

**Carrigtwohill North  
Framework Masterplan Study  
August 2015**

AS AMENDED BY CONSULTATION



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## **Section 1. Purpose of Study**



### 1.1 Introduction/Purpose of this Study

- 1.1.1 This is a framework masterplan study for the development of the lands at Carrigtwohill North (zoned X-01) in the 2011 Midleton Electoral Area Local Area Plan. Given the multiplicity of landownership and the complexity of infrastructure provision required, the overall approach taken in this masterplan study is to provide a framework within which proposals for the development of individual sections can in the future be co-ordinated towards shared principles.
- 1.1.2 Carrigtwohill North is located directly to north of the Metropolitan Town of Carrigtwohill and adjoins the recently reopened Cork-Midleton Railway line and encompasses the new Carrigtwohill Railway Station. Hence, development at this location will allow for ease of access to the services centre provided by Carrigtwohill and can contribute to the creation of critical mass of population along the recently re-opened Cork-Midleton rail line. The Development of such a large site in close proximity to the suburban rail network offers a major opportunity to provide new homes where residents can gain easy access to high quality public transport from the outset.
- 1.1.3 In developing a clear vision and delivery methodology for these lands, development on this site at Carrigtwohill must deliver a person-centred development built around enhanced opportunities for walking, cycling and public transport use that provides for a high quality environment for people to live. The key components of such a place are:
- Quality housing to meet the needs of citizens from all walks of life;
  - Well designed movement corridors (segregated where appropriate);
  - Effective connectivity to public transport, high quality amenity provision;
  - Attractive open space offering the opportunity for high quality of life; and
  - Best practice in overall design and layout.
  - Sensitive integration of the development into the existing landscape providing for the protection of environmental resources including biodiversity and water

### 1.2 Policy Background

- 1.2.1 The National Spatial Strategy 2002, the South West Regional Planning Guidelines 2010 and the Cork Area Strategic Plan (CASP) update 2008, all recognise the importance of promoting and developing the Metropolitan Towns of Cork and in particular to focus future population growth along the railway line through an integrated land use and transportation strategy. In the context of the focus on Metropolitan Cork for future population growth it is considered critical that the proposed masterplan sites in Metropolitan towns like Carrigtwohill are developed in order to achieve the required growth.
- 1.2.2 In 2005 Cork County Council prepared a Special Local Area Plan for Carrigtwohill to establish an agreed development framework for the town that would guide development and optimise development opportunities along the planned re-opening of the Cork-Midleton railway line. Within the Plan, specific objectives pertain to the preparation of a masterplan for a 128ha linear-shaped site

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which straddles the railway line both to the north and south. Local roads mark the consecutive western and eastern site boundaries. The objectives for the site include the delivery of a new residential neighbourhood of up to 3,000 units, appropriate employment development on the site through a phased programme of development,

- 1.2.3 The Midleton Local Area Plan 2011 which superseded the Carrigtwohill Special local Area Plan identifies the X-01 site (Carrigtwohill North) for substantial residential development, with the additional provision of employment, educational and community facilities. This plan also sets out in detail the main provisions to be contained in the Carrigtwohill North Framework Masterplan.
- 1.2.4 It is an objective of the Cork County Development Plan 2014 to maximise new development, for both employment and housing, in the Metropolitan towns served by the Blarney Midleton/Cobh Railwayline and to enhance the capacity of these towns to provide services and facilities to meet the needs of their population. The Cork County Development Plan 2014 has therefore identified Carrigtwohill for significant growth with a population target of 11,618 for 2022 which will require the construction of an additional 3,196 housing units and it is an objective to accommodate a substantial portion of this growth target for the town on the Carrigtwohill North lands.
- 1.2.5 The Cork County Development Plan 2014 therefore identifies Carrigtwohill North as a priority project which is proposed in the short term. Projects proposed in the short term are projects where developments can commence almost immediately when the economy and housing market recovers. Cork County Council will invite the appropriate infrastructure agencies to make immediate provision for these projects in their capital programmes so that substantial progress can be made during the lifetime of the County Development Plan.

### **1.3 Previous Masterplans for Carrigtwohill North**

- 1.3.1 In preparing the previous masterplan for this site the Planning Authority carried out a series of consultations with landowners/residents within and adjoining the Masterplan site and with the wider Carrigtwohill community.
- 1.3.2 A Preliminary Draft Masterplan was prepared in early 2010 and a period of consultation with landowners was undertaken which resulted in a Draft Masterplan was prepared for the site for in November 2010. Submissions received during the public consultation process raised a number of issues, some of which were addressed during the subsequent Local Area Plan process for the Midleton Electoral Area. One of the main changes to the Draft Masterplan during the Local Area Plan process was the need to undertake a detail Flood Risk Assessment of the site and Carrigtwohill Town. This framework masterplan absorbs the submissions from the previous public consultation process undertaken, as well as the result of the detail Flood Risk Assessment done.



## Section 1: Purpose of the Study

1.3.3 Since the adoption of the 2011 Local Area Plans and the emergence of Spatial Planning and National Roads Guidelines for Planning Authorities aiming to protect public investment in National Road Infrastructure it has been recognised that Transport Assessments for some of the larger Masterplan sites are required in order to examine the transport impacts of the proposed developments on the local road networks in the future, in accordance with the NRA Traffic and Transport Assessment Guidelines (May, 2014). A Transport Assessment has been carried out for the Carrigtwohill development (now published as a supporting background document to this study) in order to assess its influence on the local road network and to determine the necessary road infrastructure requirements to accommodate each phase of the development. The main conclusions of the study have been included in this framework masterplan.

### 1.4 Amendment to the Midleton Local Area Plan 2011

1.4.1 A number of locations throughout the county have been identified as opportunity sites in the 2011 Local Area Plans, where the preparation of individual Masterplan's are required. Carrigtwohil North is one such opportunity site. The Guidelines for Planning Authorities on Local Area Plans state that the preparation of non-statutory documents/plans (village design statement, environmental improvement plans or individual site development briefs) to guide specific development proposals is acceptable as long as they are consistent with the parameters laid down by the statutory plans. This is further endorsed where it is stated that such non-statutory studies or frameworks, prepared by local authorities and working within defined policy and objective parameters of the relevant plan, are appropriate and complementary to the preparation of the statutory Local Area Plan.

1.4.2 This Framework Masterplan once completed will inform an amendment to the Midleton Electoral Area Local Area Plan 2011. The Framework Masterplan will act as a background planning guidance document to inform the future development of the site and the Local Area Plan will be amended to give the Framework Masterplan a statutory footing.

### 1.5 Role of Other Stakeholders

1.5.1 The County Council alone cannot deliver the necessary infrastructure or other supporting actions necessary make this development a success. To achieve the principle objectives associated with this development substantial co-operation between a wide variety of stakeholders is essential. In the area near this development site, Cork County Council will require assistance in the provision of certain medium to long term road and public transport infrastructure and improvements comprising:

- Amended and improved bus services;
- An increased frequency of train service;
- Support and funding for these and other transport interventions from the National Transport Authority; and

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- A new junction/interchange on the N25 at the former Amgen Site and ancillary local road network.
- 1.5.2 Irish Water is the body responsible for the provision of Water Services infrastructure, the present Carrigtwohill Waste Water Treatment plan is overloaded , however an upgrade is under construction and is due for completion in 2015.
- 1.5.3 There is adequate water supply available, however the requirement for further storage reservoir may need to be assessed.
- 1.5.4 In the wider Metropolitan area including Cork City, this development at Carrigtwohill North forms part of a strategy based on the Cork Area Strategic Plan (CASP) which envisages the implementation of complementary and co-ordinated land use and transportation initiatives by both City and County planning authorities. In order to compliment population and new housing development in locations such as Carrigtwohill North that are well served by the Suburban Rail Network it is critical that urban regeneration and employment development be prioritised in the City Centre and in locations close to Kent Station or other stations on the network. With specific regard to the eastern rail corridor that serves Carrigtwohill it is envisaged that urban improvements and redevelopment in the vicinity of Kent Station and Cork City centre will assist in making the eastern suburban rail service a viable option for residents along this rail line, by providing employment attractors to residents living east of the city. This is a critical requirement in the delivery of Cork's potential for economic growth based around a sustainable rail transport system within Metropolitan Cork.
- 1.5.5 In the short term, this masterplan study seeks to sets out a phased approach to the development of the site and the delivery of critical infrastructure. The phasing proposals provide for the minimum of infrastructure investment prior to the commencement of development. Each phase of development is then linked to the delivery of additional infrastructure
- 1.5.6 As with any strategic development site, the success or otherwise of this project relies on the support of all landowners and key infrastructure providers.

## **Section 2. Description of the Site and its surroundings**



### 2.1 Introduction

2.1.1 The purpose of this section is to describe the background to these development proposals and highlight relevant features of the Carrigtwohill North site, its' surroundings and supporting infrastructure. The section commences by describing how the development of this site can contribute to the overall requirement for new housing in the Metropolitan Strategic Planning Area of which the site forms a part. The physical features of the site itself are described and those which require retention or specialised treatment during the design of development proposals are highlighted. Finally, the section gives a description of the infrastructure that is available locally to support the development of the site (particularly water, waste-water and transport infrastructure) and attention is drawn to those aspects of the infrastructure framework where significant investment will be required in order to deliver the capacity necessary to sustain the development proposals set out in this study.

### 2.2 The Requirement for New Housing in the Cork Metropolitan Area

2.2.1 CSO population forecasts indicate that the population of Ireland is likely to continue growing over the next 30 years or so. The 2011 census recorded a population of 4.6 million persons for the State and the most recent research from the CSO suggests that this could grow to between 5.0 million and 6.7 million by the year 2046.

2.2.2 In 2011 the census indicated that the combined populations of the City and County of Cork (519,032 persons) was about 11.3% of the population of the state. Based on the CSO national projections, the population of the City and County could grow to between 550,000 and 770,000 persons by 2046.

2.2.3 Historic trends in the northern and western parts of the county suggest that, despite the national population growth trend, the populations of these areas are likely to remain relatively constant. Most, if not all, of the population growth in the county is likely to occur within the Metropolitan area close to Cork City.

2.2.4 In 2011 the total population of the Metropolitan Area including Cork City was 289,739 persons. Based on the preceding paragraphs, the population of this area could grow to between 321,700 and 541,000 persons by 2046.

2.2.5 To facilitate a co-ordinated approach to planning for population growth, the South West Regional Authority issued population 'targets' for the year 2022 in the Regional Planning Guidelines issued in 2010. These 'targets' have been used by the City and County Councils to prepare the Draft Joint Housing Strategy in January 2013. This indicates that the combined 2022 population target for the City and County areas of Metropolitan Cork is 363,891 persons and this figure is being used by both City and County Councils in the preparation of Statutory Plans.

2.2.6 In line with national and international trends, the average household size in Cork is continuing to decline. In the 2011 census the average number of persons in each household was 2.7 but this is

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expected to decline towards an average of 2.4 by the year 2022. The effect of this, after an allowance has been made for vacancies etc., is that to house the target population for 2022 (363,891), it will be necessary to construct over 51,000 new dwellings in the combined City and County Metropolitan Area.

- 2.2.7 Over the next 30 years (up to the year 2046) preliminary indications are that Cork City and the Metropolitan area around it may need to accommodate over 146,000 new households. About 77% of these (c.118,000) are likely to be 1 or 2 person households rather than larger family units. Although the majority of these smaller households will be formed by younger people, many are also likely to be in the older age cohorts. Cork City is likely to be the location of choice for the younger aged 1 or 2 person households, but there is likely to be significant demand in the County areas especially amongst the older age cohorts in this group.
- 2.2.8 Although many 1 or 2 person households may well choose to buy or rent a 3 or more bedroom dwelling the demand for smaller dwellings seems likely to be greater in future years than it has been in recent years.
- 2.2.9 Accordingly, there is a requirement to build 31,000 new dwellings within the County Metropolitan Strategic Planning Area to accommodate the current population target set out in the Regional Planning Guidelines. In order to meet this demand for new dwellings, the County Council has identified in its local area plans land suitable for housing development that is estimated will yield a total of 36,620 new dwellings as follows:

**Table 2:1 Housing Land Supply**

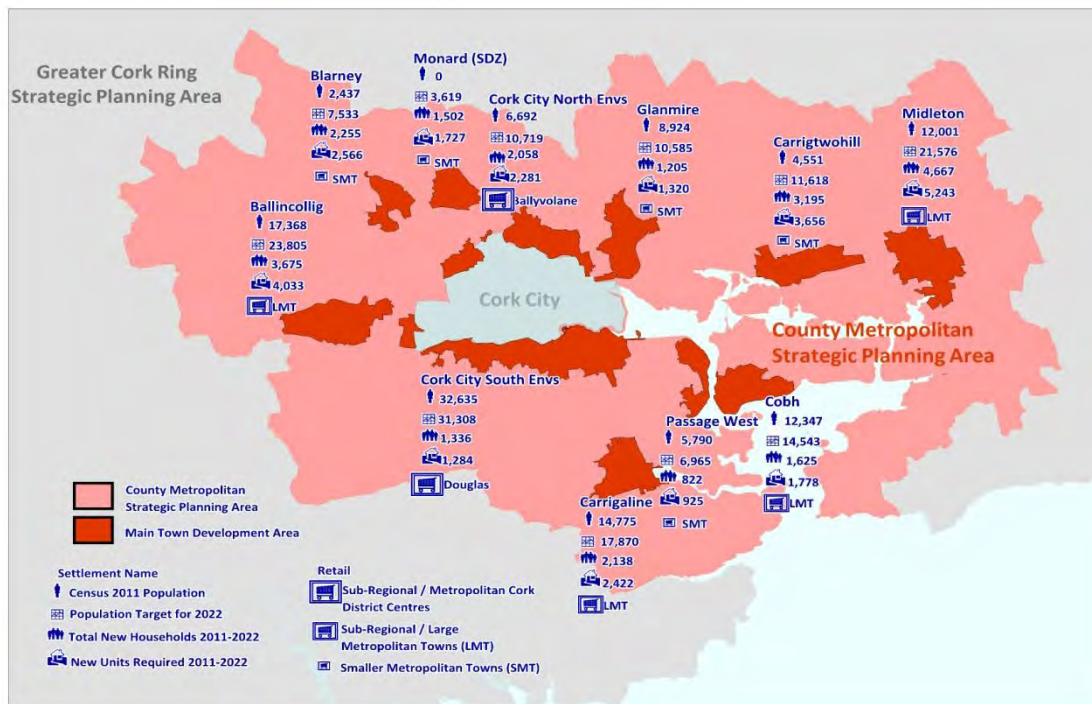
County Metropolitan Strategic Planning Areas	
Housing Land Supply Summary	
Residential Land Supply	Housing Units
Large Sites including (Masterplan Sites/Strategic Development Zones)	22,713
Other Zoned land in Main Towns	10,978
Villages	2,137
Rural Housing	1,672
<b>TOTAL</b>	<b>36,620</b>

- 2.2.10 Of the total housing land supply for the County Metropolitan Strategic Planning Area, 62% derives from a small number of large development sites which include Water-Rock, Carrigtwohill,

## Section 2: Description of the Site

Shannonpark (Carrigaline), Ballincollig, North Environs (Ballyvolane), Glanmire (Richmond and Ballinglanna), Blarney (Stoneview), Monard and Cobh.

