

# SEA ENVIRONMENTAL REPORT

## APPENDIX II – NON-TECHNICAL SUMMARY

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FOR THE

### DRAFT GOREY TOWN AND ENVIRONS LOCAL AREA PLAN 2017 - 2023

**for: Wexford County Council**

County Hall,  
Carricklawn,  
Wexford.



**by: CAAS Ltd.**

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## **Section 1 Introduction and Terms of Reference**

This is the Non-Technical Summary of the Environmental Report for the Gorey Town and Environs Local Area Plan 2017-2023. The purpose of the Environmental Report is to provide a clear understanding of the likely environmental consequences of decisions regarding the adoption and implementation of the Plan.

### **What is an SEA?**

SEA is a systematic process of predicting and evaluating the likely environmental effects of implementing a proposed plan, or other strategic action, in order to ensure that these effects are appropriately addressed at the earliest appropriate stage of decision-making on a par with economic, social and other considerations.

### **Why is it needed?**

The SEA has been carried out in order to comply with the provisions of the SEA Regulations and in order to improve planning and environmental management within Gorey Town and its Environs. The output of the process is an Environmental Report that should be read in conjunction with the Plan.

### **How does it work?**

All of the main environmental issues in the area were assembled and presented to the team who prepared the Plan. This helped them to devise a Plan that protects whatever is sensitive in the environment. It also helped to identify wherever potential conflicts between the Plan and the environment exist and enabled these conflicts to be mitigated.

The SEA was scoped in consultation with designated environmental authorities.

### **What is included in the Environmental Report that accompanies the Plan?**

The Environmental Report contains the following information:

- A description of the environment and the key environmental issues;
- A description and assessment of alternatives for the Plan;
- An assessment of the provisions of the Plan; and,
- Mitigation measures which set out to aid compliance with important environmental protection legislation - e.g. the Water Framework Directive, the Habitats Directive - and which will avoid/reduce the environmental effects of implementing the Plan.

### **What happens at the end of the process?**

An SEA Statement has been prepared which summarises, inter alia, how environmental considerations have been integrated into the Plan.

## Section 2 The Local Area Plan

### 2.1 Vision and Key Principles

Wexford County Council's vision for the town included in the Draft Plan is as follows:

*By 2023 Gorey Town will be a high quality, green, well connected town with a compact, walkable urban form. It will have a network of sustainable neighbourhoods that are socially inclusive and desirable places to live. Gorey Town will have high quality sustainable jobs and it will be an attractive place to live in, to visit and to enjoy its high quality public realm, its vibrant arts and culture and its bustling town centre and premier retailing services.*

The key principles for achieving the Vision are to:

- Require high quality and people friendly design.
- Continue to develop Gorey as a thriving and attractive town with a vibrant mix of uses.
- Continue to develop the town as a premier retail destination.
- Continue to improve the public realm so that the town is an attractive place to live, work and visit.
- Prioritise local economic and employment development.
- Continue to ensure that adequate provision is made for childcare, educational and recreational facilities.
- Improve the movement, connectivity and legibility within the plan area for users of all forms of transport, in particular pedestrians and cyclists.
- Require high quality accessible public open spaces and continue to provide a network of public open spaces at appropriate locations in the plan area.
- Protect natural, built and cultural heritage.
- Maximise the benefits of biodiversity and enhance the green infrastructure network in the area.

### 2.2 Relationship with other relevant Plans and Programmes

#### Introduction

The Plan sits within a hierarchy of land use forward planning strategic actions. The Plan must comply with relevant higher-level strategic actions and may, in turn, guide lower level strategic actions. The following sections identify a number of these strategic actions, further details of which are contained in the main Plan document.

The Plan is at the lower level of the hierarchy in the context of national, regional and county level plans. The preparation of the Local Area Plan has also been informed and influenced by various local government, national and international policy documents including (but not limited to) the following:

#### **International**

- Agenda 2000
- Local Agenda 21
- The European Spatial Development Perspective (ESDP)
- Various EU Directives

#### **National**

- Infrastructure and Capital Investment 2012-16: Medium Term Exchequer Framework, 2011
- Sustainable Development: A Strategy for Ireland, 1997
- National Spatial Strategy 2002 – 2020 (NSS)

- Ministerial Guidelines issued under Section 28 of the Planning and Development Act 2000-2011

***Regional***

- Regional Planning Guidelines for the South-East Region 2010-2022

***County***

- Wexford County Development Plan 2013-2019

**Regional Planning Guidelines**

County Wexford, including Gorey Town and Environs, is subject to the Regional Planning Guidelines for the South-East Region 2010-2022 that provide a framework for the long-term strategic development of the South-East Region. The Guidelines do this through setting out goals, policies and objectives in relation to population targets, housing, infrastructure, economic development, environment, amenities, social infrastructure and community development, ensuring the successful implementation of the NSS at regional, county and local level.

