

**North Drogheda Environs  
Master Plan 2006:  
Variation to the  
North Drogheda Environs  
Local Area Plan 2004  
(Variation No.1)**



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## *Vision Statement*

*The Council is committed to a self-sustaining community within the Plan lands, whilst retaining strong links between this new community and the town of Drogheda. This will be achieved by ensuring -*

*As many as possible of the day-to-day needs of the community are available within a 5 to 10 minute walk/cycle of homes e.g. primary schools, recreational /community facilities and local shopping needs.*

*The maximum possible level of integration and connectivity for pedestrians and cyclists between all parts of the Plan lands.*

*A high level of pedestrian/cyclist and public transport connectivity between the Plan lands and the urban area of Drogheda, particularly, the town centre.*

*The creation of a well defined urban form with a strong 'sense of place' with flexible and adaptable built forms.*



1  
Introduction

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## 1.1 The North Drogheda Environs Local Area Plan and the Master Plan

The North Drogheda Environs Local Area Plan (LAP) was adopted in 2004. The plan provides for a wide range of uses including the development of three new residential neighbourhoods to cater for a population of 20,000 people on an area extending to 254 hectares located approximately 2km north of Drogheda town centre.

The LAP states "it will be necessary to prepare a Master Plan for each of the three residential neighbourhoods identified in the plan before planning permissions will be granted on foot of any individual planning application" (Section 6.2B).

However, Louth County Council has prepared a single Master Plan, with three sub-sections, one dealing with each of the three proposed neighbourhoods. This approach was considered appropriate in order to ensure integration between neighbourhoods and facilitate adherence to legislative and regulatory requirements. The Master Plan forms a variation to the LAP.

### Master Plan Objective: MP1

Whilst the provisions of the Master Plan, including the roads hierarchy are policy aims, objectives and targets that the Planning Authority requires adherence to, the Council recognises that a degree of flexibility is desirable. However, the level of flexibility shall not undermine the policy aims, objectives and targets of the Master Plan. The over-riding consideration is to ensure that the urban design framework, as set out in the Master Plan, is achieved, including strong levels of permeability throughout the Plan lands.

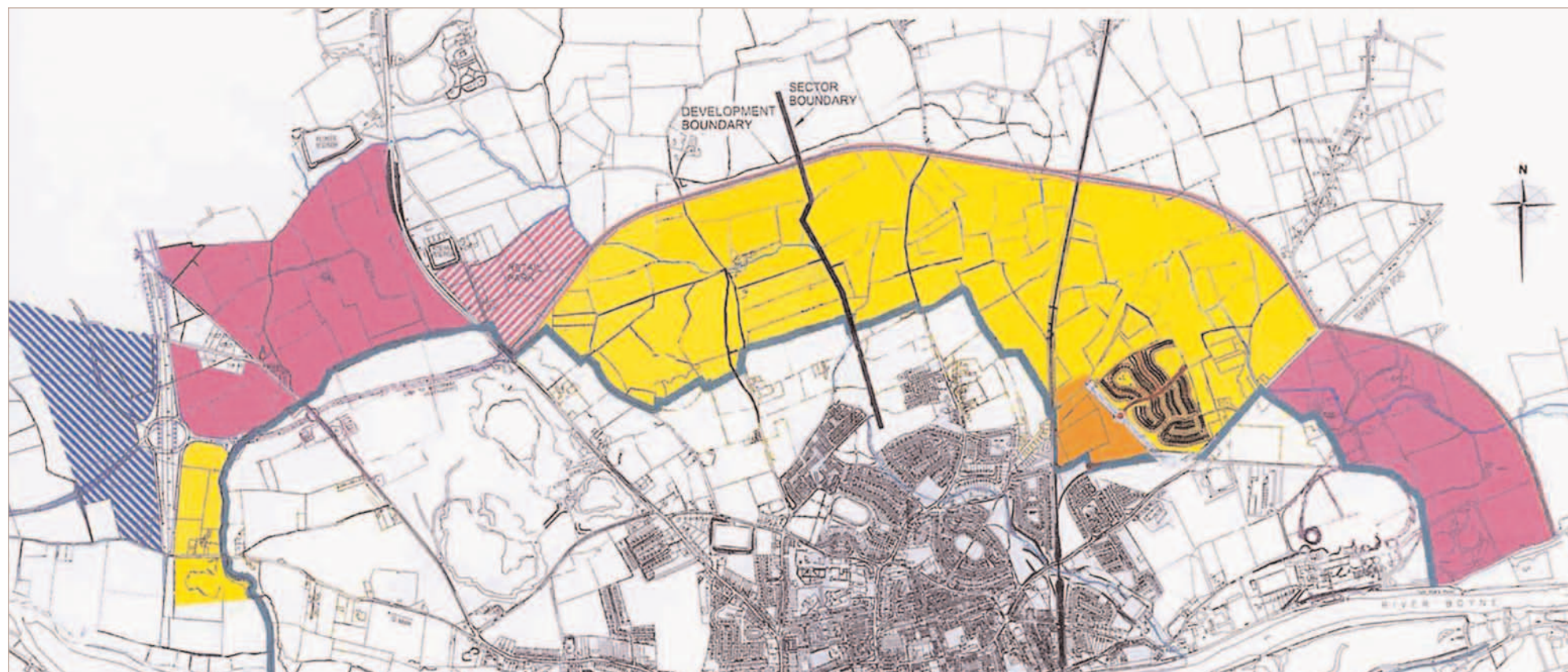
The Master Plan itself is in compliance with the policies, objectives and development control standards contained in the LAP. Nevertheless, it proposes some variation in respect of:

- Civic & Commercial Centres which are somewhat larger than the traditional concept of a neighbourhood centre;
- The location of a new rail station on the northern, rather than the southern, edge of neighbourhood three;
- A larger size of site for each of three primary schools, potentially a fourth primary school and a secondary school outside the plan lands; and
- Detailed arrangements for phasing.

The Master Plan provides for:

- The sustainable development of an area of land extending to approximately 254 hectares forming three separate but integrated residential neighbourhoods;
  - Framework layout plans, phasing arrangements and urban design objectives / targets for each of the three neighbourhoods that will provide a high quality, varied and sustainable living environment with its own unique character;
  - A civic and commercial centre and adjoining primary school within each residential neighbourhood to provide for the day-to-day needs of future residents;
  - A linear park running from the R166 (Termonfeckin Road) to the east and the R132 (Dublin Road) to the west of the lands, incorporating pedestrian and cycle paths, playing areas and landscaped areas to provide for the recreational needs of residents;
  - A sports and recreation area to the north of the Plan Lands;
  - The preparation of a detailed development framework for both the new open space areas and the new residential and neighbourhood areas.
- The integration of the new open space areas with the new development areas and between the new areas and surrounding lands, ensuring that recreational/amenity areas are accessible to the wider community. This contributes towards the development of an integrated and sustainable community.
  - Phased development of the residential neighbourhoods.
  - Essential infrastructure through the preparation of an infrastructure framework and implementation plan that will provide for the construction of the Port Access Northern Cross Route (PANCR) to link the lands with the R132 to the west and the R166 to the east;
  - A foul drainage network, public water supply, sustainable arrangements for the attenuation and disposal of surface water, and utilities.
  - The preparation of appropriate development contributions' schemes to fund the provision of infrastructure; and,
  - An Environmental Report describing the Strategic Environmental Assessment of the Master Plan in accordance with EU and National regulations.

### Overall Zoning Map 1 - Extract from North Drogheda Environs Local Area Plan, 2004



- To provide for residential use in accordance with approved Master Plans
- To provide for employment uses
- To provide for mixed uses appropriate to transport hub
- To provide for a retail park
- To provide for tourism and leisure uses consistent with protection of adjoining heritage area

▲ Extract from the North Drogheda Environs Local Area Plan 2004



MAP 1. OVERALL ZONING MAP  
NORTH DROGHEDA ENVIRONS PLAN  
LOUTH COUNTY COUNCIL  
COUNTY HALL, DUNDALK

Map 2 Indicative Treatment of Residential Areas - Extract from North Drogheda Environs Local Area Plan, 2004



▲ Extract from the North Drogheda Environs Local Area Plan 2004

MAP 2. INDICATIVE TREATMENT OF  
RESIDENTIAL AREAS  
NORTH DROGHEDA ENVIRONS PLAN  
LOUTH COUNTY COUNCIL  
COUNTY HALL, DUNDALK

- Borough Boundary
- To provide for residential use in accordance with approved Master Plans
- To provide for a neighbourhood centre and primary school
- To provide for mixed uses appropriate to transport hub
- Indicative location of linear open space
- ➔ Possible access points
- FP Flood Plain



## 1.2 Formal and Regulatory Requirements

The Master Plan has been prepared as a variation to the North Drogheda Environs Local Area Plan in accordance with the provisions of the Planning and Development Act 2000 (as amended), and associated Regulations, and will be implemented in compliance with the legislative and regulatory requirements of same Act and Regulations.

Similarly, a Strategic Environmental Assessment of the Master Plan has been undertaken according to the provisions of European Directive 2001/42/EC1. Both the Master Plan and the Environmental Report associated with the Strategic Environmental Assessment will be subject to public consultation in accordance with relevant Acts and Regulations.

### 1.3 Plan Lands and Hinterland

Drogheda is located on the east coast of Ireland, midway between Dublin and Dundalk within the Border Region on the R132.

The Plan lands themselves are divided into three neighbourhoods as follows:

NH1 -	78 hectares
NH2 -	73 hectares
NH3 -	103 hectares

The lands are bounded to the west by field boundaries beyond which lies the R132, and to the east by the R166, Termonfeckin Road. 'Twenties Lane', the Ballymakenny Road and the Dublin-Belfast railway line bisect the lands in a north-south direction. The proposed Port Access Northern Cross Route (PANCR), which will connect the lands with the R132 to the west and R166 to the east, will form the northern boundary of the lands. To the south of the plan lands, are residential area of Drogheda, including Moneymore, Whitethorn, Castle Manor, Grange Rise and Termon Abbey.

The majority of the plan lands are in agricultural use, with a number of individual dwellings located on the county roads. The Sienna Convent is located within the northern part of residential neighbourhood one. The residential area known as 'Termon Abbey' is located within neighbourhood three of the plan lands.

### 1.4 Population

In the absence of any large scale urban development in the Plan lands (with the exception of Termon Abbey) and the proximity of the area to the Drogheda Urban Area, demographic analysis is based primarily on the Drogheda Borough Area.

The population of the Drogheda Urban Area in 2002 was 28,308 persons representing an increase of 15.7% from the 1996 population census, when the population was recorded at 24,460 persons. This represents an annual growth rate of 2.61%. Based on the 1996-2002 trends, the population of the Drogheda Urban Area would be in the region of 41,607 persons by 2020. However it should be noted that both national and regional planning policy is encouraging substantial growth; the Regional Planning Guidelines for the Border Region envisage the population of Drogheda reaching 60,000 in the medium to long term, and this aim is reflected in the Drogheda Borough Council Development Plan (2005-2011). Furthermore, the South Drogheda Environs have seen considerable growth since 1996.

## 1.5 Household Sizes

According to the Drogheda Borough Council Development Plan 2005 - 2011, the average private household size for the Drogheda area is 2.94 persons. In the County Louth area the average household size has fallen from 3.76 persons to 3.21 persons during the 15-year period 1981 to 1996.

### 1.6 Demographic Profile and Educational Requirements

Another important consideration that has a bearing on the plan is the demographic profile of the population. The age profile of the population for the town of Drogheda, as contained in the 1996 Census of Population, demonstrates that the largest age group in the Drogheda area is between 25-44 years, followed by the 0-14 years age group.

This has important implications for the provision of schools, recreational and other social facilities both in terms of growth and government policy to reduce class sizes over time.

The Department of Education has set down a requirement of 25 children per classroom with a requirement of 24 classrooms in a school, to give a total pupil number of 600 pupils.

Therefore, in view of the demographic profile and predicted population of the plan lands and following consultation with Department of Education, a 1.2 hectare site has been reserved within each residential neighbourhood and adjacent to its civic commercial centre for the future provision of primary schools. A further site may be required for a fourth primary school on land north of the PANCR.

Following consultations with the Department of Education, secondary schools will be required. The Department advises that such schools require a significant land take, in the region of 4 to 5 hectares each, and suggests that such schools be located where they can share facilities, including sports grounds. A minimum of 1 large post-primary school will initially be required. In the event that a second post-primary school is required as phased development progresses, Louth County Council will cooperate with the Education Authorities in securing a further site. The Department of Education supports the use of shared facilities as this reduces the necessary land take. Given the 'shared access advice' of the Department, it is considered that north of the PANCR, preferably close to the proposed Sports Centre, will be suitable.

Regarding provision for special needs, the Council will cooperate fully with the Department of Education in this respect.

Childcare facilities must be provided in accordance with the requirements of the Louth Childcare Strategy 2002. These should normally be located within the civic commercial centres, close to schools and places of employment.

2  
National, Regional and  
Local Planning Context

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## 2.2 Regional Planning Policy

The following regional planning documents were consulted in the preparation of this Master Plan:

- The Border Regional Planning Guidelines 2004
- The Dublin Regional Planning Guidelines 2004

Drogheda is located in the Border Region but influenced by the Dublin Region. Both sets of guidelines promote the development and growth of urban centres such as Drogheda as focal points within their surrounding rural catchments. The key objectives for such centres are: employment provision; population growth (see Introduction, Section 1.4); satisfaction of housing demand; and, delivery of a high quality of life for the population.

The Master Plan seeks to achieve these objectives in the development of the plan area.

## 2.3 Local Planning Policy

The following local planning documents were consulted in the preparation of this Master Plan:

- North Drogheda Environs Local Area Plan 2004;
- Louth County Development Plan 2003 - 2009;
- Housing Strategy for County Louth 2001;
- Louth Retail Strategy;
- Louth Play Policy;
- Corporation of Drogheda Development Plan 1999;
- Drogheda Borough Council Development Plan 2005-2011;
- Planning Strategy for the Greater Drogheda Area 2005 (Issues Paper);
- Meath County Development Plan 2000, (and Issues Paper March 2005);
- East Meath Sub-Region Local Area Plan 2000, (and East Meath Local Area Plan Issues Paper 2004); and
- An Economic and Spatial Study of Drogheda 2001 (The Bacon Report)

These spatial plans, strategies and studies all acknowledge the importance of Drogheda in the urban hierarchy. For example the Louth County Development Plan states it is policy "to promote and facilitate the growth of Drogheda as a major urban centre that can accommodate substantial population growth and act as a driver for development in the south of the county and wider surrounding region." (Pg 47). Equally, the recently adopted Drogheda Borough Development Plan 2005 - 2011 recognises the important role of the town in the local and regional hierarchy.

However, it is primarily the County Development Plan, the Louth County Housing Strategy and the North Drogheda Environs Local Area Plan (LAP) 2004 which provide the framework for the Master Plan. Together, these documents provide objectives for development and development control standards concerning: dwelling mix; public and private open space; and, car parking.

The following sections set out these objectives and standards.



Extract from the Border Regional Planning Guidelines 2004 ▲

#### Housing Policy: HP1

The provision of housing, including social and affordable housing, shall accord with the Louth County Housing Strategy, as may be amended.

### 2.3.1 North Drogheda Environs LAP 2004 Policy and Development Control Requirements

According to the LAP, specific objectives for the development of the plan lands are provision of:

- A mixture of housing types with private open space within three distinct neighbourhoods (accommodating approximately 20,000 people);
- A Port Access Northern Cross Route linking the R132 to the west with the R166 to the east;
- 20% open space, including a (centrally located) public park, playing fields and smaller open spaces/play facilities;
- Walking and cycle routes linking destinations within and outside the plan area;
- Civic Commercial Centres incorporating local shopping and community facilities, including crèches;
- Primary schools and associated sporting facilities;
- Land for a new rail station and associated park and ride facility;
- Bus routes and shelters; and
- Associated infrastructure including roads, foul drainage, surface water management and water supply

#### 2.3.1.1 Dwelling Mix

The LAP seeks a housing mix in line with the Housing Strategy for County Louth, which recommends the following residential mix:

##### Private Dwelling Mix

House Type	Private %
1 & 2 bed	35
3 bed	35
4 bed	30

##### Social/Affordable Dwelling Mix

House Type	Social %
1 & 2 bed	37 & 39 respectively
3 bed	14
4 bed	10

The Housing Strategy aims to ensure that the projected demand for housing, including social and affordable housing needs, are adequately met within the County. In this regard it is a policy of the Strategy to ensure that 20% of zoned residential lands are reserved for the provision of social and affordable housing purposes. The preference is for developers to provide dwellings rather than land.

#### 2.3.1.2 Public Open Space Requirements

The LAP states that public open space shall be 20% of the total area zoned for residential development; refer to section 3.5.1 Public Open Space Quantum.

The LAP also states that:

- A quarter of the public open space requirement may be provided outside of the plan lands;
- Open space shall be provided at convenient locations within the three neighbourhoods;
- The main body of open space in each neighbourhood shall be linked, forming a linear park and this park will provide for a continuous green area running from the R166 (Termonfeckin Road) to the R132 (Dublin Belfast Road), incorporating pedestrian and cycle paths, playing fields and landscaped areas;
- The linear park should be opened out into larger regular shaped open spaces to facilitate the provision of significant areas for playing fields and other active recreational pursuits;
- Where appropriate, certain open spaces may be utilised as part of a storm water management and attenuation plan; and

The public open space quantum is exclusive of roads and associated landscape treatments, additional areas required within individual developments for stormwater attenuation, other than as set out under Section 5 Infrastructure of this Master Plan; and lands owned by or used exclusively by private sporting clubs or other organisations.

### 2.3.1.3 Private Open Space Requirements

The Louth County Development Plan requires that all new dwellings should have direct access to private amenity space, either in the form of a balcony, patio or garden area. Where balconies are proposed they should be an integral part of the building and act as usable open spaces. Balconies shall recess into buildings and act as an extension of the living space. The following standards for private open space are set by this Plan

Private Open Space Requirements	
Dwelling Unit	Minimum Private Open Space
Houses - 1 and 2 bed	60 sq.m.
Houses - 2 plus bed	80 sq.m.
Houses (town centre)	50 sq.m.
Apartments/Duplexes 1 bed	20 sq.m.
Apartments/Duplexes 2/3 bed	40 sq.m.
Civic / Commercial Centre Apartments/Duplexes 1 bed	10 sq.m.
Civic / Commercial Centre Apartments/Duplexes 2/3 bed	20 sq.m.

However, the Louth County Development Plan also recognises that innovative layouts for housing can provide acceptable alternatives, in the form of combined private and semi-private open space. Such solutions may be considered appropriate in the development of the plan lands.

### 2.3.1.4 Car Parking

Car parking should be provided in accordance with the standards set out in the Louth County Development Plan, as follows:

Car Parking Requirements		
Land Use	Urban Spaces per Unit	Sub-Urban Spaces per Unit
Dwellings	1 per dwelling	1.5 per dwelling
Apartments	1 per dwelling	1.5 per dwelling
Retail	1 per 20 sq.m.	1 per 10 sq.m.
Bar/Dancehall	1 per 5 sq.m.	1 per 5 sq.m.
Restaurant	1 per 10 sq.m.	1 per 5 sq.m.
Financial Institution	1 per 30 sq.m.	1 per 25 sq.m.
Schools	1 per classroom	1 per class room
Clinic/Doctor's	2 spaces per consulting room	2 spaces per consulting room

#### Private Open Space Policy: POS 1

Where due regard is given to orientation and avoidance of overlooking, reduced areas of Private Open Space may be considered. With care, this can offer variety to the built form and more sustainable solutions to provision of detached housing.

#### Car Parking Objective: CP 1

Large expanses of car parking will be discouraged, particularly in the Civic Commercial centres. Therefore, where mixed-use planning applications are made, parking provision should be considered collectively, i.e. shared use amongst residential and employment uses. Underground parking and multi-storey facilities should also be considered, subject to their impact on urban design.

#### Car Parking Objective: CP 2

In residential areas, grouped parking behind building lines will be encouraged.

3  
Landscape and Open Space

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### 3.1.1 Introduction

The purpose of the Landscape and Open Space components of this document is to outline the issues relating to the study area and its hinterland in the context of the LAP and the Louth County Development Plan.

Within the plan lands, a range of existing landscape features will provide the basis of an exciting and diverse network of open space that will be linked to open space and landscape features outside the plan lands. These provisions are essential if Drogheda is to remain a green and attractive place in which to live as it expands, and also if the new residential development is to be integrated with other parts of Drogheda in terms of pedestrian and cyclist access.

Notably, there is potential for linkages between the plan lands to Beaulieu House and the Boyne Estuary to the east, to Killineer House to the north, to the disused quarry lands and the Boyne Valley to the south-west and to the existing open space network to the south. The open space network proposed as part of this Master Plan is designed to facilitate these links as well as service the proposed development.

The basic principle governing the provision of open space is that there should be a clear distinction between 'active' and 'passive' open space. Accordingly, the proposed open space network is organised along a 'passive' Linear Park, with local 'active' open space, as well as school facilities and community services, located close to or along the Linear Park. The most intensively used 'active' facilities, demanding higher specification in terms of construction, management and maintenance will be located outside the plan lands. These facilities will be located to the north of the site, and may form part of a wider campus or network of second and third level institutions and public open space



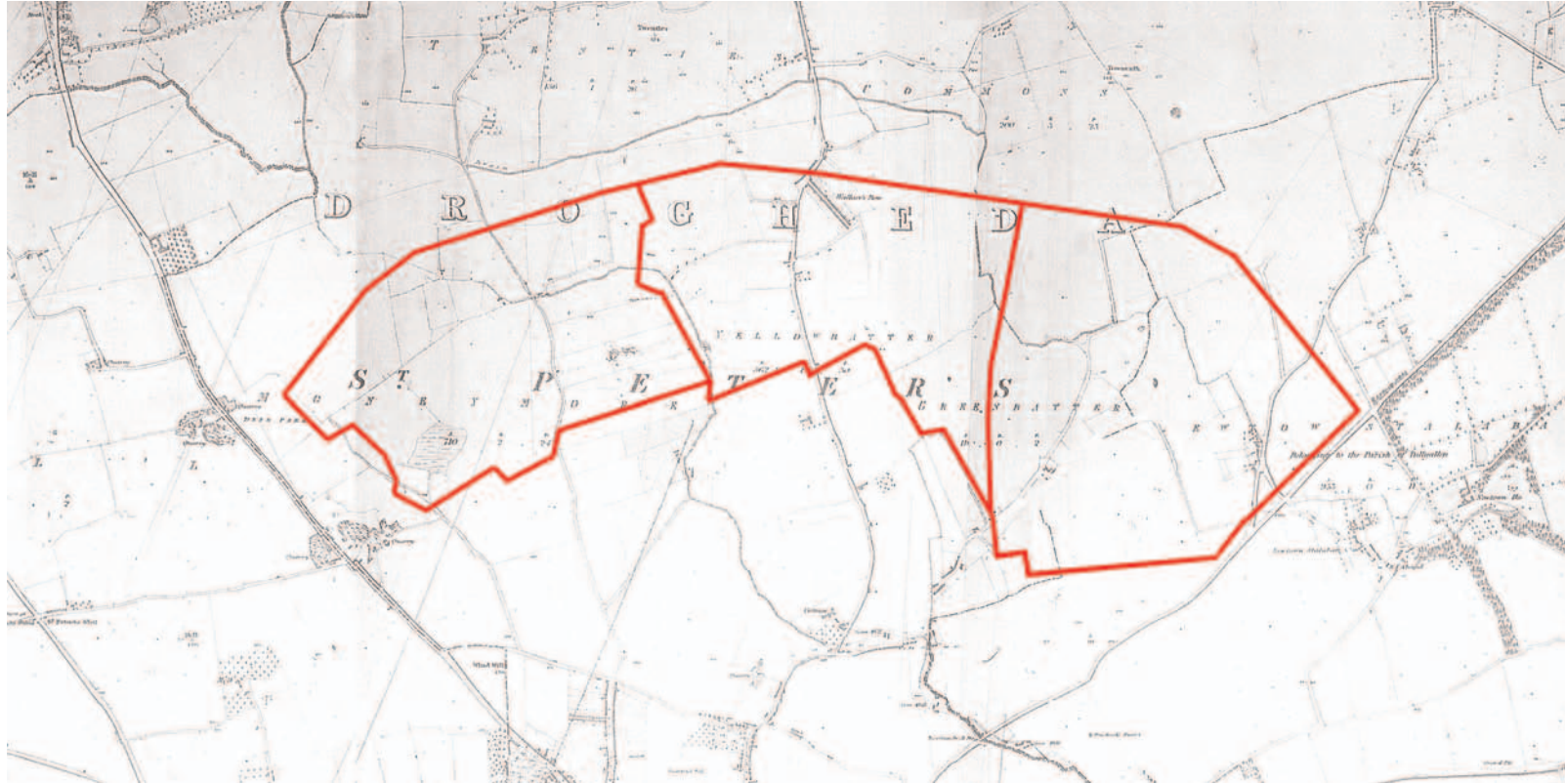
▲ North Drogheda Environs circa 1777

### 3.2.1 Landscape History Of The Plan Lands

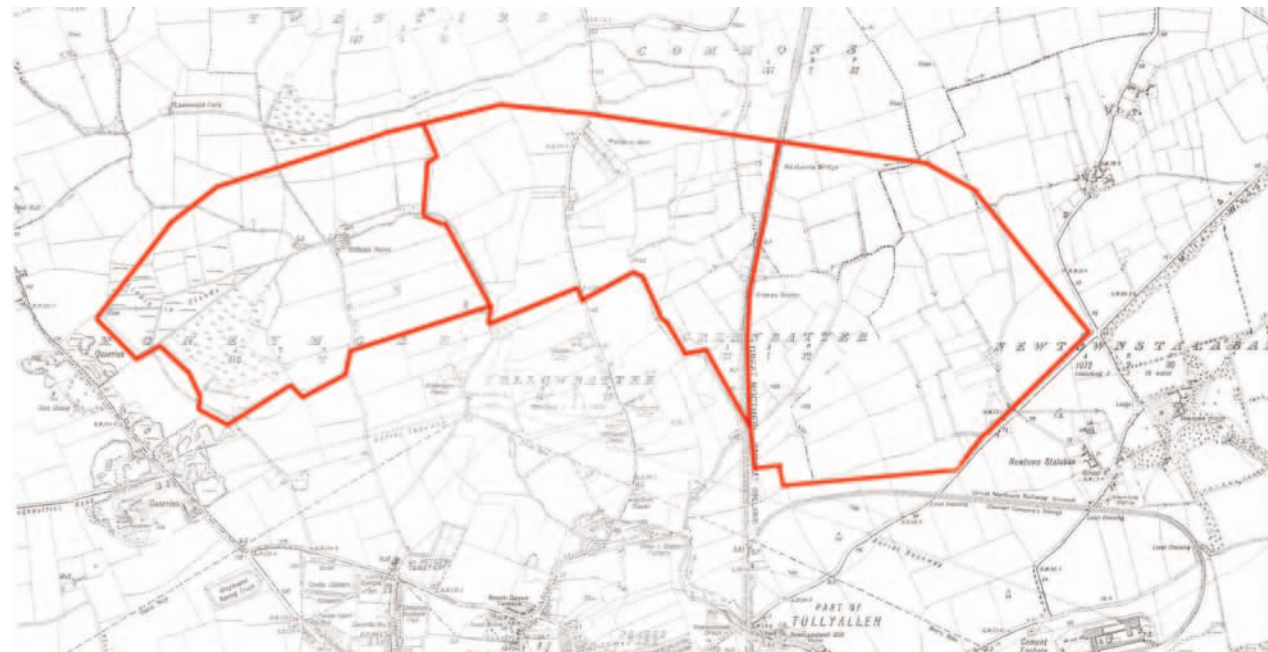
Beaulieu House, which dates from 1660, as well as Newtown House and associated landscape features and planting, are illustrated on the 1777 map. Both lie outside the plan lands but in the near vicinity.

By 1835, Killineer House, to the northwest of the plan area, had been constructed. The Termonfeckin Road was aligned as it is today, forming the eastern boundary to neighbourhood three.

The 1920 Map illustrates the comprehensive development which had occurred during the second half of the 1800s including the construction of the railway, the expansion of the quarries and the construction of aerial ropeways between the quarries and the cement works at the north side of the Boyne Estuary.



▲ North Drogheda Environs circa 1835



▲ North Drogheda Environs circa 1920

A number of features within the plan area are identified, such as 'Hillside House' on Twenties Lane.

All the historic maps feature references to flood plains, streams and drains, which remain largely intact today.

Terms such as 'bleachyards' refer to the process of bleaching flax for the production of linen. It is believed that the flood plain in neighbourhood one was used to soak flax prior to the sun bleaching process.



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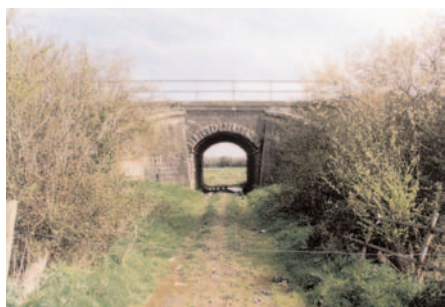
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1. Flat grazing lands with mature alder hedgerow
2. Grazing lands with partial hawthorn hedgerow
3. Ushers Stream, looking south
4. Farm buildings on Twenties Lane
5. Large field size with hedgerows removed
6. 'Moore's Bridge' at railway, looking east
7. Wetlands/drainage to railway embankment
8. Railway looking west

### 3.3.1 Landscape and Visual Assessment Of The Plan Lands

The site is intimately linked to Drogheda and the Boyne Valley by virtue of its geographical location and the visual and hydrological connections from the site to its immediate hinterland.

Most of the lands are currently farmed and include a mix of grazing and tillage farming. Hedgerows range from Hawthorn dominated to Alder dominated and include species such as ash, willow, elder and blackthorn. Many hedgerows have been removed in the past and replaced with wire fencing. An older field pattern with a large number of mature trees and smaller field sizes exists in neighbourhood two adjacent to the railway line. There are a number of working farm complexes and private dwellings within the plan area. Residential units and a neighbourhood centre are under construction to the east of the site, in neighbourhood three.

Usher's Stream and Beaulieu Stream, drain and subdivide portions of the site. The site is further subdivided by the north-south railway axis. A naturally occurring floodplain exists within neighbourhood one.

The lands through the centre of the site are generally flat, falling gently towards the east. Locally extreme topography exists along certain portions of Twenties Lane. High points exist along the northern portion of the site.

Strong views and vistas to the town of Drogheda, the Boyne Valley and beyond are afforded from high points on site.

Demesne landscape features of extraordinary quality are found outside but directly adjacent to the plan area. These include planting associated with Newtown House, Killineer House and, most notably, Beaulieu House.

### 3.4.1 Objectives – Management & Maintenance of Public Open Space

It is proposed that over the development period of this Master Plan, as public open space is 'taken-in-charge' (linear park & sports centre only to be taken in charge), Louth County Council will take on the role of management (rather than maintenance), with the day to day maintenance of public open space reduced significantly and carried out by tendering landscape contractors and property management firms.

The open space network of the Master Plan is designed to facilitate a move away from 'high-input' \* landscape maintenance to 'low-input' \*\* landscape management, and the quantum of Space Left Over After Planning (SLOAP) is minimised across the plan area. The proposed road profiles do not include large grassed margins or reservations. Many of the proposed sports/leisure facilities are located and configured in order to enable their maintenance by the private sector.

The quantum of public open space is fixed by the LAP at 20% of the lands zoned for residential development, allowing for 15% located within the plan area plus 5% located outside the plan area.

A large proportion of the proposed open space network comprises native planting which will, with good management and little maintenance, form viable and diverse native plant communities, invaluable in terms of their contribution to the flora and fauna of the plan area, as well as to long-term educational and community development. The 'Wetland Park' in neighbourhood one and the 'Linear Park' are good examples of 'low-input' landscape types and together they account for approximately 40% of the open space network. The quantity of mown, grassed open space ('high-input') is relatively small and is located in well controlled, well defined areas within the urban design framework, such as pocket parks.

In summary, the main objectives of the Master Plan, in terms of management and maintenance of open space are to:

- Maximise efficiency of landscape types by promoting high proportion of native planting;
- Maximise biodiversity;
- Reduce petro-chemical and human resource inputs;
- Protect existing structural landscape, where possible, to act as 'engine' for development of plant communities;
- Develop neighbourhood one floodplain as native wetland area to act as a park within the plan area;
- Concentrate high-input landscape types such as high specification sports pitches in suitable locations; and,
- Contract work for maintenance of high-input landscape types, with Louth County Council retaining a management role.

