	0	+	0	0	0
H11	+	0	0	0	0	0	0	0	+	0	0	0
H12	+	x	0	0	+	0	0	0	+	0	0	+

EPOs	PHH	BFF	AN1	AN2	CF	W1	W2	W3	MA1	MA2	CH	LS
Movement Objectives												
MO1	+	0	+	0	+	0	x	x	+	0	0	x/+
MO2	+	0	+	0	+	0	0	0	+	0	0	+
MO3	+	0	+	0	+	0	0	0	0	0	0	0
MO4	+	+	+	+	+	+	+	0	+	0	0	+
MO5	+	0	+	0	+	0	0	0	+	0	0	0
MO6	+	x	+	0	+	0	0	0	+	0	0	0
MO7	+	0	+	0/?	+	0	0	0	+	0	0	0
MO8	+	0	+	x/?	+	0	0	0	+	0	0	0
MO9	+	0	+	0	+	0	0	0	+	0	0	0
MO10	+	0	+	0	+	0	0	0	+	0	0	0
MO11	+	0	+	0	+	0	0	0	+	0	0	0
MO12	+	0	+	0	+	0	0	0	+	0	0	0
MO13	+	0	+	0	+	0	0	0	+	0	0	0
MO14	+	0	+	0	+	0	0	0	+	0	0	0
MO15	+	0	+	0	+	0	0	0	+	0	0	0
MO16	+	0	+	0	+	0	0	0	+	0	0	0
Urban Design and Form Objectives												
UD1	+	0	0	0	0	0	0	0	+	0	0	+
UD2	+	0	0	0	0	0	0	0	+	0	0	+
UD3	+	0	0	0	0	0	0	0	0	0	0	+
UD4	+	+	0	0	0	0	0	0	+	0	0	+
UD5	+	+	0	0	0	0	0	0	0	0	0	+
UD6	+	0	0	0	0	0	0	0	0	0	0	+
UD7	+	+	0	0	0	+	0	0	0	0	+	+
UD8	+	0	+	0	0	0	0	0	+	0	0	0
UD9	+	0	0	0	0	0	0	0	0	0	0	+

EPOs	PHH	BFF	AN1	AN2	CF	W1	W2	W3	MA1	MA2	CH	LS
UD10	+	0	0	0	0	0	0	0	+	0	0	+
UD11	+	0	+	0	+	0	0	0	0	+	0	0
UD12	+	0	0	0	0	0	0	0	0	0	0	+
UD13	+	0	0	0	0	0	0	0	0	0	0	+
UD14	+	0	0	+	0	0	0	0	0	0	0	0
UD15	+	+	0	0	0	0	0	0	0	0	0	+
UD16	+	0	0	0	0	0	0	0	+	+	0	+
UD17	+	0	0	0	0	0	0	0	0	0	0	+
Community and Social Infrastructure Objectives												
CS1	+	+	0	0	0	+	+	0	0	0	0	+
CS2	+	x	0	0	0	0	0	0	0	0	0	0
CS3	+	0	0	0	0	0	0	0	0	0	0	0
CS4	+	x/+	0	0	0	+	0	0	0	0	+	+
CS5	+	0	0	0	0	0	0	0	0	0	0	0
CS6	+	0	+	0	+	0	0	0	+	0	0	0
CS7	+	0	0	0	0	0	0	0	0	0	0	0
CS8	+	0	0	0	0	0	0	0	0	0	0	0
CS9	+	0	0	0	0	0	0	0	0	0	0	0
CS10	+	0	0	0	0	0	0	0	0	0	0	0
CS11	+	0	0	0	0	0	0	0	0	0	0	0
Heritage Objectives												
H1	+	0	0	0	0	0	0	0	0	0	+	+
H2	+	0	0	0	0	0	0	0	0	0	+	0
H3	+	0	0	0	0	0	0	0	0	0	+	+
H4	+	+/?	0	0	0	+/?	0	0	0	0	+	+