**Wexford County Development Plan 2013-2019**

The Wexford County Development Plan 2013-2019 sets out the strategic planning and sustainable development of County Wexford over its lifetime and is consistent with the National Spatial Strategy and the Regional Planning Guidelines (RPGs).

The South-East Region is divided into six smaller sub-areas. Gorey Town is located within Sub-Area 'North County Wexford'. The principal issues associated with this area are:

- Strong population growth-influence of the Greater Dublin Area is present.
- Strong physical links to Dublin and the Mid-East Regions.
- Demographic implications for the rest of the County and the Hub at Wexford Town.
- Tourism development to be facilitated.
- Urban sprawl to be controlled and monitored.
- Sensitive coastal landscapes.

The RPGs designate Gorey Town as a 'Larger Town'. The town has recently experienced high levels of population growth and the RPGs highlight that while the town will continue to be an attractive location for new residential development, care must be taken to ensure that the continued expansion of the town is more measured to ensure that community, social and retail development keep pace with recent rapid phases of mainly residential development.

**Environmental Protection Objectives**

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

## **Section 3     The Environmental Baseline**

### **3.1     Introduction**

The environmental baseline of Gorey Town and its Environs is described in this section. This baseline together with the Strategic Environmental Objectives, which are identified further in the document, is used in order to identify, describe and evaluate the likely significant environmental effects of implementing the Draft Plan and in order to determine appropriate monitoring measures. The environmental baseline is described in line with the legislative requirements encompassing the following components – biodiversity, flora and fauna, population, human health, soil, water, air and climatic factors, material assets, cultural heritage, landscape and the interrelationship between these components.

The lack of a centralised data source that could make all environmental baseline data for the Plan area both readily available and in a consistent format posed a challenge to the SEA process. This difficulty is one which has been encountered while undertaking SEAs at local authorities across the Country and was overcome by investing time in the collection of data from various sources and through the use of Geographical Information Systems.

### **3.2     Likely Evolution of the Environment in the Absence of the Plan**

The 2010-2016 Gorey Town and Environs Local Area Plan contains provisions that contribute towards environmental protection and sustainable development within Gorey and its surrounding environs.

If the current Plan was to expire and not be replaced by the new Plan, this would result in a deterioration of the town's planning and environmental protection framework. Although higher-level environmental protection objectives - such as those of the new 2013-2019 County Development Plan and various EU Directives and transposing Irish Regulations – would still apply, the deterioration of this framework would mean that new development would be less coordinated and controlled. Such development would have the potential to result in an increase in the occurrence of adverse effects on all environmental components, especially those arising cumulatively. Cumulative effects occur as a result of the addition of many small impacts to create one larger, more significant, impact.

Such potential adverse effects could include:

- Loss of biodiversity with regard to Natura 2000 Sites/Annexed habitats and species;
- Loss of biodiversity with regard to ecological connectivity and stepping stones;
- Loss of biodiversity with regard to designated sites including Wildlife Sites and species listed on Schedule 5 of the Wildlife Act 1976;
- Spatially concentrated deterioration in human health;
- Adverse impacts on the hydrogeological and ecological function of the soil resource;
- Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology;
- Increase in the risk of flooding;
- Failure to provide adequate and appropriate waste water treatment;
- Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean;
- Increases in waste levels;
- Failure to contribute towards sustainable transport and associated impacts;
- Effects on entries to the Record of Monuments and Places and other archaeological heritage;
- Effects on entries to the Records of Protected Structures and other architectural heritage; and
- Occurrence of adverse visual impacts.

### 3.3 Biodiversity and Flora and Fauna

#### Natura 2000

Candidate Special Areas of Conservation (cSACs) have been selected for protection under the European Council Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC) by the (former) Department of the Environment, Heritage and Local Government due to their conservation value for habitats and species of importance in the European Union.

Special Protection Areas (SPAs) have been selected for protection under the 1979 European Council Directive on the Conservation of Wild Birds (79/409/EEC) due to their conservation value for birds of importance in the European Union. SPAs, along with SACs, comprise Ireland's Natura 2000 network – part of an EU-wide network of protected areas established under the Habitats Directive.

There are no Natura 2000 sites occurring inside the Plan boundary. There is one SPA and three cSACs located within a 15km radius of the plan area. These are shown on Table 3.2 and mapped on Figure 3.1.

**Table 3.1 Natura 2000 Sites within 15km of the Plan area**

Natura 2000 Sites		
Designation	Code	Site Name
cSAC	000781	Slaney River Valley SAC
cSAC	001742	Kilpatrick Sandhills SAC
cSAC	000700	Cahore Polders And Dunes SAC
SPA	004143	Cahore Marshes SPA

#### Proposed Natural Heritage Areas

Natural Heritage Areas (NHAs) are designated due to their national conservation value for ecological and/or geological/geomorphological heritage. They cover nationally important semi-natural and natural habitats, landforms or geomorphological features, wildlife plant and animal species or a diversity of these natural attributes. NHAs are designated under the Wildlife (Amendment) Act 2000. Proposed NHAs (pNHA) were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated.