*\* High-input refers to landscape types that require ongoing high levels of resources to maintain (and may also require skilled management techniques). Examples are close mown swards and sports surfaces.*

*\*\* Low-input refers to landscape types that require a low level of resources in terms of maintenance (but may require skilled management techniques). Examples are simple woodland matrix planting and meadows.*

### 3.4.2 Objectives – 'Active' and 'Passive' Open Space

The Master Plan recognises the need for leisure, sports and community facilities. In order to deliver high quality facilities, designed and built to a high specification, it is proposed to concentrate or cluster facilities in key locations. By concentrating intensive active uses, the efficient maintenance and long-term management of both active and passive open space is facilitated.

Recent projects in Ireland, developed by local authorities and managed for public use have successfully combined public and private sector management and maintenance skills to provide high quality, value for money facilities.

The main objectives of the Master Plan in terms of active and passive open space are to:

- Cluster active open space facilities;
- Locate some active open space facilities in or close to civic / commercial centres;
- Promote the development of a large centre of active facilities north of the plan area (Sports Park);
- Provide flexible open space adjacent to proposed schools, which can be used to suit the requirements of the schools at particular times or events;
- Develop the Linear Park as a continuous passive open space experience, with connections to active areas; and
- Promote low-input wildlife habitats and urban forestry in passive open space.

### 3.4.3 Objectives – 'Taking in Charge' of Public Open Space

This Master Plan document outlines the general nature, extent and location of the proposed public open space network, most of which shall be taken in charge and managed by Louth County Council; these open spaces are the Linear Park, Wetland Park and Sports Centre. Pocket parks will not be taken in charge by the Council.

The Council will examine various models for the management and maintenance of developments including, where appropriate, management companies and other agreements. The objective is to secure a high level of management and maintenance of public utilities and spaces in the area.

### 3.4.4 Objectives – Private Open Space

The minimum standards for private open space are tabled under Section 2.3.1.3. The standards allow for a variety and mix of private open space, depending on unit type.

The main objectives of the Master Plan, in terms of private open space are to:

- Maximise quantum of useful private open space per household;
- Promote good quality shared private open space for apartment developments;
- Protect existing structural landscape;
- Promote the concept and practice of Urban Forestry. Refer to Section 3.4.5 Objective – Urban Forestry and Landscape and Open Space Policy 1

#### Landscape & Open Space Objective: LOS 1

Louth County Council will promote the concept and practice of Urban Forestry, whereby all trees, in both public and private open space, are considered and managed as one population. This shall be facilitated through the selection of trees for planting in both public and private open space from agreed schedules.

#### Landscape & Open Space Objective: LOS 2

Before open space is 'taken in charge' and to ensure the quality of the various components of the public open space network, developers shall be obliged to satisfy certain quality control mechanisms set down by Louth County Council. All, or a number, of the following quality control mechanisms shall be applied by Louth County Council to individual developments.

1. Conditions attached to granting of planning permission such as:

- Tree species selected from specific schedules of native species
- Minimum quantities and sizes of trees for specific purposes
- Planting of portions of open space prior to building works commencing, and other phasing mechanisms
- Detailed finished levels for open space areas relative to adjoining public roads to satisfaction of the Council

2. Financial bonds to ensure:

- Protection of existing trees, hedgerows, streams and other landscape features
- Proper construction and planting of open space according to conditions

3. Financial contributions.

### 3.4.5 Objectives – Urban Forestry

The benefits of woodland as a landscape type, are numerous and include aesthetic, recreational and economic benefits. However, woodlands require management and the Council will wish to be satisfied that any landscape scheme includes proposals for the proper management of woodland.

In general, the annual cost of maintaining and managing simply designed wooded areas is significantly less than that for close mown amenity grassland.

The Master Plan promotes the development of woodland as a natural and amenity resource and promotes the use of current funding and information mechanisms such as the Neighbourhood Scheme and future schemes that may become available during the Master Plan's development period.

The Neighbourhood Scheme is designed to promote woodlands for public access and recreation. The Neighbourhood Scheme offers support to local authorities, community groups, environmental NGOs and private woodland owners to work in partnership to develop appropriate woodland amenities in and around villages, towns and cities. These 'neighbourhoods' represent a resource for all and form an integral part of the locality and community life. The Neighbourhood Scheme is funded by the Forest Service of the Department of Agriculture and Food under the National Development Plan 2000–2006, supported by the European Union. It is administered by the Forest Service and will operate until the end of 2006.

#### Landscape & Open Space Objective: LOS 3

In submitting detailed landscape schemes for the plan lands to the Council, developers must seek to fulfil the Master Plan's objectives for the management of trees and woodlands.

The main objectives of the Master Plan in terms of management of trees and woodland are to:

- Highlight the concept of Urban Forestry and the need for skilled long-term management;
- Identify and conserve existing structural landscape elements in the plan area;
- Create linkages between landscape elements within the plan area and landscape features beyond;
- Promote the use of native tree species in planting schemes and promote the use simply designed woodland as opposed to complex woodland mixes which require intense management and maintenance;
- Identify areas where particular species mixes are appropriate to ground conditions;
- Promote habitat types as recommended by the Heritage Council to achieve above; and
- Develop funding and procurement of tree planting schemes.

#### Useful Organisations and References

##### Organisations:

The Tree Council of Ireland  
 The Heritage Council  
 Coford  
 The Forest Service, Dept. of Agriculture & Food  
 National Development Plan (NDP) 2000–2006  
 The National Urban Forestry Unit (UK)

##### References:

Trees or Turf? – Best Value in Managing Urban Green Space. The National Urban Forestry Unit (UK)  
 Trees & Woods in Towns & Cities – How to Develop Local Strategies for Urban Forestry. The National Urban Forestry Unit (UK)

#### Landscape & Open Space Policy: LOS 4

One or more of the following planting schedules, as compiled by the Heritage Council, 'A Guide to Habitats in Ireland', shall be used in all developments within the plan area. The planting schedules shall be specific to existing, retained planted features on site, such as tree lines, hedgerows, stream edges and permanently flooded areas.

##### Semi-natural Woodland

###### WN 6 – Wet Willow Alder Ash Woodland

Alnus glutinosa (alder)  
 Salix cinerea (willow)  
 Fraxinus excelsior (ash)

##### Linear Woodland

###### WL 1 – Hedgerows

Crataegus monogyna (hawthorn)  
 Prunus spinosa (blackthorn)  
 Ilex aquifolium (holly)  
 Fraxinus excelsior (ash)  
 Corylus avellana (Hazel)  
 Sambucus nigra (elder)

###### WL 2 – Treelines

Fagus sylvatica (beech)  
 Aesculus hippocastanum (chestnut)  
 Tilia ssp. (lime)  
 Quercus robur (pedunculate oak)

#### Landscape & Open Space Objective: LOS 5

If attenuation is the preferred option, it must occur remotely from the stream courses. The Pocket Parks, due to their locations, are suited to attenuation. It would be reasonable, therefore to allocate a portion of the surface area of the Pocket Parks for attenuation. The following open spaces shall NOT be used for storm water attenuation:

- Railway Park\* (location for play and sports facilities)
- Sports Centre (off site)
- Pocket Park (up to 50% of the total surface area of each individual pocket park)

### 3.4.6 Objectives – Open Space & Storm Water

The Master Plan provides for the use of certain open spaces as storm water attenuation areas. The proposed 'Wetland Park' as well as the 'Linear Park', with the potential for altering the profiles of the Beaulieu and Ushers Streams, represents approximately 12 hectares of open space, within which attenuation or management of storm water may be facilitated, subject to there areas being continuously available for public use.

The 'Wetland Park' and 'Linear Park', while facilitating storm water attenuation will also function as wildlife habitats and will facilitate informal play and kick-about areas as well as cycle and pedestrian routes. The functional requirements for these areas shall be the determining factor in considering parts of these areas for attenuation. The eventual surface area of the 'Wetland Park' shall be determined by the extent of the actual flood plain, the nature of the proposed development immediately adjacent, and detailed flood and flow studies.

No other public open space shall be used for attenuation or management of storm water unless otherwise agreed in writing with the Council as part of the required Stormwater Management Strategy for the Plan lands and Environs (Also see LOS 5)

The following open spaces may be used for storm water attenuation:

- Pocket Park (up to 50% of the total surface area of each individual pocket park)
- All other open space not listed above.

\* *Railway Park may flood anyway, because of its proximity to a restriction in the Beaulieu Stream*

### 3.5.1 Public Open Space Quantum

In accordance with National Policy as expressed in the Residential Guidelines, the required public open space provision is calculated on the basis of the gross area of the Plan lands. In the context of this Plan the 'gross area' excludes the Port Access Northern Cross Route, the Railway Line, Termonfeckin Road, Sienna Convent and lands developed/committed to development in Neighbourhood 3. The LAP states that public open space shall be 20% of the total area zoned for residential development. The LAP also states that a quarter of the public open space requirement will be provided outside of the Plan lands.

Plan Lands Currently Under Construction:	32 ha*
Plan Lands Subject to Development:	219 ha**
Total Area Zoned Residential Development:	254 ha

<u>Open Space Components</u>	<u>Required Within Plan Lands</u>	<u>Required Outside Plan Lands</u>
Linear Park	5.44 ha	
Links to Open Space outside plan area	1.92 ha	
Wetland Park	6.80 ha ***	
Ridge Park	1.30 ha	
Hollow Park	0.70 ha	
Railway Park	1.40 ha	
Bridge Park	1.00 ha	
Pocket Parks (Total)	14.29 ha ****	
<b>Subtotal</b>	<b>32.85 ha</b>	<b>12.55 ha*</b>
Existing Open Space	3.20 ha	
Total within Plan lands	36.05 ha	
Total outside Plan lands		12.55 ha
<b>Total Public Open Space</b>	<b>48.60 ha</b>	

Facilities in Addition to the 15% Quantum	
Neighbourhood 1 School	1.20 ha
Neighbourhood 2 School	1.20 ha
Neighbourhood 3 School	1.20 ha
<b>Total</b>	<b>3.60 ha</b>

**Landscape & Open Space Objective: LOS 6**  
 The Reserved Attenuation Area (15.8 ha) shall be considered for development following a detailed Flow & Flood Study over an extended time period (at least 5 years, refer to Section 5 Infrastructure). If the study finds the area is necessary for attenuation purposes, then it shall not be developed and shall be retained as open area in addition to the public open space quantum set out in this Plan.

- \* Neighbourhood 3 comprises 32 ha of land currently under construction with a 10% quantum (3.2 ha) of open space currently allocated within the Plan lands. An additional 5% quantum (1.6 ha) of open space shall be contributed to the Sports Centre. The quantum of open space outside the Plan lands will therefore total 12.55 ha.
- \*\* The proposed quantum of public open space within the Plan lands is calculated independently from the 3 ha of Sienna Convent and the 32 ha of land currently under construction, therefore 15% (32.85 ha) of the remaining 219 ha will be allocated to public open space within the Plan lands and 5% (10.95 ha) of the same remaining 219 ha will be contributed to the Sports Centre.  
 The total quantum of open space within the Plan lands will comprise of the existing 3.2 ha of public open space and the proposed 32.85 ha of public open space for a total of 36.05 ha. The total quantum of open space to contribute to the Sports Centre will comprise of 1.6 ha and 10.95 ha for a total of 12.55 ha of public open space outside the Plan lands.
- \*\*\* The full extent of the Wetland Area in NH 1 is 22.6 hectares, of which 6.8 ha is allocated as open space. The balance of the area (15.8 ha) shall not be developable until a detailed flood analysis is completed over an extended period of time (see Infrastructure Section 5) If the study finds the area is necessary to be retained as part of the floodplain then the balance (15.8 ha) will be added to the overall quantum of public open space in the Plan lands.
- \*\*\*\* Pocket parks comprise three types:  
 Type 1 (close to Linear Park and incorporating existing hedgerows protected)  
 Type 2 (remote from Linear Park, more open characteristic)  
 Type 3 (at boundary of plan area, configured to allow future connecting open space outside plan area).

### Landscape & Open Space Objective: LOS 7

The exact location, size and dimensions of each pocket park shall be agreed in writing with Louth County Council at the planning application stage for each development. The network of pocket parks, when complete, shall provide a composite set of recreational facilities across the Plan lands. In this regard, a 'Park Provision Strategy' shall be submitted for the agreement of the Council prior to development commencing on the Plan lands.

Pocket parks shall be arranged to facilitate the retention of existing landscape features where appropriate, the provision of informal flat 'kick-about' areas and the provision of at least one specific recreational facility such as a playground for a specific age group or a board-games table and seating or such similar facility for adults and/or elderly persons.

For example, one pocket park shall contain a play facility for 4-8 year olds (e.g. a Local Equipped Play Area, or LEAP, as specified by the National Playing Fields Association), while a neighbouring pocket park shall contain a play facility for 8-12 year olds (e.g. A Neighbourhood equipped Area for Play, or NEAP, as specified by the National Playing Fields Association), and so on.

Finished levels for the parks relative to adjoining finished levels, shall be provided with planning applications. In addition, detailed layouts for the pocket parks, including landscaping and active/passive facilities shall be provided with planning applications in the relevant residential area serving the park.

Pocket Parks are intended as informal open spaces benefiting from passive surveillance by adjacent residential properties. They should not be fenced or enclosed and should include pedestrian routes which might be necessary to link to other open spaces or streets; external lighting; some street furniture; planting (mainly trees).

### 3.5.1.1 Public Open Space Quantum

#### Proposed Minimum Specification for Sports Centre\*

Item	Quantity	Gross Dims/Pitch (m)	Gross Area/Pitch (ha)	Total Area (ha)
Gaelic Games Pitch	4	148 x 88	1.3	5.20
Association Soccer Pitch	4	118 x 81	0.95	3.80
Rugby Union Pitch	1	150 x 84	1.26	1.26
All-weather/Mini Pitch	4	-	-	1.40
Tennis Court	4	-	-	0.23
<b>Total Area Playing Surfaces (ha)</b>				<b>11.89</b>
Plus:				
Changing/storage/administration facility				
Operational facilities (maintenance etc.)				
Floodlighting to all-weather pitches				
Min. 100 space car park plus miscellaneous external areas for drop-off, service and other facilities				
Associated fencing and boundary treatments and associated landscaping and external works.				
<b>Total Area for Sports Centre (ha)</b>				<b>12.55</b>

\* Indicative and subject to a detailed design specification as agreed with Louth County Council, to ensure the pitches are properly constructed and drained etc. The exact breakdown of sports facilities shall be determined following consultation with existing sports clubs and may be subject to the County Recreational Needs Study which is currently being prepared by Louth County Council.

#### Landscape & Open Space Objective: LOS 8

The Sports Centre shall serve, primarily, the residents of the plan lands and shall be managed by or on behalf of Louth County Council. The range of facilities that it may include are as follows: Sports building with changing facilities; gym; all-purpose sports hall; café; all weather pitches (GAA pitches, soccer pitches and other major sports); informal kick about/training area; tennis courts; athletics facility; parking; maintenance building/yard; warden/security facility; deliveries/unloading area; bus stop/taxi/car drop-off point; playground/play area; and landscaping

The quantum under 3.5.1.1 should be considered as a minimum specification for the proposed Sports Centre which constitutes 5% open space quantum located north of the Port Access Northern Cross Route (PANCR).

The Sports Centre facilities shall be provided at the developers expense in accordance with the Master Plan Phasing Programme (see Section 6 and the minimum specification under Table 3.5.1.1). A detailed specification shall be submitted to the Planning Authority prior to the commencement of any development of the Master Plan lands (Section 6).

### 3.5.2 Public Open Space Quantum

In accordance with the requirements of the Local Area Plan, the Public Open Space requirement is 20% of the Master Plan lands, and accordingly has been calculated on the basis of the gross hectareage of the plan lands, and excluding the Port Access Northern Cross Route, the Railway Line, Termonfeckin Road, Sienna Convent and lands developed/committed to development in Neighbourhood 3.

A minimum of 15% of the open space is distributed throughout the plan area across the three neighbourhoods.

A maximum of 5% is located outside the plan area. This area of land shall be designated for high specification sports facilities and shall be located to the north of the proposed PANCR. The exact boundaries of this land shall be determined by the topography and suitability of the lands for sports facilities.

The public open space quantum outlined in this document are exclusive of roads and associated landscape treatments, additional areas required within individual developments for storm water attenuation, lands owned by or used exclusively by private sporting clubs or other organisations.

The Wetland Park (6.8 ha), while functioning as a storm water attenuation area, shall be included in the 15% open space within the plan area. The exact surface area, which shall not be less than 6.8 hectares, shall be determined by the extent of the actual flood plain and the nature of the proposed development immediately adjacent (see Figure 4.6A on page 42 and Section 3.4.6).

The reserved attenuation area shall act as a buffer zone pending the completion of detailed flow studies of the area, including the Beaulieu and Ushers Streams.



- Main Open Space
- Pocket Parks
- Sports Centre

**3.6.1 Public Open Space – Main Components**

The main proposed open space components are:

**Within Plan Area**

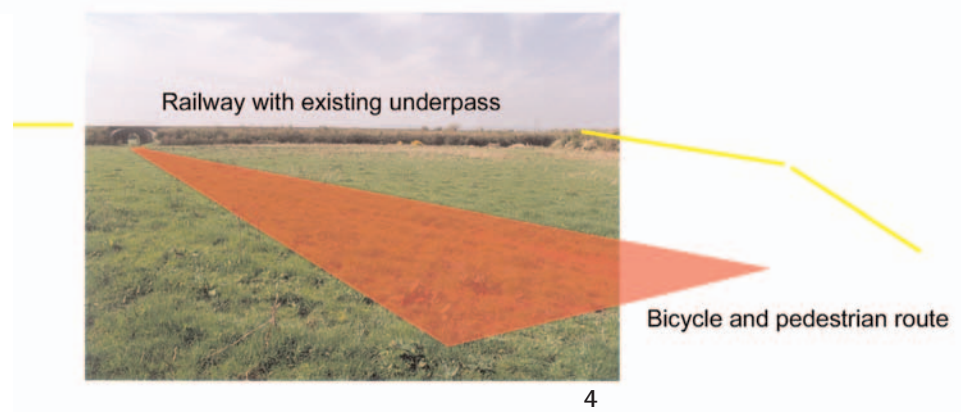
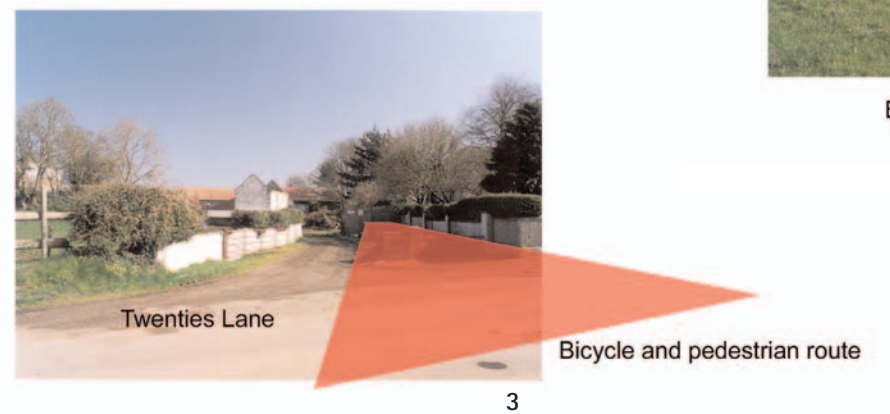
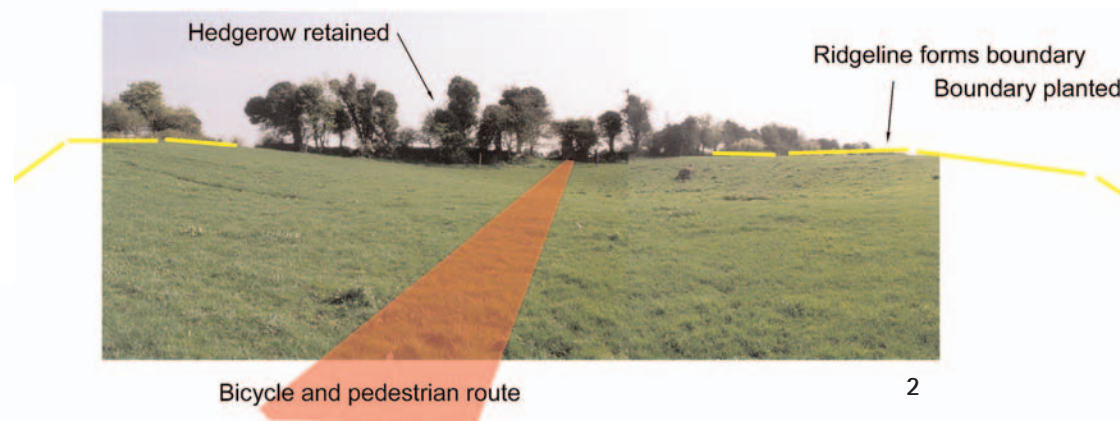
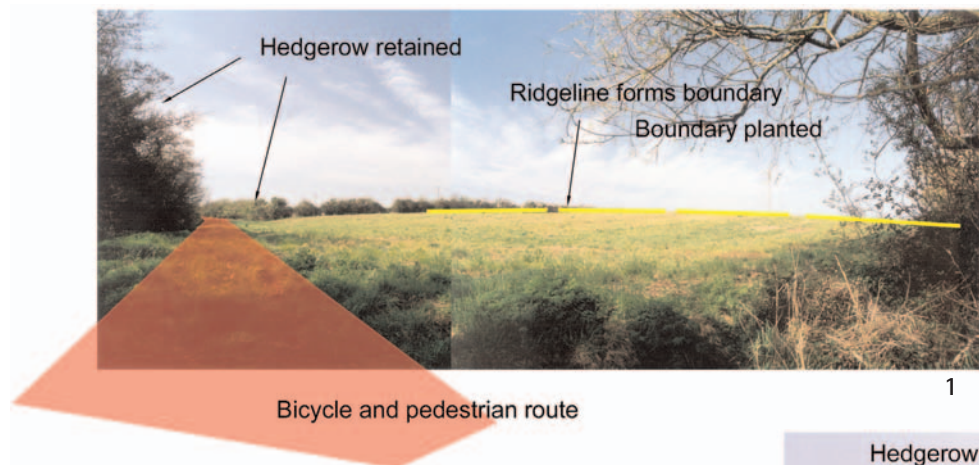
1. Linear Park (Low-input)
2. Secondary Links to other spaces (Low-input)
3. Wetland Park (Low-input)
4. Twenties Lane Farmyard
5. Ridge Park (Med-Low-input)
6. Hollow Park (Med-Low-input)
7. Railway Park (Med-Low-input)
8. Bridge Park (Med-Low-input)
9. Pocket Parks (High-Med-input)
10. Existing Open Space

**Outside Plan Area**

11. Sports Centre (High-input)

**Landscape & Open Space Objective: LOS 9**

At least three safe and secure pedestrian and cycle links shall be provided to link the Plan lands with open lands north of the PANCR: two under the Port Access Northern Cross Route to the "Greenbelt" on the North, including one to link with the proposed Sports Centre; and, a third pedestrian bridge at Dublin / Belfast Railway.



### 3.7.1 Design Guidelines – Main Cycle & Pedestrian Route

The Master Plan includes a main east-west cycle and pedestrian route designed to link the civic centres, schools, and community buildings and to connect to existing and future links outside the plan area.

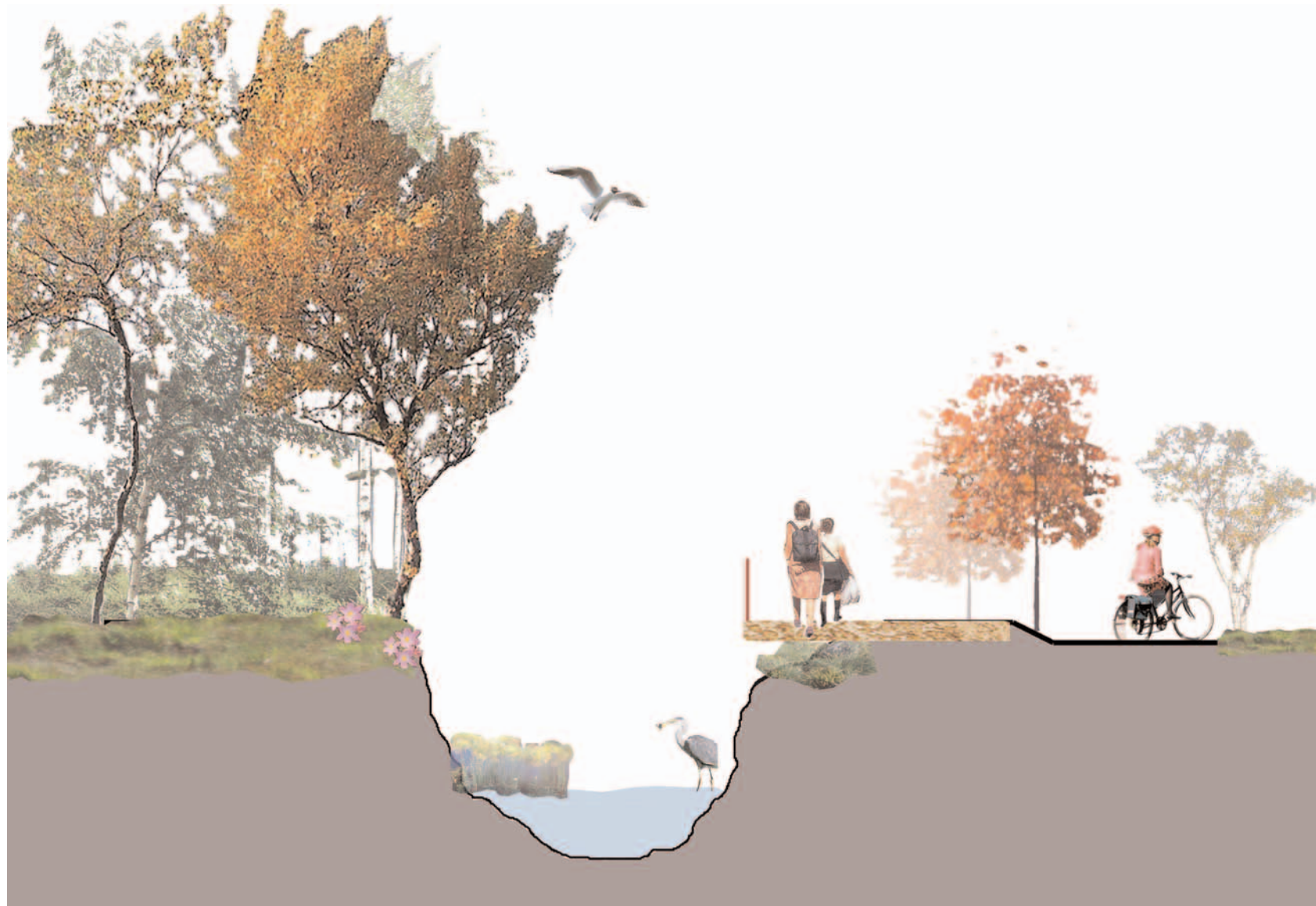
The cycle and pedestrian route continues through the Linear Park which connects the main open spaces below:

- Wetland Park
- Twenties Lane Farmyard
- Ridge Park
- Hollow Park
- Railway Park
- Existing Open Space

The location and morphology of these open spaces is identified on the basis of existing streams, hedgerows, local topography and archaeology.

The images on the facing page illustrate a number of examples where local ridgelines, streams and hedgerows form the boundaries of proposed open space. These are:

1. 'Ridge Park' - looking west to "Twenties Lane Farmyard"
2. 'Hollow Park' - looking east
3. 'Twenties Lane Farmyard' - looking east
4. 'Railway Park' - looking west



▲ Indicative Section AA



### 3.7.2 Design Guidelines – Linear Park

#### Section AA (Indicative)

Both the Usher's Stream and the Beaulieu Stream have been identified as habitats with local importance. In addition, they feed into the Boyne Estuary, and as such, changes to the streams may have an effect at the Estuary. The Linear Park is proposed, where possible, to follow the course of the streams, thereby protecting the streams from development and, where wide enough enhancing the existing habitats.

Section AA illustrates the Linear Park along a tributary of the Ushers Stream, showing the minimum requirement (subject to policy LOS 9):

- Existing hedgerow retained and protected
- Existing stream profile retained
- Proposed pedestrian route
- Proposed cycle route
- Proposed planting

#### Landscape & Open Space Objective: LOS 10

Protect and increase wildlife connectivity through the design of the Linear Park and other wildlife corridors linking North Drogheda Environs with other significant habitat areas such as the adjacent Demesne Landscapes and the Beaulieu Gardens.

Habitat strategies that protect and/or establish wildlife corridors:

- Rooftop gardens
- Increase tree canopy
- Stream preservation and restoration
- On-site storm water treatment
- Use of planting schedules (LOS 4)
- Use of native groundcover species



▲ Indicative Section BB



### 3.7.2 Design Guidelines – Linear Park

#### Section BB (Indicative)

Portions of the streams are currently deep with steep embankments. These may be required to be re-profiled for reasons of safety and accessibility. In addition, although the Master Plan seeks to protect existing streams, there may be a requirement to re-profile portions of streams to enable surface water drainage.

Section BB illustrates the Linear Park along a tributary of the Ushers Stream, re-profiled:

- Existing hedgerow retained and protected
- Existing stream profile widened
- Proposed pedestrian route
- Proposed cycle route
- Proposed planting
- Proposed External Lighting

#### Landscape & Open Space Objective: LOS 11

Where it is necessary to re-profile, widen or deepen existing streams to facilitate drainage or for any other reason, the edge condition shall be re-instated under the supervision of a properly qualified ecologist. Streams shall not be culverted except in the three civic / commercial centres. All proposed works shall be subject to detailed environmental assessment which shall include appropriate mitigating measures to protect and re-instate habitat.



▲ Indicative Section CC



### 3.7.2 Design Guidelines – Linear Park

#### Section CC (Indicative)

The proposed Linear Park does not follow continuously the course of the Ushers Stream or the Beaulieu Stream. In addition, it interfaces with built development at a number of locations.

Section CC illustrates a typical profile of the Linear Park where it has deviated from the alignment of the streams and where it interfaces directly with built development. The typical requirements are:

- Street tree planting and external lighting
- Proposed cycle route
- Proposed planting
- Proposed pedestrian route & existing hedgerow and/or proposed planting

#### Landscape & Open Space Objective: LOS 12

Where the edge of the Linear Park is defined by built development it should be built edge (3 to 4 storeys).

#### Landscape & Open Space Objective: LOS 13

The width and character of the linear park shall alter according to existing conditions on site and the nature of the proposed development. The minimum requirements shall, where possible, include the retention and protection of existing hedgerows; the retention of stream profiles; and shall include pedestrian and cycle routes; and, planting with native species.

### 3.7.2 Design Guidelines – Linear Park

#### Section DD (Indicative)

The proposed Linear Park connects a series of open spaces, at which it widens to accommodate areas of recreation and amenity.

Section DD illustrates an area provisionally entitled 'Hollow Park', located in Neighbourhood 2, where there is an existing hollow of approximately 4000 sqm (1 acre). The ridgeline around the edge of the space is proposed to be planted to emphasise the enclosure. The pedestrian and cycle route continue through the space but are separated as shown.

Section DD shows:

- Existing hedgerows retained
- Ridgelines planted
- Proposed cycle route and external lighting
- Proposed pedestrian route
- Informal active recreation area



▲ Indicative Section DD





▲ Indicative Section EE



### 3.7.3 Design Guidelines – Street Profiles

#### Twenties Lane

##### Section EE (Indicative)

Twenties Lane runs north from Drogheda through Neighbourhood 1.

The character of the existing road in terms of its topography, southern alignment and existing vegetation will be retained.

Section EE illustrates:

- Existing hedgerows retained and protected
- Proposed housing to Twenties Lane
- Proposed footpaths on Twenties Lane

#### Landscape & Open Space Objective: LOS 14

The southern section of Twenties Lane shall be retained for access to existing housing and its character, alignment and existing vegetation shall also be retained.



▲ Indicative Section FF



### 3.7.3 Design Guidelines – Street Profiles

#### Port Access Northern Cross Road

##### Section FF (Indicative)

The Port Access Northern Cross Route, connecting the port and the M1, is to be constructed along the northern boundary of the plan lands. The design comprises a single carriageway in both directions.