EPOs	PHH	BFF	AN1	AN2	CF	W1	W2	W3	MA1	MA2	CH	LS
Green Infrastructure and Biodiversity Objectives												
GI1	+	+	+	+	0	0	+	0	0	0	+	+
GI2	+	+	+	+	0	0	+	0	0	0	0	+
GI3	+	+	+	+	0	+	+	0	0	0	0	+
GI4	+	+	+	+	0	+	+	0	0	0	+	+
GI5	+	+	+	+	0	+	+	0	0	0	+	+
GI6	+	+	+	+	0	+	+	0	0	0	+	+
GI7	+	+	+	0	+	+	+	+	0	0	0	+
GI8	+	+	0	0	+	0	+	0	0	0	0	+
Infrastructure Objectives												
INF1	+	0	0	0	0	+	+	+	0	0	0	0
INF2	+	0	0	0	0	0	0	+	0	0	0	0
INF3	+	+	0	0	0	+	+	+	0	0	0	0
INF4	+	0	0	0	0	+	+	+	0	0	0	0
INF5	+	0	0	0	0	0	0	0	0	0	0	+
INF6	+	+/?	+	0	+	0/?	0	0	+	0	0/?	0
INF7	0	0	0	0	0	0	0	0	0	+	0	0

Table 21: Potential LAP Objectives Effects on Environmental Protection Objectives

Environmental Receptor	Environmental Protection Objective
Population and Human Health	**PHH** To create a sustainable compact city in which to live, work and/or visit. *(other EPOs relating to population and human health are covered under each of the environmental headings below)*
Park West – Cherry Orchard LAP Objectives Impacts	The over-riding objective (KP1) to develop the remaining sites in Park West – Cherry Orchard will help to fulfil this EPO. Providing new employment opportunities close to the train station and along the M50, in addition to new residential development will help to ensure that the area is a compact city neighbourhood within which to live, work and visit. The provision of a new local school, upgrades to Cherry Orchard Park and investment in a new amenity at the Canal, will help to ensure that this is a desirable and welcoming neighbourhood. Development in the LAP area will also alleviate the need to develop in areas that may not have existing suitable infrastructure or where the provision of such infrastructure would have adverse impacts on the environment.
Biodiversity, Flora & Fauna	**BFF** To protect and where appropriate enhance the diversity and range of habitats, species and their resources within the LAP area.
Park West – Cherry Orchard LAP Objectives Impacts	The LAP contains a number of key principles and objectives (KP13, KP18, KP19, GI1, GI2, GI3, GI4, GI5, GI6, EO13, SRO6, GI1-GI4) in support of this EPO. The LAP outlines the strategy to create a number of "green corridors" throughout the area, which new sites will link into/ form a part of; and to protect the status and setting of the Grand Canal pNHA. New parks which form part of the key sites will be required to link into these corridors, and within site 4 there is an objective to include parts of the old field boundaries into the open space strategy for this site. Within the existing Cherry Orchard area it is also proposed to "green" some of the existing streets through the provision of new street planting. Also the LAP promotes the achievement of a more compact city with the reuse of vacant (and largely manipulated) sites, thus helping to avoid development sprawl to the urban fringes and onto greenfield sites. Such an approach concentrates new development largely into built-up, well-connected urban areas whilst avoiding more environmentally sensitive and vulnerable sites.
Air Quality & Noise	**AN1** To protect good air quality status and minimise all forms of air pollution (i.e. Nitrogen oxides & Particulate Matter). **AN2** To maintain and, where possible, improve the good acoustical quality for the current and future residents of the plan area.
Park West – Cherry Orchard LAP	The LAP contains a number of key principles and objectives (KP11, KP13, KP14, KP15, ED05, ED06, H02, M08, M09, GI3, UD14) in

Objectives Impacts	support of this EPO. The delivery of new homes and employment along a key public transport route has the potential to encourage high levels of sustainable travel patterns and thus help protect good air quality status and reduce city noise levels. Objectives to improve connections and achieve more sustainable travel patterns are included within the LAP. In addition objectives which seek to enhance green infrastructure will help to provide a carbon sink locally in the area. The key landuse plan for the area seeks to provide a buffer of "non"-residential" uses along the boundary of the M50 to help minimise the impacts of air and noise from this major artery on the amenities of the local population. All developments along the M50 and the railway line will be required to submit a detailed assessment and mitigation strategy for noise and air.
Climatic Factors	**CF** To minimise emissions of greenhouse gases.
Park West – Cherry Orchard LAP Objectives Impacts	The LAP contains a number of key principles and objectives (KP1, KP2, KP6, KP11, KP14, KP15, ED01, ED02, H02, H11, M07, M08, M10, UD13), in support of this EPO. Climatic conditions will be improved with the development of a more compact, consolidated locality in a mixed-use format with retail, commercial, employment, residential and recreational uses all within easy reach of one another either on foot, by bicycle or on public transport. Good public transport linkages, both existing and significant improvements in the future, underpin the sustainable planning approach of the plan. Such an approach will significantly reduce the need to travel by private car, which in turn will result in less waste of energy, reduced emissions of greenhouse gases and reduces the risk of flooding as a result of climate change. There may be short term impacts with regards to emissions related to construction and infrastructure provision. However this will be alleviated over the long term by the reduction in emissions through sustainable development.
Water (Including Flooding)	**W1** To comply with EU Water Framework Directive to ensure and maintain good ecological status of all receiving water in the LAP area. **W2** To reduce and manage the risk of flooding. **W3** To provide adequate wastewater treatment, water distribution networks and drainage networks.
Park West – Cherry Orchard LAP Objectives Impacts	The LAP contains a number of key principles and objectives (KP16, KP17, KP18, KP19, INF1, INF2, INF3, INF4) in support of this EPO. There will be intensification of population and of economic activity within the plan area. The expansion and upgrading of the Ringsend Wastewater Treatment Plan is an urgent priority for Irish Water to serve the growing needs of the City.