There are no NHAs occurring inside the Plan boundary or within 15km of the Plan area. There are 12 pNHAs within 15km of the Plan area, as listed on Table 3.2 and mapped on Figure 3.2. Most of these are situated downstream along the County's coastline. The closest pNHA is the Courtown Dunes and Glen pNHA that is located along the Owenavorrhagh River close to Courtown.

**Table 3.2 NHAs and pNHAs in the vicinity of the Plan area**

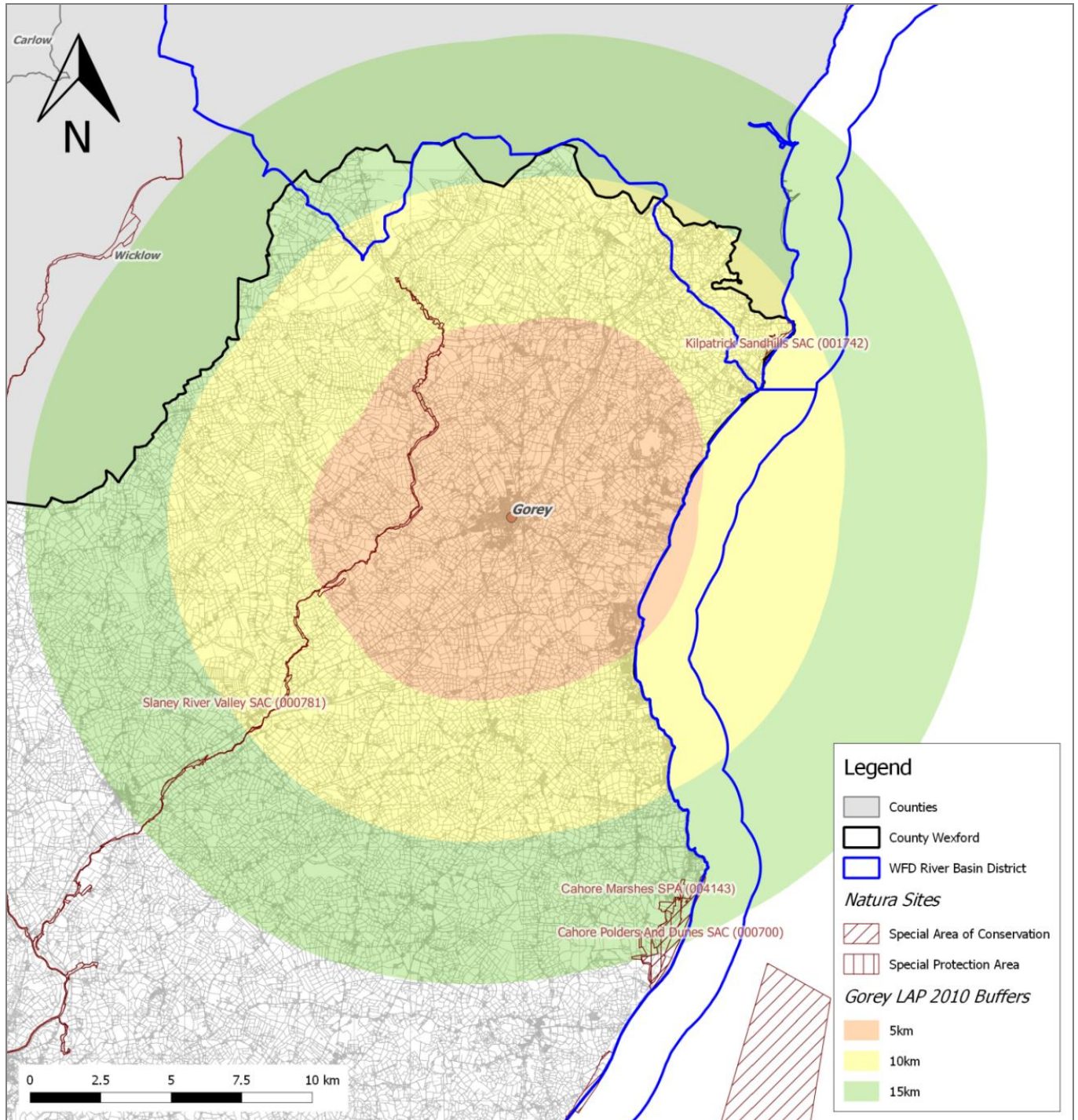
Proposed Natural Heritage Areas		
Designation	Code	Site Name
pNHA	000757	Courtown Dunes and Glen
	000745	Ballymoney Strand
pNHA	001745	Arklow Rock-Askintinny
pNHA	001742	Kilpatrick Sandhills
pNHA	001834	Kilgorman River Marsh
pNHA	001733	Ardamine Wood
pNHA	001737	Donaghmore Sandhills
pNHA	000700	Cahore Polders and Dunes
pNHA	001748	Avoca River Valley
pNHA	001931	Arklow Town Marsh
pNHA	000702	Leskinfere Church, Clogh
pNHA	001736	Cahore Point North Sandhills