Section FF illustrates a typical section including:

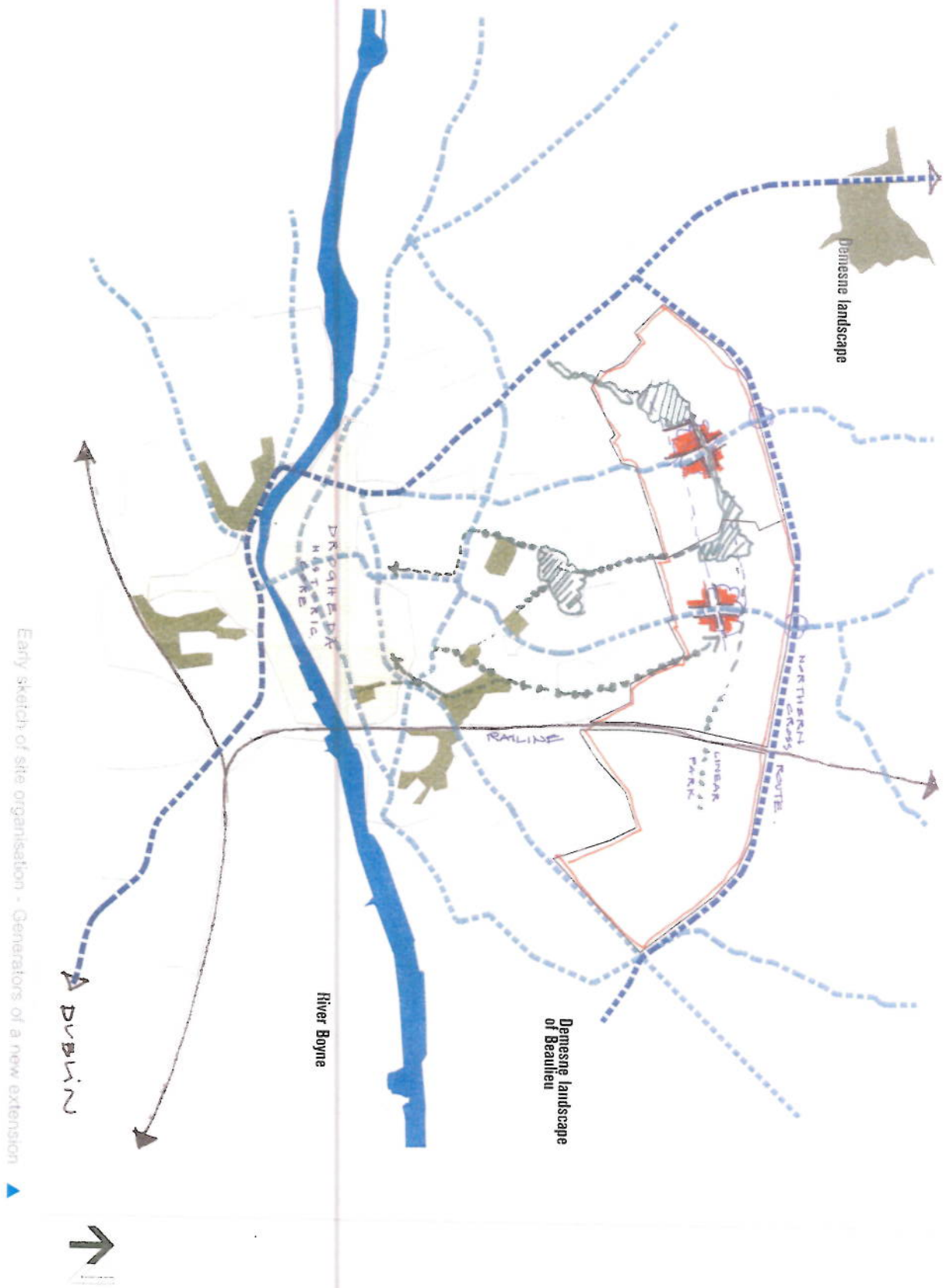
- Proposed planting and mounding along the boundary of the plan lands
- Proposed housing and rear gardens to the south of the road
- Cycle routes adjacent

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4  
Urban Design Framework



### Site Organisation & Design Objectives (Initial Sketch)



Early sketch of site organisation - Generators of a new extension

#### 4.1.1 Urban Design Aims and Objectives

The Urban Design Framework has the following objectives:

- Provide three identifiable residential neighbourhoods with three civic/commercial centres each with a distinctive character.
- To link the proposed town extension to the historic core and outlying hinterland, particularly the Boyne Valley and lands to the north of the PANCR, by providing pedestrian, cycle and road networks. This will be partly achieved through a series of loops from the spine route of the Linear Park linking the local parks related to the residential neighbourhood areas and the civic/commercial centres.
- Reduce the constraints imposed by physical barriers such as arterial routes and the railway line.
- Reduce the environmental impact from the design and construction process, restore wildlife habitat, harness natural energy flows and biological processes and reduce our reliance on finite natural resources.



## Patterns of Development



- Study Areas
- Existing Open Space
- Proposed Open Space
- Road Network
- Zoned Technological Business Park
- Zoned Tourist Related Development
- Provision for new Retail Park
- Disused Quarries
- Beaulieu House & Gardens

### Urban Design Objective: UD 1

Establish a sense of place and history that responds to and reinforces distinctive patterns of development and landscape.

*In order to initiate a sustainable pattern of development, the following principles should be applied:*

#### Site Boundary Considerations

The boundary line of the Plan lands will need specific design solutions to establish an appropriate level of transition, protection and/or accessibility, particularly in the following areas:

- Edge to Port Access Northern Cross Route
- Edge to Existing Residential lands
- Edge to Future Residential lands
- Edge to Arterial routes
- Edge to Existing Open space

#### Linear Edge Treatment

A variety of edge treatments will need to be developed and designated in particular locations to establish an appropriate level of security, density, activity and/or amenity; particularly in the following areas:

- Edge along Linear Park
- Main street at Civic / Commercial Centres
- Edge along Neighbourhood Parks
- Edge along significant routes
- Gateway into character areas

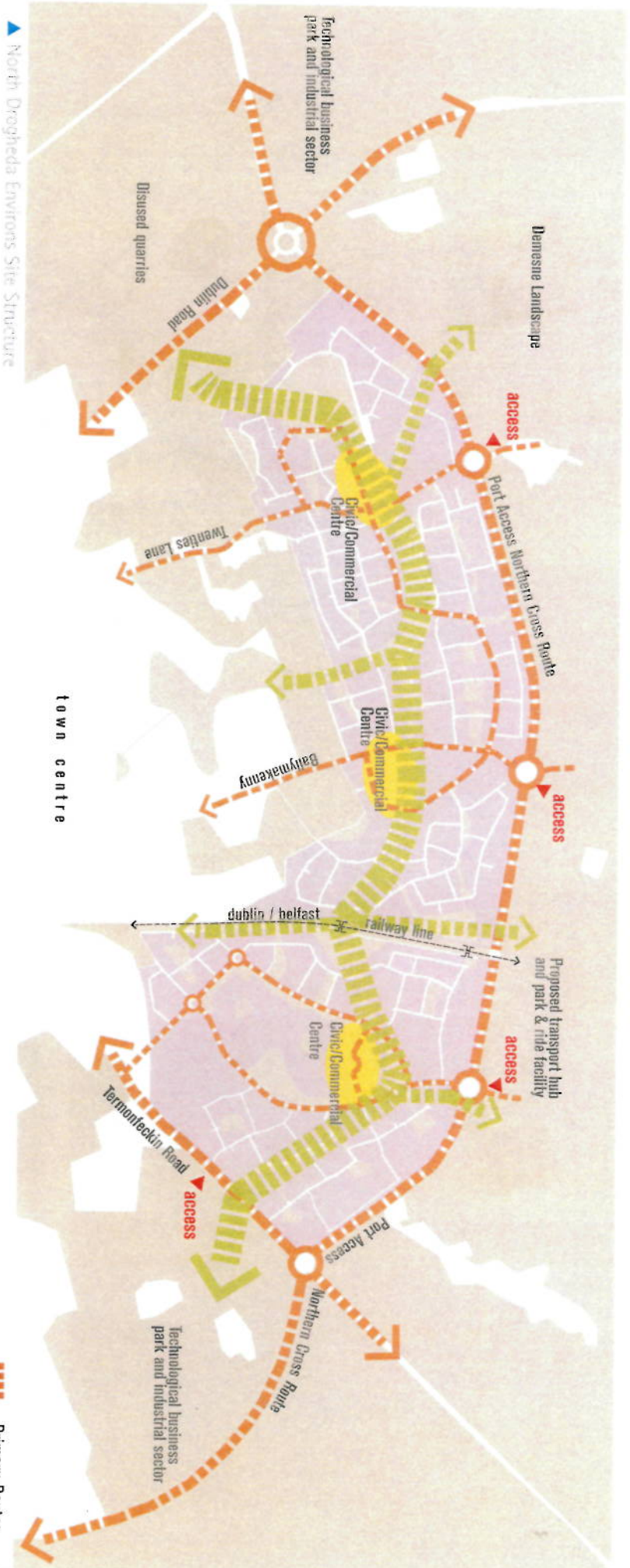
#### Street Section Design

The grid of streets will require specific design strategies to increase the safety, legibility and connectivity of the streets; footpaths, cycle ways and public spaces; particularly in the following areas:

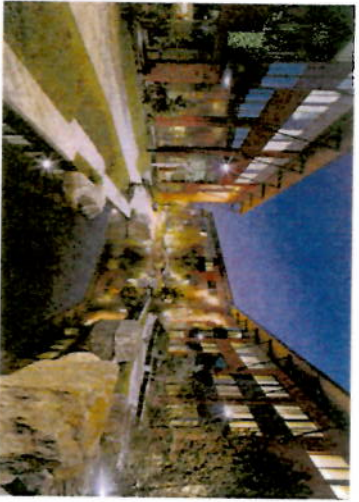
- Edge to Port Access Northern Cross Route
- Existing Twenties Lane
- Main street at Civic / Commercial Centres
- Streets along the Linear Park
- Shared surface cluster housing



## Site Structure



▲ North Drogheda Environs Site Structure



▲ Connectivity of Neighbourhoods



▲ Integration of Open Space



▲ Relationship with Context

### 4.2.1 Site Structure

#### Connectivity of Neighbourhoods

The Master Plan sets out to counteract existing barriers and seek every opportunity to provide more physical connections between the three neighbourhoods. An accessible network of streets, cycleways and footpaths will be critical for establishing a clear and legible framework of movement within the plan lands.

#### Integration of Open Space

The Master Plan encourages the protection of existing wildlife habitats and integration of quality landscapes; this will not only balance the needs of both our built and natural environments but will also instigate a unique character for the new neighbourhoods.

#### Relationship with Context

The lands are bounded to the south by the town of Drogheda and to the east and west by both Demesne landscapes and potential employment areas; links are to be encouraged from the Plan lands to the historic core of Drogheda, lands north of the Port Access Northern Cross Route and to the surrounding Demesne landscapes. Links must also be established between the civic / commercial centres and the employment opportunities that will be developing on either side of the Plan lands.



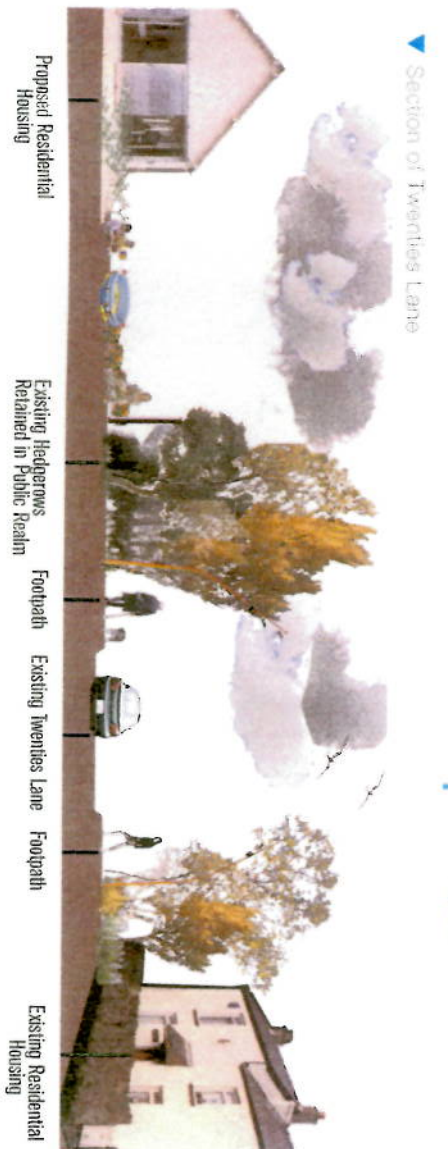
## Movement Framework



▲ Movement Framework of the North Drogheda Environs



▲ Section of Northern Cross Route



▲ Section of Twenties Lane

### 4.3.1 Movement Network

It is an objective of the Master Plan to develop a network of routes that are well designed, well connected, safe and easy to move through.

A majority of the roads within the Plan lands will be categorised as access roads serving the residential development with low speed limits.

#### Urban Design Objective: UD 2

Organise roads, footpaths and public spaces that are connected into well-used routes that lead to where people want to go.

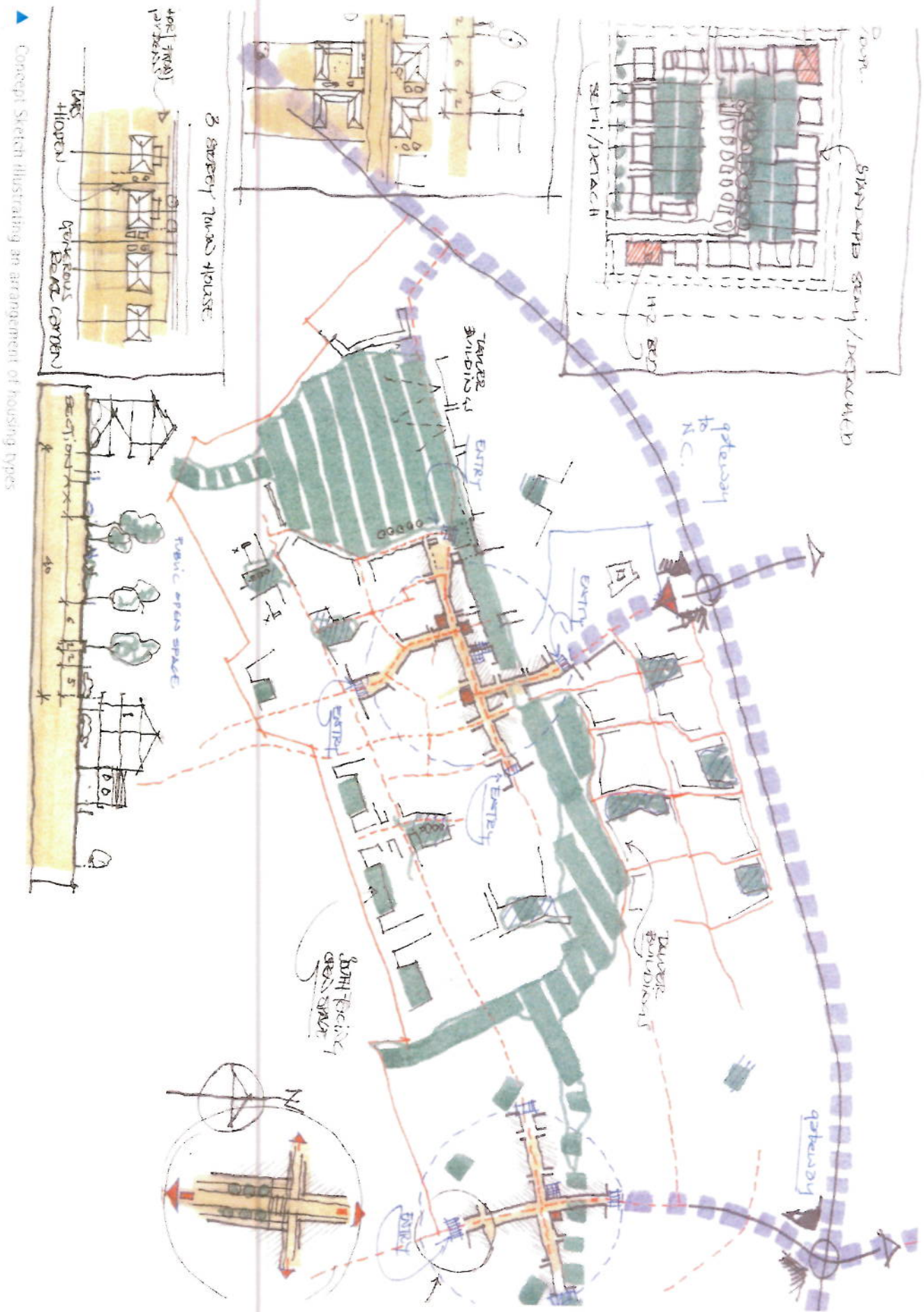
#### Urban Design Objective: UD 3

At least 3 segregated pedestrian/cycle connections shall be provided between the Plan lands and lands to the north as part of the design and construction of the PANCR. One such connection shall be provided in the vicinity of the railway line to connect the Plan lands with the proposed Sports Centre and schools complex. The other two connections shall be provided along the PANCR.

Where cycle routes share roads, appropriate measures shall be used to define and segregate cyclists' road space



**Built Form**



▲ Concept Sketch illustrating an arrangement of housing types

**Urban Design Objective: UD 4**

The Planning Authority will encourage flexible use, including small scale employment use at the edge buildings, including live / work dwellings. Acceptability of proposed uses will be subject to normal development control criteria and particularly protection of residential amenity.

**4.4.1 Diversity of Densities**

In primarily residential areas, density, heights, plot ratio and site coverage will be used to help create the variety and distinctiveness for each neighbourhood. While the figures for dwellings per neighbourhood (provided in the following paragraphs) assume a maximum of 7100 dwellings across the plan lands, in practice, the Council will accept a variation on this figure of 50%. Similarly, while the Council will accept a variation of 100% on the floorspace figures for the commercial uses, it will not accept variation on standards for schools/creches or open space/leisure.

**Built Edge**

The built edge elements will be used to create a strong urban edge at particular locations in the Plan lands. For the purpose of the Plan, Built Edge Buildings are defined as 'buildings of an appropriate design, scale, mass and form to create a good sense of place, urban context and enclosure.

These elements will be used to increase 'legibility' and ensure ease of movement throughout the development. Whilst the Plan does not specifically control building heights, it is envisaged that the majority of building will be two or three storey, with elements of four storey and four storey with set back located at:

- Civic / Commercial Centre housing
- Gateway elements to the linear park
- South facing passive supervision of parks
- Key street junctions
- At the public transport interchange

**Medium density**

The medium density will be composed of predominantly semi detached and terraced housing

**Low density**

Pockets of houses will be located based on the following criteria:

- Walking distance from centres
- Walking distance from main streets
- Responding to local topography
- Existing pattern of development





▶ Residential Neighbourhood



▶ Quarries



▶ Residential Neighbourhood



▶ Proposed development aims to generate areas with differentiated urban character



▶ Technological Business Park



▶ Beaulieu House & Gardens

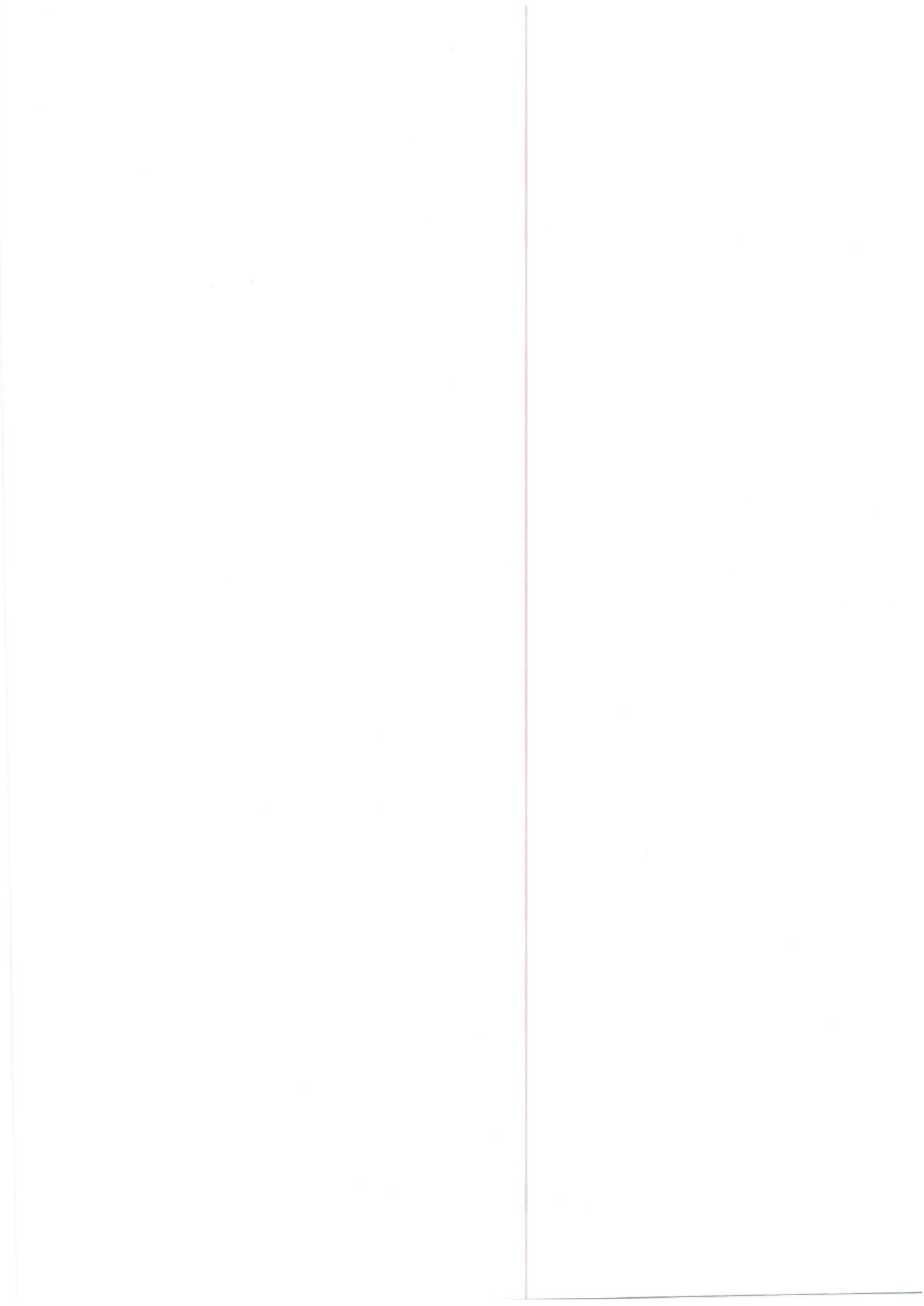


▶ Campus & Recreational Facilities

4.5.1 Drogheda North Environs Local Area Plan  
Identifiable Areas (1-4) and Context Areas (5-8)

- 1 **Residential Neighbourhood\***  
predominantly residential  
preserved wetland area  
twenties lane farmyard  
low to high density  
integrated civic/commercial centre
- 2 **Residential Neighbourhood\***  
predominantly residential  
mix of hard and soft landscape  
possible garden centre  
low to high density  
integrated civic/commercial centre
- 3 **Residential Neighbourhood\***  
predominantly residential  
low to high density  
mixed use centre
- 4 **Campus & Sports Centre**  
public park  
various sports facilities  
transport hub and park & ride  
possible primary & post primary school  
possible third level campus
- 5 **Technological Business Park  
& Industrial Sector**  
commercial and retail park  
low to medium density
- 6 **Quarries**  
candidate for adaptation
- 7 **Technological Business Park  
& Industrial Sector**  
commercial and industry  
low to medium density
- 8 **Beaulieu Demesne**  
Beaulieu House and gardens  
candidate for preserved heritage site

\* In accordance with the adopted LAP, the Master Plan concentrates on the three designated Residential Neighbourhoods



### Residential Neighbourhoods

Table 4.0 - Land Use Distribution

NEIGHBOURHOODS	QUANTUMS & REQUIREMENTS										KEY COMPONENTS & CONSIDERATIONS	
	Gross Area	Net Development Area	Required Minimum Public Open Space	Public Open Space Distribution	Average Number of Dwellings per ha	Total Number of Dwellings	Minimum Non-residential	Primary School Requirement	Minimum One and Two Bed	Maximum Three Bedroom		Maximum Four Bedroom +
Neighbourhood One	78 ha	59,74 ha	refer to Sec. 3.5.1	14.06 ha	35	2,071	8,100m <sup>2</sup> 4	1.20 ha	35%	35%	30%	Reserved Attenuation Area -refer to Figure 4.6.1 Significant buildings of Twenties Lane Farmyard Retain southern portion of existing Twenties Lane alignment Garden Centre
Neighbourhood Two	73 ha	61.92 ha	refer to Sec. 3.5.1	9.88 ha	35	2,167	8,100m <sup>2</sup> 4	1.20 ha	35%	35%	30%	Transport Hub and Park & Ride Facility Sports Centre - 5% Open Space outside Plan lands
Neighbourhood Three	103 ha	57.69 ha <sup>1</sup>	refer to Sec. 3.5.1	12.11 ha	35	2,019 <sup>3</sup>	6,779m <sup>2</sup> 4	1.20 ha	35%	35%	30%	Physical connections outside the Plan lands Public Open Space will not be equally distributed
Study Area	254 ha	179.35 ha *	48.60 ha <sup>2</sup>	48.60 ha <sup>2</sup>	35	6,257 <sup>3</sup>	22,979m <sup>2</sup>	3.60 ha	35%	35%	30%	

- \* Total Net Development Area calculation excludes structural open space, Termonfeekin Road, proposed PANCR, existing Dublin / Belfast Railway Corridor, primary schools, Sienna Convent and existing developments.
- 1 Net Development Area excludes the 11.3 hectares currently under construction within Aston Village and excludes the existing 20.7 hectares within Termon Abbey
  - 2 The LAP states that public open space shall be 20% of the total area zoned for residential development and one quarter of that public open space requirement shall be provided outside of the Plan lands.
  - 3 The number of dwelling units exclude the existing 220 Aston Village dwellings currently under construction nor does it include the 465 dwellings of the existing Termon Abbey development.
  - 4 Of which retailing does not exceed 38%

#### Urban Design Objective: UD 5

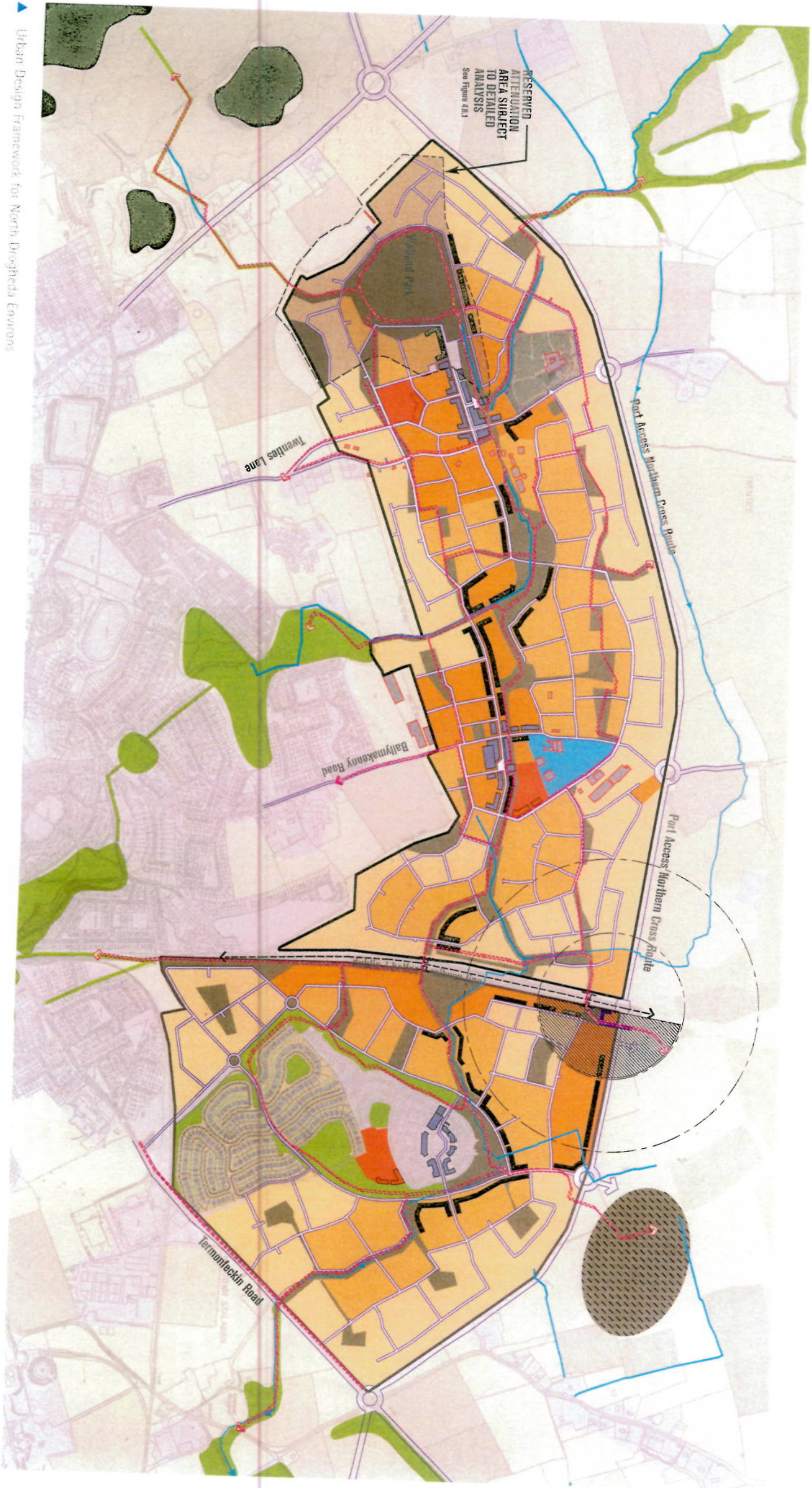
While density variations in accordance with the density ranges are permissible, it is an objective of the Plan to achieve the maximum dwelling numbers across the Plan lands.

#### Urban Design Objective: UD 6

It is an objective of the Plan to achieve the dwelling mix across each neighbourhood. Variations in mix on a planning application basis may be permissible subject to the applicant being able to demonstrate to the satisfaction of the Council that the percentage dwelling mix across the land holding will be achieved. Applicants seeking deviations from dwelling mix will be required to submit a Framework Plan demonstrating how required dwelling mix will be achieved across their overall landholding.

- Proposed Open Space
- Sports Centre
- Existing Open Space
- Road Network
- Existing Development
- Possible Garden Centre
- Existing Sienna Convent
- Low Density (17 - 32 d/ha)
- Medium / Low Density (33 - 45 d/ha)
- Medium / High Density (39 - 45 d/ha)
- Built Edge
- Civic / Commercial Centre
- Entry Level School
- Main Pedestrian Spines + Cycle Ways
- Dublin / Belfast Railway
- Disused Quarries
- 5 - 10 minute walking radius
- Proposed Transport Hub and Park & Ride

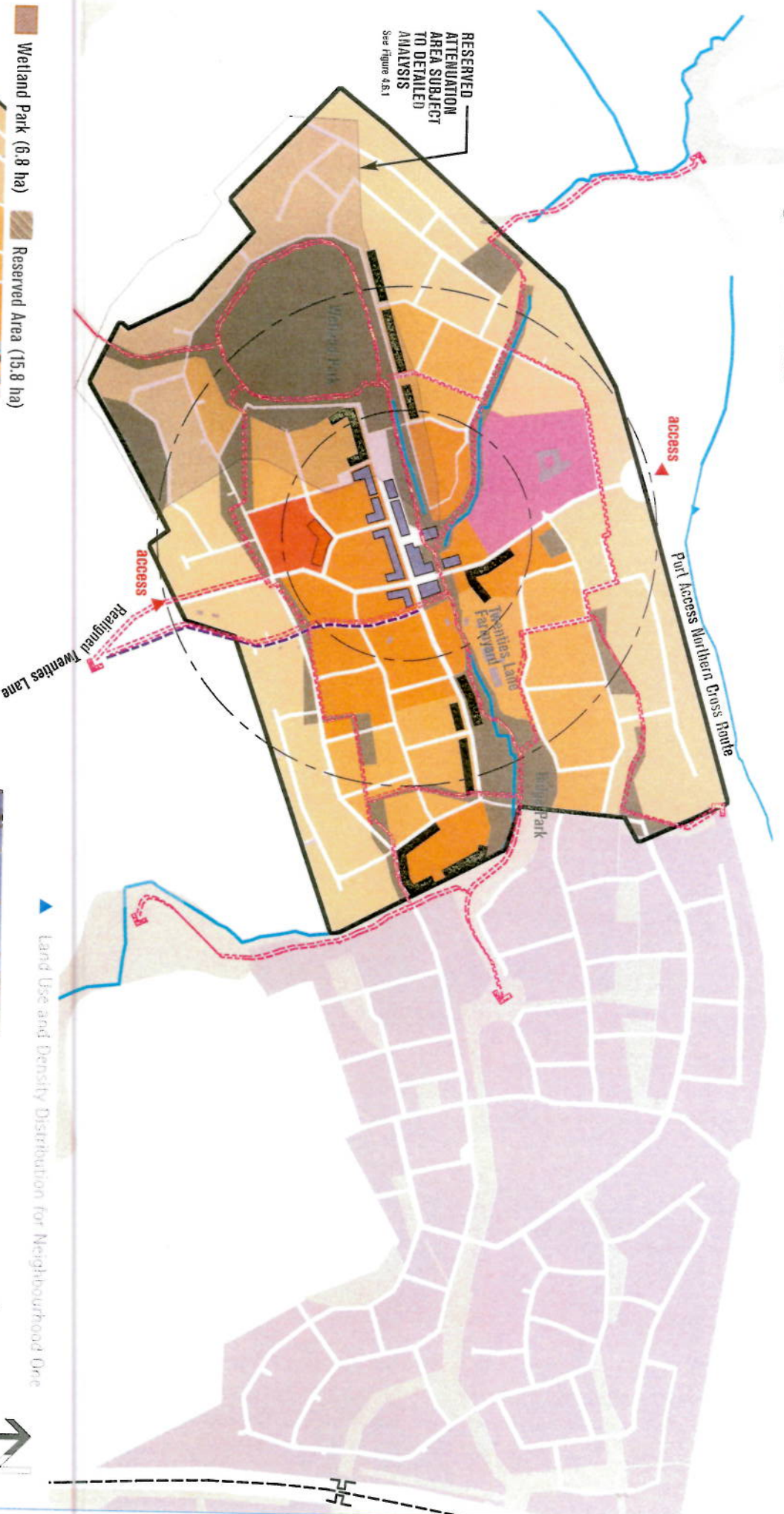




Urban Design Framework for North Drogheda Environs



### Residential Neighbourhood One



- Study Area
- Low Density (17 - 32 d/ha)
- Medium / Low Density (33 - 45 d/ha)
- Medium / High Density (39 - 45 d/ha)
- Built Edge
- Proposed Open Space
- Sienna Convent
- Civic Commercial Centre
- Entry Level School
- Main Pedestrian Spines + Cycle Ways
- Retained Portion of Twenties Lane
- Dublin / Belfast Railway
- 5 - 10 minute walking radius

#### 4.6.1 Residential Neighbourhood One

Neighbourhood One establishes its character by complementing important and attractive elements of the existing landscape. The protection of existing topography, natural streams, mature hedgerows and attenuation areas will have a positive effect on the comfort and amenity of Neighbourhood One. The Buffer Area lands are not allocated for development under this Master Plan unless the required Flood & Flow study determines otherwise.