Figure 2.1 County Metropolitan Strategic Planning Area



2.2.11 In order to support Government investment in infrastructure (particularly that in suburban rail and water infrastructure services in the Cork area) and limit the need for further investment in the short term, the County Council has prioritised its approach to the development of these sites. The Middleton, Carrigtwohill and Carrigaline sites are supported by existing or planned investment in rail or water infrastructure therefore these masterplans form the first tranche for which masterplans have been prepared.

## 2.3 Site Context

2.3.1 Carrigtwohill is located along the N25 Cork – Waterford route and is designated as a Metropolitan Town within the County Metropolitan Strategic Planning Area. The town has experienced significant growth and development in the last decade (approximately 25%pa) and the 2011 population census counted 4551 persons. The draft County Development Plan 2013 has identified a target population for Carrigtwohill by 2022 of 11,618.

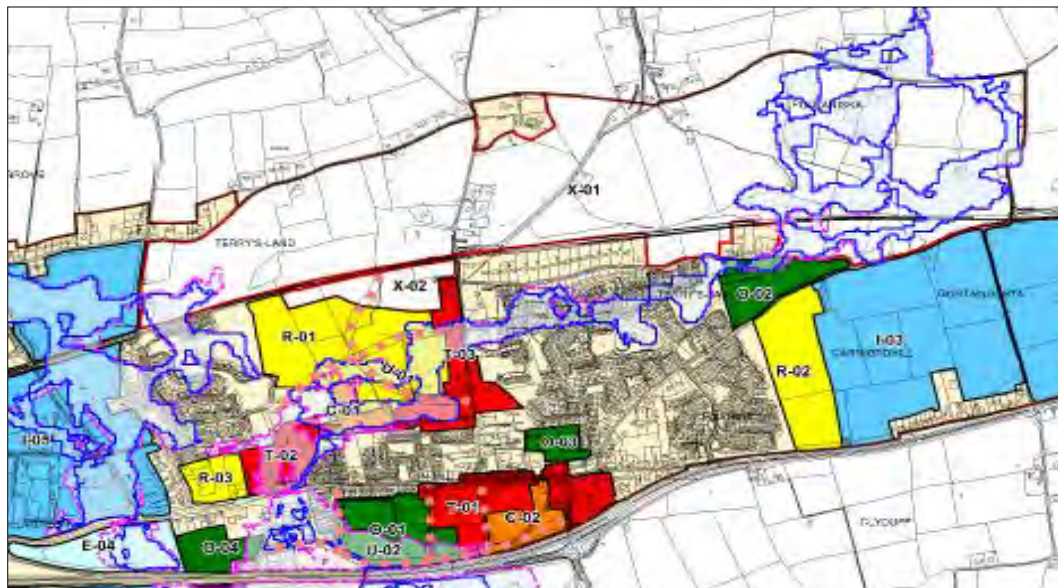
2.3.2 A primary aim for Carrigtwohill, as set out in the draft County Development Plan 2013 and building on the success of the re-opening of the rail line, is to facilitate its growth as an integrated employment centre while maintaining its attractive setting within the Metropolitan Cork Green Belt.

2.3.3 The framework masterplan area (shown as X-01 on the map below) is located to the north of the reopened Cork –Middleton Railway line and Carrigtwohill Town Centre. To the south of the railway

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line, a major residential development is in the process of being completed. This development includes a wide variety of house types from semi-detached units to terraces to a four story apartment complex. Additional retail development has also been zoned to the south of this site. To the north and east the site is bounded by the A1 Metropolitan Cork Green Belt, which is the most protected part of the Green Belt particularly because of its location on a prominent ridge overlooking the town.

Figure 2.2 Masterplan Site location map

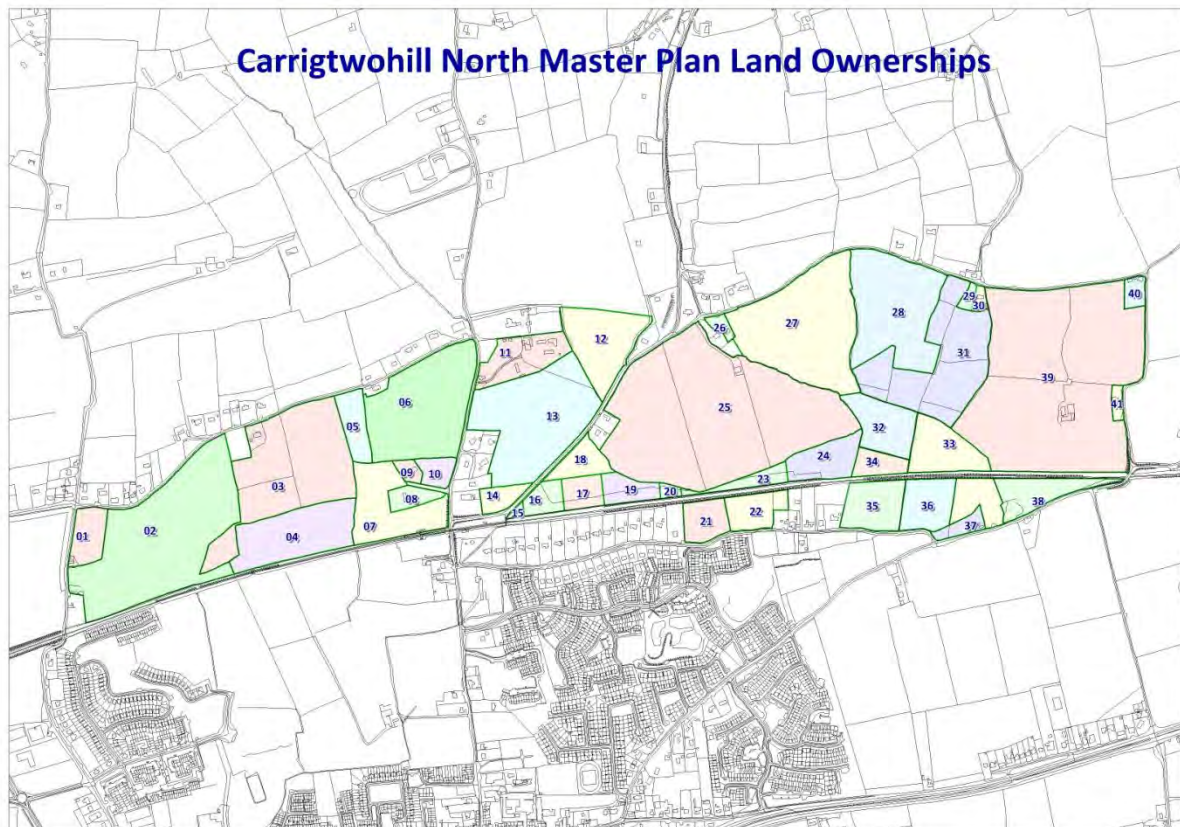


### 2.4 Landownership

2.4.1 The total area of the Framework Masterplan site is 128 hectares. There are 41 principle landowners, as shown on the landownership map below.



Figure 2.3 Land Ownership



## 2.5 Physical and Natural Features

2.5.1 Cork County Council engaged consultants (Limosa Environmental) to prepare a Preliminary Ecological Appraisal of the site. The purpose of the appraisal is to gather baseline data for a site through desk-top studies and walkover surveys in order to identify notable species and habitats and evaluate the ecological features on the site to identify potential impacts of proposed development and provide necessary mitigation. Ground conditions within the framework master plan area are generally dry; however, the lands adjoining the Railway line can be wet due to periodic flooding. A recently commissioned detailed Flood Risk Assessment indicated that 16.0 ha or 13.77% of the site is at serious flood risk. This detailed flood risk was not known during the preparation of the previous draft masterplan in 2010.

### Topography

2.5.2 The topography of the study area, is gently sloping from north to south, but is a little steeper towards the road to the north of the site. The height differential across the site is in the range of 0-40 metres. The lands are slightly below the railway to the south while approaching the northern boundary of the site and upwards the land rises more steeply which may present more challenges for development.

2.5.3 This generally southerly slope gives an opportunity for efficient and cost effective drainage and house orientation

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### Landscape

2.5.4 Primarily, the land parcels are enclosed by hedgerows and is predominantly farmland being interspersed with a number of single site houses. The roads which bound the site are lightly trafficked, hedgerow enclosed boreens and have a predominantly rural character. There are number of areas of scrubland which may be of limited ecological value. The lands contain field drains which channel water through these lands and further towards the town to the south. There is evidence of water logging in places.

### Archaeology and Cultural Heritage

2.5.5 There are no Record of Monument and Places (RMP) sites within the proposed site.

### Ecology

2.5.6 The preliminary ecological value of habitats recorded in the Carrigtwohill North study area was assigned following an ecological appraisal which was carried out in January 2015. These values are shown in Table 2.2 and the more noteworthy habitats are discussed below;

2.5.7 Proposals contained in this masterplan have been designed to ensure that areas of ecological importance identified in the Masterplan Area are protected and retained.

Table 2.2 Ecological Evaluation

Habitat	Preliminary Ecological Value	Notes
Improved agricultural grassland	Low local	Relatively low value for wildlife
Wet grassland	Moderate -high local	*further survey and assessment is required to confidently assign value.
Grassland / Willow Scrub	Low local	Habitat surrounding recent housing developments.
Arable crops	Low local	Relatively low value for wildlife.
Buildings and artificial surfaces	Low local	
Streams	Moderate local*	*further survey and assessment is required to confidently assign value.
Hedgerows	Moderate Local	
Treelines	Moderate - High local	See further discussion below

### Habitats of greater ecological sensitivity

#### *Streams*

- 2.5.8 The presence of stream/ditches with a landscape contributes to the biodiversity of the area primarily because watercourses support species or species assemblages that are not found in other habitat types. By their nature, streams also provide ecological connectivity. The mid and eastern watercourses are bounded by treelines present on OS 6" maps and are likely to play an important role as a wildlife corridor.

When streams are bounded by treelines, the aerial insect fauna associated with both the stream and treelines may add to the importance of these habitats as foraging corridors for bats ( see further text on treelines below).

- 2.5.9 The biodiversity value of all watercourses and their natural buffers in the Carrigtwohill North site should be protected and enhanced and the development of amenity walks along watercourses should be incorporated at the detailed design stage of each phase of development

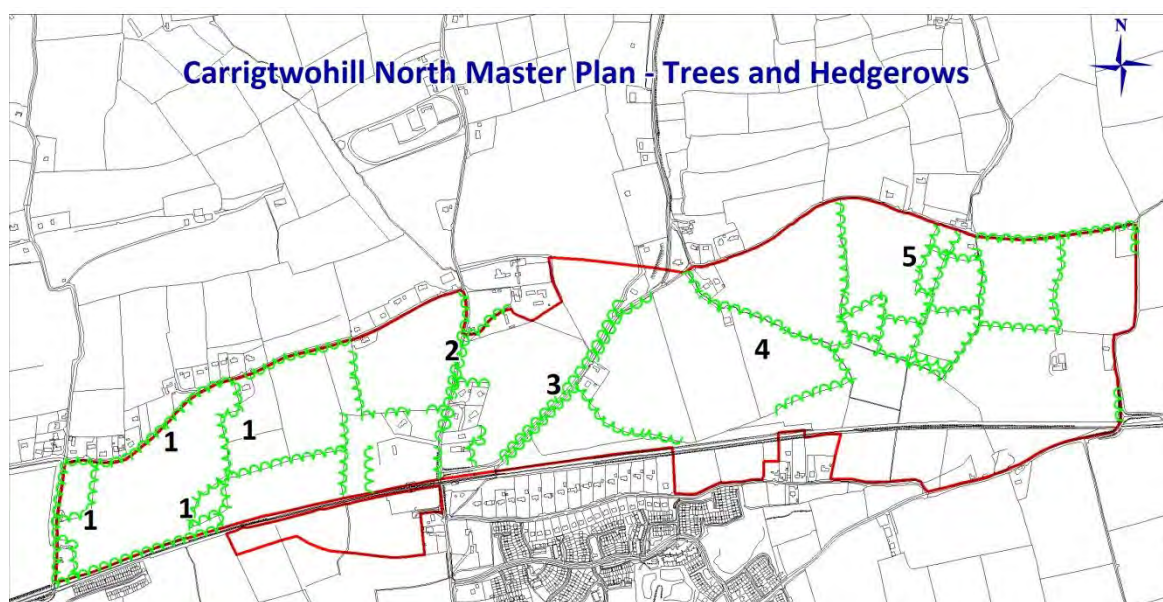
#### *Natura 2000*

- 2.5.10 The study area is not the subject of any conservation designation, proposed, candidate, or otherwise, under current legislation. The range of habitats present within the study area is limited with a number of common fauna species present. The lands are mostly kept as grassland with the exception of the streams and existing hedgerows. Cork Harbour SPA – 4030 is located within 2.5 km of the site, however, there are no Natura 2000 sites within, adjacent or in close proximity to the boundary of the site.

#### *Trees and Hedgerows*

- 2.5.11 The site generally consists of farmland under a mixture of grass and tillage. There are substantial groups of trees in the West, South, Centre and North East of the site
- 2.5.12 Tree lines and hedgerows have high intrinsic ecological value and contribute to the biodiversity of the site as well as having the potential to support a range of nesting, resting, breeding, foraging and commuting species. Treelines dominate as field boundaries within the Masterplan site, and whilst all have ecological value, five areas in particular are deemed to be of greater importance (refer to Figure 2.4). It is an objective to protect/enhance these important hedgerow and treelines which are considered to be of moderate to high ecological value.