### **Ecological Networks and Connectivity**

Ecological networks are important in connecting areas of local biodiversity with each other and with nearby designated sites so as to prevent islands of habitat from being isolated entities. They are composed of linear features, such as treelines, hedgerows and rivers/streams, which provide corridors or stepping-stones for wildlife species moving within their normal range. They are important for the migration, dispersal and genetic exchange of species of flora and fauna particularly for mammals, especially for bats and small birds and facilitate linkages both between and within designated ecological sites, the non-designated surrounding countryside and the town.

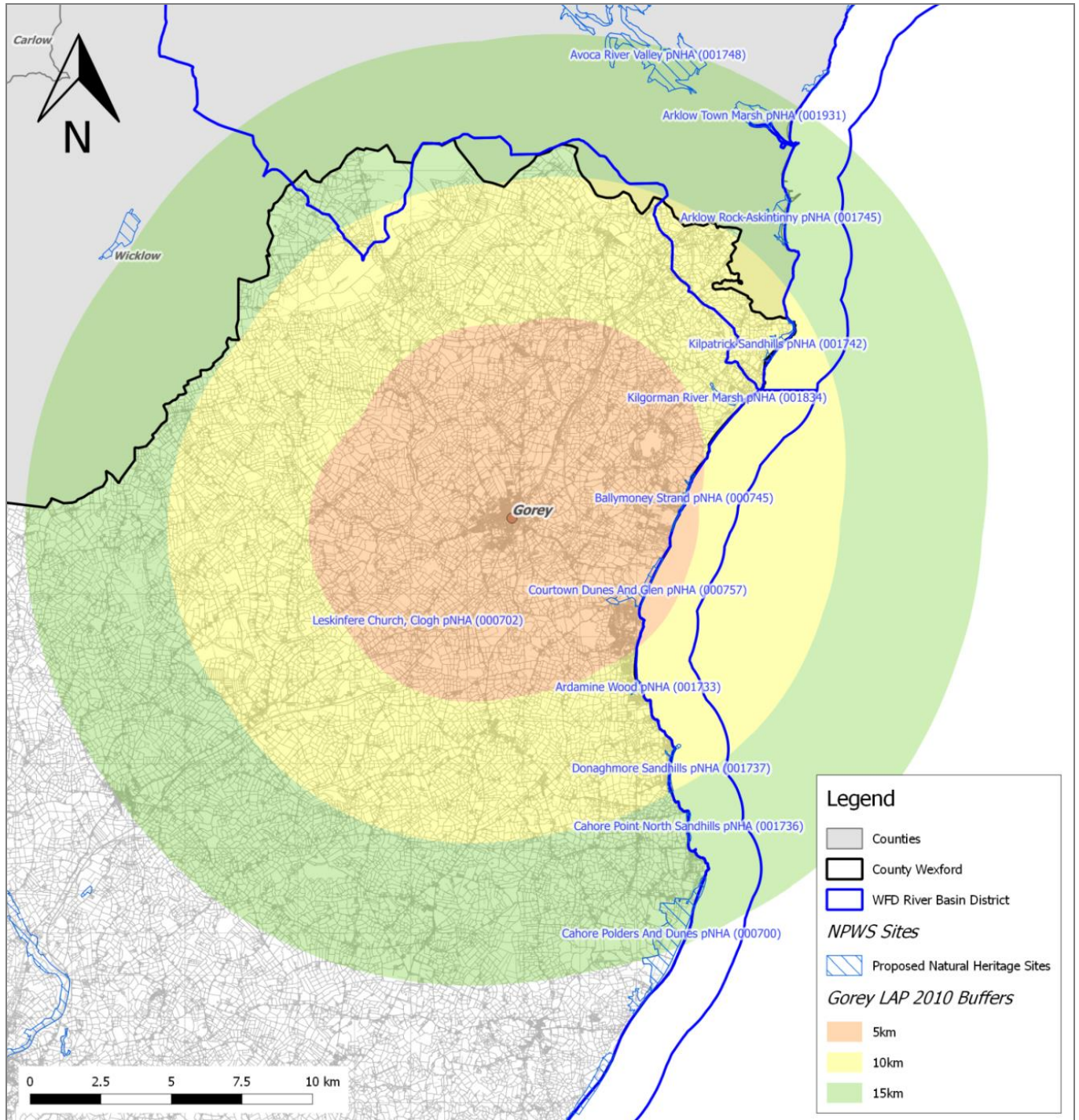
Important ecological networks comprise a variety of features including the Banogue and Ballyowen River corridors that traverse the Plan area, various open spaces, hedgerows and the wooded Ramsford Park in the north of the Plan area.