#### 4.6.2 Density Distribution

Gross Area	78 hectares
Net development Area	59.74 hectares
<b>Low Density Residential</b>	33 hectares
Min-max dwelling per ha	17 - 32
Min-max dwelling units	561 - 1,056
<b>Medium Density Residential</b>	16 hectares
Min-max dwelling per ha	33 - 45
Min-max dwelling units	528 - 720
<b>Med-High Density Residential</b>	12 hectares
Min-max dwelling per ha	39 - 45
Min-max dwelling units	468 - 540
<b>Total Min-max dwelling units</b>	<b>1,557 - 2,316</b>

#### Urban Design Objective: UD 7

**Reserved Attenuation Area**  
The Reserved Area (15.8 ha) shall be considered for development following a detailed Flow & Flood Study over an extended time period (at least 5 years (refer to Section 5 Infrastructure or Figure 4.6.1) or as otherwise agreed with the Council. If the study finds the area is necessary for attenuation purposes, then it shall not be developed and shall be retained as open area in addition to the public open space quantum set out in this Plan.

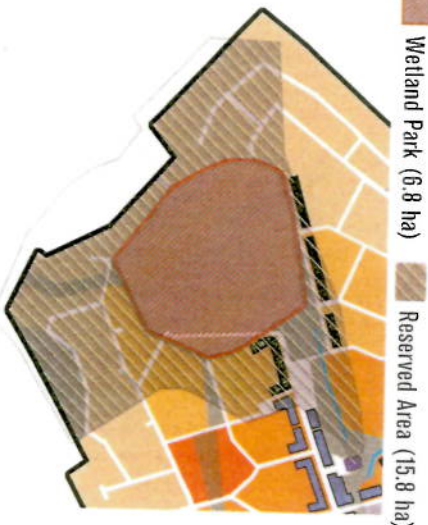


Figure 4.6.1 Reserved Attenuation Area



Passive Surveillance



Park Activity and Accessible Greens



## Neighbourhood One Civic & Commercial Centre One

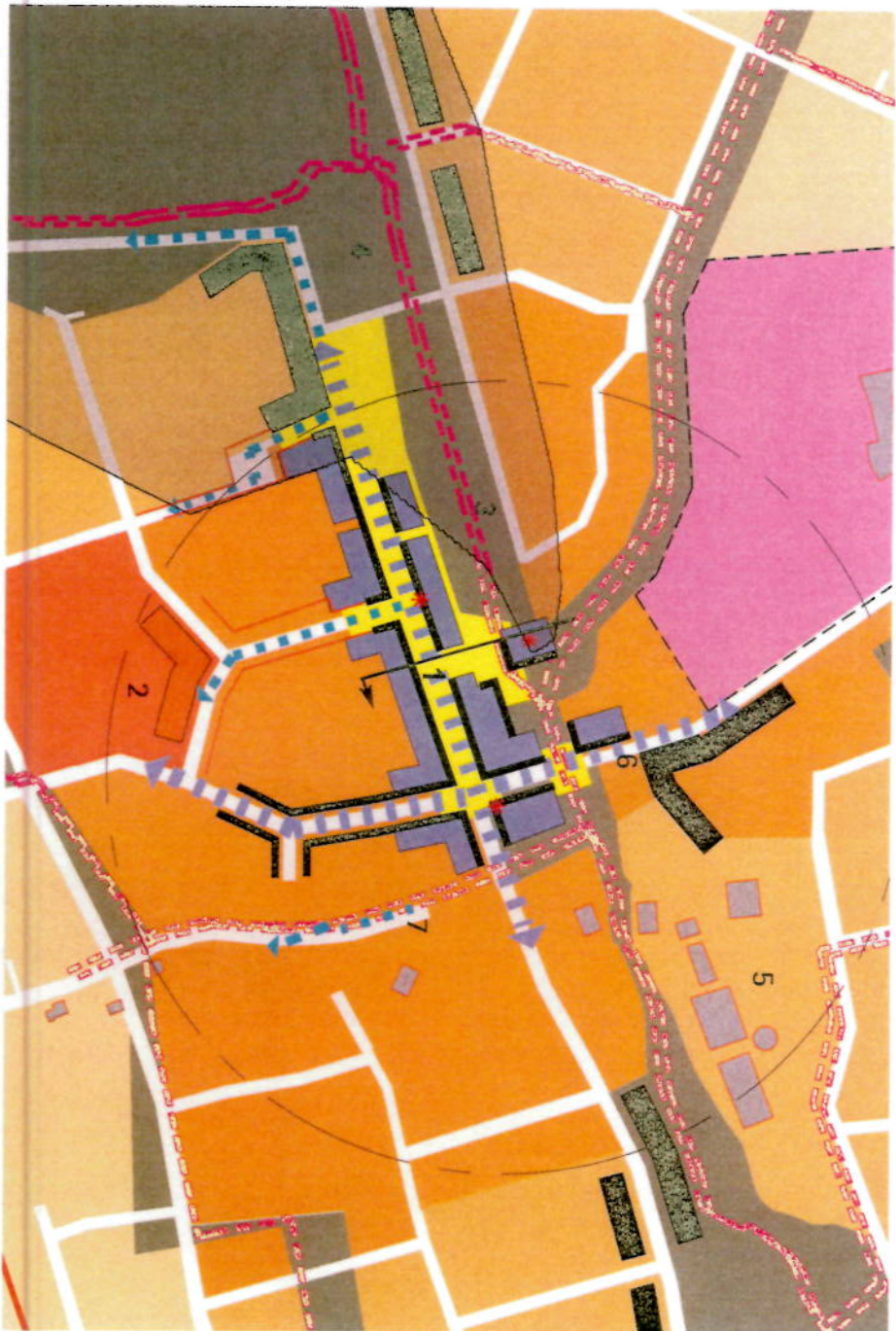
### ELEMENTS

- Clear entrance points
- Residential use incorporated into centre
- School to form street edge
- Community Building  
Focal building to terminate street axis  
South facing civic square to street
- Retail  
Supermarket tenant where appropriate to be edged by smaller 'comparison' shopping to street. Ground floor uses shall be restricted to shops, pubs, restaurants and other "active street" uses with not more than 25% of such frontages comprising office, professional and other services

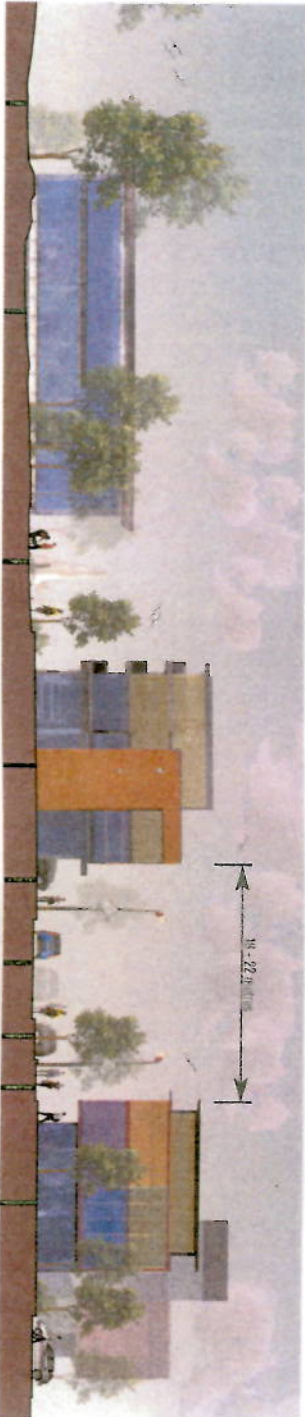
Table 4.6A Civic & Commercial Centre

Element	Gross Area m <sup>2</sup>
Supermarket Anchor	1000m <sup>2</sup> - 1600m <sup>2</sup> (target)
Convenience Retail (Unit Outlets) Hairdresser, Chemist, Etc.	900m <sup>2</sup> (target) (each unit not to exceed 150m <sup>2</sup> )
Comparison Retail	600m <sup>2</sup> (target) (each unit not to exceed 150m <sup>2</sup> )
Service Employment Banks, Office, Creche, Post Office, Etc.	3000m <sup>2</sup> (minimum)
Cafe & Pub	500m <sup>2</sup> (target) (not to exceed 900m <sup>2</sup> )
Community & Civic Sports facility, Library, Clinic, Religious,	700m <sup>2</sup> (minimum)
Education Primary School	1400m <sup>2</sup> (minimum)
<b>Total</b>	<b>8,100m<sup>2</sup></b>

Note: Other uses such as leisure & fitness would be encouraged as additional areas



Commercial & Civic Centre within Neighbourhood One



### Urban Design Objective: UD 8

The level of shopping provision will be such as to serve local needs only. All retail development applications shall be in accordance with the County Retail Strategy.

- 1 The Main Street
  - 2 School Site
  - 3 Parallel Linear Park
  - 4 Gateway to Ecological Park
  - 5 Twenties Farm Yard
  - 6 Re-aligned Twenties Lane to Primary Street
  - 7 Retained Portion of Twenties Lane
- Proposed Open Space
  - Pedestrian Priority Zone
  - Focal Building
  - Edge Building
  - Access & Movement
  - Built Edge
  - Non-Residential
  - Residential
  - Entry Level School
  - Sienna Convent
  - Main Pedestrian Spines + Cycle Ways

### 4.6.3 Civic and Commercial Centre One

Civic / Commercial Centre One is proposed on an east-west axis, defined at the west end by a gateway to the Wetland Park and at the east end by the north-south Twenties Lane. The centre lies predominantly on the west of Twenties Lane in order to define an entrance to a more urban precinct of neighbourhood one.

The school site is proposed as an element of the new street structure and incorporating portions of the new alignment of Twenties Lane and linked directly to the civic commercial centre and linear open space.

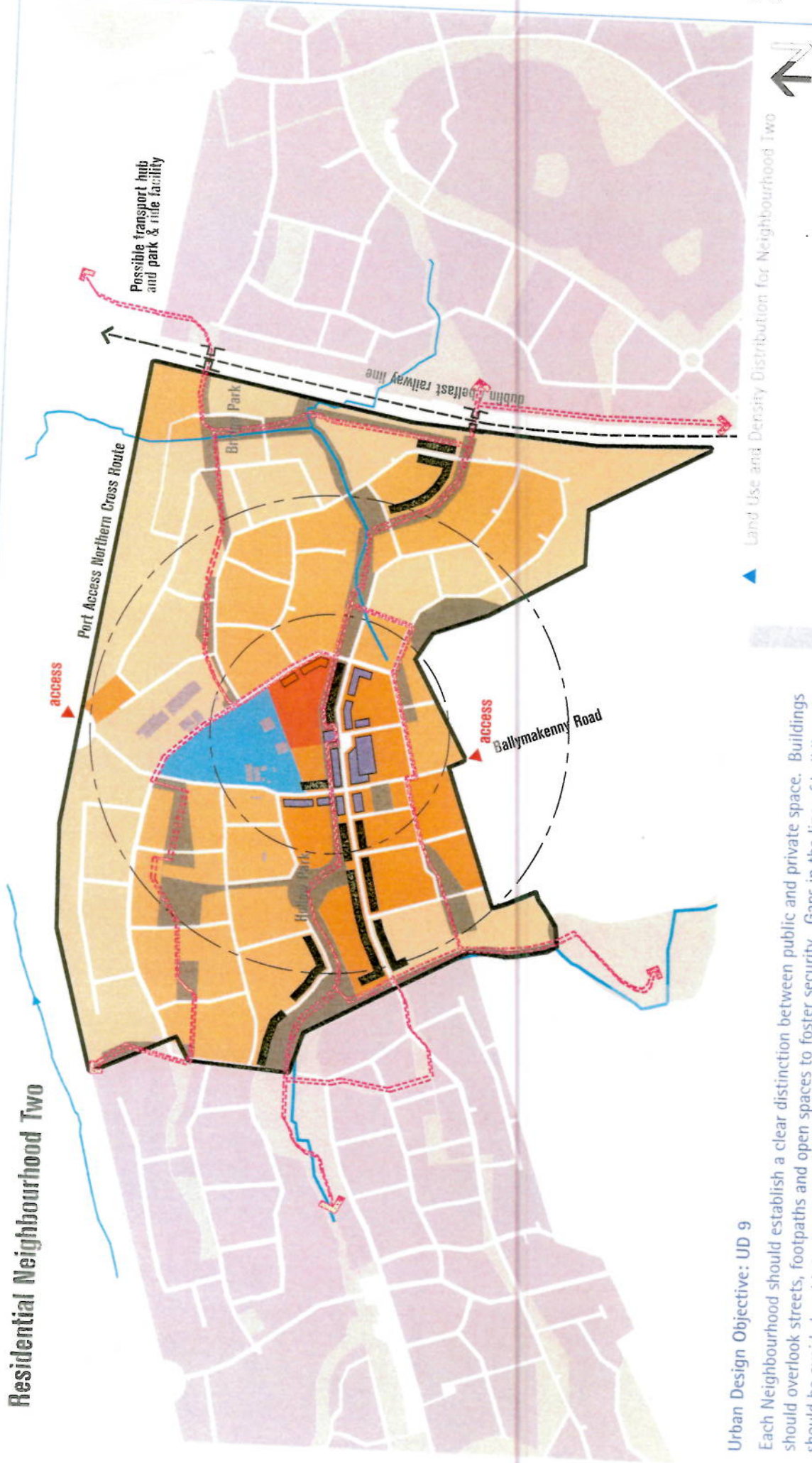
The buildings of Twenties Lane Farmyard provide an identifiable character for the neighbourhood and establish a gateway element into the linear park, therefore a portion of the farm buildings may be retained and appropriate uses sought.

### 4.6.4 Civic and Commercial Centre Uses

The principle is to generate an appropriate level of employment uses in the centres to create social sustainability, reduce the need to travel and increase safety. To define a civic / commercial centre as a destination and promote activity, the uses and elements as set out in Table 4.6.A are proposed as urban design objectives.



## Residential Neighbourhood Two



- Study Area
- Low Density (17 - 32 d/ha)
- Medium / Low Density (33 - 45 d/ha)
- Medium / High Density (39 - 45 d/ha)
- Built Edge
- Proposed Open Space
- Possible Garden Centre
- Civic Commercial Centre
- Entry Level School
- Main Pedestrian Spines + Cycle Ways
- Dublin / Belfast Railway
- 5 - 10 minute walking radius

### 4.7.1 Residential Neighbourhood Two

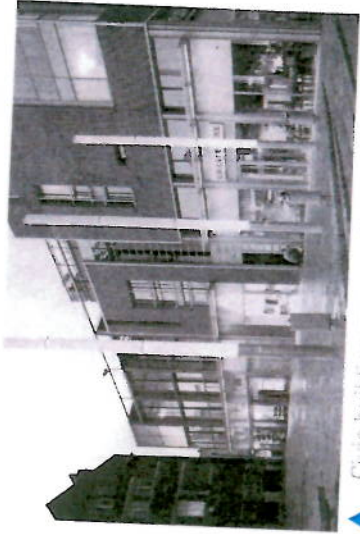
Neighbourhood Two establishes its distinctive character through the organisation of strong physical and visual connections within the existing lands. The organisation of streets, footpaths, cycleways and linear walks will result in an active civic/commercial centre, useable open space, and an engaging community.

### 4.7.2 Density Distribution

Gross Area	73 hectares
Net development Area	61.92 hectares
<b>Low Density Residential</b>	28 hectares
Min-max dwelling per ha	17 - 32
Min-max dwelling units	476 - 896
<b>Medium Density Residential</b>	24 hectares
Min-max dwelling per ha	33 - 45
Min-max dwelling units	792 - 1,080
<b>Med-High Density Residential</b>	10 hectares
Min-max dwelling per ha	39 - 45
Min-max dwelling units	390 - 450
<b>Total Min-max dwelling units</b>	<b>1,658 - 2,426</b>

#### Urban Design Objective: UD 9

Each Neighbourhood should establish a clear distinction between public and private space. Buildings should overlook streets, footpaths and open spaces to foster security. Gaps in the line of buildings should be avoided and leftover spaces utilised to help the clarity of the neighbourhood.



▲ Civic building commanding edge to square



▲ Ever-changing characteristic of Linear Open Space



▲ Built Edge onto Linear Open Space



## Neighbourhood Two Civic & Commercial Centre Two

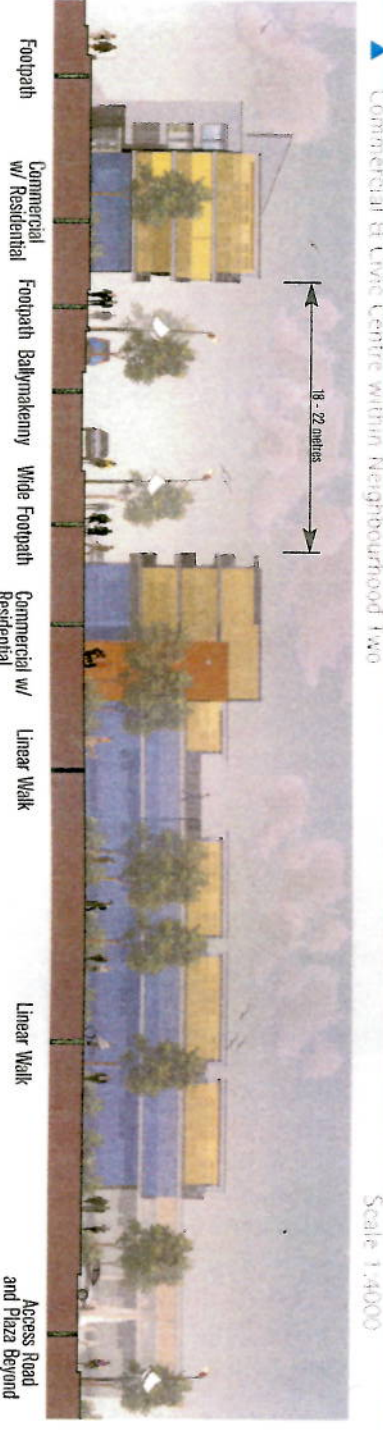
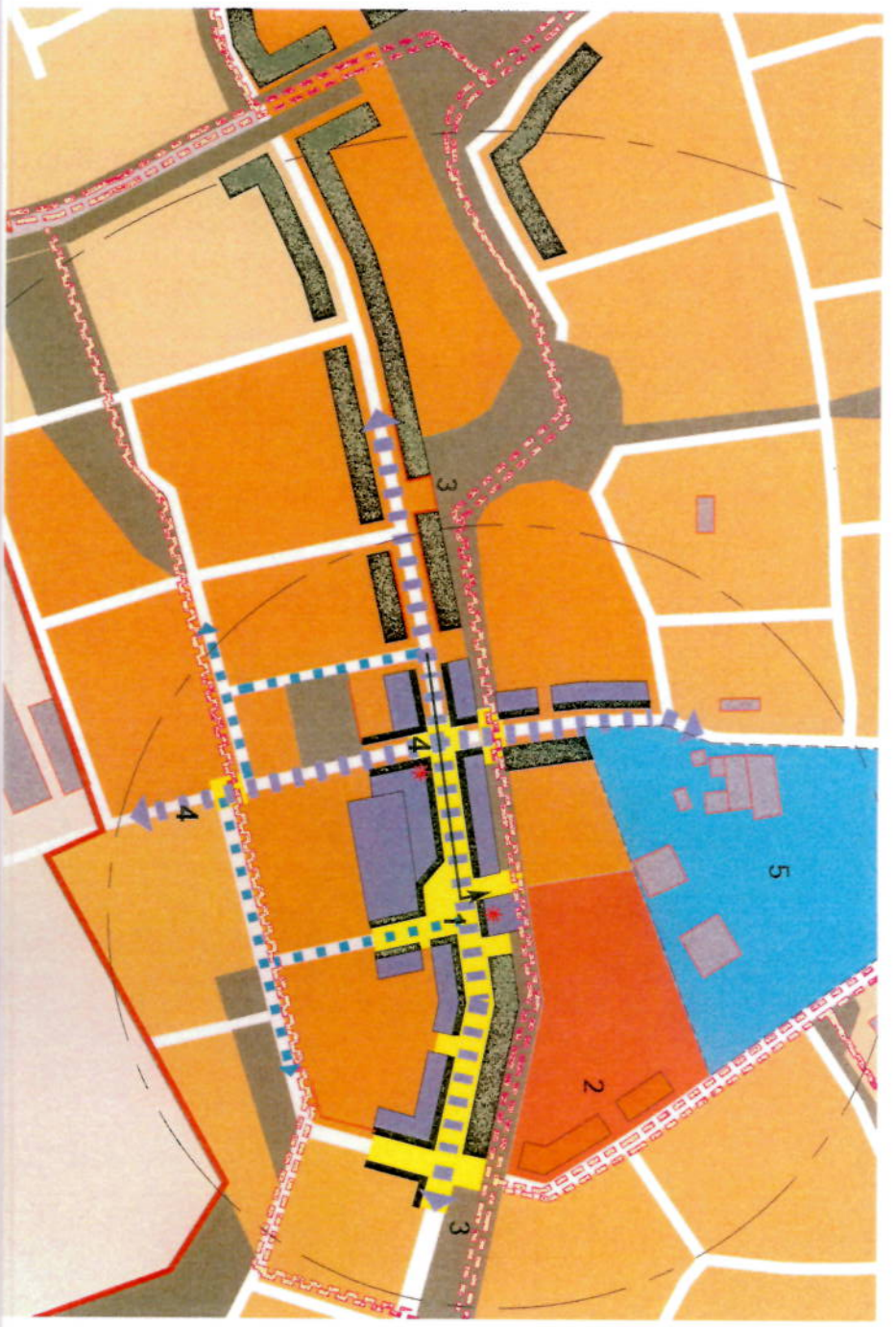
### ELEMENTS

- Clear entrance points
- Residential use incorporated into centre
- School to form street edge
- Community Building  
Focal building to terminate street axis  
Civic square edging street
- Retail  
Supermarket tenant where appropriate to be edged by smaller 'comparison' shopping to street.  
Ground floor uses shall be restricted to shops, pubs, restaurants and other "active street" uses with not more than 25% of such frontages comprising office / professional / other services

Table 4.7A Civic & Commercial Centre

Element	Gross Area m <sup>2</sup>
Supermarket Anchor	1000m <sup>2</sup> - 1600m <sup>2</sup> (target)
Convenience Retail (Unit Outlets) Hairdresser, Chemist, Etc.	900m <sup>2</sup> (target) (each unit not to exceed 150m <sup>2</sup> )
Comparison Retail	600m <sup>2</sup> (target) (each unit not to exceed 150m <sup>2</sup> )
Service Employment Banks, Office, Creche, Post Office, Etc.	3000m <sup>2</sup> (minimum)
Cafe & Pub	500m <sup>2</sup> (target) (not to exceed 900m <sup>2</sup> )
Community & Civic Sports facility, Library, Clinic, Religious.	700m <sup>2</sup> (minimum)
Education Primary School	1400m <sup>2</sup> (minimum)
<b>Total</b>	<b>8,100m<sup>2</sup></b>

Note: Other uses such as leisure & fitness would be encouraged as additional areas



### Urban Design Objective: UD 10

Create a place with a sense of well being and amenity, incorporate public spaces and routes that are lively and pleasant to use. Establish a feeling of safety and security, encourage an uncluttered and easily maintained space with attractive planting, well designed lighting and street furniture. Ensure that buildings address the urban street and provide 'front door' back of pavement pedestrian access.

- The Main Street
- School Site
- Parallel Linear Park
- Access to Ballymakenny
- Possible Garden Centre

- Proposed Open Space
- Pedestrian Priority Zone
- Focal Building
- Edge Building
- Access & Movement
- Built Edge
- Non-Residential
- Residential
- Entry Level School
- Potential Garden Centre
- Main Pedestrian Spines + Cycle Ways

4.7.3 Civic and Commercial Centre Two  
Civic / Commercial Centre Two is proposed as a linear organisation primarily on an east-west axis running parallel with the linear walk.

It is considered essential that the primary street intersection is a traffic light controlled junction to ensure pedestrian priority. Critical junctions are to have strong corner elements or edge buildings to ensure legibility and an active, urban environment.

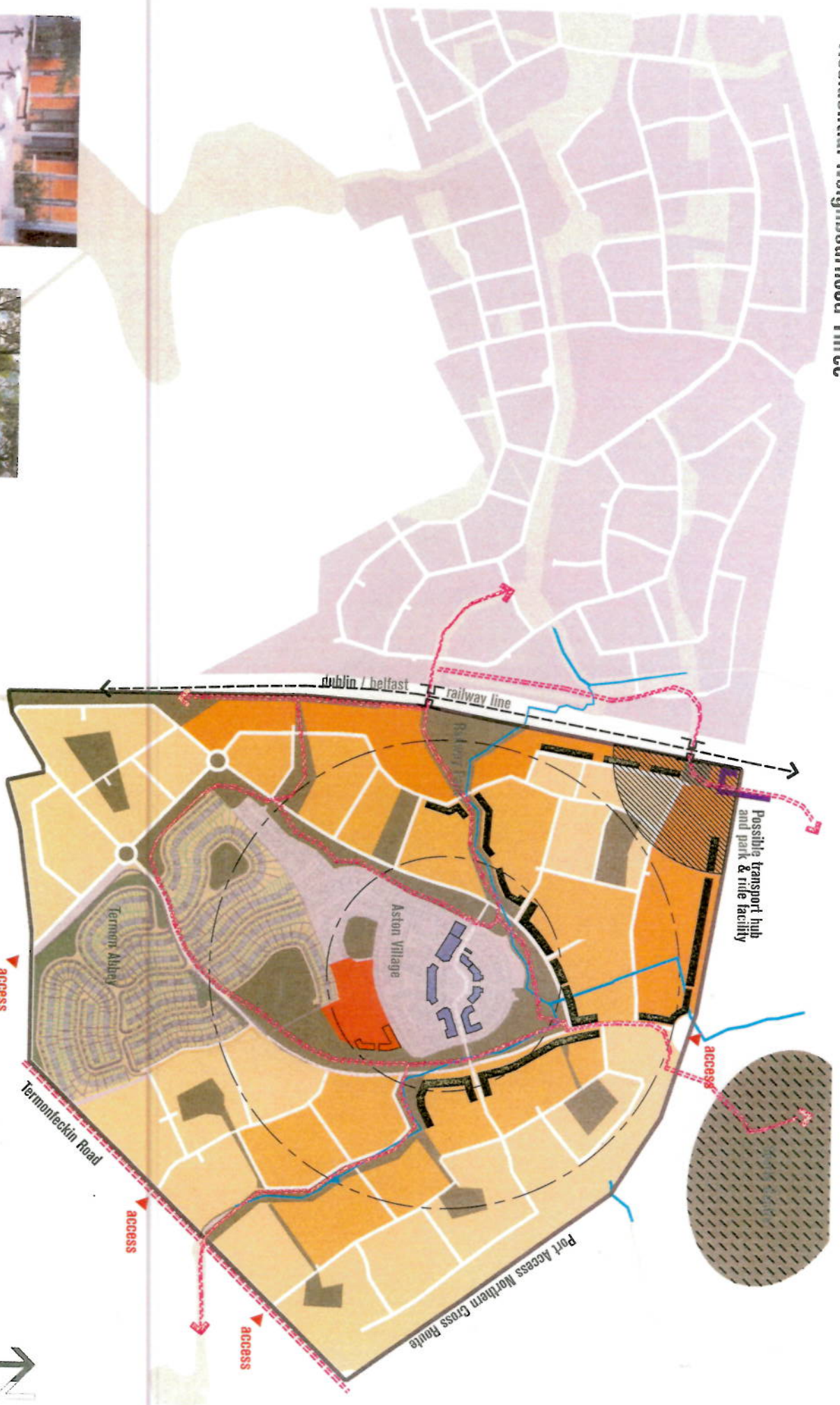
The east-west axis is proposed to establish a direct link to neighbourhood one and provide movement between complimentary uses within the two centres; this complements social sustainability principles. The organisation will also act as a gateway to the pre-dominantly residential areas.

### 4.7.4 Civic and Commercial Centre Uses

Civic and Commercial Centre Two is centrally located within the plan lands and is envisaged to be a focus for greater public uses, therefore the centre will provide a strong employment input. The uses and elements as set out in Table 4.7.A are proposed as urban design objectives.



### Residential Neighbourhood Three



- Study Area
- Low Density (17 - 32 d/ha)
- Medium / Low Density (33 - 45 d/ha)
- Medium / High Density (39 - 45 d/ha)
- Built Edge
- Proposed Open Space
- Sports Centre
- Civic Commercial Centre
- Entry Level School
- Main Pedestrian Spines + Cycle Ways
- Dublin / Belfast Railway
- 5 - 10 minute walking radius

**4.8.1 Residential Neighbourhood Three**  
 Neighbourhood Three is distinguished by its ability to establish connectivity through numerous site constraints and barriers. The integration of existing developments and establishment of strong connections across the railway, over the PANCR and into Demesne landscapes will improve the neighbourhood's identity and establish an appropriate extension of the neighbourhood centre.

**4.8.2 Density Distribution**

Gross Area	103 hectares
Net development Area	57.69 hectares*
<b>Low Density Residential</b>	28 hectares
Min-max dwelling per ha	17 - 32
Min-max dwelling units	476 - 896
<b>Medium Density Residential</b>	19 hectares
Min-max dwelling per ha	33 - 45
Min-max dwelling units	627 - 855
<b>Med-High Density Residential</b>	11 hectares
Min-max dwelling per ha	39 - 45
Min-max dwelling units	429 - 495
<b>Total Min-max dwelling units</b>	1,532 - 2,246

\* Net development Area excludes the 11.3 hectares currently under construction within Aston Village and excludes the existing 20.7 hectares within Termon Abbey

**Urban Design Objective: UD 11**  
 Develop a place that has a clear image and is easy to understand. Encourage the use of landmarks and focal points, views and gateways to particular areas. Promote the use of art and crafts, signage and lighting to increase the clarity of the space.