Figure 2-4 Trees and Hedgerows



## Wet Grasslands/ Scrub

2.5.13 The wetland area in the south-east of the site which lies adjacent (north) of the railway line, is unmanaged and currently provides a ‘wilderness’ area for wildlife, and together with mature treelines, streams, and unmanaged habitat to the east, these habitats are likely to be the most biodiversity-rich area within the Masterplan site. There is a potential that the habitats support breeding mammals, and the potential for a Badger sett cannot be discounted.

2.5.14 It is an objective to protect/enhance these important wetlands which are considered to be of moderate to high ecological value.

## Existing Buildings

2.5.15 The site has a number of existing buildings, mainly located on the periphery of the site and predominantly residential dwellings. The geo-directory counts show that there are approximately 13 residential buildings and 3 commercial premises on the site. It is the intention that most of the residences will be incorporated into the design of the development at the appropriate phase.

## 2.6 Existing Infrastructure

### Transport

#### Rail Services

2.6.1 A total of 21 trains operate daily each way between Cork and Midleton, with services running every 30 minutes at peak times, and every hour at off-peak times, Monday to Friday. Seventeen trains each way operate on Saturdays and nine trains operate each way on Sundays. All trains serve the new station Carrigtwohill, as well as Midleton, Glounthaune, Little Island and Kent Station, Cork.

## Section 2: Description of the Site

- 2.6.2 Each train is a two-carriage commuter train, with capacity for 320 passengers, including seating for 129 passengers. The operating platforms have been built to accommodate future expansion to four-carriage trains with an operational capacity of every 15 minutes.
- 2.6.3 As well as offering a strong commuter service, the new timetable offers excellent connections to the Cork-Dublin Intercity service, maximising the benefit of this new infrastructure.

### Pedestrians and Cyclists

- 2.6.4 At present there are no dedicated cycle routes available within the town of Carrigtwohill. Safe and direct cycle routes are required from existing residential areas to the town centre and business park to encourage cycling as a safe and sustainable mode of transport and as a means of travel to the railway station where covered cycle stands are available.
- 2.6.5 The quality of the pedestrian network on the Main Street is reasonable with varying footpath widths. There are good links between the IDA Business Park and the town centre. Elsewhere both the quality and provision of pedestrian links varies from substandard to no provision.
- 2.6.6 There are a number of good quality pedestrian routes in the perimeter of the settlement which have been delivered as part of recent residential developments but connectivity between these areas and the town centre. is poor in places.
- 2.6.7 Most of the town and the Masterplan site are within the accepted 10 minute (or 800m) walking distance of the railway station so opportunities exist to expand and maximise connectivity and direct pedestrian routes to the station from various locations within the town.

### Bus Services

- 2.6.8 The existing bus network serving Carrigtwohill at present functions primarily as an interim stop along a wider route operating between Cork City and a range of settlements in East Cork. There is no bus station within the town but there are a number of bus stops at staggered locations on the Main Street.

### Roads

- 2.6.9 Carrigtwohill is well served off the N25 National Primary Road, which links Cork City via Dunkettle Interchange to Midleton, Youghal, Waterford and Rosslare Harbour. Together with Midleton, it also serves two other towns (Carrigtwohill and Cobh (via R624)) identified by the County Development Plan 2014 as locations for major population growth in order to support the overall strategy for the Cork 'Gateway'. The County Development Plan 2014 makes provision for a combined future population growth of 18,847 persons in these three towns. In addition, to the east of Midleton, the N25 also serves Youghal which although not the subject of such significant growth proposals, has also become a popular location for those who commute to the Cork area for employment.

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- 2.6.10 From the Dunkettle interchange (which gives access to the M8 and N40) the N25 is a dual carriageway (grade separated) road as far as Carrigtwohill. From Carrigtwohill to Midleton the road is dual carriageway but with at grade junctions with minor roads. There are 2 off ramps from the N25 serving the west and the centre of the town.
- 2.6.11 The modernised route west of Carrigtwohill generally has capacity to accommodate the additional traffic that planned population growth in this corridor will cause. However, the lower standard route between Midleton and Carrigtwohill will require modernisation to accommodate all the planned growth. The scope and timing of these improvements will be influenced by the extent to which the Government's targets for modal shift to more sustainable modes of transport can be achieved.
- 2.6.12 The town also has a hierarchy of roads and streets which reflects the incremental growth of the settlement from a small rural village to a Metropolitan Town. Access from Carrigtwohill town centre to the site is northwards along Station Road which then splits north of the railway line into the (L3606) and the L3603, these run directly through the site. Alternatively, the site can be accessed via the L3616 (Wises Bridge) from the west. The site is also accessible from the east from the L7640 (Ballyadam Bridge). The L3615 runs along the northern boundary of the site.
- 2.6.13 Whilst some improvement works have been undertaken on all 3 bridges in the past when the railway line was re-laid, pedestrian access across the bridges is poor.
- 2.6.14 In order to inform this framework masterplan, a traffic and transport assessment has been carried out on behalf of the County Council by 'MHL'. The assessment, utilising up-to-date traffic counts and modelling techniques, examined a number of alternative approaches to the phasing of development and the delivery of road infrastructure and transportation improvements with the aim of identifying a strategy for the development that would make a significant contribution to achieving the Governments targets for modal shift and, at the same time, provide the greatest protection to the carrying capacity of existing and planned road infrastructure. This assessment is separately available as a background document to this framework masterplan.
- 2.6.15 Delivering enhanced levels of modal shift will require the commitment of transport operating and funding agencies and also the commitment of the planning authorities (including Cork City Council) to take appropriate steps to focus employment development on locations served by the public transport network.

### Water, Waste Water and Surface Water disposal

#### Irish Water

- 2.6.16 The Government has established Irish Water to assume responsibility for the operation and delivery of public water services (water and wastewater) on a national basis. The Water Services (No. 2) Act 2013 provided for the transfer of water services (water and wastewater) functions from the 34 Local



Authorities to Irish Water. It has taken over responsibility for water services from the Local Authorities from 1st January 2014.

- 2.6.17 Irish Water is responsible for the operation of public water services (water and wastewater) including management of national water services assets, maintenance of the water services system, investment and planning, managing capital projects and customer care and billing. Irish Water will make capital and operational investment decisions regarding the country's national water infrastructure.
- 2.6.18 Irish water has published its Proposed Capital Investment Plan (2014-2016) outlining the indicative investment priorities in water services infrastructure over this period. Irish Water has also commenced work on a 25 Year Water Services Strategic Plan (WSSP) which is intended to state the objectives of Irish Water in relation to the provision of water services for a 25 year period and the means by which Irish Water proposes to achieve these objectives. Capital Investment Plans will be adjusted as required to meet the objectives and priorities of the 25 Year Water Services Strategic Plan. Cork County Council has made submissions to Irish Water concerning both the Proposed Capital Plan (2014-2016) and the 25 Year Water Services Strategic Plan.

### Drinking Water

- 2.6.19 A water supply is available to service the Carrigtwohill Masterplan Area and also the target population for Carrigtwohill contained in the Draft County Development Plan 2013. This is as a result of the extension of the Cork Harbour and City Water Supply Scheme with the installation of a large diameter trunk watermain from Little Island to Carrigtwohill (Hedgy Boreen) in 2006/2007.
- 2.6.20 There is a 700 mm diameter public trunk watermain running through the Masterplan site in a west-east direction adjacent to the northern side of the Cork-Midleton railway line. There is a 450 mm diameter trunk watermain running in a north-south direction which crosses under the Cork-Midleton railway line.
- 2.6.21 A new watermain network is required within the proposed Masterplan Area to serve individual developments. This network must be designed and constructed so that it can be taken in charge by Irish Water. The issue of storage for the overall Carrigtwohill area may need to be addressed.
- 2.6.22 As Irish Water is now the relevant body dealing with water services issues it will be necessary for a Developer to obtain a connection agreement from Irish Water for water supply.

### Waste Water

- 2.6.23 Disposal of wastewater from the Carrigtwohill North Masterplan Area will be by way of connection to the Irish Water wastewater infrastructure and by no other means
- 2.6.24 Currently in Carrigtwohill the existing Waste Water Treatment plant has a capacity of 8,500 PE, however at present it is overloaded

## Carrigtwohill North Framework Masterplan 2015

- 2.6.25 Construction of a new waste water treatment plant has commenced adjacent to the existing plant at Rossmore which will cater for a capacity of 30,000 PE with an option to expand to 45,000 PE in the future. This should alleviate the current effluent contamination of the harbour.
- 2.6.26 A new network of sewers is required to be installed within the Masterplan Area to serve the proposed individual developments. These must be designed and constructed so that they can be taken in charge by Irish Water. This new sewer network will connect into the existing Carrigtwohill sewer infrastructure.
- 2.6.27 As Irish water is now the relevant body dealing with water services issues it will be necessary for a Developer to obtain a connection agreement from Irish Water for wastewater disposal and treatment.

### Surface Water

- 2.6.28 It is proposed to carry out a comprehensive Sustainable Urban Drainage Study (SUDS) to identify the issues and solutions for the attenuation and disposal of surface water.

### Flood Risk

- 2.6.29 Three number storm sewers were constructed under the railway line prior to the reopening of the Cork-Midleton line.
- 2.6.30 A number of streams run in a north-south direction through the Masterplan Site. The Lee CFRAMS report identified areas at risk of flooding in the south of the town and recommended a more detailed flood risk assessment study for the whole town, including the master plan site. The Flood Risk Management Guidelines require that future development in the first instance is avoided in areas indicated as being at risk of flooding. Flooding is discussed in further detail in Section 3 ( Masterplan proposals)
- 2.6.31 As a result of this a more detailed flood risk assessment has been carried out on behalf of Cork County Council by JBA Consultants which identified a number of areas within the framework master plan site which are considered at risk of flooding
- 2.6.32 The report recommends that a groundwater level monitoring network should be established. This should incorporate existing boreholes and monitoring wells in the catchment. A detailed well and karst survey should be completed to identify any additional bedrock boreholes and karst features and where an insufficient number of boreholes are identified, new boreholes should be drilled at key locations to fill data gaps. A number of other steps to establish a monitoring network are also detailed in the full report.
- 2.6.33 It further recommends that gauges be installed to provide continuous monitoring at springs and sinking streams in order to quantify ground water discharge and surface water recharge rates.



## Section 2: Description of the Site

- 2.6.34 Where possible development other than that catering for Open Space purposes should be avoided in areas identified as being at risk of flooding.

### Waste Management

- 2.6.35 Cork County Council no longer provides a refuse and recyclables collection service. It will be for a private operator to provide a service for the masterplan site. There is a public civic amenity site south of the town at Rossmore

### Schools

- 2.6.36 Carrigtwohill is currently served by 2 primary schools, (1 all girls, 1 all boys) and an all girls secondary schools. The three schools are located approximately 1 km south of the master plan site. The Department of Education is proposing to build a new primary and secondary school in Carrigtwohill.

### Broadband

- 2.6.37 Significant broadband investment is required in order to facilitate the technological requirements of both potential residents and businesses in Carrigtwohill. Currently it is not proposed to include Carrigtwohill in the Metropolitan Area Network Scheme

### Power and Telegraph Lines

- 2.6.38 An existing high voltage (220kv) power line transverses the site. The costs and major undertaking involved in relocating this line are prohibitive.
- 2.6.39 A 40 kv line also transverses the site and this can be grounded and diverted at fairly minimum cost.

### 2.7 Issues – Carrigtwohill North

#### 2.7.1 Issues to be addressed by this Masterplan include:

- There is an urgent requirement for development to commence to meet the need for housing in a location where sustainable transport services are already in existence.
- Stormwater Urban Drainage Systems (Suds) study needs to be undertaken for the site.
- Secure the co-operation and support of landowners.
- Secure co-operative strategies from other public agencies which include; Irish Water, Irish Rail, the National Roads Authority and the National Transport Authority.
- Maximize the potential for modal shift from car based transport to rail transport in order to achieve National Targets and make best use of existing and planned transport infrastructure.
- Co-ordinate planning policies to create employment opportunities along the rail corridor (e.g. in Cork City in close proximity to Kent Station).
- Implement the Transport Assessment recommendations.
- Recognize the ecological importance of parts of the site (treelines, wetlands and bio-diversity habitats) and implement the recommendation of the Ecological Appraisal Report.
- An existing high voltage (220Kv) power line transverses the site. The costs and major undertakings involved in relocating this line are prohibitive.
- The site although a significant asset is also a physical barrier to a more seamless integration with the established settlement and connectivity is paramount.
- Significant broadband investment required in order to facilitate the technological requirements of both potential residents and businesses on the Masterplan site.

# **Section 3. Framework Masterplan Proposals**



### 3.1 Introduction

- 3.1.1 This section sets out the vision for the development of Carrigtwohill North and its guiding principles in the areas of Housing, Urban Design, Transport and Mobility, Green Infrastructure, Open Space and Recreation, Community Uses, Water Services and Flood Risk. These principles should be used to guide the future development of Carrigtwohill and its detailed proposals in the planning policy process and in future detailed design plans. In preparing applications for planning permission, intending developers must demonstrate that their proposals have addressed the principles set out in this document.
- 3.1.2 The overall vision for the development of these lands at Carrigtwohill North is informed by the 2011 Carrigaline Local Area Plan X-01 Zoning Objective. All informing decisions for the Carrigtwohill North development should be assessed within the context of this stated vision:

Provide a framework plan for a new residential neighbourhood in Carrigtwohill that will enable the town to expand to meet the growth targets of the Cork County Development Plan 2014 and achieve modal shift to support the use of the suburban rail line from Midleton to Cork City. In order to achieve a properly co-ordinated development, it will be developed in accordance with a framework plan for the area that has been approved by the County Council through consultation with the relevant landowners and key stakeholders.