**Figure 3.1 cSACs and SPAs in the vicinity of the Plan area**

Source: NPWS (datasets downloaded February 2016)



**Figure 3.2 NHAs and pNHAs in the vicinity of the Plan area**

Source: NPWS (datasets downloaded February 2016)



## 3.4 Population and Human Health

### Population

In Census 2002, the population of Gorey Town and its Environs was 5,282 persons. This increased to 7,193 persons in Census 2006 - an increase of 1,911 persons or 36%. The recorded population in Census 2011 was 9,114 persons. This represented an increase of 1,921 persons or 27% since 2006.

### Human Health

Human health has the potential to be impacted upon by environmental vectors (i.e. environmental components such as air, water or soil through which contaminants or pollutants, which have the potential to cause harm, can be transported so that they come into contact with human beings). Hazards or nuisances to human health can arise as a result of exposure to these vectors arising from incompatible adjacent land uses for example. These factors have been considered with regard to: the description of the baseline of each environmental component; and the identification and evaluation of the likely significant environmental effects of implementing the Plan.

## 3.5 Soil

Soil is the top layer of the earth's crust. It is formed by mineral particles, organic matter, water, air and living organisms. Soil can be considered as a non-renewable natural resource because it develops over very long timescales. It is an extremely complex, variable and living medium and performs many vital functions including: food and other biomass production, storage, filtration and transformation of many substances including water, carbon, and nitrogen. Soil has a role as a habitat and gene pool, serves as a platform for human activities, landscape and heritage and acts as a provider of raw materials. Such functions of soil are worthy of protection because of their socio-economic as well as environmental importance.

The Geological Survey of Ireland (GSI) and the National Parks and Wildlife Service (NPWS) of the Department of Arts, Heritage and the Gaeltacht are in the process of identifying important geological and geomorphological sites in Ireland for designation as NHAs. The sites are being selected under 16 different geological themes with a representative sample to be identified under each theme. A second tier of County Geological Sites are identified for inclusion in development plans in order to receive a measure of recognition and protection through the planning system. The closest County Geological Site in proximity to the Plan area is Ballymoney Strand to the north of Courtown, c. 5km away from the Plan area.

## 3.6 Water

### Potential Pressures on Water Quality and the Water Framework Directive

Human activities, if not properly managed, can cause deterioration in water quality. Pressures exerted by human activities include the following: sewage and other effluents discharged to waters from point sources, e.g. pipes from treatment plants; discharges arising from diffuse or dispersed activities on land; abstractions from waters; and structural alterations to water bodies. Since 2000, Water Management in the EU has been directed by the Water Framework Directive 2000/60/EC (WFD). The WFD requires that all Member States implement the necessary measures to prevent deterioration of the status of all waters - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving "good status". All public bodies are required to coordinate their policies and operations so as to maintain the good status of water bodies that are currently unpolluted and improve polluted water bodies to a good status. Ireland has been divided into eight river basin districts or areas of land that are drained by a large river or number of rivers and the adjacent estuarine / coastal areas. The management of water resources is on these river basin districts. Gorey Town and its Environs fall within the South Eastern River Basin District.

## Surface Water

The WFD defines 'surface water status' as the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status. Ecological status is an expression of the structure and functioning of aquatic ecosystems associated with surface waters. Such waters are classified as of "good ecological status" when they meet Directive requirements. Good surface water chemical status means that concentrations of pollutants in the water body do not exceed the environmental limit values specified in the Directive.

The Banoge River is the principal river that flows through the Plan area and its main tributaries are the Ballyowen River and the Clonattin Upper River. The WFD status of the River Banoge is currently classified as being of *moderate status* upstream of the Regional Road R72 and *poor status* downstream of the Regional Road R72 (see Figure 3.3). The Ballyowen River that flows into the Banoge River upstream of the R72 bridge is identified as being of *moderate status*. The Clonattin Upper River that flows into the Banoge River downstream of the R72 bridge is identified as being of *poor status*.

The Banogue flows into the Owenavorrigh River that is classified as being of *moderate status* both upstream and downstream of the town.

The Owenavorrigh Estuary at Courtown is also classified as being of *moderate status* as are the coastal waters in this area.

## Groundwater

For groundwater bodies, the approach to classification is different from that for surface water. For each body of groundwater, both the chemical status and the quantitative must be determined. Both have to be classed as either good or poor. The WFD sets out a series of criteria that must be met for a body to be classed as good chemical and quantitative status.

The status of the groundwater underlying the area of Gorey Town and Environs is identified as being of good status (see Figure 3.4), meeting the objectives of the WFD.