- 

Proper and secure bicycle storage
- 

Three storey residential housing edging Linear Open Space



## Neighbourhood Three Civic & Commercial Centre Three

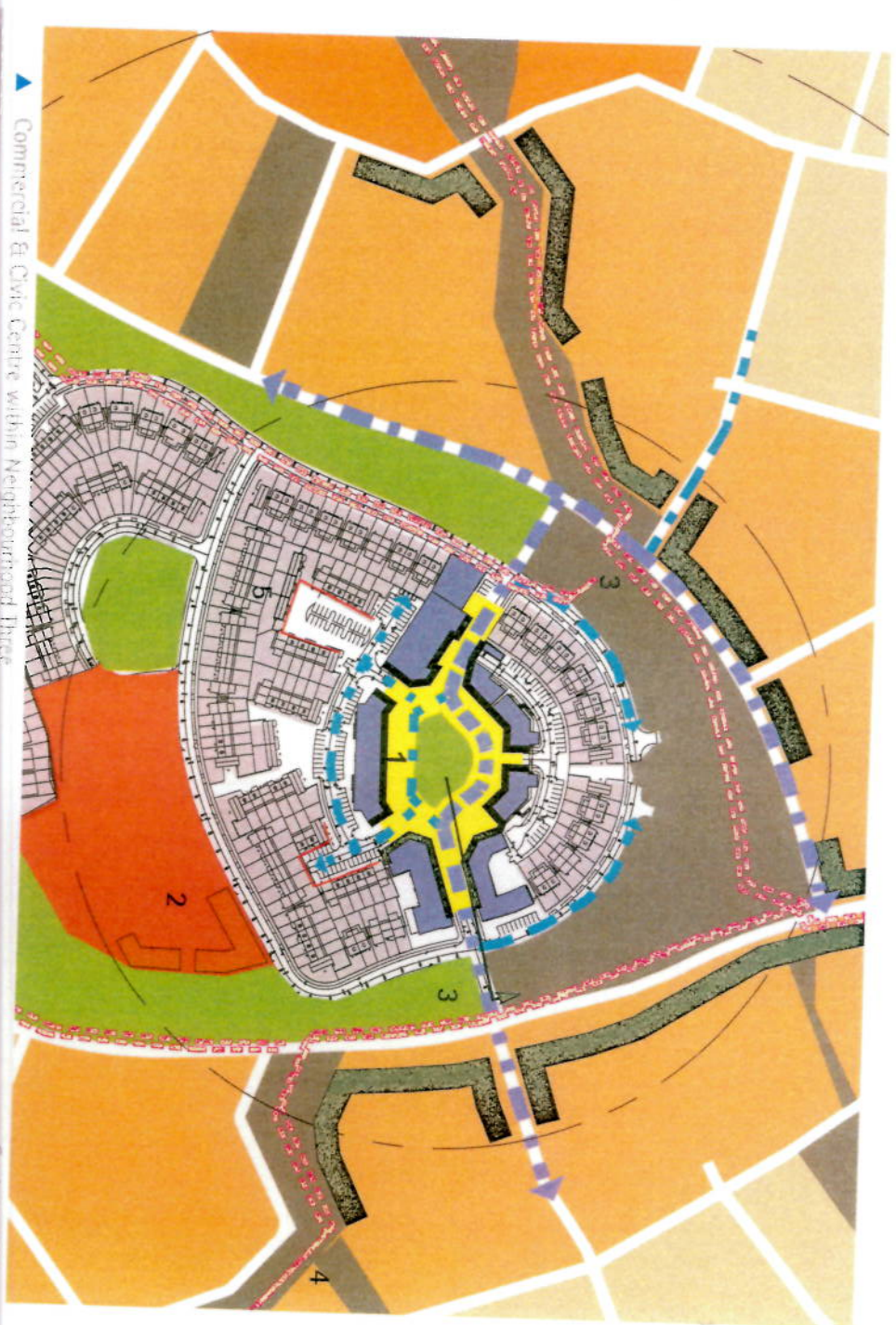
### ELEMENTS

- Clear entrance points
- Residential use incorporated into Aston Village
- School to form street edge
- Retail
  - 'Anchor' supermarket tenant where appropriate to be edged by smaller comparison' shopping to street.
- Leisure + Public Park
  - Entrances to public park in village centre

Table 4.8A Civic & Commercial Centre

Element	Gross Area m <sup>2</sup>
Supermarket	1175m <sup>2</sup> (841m <sup>2</sup> net retail/ 1175m <sup>2</sup> gross)
Comparison Retail (Unit Outlets)	1472m <sup>2</sup>
Service Employment Office, Creche,	1607m <sup>2</sup>
Pub & Cafe	910m <sup>2</sup>
Community & Civic Medical Centre	215m <sup>2</sup>
Education Primary School	1,400m <sup>2</sup>
<b>Total</b>	<b>6,779m<sup>2</sup></b>

Note: Other uses such as leisure & fitness would be encouraged as additional areas



- 1 The Main Street
- 2 School Site
- 3 Adjacent Linear Park
- 4 Gateway to Beaulieu
- 5 Aston Village

- Proposed Open Space
- Existing Open Space
- Pedestrian Priority Zone
- Focal Building
- Edge Building
- Access & Movement
- Built Edge
- Non Residential
- Residential
- Entry Level School
- Main Pedestrian Spines + Cycle Ways

### 4.8.3 Civic and Commercial Centre Three

The neighbourhood centre, Aston Village, is designed along the lines of a traditional Irish village which will provide a supermarket, medical centre, pub, neighbourhood shops, offices, creche and a primary school.

Densification of this centre will be encouraged, subject to normal development control criteria.



Urban Design Objective: UD 12  
Establish a mix of compatible uses that can be integrated among a variety of layouts and building form.



# 5 Infrastructure

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*This Infrastructure Section of the Master Plan addresses the following matters:*

- *Identification of local infrastructure required to service the Northern Environs;*
- *Identification of the necessary upgrades to existing infrastructure to allow development;*
- *Consideration of the wider area when recommending future infrastructure;*
- *Establishment of design standards for roads;*
- *Establishment of design standards for foul and surface water drainage;*
- *Establishment of design standards for watermains; and*
- *Promotion of sustainable development*

### 5.1.1 Philosophy

#### Infrastructure Objective: INF 1

The objective of Louth County Council is to obtain a high quality urban environment and infrastructure design for the three neighbourhoods and the Master Plan overall.

The natural development of the Port Access Northern Cross Route (PANCR) is from west to east while the Foul Sewerage System will need to develop in an east to west direction. Allied to this are the considerable constraints of Stormwater Management and Water Supply, the solution to which will require an innovative and holistic approach

Core objectives for the design and construction of the major infrastructure elements include:

- *Sustainability;*
- *Best Practice;*
- *Quality Construction*

### 5.1.2 Sustainability

All development should balance environmental, economic and social objectives and to this end it is imperative that all infrastructure is designed and constructed with regard to environmental and ecological issues. In particular, the potential ecological implications of interference with stream channels will require detailed assessment before engineering solutions are applied.

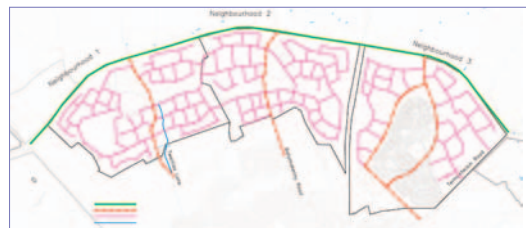
#### 5.1.3 Best Practice

Employing best practice techniques from conception to handover will help to deliver the necessary infrastructure in a sustainable manner. Such techniques should address the design, construction, testing and commissioning and/or handover stages. The main relevant standards are to be found within the following documents

- Recommendations for Site Development Works for Housing Areas", DOELG
- Sustainable Urban Drainage Systems", CIRIA
- Drainage of Development Sites - A Guide", CIRIA & Wallingford
- Traffic Management Guidelines", NDP, DOELG, DTO & DOT
- NRA Series of Road Design and Construction Manuals

#### 5.1.4 Quality Construction

In order to achieve a high quality of construction it will be necessary to use the highest quality of design and materials, and employ an experienced workforce.



▲ Refer to Appendices for Proposed Road Network

**Infrastructure Objective: INF 2**

One of the main urban design objectives for the Plan lands is to create a vibrant, integrated, safe and secure environment for the population. It is an objective, therefore, to facilitate and strongly prioritise safety and the ease of movement for pedestrians, cyclists and public transport. Movement by private car is accommodated, but does not receive a priority level above more sustainable transport modes. The Plan facilitates safe but not necessarily direct or fast movement by private car through the Plan lands.

**Infrastructure Objective: INF 3**

To seek to achieve a balance between the use of private transport with the need to promote alternative modes of transport such as public transport, cycling and walking.

GENERAL STANDARDS	
<b>CLASSIFICATION</b>	
<i>Cycle Path Width</i>	
<i>Absolute minimum</i>	1.50m
<i>Preferred minimum</i>	1.75m
<i>Foot Path Width</i>	
<i>Minimum</i>	1.80m
<i>Favourable maximum</i>	2.50m
<i>Super elevation</i>	
<i>Desirable maximum</i>	5.0 %
<i>Absolute maximum</i>	7.0 %

**Roads and Transportation**

It is the intention of Louth County Council to ensure that all roads are designed as "people friendly" with regard to pedestrian and cycling facilities. To this end, the Council will promote the use of innovative design; this may take the form of soft engineering such as horizontal alignment of roads and/or use of green verges to roadsides to segregate pedestrians and cyclists and to promote traffic calming. Hard engineering solutions such as speed ramps and speed tables will be discouraged. Road speeds will be discouraged through narrowing of the Ballymakenny Road and Twenties lane at appropriate locations to ensure a safe residential development.

Assessment of carriageway width is not based solely on peak hour travel demand but also considers the environmental impact on the area.

**5.2.1 Traffic Generation**

It is anticipated that a Population Equivalent of 20,000 within the North Drogheda Environs could generate approximately 12,000 trips (6,000 trips out and 6,000 trips in) per day. Design and construction of all roads shall consider best practice at all times and shall be in accordance with the National Roads Authority Publications, "Road Geometry Handbook", "Design Manual for Roads & Bridges" & "Manual of Contract Documents for Road Works" and the "Traffic Management Guidelines" published jointly by the Department of Environment and Local Government, the Department of Transport and the Dublin Transportation Office.

**5.2.2 Existing Motorway Junction**

It will be necessary to conduct a traffic impact study at an early stage of Plan implementation in order to assess the impact of the additional traffic generated by the development on the existing M1 Motorway Junction with the N51.

**5.2.3 Proposed New Roads**

Louth County Council has, in recent times, developed from concept stage and designed to near completion the preferred route, the horizontal and the vertical alignment for the Proposed Port Access Northern Cross Route (PANCR). Modification of this design will only be considered in the context of detailed design requirements and environmental considerations. The boundary of the Northern Environs, Plan lands, shall not otherwise be changed.

**5.2.4 Primary Distributor Roads**

The primary distributor road, the Proposed PANCR, is to provide for long distance travel. It will be a requirement that pedestrians and cyclists are segregated from traffic. A key consideration will be safe movement in a north-south direction to facilitate pedestrian and cycle traffic to the proposed regional sports centre and wider land area north of the Plan lands. To this end, a minimum of 3 crossover points will be required on the PANCR, which may take the form of under-passes or overhead crossings. These crossovers may be located at or provide access to the following, subject to detailed design considerations:

- The zoned area to the North of Neighbourhood 1
- The Sports Facility to the north of Neighbourhood 3
- At the railway crossing

The detailed design of the PANCR shall consider the potential future requirements for additional crossings, particularly to the North of Neighbourhood 2.

**5.2.5 Local Collector Roads**

Local Collector Roads are to provide for local journeys and provide links to major routes. Residential and commercial access and/or frontage will be permitted to these roads. These roads are to be designed to provide safe movement of pedestrians and cyclists. It is a requirement that a number of roads be upgraded to the standard of Local Collector Road.

The upgraded Ballymakenny Road and Twenties Lane shall provide segregated cycle paths. Both these roads are to be designed as UAP3 (Urban All Purpose) Classification under the Design Manual for Roads and Bridges and be a minimum 7.3m in width, subject to a detailed traffic study. This Road Classification allows for carrying mixed traffic with full frontage access, side roads, bus stops and at-grade pedestrian crossings.

The preferred route for the realignment of the Twenties Lane is as shown on the "Proposed Fixed Roads" map on page 98 of the Master Plan. Part of the preferred route is located on a proposed playing field attached to the Drogheda Institute of Further Education, which is in the ownership of County Louth VEC. The VEC has previously intimated that it would be prepared to facilitate the re-routing of the Twenties Lane on its property, provided that additional land in lieu is made available in order that the playing field can be retained. If this matter can not be resolved to the satisfaction of Louth County Council, a modification to the preferred route and limited alterations to the overall urban design framework may be permitted provided that the character of the existing Twenties Lane extending from the proposed linear park to the VEC site remains substantially intact. Any proposed changes to the route will be subject to full public consultation under part 8 planning procedures.

Parallel parking bays and bus lay-bys will be encouraged to assist with traffic flow through both these routes. Traffic lights will be appropriate at the civic / commercial centres to ensure safety, promote a more urban condition and identify the change in environment. Improvements are also required to the Termonfeckin Road, subject to assessment and availability of land e.g. roundabouts on the PANCR, lighting, carriageway definition, surfacing as well as accommodation of cyclists and pedestrians.

## Geometric Design Characteristics for Roads Network\*

### 5.2.6 Access Roads

The design speed for the access roads is to be a maximum of 30 kph. Vehicle access to properties and access for delivery of goods and services is to be provided. Segregated cycle tracks are not a requirement on access roads, however, pedestrians are to have freedom to cross the access roads.

### 5.2.7 Visibility Splays

Clear visibility splays shall be provided at all junctions within the development and at junctions with existing and proposed roads as per the Geometric Design Table or as otherwise agreed with the Council. All property boundaries and parking bays shall be clear of the visibility splays.

#### Infrastructure Objective: INF 4

While the Council recognises certain minimum roads engineering standards are necessary, all applications will be assessed against priority treatment for cyclists and pedestrians.

### 5.2.8 Traffic Calming

Traffic calming measures are to be introduced in accordance with the "Traffic Management Guidelines" and shall be designed as an integral part of any element of development to provide a sustainable development philosophy and a safer place for people to live. The horizontal alignment of roads will be the preferred method to limit the speed of vehicles, however, where this is not possible alternatives will be considered such as:

- Carriageway Narrowing & Chicanes
- Gateways & Entry Treatments
- Speed Control Islands
- Change of Priority at Junction

### 5.2.9 Parking

Car parking spaces shall be provided as per the Louth County Development Plan. Parking spaces must be considered in the geometric design of the roads. On-street parking can also contribute to traffic calming.

#### Infrastructure Objective: INF 5

Car parking shall be an integral part of the design elements for the urban frameworks. Large expanses of surface car parking will be discouraged, particularly in the civic/commercial centres. Where surface parking is acceptable at the civic/commercial centres it shall be located behind the building line. Alternatively, to avoid creation of large expanses of car parking, underground parking or multi-storey parking facilities should be used, depending on urban design impacts. In residential areas grouped parking will be encouraged, again behind building lines.

### 5.2.10 Public Transport

Louth County Council recognises the need for a modern integrated public transport system. To this end the Council require designated bus routes through the three neighbourhoods. Bus stop lay-bys are to be provided along the PANCR and encouraged along the Local Collector Roads, where this is not possible, kerbside bus stops will be permitted.

### 5.2.11 Rail Station

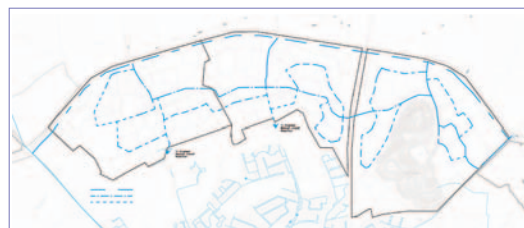
It is an objective of Louth County Council to seek permission for provision of a new railway station north of the River Boyne. A general location for this station has been identified towards the northern part of the Plan lands. The exact location is to be determined following detailed design and assessment and a mobility study. The area around the proposed location is designated as reserved land for high-density residential development. The relocating of the rail stop does not result in any other changes to land use designations.

At the same time it is recognised that delivery of the new rail stop can only be considered in the context of regional rail solutions on the Dublin - Belfast Rail, between, Drogheda / Dundalk and Dublin City Centre rail stations.

Louth County Council shall review potential location of Rail Station at the Local Area Plan review stage of 6 years. The location of the rail station and the phasing of development may allow an opportunity to incorporate additional higher density residential and civic and commercial development. In the interim the area around the public transport interchange may be used for park and ride facilities.

CHARACTERISTICS FOR ROADS NETWORK					
CLASSIFICATION	Port Access Northern Cross Route	New Twenties Lane	Ballymakenny Road	Local Collector Road	Minor Access Road
Design Speed (kph)	80	50	50	50	30
<i>Geometric Characteristics</i>					
Standard Carriageway Width (m)	7.3	7.3	7.3	6.1	5.0
<i>Standard Radius at Bends</i>					
Preferred (m)	255	180	180	40	20
Minimum (m)	127	90	90	--	--
<i>Min. Length of Curve per 1% Change in Gradient (m)</i>					
Sag	13	13	13	9	6.5
Crest	17	17	17	10	6.5
<i>Visibility Splays</i>					
X (m)	4.5	4.5	4.5	3.0	3.0
Y (m)	120	90	90	70	50

\*information based on National Roads Authority Design Manuals



▲ Refer to Appendices for Watermain Layout

**Infrastructure Objective: INF 6**

To protect and develop existing groundwater sources and aquifers in the county and to restrict and control development in a manner consistent with the proper management of these resources

## Water Supply

### 5.3.1 Existing Water Supply

The water supply for Drogheda is abstracted from the River Boyne and the River Mattock and distributed from two sources as follows:

- Staleen Water Treatment Works, currently supplying approximately 31,500m<sup>3</sup> per day. At present a total of 15,200m<sup>3</sup>/d is supplied to Drogheda Town, with the remainder of 16,300m<sup>3</sup>/d supplied to Meath
- Rosehall Reservoir, potential to supply approximately 3,636m<sup>3</sup>/day. This source is currently unavailable during summer months or prolonged periods of dry weather.

The water supply meets the current water demand for Drogheda and Environs but the potential for expansion is limited and it is estimated that the spare capacity is in the region of less than 5%, which is reserved for emergency supply and infill development.

### 5.3.2 Existing Watermain Network and Water Conservation Issues

A substantial proportion of the existing watermain network in Drogheda is in excess of 50 years old. Over the years, this has been extended and augmented by the laying of new mains. There is significant leakage from the network and thus considerable Unaccounted For Water (UFW), estimated at approximately 48%. A substantial reduction in the volume of UFW would greatly help to reduce pressure on the water supply.

For this reason, Louth County Council are currently undertaking the "Louth Local Authorities Water Conservation and Network Management Project".

The project includes a number of elements that will benefit the North Drogheda area, including proposals to reduce UFW and hydraulic modeling, to indicate where reconfiguration can be undertaken to improve the operation of the network.

These measures may allow some new development to proceed in the North Drogheda area in advance of the proposed new mains.

Future developments must have regard to the need to conserve water and, as a means of addressing this issue, may include the following measures:

- Grey water recycling
- Pressure & flow regulators on fittings
- Prohibition on direct feeds to heating and appliances
- Low flush toilets
- Use of rainwater for toilet flushing
- Apartments to include end use recycling

### 5.3.3 Future Water Supply

The Preliminary Report on the East Meath, South Louth and Drogheda Water Supply Scheme includes proposals on the development of water sources to cater for the needs of the supply area to the year 2023. Currently, work is underway to determine the potential of the Regionally Important Aquifer located south of Drogheda to supply water to the area. The Report includes proposals to supply water to the North Drogheda and South Louth Area and the following proposals are of particular relevance:

- A new 600mm diameter trunk main is proposed from Staleen WTW to North Drogheda
- A new 7,100m<sup>3</sup> service reservoir is proposed for North Drogheda, to be located at Killineer
- A 600mm diameter trunk main is proposed from Killineer Reservoir to Mell
- Two new 450mm diameter distribution mains are proposed from the roundabout at Mell.

- One main will serve areas east of Mell, while a second main will serve areas west of Mell, including much of north Drogheda. The second distribution main will run west from Mell, crossing the railway line and the Termonfeekin Road and will continue southwards across the River Boyne, linking in to the existing network close to Kiltrough

### 5.3.4 Temporary Watermain Supply

Provision of adequate water supply is a prerequisite for any development being permitted in the area.

The use of temporary wells for the provision of water will be accepted subject to demonstrating that an adequate, sustainable supply can be provided and the provision and implementation of a satisfactory Groundwater / Source Protection Plan. It is envisaged that such supplies may be required to be in place until 2012 and the level of development permitted will reflect the proven sustainable supplies available from these sources.

Temporary supply will be distributed via a suitable new watermain network, which should include a substantial element of the proposed long-term trunk, secondary and feeder network. The wells and interim distribution network shall be managed as an integrated system by a competent contractor appointed and paid for by the developers group and approved by Louth County Council. This is required in order to ensure the quality of water meets relevant standards and that failure of a well or wells will not lead to a specific development losing its water supply.

### 5.3.5 Future Watermain Network

Proposals for the watermain network will be required to demonstrate best practice with regard to design, construction, environmental, ecological, economical and technical areas. In particular, new watermains in the North Drogheda Area will be required to be:

Constructed to appropriate standards so as to minimise potential leakage from new mains.

Configured and metered such that District Meter Areas can be established.

It is envisaged that the watermain network will comprise of the following elements:

**Trunk Main:** A trunk main is to be constructed along the route of the proposed PANCR. This main is to be designed to cater for the entire catchment as well as providing a strategic circumferential main for the overall Drogheda Network. Direct connection from the trunk main will be kept to a maximum of 3 or 4 connections.

**Secondary Main:** It is proposed that a secondary main will be provided with connection off the Trunk Main at the Twenties Lane, Ballymakenny Road, the access road into Neighbourhood 1 and the Termonfeckin Road. This main will effectively provide loops within each neighbourhood. They may be used as the primary distribution mains for the temporary water supply arrangements until such time as the Trunk Main is delivered in conjunction with the Port Access Northern Cross Route. These mains are to be located within the footpath of the distributor roads and along the route of the linear park. These mains will also be required to provide interconnectivity with the existing Drogheda Borough Council network.

**Feeder Lines:** A number of feeder lines off the Secondary Main will provide access point for the proposed sub-catchments. These lines may also connect into adjacent developments within the Drogheda Borough Council area.

**Individual Development Mains:** Watermains to serve individual housing developments will be required to be designed as looped networks. The mains are to be located in open space or, where this is not possible, along the footpath.

**Watermain Design Considerations:** It will be necessary to demonstrate best practice with regard to all design. The following design guidelines shall set the minimum standards which will be required:

**Watermain Pressure:** Watermain pipes shall have a minimum nominal pressure classification of 9 bar and be Class C pipes.

**Pipe Materials:** Unplasticized polyvinylchloride (uPVC) pipes, ductile iron pipes & fittings to IS EN 545 and Polyethylene Pipes to IS EN 512 will be permitted.

**Pipe Sizes:** The Trunk Main has been designed to serve the entire catchment area, including lands outside the Environs Plan. The Secondary Mains shall be sized to adequately cater for all water requirements within the sub-catchments and to provide adequate linkage to the Drogheda Borough trunk mains network.

**Watermain Layout:** All pipelines are to be located primarily in open space or, where this is not possible, along public footways. The layout shall incorporate a series of integrated loop systems. Service pipelines shall not cross roads.

**Anchorage & Thrust Blocks:** Concrete anchor blocks are to be located at all tees, bends and curvatures greater than 220. Pipes shall be encased to a minimum of 150mm and shall be a minimum 750mm in length.

**Flow Measurement:** Flow measurement devices will be required at strategic points. This will include district metering at connections from the Trunk Main and bulk metering to all developments.

**Cover to Pipelines:** All watermain pipes shall have a minimum cover of 900mm. Service pipeline shall have a minimum cover of 600mm.

**Accessibility:** Pipelines shall be accessible for maintenance and repair purposes.

**Hydrants:** Hydrants shall be provided such that no house is more than 46m from a hydrant. The depth of the outlet below ground level shall not exceed 200mm.

**Sluice Valves:** Sluice valves shall be provided such that houses can be isolated in groups of maximum 40 units.

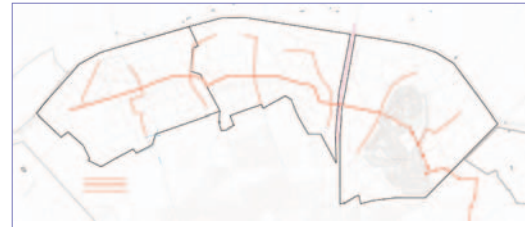
**Air Valves:** Air valves shall be provided and located at the summit of watermains.

**Boundary Boxes:** Approved Boundary Boxes shall be provided for each house, located in the footpath immediately outside the house. In the case of apartments or sub-divided premises, approved manifold systems may be used.

**Testing of Pipelines:** All watermains shall be hydraulically tested in accordance with the manufacturers instructions. Pipelines shall be tested to 1.5 times the working pressure. House connections will not be permitted to the watermain until the main has been successfully tested.

**Sterilisation of Pipelines:** On completion of the final test the system shall be sterilised in sections. The system is to be flushed out and water containing 10 parts per million residual chlorine shall be allowed to stand in the mains and service pipes for 2 hours. Following sterilisation, the system is to be flushed out again.

**Takeover of Pipelines:** The County Council will, at their sole discretion and subject to satisfactory construction and completion, take in charge watermains with the right to grant further connections to same.



▲ Refer to Appendices for Foul Drainage Layout

**Infrastructure Objective: INF 7**

The proposed extension to the trunk main shall be designed and constructed in accordance with best practice from a technical and environmental perspective. It shall incorporate flow measurement facilities and shall be constructed as a single entity in its entirety.

**Infrastructure Objective: INF 8**

The Local Authority will require compliance with IO 1 (Section 6) to the effect that 'non-providers' will be permitted to connect to infrastructure subject to reasonable apportionment of provision costs. The Council shall determine reasonable apportionment in the absence of agreement between parties.

## Foul Water Drainage

### 5.4.1 Existing Foul Sewers

All foul sewage generated North of the River Boyne is collected via a network of gravity pipelines to a Siphon Chamber located on Doners Green where it crosses the River via a 500mm and 1200mm pipe. The sewage is delivered to a Pumping Station at Newtown, where it is pumped to the Waste Water Treatment Plant.

A 750 mm diameter pipeline with a minimum gradient of 1:330 has been constructed from the Siphon Chamber to the Eastern Boundary of Neighbourhood 3. The capacity of this pipeline is approximately 600 l/s.

### 5.4.2 Projected Effluent Generation

The target population for the North Drogheda Environs is 20,000. In addition to this, provision has to be made for associated commercial, institutional, industrial usage. Capacity has also to be provided for zoned lands to the west and north east of the study area and other zoned lands within the Borough Boundary, which drain naturally to the proposed trunk Sewer.

North Drogheda Environs:

<b>Residential</b>	<b>Non-Residential</b>
2.8 Persons/dwelling	205,200 l/day
200 l/hd/day	9.5 l/s at 4DWF
4 DWF	65,710 gm BOD/day
190.5 l/s at 4 DWF	
60Gms BOD/hd/day	

Total Flow: 200 l/s

### Lands within Drogheda Borough Council

8500 PE  
4 DWF  
79 l/s at 4 DWF

### Industrial Lands to West and North East of Environs

91 Hectares  
56,000 l/Ha/day  
5,096,000 l/day  
59 l/s

It is not envisaged that major 'wet industries' would be located within the area.

### 5.4.3 Wastewater Treatment Plant

The existing Wastewater Treatment Plant, located on Marsh Road, has a treatment capacity of 67,600PE, which is currently being increased to 101,000PE. Further expansion of the wastewater treatment capacity will be addressed as the need arises.

### 5.4.4 Reduction in Loading

Louth County Council will look favourably on measures taken to reduce the Hydraulic and Pollution Load forwarded to Treatment. This may take the form of, but will not be confined to, the following mechanisms:

- Utilisation of fittings that promote conservation of water
- Management of water pressure to reduce wastage
- Grey water re-use
- Prohibition on use of sink macerators

### 5.4.5 Extension of Existing Trunk Sewer

It is envisaged that the foul drainage network will comprise of:

**Trunk Sewer:** To serve the entire catchment and additional aforementioned-zoned sub-catchments outside the Area Plan Boundary as per Section 5.4.2. The trunk sewer is to be routed through open spaces, where possible, with a minimum wayleave of 10m on completion of construction unless agreed otherwise at planning application stage. Where reduced width wayleaves are considered, specific construction measures may be required by the Council to ensure accessing the sewer at a future date will not prejudice the safety of adjacent structures. Design and construction will be carried out by developers to specifications and construction standards to be agreed in writing with the Council. In addition, an extension to the trunk sewer to allow for the connection of a rising main from the area west of the R132 shall be provided, which shall be constructed in conjunction with the trunk sewer.

**Collector Sewer:** To serve sub-catchments of the development area and lands within Drogheda Borough Council, which drain naturally towards the drainage network. The collector sewers are to be constructed in open spaces, where possible. Connections from the Collector Sewer to Trunk Sewer are to be kept to a minimum; therefore medium sized sub-catchments are to be catered for by collector sewers.

**5.4.6 Individual Development Drainage:**

Within individual developments, collector sewers will not be permitted in individual gardens or private areas. Each house will, insofar as possible, have an individual connection to a manhole or approved saddle connection to the collector sewer.

**5.4.7 Guidance Documents**

The Council consider the "Drainage of Development Sites - A Guide" published by CRIA & HR Wallingford, 2004 provides guidance in respect of a drainage philosophy and standards that would be acceptable.

**5.4.8 Foul Drainage Design Considerations**

An integrated design will be required with regard to the Trunk and Collector Sewers.

The following design guidelines, in conjunction with recommended guidance documents, set the minimum standards that will be required. The Local Authority may specify further requirements with regards to design and construction to cater for site-specific requirements.

**Pipe Materials:** uPVC pipes and fittings shall be permitted up to 300mm diameter, in accordance with IS 424. Pipelines in excess of this diameter shall be Concrete spigot and socket pipes in accordance with IS 6. Under certain circumstances, glass reinforced plastic (GRP) and Glass Composite Concrete (GCC) may be considered.

**Pipe Sizes:** Trunk pipelines shall be designed to cater for a 4 times Dry Weather Flow (4 DWF). Collector pipelines shall cater for 6DWF.

**Gradients & Velocities:** Pipelines shall be laid to a gradient that will produce velocities in the range 0.75m/sec to 3.0m/sec. Self-cleansing velocities shall be obtained and demonstrated in all pipelines and under all flow conditions.

**Flow Measurement:** Flow measurement devices will be required at strategic points in order to allow early detection of ingress of stormwater to the system. A minimum of two units will be required in the trunk sewer.

**Manholes:** All manholes will be required to be constructed in accordance with the "Recommendations for Site Development Works for Housing Areas published by the Department of the Environment". In particular, all manholes shall be resistant to water penetration, resistant to leakage, be durable and be designed and constructed so as to minimise the risk of blockage. In areas susceptible to flooding, manhole covers shall incorporate an impermeable seal.

**Cover to Pipelines:** Minimum cover to all pipelines shall be as follows

Roads & Driveways:	1.2m
Open Spaces:	0.9m
Gardens:	0.6m

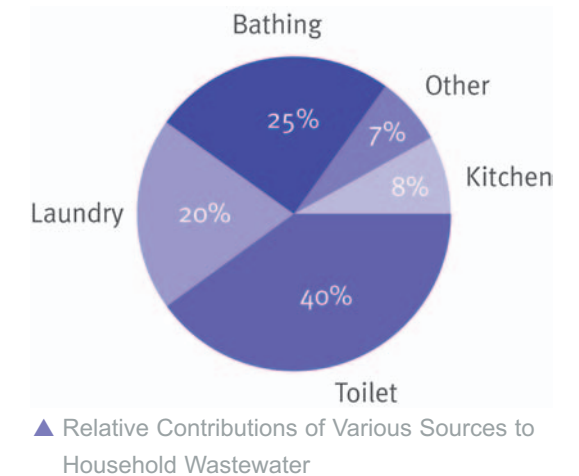
If it proves impossible to achieve the above minimum cover and subject to written agreement with the Council, additional measures may be taken to adequately protect the pipelines

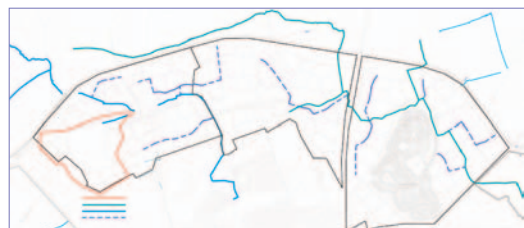
**Accessibility:** All sewers shall be accessible for maintenance and repair purposes. As such, all units shall be connected directly to the mains system. Access shall also be accommodated at maximum intervals of 90m, at all changes in direction & gradient, at all changes in pipe diameter & sewer junctions and at the head of all sewers.

**Pumping Stations:** The Council do not favour the use of pumping stations where a gravity option exists, however the Council will accept proposals in respect of the use of pump stations if a substantial catchment is to be served by the proposed pump station. In such circumstances a computed sum will be required from the developers in respect of the on-going operation and maintenance of the pump station based on a 20-year operation period. Louth County Council will determine acceptable design standards in respect of adoptable pump stations in consultation with its Operate & Maintenance Contractor.