### 3.2 Housing

- 3.2.1 This section sets out the general planning policies and principles for the provision of housing in Carrigtwohill North. In addition it also sets out guidance on the approach to housing density, housing mix and social housing. The following key housing principles should underpin the development of the development;

Table 3-1 Housing Principles

Principles
<ul style="list-style-type: none"><li>• To achieve a maximum of 2,950 dwelling units as part of the overall masterplan development.</li><li>• Ensure the provision of an appropriate housing mix; all applications for multi unit residential developments should be accompanied by a statement of housing mix which will facilitate the proper evaluation of the proposal relative to the demographic and housing needs of Metropolitan Cork.</li><li>• Consider the needs of the older population cohort when planning the design and mix of housing.</li><li>• Make provision for housing that is capable of future expansion/adaptation to meet the future needs of occupants.</li></ul>

- Provide for Social & Affordable Housing through Part V of the Planning & Development Act 2000.
- Ensure overall compliance with the Cork Planning Authorities Revised Draft Joint Housing Strategy (December 2013).
- Provision of high quality and energy efficient housing in an attractive place to live

### Density

- 3.2.2 It is a target of this plan to achieve the development of between 2500-3,000 dwelling units as set out in the 2011 Midleton Local Area Plan. The site comprises approximately 128ha of which approximately 95ha will be developed for housing at 28 units per hectare. A medium density of 30-50 units per hectare will allow a range of house types to be provided that both supports rail public transport while also providing a choice of units for family needs. While restrictive policies are in place to protect rural landscapes from urban-generated housing, support is required in the provision of attractive alternatives for family housing in developments like Carrigtwohill North. Hence, this project will aim to provide a mix of dwelling types from smaller 2 bedroom units to 4/5 bedroom units at an overall density level that supports public transport by allowing higher density development to be located in close proximity to the existing railway station..

### Housing Mix

- 3.2.3 It is an objective of the County Development Plan to require the submission of a Statement of Housing Mix with all applications for multi-unit residential development in order to facilitate the proper evaluation of the proposal relative to the strategic objectives of the plan. A balanced mix of house types in all new housing developments is essential in order to provide a choice of housing, suitable to all age groups and persons at different stages of the housing cycle. A Housing Needs Analysis for developments in Carrigtwohill North will also be required in order to demonstrate the appropriateness of schemes put forward to ensure they match local demographics and future demographic needs.
- 3.2.4 The majority of households over the next 20 years will be smaller in size consisting of 1-2 persons and the city is considered to be a good location for the supply of the majority of smaller units to accommodate this emerging smaller household size. However, this site and other sites throughout Metropolitan Cork shall make supplementary provision for some smaller units in higher density enclaves at suitable locations closest to the existing and proposed rail stations and the neighbourhood centre. The provision of these units at these locations does not exclude smaller units on other residential sites throughout the masterplan; all developments within the overall masterplan site can include smaller units to meet market requirements. A higher standard of design will be required in higher density areas. Outside those higher density areas closest to the rail line a mix of

3/4/5+ units will be desirable according to market conditions in order to achieve the residential targets for the site.

### Social Housing

- 3.2.5 The *Cork Planning Authorities Draft Joint Housing Strategy December 2013* and the *County Development Plan 2014* require that 14% of new housing development is reserved for the purpose of 'Part V' social housing and/or specialised housing needs. The actual mechanism used to satisfy the Part V requirement will be the one that best facilitates the development of a strong, vibrant, mixed tenure community. The options for the discharge of Part V obligations are set out in the *Joint Housing Strategy*.

## 3.3 Urban Design

### Introduction

- 3.3.1 Urban design has a key role to play in creating and maintaining successful places. Urban design includes the way places look, work and feel, it considers the connections between places and buildings; the character of the built environment and the processes used for ensuring successful villages, towns and cities. The following design principles should influence the layout and design of the Carrigtwohill development:

Table 3-2 Urban design principles

#### Principles

- To achieve development areas with a distinctive character in terms of appearance of surroundings and buildings. This can be achieved through the inclusion of positive characteristics such as innovative design, reference to topographical and historical features and the inclusion of individual focal points.
- The layout of the site should achieve a high standard of connectivity and permeability through the provision of good walking and cycling connections.
- Give priority to the provision of high quality public realm.
- To achieve a unique, innovative and distinctive design of houses with high quality finishes and materials.
- All residential developments on site will require the submission of Urban Design Statements that are guided by; *The Guidelines on Sustainable Residential Development in Urban Areas* (2008), its companion documents the *Urban Design Manual*, Cork County Councils published *Making Places: a Design Guide for Residential Estate Development 2011* and the *Design Manual for Urban Roads and Streets* (2013) as best practice guides in the provision of sustainable residential development.

### Character Areas

- 3.3.2 Within the development there needs to be distinct residential character areas that create individual suburban quarters that are different from adjoining neighbouring schemes. All new proposals for housing should therefore seek to create areas which have a distinctive character which will lessen the impact of a large scale homogenous residential area if it is designed as a number of smaller, individual residential spaces. This can be achieved through a mix of house design, house type, mix, layout and the building of individual focal buildings that will enable attachment to a particular sub area in the masterplan scheme. The scale, massing and height of new buildings should also be considered in relation to adjoining buildings.
- 3.3.3 The key to the success of a neighbourhood are features which are particular to that place. As well as helping people to form an attachment to a place, landmarks or easily recognisable features will ensure a place is easy to locate and navigate around by residents and visitors. Facilitating easy orientation is critical to a person's sense of personal security and safety. Natural features can help give shape to a development and integrate with its surrounds. The emphasis should be on conserving and enhancing the site's features e.g. open watercourses or retaining trees/hedgerows. The topography of the site should also be analysed to ensure that the development will respect the qualities of the surrounding landscape and townscape. These features can often form the focal point of the development.

### Connectivity and Permeability

- 3.3.4 The following design principles should influence the layout and design of streets in the Carrigtwohill North masterplan area:
- *Connectivity and permeability:* Convenient access for pedestrian, cycle and car journeys through the provision of a highly connected street layout where all streets lead to other streets and the use of cul-de-sacs is avoided wherever possible, between and within areas, particularly to bus stops and rail stations, recreation/community/commercial facilities and to places of work/education.
  - To facilitate high levels of pedestrian and cycle journeys by providing a highly connected street layout where all streets lead to other streets and the use of cul-de-sacs is avoided wherever possible;
  - *Sustainability:* Priority should be given to the needs of walking, cycling and public transport overall the needs for car borne trips should be minimised;
  - *Safety:* streets, paths and cycle routes should provide for safe access by users of all ages and degrees of personal mobility;
  - *Legibility:* it should be easy for both residents and visitors to find their way around the area through the provision of signage and focal points;



### Public Realm

- 3.3.5 The provision of public realm in a town or suburb on publically owned streets, pavements, parks and other publically accessible open spaces and civic areas enables the promotion of good health and well being through a sense of civic pride and place. It involves the use of distinctive features and materials to create streetscapes and spaces that facilitates the re-positioning or re-imaging of an area's marketability. Typical examples of public realm interventions in a town are high quality footpaths and cycle ways, street furniture, utilities and services, lighting, signage and public art.
- 3.3.6 In Carrigtwohill North the opportunity exists for the use of existing hedgerows and local topography to create a unique concept in housing and community living through innovative public realm.
- 3.3.7 The creation of a Station Quarter in the centre of the site which will be a vibrant, high density residential and mixed use local centre will provide a focal point for the community within the Masterplan site.
- 3.3.8 A vertical mix of compatible uses should be focused around a new square with a mix of commercial of appropriate scale, residential uses can be accommodated at ground floor level as well as overhead commercial space..
- 3.3.9 The square shall be at the heart of this area and should be designed to accommodate a wide variety of events such as a regular local market and should include cycle parking provision, public seating and public art Access to this square should be via a variety of pedestrian priority streets/lanes/arcades which should converge on this space to reinforce its centrality within the plan area.

### Building Design

- 3.3.10 Carrigtwohill North is a large scale residential development and it is important to achieve a sense of place and individualism in building design. Particular care should be taken with the materials or finishes and the external design and appearance of housing throughout the scheme in order to avoid monotony. Building design throughout the development should adopt a distinctive and durable palette of high quality materials that will make a positive contribution to the locality, create coherence, distinctiveness and local identity. Diversity in design should also be achieved in order to provide a variety of housing typologies. The Design Statement from the Developer should explain the context of the site and justify the palette of materials to be used.
- 3.3.11 Building frontages for all residential buildings should be orientated towards the primary street, and/or open space as appropriate. Primary pedestrian entrances and active living spaces within residential buildings should be located along this frontage. Variations in building design may also be needed in different parts of the layout. For instance, windows and entrances being put in gable walls to take advantage of different orientations, outlooks and access arrangements, or elevations being specially designed to provide focal points at the ends of vistas or on corner sites. The housing should also provide residents with good standards of amenity, privacy, security and energy efficiency in order to

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encourage the creation of attractive and safe living environments. Apartment and house development should follow the DoEHLG Guidelines on Sustainable Residential Development in Urban Areas 2009 and the Sustainable Urban Housing Guidelines for New Apartments 2007.

- 3.3.12 A comprehensive approach to design is required that involves discussion and collaboration with all the interested parties. Developers will derive benefits from working closely with planners, road engineers, architects and landscape architects, and local people, in achieving high quality developments that will be locally acceptable.

### 3.4 Transport and Mobility

Table 3-3 Transport and Mobility principles

<i>Principles</i>
<ul style="list-style-type: none"><li>• Exploit the potential for residents of this development to achieve high levels of modal shift away from the private car in favour of more sustainable modes of transport. High standards of access and mobility will add to the quality of life for residents of Carrigtwohill North.</li><li>• Support the achievement of high levels of modal shift by collaborating with other agencies to improve public transport services and influence patterns of employment development to support use of sustainable modes and travel by public transport.</li><li>• Provide direct and convenient access to the town centre, schools and nearby employment zones.</li><li>• Establish an appropriate roads hierarchy for the site (in line with 'Making Places: A Design Guide for Residential Development) and indicate responsibility for funding and construction.</li><li>• Identify the requirement, timing and funding of external improvements to the road network</li><li>• Ensure the primary role of the public realm as a network of streets and open spaces that enable a successful and vibrant public life</li></ul>

#### Introduction

- 3.4.1 The 2001 Cork Area Strategic Plan (CASP) set out a vision for Cork where the main towns of the immediate hinterland of Cork would be linked to the City and each other by an integrated transport system including high quality suburban rail services. To implement the CASP vision Government Agencies, Planning Authorities, Transport Providers and other stakeholders agreed to locate new housing and employment development at appropriate locations on the transport system in order to provide the greatest encouragement for future residents to base their travel patterns on sustainable modes rather than the private car.
- 3.4.2 This development at Carrigtwohill North, first identified in 2005 by Cork County Council, is a critical element in the delivery of the CASP vision. The site is close to Carrigtwohill town centre and is served by a railway station on site. The terrain is generally flat offering the potential for many to walk or

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cycle easily to those destinations if the right infrastructure is planned and provided at the outset of the development. The railway infrastructure linking Midleton with Carrigtwohill, Little Island and Cork has the capacity to transport over 2,500 passengers per hour in each direction. Therefore, delivering measures to facilitate and encourage future residents to base their travel patterns on the existing rail infrastructure is a key element of the planning and design of this development. The successful delivery of this will require careful and sensitive actions not only by intending developers and the County Council but by many other agencies including transport providers, funding agencies and the City Council in its' capacity as a planning authority.

### Transportation & Road Network – Overall Approach

- 3.4.3 The road network proposals of this framework masterplan are derived from the traffic and transport assessment carried out on behalf of the County Council by 'MHL' Consulting Engineers (September 2014) which is separately available as a background document. The aim of the assessment was to facilitate a significant contribution to achieving the Governments targets for modal shift and, at the same time, provide the greatest protection to the carrying capacity of existing and planned road infrastructure.
- 3.4.4 The assessment concludes that future planned population growth in Carrigtwohill can be accommodated with minor improvements to the road network and a moderate modal shift of 2% of passengers using the railway service
- 3.4.5 At the outset of the Carrigtwohill North development the following road network improvements will be necessary and will create the network capacity to accommodate 500 new dwellings between 2016 and 2021.
- Construction of distributor road connecting Wyse's road and Station Road, link road heading south to the constructed underpass from the distributor road,
  - Signalisation of Main St/Maple Crescent Junction,
  - Signalisation of proposed Oakbrook Link Road/Station Road junction,
  - Signalisation of Main Street/Station Road junction,
  - Right hand turn lane to proposed new school zoning c-01 ( Midleton LAP 2011),
  - Improvement Works on Station Road, traffic management/urban renewal works on Main Street,
  - Upgrade Cobh road roundabout.
- 3.4.6 Between 2021 and 2026 a further 500 new houses can be accommodated with further minor road infrastructure improvements.
- Signalisation of Main Street and Carrigane Road Junction, Signalise Main Street/Wises Road Junction, Upgrade Cross roads junction Maple Lane/Oakbrook to roundabout.

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- 3.4.7 The model concludes that a maximum of 1,750 new houses can be constructed without the need for major road improvements namely the proposed new N25 junction and associated link road network at the former Amgen Site.
- 3.4.8 Should an accelerated Modal shift be achieved in Carrigtwohill the report opines that a maximum of 2,500 dwellings can be constructed by 2036 without the need for the proposed N25 junction or any additional infrastructure requirements to that set out for moderate modal shift
- 3.4.9 The report is based on the assumption that all extant permissions for residential and commercial development permission are developed prior to commencement of development on the Masterplan site.

### Site Layout - Overall Approach

- 3.4.10 Planning the layout of conventional housing estate developments usually begins with the planning of the road network based on an assessment of the likely trip patterns of private car users. The aim of this development is to achieve high levels of modal shift and if this is to succeed then a different approach to the layout and design of this development will be necessary. The layout should be based around the requirement to deliver safe and direct routes for walkers and cyclists to make journeys within the site, to the town centre and nearby employment centres. Likely trip patterns of private car users, whilst important, must be a secondary consideration in determining the routing and alignment of the road network.
- 3.4.11 In 2011 Cork County Council approved the document 'Making Places – A Design Guide for Residential Estate Development' and a number of important policy initiatives relating to transport and movement have been introduced by Government since the approval of this document (e.g. The National Cycle Manual – NTA, 2011 and The Design Manual for Urban Roads and Streets – DoTTS, 2013), the County Council's design guide is an important reference document for those designing housing layouts within this development.
- 3.4.12 In particular, it is important for developers to meet the following requirements:
- To facilitate high levels of pedestrian and cycle journeys by providing a highly connected street layout where all streets lead to other streets and the use of cul-de-sacs is avoided wherever possible.
  - Design for reduced vehicle speeds (30 kph) on roads with direct access to residential properties and wherever the road surface is shared with pedestrians or cyclists.
  - Provide segregated facilities for cyclists where the road design speed exceeds 30 kph.
  - Design for 'active street edges' to promote pedestrian activity, provide passive surveillance and encourage lower vehicle speeds.
  - Plan the provision of roads and streets broadly in line with the 'road types' described in pages 72-86 of 'Making Places: A Design Guide for Residential Estate Development'.