The Geological Survey of Ireland (GSI) rates aquifers according to both their productivity and vulnerability to pollution.

Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter underground water. Figure 3.5 maps aquifer vulnerability for the Plan and surrounding area – much of the area is identified as being of high or moderate vulnerability. A number of areas in the Plan area are identified as having rock at or near the surface, and aquifer vulnerability surrounding these areas is identified as being of extreme vulnerability. Areas to the east of Gorey Town are of low vulnerability.

A regionally important aquifer- fissure bedrock occurs under much of the Plan area, particularly to the south and southeast. A locally important bedrock aquifer (Moderately Productive only in Local Zones) occurs to the north and northwest of the Plan area.

## Flooding

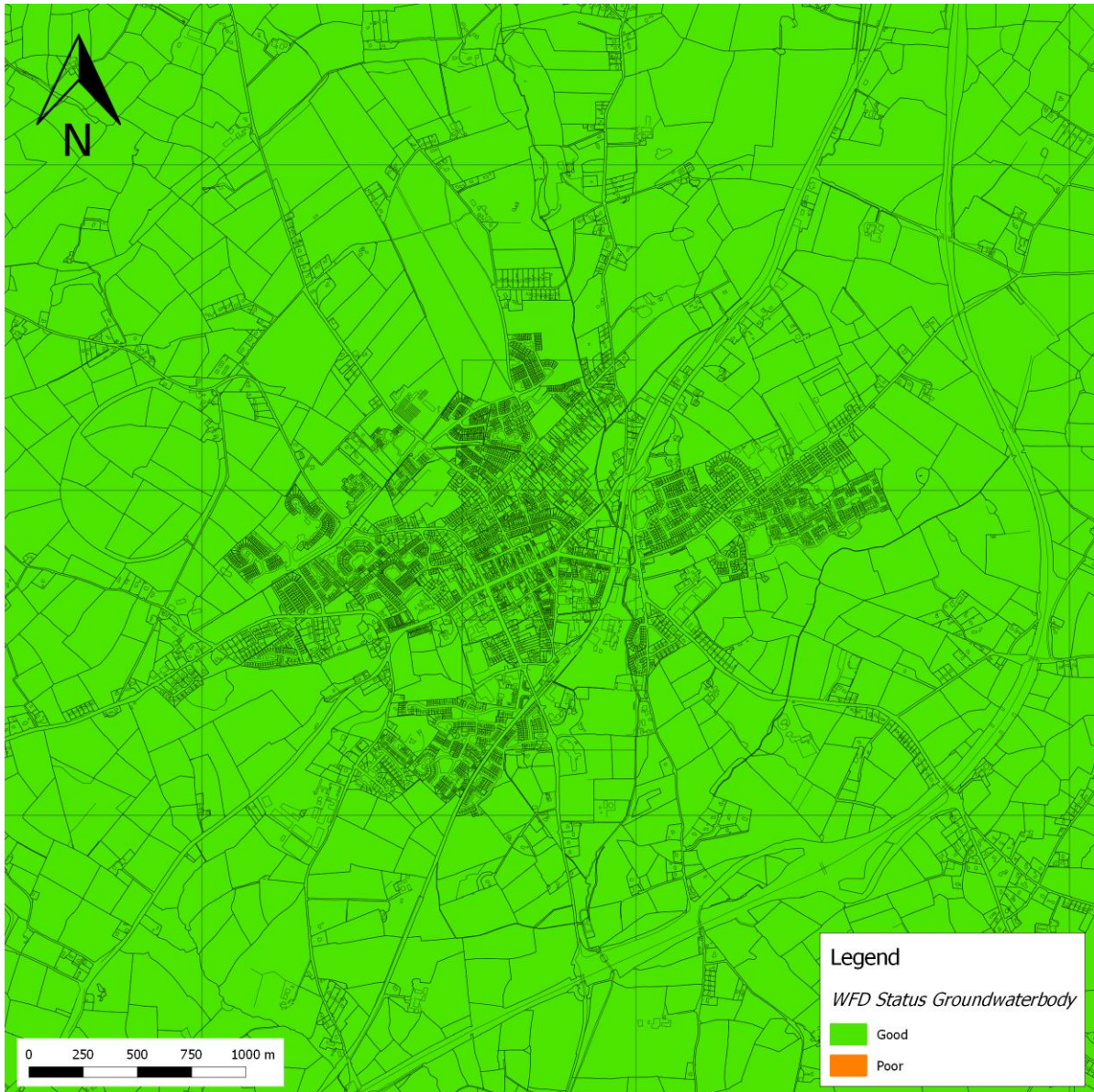
A Strategic Flood Risk Assessment (SFRA) has been undertaken alongside the preparation of the Plan. The requirement for SFRA is provided under the Flood Risk Management Guidelines. The Banoge River is the principal river that flows through the Plan area and its main tributaries are the Ballyowen River and the Clonattin Upper River. The OPW has identified two recurring flood events within the Plan area along the Banoge River at the Gorey Arklow Road railway bridge and at Gorey Garden City. The Council has implemented measures including the installation of piping systems and improved drainage systems that have assisted in alleviating the flooding issue. Areas at risk of flooding adjacent to these watercourses are mapped on Figure 3.6.