	Due to the barriers of the Canal and the railway within the LAP area, there are a number of drainage pinch points which may require upgrades to the existing drainage infrastructure. A remodelling of the surface water attenuation with cherry Orchard park will likely occur during the redesign of the park. The LAP supports the Water Framework directive for the rehabilitation of the Camac River through the implementation of best practice SuDS throughout the LAP area, to improve quality and control of outflows to the river Camac from the LAP lands.
Material Assets (Transport & Waste Management)	**MA1** To reduce traffic levels by encouraging modal change from car to more sustainable modes of transport such as public transport, walking & cycling. **MA2** To reduce the generation of waste and adopt a sustainable approach to waste management.
Park West – Cherry Orchard LAP Objectives Impacts	The LAP contains a number of objectives (KP1, KP14, KP15, MO1, M02, M04, M05, M06, M07, M08, M09, M10, MO11, MO12, MO13, MO14, MO15, INF7)) in support of this EPO. The LAP supports high density development the in the vicinity of the Park West- Cherry Orchard train station. New road and pedestrian/ cycle connections are also sought to improve permeability throughout the area and to make sustainable modes of transport more attractive and safer. Provision for new recycling facilities is also sought, in particular within the Park West area.
Cultural Heritage (Archaeology & Architectural Heritage)	**CH** To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.
Park West – Cherry Orchard LAP Objectives Impacts	The LAP contains a number of objectives (ED08, H1, H2, H3, H4) in support of this EPO. The LAP contains a number of objectives to explore the enrichment of the industrial heritage that is the Canal and in particular the Gallanstown Waterworks, as an amenity and resource to the area and to the City. The presence of a National Monument within Park West (believed to be an early Christian burial ground) draws attention to the need to monitor the vicinity for future possible findings. The NIAH recommendations at Chery Orchard hospital are also noted and respected within the LAP.

Landscape & Soils/Geology	**LS** To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchard's landscapes and soils.
Park West – Cherry Orchard LAP Objectives Impacts	The LAP contains a number of key principles and objectives (KP1, KP13, KP15, GI1 – GI6,) in support of this EPO. The plan is devised on a strategy of integration of landuse and transport with the objective of achieving an integrated and connected city allowing for the protection of greenfield sites on the fringes of the urban area. This strategy actively encourages the reuse of brownfield sites in less environmentally sensitive urban areas and significantly lessens pressure for development on greenfield lands.

9 Mitigation Measures

9.1 Introduction

This section describes measures to prevent, reduce and as fully as possible offset any potential environmental effects of implementing the Draft Park West – Cherry Orchard Local Area Plan.

As described and detailed in Section 8, potential significant adverse impacts of implementing the Park West – Cherry Orchard Local Area Plan arise as a result of objectives to facilitate additional population, economic growth and development, increasing densities and generally facilitating intensification of the city, promoting increased access to recreational areas and promoting taller buildings in some locations. While these objectives are fully in line with national and regional policy to consolidate and ensure a more compact city with greater intensity of uses, and to ensure that the city's role as the economic engine of the state is strengthened, there is potential for significant adverse impacts on the receiving environment unless mitigated against. Mitigation measures are the measures to prevent, reduce and as fully as possible offset any adverse environmental effects as a result of implementing the plan.

Within the LAP, objectives have been included to specifically mitigate against potential adverse environmental impacts, which could arise from implementing the LAP.