### Cyclists and Pedestrians

- 3.4.13 The Government's sustainable development strategy, Sustainable Development – A Strategy for Ireland, identifies the increased provision of safer facilities for pedestrians and cyclists, including the provision of dedicated cycle lanes as a key priority. In addition, Smarter Travel: A Sustainable Transport Future 2009 – 2020, sets out as some of its key goals that future population and employment growth will predominantly take place in sustainable compact forms, that the future extent of the total share of car commuting will drop from 65% to 45% and that alternatives such as walking, cycling and public transport will be supported and provided to the extent that these will rise to 55% of total commuter journeys to work.
- 3.4.14 At present there are no cycle route networks in Carrigtwohill. This deficiency will need to be addressed by the County Council in tandem with the development of Carrigtwohill North and intending developers will be asked to make a contribution to the cost of providing this important infrastructure.
- 3.4.15 Within the site itself, where roads are designed to facilitate vehicle speeds of 30kph or less it can be appropriate for cyclists to share road space with motor vehicles, especially on lightly trafficked sections of the road network. In addition, as part of the development's green infrastructure, this masterplan identifies a green corridor running west / east through the site that will facilitate pedestrian and cyclist movements, segregated from motor vehicles movements to be provided by intending developers. Future detailed designs within phases are required to identify and provide for pedestrian and cyclist priority areas of a high quality and safe setting, ultimately creating a walking and cycling network within the masterplan site area. In addition, public footpaths should be provided to the standards set out in 'Making Places: A Design Guide for Residential Estate Development' and the Design manual for Urban roads and streets so that the pedestrian realm and safe pedestrian street crossings will be provided throughout the development.
- 3.4.16 It is particularly important that strong cyclist and pedestrian links are provided between the masterplan site and the railway stations. A continuous cycle lane should also be a priority between the site and Carrigtwohill Town Centre. Ultimately, it is anticipated that the masterplan development will have a network of segregated movement corridors, built into the urban fabric of the site at the earliest design stage.
- 3.4.17 It will be important to optimise the accessibility opportunities at Carrigtwohill North to connect with neighbouring areas. Pedestrian and cycling linkages from housing estates, located to the south of the site must be provided as part of the development of Carrigtwohill North. This will allow for residents therein to access facilities within the new mixed use development.
- 3.4.18 Dedicated cycle and pedestrian routes will be provided with the Framework master plan site which can be extended to connect with the wider settlement of Carrigtwohill.

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- 3.4.19 An underpass has been constructed under the railway line between the site and residential lands to the south which will facilitate access for pedestrians, and cyclists.. Upgrades, renovations or replacement of existing bridges at Ballyadam and Wyse's will also be required to allow for both pedestrian and cyclist's access in addition to the anticipated increase in vehicular traffic.
- 3.4.20 Throughout the plan proposals are made for an elaborate network of cycle/pedestrian paths to provide access between residential areas and social/economic facilities in the town.
- 3.4.21 In order to enhance Pedestrian and Cycle linkages a pedestrian/cycle bridge will be constructed over the Railway line within each Phase connecting with existing residential areas to the south of the railway line.

### Rail

- 3.4.22 The Carrigtwohill North Site with an existing railway station at its core is ideally located to contribute to public transport usage. However parts of the site are located outside the recommended 1000m/ten minute walking distance from the railway station.
- 3.4.23 It is therefore imperative that this facility, is linked to a network of internal movement corridors, will provide critical modal transport choice to future residents.
- 3.4.24 By encouraging the use of the existing rail service to Cork City this masterplan development will give support to the city's attempts to reverse its city centre employment losses in recent years. New residents utilising this rail service, coupled with the provision by Cork City Council of employment opportunities within walking distance of Kent Station will give effect to the wider CASP development strategy.
- 3.4.25 The support of the public transport agencies in providing appropriate facilities and services is critical to the delivery of the wider strategies that this Carrigtwohill North development is supporting. This support, including funding elements will be crucial in t encouraging a modal shift away from private car by future residents. Irish Rail and the National Transport Authority are key supporting stakeholders, these agencies have already given a commitment to support these proposals and with this support this development can contribute to sustainable housing growth that builds on existing rail transport infrastructure provision. This strategy is further aided by the planned for future population growth at other locations along this eastern rail corridor.

### Bus

- 3.4.26 In addition to its railway service, Carrigtwohill is well connected to Cork via a number of regional bus routes, providing regular services. These services, combined with the existing rail services, make Carrigtwohill a highly connected Metropolitan Town.
- 3.4.27 Although there is no town bus service at present, the road network in this development must be designed to accommodate such a service and other bus services as future demand requires.

Road Network

3.4.28 In order to make the best use of existing and planned public investment in transport infrastructure, it is the aim of this masterplan to maximise pedestrian, cycling and public transport related movement. However, even accounting for significant non-private car use, there will remain a need from existing and future residents in this area to use private cars. This additional population and the natural background growth in road traffic will together require significant road infrastructure improvements.

3.4.29 Cork County Council’s Design Guide, Making Places, outlines the general road hierarchy to be used by developers in the design of new residential estates and the following table indicates how this will be applied to the development of the Carrigtwohill North site:

Table 3-4 Street Hierarchy

Carrigtwohill North Framework Masterplan Street Hierarchy Specification						
Road Type: DMURS	Road Type: Making Places	Description	Max Dwellings Served	Carriageway width, Footpath & Cycle Provision	Design Speed	Comments
Arterial	1	Local Distributor		7.3m (or 6.75m with bus lay-bys) 2x2.5m footways Segregated Cycle-tracks	40-50kph	East Distributor Frontage only service road/shared private driveway. West Access by parallel service road.
Link	2	Link Street		6.0 - 6.6m 2x2.5m footways Segregated Cycle-tracks	30-50kph	To link East Distributor to existing development and to link West neighbourhoods. Can serve non-residential uses. Bus lay-bys required.
Link	3	Feeder Street	300-500 (link/loop) 150 cul-de-sac	5.5- 6.0m 2x2.5m footways Cycles share road	30kph	To link residential areas to ‘Link Road’ network. Direct route in or out of 30kph area. No access restrictions.
Local	4	Access Street	100 – 200 (link/loop) 100 cul-de-sac	4.8m 2x2.5m footways Cycles share road	10-30kph	Links between residential areas and to ‘Link Road’ or ‘Feeder Roads’. Quality design/finish. No access restrictions.

1. This table has been derived primarily from the Design Manual for Urban Roads and Streets (2013) as read with Cork County Council’s Making Places: Design Guide for Residential Estate Development (2011)
2. Junctions between Link and Feeder Streets will be 6.0m and between Feeder and Local Streets, 4.5m.

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3. On Link and Feeder Streets with no on street parking outer verges of 1.5-2.0m shall be provided to facilitate planting.

### 3.5 Water Services

#### Irish Water

- 3.5.1 Irish Water has become the relevant statutory body with responsibility for the operation of public water and wastewater services under the Water Services (No. 2) Act 2013. Irish Water will make capital and operational investment decisions regarding the country's national water infrastructure. As part of this process, Irish Water intends to develop a long-term (25 year) Strategic Plan for the future provision of water services (The WSSP). This Strategic Plan is intended to outline the strategic direction for Irish Water over the short, medium and long-term time frames up to 2040. It will identify what areas require focus and development in order to meet key objectives and mandate set out by government.
- 3.5.2 Capital Investment Plans will be published outlining the indicative investment priorities in water services over a stated period. There plans will be adjusted as required to meet the objectives and priorities of the 25year water services strategic plan.
- 3.5.3 The Masterplan must ensure that all Water Services Development comply with the Water Services Objectives set out in the Cork County Development Plan.

Table 3-5 Water Services Principles

#### *Principles*

- Protection of water resources and compliance with the Water Framework Directive and Habitats Directive.
- Drinking Water must be provided to the Carrigtwohill North Scheme from a sustainable source which complies with the requirements of the Water Framework Directive and the Habitats Directive.
- Waste Water Treatment infrastructure to be provided for this scheme must be compliant with the Water Framework Directive and the Habitats Directive, and will be in accordance with the Wastewater Management Strategy which is to be prepared by various stakeholders including Irish Water and Cork County Council for Cork Harbour, as provided for in the Cork County Development Plan 21014.
- During Construction it will be required that construction activities are planned and implemented in accordance with recognised environmental best practice to manage the risk of water pollution.
- The SuDs Scheme will provide for attenuation for all surface water run-off taking account of future predicted increases in rainfall magnitude.



### Wastewater Treatment and Disposal

- 3.5.4 An upgrade to the existing Carrigtwohill Waste Water Treatment plant is under construction and due for completion in 2015. This plant will have sufficient capacity to cater for the existing and projected future growth of Carrigtwohill.
- 3.5.5 A new network of sewers is required to be installed within the Masterplan Area to serve the proposed individual developments. These must be designed and constructed so that they can be taken in charge by Irish Water. This new sewer network will connect into the existing Carrigtwohill sewer infrastructure.
- 3.5.6 Waste water treatment infrastructure to be provided for this scheme must be compliant with the Water Framework Directive and the Habitats Directive, and will be in accordance with the Wastewater Management Strategy which is to be prepared by various stakeholders including Irish Water and Cork County Council for Cork Harbour, as provided for in the Cork County Development Plan 2014.
- 3.5.7 As Irish Water is now the relevant body dealing with water services issues it will be necessary for a Developer to obtain a connection agreement from Irish Water for waste-water disposal and treatment.

### Water Supply

- 3.5.8 A water supply is available to service the Carrigtwohill Masterplan Area and also the target population for Carrigtwohill contained in the County Development Plan 2014. This is as a result of the extension of the Cork Harbour and City Water Supply Scheme with the installation of a large diameter trunk watermain from Little Island to Carrigtwohill (Hedgy Boreen) in 2006/2007.
- 3.5.9 There is a 700 mm diameter public trunk watermain running through the Masterplan site in a west-east direction adjacent to the northern side of the Cork-Midleton railway line. There is a 450 mm diameter trunk watermain running in a north-south direction which crosses under the Cork-Midleton railway line.
- 3.5.10 A new watermain network is required within the proposed Masterplan Area to serve individual developments. This network must be designed and constructed so that it can be taken in charge by Irish Water.
- 3.5.11 The issue of storage for the overall Carrigtwohill Area may need to be addressed.
- 3.5.12 The provision of drinking water to the Carrigtwohill North Scheme must be from a sustainable source and one which complies with the requirements of the Water Framework Directive and the Habitats Directive

### 3.6 Surface Water

- 3.6.1 The masterplan's preferred approach to addressing the issue of stormwater collection and disposal is a comprehensive Sustainable Urban Drainage System (SuDS) solution designed and put in place that caters for the entire site. Each development phase identified herein is of a scale that allows for a phase-specific solution to surface/storm water.
- 3.6.2 In order to address the issue of storm water collection and disposal, a comprehensive solution will have to be designed and put in place that caters for the entire site. As with the development to the south of the railway line, the preferred option is to construct attenuation ponds
- 3.6.3 The Framework Masterplan envisages the use of permeable pavement techniques including porous tarmac or solid block pavers with gaps to provide through flow of water. However given the geology of the site there may be limitations to the extent that SuDS infiltration solutions can be utilised. Accordingly it is likely that a viable SuDS solution will involve in part the construction of a series of attenuation areas. Attenuation Areas should be designed in such a way as to have high amenity value. For the developed site it is required that any flows in excess of those from the original Greenfield site must be attenuated to the 1 in 100 year critical storm event.
- 3.6.4 Flood routing of surface water runoff during extreme weather events will have to be satisfactorily addressed having particular regard to the Cork Middleton railway line.
- 3.6.5 It is proposed to carry out a comprehensive Sustainable Urban Drainage Systems (SuDS) study to identify the issues and solutions for attenuation and disposal of stormwater. Surface Water Attenuation measures to be designed for the site shall have regard to the Carrigtwohill North Preliminary Ecological Appraisal report and be complementary to same.
- 3.6.6 SuDS Plans should include provision for performance monitoring and maintenance.

### 3.7 Flood Risk

Table 3-6 Flood Risk Principles

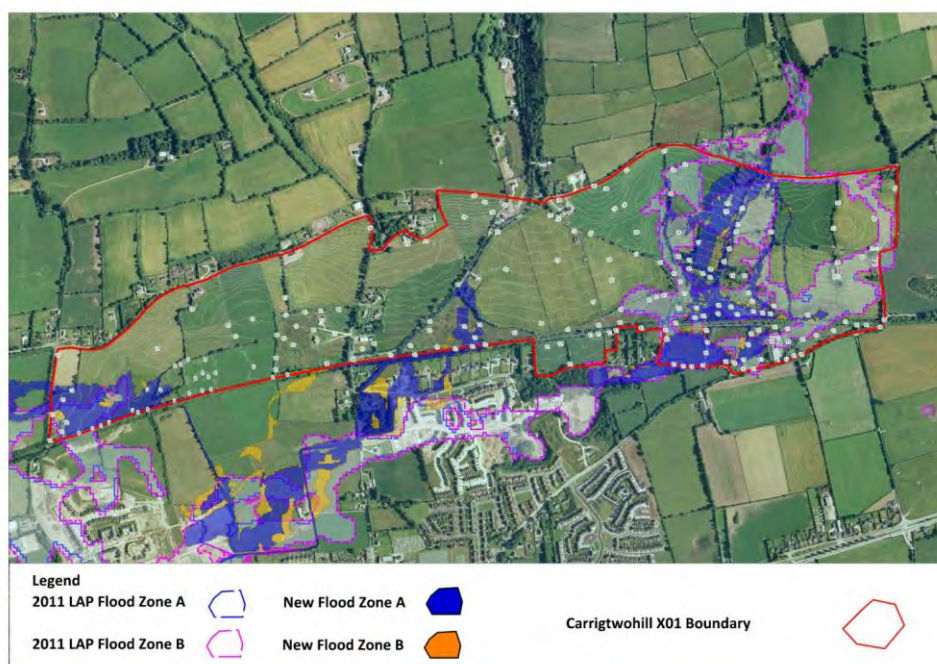
#### *Principles*

- Ensure that all proposals for development falling within flood zones are consistent with the Ministerial Guidelines – The Planning System and Flood Risk Management
- Ensure compliance with the Councils strategy in the management of flood risks as outlined under subsection 1.8 in Section 1 of the *Electoral Area Local Area Plans*
- Realise the flood plains of the streams of the Masterplan site as important amenity and ecological assets for the area and town as a whole . Flood plains and stream corridors shall be protected against inappropriate development.