**Installation:** Installation of all pipelines shall be strictly in accordance with the manufacturers instructions. On-line connections shall be via proprietary saddle pieces, connected as per manufacturers instructions.

**Testing of Sewers:** All sewers shall be subject to either an air test or a water test in accordance with "Recommendations for Site Development Works for Housing Areas published by the Department of the Environment", prior to coming into service. All manholes shall be subject to an approved infiltration test, following backfilling and when the groundwater adjacent to the manhole is at its highest level.





▲ Refer to Appendices for Stormwater Drainage

#### Infrastructure Objective: INF 9

Where it is necessary to re-profile, widen or deepen existing streams to facilitate drainage or for any other reason, the edge condition shall be re-instated under the supervision of a properly qualified ecologist. Streams shall not be culverted except in the three neighbourhood centres. All proposed works shall be subject to detailed environmental assessment which shall include appropriate mitigating measures to protect and re-instate habitat.

## Surface Water Drainage

### 5.5.1 Existing Surface Water Regime

An overriding consideration in the preparation of the surface water regime for the plan lands is the protection of the ecological value of streams and wetlands. All proposals involving alterations to channels will be subject to detailed landscape and ecological assessment. Surface proposals for the Plan lands are therefore subject to this over-riding consideration.

There are two main streams draining the North Drogheda Environs, namely the Ushers Stream and the Beaulieu Stream, which predominately provide drainage for surface water run-off from green field lands, as detailed on the Surface Water Drawing.

The Ushers Stream drains through the urban area of North Drogheda in open and closed conduits and serves as an outfall for rainfall generated runoff from various developments in the urban area. The Ushers Stream Catchment contains a naturally low-lying area which functions as a flood attenuation area / flood plain to the west of Twenties Lane and is a key element in preventing flooding downstream in the urban area of North Drogheda.

The Beaulieu Stream flows through the grounds of Newtown House and the ponds at Beaulieu House. There are a number of weirs and a piped section on the stream in the Newtown House area, which limit the flow that can drain through this wooded area without causing a flooding problem. In addition, there is a history of flooding at Beaulieu Cross and Newtownstalaban arising from overland flow from the Beaulieu Stream to the adjacent Baltray Stream Catchment.

Previous studies indicate that the Ushers Stream and Beaulieu Stream do not have sufficient capacity to cater for substantial development and therefore channel improvements, flow diversion and stormwater attenuation are required. In the Ushers Stream flood risk occurs at the commencement of the urban piped section of the stream but is alleviated provided flood flows can drain effectively to the natural flood plain. In the Beaulieu Stream there is a risk of flooding from the Termonfeckin Road, through the grounds of Newtown House, to the sea outlet as well as in the Baltray Stream Catchment.

### 5.5.2 Upgrading of Existing Surface Water System

In summary, the recommendations of Studies on the streams in North Drogheda include the following:

**Ushers Stream:** The flood attenuation area / flood plain, as set out in TOBIN Consulting Engineers Reports on Drainage Infrastructure Proposals for North Drogheda - Assessment of Ushers and Beaulieu Streams and mapping deposited with the Council is to be preserved free of development.

The Council may consider a reduction in the extent of the flood attenuation area / flood plain basin at a future date, subject to a comprehensive hydrological study being undertaken based on catchment specific data collected over an appropriate time period indicating that such a reduction does not pose significant flood risk to either existing or proposed developments.

All new developments within the stream catchment are to provide attenuation to limit the outflow to that which naturally occurs prior to development.

Improvement works are to be carried out on the stream, including localised regrading of the streambed, improvement of cross-sections and replacement of culverts to provide capacity for at least a 50-year Return Period.

Impact assessment of 100-year flows will also be required. Improvement works shall be carried out in an environmentally sensitive manner taking cognisance of the recommendations in Section 3.7.2.

The Stream is to be properly 'Banked' where required and sides reinforced to prevent soil erosion. Initial clearance and on-going management of flood retention basin is to be carried out by developers.

**Beaulieu Stream:** It will be a requirement to construct a Diversion Pipeline from the Termonfeckin Road to the Boyne River when the section of the Port Road from Termonfeckin Road to the Port is being constructed.

Improvement works are to be carried out on the stream, including localised regrading of the streambed, improvement of cross-sections and replacement of culverts to provide capacity for at least a 50-year Return Period. Impact assessment of 100-year flows will also be required. Improvement works shall be carried out in an environmentally sensitive manner taking cognisance of the recommendations in Section 3.7.2.

The Stream is to be properly 'Banked' where required and sides reinforced to prevent soil erosion.

All new developments within the stream catchment are to provide attenuation to limit the outflow to that which naturally occurs prior to development.

**Infrastructure Objective: INF 10**

A stormwater management plan will be required for the entire area based on the CIRIA publication "Sustainable Urban Drainage Systems". Attenuation Tanks will not normally be permitted within each individual development but shall be provided on a regional basis. Control of stormwater at source will be encouraged.

### 5.5.3 Proposed Surface Water Management

A Surface Water Management Plan will be required in respect of the overall development area, which shall be based on the SUDS Design Philosophy. This will incorporate an integrated approach to the management of runoff from each individual unit, development, designated neighbourhood and the North Drogheda Environs as a whole, so that a universal and consistent approach to provision of an overall functional solution to surface water management is adopted. The plan shall be submitted to Louth County Council for approval and modified as required prior to commencement of development works. All developments shall be required to submit individual drainage proposals consistent with the overall plan.

Cognisance shall be taken of objectives and constraints as set out in Section 3 - Landscape and Open Space in the preparation of the plan and in particular the design options shall recognise the importance of minimising the impact of attenuation features on the utilisation of open space for recreational purposes. All proposals relating to the alterations of streams and flood plains shall be subject to detailed landscape and ecological assessment.

The following issues shall be specifically addressed in the plan:

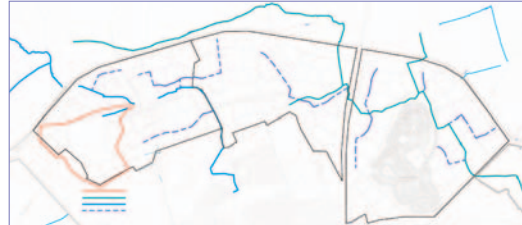
- Protection of water quality in receiving watercourses and groundwater
- Stream Regime Protection - minimisation of ecological and physical impacts on receiving streams
- Level of Service Protection - protection of site from flooding of drainage system
- Stream Flood Protection - minimisation of risk of downstream flooding
- Site Flood Protection - control of flooding of site during extreme events

Maximum acceptable surface water runoff levels and indicative storage requirements are provided in "Report on Drainage Infrastructure Proposals for North Drogheda - Assessment of Ushers Stream and Beaulieu Stream", prepared by TOBIN Consulting Engineers for Louth County Council.

Stormwater attenuation methods may include but will not be limited to the following:

1. Filter Strips & Swales
2. Filter Drains & Permeable Surfaces
3. Infiltration Trench
4. Flood Plains
5. Detention Basins
6. Retention Pond
7. Balancing Ponds
8. Flood Storage Ponds

Subject to detailed studies (including flow studies) of the existing flow regime, alternative arrangements may be considered. Developers will be required to submit a Management and Operation Plan for construction and post construction phases of all elements of the integrated surface water drainage system, which will adequately address the on-going operation and maintenance of all elements of the system including ongoing maintenance of the stream channel, attenuation facilities, pipelines and the flood plain.



▲ Refer to Page 61 or the Appendices for Stormwater Drainage

#### Infrastructure Objective: INF 11

Subject to detailed studies (including flow studies) of the existing flow regime, alternative arrangements may be considered. Developers will be required to submit a Management and Operation Plan for design, construction and post construction, which will incorporate proposals for the prevention of flooding and include detailed ecological assessments, and mitigating measures.

## Surface Water Drainage

### 5.5.4 Guidance Documents

Guidance in respect of SUDS philosophy is provided in the following CIRIA Publications:

- Sustainable Urban Drainage Systems – Design Manual for Scotland and Northern Ireland
- Sustainable Urban Drainage Systems – Best Practice Manual
- Sustainable Urban Drainage Systems – Best Practice Manual and Drainage of Development Sites – A Guide, published by CIRIA / HR Wallingford

### 5.5.5 Design Considerations

It will be necessary to demonstrate the use of best practice with regard to all design works. The following design guidelines shall set the minimum standards that will be required. All designs submitted in respect of individual developments shall be consistent with the Surface Water Management Plan. The Local Authority may place further restrictions to the general design or to cater for localised considerations:

**Pipe Materials:** uPVC pipes and fitting shall be permitted up to 300mm diameter, in accordance with IS 424. Pipelines in excess of this diameter shall be concrete spigot and socket pipes in accordance with IS6 or rebated concrete pipes to BS 5911.

**Pipe Sizes:** Surface run-off shall be calculated using the Modified Rational Method.

**Gradients & Velocities:** Pipelines shall be laid to a gradient that will produce velocities in the range 0.80m/sec to 3.0m/sec when flowing half full.

**Installation:** Installation of all pipelines shall be strictly in accordance with the manufacturers instructions. On-line connections shall be via proprietary saddle pieces, connected as per manufacturers instructions.

**Cover to Pipelines:** Minimum cover to all pipelines shall be as follows:

Roads & Driveways:	1.2m
Open Spaces:	0.9m
Gardens:	0.6m

If it proves impossible to achieve the above minimum cover and subject to approval, additional measures may be taken to adequately protect the pipelines.

**Manholes:** All manholes will be required to be constructed in accordance with the "Recommendations for Site Development Works for Housing Areas published by the Department of the Environment". In particular, all manholes shall be resistant to water penetration, resistant to leakage, be durable and be designed and constructed so as to minimise the risk of blockage.

**Accessibility:** All pipelines, manholes, attenuation structures and ancillary elements shall be accessible for maintenance and repair purposes. Access shall also be accommodated at maximum intervals of 75m, at all changes in direction & gradient, at all changes in pipe diameter & sewer junctions and at the head of all sewers.

**Testing of Sewers:** All sewers shall be subject to either an air test or a water test in accordance with "Recommendations for Site Development Works for Housing Areas published by the Department of the Environment", prior to coming into service.

All manholes shall be subject to an approved infiltration test, following backfilling and when the groundwater adjacent to the manhole is at its highest level.

### 5.5.6 Upgrading of Streams

The design capacity for the upgraded streams shall be for a 50-year flood. Due cognisance shall be taken of more severe storms in design of open spaces and developments with flood risk analysis for 100-year storm to be undertaken to identify areas that may be inundated should the stream overtop its banks.

The design capacity should also make allowances for projected impacts of Global Warming and resultant increased rainfalls.

The number of outfalls shall be kept to a minimum and shall be designed such that scouring and bank damage is prevented through means of effective energy dissipation and environmentally sensitive bank and bed reinforcement.

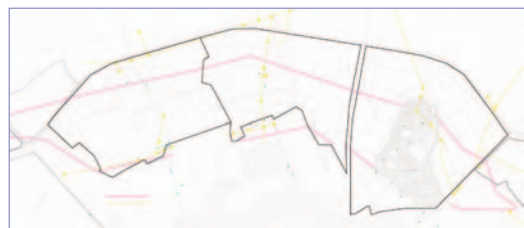
Works on streams, culverts and bridges shall incorporate recommendations from both Eastern Fisheries Board and the Office of Public Works who shall be consulted at an early stage in the design process.

**Attenuation Storage Facilities:** The use of underground tank storage systems with flow control devices at individual small scale developments will, in general, not be permitted due to limited effectiveness of flow control devices at low flows.

## Existing and Proposed Stormwater Drainage Layout



▲ Existing and Proposed Stormwater Drainage Layout



▲ Refer to Appendices for ESB Network

**Infrastructure Objective: INF 12**

While recognising that certain utilities have a monopoly position in respect of the supply of ducted services, the County Council will encourage an open access protocol in respect of the provision of ducting for utilities.

**Infrastructure Objective: INF 13**

It is an objective that existing overhead lines and all new lines be placed underground throughout the Plan lands. In particular overhead cables will not be permitted within the linear park or pocket parks. Sub-stations and other facilities including gas and telcom facilities shall be placed at the least obtrusive locations.

**Waste Disposal & Recycling Objective: INF 14**

The Council will require recycling 'bring' facilities to be located strategically around the Plan lands so that every household has convenient access to them. Facilities for the recycling of glass, paper, clothes and beverage cans must be provided within the Plan lands. Additional facilities may also be required. They should be located so as to minimise negative impacts on residential amenity and be easily accessible to collection vehicles.

**Utilities**

Adequate ducting is to be provided to cater for the current and anticipated future utility provision. A written agreement will be required with the duct providers and the Council to ensure that service providers will be leased ducting, subject to maintaining the ducting in good condition and agreeing to share duct space with competitors where this is technically feasible.

**5.6.1 Existing Electricity Supply**

2 No. existing overhead 38kV lines cross the North Drogheda Environs. The southern line has been placed underground in a number of locations and one part of the northern line has been undergrounded.

The area has a restricted distribution network of 10kV lines. These are a mixture of overhead and underground cables, with sub-stations located at various points on the network as shown on the drawing, refer to the Infrastructure Drawings under the Appendices.

**5.6.2 Future Electricity Network**

The overhead 38kV lines will be required to be routed underground where the route crosses the North Drogheda Environs. The new route should be located along an accessible route. The northern line is to be rerouted along the linear park while the southern line will be rerouted locally along access routes to avoid development areas. Way-leave access over the cables will be required by the ESB. There will also be restrictions on the proximity of development to the underground cables.

The development area will have a primary feed from the ESB network with 2No. 38kV/10kV sub-stations being placed in suitable locations. These will each require a space of 2000m<sup>2</sup> (50m x 40m approx) with vehicular access thereto.

Secondary distribution at 10kV will be by means of cables installed along public routes to localised 10kV/400V sub-stations. These sub-stations shall provide power to all low voltage customers and larger single users (at 10kV).

Residential and commercial schemes are to have sub-stations provided. Public and amenity lighting schemes are to have mini-pillars/distribution pillars/sectional pillars provided.

All sub-stations are to be located as determined by the developers and local authority in conjunction with ESB Networks.

Sub-station buildings and/or compounds are to be constructed in accordance with ESB Networks specifications. Connection from the network to the premises/development will comply with the National Code of Practice for Customer Interface as issued by ESB Networks.

All sub-station locations and cable routes are to be agreed with ESB Networks. Cables shall be installed in pipe ducts underground. Arrangement of pipe ducts, specification of pipe duct material and segregation from other services shall be as directed by ESB Networks. Generally pipe ducts shall be installed 900mm (min) below finished ground level and 500mm radially away from other services.

Compliance with standards, specifications and codes of practices shall be the edition current at time of construction.

**5.6.3 Energy Efficiency and Renewable Energy**

The Planning Authority will

- Promote and encourage the development of sustainable energy resources within the plan area;
- Encourage the design of buildings that promote energy conservation;
- Co-operate with Sustainable Energy Ireland in promoting greater energy efficiency and conservation; and
- Ensure applications for energy generating structures or other alternative energy facilities are assessed on their merits, having regard to considerations of visual and residential amenity.

**Energy Objective: INF 15**

For all developments, including residential developments comprising 10 or more units, and non-residential development exceeding 1000m<sup>2</sup> gross floorspace, the Council will require at least 10% of predicted energy requirements to be provided, on site, from renewable energy sources.

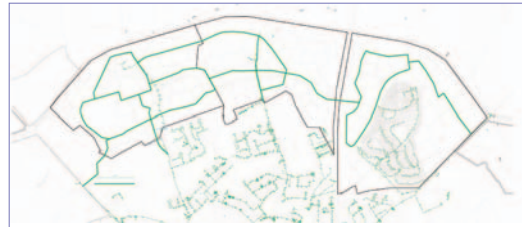
The heating energy performance of new buildings shall not exceed 50kwh/m<sup>2</sup> of useful floor area.

**5.6.4 Gas Supply**

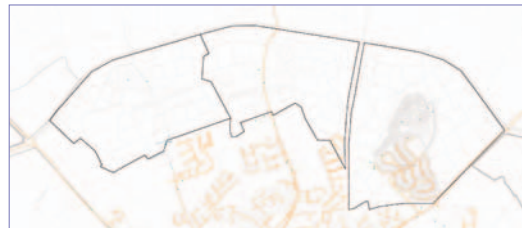
All residential and commercial development in the North Drogheda Environs will be connected to the national gas network.

**5.6.5 Existing Gas Supply**

The existing gas supply network in the area is illustrated on the accompanying drawing. This includes a 180mm PE 4 Bar line on the Termonfeckin Road, a 125mm PE 4 Bar line on the Ballymakenny Road, a 90mm PE 4 Bar line on Twenties Lane and a 125mm PE 4 Bar line on R132.



▲ Refer to Appendices for Gas Network



▲ Refer to Appendices for Telecom Networks

#### 5.6.6 Proposed Gas Network

It will be a requirement to upgrade and enhance the network as necessary in consultation with Bord Gais, including the installation of necessary above ground installations (AGI's). Bord Gais will require way-leave access over the pipework. There will also be restrictions on the proximity of development to the underground pipes. Connections to the existing network shall be provided where appropriate by Bord Gais or a Bord Gais appointed contractor. All gas mains pipework and gas services shall also be provided by Bord Gais or a Bord Gais appointed contractor. All trenches constructed for accommodating gas mains shall be provided by the appropriate developer and are to be constructed in accordance with the requirements as set out in the Bord Gais Guidelines and Irish Standards Publications.

General details of developers, total numbers of business and residential units requiring meters shall be required for Bord Gais Network design. Detailed Site layout drawings with proposed meter positions, a project programme as well as a site location map shall also be required by Bord Gais. All information required is obtainable from Bord Gais at [plans@bge.ie](mailto:plans@bge.ie).

All Gas trenches are to be placed in accordance with the requirements as set out in the Bord Gais Guideline Publications.

#### 5.6.7 Telecom Supply

Louth County Council support the development of an open access ducting network to support telecommunications. This shall consist of a pair of 100mm ducts with 25mm branch connections from access chambers or swept tees to each house/unit. Such a network shall remain in the ownership of the developer until taken in charge by the Council and shall be made available to all service providers on a non-exclusive lease basis at minimal cost. The network shall support the provision of universal access to competitive telecommunications services, broadband and digital television to further enhance the attractiveness of Drogheda for inward investment and as a place to live.

#### 5.6.8 Existing Telecommunication Infrastructure

The existing Eircom Networks are detailed on the Infrastructure Drawings under the Appendices. Eircom have, at present, no plans to supplement the existing infrastructure in the region. However, this will be reviewed on an on-going basis, possibly subject to granting of substantial planning. Eircom have indicated that additional exchanges are likely to be required in order to adequately service the area.

Ducting and site infrastructure will be placed in accordance with the requirements of the service provider. Arrangement of exchange buildings, comms towers containing antenna, microwave dishes etc. shall be agreed in advance such that their location, design and access thereto are compatible with the design strategy for the area including the Urban Design Framework of this document. Ducting shall be installed underground to provide a comprehensive network which minimises overhead cables. Final connections to premises shall be via underground ducts.

Successful delivery of services will depend on early consultation between developers, Louth County Council and the Telecoms Service Providers. The consultation process shall include input from Telecoms Service Providers currently active in the region. An opportunity should also be offered to other Service Providers, registered with the Department of Communications, Marine and Natural Resources, who may wish to become active/operational in the region. Requirements of the Service Providers shall be considered and networks developed to provided a coordinated infrastructure which facilitates delivery of service to consumers without the need for excessive underground ducting, manholes, exchanges, antenna etc

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# 6 Phasing and Implementation

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Summary of Quantums & Requirements	
Gross Development Area	254 ha
Net Development Area	179.35 ha
Total No. of Dwellings	7,100
Public Open Space including Sports Centre	20% of Gross Plan Lands
Within Plan Lands	36.05ha
Outside Plan Lands	12.55 ha
Total	48.60 ha
Primary Schools (3)	1.2 ha each
Civic/Commercial Centre One	8,100m <sup>2</sup>
Civic/Commercial Centre Two	8,100m <sup>2</sup>
Civic/Commercial Centre Three	6,779m <sup>2</sup>
Port Access Northern Cross Route	
Transport Hub and associated Park & Ride Facility	
Footpaths & Cycleways	
Bus Routes and Shelters	
Infrastructure including roads, foul drainage, surface water and water supply	

### 6.1.1 Phasing and Implementation

The successful implementation of this plan depends on certain elements being delivered at key stages. The reasons for this are various; the primary reason being to ensure the area develops in a logical and co-ordinated manner in the interests of the proper planning and sustainable development of the area. Others relate to the provision of a living environment, the limitations of existing infrastructure (foul water drainage, water supply, storm water control and roads) to support new development and, in the case of roads, to enable the construction of the development itself.

In addition, the need to ensure that commercial, community and recreational/amenity facilities and services are available at an early stage is an important consideration.

For these reasons, development will be contingent upon the provision of an adequate level of infrastructure, (physical and community) facilities and services to enable construction and sustain the new population.

Key elements of infrastructure, facilities and services will be secured at the appropriate stages by means of the objectives set out in the table on the following page.

Diagrams on subsequent pages illustrate the sequence of development.

Having regard to the above, and taking account of the provisions of the North Drogheda Environs Local Area Plan, 2004, the scale and extent of development in the Master Plan lands and the proper planning and sustainable development of the area, the achievement of the following objective is considered an essential and integral part of the Plan.

#### Implementation Objective: IO 1

Landowners / developers with interests in developing in the area shall enter appropriate legal / financial agreement(s) with the Council to secure delivery of the infrastructure, including roads, drainage, services, water supply, recreation and civic / community, required to ensure the successful implementation of the Plan. In this regard a body corporate or other legal entity shall be established, capable of both entering into a legal / financial agreement with the Council and delivering on the contents of the agreement to the satisfaction of the Council.

#### ***The required legal / financial agreement shall, inter alia, provide for the following –***

The design and construction of the Port Access Northern Cross Route from the R132 to the R166 as a single contract.

Construction of the Northern Cross Route from the R166 to the Port at Drogheda

The design and construction of the foul sewer from its existing 'end point' in Neighbourhood Three, westwards as far as R132. The sewer shall be designed and constructed so that sufficient capacity is provided to accommodate the Plan lands, the wider LAP lands and other lands beyond the LAP lands that can drain by gravity to the sewer.

Alterations to the Ushers and Beaulieu streams and other surface water arrangements to provide suitable and sustainable surface water drainage of the area without negative flooding impacts elsewhere. This shall include design of an overflow pipe provisions of the Master Plan.

The provision of the linear parks, including the sports centre in accordance with the provisions of the Master Plan.

Arrangement to facilitate access to infrastructure from non-parties to the agreement subject to reasonable apportionment of the overall costs of providing the infrastructure.

**Table 6.0 Phasing & Implementation**

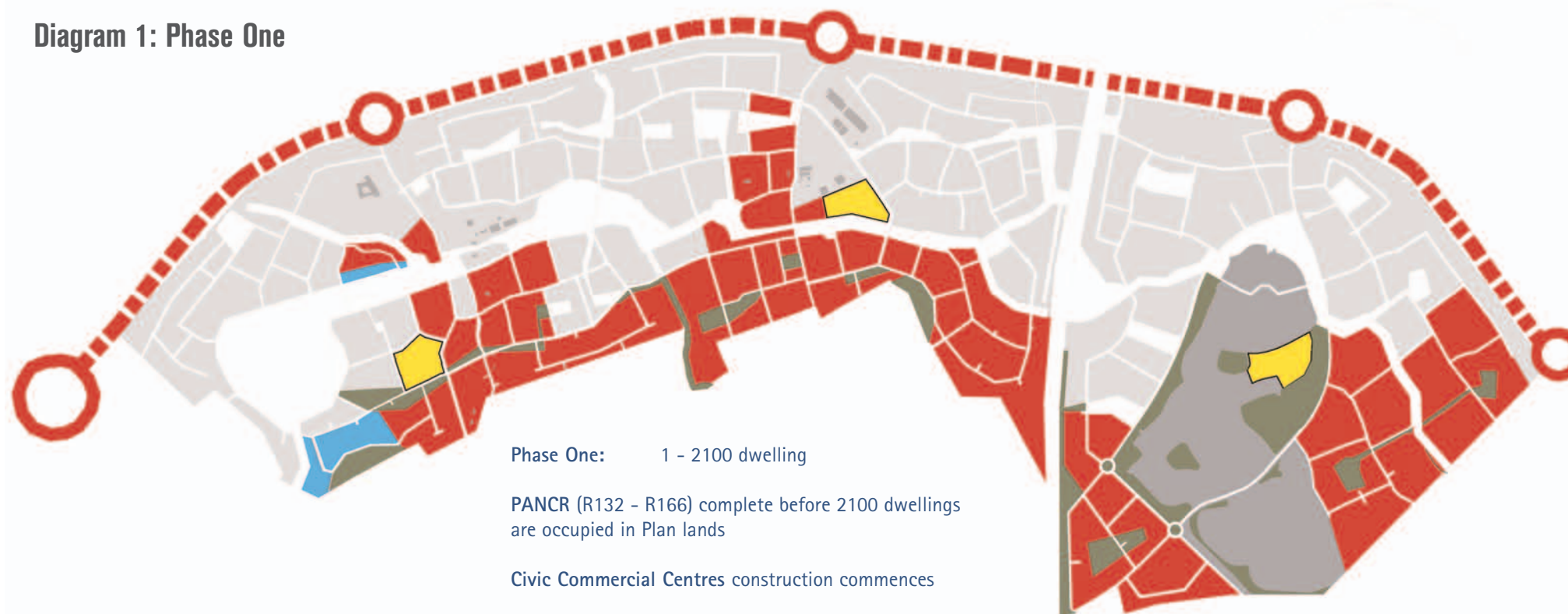
Infrastructure Item	Objective Phasing Ref.	Objective	Phase One*** Not more than 2100 dwellings	Phase Two*** Not more than 2500 dwellings	Phase Three*** Not more than 2500 dwellings
1. Construction Traffic	CT 1	All construction traffic serving NH1 and NH2 shall be from the R132 unless otherwise agreed in writing with the Council. Prior to the commencement of any development on the Plan lands, a haul route(s) shall be constructed. In this regard, method statements shall be agreed in writing with the Planning Authority**.	Nil.	Nil.	Nil.
2. Northern Cross Route & Infrastructure Provision*	PANCR 1	Other than with the prior written agreement of the Council, no development shall commence on the Plan lands until implementation objective IO1 is in place. No development of residential areas or the civic/commercial centres shall commence on Plan lands until construction of the PANCR has commenced between the Dublin Road (R132) and the Termonfeckin Road (R166). As a minimum, the PANCR from the R132 to the R166 shall be constructed under a single contract	Nil.	Nil.	Nil.
	PANCR 2	Not more than a total of 700 dwellings shall be occupied until PANCR is constructed to Twenties Lane**; not more than a total of 1400 dwellings shall be occupied until PANCR is constructed to Ballymakenny Road** and; not more than a total of 2100 dwellings shall be occupied until PANCR is constructed to Termonfeckin Road**, all subject to the capacity of existing road network being demonstrated to the satisfaction of the relevant Council (LCC/DBC)	700; 1400; 2100	N/A - PANCR complete	N/A - PANCR complete
	PANCR 3	At least 3 no. safe and secure pedestrian connections shall be provided across the PANCR** (between R132 and R166), a fourth shall form part of the design of the route. One such connection shall be directly between the Plan lands and the Sports Centre. Links shall be provided as part of PANCR construction.	700; 1400; 2100	N/A - PANCR complete	N/A - PANCR complete
3. Infrastructure	INF 1	Prior to the commencement of development an "Infrastructure Framework Plan" for the Plan lands shall be completed to the satisfaction of the Planning Authority. The Framework Plan shall include, as a minimum, foul discharge and water supply proposals and a stormwater strategy plan for at least the extent of the Plan lands, including a timing and implementation programme. The following Infrastructure Items shall be incorporated:	Nil	Nil	Nil
3a. Foul Drainage	FW 1	The main trunk sewer shall be constructed as a single contract. A written agreement between Council and providers of sewer will be required to the effect that non-providers will be permitted to connect to the sewer subject to reasonable apportionment of the overall cost of providing the sewer.	700****	N/A - TS complete	N/A - TS complete
	FW 2	The trunk sewer shall be taken in charge by the Council upon completion of the sewer** and expiration of an agreed maintenance period.	700****	N/A	N/A
3b. Surface Water	SW 1	The floodplain area to the west of Twenties Lane shall be maintained. The extent of the floodplain area may be redefined in the future following a detailed flood study over a minimum 5 year period which categorically proves that it may be redefined, unless otherwise agreed with the Council.			
	SW 2	A stormwater strategy plan will be required for the entire area based on the CIRIA publication "Sustainable Urban Drainage Systems", prior to commencement of development.	Nil	N/A	N/A
	SW 3	Upgrading of Ushers and Beaulieu Streams to cater for 50 year flood event. Level of upgrade to be provided is to be in accordance with Wallinton Procedure for Flood Estimation, detailed ecological assessments, and the stormwater strategy.			
	SW 4	Construction of diversion pipeline from Termonfeckin Road to Boyne River to improve flow capacity.			
	SW 5	It is expected that the Flood Flow study for the attenuation area will be completed before the end of Phase 1, but in the event that it is not completed by the end of Phase 1, no development shall take place until such studies are completed to the satisfaction of the Planning Authority			
3c. Water Supply	WS 1	Water supply shall be via a trunk main parallel to the PANCR, with not more than 4 connections. Secondary mains shall be provided at Twenties Lane, Ballymakenny Road and Termonfeckin Road			
	WS 2	Interim measures such as temporary wells may be acceptable subject to confirmation of supply and groundwater protection**.			
	WS 3	Wells will be managed by a single management entity**			

\* From R132 to R166  
 \*\* To satisfaction of the Council/as determined by the Council.  
 \*\*\* Number of dwellings that can be constructed before provision of key infrastructure item.  
 \*\*\*\* Subject to availability of capacity at the Drogheda WWTP.

Infrastructure Item	Objective Phasing Ref.	Objective	Phase One*** Not more than 2100 dwellings	Phase Two*** Not more than 2500 dwellings	Phase Three*** Not more than 2500 dwellings
4. Linear Park	LP 1	Prior to the commencement of any development a full design specification for the Linear Park shall be submitted to, and approved by, the Council.	<i>Nil.</i>		
	LP 2	The Linear Park shall be developed in accordance with the design specification set out at LP1.			
	LP 3	Construction of the Linear Park shall commence prior to the substantial completion** of dwellings in Phase 1 of the Plan lands. The Linear Park shall be completed prior to the substantial completion of 50 per cent of the dwellings in Phase 2.	2100	1250	<i>N/A Linear Park Complete</i>
	LP 4	The linear park shall be vested with the Council on completion	<i>N/A</i>	<i>Park vested with Council.</i>	
5. Pocket Parks	PP 1	A design specification for each pocket park shall be submitted to and approved by the Council prior to the commencement of development served by the relevant park. The design specification shall accord with the Provision Strategy (Policy LOS 7).	<i>N/A</i>		
	PP 2	The Council will examine various models for the management and maintenance of developments, including where appropriate management companies and other agreements. The objective is to secure a high level of management and maintenance of public utilities and spaces in the area.	<i>As per PP1</i>	<i>As per PP1</i>	<i>As per PP1.</i>
	PP 3	Pocket Parks shall be completed** prior to the completion of not more than 50 per cent of dwellings** served by the Park.	<i>Relevant Parks complete</i>	<i>Relevant Parks complete</i>	<i>Relevant Parks complete</i>
6. Sports Centre	SC 1	A full design specification for the Sports Centre (SC) shall be submitted to the Council, prior to the commencement of any development on the plan lands.	<i>Nil</i>		
	SC 2	The Sports Centre shall be completed prior to substantial completion** of Phase 2 dwellings.	2100	2500	<i>N/A SC constructed.</i>
	SC 3	The Sports Centre shall be vested with Louth County Council. The Council will decide the appropriate management mechanism.	2100	2500	<i>N/A SC constructed.</i>
7. Civic/Comm Centres	CC 1	The Council will seek the commencement of construction of each of the Civic/Commercial Centres prior to the substantial completion of 50 per cent of Phase 1 dwellings in each neighbourhood, and will seek completion of centres prior to completion of Phase 2 dwellings in each neighbourhood.	1050	2500	
8. Primary Schools	PS 1	The Council shall seek the early provision of the schools required to serve the area. In this regard, the three designated school sites shall be reserved. The reserved school sites shall be maintained as functional open spaces, levelled, grassed and maintained until such time as they are required for school provision.	1050		

\* From R132 to R166  
 \*\* To satisfaction of the Council/as determined by the Council.  
 \*\*\* Number of dwellings that can be constructed before provision of key infrastructure item.  
 \*\*\*\* Subject to availability of capacity at the Drogheda WWTP.