9.2 Mitigation

9.2.1 Mitigation through consideration of alternatives

A number of alternatives were considered at an early stage in the process and evaluated for their likely significant environmental effects (see section 6 and 7 of the Environmental Report). Options considered were based round the use of specific key sites for varying purposes: -

1. Barnville Site (Site 5 to the south of Cherry Orchard Park)

2. M50 – Cloverhill Site (Site 3a to the east of M50 and west of prison)

3. Densities (Site 4, to the north of train station)

By evaluating each of these alternatives against the EPO's, the options chosen for the LAP were based upon informed environmental as well as planning considerations.

9.2.2 Mitigation for Air and Noise

The largest available land banks for development in the Plan area immediately adjoin the M50. Obtaining the air and noise data from the Environmental Health section of the City Council has significantly shaped the development strategy of the Draft LAP. It became clear from the outset that while these lands are favourably located in the city, in an existing urban area and close to existing amenities and services, residential development immediately abutting the M50 is not a desirable use due to noise and air impacts. In order to strike a balance between the two factors, the Draft LAP is proposing a "green strip" along with a commercial buffer between the future residential development and the M50.

This will bring the residential development building line back from the M50. Design and construction techniques will further protect the residential amenity, in a similar fashion to how 'The Crescent Building' in the first phase of Park West's residential scheme is developed. New proposals will be required to submit a detailed assessment and mitigation strategy for noise and air as part of future planning applications (Objective UD14).

Mitigation for traffic impacts set out below (9.2.4) includes the provision of new traffic connections to serve the area which will enhance permeability, improve legibility and movement through the area, thus reducing (i) the need to travel by car; (ii) the distance undertaken for car trips and (iii) queuing of cars/congestion. This will in turn also favourable reduce noise and air pollution impacts in the area.

9.2.3 Mitigation for Water Issues

The 'Opportunities and Constraints' report prepared by Arup's and meetings with the City Council's Drainage Department and Irish Water have formed the basis for mitigating measures required to facilitate additional development.

Surface Water

The LAP identifies a number of potential interventions to support opportunities to allow for Surface Water Management Protection of existing watercourses and to support opportunities to build further resilience into the surface water drainage network to aid the delivery of additional development in the area.

Potential interventions include: -

(a) Support opportunities to allow for Surface Water Management Protection of existing watercourses and the reopening (re-lighting) of covered or culverted watercourses e.g. Gallanstown Streem, Blackditch stream and Galback streams.

(b) Support opportunities to build further resilience into the surface water drainage network.

Whilst in general there is well developed infrastructure in the area, in order to service the identified development sites additional surface water infrastructure will be required in order to convey runoff from these sites to the existing surface water sewer network and connect to existing outfalls. A survey should be carried out to determine if the existing surface water infrastructure is adequate to serve the both the existing and future surface water volumes. Development within the LAP lands must take cognisance of the impact on downstream receiving watercourses, the Camac River and the River Liffey, which discharges into Dublin Bay. It may be necessary to carry out upgrades of the existing surface water drainage network, pending a more detailed assessment of the capacity and condition of the existing infrastructure.

River Camac Drainage Catchment

As noted previously, the majority of the LAP lands fall within the River Camac Drainage Catchment. Dublin City Councils Environmental Services section are currently examining the River Camac under the Water Framework Directive as part of implementing the Camac Greenway. There is an objective of DCC to improve its status from "Poor Status" up to "Good Status". DCC WFM Strategy guidelines for developments proposals within the Camac Catchment, set out above which are included in the Draft LAP.

It is an objective of the LAP to support the implementation of the Water Framework Directive to improve the status of the Camac, through implementing best practice SuDS and potential works to streams as part of any future development within the LAP area and