### Section 3: Framework Masterplan Proposals

- 3.7.1 The Draft Lee CFRAMS report identified areas at risk of flooding in the south of Carrigtwohill Town and has recommended that there is a need for a more detailed flood risk assessment study for the whole town, including the master plan site.
- 3.7.2 As a result of this a more detailed flood risk assessment has been carried out which identified a number of areas within the framework master plan site which are considered at risk of flooding.
- 3.7.3 The Map overleaf details the old and revised flood risk areas in Carrigtwohill which have been identified in the new study.

Figure 3-1 Carrigtwohill North Flood Risk



### 3.8 Green Infrastructure, Open Space and Recreation

Table 3-7 Green Infrastructure Principles

Principles
<ul style="list-style-type: none"><li>• Create a hierarchy of green space provision, in terms of location, function, size and levels of accessibility / use in order to achieve a choice of open space facilities.</li><li>• Wherever possible, retain existing mature trees and mature hedgerows throughout the site.</li><li>• Ensure that the site and the development areas are landscaped to a very high standard in order to provide a high quality environment for new residents and existing residents living within close proximity of the site</li><li>• Create new and enhanced assets that improve the functionality of the green infrastructure network - including opportunities for landscape and habitat enhancement, and the provision of new green spaces and green movement corridors</li></ul>

- Integrate green infrastructure provision into development schemes
- Protect the existing key physical, natural, ecological, landscape, historical, access and recreational assets that contribute to the functionality of the green infrastructure network
- Provide a vibrant mix of open space areas and recreational facilities throughout the development.
- Use of *Guidelines on Sustainable Residential Development in Urban Areas* and the *Cork Recreation and Amenity Policy 2006* as best practice guides in the provision of, including open space, recreation and amenity areas throughout Carrigtwohill North.
- Protection of flood plains and stream corridors against inappropriate development.
- Management of stream corridors will be in accordance with best practice guidelines., buffer zones shall be provided in areas where streams pass through areas zoned for uses other than Open Space.

### Introduction

- 3.8.1 The Carrigtwohill Masterplan envisages a housing target of approximately 2,500 units, this will result in a significant increase in the population and to meet the diverse needs of this future community a hierarchy of open space and a wide range of sports and recreational facilities will need to be provided so as to meet the diverse needs of this future community. Whilst it is not realistic to provide all of these facilities prior to development commencing, it will be necessary to construct many of these facilities on a pro-rata basis.

### Green Infrastructure, Open Space and Infrastructure

- 3.8.2 Green infrastructure is a network of multi-functional green spaces and linkages throughout a development. It can include features such as parks, gardens, woods, nature reserves and water-bodies. Linkages also include linear features such as off road paths, rivers, streams or hedgerows, which can provide dispersal corridors for wildlife and connect people to open spaces.
- 3.8.3 The concept of green infrastructure planning is based on a strategic approach to ensuring that environmental assets of natural and cultural value are integrated with land development, growth management and built infrastructure planning at the earliest stage. This approach enables land management to be more proactive, less reactive and better integrated with efforts to manage growth and development at all spatial planning levels. Green infrastructure planning is, therefore, a key mechanism for delivering sustainable communities and quality of life benefits within growth areas.
- 3.8.4 It is expected that all detailed designs arising from this masterplan will integrate the following elements into designs at an earlier stage in the process:
- Protection of the existing key physical, natural, ecological, landscape, historical, access and recreational assets.

## Section 3: Framework Masterplan Proposals

- Creation of new and enhanced assets that improve the functionality of the green infrastructure network - including opportunities for landscape and habitat enhancement, and the provision of new green spaces and green links.

### Open Space and Recreation

3.8.5 The table below outlines the public open space hierarchy and accessibility standards for Carrigtwohill North. The standards allow the provision of a wide variety of accessible public open spaces to meet the diverse needs of the residents.

3.8.6 In accordance with the objective contained in the Midleton Local Area Plan for this site, useable open space shall be in the order of 20% of the total site area and shall be designed and located in accordance with best practice guidance.

<b><u>Open Space Hierarchy and Accessibility</u></b>			
<b>Type of Public Open Space</b>	<b>Areas</b>	<b>Accessibility from homes</b>	<b>Note</b>
<b><u>Linear Park</u> – accommodate playground facilities and a number of playing fields. Passive recreational and biodiversity areas will also be accommodated in the Linear Park.</b>	13,2 ha	Within 1km	
<b>Small Park- accommodate playground facilities and a number of playing fields. Passive recreational and biodiversity areas will also be accommodated in the Local Park.</b>	2.2-3.3 ha	Within 1km	
<b><u>Pocket Parks</u> – facilities for smaller children but not necessarily formal play facilities. Have an important visual and social function also. These areas must not be to the side or back of houses and must be adequately overlooked.</b>	Between 400sqm – 0.2ha	Every home within 100m walking distance	Provide pocket parks in all cases. No contributions in lieu.

## Carrigtwohill North Framework Masterplan 2015

Table 3-8 Open Space Hierarchies

### Linear Park

- 3.8.7 The provision of a linear park in the East of the site, spanning from the sites northern boundary southward across the Cork-Midleton Railway line is proposed. Due to flood risk, this area has limited development potential. Consequentially, it presents an opportunity to provide a high quality amenity area to serve future development on remaining lands within the masterplan site. Mainly flat but sloping upwards to the north the site comprises of undeveloped green fields, with a number of field boundaries crossing the site.
- 3.8.8 A wide range of active and passive recreational provision will be required, including public sports pitches, children's play areas and informal amenity areas. It is also intended to provide a pedestrian walkways within the park and a pedestrian/cyclist bridge over the railway line
- 3.8.9 The proposed Link Street will transverse the Linear Park
- 3.8.10 It is intended that as many trees as possible will be retained with special consideration given to the retention of native tree species. In addition, the existing hedgerow structure will also be retained where possible and supplemented, with special care taken to ensure minimal disturbance of local flora and fauna. New trees will also be provided in clusters throughout the linear park to enhance the character of the area.
- 3.8.11 This masterplan anticipates the acquisition of the land for the Local Park to serve the overall development. A special development contribution on development within the site to cover the acquisition and development costs will be levied.
- 3.8.12 Habitat surveys have been carried out as part of the County Habitat Survey and have identified areas of local biodiversity within the site. These areas will be taken into consideration in the proposed layout and will be afforded protection by incorporation into the proposed linear park.
- 3.8.13 Recreational / amenity facilities will be sensitively integrated into the park in a manner that is compatible with ensuring the protection of the environmental resources including flood protection functions, water quality and biodiversity of the area in an effort to protect riparian zone, stream buffers to ensure protection of water quality, river banks, and freshwater species including otters will also need to be provided.

### Green Corridors and Small Parks

- 3.8.14 A primary green corridor is proposed across the masterplan site forming a key link between existing and future development to the south, developments in Phase 1 and the Linear park to the east of the masterplan area – the station quarter and the proposed schools. This green corridor will provide a well maintained and secure natural corridor within the site. In addition a number of secondary green corridors are envisaged that link the site in a north to south and east to west direction. This network

## Section 3: Framework Masterplan Proposals

of corridors will form a local community hub enabling pedestrian / cycle cross movements towards the linear park at all times of the day. Provision shall be also made for landscaping along the green corridors to ensure an attractive pedestrian and cycling link through the site..

- 3.8.15 This green corridor presents opportunities to develop a network of small parks that facilitate passive and active recreation. It is envisaged that active recreational facilities will be shared between the proposed schools and the community.

### Pocket Parks in Residential Neighbourhoods

- 3.8.16 In accordance with the Council's Recreation and Amenity Policy these smaller green spaces should be usable open space and must have a surface that is adequately drained and permits recreational or leisure time use. Surface materials should include a combination of grass, plant materials, wood or paving materials of a type designed for pedestrian or recreational use. The recreation and amenity policy recommends avoiding large undefined areas and pockets of badly shaped, fragmented or unusable land in residential areas which are difficult to maintain.

## 3.9 Ecology

- 3.9.1 A Preliminary Ecological Appraisal of the Carrigtwohill North site was carried out in January 2015. The purpose of the appraisal was to assess the baseline ecological conditions for each site, to identify the key ecological resources to be retained, and where necessary identify the scope of further ecological surveys. The report outlines potential impacts and recommendations for watercourses, treelines and hedgerows and fauna. The main recommendations of the report which should be implemented from the outset of development are;

The protection/enhancement of the biodiversity value of Areas identified to be of moderate/high ecological value; Watercourses and their buffers; and Important hedgerows/treelines

- Surface Water Attenuation measures to be designed for the site shall have regard to the Carrigtwohill North Preliminary Ecological Appraisal report and be complementary to same.
- Further ecological surveys will be required to be completed by prospective developers prior to the submission of a planning application and the results of such surveys shall be used to inform and refine site design details.
- Landscape planting proposals should be developed with reference to the Carrigtwohill North Preliminary Ecological Appraisal and the following measures shall be incorporated into the site design/landscape planning at detailed design stage;
  - Provision of connectivity through the provision of ecological corridors and semi-natural habitats to provide ecological networks throughout the site.

## Carrigtwohill North Framework Masterplan 2015

- Enhancement of low ecological value grassland for wildlife.
- The creation of habitat mosaics to maximise biodiversity.
- Recognising the importance of scrub to provide dense and safe cover for faunal species and breeding habitat for several bird species.

- The dangers of alien/invasive species should be recognised.
- Habitats of ecological value shall be protected during construction and any measures recommended in the Carrigtwohill North Preliminary Ecological Appraisal shall be incorporated into construction method statement at planning application stage.

3.9.2 The Carrigtwohill North Preliminary Ecological Appraisal report concludes that the undertaking of further surveys and impact assessment resulting in targeted mitigation should enable the proposed development to proceed without any large adverse effects on the ecology of the site or adjacent environment.

### 3.10 Community Uses

Table 3-9 Community Uses Principles

#### *Principles*

- Provide for a vibrant mix of community facilities including primary and secondary schools which will serve the Carrigtwohill North population and the population of the surrounding hinterland.
- Use of *Guidelines on Sustainable Residential Development in Urban Areas* in the provision of social and community facilities.

#### **Introduction**

3.10.1 The Carrigtwohill North Masterplan envisages the development of a minimum of 2,500 new homes and a wide range of public facilities to be provided so as to meet the diverse needs of this future community. In particular, this will include educational, cultural, leisure and childcare facilities. Whilst it is not realistic to provide all of these facilities prior to development commencing, it will be necessary to construct these facilities on a pro rata basis.

#### **Schools**

3.10.2 The revised population target of 11,618 persons for Carrigtwohill by 2022 set by the Draft County Development Plan 2013 will give rise to an additional requirement for educational facilities above that previously identified. Given that Carrigtwohill North is the main focus for the future expansion of the town, the development of the Carrigtwohill North site will promote the need for two primary schools



## Section 3: Framework Masterplan Proposals

and one secondary school. Therefore, a site must be reserved for one primary school as part of Phase 1 and an additional primary school site and secondary school site as part of Phase 2

- 3.10.3 The location of the schools is determined by the need to insofar as possible be close to areas of greatest residential development and adjacent to proposed Open Space/Sports so that the possibility of sharing facilities is maximised.
- 3.10.4 It is intended that these sites, when required, will eventually be purchased by the Department of Education and Skills who will then build the schools. The schools should be centrally located in close proximity to the proposed Station Quarter, Linear Park, local parks and Green Corridor. All of these areas will be accessible to students via walkways and cycleways. The provision of car and bus parking, and set down areas at school sites will require very careful consideration to ensure pedestrian and traffic safety, as well as to avoid unnecessary traffic congestion during peak usage.

### Community Hall

- 3.10.5 A new community hall is required and should be integrated into the Neighbourhood Centre so as to maximise access for the wider community. The building should be designed to accommodate a diverse range of uses including indoor sports facilities, function rooms and childcare facilities and would be provided for under the Council's Recreation and Amenity Policy.
- 3.10.6 In specific terms it is preferable to construct a single large civic building so as to accommodate the above uses. However, this building should be easily subdivided to take into account various concurrent activities.
- 3.10.7 This building will need to be centrally located within or adjoining the Local Neighbourhood centre and should constitute a landmark building in its own right. It is envisaged that such a community building will be provided as part of Phase 2 of the development, in order to allow for a spread of social facilities within the overall development and to allow for the accumulation of points under the Council's Recreation and Amenity Policy. The Council will encourage other civic, community and cultural uses to locate within the community facility, including potentially the provision of a library and sports facilities if required to cater for the needs of a growing population. Any community building should also be capable of adaptation to allow for dual daytime and evening uses. There may also be a need to adapt the building to different uses in the future if so required.

### Childcare

- 3.10.8 The *Guidelines on Childcare facilities for Planning Authorities 2001* considers that crèche provision forms an integral part of proposals for new residential development. In particular it is stated that one purpose built childcare facility will normally be required where proposals involve the provision of 75 or more dwellings. Such buildings should be able to accommodate at least 20 children.

### 3.11 Business Uses

#### Mixed Use Station Quarter

- 3.11.1 In order to optimise the strategic position of lands close to the railway station, a high density mixed use approach is advocated. The inclusion of shops, restaurants, and community and small scale commercial uses at ground level with residential units on the upper floors should extend activity beyond normal business hours so as to create a new vibrant core at an important public transport node. Any retail uses within the neighbourhood centre needs to be sized to complement the retail offerings of Carrigtwohill Town Centre
- 3.11.2 An urban square will provide the focus for this area which will allow for social interaction and create a sense of place. Buildings shall enclose the square and create natural surveillance of the space. The public square should be designed to accommodate a variety of events such as a regular farmers market and should include cycle parking provision, public seating and public art.