Diagram 1: Phase One



Phase One: 1 - 2100 dwelling

PANCR (R132 - R166) complete before 2100 dwellings are occupied in Plan lands

Civic Commercial Centres construction commences

Linear Park construction commences prior to substantial completion of Phase One

Pocket parks serving various housing areas shall be completed\*\* prior to the substantial completion\*\* of 50% of dwellings served by appropriate parks.

It is expected that the Flow and Flood Study for the attenuation area will be completed before the end of Phase 1, but in the event that it is not completed by the end of Phase 1, no development shall take place until such studies are completed to the satisfaction of the Planning Authority

- Northern Cross Route
- Phase One (2100 dwellings)\*
- Public Open Space
- Sports Centre
- Civic Commercial Centre
- Primary School
- Phase Two (2500 dwellings)\*
- Phase Three (2500 dwellings)\*
- Lands subject to Flow & Flood Study

\* Phasing portions are in-line with proposed density distribution, therefore each colour indicates the lands that are available for development during a particular phase. (assuming maximum number of dwellings)

\*\* To satisfaction of the Council/as determined by the Council.

**Implementation Objective: IO 2**

It is an objective of the Plan to secure the development of the Plan lands in accordance with *Table 6.0 Phasing & Implementation* and the phasing programme as set out in Diagrams 1-4 on page 70.

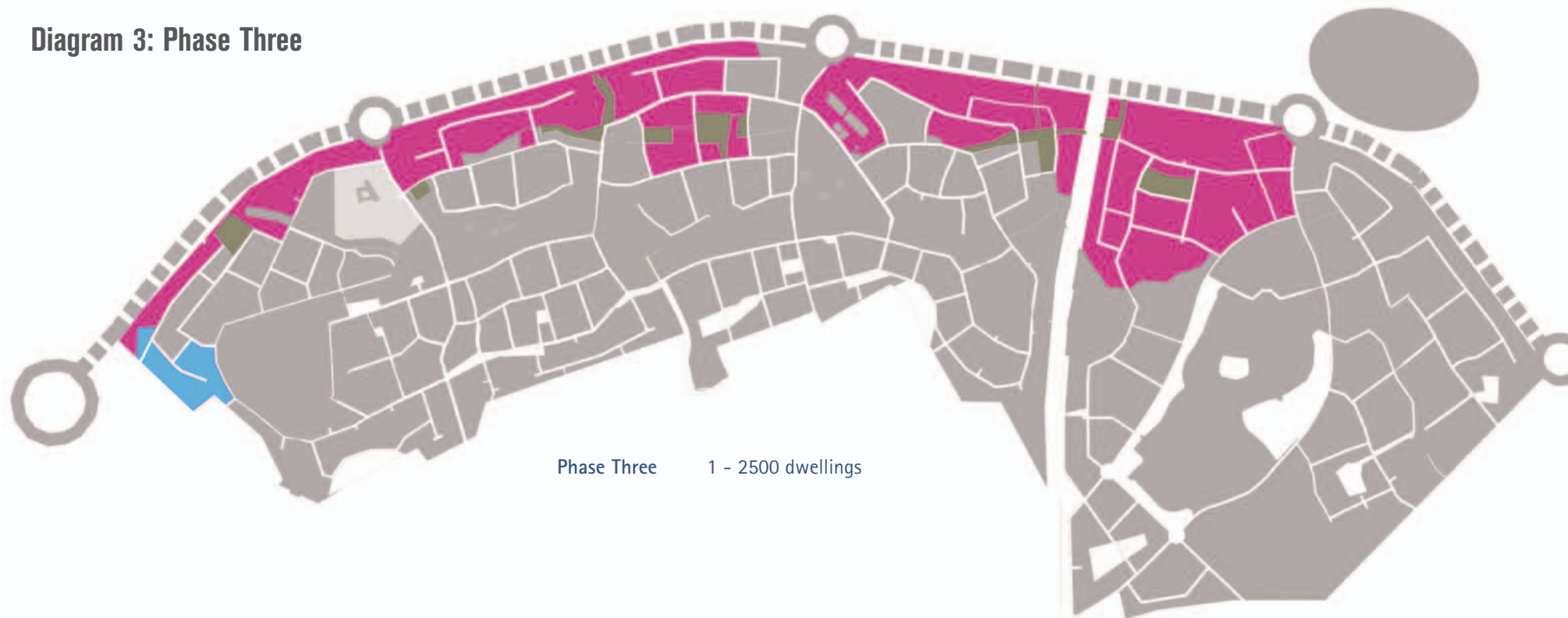
**Implementation Objective: IO 3**

Place Names - Streets, housing areas, community, recreation and other facilities shall use local place names, preferably using historical Irish names and must be done in consultation with the Local Authority.

Diagram 2: Phase Two



Diagram 3: Phase Three



- Northern Cross Route
- Phase One (2100 dwellings)\*
- Public Open Space
- Sports Centre
- Civic Commercial Centre
- Primary School
- Phase Two (2500 dwellings)\*
- Phase Three (2500 dwellings)\*
- Lands subject to Flow & Flood Study

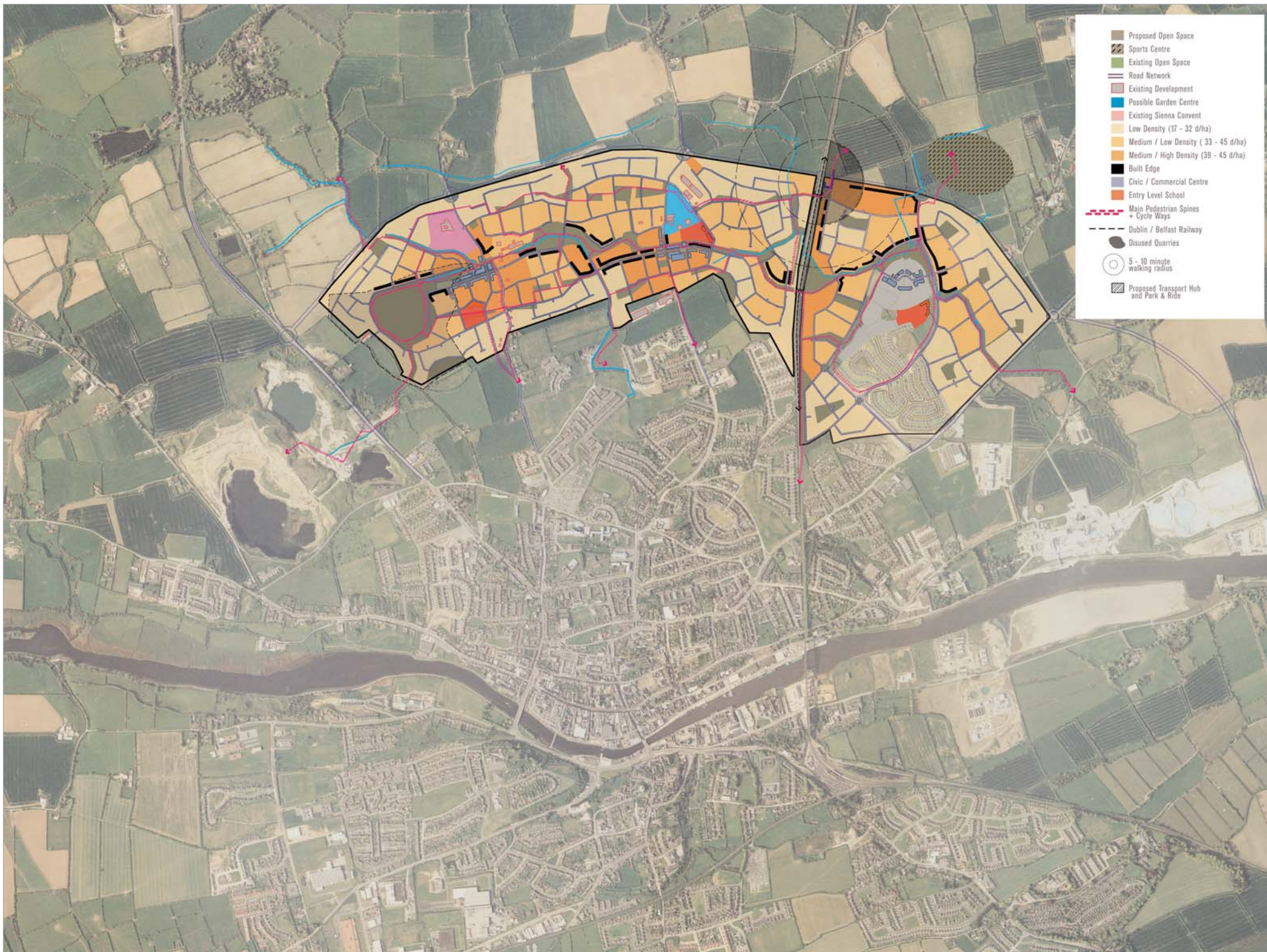
\* Phasing portions are in-line with proposed density distribution, therefore each colour indicates the lands that are available for development during a particular phase. (assuming maximum number of dwellings)

\*\* To satisfaction of the Council/as determined by the Council.

**Implementation Objective: IO 4**

There will be a presumption in favour of granting planning permissions in the Plan area when the Council is satisfied the necessary physical, social, community, recreational and civic/commercial infrastructure is in place, or will be provided within specified time periods as set out in the Implementation objective table on page 68. In this regard, all planning applications shall be accompanied by a statement setting out the time periods for delivery of infrastructure in accordance with the Implementation Objective table to the satisfaction of the Council. The Council may use agreements under Section 47 of the Planning and Development Act 2000, as amended to secure the provision of necessary infrastructure in tandem with the development of the area.

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7  
Appendices

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*Appendix 7.1  
North Drogheda Environs  
Policies and Objectives  
Consolidation Table*

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### Master Plan Objectives

#### MP1

Whilst the provisions of the Master Plan, including the roads hierarchy are policy aims, objectives and targets that the Planning Authority requires adherence to, the Council recognises that a degree of flexibility is desirable. However, the level of flexibility shall not undermine the policy aims, objectives and targets of the Master Plan. The over-riding consideration is to ensure that the urban design framework, as set out in the Master Plan, is achieved, including strong levels of permeability throughout the Plan lands.

### Planning Context Objectives

#### HP1

The provision of housing, including social and affordable housing, shall accord with the Louth County Housing Strategy, as may be amended.

#### POS1

Where due regard is given to orientation and avoidance of overlooking, reduced areas of Private Open Space may be considered. With care, this can offer variety to the built form and more sustainable solutions to provision of detached housing.

#### CP1

Large expanses of car parking will be discouraged, particularly in the Civic and Commercial centres. Therefore, where mixed-use planning applications are made, parking provision should be considered collectively. i.e. shared use amongst residential and employment uses. Underground parking and multi-storey facilities should also be considered, subject to their impact on urban design.

#### CP2

In residential areas, grouped parking behind building lines will be encouraged.

### Landscape & Open Space Objectives

#### LOS1

Louth County Council will promote the concept and practice of Urban Forestry, whereby all trees, in both public and private open space, are considered and managed as one population. This shall be facilitated through the selection of trees for planting in both public and private open space from agreed schedules.

#### LOS2

Before open space is 'taken in charge' and to ensure the quality of the various components of the public open space network, developers shall be obliged to satisfy certain quality control mechanisms set down by Louth County Council. All, or a number, of the following quality control mechanisms shall be applied by Louth County Council to individual developments.

1. Conditions attached to granting of planning permission such as:

Tree species selected from specific schedules of native species

Minimum quantities and sizes of trees for specific purposes

Planting of portions of open space prior to building works commencing, and other phasing mechanisms

Detailed finished levels for open space areas relative to adjoining public roads to satisfaction of the Council

2. Financial bonds to ensure:

Protection of existing trees, hedgerows, streams and other landscape features

Proper construction and planting of open space according to conditions

3. Financial contributions.

### Landscape & Open Space Objectives

#### LOS3

In submitting detailed landscape schemes for the plan lands to the Council, developers must seek to fulfil the Master Plan's objectives for the management of trees and woodlands.

#### LOS4

One or more of the following planting schedules, as compiled by the Heritage Council, 'A Guide to Habitats in Ireland', shall be used in all developments within the plan area. The planting schedules shall be specific to existing, retained planted features on site, such as tree lines, hedgerows, stream edges and permanently flooded areas.

#### **Semi-natural Woodland**

WN 6-Wet Willow Alder Ash Woodland

Alnus glutinosa (alder)  
Salix cinerea (willow)  
Fraxinus excelsior (ash)

#### **Linear Woodland**

WL 1 - Hedgerows

Crataegus monogyna (hawthorn)  
Prunus spinosa (blackthorn)  
Ilex aquifolium (holly)  
Fraxinus excelsior (ash)  
Corylus avellana (Hazel)  
Sambucus nigra (elder)

WL 2 - Treelines

Fagus sylvatica (beech)  
Aesculus hippocastanum (chestnut)  
Tilia ssp. (lime)  
Quercus robur (pedunculate oak)

### Open Space Objectives

#### LOS5

If attenuation is the preferred option, it must occur remotely from the stream courses. The Pocket Parks, due to their locations, are suited to attenuation. It would be reasonable, therefore to allocate a portion of the surface area of the Pocket Parks for attenuation. The following open spaces shall **NOT** be used for storm water attenuation:

**Railway Park\***(location for play and sports facilities)

**Sports Centre** (off site)

**Pocket Park** (up to 50% of the total surface area of each individual pocket park) The following open spaces **may be used** for storm water attenuation:

**Pocket Park**(up to 50% of the total surface area of each individual pocket park)

All other open space not listed above.

*\* Railway Park may flood anyway, because of its proximity to a restriction in the Beaulieu Stream*

#### LOS6

The Reserved Attenuation Area (15.8 ha) shall be considered for development following a detailed Flow & Flood Study over an extended time period (at least 5 years, refer to Section 5 Infrastructure). If the study finds the area is necessary for attenuation purposes, then it shall not be developed and shall be retained as open area in addition to the public open space quantum set out in this Plan.

Open Space Objectives

LOS7

The exact location, size and dimensions of each pocket park shall be agreed with Louth County Council at the planning application stage for each development. The network of pocket parks, when complete, shall provide a composite set of recreational facilities across the Plan lands. In this regard, a 'Park Provision Strategy' shall be submitted for the agreement of the Council prior to development commencing on the Plan lands.

Pocket parks shall be arranged to facilitate the retention of existing landscape features where appropriate, the provision of informal flat 'kick-about' areas and the provision of at least one specific recreational facility such as a play-ground for a specific age group or a board-games table and seating or such similar facility for adults and/or elderly persons.

Finished levels for the parks relative to adjoining finished levels, shall be provided with planning applications. In addition, detailed layouts for the pocket parks, including landscaping and active/passive facilities shall be provided with planning applications in the relevant residential area serving the park.

Pocket Parks are intended as informal open spaces benefiting from passive surveillance by adjacent residential properties. They should not be fenced or enclosed and should include pedestrian routes which might be necessary to link to other open spaces or streets; external lighting; some street furniture; planting (mainly trees).

Open Space Objectives

LOS8

The Sports Centre shall serve, primarily, the residents of the plan lands and shall be managed by or on behalf of Louth County Council. The range of facilities that it may include are as follows: Sports building with changing facilities; gym; all-purpose sports hall; café; all weather pitches (GAA pitches, soccer pitches and other major sports); informal kick about/training area; tennis courts; athletics facility; parking; maintenance building/yard; warden/security facility; deliveries/unloading area; bus stop/taxi/car drop-off point; play-ground/play area; and landscaping

The quantum under 3.5.1.1 should be considered as a minimum specification for the proposed Sports Centre which constitutes 5% open space quantum located north of the Port Access Northern Cross Route (PANCR).

The Sports Centre facilities shall be provided at the developers expense in accordance with the Master Plan Phasing Programme (see Section 6 and the minimum specification under Table 3.5.1.1). A detailed specification shall be submitted to the Planning Authority prior to the commencement of any development of the Master Plan lands (Section 6).

Open Space Objectives

LOS9

At least three safe and secure pedestrian and cycle links shall be provided to link the Plan lands with open lands north of the PANCR: two under the Port Access Northern Cross Route to the "Greenbelt" on the North, including one to link with the proposed Sports Centre; and, a third pedestrian bridge at Dublin / Belfast Railway.

LOS10

Protect and increase wildlife connectivity through the design of the Linear Park and other wildlife corridors linking North Drogheda Environs with other significant habitat areas such as the adjacent Demesne Landscapes and the Beaulieu Gardens.

Habitat strategies that protect and/or establish wildlife corridors:

- Rooftop gardens
- Increase tree canopy
- Stream preservation and restoration
- On-site storm water treatment
- Use of planting schedules (LOS 4)
- Use of native groundcover species

LOS11

Where it is necessary to re-profile, widen or deepen existing streams to facilitate drainage or for any other reason, the edge condition shall be re-instated under the supervision of a properly qualified ecologist. Streams shall not be culverted except in the three neighbourhood centres. All proposed works shall be subject to detailed environmental assessment which shall include appropriate mitigating measures to protect and re-instate habitat.

Open Space Objectives

LOS12

Where the edge of the Linear Park is defined by built development it should be built edge (3 to 4 stories).

LOS13

The width and character of the linear park shall alter according to existing conditions on site and the nature of the proposed development. The minimum requirements shall, where possible, include the retention and protection of existing hedgerows; the retention of stream profiles; and shall include pedestrian and cycle routes; and, planting with native species.

LOS14

The southern section of Twenties Lane shall be retained for access to existing housing and its character, alignment and existing vegetation shall also be retained.

#### Urban Design Objectives

##### UD1

Establish a sense of place and history that responds to and reinforces distinctive patterns of development and landscape.

##### UD2

Organise roads, footpaths and public spaces that are connected into well used routes that lead to where people want to go.

##### UD3

At least 3 segregated pedestrian/cycle connections shall be provided between the Plan lands and lands to the north as part of the design and construction of the PANCR. One such connection shall be provided in the vicinity of the railway line to connect the Plan lands with the proposed Sports Centre and schools complex. The other two connections shall be provided along the PANCR.

Where cycle routes share roads, appropriate measures shall be used to define and segregate cyclists' road space

#### Urban Design Objectives

##### UD4

The Planning Authority will encourage flexible use, including small scale employment use at the edge buildings, including live / work dwellings. Acceptability of proposed uses will be subject to normal development control criteria and particularly protection of residential amenity.

##### UD5

While density variations in accordance with the density ranges are permissible, it is an objective of the Plan to achieve the maximum dwelling numbers across the Plan lands.

##### UD6

It is an objective of the Plan to achieve the dwelling mix across each neighbourhood. Variations in mix on a planning application basis may be permissible subject to the applicant being able to demonstrate to the satisfaction of the Council that the percentage dwelling mix across the land holding will be achieved. Applicants seeking deviations from dwelling mix will be required to submit a Framework Plan demonstrating how required dwelling mix will be achieved across their overall landholding.

##### UD7

The Reserved Area (15.8 ha) shall be considered for development following a detailed Flow & Flood Study over an extended time period (at least 5 years (refer to Section 5 Infrastructure or *Figure 4.6.1*) or as otherwise agreed with the Council. If the study finds the area is necessary for attenuation purposes, then it shall not be developed and shall be retained as open area in addition to the public open space quantum set out in this Plan.

#### Urban Design Objectives

##### UD8

The level of shopping provision will be such as to serve local needs only. All retail development applications shall be in accordance with the County Retail Strategy.

##### UD9

Each Neighbourhood should establish a clear distinction between public and private space. Buildings should overlook streets, footpaths and open spaces to foster security. Gaps in the line of buildings should be avoided and leftover spaces utilised to help the clarity of the neighbourhood.

##### UD10

Create a place with a sense of well being and amenity, incorporate public spaces and routes that are lively and pleasant to use. Establish a feeling of safety and security, encourage an uncluttered and easily maintained space with attractive planting, well designed lighting and street furniture. Ensure that buildings address the urban street and provide 'front door' back of pavement pedestrian access.

##### UD11

Develop a place that has a clear image and is easy to understand. Encourage the use of landmarks and focal points, views and gateways to particular areas. Promote the use of art and crafts, signage and lighting to increase the clarity of the space.

##### UD12

Establish a mix of compatible uses that can be integrated among a variety of layouts and building form.

## Infrastructure Objectives

**INF1**

The objective of Louth County Council is to obtain a high quality urban environment and infrastructure design for the three neighbourhoods and the Master Plan overall.

**INF2**

One of the main urban design objectives for the Plan lands is to create a vibrant, integrated, safe and secure environment for the population. It is an objective, therefore, to facilitate and strongly prioritise safety and the ease of movement for pedestrians, cyclists and public transport. Movement by private car is accommodated, but does not receive a priority level above more sustainable transport modes. The Plan facilitates safe but not necessarily direct or fast movement by private car through the Plan lands.

**INF3**

To seek to achieve a balance between the use of private transport with the need to promote alternative modes of transport such as public transport, cycling and walking.

**INF4**

While the Council recognises certain minimum roads engineering standards are necessary, all applications will be assessed against priority treatment for cyclists and pedestrians.

## Infrastructure Objectives

**INF5**

Car parking shall be an integral part of the design elements for the urban frameworks. Large expanses of surface car parking will be discouraged, particularly in the civic/commercial centres. Where surface parking is acceptable at the civic/commercial centres it shall be located behind the building line. Alternatively, to avoid creation of large expanses of car parking, underground parking or multi-storey parking facilities should be used, depending on urban design impacts. In residential areas grouped parking will be encouraged, again behind building lines.

**INF6**

To protect and develop existing groundwater sources and aquifers in the county and to restrict and control development in a manner consistent with the proper management of these resources

**INF7**

The proposed extension to the trunk main shall be designed and constructed in accordance with best practice from a technical and environmental perspective. It shall incorporate flow measurement facilities and shall be constructed as a single entity in its entirety.

**INF8**

The Local Authority will require compliance with IO 1(Section 6) to the effect that 'non-providers' will be permitted to connect to infrastructure subject to reasonable apportionment of provision costs. The Council shall determine reasonable apportionment in the absence of agreement between parties.

## Infrastructure Objectives

**INF9**

Where it is necessary to re-profile, widen or deepen existing streams to facilitate drainage or for any other reason, the edge condition shall be reinstated under the supervision of a properly qualified ecologist. Streams shall not be culverted except in the three neighbourhood centres. All proposed works shall be subject to detailed environmental assessment which shall include appropriate mitigating measures to protect and re-instate habitat.

**INF10**

A stormwater management plan will be required for the entire area based on the CIRIA publication "Sustainable Urban Drainage Systems". Attenuation Tanks will not normally be permitted within each individual development but shall be provided on a regional basis. Control of stormwater at source will be encouraged.

**INF11**

Subject to detailed studies (including flow studies) of the existing flow regime, alternative arrangements may be considered. Developers will be required to submit a Management and Operation Plan for design, construction and post construction, which will incorporate proposals for the prevention of flooding and include detailed ecological assessments, and mitigating measures.

**INF12**

While recognising that certain utilities have a monopoly position in respect of the supply of ducted services, the County Council will encourage an open access protocol in respect of the provision of ducting for utilities.

## Infrastructure Objectives

**INF13**

It is an objective that existing overhead lines and all new lines be placed underground throughout the Plan lands. In particular overhead cables will not be permitted within the linear park or pocket parks. Sub-stations and other facilities including gas and telcom facilities shall be placed at the least obtrusive locations.

**INF14**

The Council will require recycling 'bring' facilities to be located strategically around the Plan lands so that every household has convenient access to them. Facilities for the recycling of glass, paper, clothes and beverage cans must be provided within the Plan lands. Additional facilities may also be required. They should be located so as to minimise negative impacts on residential amenity and be easily accessible to collection vehicles.

**INF15**

For all developments, including residential developments comprising 10 or more units, and non-residential development exceeding 1000m<sup>2</sup> gross floor-space, the Council will require at least 10% of predicted energy requirements to be provided, on site, from renewable energy sources.

The heating energy performance of new buildings shall not exceed 50kwh/m<sup>2</sup> of useful floor area.

#### Phasing & Implementation Objectives

##### IO 1

Landowners / developers with interests in developing in the area shall enter appropriate legal / financial agreements to secure delivery of the infrastructure, including roads, drainage, services, water supply, recreation and civic / community, required to ensure the successful implementation of the Plan. A body corporate or other legal entity shall be established, capable of both entering into a legal / financial agreement and delivering on the contents of the agreement to the satisfaction of the Council.

#### ***The required legal / financial agreement shall, inter alia, provide for the following***

The design and construction of the Northern Cross Route from the R132 to the R166 as a single contract.

Construction of the Northern Cross Route from the R166 to the Port at Drogheda

The design and construction of the foul sewer from its existing 'end point' in Neighbourhood Three, westwards as far as R132. The sewer shall be designed and constructed so that sufficient capacity is provided to accommodate the Plan lands, the wider LAP lands and other lands beyond the LAP lands that can drain by gravity to the sewer.

Alterations to the Ushers and Beaulieu streams and other surface water arrangements to provide suitable and sustainable surface water drainage of the area without negative flooding impacts elsewhere. This shall include design of an overflow pipe provisions of the Master Plan.

The provision of the linear parks, including the sports centre in accordance with the provisions of the Master Plan.

Arrangement to facilitate access to infrastructure from non-parties to the agreement subject to reasonable apportionment of the overall costs of providing the infrastructure.

#### Phasing & Implementation Objectives

##### IO 2

It is an objective of the Plan to secure the development of the Plan lands in accordance with *Table 6.0 Phasing & Implementation* and the phasing programme as set out in Diagrams 1-4 on page 70.

##### IO 3

Place Names - Streets, housing areas, community, recreation and other facilities shall use local place names, preferably using historical Irish names and must be done in consultation with the Local Authority.

##### IO 4

There will be a presumption in favour of granting planning permissions in the Plan area when the Council is satisfied the necessary physical, social, community, recreational and civic/commercial infrastructure is in place, or will be provided within specified time periods as set out in the Implementation objective table on page 68. In this regard, all planning applications shall be accompanied by a statement setting out the time periods for delivery of infrastructure in accordance with the Implementation objective table to the satisfaction of the Council. The Council may use agreements under Section 47 of the Planning and Development Act 2000, as amended to secure the provision of necessary infrastructure in tandem with the development of the area.

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*Appendix 7.2  
Landscape and Open Space  
Case Studies*



1



2



3



4



5

**Precedent Case Study 1**

**Urban Farm & Community Centre**

**A** Precedent Case Study 1

Urban Farm & Community Centre

Mikkelhorst Ecological Farm, Groningen

Client: Foundation Ecologische Boerderij De Mikkelhorst

Architects: Onix Studio

Located in a residential area in Groningen, Netherlands, the project comprises a children's zoo, market garden, offices, changing rooms, tea room, stables and barn. The facilities are designed to cater fully for mobility impaired and other disabled users.

- 1. Paddocks for small farm animals
- 2. Residential buildings adjacent
- 3. Local vernacular developed

**B** Airfield, Dublin

Airfield Trust

This urban farm is located in Dundrum and is used as an educational centre for visiting schools. The farm forms part of a larger series of gardens and walks.

4/5. Variety of breeds maintained for educational purposes



1



3



5



2



4



6

#### Precedent Case Study 2

#### High Quality Active Recreation

#### Precedent Case Study 2

#### High Quality Active Recreation

Finglas Leisure & Community Centre, Dublin

Dermot Foley Landscape Architects Donnelly Turpin Architects

Comprises public park, youth centre, creche, swimming pool, all-weather pitches, parking. Managed by Dublin City Council. Maintained by private sector property management firm.

This project is designed and maintained to cater for continuous, intensive use by a broad range of users. Key issues include:

1. Well defined arrival and entry
2. External lighting
3. Public pedestrian route bisects site
- 4/6. Key planting treatments
5. Night-time use

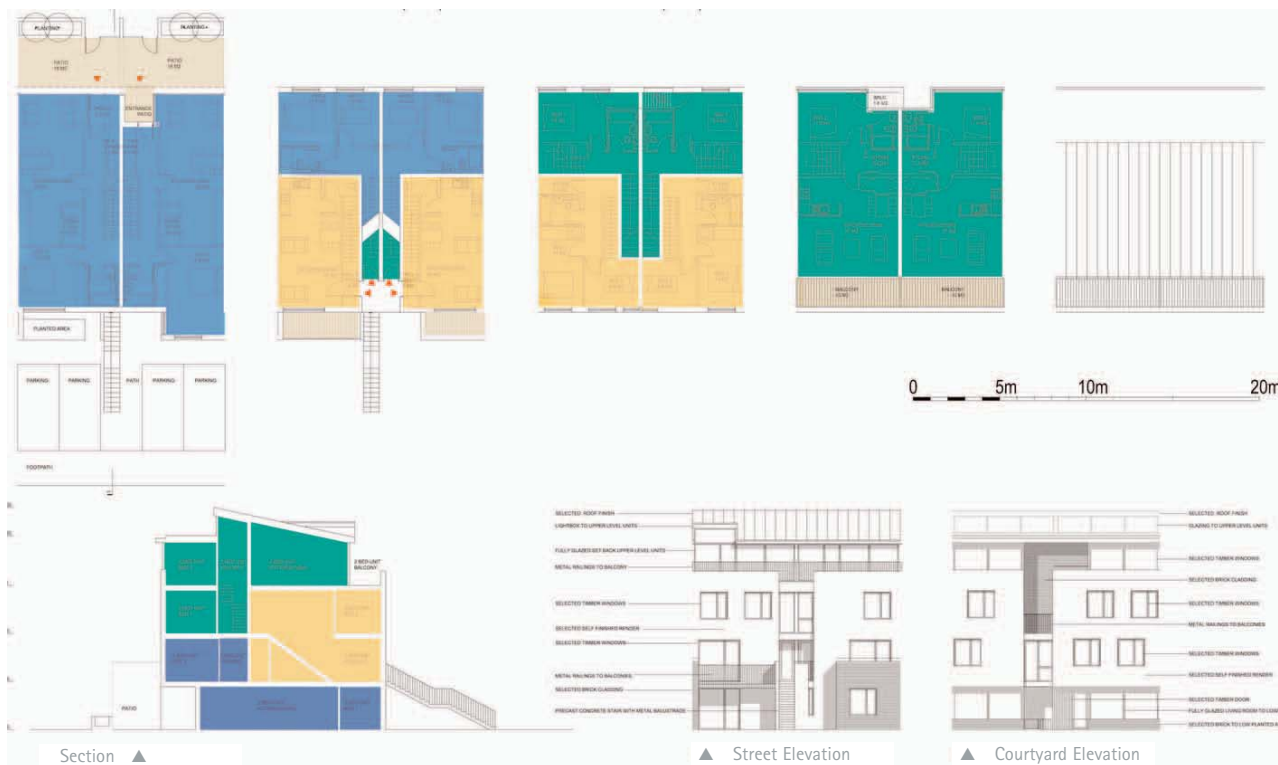
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*Appendix 7.3*  
*Indicative Character Areas &*  
*Housing Typologies*

## Diswelltown



▲ Typical Site Section



### Precedent Case Study 1 Diswelltown

*Context:* Gently sloping green field site, bounded to the east by the M50, and to the north and west and south by existing dwellings.

*Housing Type:* Composed of 4 storey courtyard block, terraces arranged around a public space.

*Vehicular Access:* is to the 4 external sides of the block.

*Pedestrian Access:* is to the 4 external sides of the block and 2 pedestrian entry points to public courtyard.

*Private Open Space:* Ground floor units provided with terraces; intermediate level units with balconies and upper level units with roof terraces.

*Public Open Space:* Communal space is provided by a 0.5 acre communal public courtyard.



▲ Site Plan

## Cherryorchard



▲ Site Plan



Terrace Unit



Corner Element



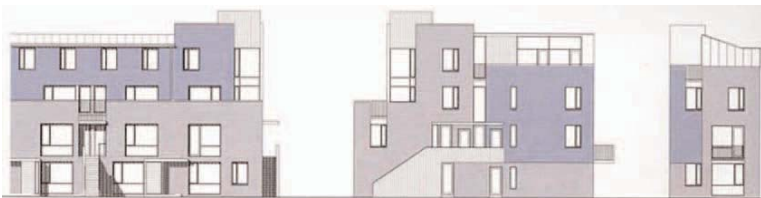
End Block



4 Storey Duplex



▲ Side Elevation



▲ Front Elevation

▲ Side Elevation

▲ Rear Elevation



▲ Typical Site Section

### Precedent Case Study 2 Cherryorchard

*Context:* Dublin City Council sought tenders for an extensive programme of affordable housing in Cherry Orchard. 30% of the units are for affordable shared ownership housing for people on the Corporation list, while the balance are for private sale within an agreed price range. The site is in a suburban location adjacent to Park West and close to a railway station.

*Housing type:* The scheme comprises a range of 3 & 4 storey duplexes with some two storey houses.

*Vehicular Access:* One car space is provided per dwelling as the scheme is adjacent to the proposed Park West station on the Cork railway line.

*Private Open Space:* Most units have a ground level garden while feature and corner apartments have balconies.

*Public Open space:* A crèche is proposed within the central public space.