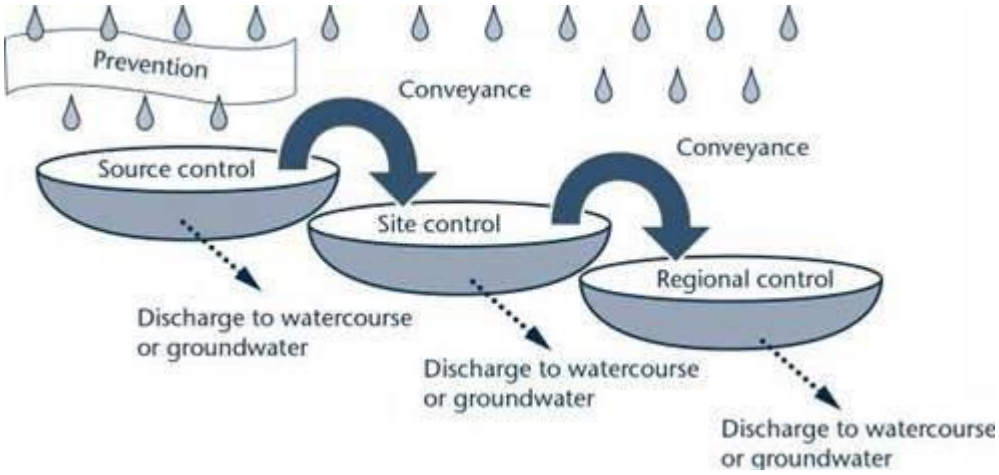
to support and facilitate the upgrade of existing surface water infrastructure where possible.

SuDS Infrastructure

The development of the LAP lands affords the opportunity to implement best practice SuDS features in order to reduce the volume and increase the quality of outflow from the public open spaces and roads. One of the guiding objectives of the proposed Park West - Cherry Orchard Local Area Plan is “to create a vibrant and sustainable new urban area”. The implementation of SuDS principles within the LAP lands will support this vision, ensuring that surface water is managed in a positive and sustainable manner within the lands, reclaiming water as an asset for the area. SuDS approaches are holistic in their management of surface water, considering not only the volume of water to be accommodated, but also the quality of this water as well as the amenity and habitat functions that these features can often perform.

A core objective of the strategy is to manage surface water in a sustainable way, ensuring there is no unacceptable residual risk of flooding to the LAP lands as well as ensuring no increased flood risk up or downstream of the lands. A fundamental pillar of the strategy is the provision of adequate levels of treatment of the surface water as it is proposed to discharge to existing watercourses. Surface water discharges shall be limited to 2l/s/ ha for proposed development. With the above objectives in mind, it is recommended that a SuDS treatment train approach be implemented across the LAP lands.

Figure 14: SuDS Management Train



DCC requires this softer engineered approach to be used to manage surface water at source as it is a greener, more environmentally effective approach for managing stormwater on developed lands. Over ground soft engineering solutions are necessary and a minimum 2-staged treatment approach in accordance with best SuDs practice would be the preferred. Management of surface water at source is the priority and ideally, only overflow in extreme weather events shall be directed to main surface water infrastructure.

Sustainable Urban Drainage Systems (SUDS) measures shall, where feasible be incorporated into new developments in line with appropriate sustainable drainage practices, and including the following options:

- Infiltration systems including infiltration trenches, infiltration basins, permeable paving, soakways, green roofs and green gardens,
- Filtration systems, including swales, bio retention systems and filter strips,
- Retention systems including retention swales,
- Detention systems including underground tanks, underground attenuation, detention basins and filter drains
- In addition to the above, in extreme storm events, flood waters can be accommodated by designing landscaped areas to flood temporarily and thus control the rate of outflow from the site.

For smaller developments the following drainage requirements are sought:

- Permeable paving
- Rainwater harvesting
- Use of appropriately designed soakaways.

Potential SuDS Locations

Based on the SuDS strategy outlined above, the topography of the LAP lands, the flood risk identified within the LAP lands and the ground conditions encountered during the ground investigations which have been carried out within the LAP lands, the following areas have been identified as appropriate for SuDS features within public realm areas. The final location and design of these features will require further geotechnical assessment:

1. Public Road Cross-Sections

A number of existing roads within the LAP area, particularly the Park West Business Park and Industrial areas have cross sections which include trees and grassed verges and this provides the opportunity to implement SuDS features such as tree pits, street planters and swales as a source control measure whilst improving the landscape and amenity value of these areas.

The introduction of such features into the existing roads in the area which are wide such as Cherry Orchard Avenue shall also be explored as along with reducing the volume and increasing the quality of runoff they would greatly help improve the landscape and visual amenities of these areas.

2. Public Open Spaces

SuDS features should also be incorporated within public open spaces where appropriate to reduce the volume and increase the quality of runoff from these areas, as well as to improve their landscape and amenity value. A number of public open spaces exist within the LAP lands, in particular within the Cherry Orchard residential area. These public open spaces afford the opportunity to implement further SuDS features within the LAP lands.