### 3.12 Land Use Concept

- 3.12.1 The Framework Master Plan Concept Plan has been prepared following the analysis of policies and site considerations. The design concept is based on the principles set out in Section 3 of the master plan, namely:-
- To allocate residential neighbourhoods in higher densities around the railway station
  - To allocate a portion of land for the development of a mixed use railway quarter, where high density housing can mix with commercial activities as a central core to the proposed development.
  - To allocate the recreational areas on land at risk of flooding, a linear park on the large eastern area and two smaller parks in the centre of the site and to the east of the site.
  - To allocate land for two primary schools and a secondary schools in the east and west of the site in close proximity to the residential neighbourhoods.
  - Provide link roads to access all the residential neighbourhoods and the existing development south of the railway line, reinforcing the existing bridges and crossing points.
- 3.12.2 In accordance with the requirements of the X-01 objective in the Midleton Electoral Local Area Plan 2011, the land uses have been provided on the Concept Plan as shown below. In addition, the land use categories provided are listed in the table below.

Table 3-10 Land use Zonings

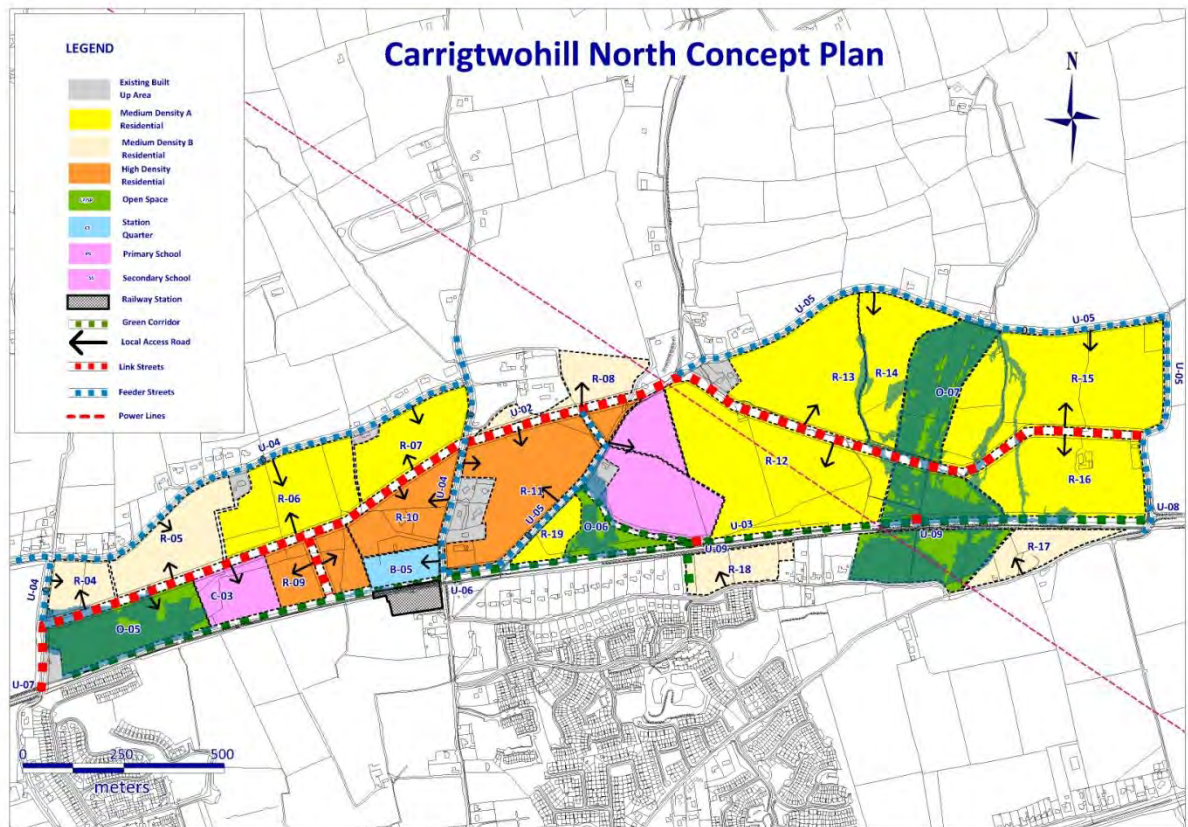
Land Use Zonings	
Land Parcel	Land Use
H1	High Density Residential

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H2	High Density Residential
H3	High Density Residential
M1	Medium B Density Residential
M2	Medium B Density Residential
M3	Medium A-Density Residential
M4	Medium A Density Residential
M5	Medium B Density Residential
M6	Medium A Density Residential
M7	Medium A Density Residential
M8	Medium A Density Residential
M9	Medium B Density Residential
M10	Medium A Density Residential
M11	Medium A Density Residential
M12	Medium B Density Residential
M13	Medium A Density Residential
C1	Station Quarter
PS1	Primary School
PS2	Primary School
SS	Secondary School
SP1	Open Space
SP2	Open Space
LP1	Linear Park
LP2	Linear Park
LP3	Linear Park

# Carrigtwohill North Framework Masterplan 2015

Figure 3-2 Carrigtwohill North Concept Plan



## Section 4. Phasing and Implementation



### 4.1 Introduction

4.1.1 This section sets out the phasing, implementation and funding strategy for the development site. The masterplan does not seek to set out the detailed design of the site at this stage in the process, rather it identifies the key design elements (such as the linear park location, access routes, neighbourhood centre location, school site location etc.), provides qualitative / quantitative criteria for future detailed design, sets out the infrastructure required to serve future development and identifies an implementation strategy for the project – including ‘trigger points’ for future infrastructure provision which will enable the development of each phase of the development. This will ensure that the development of the site will proceed in an orderly and timely manner.

### 4.2 Masterplan Phases

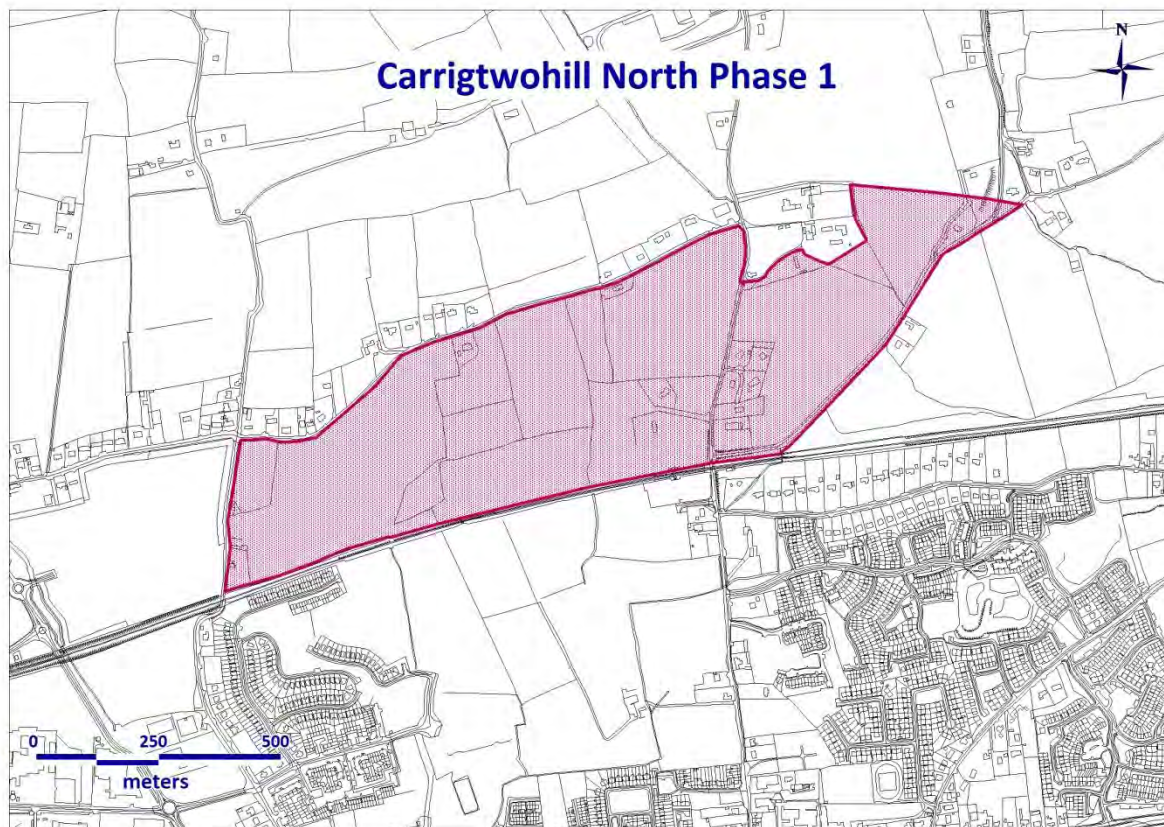
- 4.2.1 It is the objective of the Framework Masterplan to set out a logical and sequential order of phasing that allows for an orderly development pattern and maximises the development quantum related to investment in infrastructure. The timing of each phase of development is directly linked to infrastructure availability. It is envisaged that development phases may commence in a sequential order once appropriate and necessary infrastructure is available to serve the proposed development.
- 4.2.2 A total of two development phases (1 and 2) are identified within the development site. This masterplan specifies, for each phase, the number of residential units, commercial uses, educational facilities, social facilities, amenities, physical infrastructure and access strategy required, thereby setting out the enabling works that are required to allow development to commence.
- 4.2.3 Development within each phase should vary in terms of type and density in order to avoid uniformity in design. The phased area descriptions are not intended to be overly prescriptive regarding the form and visual appearance of future development, but rather set out an overall framework which will include guidance on land use mix that will inform future planning applications. This guidance should lead to a series of co-ordinated high quality developments across the master plan site which can respond to specific site characteristics and planned for facilities.
- 4.2.4 In addition, having regard to the central importance of movement within the site, all development phases will be required to demonstrate the availability of permeability through the site to access critical pedestrian, cyclist, public transport and vehicle transport infrastructure. Specifically, no development should commence until pedestrian, cyclist and vehicle movement corridors are available or sufficiently advanced to allow access to the southern and eastern site boundaries.
- 4.2.5 Specific development guidance on required infrastructure provision for each development phase is outlined in the following sections. This approach allows infrastructure providers and project developers to plan for the long term without having to provide large cost infrastructure in advance of its need.



## 4.3 Phasing Programme

### Phase 1

Figure 4-1 Carrigwohill North Phase 1



- 4.3.1 This phase of the development covers a developable area of approximately 39 ha and will provide up to 1,060 residential units. Phase 1 represents the lands closest to the railway station and also the lands which can currently be accessed more readily by motor vehicles. This phase is also closest to existing and proposed residential areas of the town.
- 4.3.2 Within this phase the Station Quarter is envisaged to be a vibrant, high density, mixed use local centre given its strategic position within the Framework Masterplan site adjoining the railway station. An urban square shall be at the heart of this character area and should be designed to accommodate a wide variety of events such as a regular local market and should include cycle parking provision, public seating and public art. Access to this square should be via a variety of pedestrian priority streets/lanes/arcades which should converge on this space to reinforce its centrality within the plan area. Phase 1 will also require the reservation of land for a 16 classroom primary school and the completion of a neighbourhood park and greenway at the western end of the site.



Table 4-1 Phase 1 Development Programme

Phase 1: Development Programme Carrigtwohill North	
Phasing of Development	Strategic Infrastructure and Service Requirements*
Prior to Commencement of Development	<p><u>Water Services</u></p> <ul style="list-style-type: none"> <li>Stormwater attenuation study</li> <li>Completion of Waste Water Treatment Plant extension</li> </ul> <p><u>Transport</u></p> <ul style="list-style-type: none"> <li>Complete Metropolitan Cork Suburban Rail Network Improvements Study</li> <li>Pedestrian/Cycle Bridge Feasibility Study</li> </ul>
➤ 0 – 500 Dwelling Units	<p><u>Transport</u></p> <ul style="list-style-type: none"> <li>Construction of Link Street (Arterial Road) connecting Wyse’s road and Station Road, link street heading south to the constructed underpass from the distributor road</li> <li>Implementation of external road improvements (see Table 4.2 below )</li> <li>Quality, Cycle and Walking network</li> </ul> <p><u>Retail/Commercial</u></p> <ul style="list-style-type: none"> <li>Commence development of Station Quarter</li> </ul> <p><u>Open Space</u></p> <ul style="list-style-type: none"> <li>Commence small park and part of the Greenway,</li> </ul>
➤ 500 – 1,000* Dwelling Units	<p><u>Transport</u></p> <ul style="list-style-type: none"> <li>Completion of Link Street as required.</li> <li>Implementation of external road improvements ( see Table)</li> </ul> <p><u>Education</u></p> <ul style="list-style-type: none"> <li>Provision of a site for a primary school</li> </ul> <p><u>Retail/Commercial</u></p> <ul style="list-style-type: none"> <li>Development of Station Quarter</li> </ul>

\*See Table 4.5 for principal infrastructure requirements and responsibility

4.3.3 In order to minimise the effects of this development on the wider Carrigtwohill Area particularly the additional traffic volumes which this phase of the development will generate, the following works have been identified in the Transport Assessment , as necessary to cater for the first 500 dwellings.