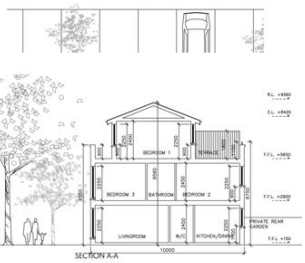
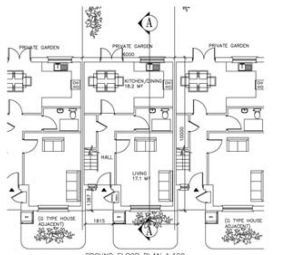
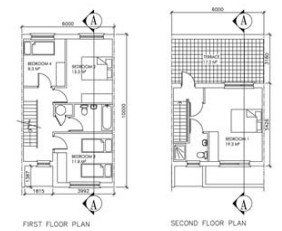
### Adamstown



▲ Site Plan



▲ Typical 3-Storey House  
130 sq m



### Precedent Case Study 3 Adamstown

*Context:* New urban sustainable community to be created pursuant to the Adamstown SDZ which was designed using a holistic approach integrating urban design, mixed land use, a mix of housing types and sizes, alternative transport links, landscape parks and open space, energy efficiency and phased development. Phase 1 is the first residential scheme proposed under the SDZ and consists of a total of 448 residential units.

*Housing type:* Composed of a mix of 2- 3 storey houses with gardens and 3-4 storey blocks with duplexes and apartments.

*Vehicular Access:* Supported by several road improvement schemes to give access to Adamstown including the initial section of the Outer Ring Road and improvements to the N4 between M50 and the Leixlip Interchange and the N4 junction with Newcastle Road.

*Pedestrian Access:* guiding principle that public transport be within 5-10 min. walk of all areas. Pedestrian and cycle routes provided to all services and facilities and cycling and pedestrian priority measures implemented at certain key locations.

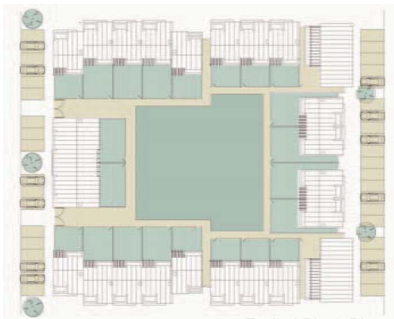
*Private Open Space:* terraced housing provided with backgardens; ground floor duplex units provided with patio spaces; apartments and upper level duplexes provided with terraces or balconies

*Public Open space:* Communal space is provided by 3 landscaped open spaces dispersed through the development with a larger park planned opposite the proposed primary school.

## Mahon Peninsula



▲ Site Plan



▲ Typical Block Plan



▲ Axonometric View



▲ Carport along street edge



▲ Vehicular streets



▲ Aerial View of a Typical Block



▲ Typical Block Section



▲ Partial Street Elevation

### Precedent Case Study 4 Mahon Peninsula

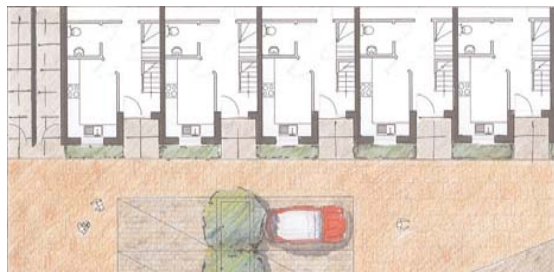
**Context:** We propose new residential community of a sufficiently high density to realise the full potential of the excellent aspect and orientation of the site in Mahon peninsula (Ballinure) Cork city.

**Housing type:** A typical residential cluster consists of 20 houses and 6 apartments. Each house fronting onto the pedestrian street has a single aspect with a private patio garden of at least 30m<sup>2</sup> which opens into a shared private space of around 1224m<sup>2</sup>. Each private house also has a balcony at first or second floor level. The apartments too, have a private balcony and each building with 3 apartments has a shared roof garden.

**Pedestrian Access:** Access to the houses would be from a series of pedestrian streets running North - South or directly from the access roads running East - West. Parking spaces under car ports would be provided for each dwelling, plus additional visitor parking.

**Open Space:** A typical residential cluster consists of 20 houses and 6 apartments. Each house fronting onto the pedestrian street has a single aspect with a private patio garden of at least 30m<sup>2</sup> which opens into a shared private space of around 1224m<sup>2</sup>. Each private house also has a balcony at first or second floor level. The apartments too, have a private balcony and each building with 3 apartments has a shared roof garden.

## Ballycullen



### Precedent Case Study 5 Ballycullen Development

**Context:** The subject lands are a south facing sloping site situated between the Ballycullen Road to the west and Daletree Road to the east.

**Housing type:** The layout comprises a wide range of dwelling types and sizes in order to accommodate the various household types from starter homes through to larger established family accommodation.

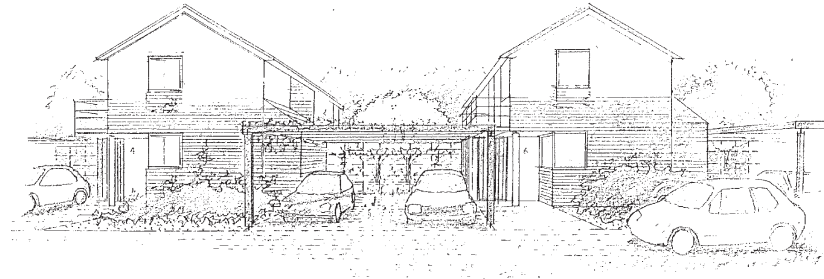
**Vehicular Access:** The proposed parking provision is 2 spaces per house, apartment or duplex unit. A variety of methods have been employed in order to deal with the level of provision required while avoiding large clusters of parked cars and also to minimise the impact of the resulting extent of hard landscaping with planting.

**Private Open Space:** Private open space has been provided at approx. 60 sqm. per unit.

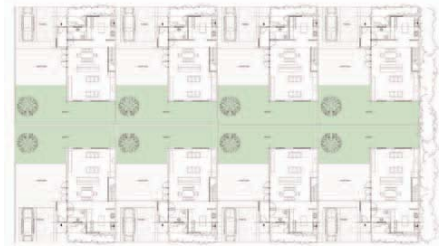
**Public Open space:** The area to the south of the site lying above the 120m contour line is provided as Class 1 Open Space.

The proposal for Class 2 open space areas are provided in a number of small "pocket parks" and green spaces to enhance the "green route" through the site.

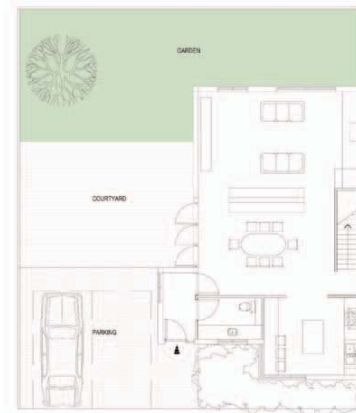
## Detached Housing Prototype



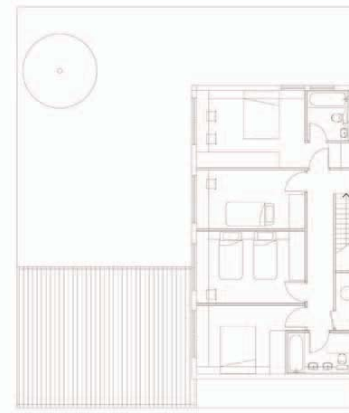
▲ Typical Massing



▲ Typical Block Layout



▲ Ground Floor Plan



▲ First Floor Plan

### Precedent Case Study 6 Detached Housing Prototypes

*Housing type:* Composed of large 2 storey 4 bed, detached houses. The traditional back and front gardens have been replaced by a courtyard and rear garden.

*Density:* This alternative treatment of private open space allows for 16 /acre detached. This compares to traditional semi detached at 10 - 12/acre

*Parking:* 2 covered parking spaces, in curtilage avoids need for parking on street

*Private Open Space:* Large courtyards at lower ground level, roof gardens are accessed from first floor extending onto roof of unit below.

## Clonsilla Fingal



### Precedent Case Study 7 Clonsilla Fingal

The residential development of private housing at Clonsilla Road incorporates 77 units on a 4 acre site. The layout comprises 44 terraced 2 and 3 bed houses and 33 apartments in small blocks ranged in a linear series of courtyards. This allows South or West orientation to each unit (all units). The style is modestly contemporary and is one of the first higher density developments at 46 units per hectare (19 units per acre) to be complete in the Dublin area.

# Fernliegh



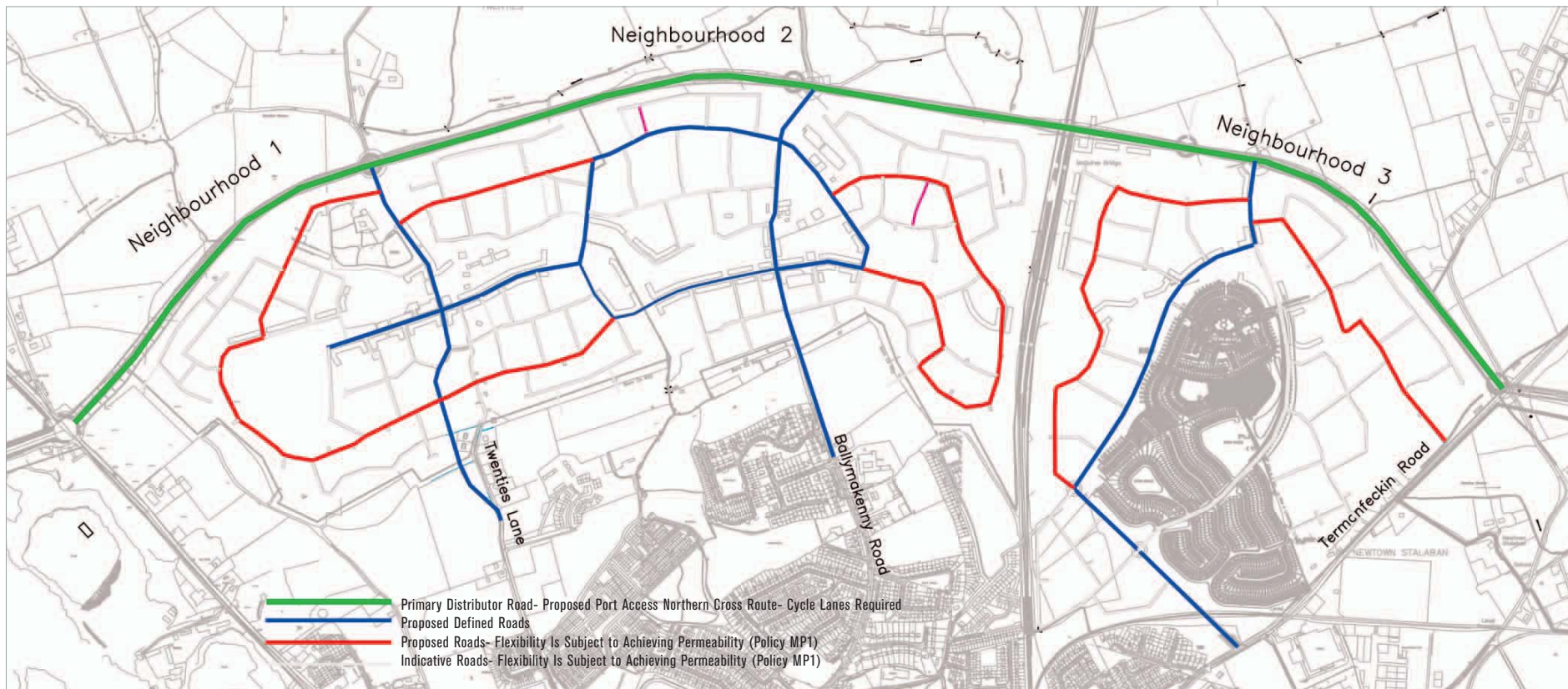
Precedent Case Study 8  
Fernliegh



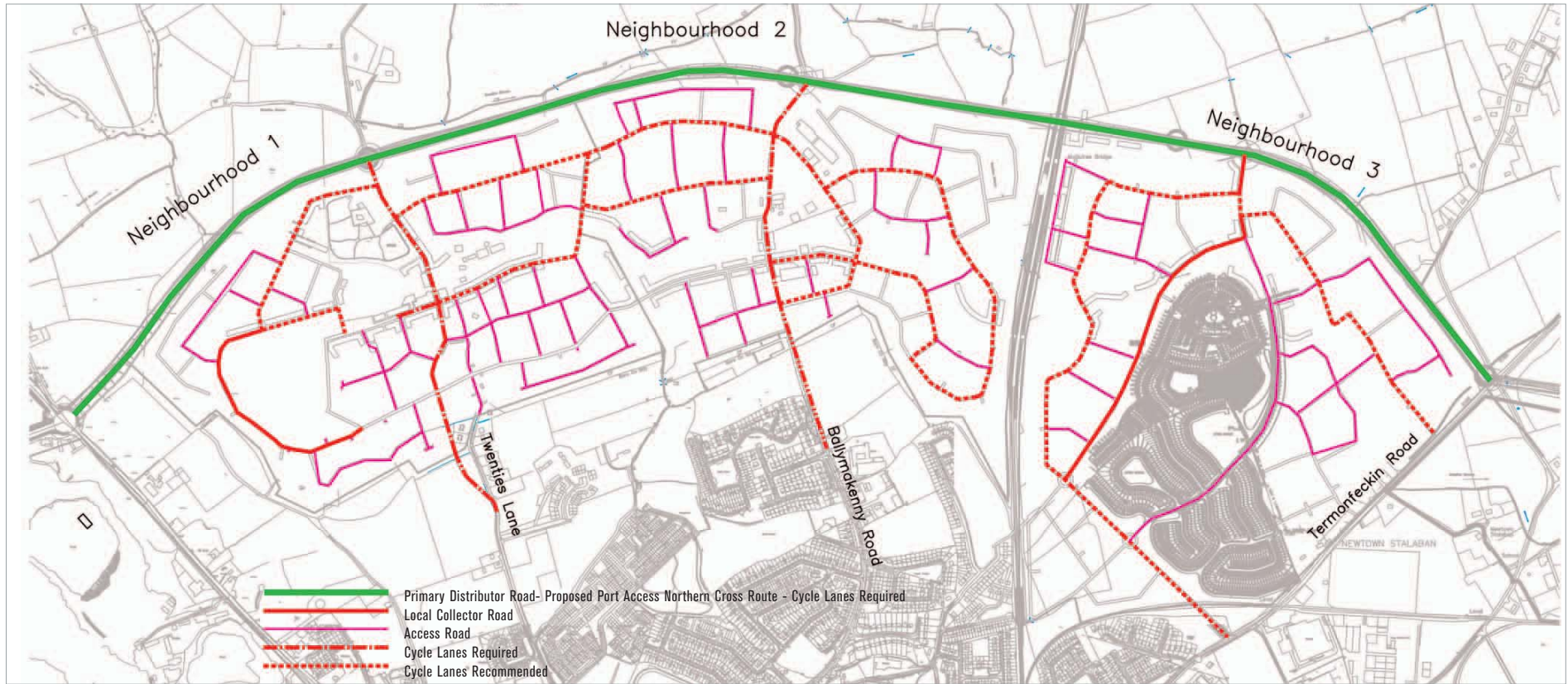
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*Appendix 7.4*  
*Infrastructure Diagrams*

### Proposed Fixed Roads



## Proposed Road Classification



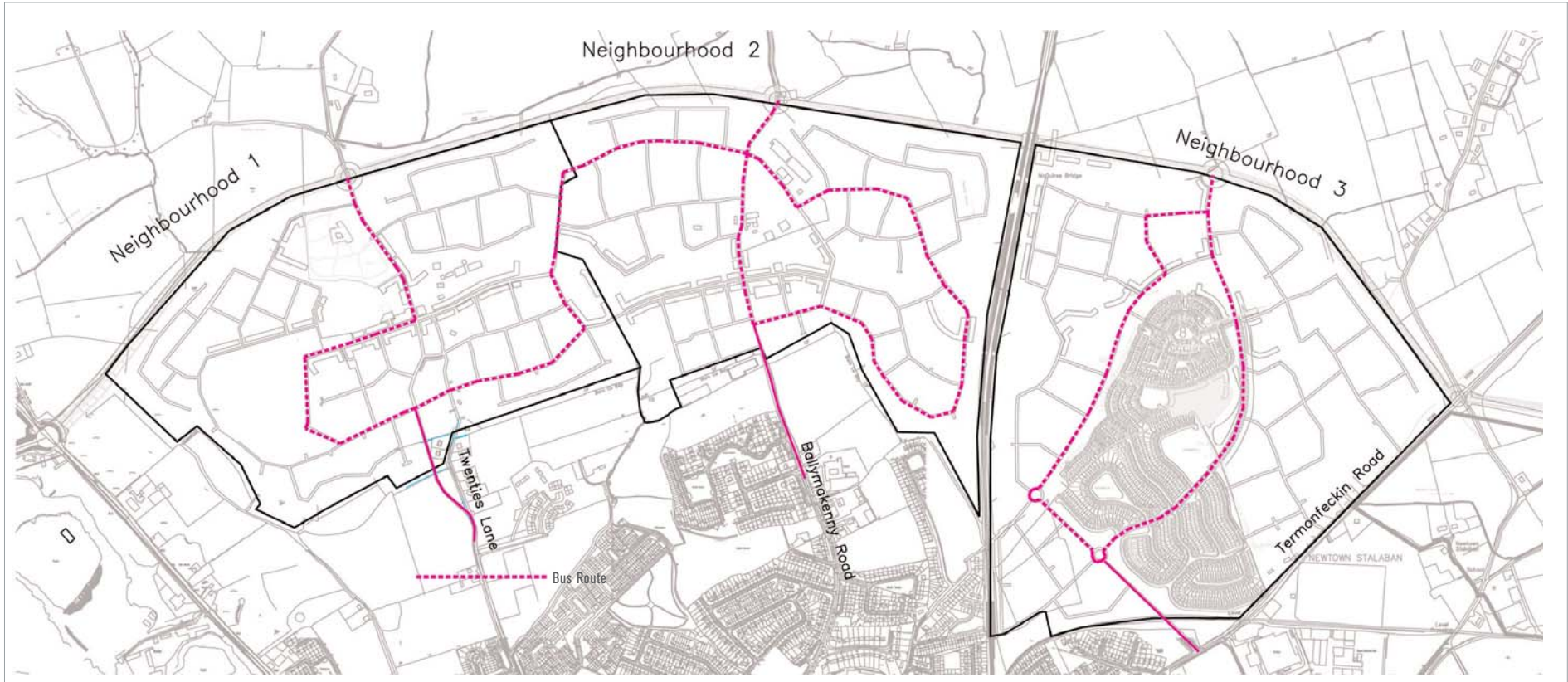
▲ Proposed Roads Layout

### Proposed Main Pedestrian Spines and Cycle Ways



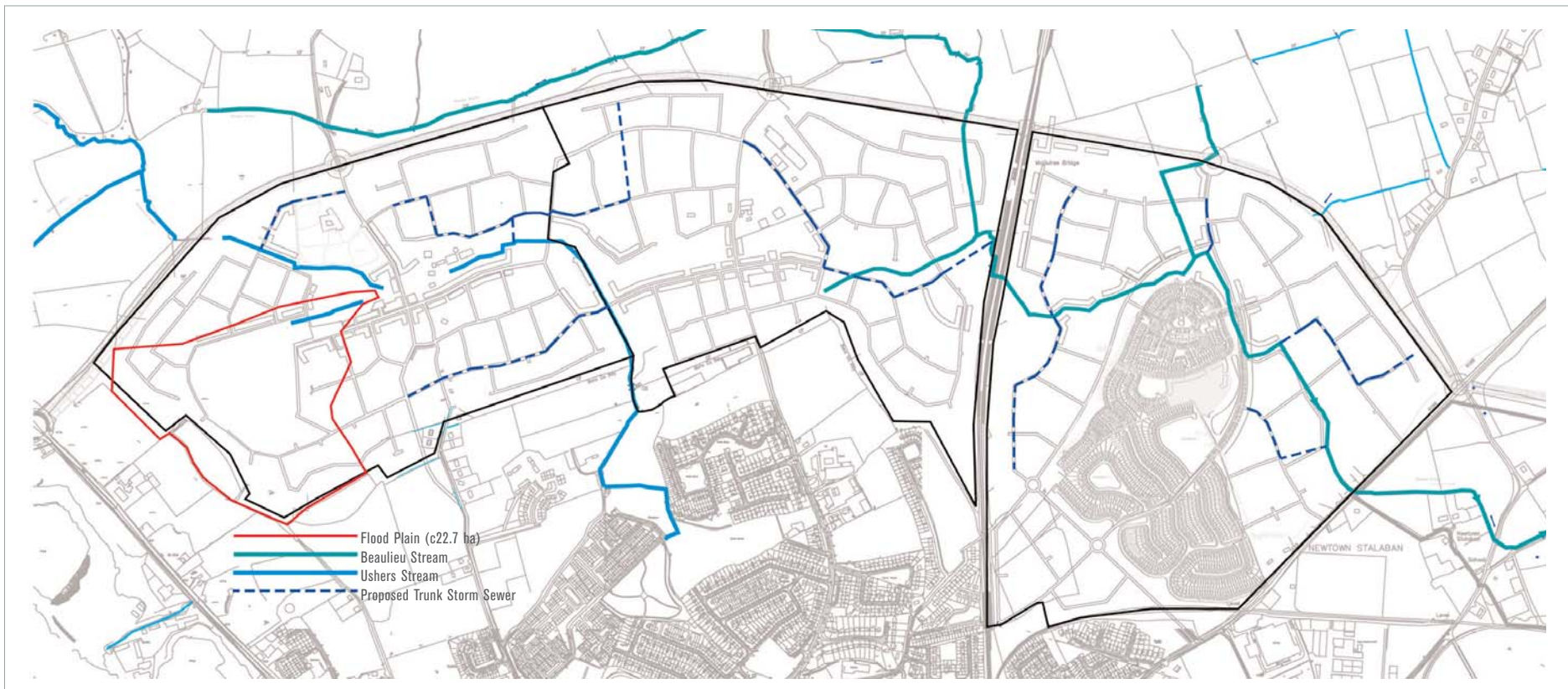
▲ Proposed Pedestrian Spines and Cycle Ways

## Proposed Bus Routes



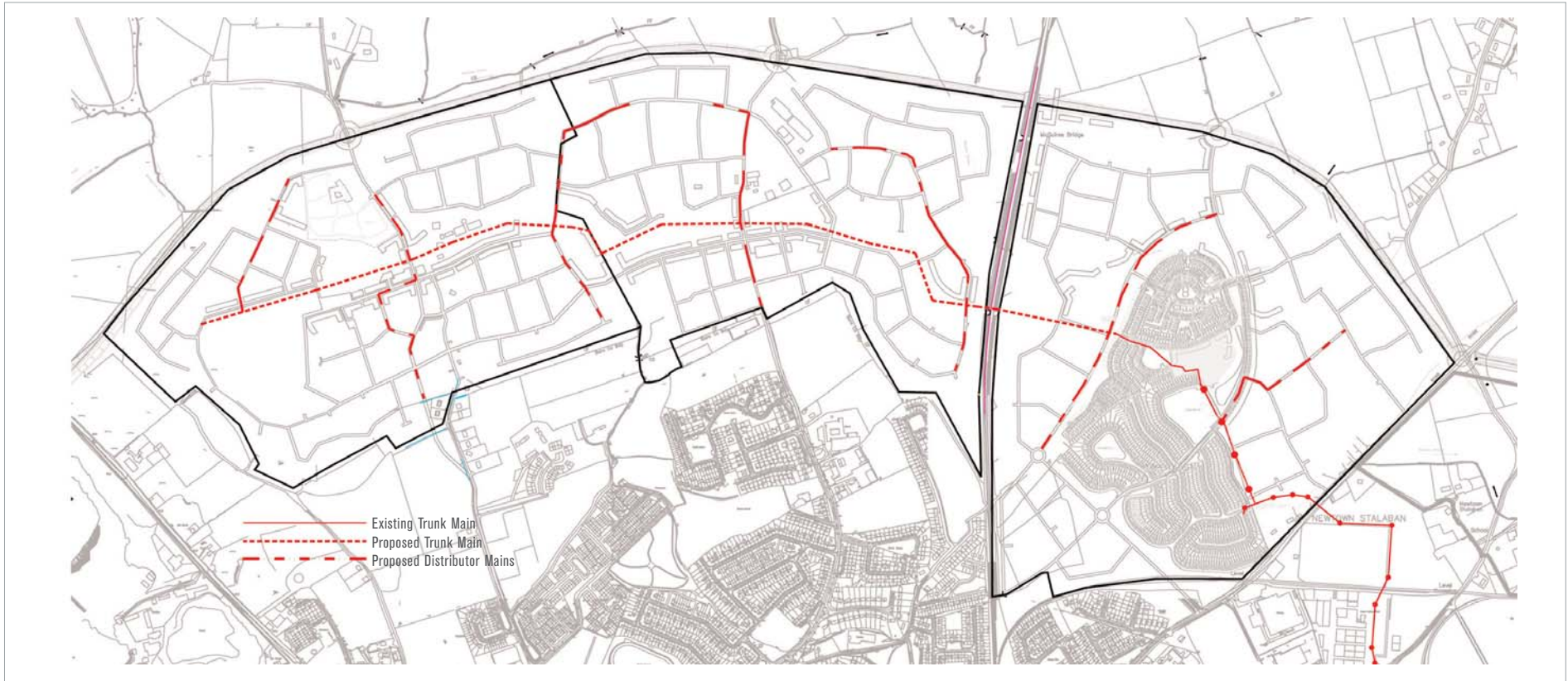
▲ Proposed Bus Routes

### Existing and Proposed Stormwater Drainage Layout



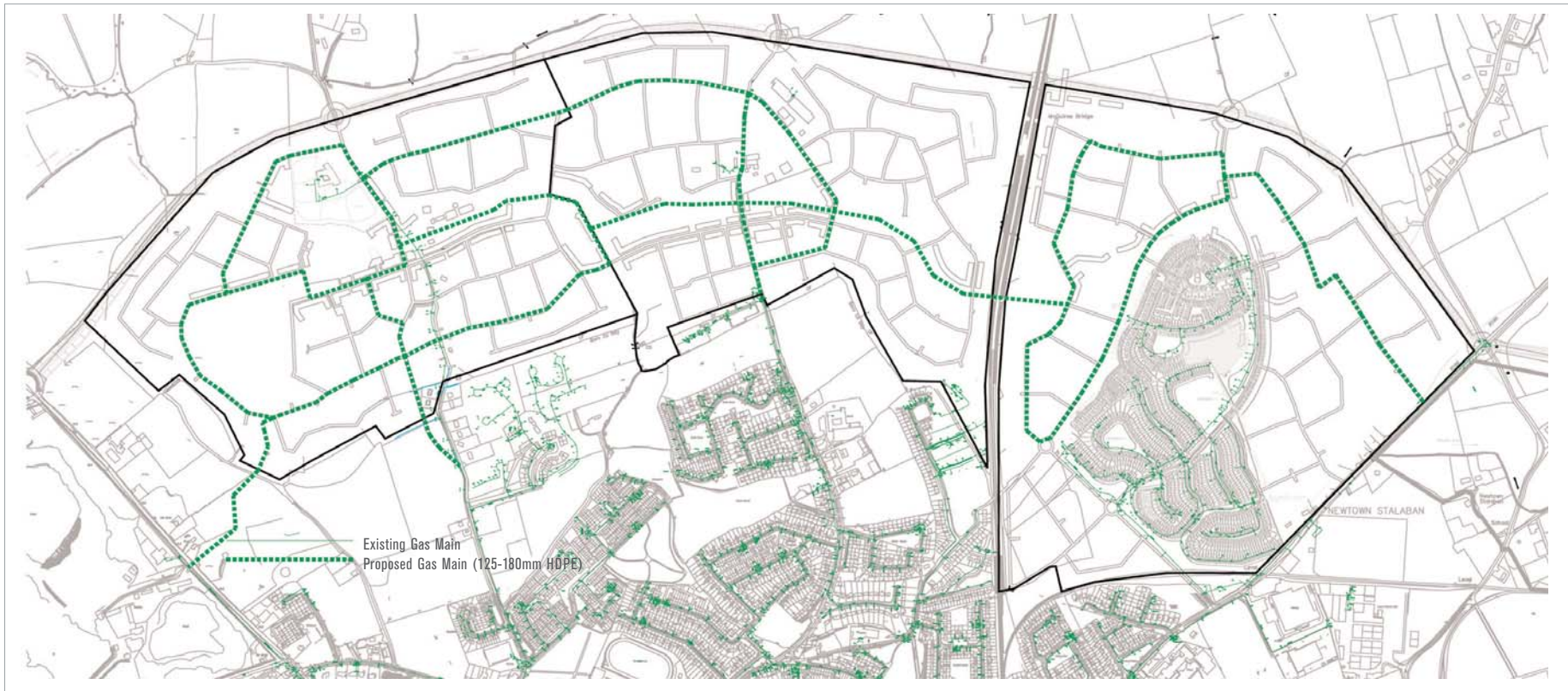
▲ Existing and Proposed Stormwater Drainage Layout

## Existing and Proposed Foul Drainage Layout



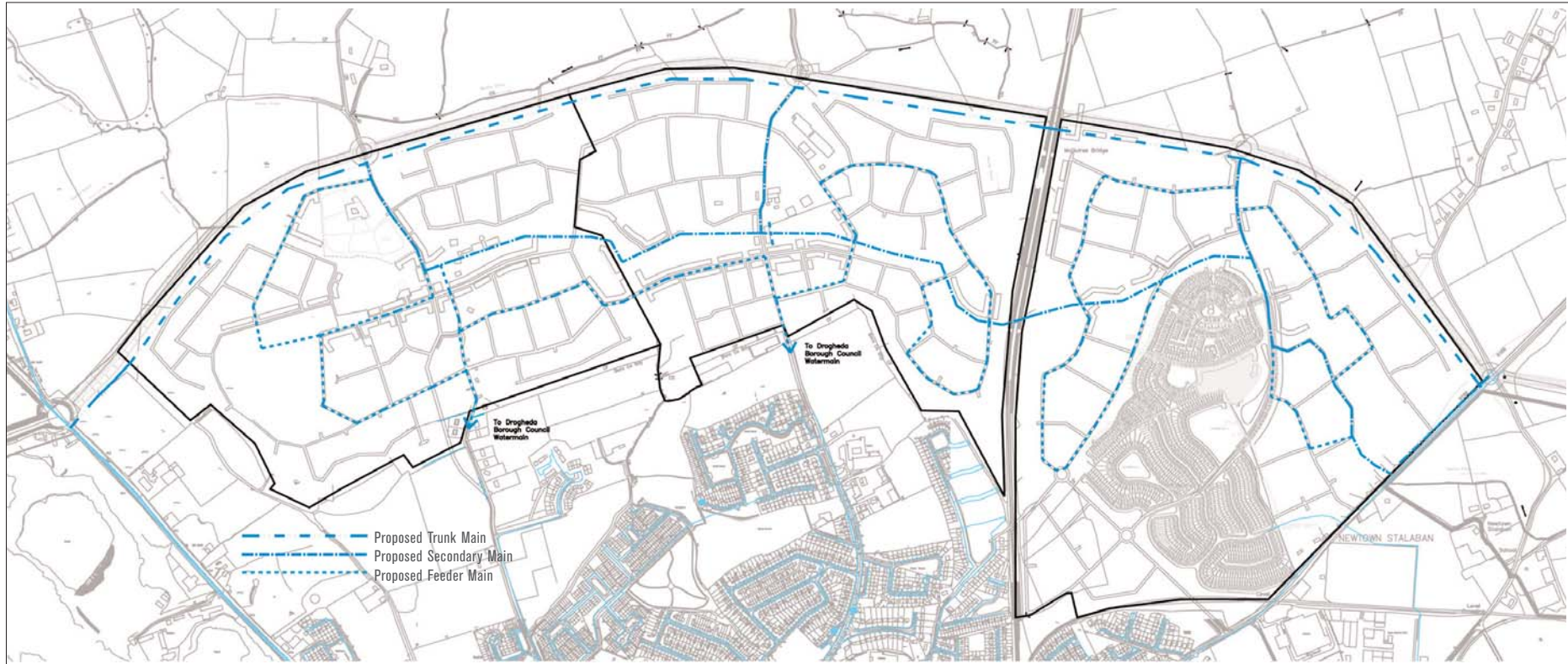
▲ Existing and Proposed Foul Drainage Layout

### Existing and Proposed Gas Networks



▲ Existing and Proposed Gas Networks

## Existing and Proposed Watermain Layout



▲ Existing and Proposed Watermain Layout

### Existing Telecom Networks



▲ Existing Telecom Networks

## Existing ESB Networks



▲ Existing ESB Networks