Two significant public open spaces exist within the LAP lands, namely Cherry Orchard Park and Old Cherry Orchard Park. These areas afford the opportunity to implement larger SuDS features such as detention basins to collect runoff from public roads and public open spaces. Based on site specific investigation, infiltration trenches and basins could also be implemented in locations where the required infiltration rates can be achieved as well as swales to convey runoff through the open spaces.

There is an existing SuDS feature Within Cherry Orchard Park which currently provides compensatory flood volume storage relating to the Cedarbrook development. The draft LAP proposes to relocate this flood storage area to allow for the provision of community and sporting facilities within the Park, for example through the provision of a swale along the southern end of the park, or to an underground storage facility. The Making Cherry Orchard Better Action Area Plan has previously identified this site location for the provision of proposed community and social enterprise hub as part of creating a new town centre area. This matter shall be subject to detailed assessment as part of any future redesign of Cherry Orchard Park and/or as part of a more detailed review of surface water drainage network in the area.

Some additional potential interventions/objectives

As discussed above there are a number of tributary streams that run through the LAP are which feed into the Camac river. In most instances, these streams are culverted through the LAP area. The LAP seeks to support opportunities to allow for Surface Water Management Protection of existing watercourses and the reopening (re-lighting) of covered or culverted watercourses as part of all new development e.g. Gallanstown Streem, Blackditch stream and Galback streams. There are significant potential benefits when daylighting streams especially within green corridors, allowing for the creation of ecological synergies between the fresh water systems within the LAP lands.

The development of the LAP lands affords the opportunity to build further resilience into the surface water drainage network through the provision of an additional surface water sewer crossing under the railway tracks, or as may be required to support future developments subject to detail design.

SuDS in an urban environment

Draft Local Area Plan Objectives:

Chapter 4 of the LAP identifies specific objectives to support the overall development strategies that will support the development of the Park West Cherry Orchard LAP lands.

Specific objectives of note included within the LAP are

It is an objective of Dublin City Council to:-

INF1 Support opportunities to upgrade the existing surface water and foul drainage systems to relieve potential constraints in the existing drainage systems and to future proof the drainage infrastructure required to support the full development of the LAP lands.

INF2 Support opportunities to upgrade the existing potable water supply network to future proof water supply to support the full development of the LAP lands.

INF3 Support the Water Framework Directive for the rehabilitation of the Camac River through implementation of best practice SuDS infrastructure throughout the LAP lands in order to improve quality and control of outflow to the river Camac from the LAP land.

INF4 Support opportunities to upgrade the existing combined drainage systems to provide separate storm and foul drainage networks.

GI1 To encourage the development of opportunities for green infrastructure, both within the LAP area and connecting to the surrounding lands.

GI2 To enhance the planting and biodiversity value of existing local parks and other incidental areas of open space/ grassland.

GI3 To seek the provision of "Green Corridors" as per the Green Infrastructure Strategy of the LAP, notably:

(i) Green link from Le Fanu park to the Grand Canal

(ii) Along the northern boundary of the Grand Canal

(iii) Along the boundary of the M50.

GI4 To enhance the biodiversity value of the local area by protecting habitats, in particular historic hedgerows and along the Canal, and create opportunities for new habitats through appropriate landscaping schemes to integrate the natural environment into the existing and future urban environment.

GI5 To work in collaboration with all stakeholders including the National Park and Wildlife Service, Waterways Ireland and South Dublin County Council to protect and enhance the Grand Canal Green Corridor which is designated as a proposed Natural Heritage area.

GI6 To ensure that all new streets are appropriately landscaped and tree lined and where feasible seek the upgrading of existing streets to incorporate landscaping, appropriate tree planting and SuDS features.

Further development objectives for specific sites to support the overall strategies of the LAP are set out in Chapter 5.

Based on the above provisions of the Draft LAP, all new developments will be required to ensure substantial water quality and quantity control, including SUDS features, are in line with best practice guidance to meet legislative standards prior to discharge.

The LAP lands are not identified as areas at risk of flooding; Dublin City Council will adopt a risk-based sequential and balanced approach, with development proposals required to carry out to an appropriate level of detail, a Site-Specific Flood Risk Assessment (SSFRA) that complies with the 'Planning System and Flood Risk Management – Guidelines' and pays attention to site specific risks to ensure that flood risk can be managed to an acceptable level without increasing flood risk upstream or downstream as a result of development.

Image: Swale surrounding DCC's Coultry Park in Ballymun

Waste Water

Irish Water have raised concerns regarding the capacity of both existing and downstream network and they suggest that further capacity studies would be required to confirm potential for additional capacities and to determine if a new large capacity foul water outlet will be required in order to facilitate the development of the lands.