## Carrigtwohill North Framework Masterplan 2015

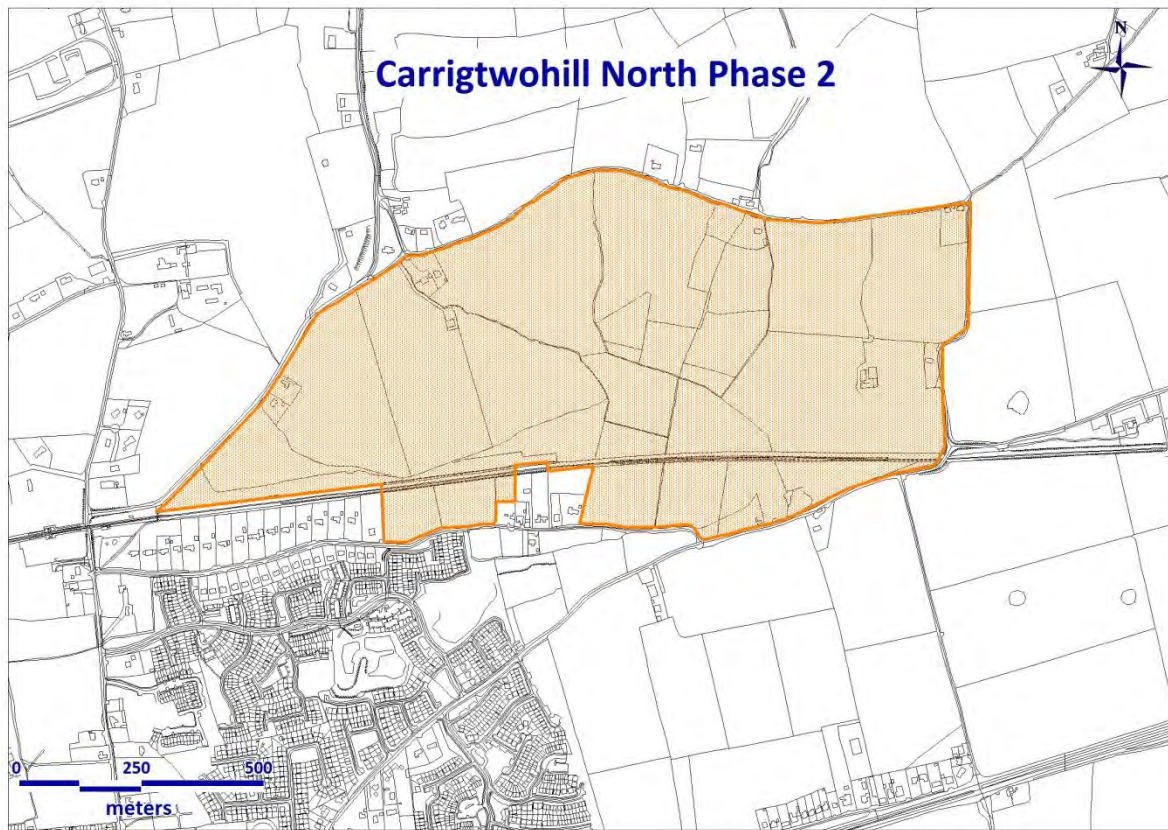
Table 4-2 External Transport Works

Phasing of Development	Strategic Infrastructure and Service External Works Requirements*
<ul style="list-style-type: none"> <li>➤ 0 – 500 Dwelling Units</li> </ul>	<p><u>Transport</u></p> <ul style="list-style-type: none"> <li>• Signalisation of Main St/Maple Crescent Junction</li> <li>• Signalisation of proposed Oakbrook Link Road/Station Road junction</li> <li>• Signalisation of Main Street/Station Road junction</li> <li>• Right hand turn lane to proposed new school zoning c-01 ( Midleton LAP 2011</li> <li>• Improvement Works on Station Road</li> <li>• Traffic management/urban renewal works on Main Street</li> <li>• Upgrade Cobh road roundabout</li> <li>• Implementation of Complete Metropolitan Cork Suburban Rail Network Improvements Study</li> <li>• Quality Cycle and Walking Network (Stage )</li> </ul>
<ul style="list-style-type: none"> <li>➤ 500 – 1,000* Dwelling Units</li> </ul>	<p><u>Transport</u></p> <ul style="list-style-type: none"> <li>• Signalisation of Main Street and Carrigane Road Junction</li> <li>• Signalise Main Street/Wises Road Junction</li> <li>• Upgrade Cross roads junction Maple Lane/Oakbrook to roundabout.</li> </ul>

\*See Table 4.5 for principal infrastructure requirements and responsibility

Phase 2

Figure 4-2 Carrigtwohill North Phase 2



4.3.4 This phase of the development covers an area of approximately 83 ha and will provide up to 1,474 residential units. Phase 2 lands are located in the east of the masterplan site. The lands cover a significant portion of the entire masterplan site and prior to the development of Phase 2 there will be a requirement for a transport assessment to analyse the changes to modal shift from the development and identify any new road and transport infrastructure required timing for delivery. Phase 2 will also require the provision of 2 parks, a Local Park and a Linear Park and the reservation of land for a 16 classroom primary school and a secondary school.

Table 4-3 Phase 2 Development Programme

Phase 2: Development Programme Carrigtwohill North	
Phasing of Development	<b>Strategic Infrastructure and Service Requirements</b>
Prior to Granting of Planning Permission for	<u>Transport</u> <ul style="list-style-type: none"> <li>Phase 2 Transport Assessment required to assess modal shift targets and identify road and transport infrastructure and required timing for delivery</li> </ul>

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Phase 2	<p><u>Water Services</u></p> <ul style="list-style-type: none"> <li>• Water Services Assessment to identify the need for provision of an adequate Water Supply - see Section 3 Water Services.</li> <li>• Water Services Assessment to identify the need for the provision of adequate capacity for Waste Water Treatment and collection - see Section 3 Water Services.</li> </ul>
➤ 1,000 – 1,750 Dwelling Units	<p><u>Transport</u></p> <ul style="list-style-type: none"> <li>• Extension and completion of Link Street from Phase 1 through Phase 2</li> <li>• Quality Cycling and Walking Network</li> <li>•</li> </ul> <p><u>Open Space</u></p> <ul style="list-style-type: none"> <li>• Completion of Small Park and Linear Park</li> </ul> <p><u>Education</u></p> <ul style="list-style-type: none"> <li>• Provision of a site for a Primary School/Secondary School Multi Campus</li> </ul>
➤ 1,750 – 2,500 Dwelling Units	<ul style="list-style-type: none"> <li>• <u>Transport</u></li> <li>• Extension and completion of Link Street</li> <li>•</li> <li>• <u>Open Space</u></li> <li>• Extension and completion of Greenway and Parks</li> </ul>

\*See Table 4.5 for principal infrastructure requirements and responsibility

4.3.5 The transport assessment also sets out a list of infrastructural works required outside of the Masterplan Site within the wider Carrigtwohill Area.

**Table 4-4 External Transport Works**

Phasing of Development	Strategic Infrastructure and Service External Works Requirements*
➤ 1,000-1,750 Dwelling Units	<p><u>Transport</u></p> <ul style="list-style-type: none"> <li>• Signalisation of junction at Main Street and Carrigtwohill Town Centre Exit slip road N25.</li> </ul>
➤ 1,750-2,500 Dwelling Units	<p><u>Transport</u></p> <ul style="list-style-type: none"> <li>• Construction of new interchange junction on N25 at former Amgen Site and ancillary roads network.</li> </ul>

\*See Table 4.5 for principal infrastructure requirements and responsibility

### 4.4 Masterplan Implementation

4.4.1 The development of this site should proceed in accordance with the phasing as set out in this section. An implementation programme will be applied to each phase of the development which will ensure that the development of the site will proceed in an orderly and timely manner with the appropriate infrastructure in place to serve the site.

#### Construction Activities

4.4.2 It will be a requirement that construction activities will be planned and implemented in accordance with recognised environmental best practise to manage the risk of water pollution.

#### Funding and Delivery

4.4.3 The financing and timely delivery of the physical, social and community infrastructure required for the Framework Masterplan lands needs to be clearly outlined to inform project advancement. The overall principle of this section is that everyone who lives in this neighbourhood will pay the following:-

- A General Development Contribution
- A Supplementary Rail Contribution

4.4.4 In principle, the implementation of this Framework Master Plan will be done by individual landowners/developers in conjunction with the Cork County Council and other key service providers, such as Irish Water (IW), National Roads Authority (NRA), National Transport Authority (NTA) and the Department of Education who are responsible for the delivery of key infrastructure.

4.4.5 The Cork County Council's Development Contribution Scheme will be applied to facilitate the provision of necessary infrastructure required for the development of the master plan area. These contributions are applied to applicants as a condition of planning approval and are in the form of a General Contribution that is levied for roads and amenity for residential development. In calculating the amount required per dwelling 40sqm (limit of exempted development amount) must be deducted from the size of each unit.

4.4.6 The Supplementary Development Contribution Scheme in accordance with the provisions of Section 49 of the Planning & Development Act, 2000 adopted for funding the development of the Cork-Midleton Railway line shall also apply to all residential development within 1km of the rail line and to all commercial development within 0.5km of the rail line. Where the railway contribution does apply to a development the general roads contribution shall be reduced by 75%.The funds generated from this scheme could be used to pay for the railway related projects such as pedestrian and cycle bridge study and the implement the construction of new pedestrian/cycle bridges over the railway line.

4.4.7 Since the 1st of January 2014, Irish Water became the statutory body with the responsibility for all water services, both water and waste water. The provision of a water services connection will be

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carried out by Irish Water in partnership with each Local Authority. Individual developers will enter connection agreements with Irish Water for the provision of water and waste water on the site.

4.4.8 The following table indicates how each element of infrastructure is to be funded and from whom funding will be required. The details and basis for the determination of the financial contributions are set out in Cork County Council's Development Contribution Scheme.

Figure 4-3 Infrastructure Requirements

Carrigtwohill North Framework Masterplan Principal Infrastructure Requirements				
Phasing of Development	Type of Infrastructure	Construction Responsibility	Funding Source	Other Notes
Prior to commencement of development	Cork Suburban Rail Network Improvement Study	Cork County Council/City Council/NTA/Irish Rail	Cork County Council/City Council	Section 49 Development Contributions
	Sustainable Urban Drainage Scheme (SuDs) Study	Cork County Council	Cork County Council	General Development Contributions
	Provision of capacity for Waste Water Treatment and collection	Irish Water	Irish Water	Upgrade Carrigtwohill WWTP to provide adequate capacity ( in progress) Connection agreements between developers and Irish Water.
	Carrigtwohill Cycle and Pedestrian Bridge Study	Cork County Council	Cork County Council	Section 49 Development Contributions
Phase1:	Construction of West-East Link Street(Arterial Road)	Developer	Developer	Necessary to provide access

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0-1,000 dwellings	as needed			across Masterplan lands to facilitate developments
	Link Street to underpass	Developer	Developer	Provides access from existing underpass and lands south of the railway line to the distributor road
	Link Road between Station Road and Oakbrook.	Developer	Developer	Provides access to Station Road from existing development. This is external to the site on land that already has planning permission.
	Implementation of Transport Assessment and Traffic management recommendations	Cork County Council	General Development Contributions	As required by Phase 1 Traffic & Transport Assessment.
	Implementation of Cork Suburban Rail Network Improvement Study recommendations	Cork County Council/Irish Rail	Section 49 Development Contributions	As required
	Provision of Water Supply, Disposal of Wastewater	Irish Water	Irish Water	Connection Agreements between developers and Irish Water.
	Implementation of Sustainable Urban	Developers	Developers	Storm water drainage

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	Drainage Scheme (SuDs) Study			
	Small Park	Developers	Developers	Possible link with attenuation areas and bio-diversity areas (see Ecological Study)
	Greenway	Developers	Developers	Connectivity within the site to the train station and other open spaces/amenity
	Carrigtwohill Quality Cycling and Walking Network (Stage 1)	Cork County Council	Cork County Council	Connectivity with Carrigtwohill
	Pedestrian Underpass Cork-Midleton Railway	Cork County Council;	Cork County Council	Provide connectivity between north and south of railway line
	Phase 2 1,000-1,750 dwellings	Link Street Section 2	Developers	Developers
Implementation of Transport Assessment and Traffic management recommendations		Cork County Council	Cork County Council	As required by Phase 2 Traffic & Transport Assessment...
Provision of Water Supply- New Storage Reservoir		Irish Water	Irish Water	Provision of additional storage for Carrigtwohill.



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				Connection agreements between developers and Irish Water.
	Carrigtwohill Quality Cycling and Walking Network (Stage 2)	Cork County Council	General Development Contributions/NTA	Connectivity with Carrigtwohill
	Implementation of Cork Suburban Rail Network Improvement Study recommendations	Cork County Council/Irish Rail	Section 49 Development Contributions	As required
	Cycle /Pedestrian links to Carrigtwohill including Cycle/Pedestrian Bridge Study	Cork County Council	Section 49 Supplementary Contributions	Located between linear park and eastern Carrigtwohill (Bog Road)
	Completion of Small Park	Developers	Developers	Possible link with attenuation areas and bio-diversity areas (see Ecological Study)
	Commencement of Linear Park	Cork County Council	Cork County Council	
	Extension of Greenway	Developers	Developers	
	Further installation of SuDs attenuation measures	Developers	Developers	Storm water drainage
	Provision of Primary and Post Primary Schools	Department of Education	Department of Education	As required.
<b>Phase 2</b>	Implementations	NRA/NTA/Cork	General	As required by

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1750-2500 dwellings	Transport Assessment and Traffic management recommendations	County Council	Development Contributions/ NRA and NTA	Phase 2 Traffic & Transport Assessment. May require major Upgrade to N25
	Completion of Linear Park	Cork County Council	Cork County Council	Developers can make a cash contribution towards the park in lieu of a reduction in the requirement for open space in a residential development
	Completion of Greenway	Developers	Developers	
	Further Installation of SuDs Study attenuation measures	Developers	Developers	Storm water drainage

### 4.5 Sources of Funding

4.5.1 Due to the project site being located on the Middleton Cork suburban railway, it is liable for funding through the Supplementary Contributions Scheme (Section 49) to be implemented in conjunction with Cork County Councils General Development Contribution Scheme. The funding mechanism for the project will rely on a combination of development contributions from developers. Although the land is mostly privately owned and construction funding is usually provided through private developers, there is a need for the local authority to provide some infrastructure to initiate the project. This funding would be recovered by way of development contributions.

#### Development Contributions for Local Road Infrastructure and Open Space

4.5.2 Cork County Council will need to prepare a General Development Contribution Scheme for this master plan implementation. Funds raised by the contributions would be used to improve the road network and junctions as required by the Transport Assessment and its revision after the implementation of Phase 1. Developers at Carrigtwohill North will be required to make contribution to the costs of this work. All other infrastructure identified in Table 4.5 will need to be built by developers.

### Water Infrastructure

- 4.5.3 All water services funding will be provided through Irish Water – the developer will require a connection agreement with Irish Water

### National Road Infrastructure

- 4.5.4 Funding for National Roads Infrastructure will be provided through the NRA and NTA.

### Rail Services and Infrastructure

- 4.5.5 Funding for rail services will be provided through the NTA and Irish Rail. Cork County Council will continue to require developers to contribute to the cost of railway infrastructure through the S49 Supplementary Scheme.