The LAP area is constrained by a number of hard boundaries such as the M50, Canal and Railway Line which are physical barriers which constrain the delivery of new drainage infrastructure and new drainage outfalls. Each of these boundaries provides physical constraints to the provision of new surface water infrastructure and the creation of new site outfalls.

At present the development of the LAP lands is constrained by the capacity of the existing twin 300 diameter sewer crossing under the railway at Le Fanu Road. This creates a potential pinch point in the network and there are already reports of surcharge incidents at the Cherry Orchard area.

In order to service the identified development sites additional foul drainage infrastructure will be required in order to convey runoff from these sites to the existing sewer network and connect to existing outfalls. Irish Water are currently undertaking studies and surveys to prepare a Drainage Area Plan and model for the area. The report and model will identify the main issues and propose solutions for same. It is estimated that the date for completion of this study is the end of 2020.

9.2.4 Mitigation for Traffic Impacts

The LAP proposes a number of traffic connections considered necessary to serve the area which will enhance permeability, improve legibility and movement through the area, thus reducing (i) the need to travel by car; (ii) the distance undertaken for car trips and (iii) queuing of cars/congestion.

Key connections proposed include:

(i) New north-south link public roadway linking Ballyfermot Road and Cherry Orchard Green, delivered as part of Site no. 1.

(ii) Reserve lands for a future new public roadway over the railway link at the junction of Cherry Orchard Drive/ Avenue/ Parade.

(iii) New pedestrian/ cycle connection over the Grand Canal in the vicinity of the Gallanstown Waterworks site.

(iv) New Green link linking Le Fanu Park and the Canal.

These connections detailed under Section 4.5 of the Draft LAP and provided for in the site briefs (chapter 5 where appropriate), will thus positively impact traffic in the area, and in turn on noise and air impacts.

9.3 Conclusion

In conclusion, it is apparent from the above assessment that the Local Area Plan includes mitigation measures to offset any potential impacts on the environmental receptors. No additional mitigation measures were considered necessary in relation to any of the environmental receptors. Key principles and objectives have sustainability at their core allowing them to act as mitigation measures to offset potential adverse impacts, and serve to formalise the mitigation measures by fully integrating them into the local area plan process.

10 Monitoring

This section sets out the proposed monitoring measures in accordance with Article 10 of the SEA Directive which requires that “significant environmental effects of the implementation of plans and programmes in order, inter alia, to identify at an early stage unforeseen effects, and to be able to undertake appropriate remedial action”. A monitoring programme has been devised having regard to the existing monitoring systems in place and in use by Dublin City Council.

For the purposes of the Strategic Environmental Assessment (SEA) of the LAP, the SEA in-house team developed environmental protection objectives, targets and indicators early on in the SEA process. Monitoring of the indicators is essential in order to track the impacts of the local area plan on the environment. See Table 22 below for Monitoring Programme including the detail of targets, indicators and department responsible for carrying out the monitoring.

Table 22: Monitoring Programme / Environmental Protection Objectives, Targets & Indicators					
Environmental Receptor	**Environmental Protection Objective**	**Target**	**Indicator**	**Frequency of Reporting**	**Department Responsible**
Population and Human Health	***PHH To create a sustainable compact city in which to live, work and/or visit.***	Sustainable densities achieved in new residential/ mixed use schemes.	Average density of new residential development for LAP area.	Mid-LAP	Planning and Property, Development Department
		Increase in the number of residential properties.	Number of residential units commenced on site/ completed within LAP.	Mid-LAP	Planning and Property, Development Department
		Increased population within the LAP area.	Percentage increase in population based on CSO.	Mid-LAP based on planned 2021 census results	Planning and Property, Development Department
Biodiversity, Flora & Fauna	***BFF To protect and where appropriate enhance the diversity and range of habitats, species and their resources within the LAP area.***	No losses of relevant habitats species or their sustaining resources as a result of implementing the LAP.	Survey and monitor bird population.	Mid-LAP	Parks & Landscape Services
			Survey and monitor distribution of bat populations.	Mid-LAP	Parks & Landscape Services
			Evidence of recorded Protected Species.	Mid-LAP	Parks & Landscape Services
			Survey and monitor extent and distribution of invasive species.	Mid-LAP	Parks & Landscape Services
		All streets to be tree-lined.	No. of new trees planted in the LAP area.	Mid-LAP	Parks & Landscape Services
		New local parks provided or Upgrade of existing parks	No. of new parks provided / upgrade to Cherry Orchard Park and other local parks	Mid-LAP	Parks & Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Air Quality and Noise	***AN1 To protect good air quality status and minimise all forms of air pollution (i.e. Nitrogen oxides & Particulate Matter).***	Maintain air quality status and meet value targets for named pollutants in line with Air Quality Framework Directives.	Values of monitored pollutants in the air, including the levels of Nitrogen Oxides (NO_x) and Particulate matter (PM_{10}) not in breach of regulation limits.	Mid-LAP	Roads & Traffic – Noise & Air Section
		An increase in the population travelling to work or school by public transport or non-mechanical means.	% of population within the plan area travelling to work or school by public transport or non-mechanical means.	Mid LAP - To be based on 2021 Census results	Roads & Traffic Planning and Property, Development Department
	AN2 To maintain and, where possible, improve the good acoustical quality for the current and future residents of the plan area.	Minimise noise pollution.	% of residents exposed to noise levels above undesirable levels.	Mid-LAP	Roads & Traffic – Noise & Air Section
Climate Factors	***CF To minimise emissions of greenhouse gases.***	Decrease greenhouse gas emissions in line with national targets.	Average energy consumption of new residential housing stock Tonnes of CO2/Capita/Year.	Mid-LAP	Environment and Engineering Department in association with Codema

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Water (including flooding)	***W1 To comply with EU Water Framework Directive to ensure and maintain good ecological status of all receiving water in the LAP area.***	All water bodies to meet targets set in River Basin Management Plan for Ireland 2018-2021'	Ecological status of water bodies.	Mid-LAP	Environment and Engineering Department – Water Division
	W2 To reduce and manage the risk of flooding.	Compliance with the OPW's Guidelines for Planning Authorities – The Planning System and Flood Risk Management.	Percentage of planning applications incorporating flood risk assessment and conditions requiring appropriate flood resilient measures for new developments.	Mid-LAP	Environment and Engineering Department (Planning and Property, Development Department)
		Provide Sustainable Urban Drainage Systems in all new developments.	Number of Sustainable Urban Drainage Systems implemented in new planning applications, and in public areas.	Mid-LAP	Environment and Engineering Department (Planning and Property, Development Department)
	W3 To provide adequate wastewater treatment, water distribution networks and drainage networks	Provision of adequate water, wastewater treatment and drainage infrastructure.	Capacity of water supply and wastewater infrastructure versus demand.	Mid-LAP	Environment & Engineering – Water Division (in association with Irish Water)

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Material Assets (transport and waste management)	***MA1 To reduce traffic levels by encouraging modal change from car to more sustainable modes of transport such as public transport, walking & cycling.***	Extension and improvement of the cycling and walking network in the area.	Length of new cycling paths/lanes and walking routes developed and permeability linkages created.	Mid-LAP	Roads & Traffic Department
		Bus Connects to serve the area.	Bus Connects operational.	Mid-LAP	Roads & Traffic Department
		DART services available in area.	DART expansion programme operational	Mid-LAP	Roads & Traffic Department
	MA2 To reduce the generation of waste and adopt a sustainable approach to waste management.	Increased recycling.	% of waste recycled.	Mid-LAP	Environment & Engineering – Waste Division

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Cultural Heritage	***CH To protect and conserve the cultural heritage including the built environment and settings; archaeological (recorded monuments, architectural structures, materials and urban fabric) and manmade landscape features.***	Ensure that the cultural heritage of the LAP area is maintained and protected from damage or deterioration	No. of archaeological sites investigated/ number of planning applications with input from or screened by the City Archaeologist.	Mid-LAP	Planning and Property, Development Department
			Monitor the City Council's additions to the Record of Protected Structures for the National Inventory of Architectural Heritage NIAH recommendations for Cherry Orchard Hospital and the Dublin City Industrial Heritage Record (DCIHR) recommendations for Industrial Heritage.		
Landscape (including soil)	***LS To protect and where appropriate enhance the character, diversity and special qualities of Park West – Cherry Orchard's landscapes and soils.***	Develop brownfield lands and vacant sites	Total area of brownfield lands and vacant sites developed/ granted planning permission.	Mid-LAP	Planning and Property, Development Department
		Develop new areas of open space	Number of new parks/ open spaces, green link through the LAP lands.	Mid-LAP	Parks & Landscape Services (Planning and Property, Development Department)