The preparation of the Plan, SEA and SFRA has taken place concurrently and the findings of the SFRA have informed both the Plan and the SEA. The SFRA has facilitated the integration of flood risk management considerations into the Plan.



**Figure 3.3 WFD Surface Water Status**  
Source: EPA (2011; datasets downloaded February, 2014)

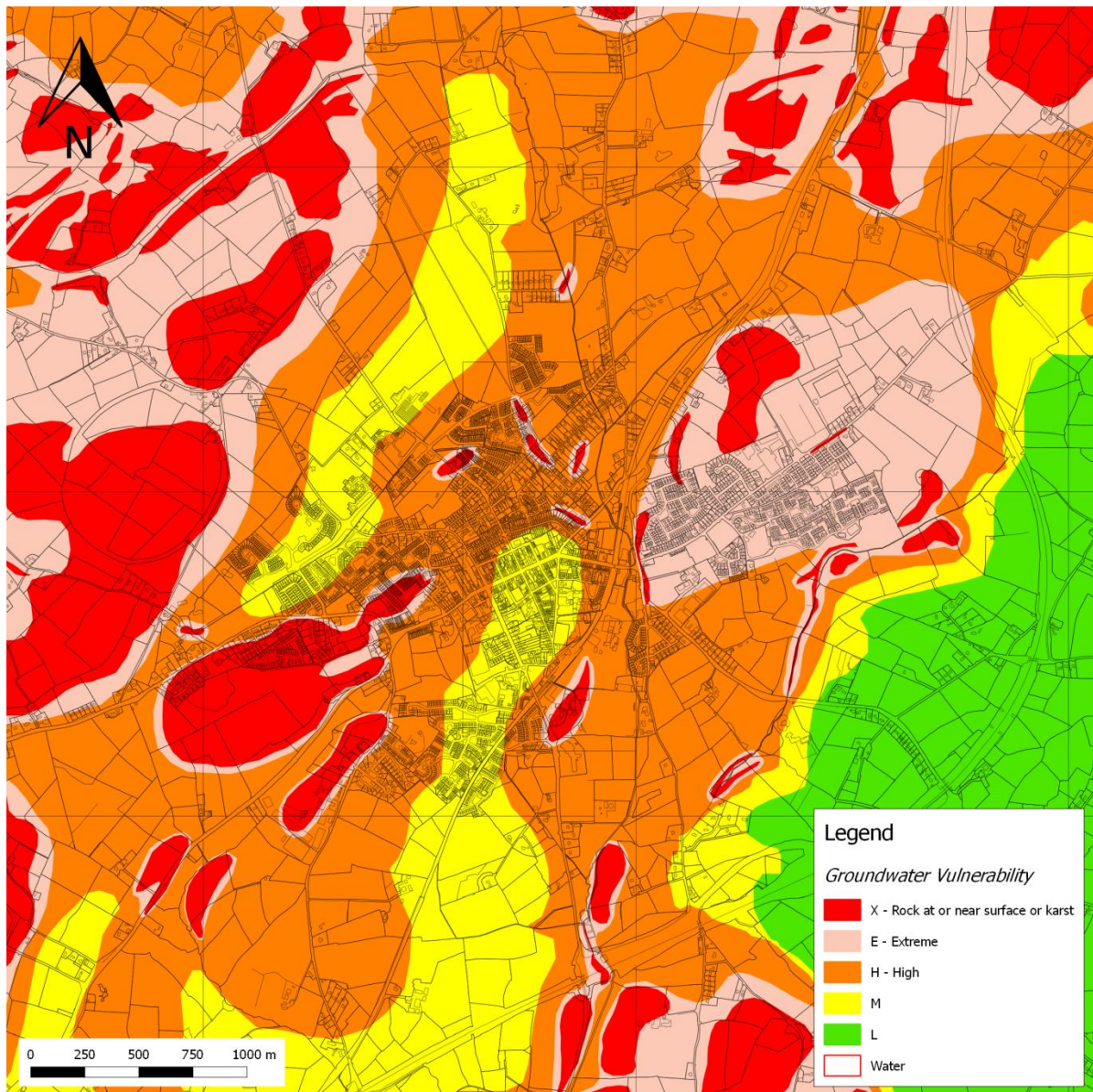




**Figure 3.4 WFD Ground Water Status**

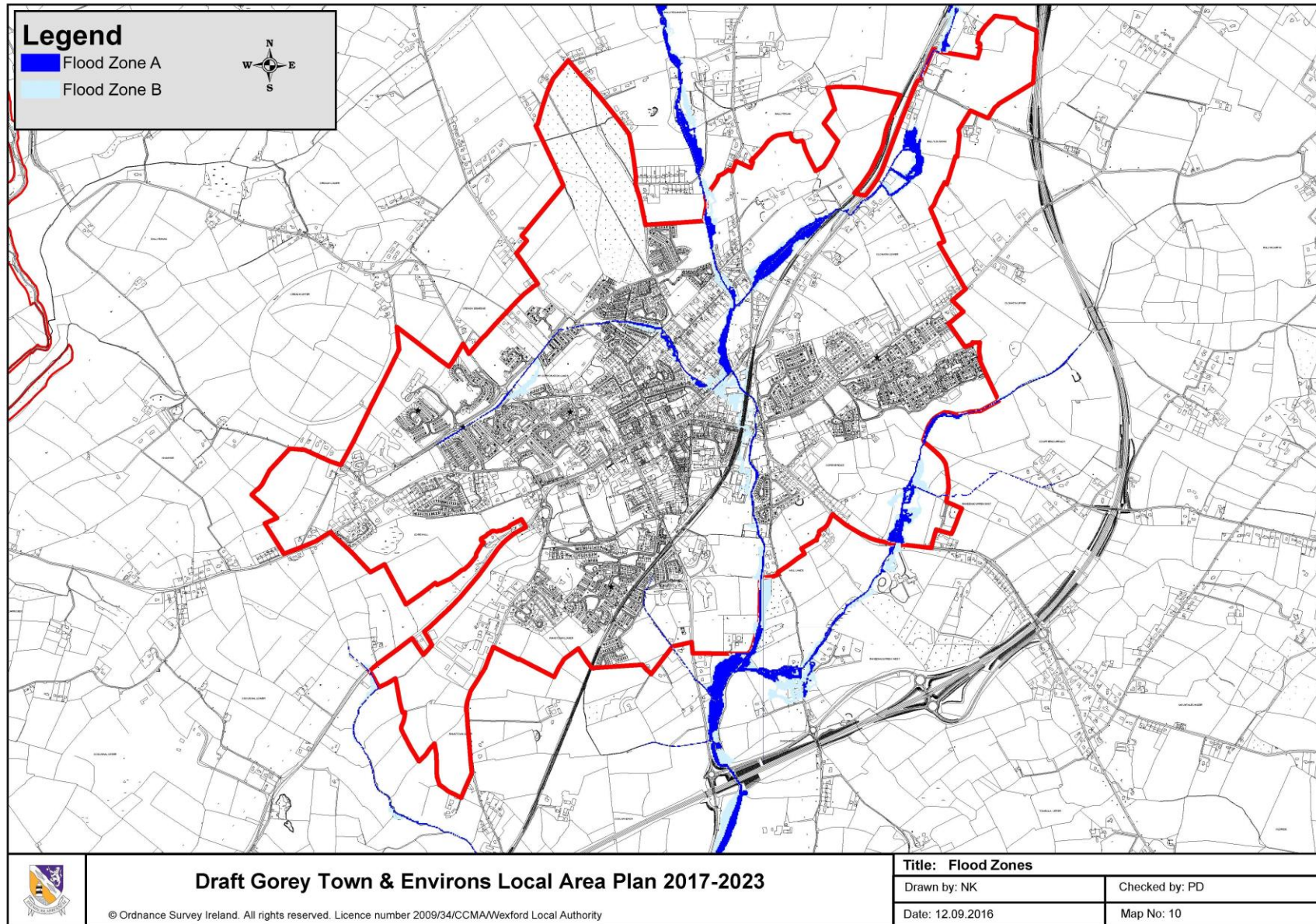
Source: EPA (2011; datasets downloaded February, 2014)





**Figure 3.5 Aquifer Vulnerability**  
Source: GSI (2006)





**Figure 3.6 SFRA Flood Mapping**  
Source: SFRA (2016)



### 3.7 Air and Climatic Factors

#### Ambient Air Quality

In order to protect human health, vegetation and ecosystems, EU Directives set down air quality standards in Ireland and the other Member States for a wide variety of pollutants. These pollutants are generated through fuel combustion, in space heating, traffic, electricity generation and industry and, in sufficient amounts, could affect the well-being of the areas inhabitants. The EU Directives include details regarding how ambient air quality should be monitored, assessed and managed.

In order to comply with air quality standards directives, the EPA measures the levels of a number of atmospheric pollutants. For the purposes of monitoring in Ireland, four zones are defined in the Air Quality Standards Regulations 2002 (SI No. 271 of 2002).

Gorey Town and Environs is located within Zone D where air quality is currently identified as being “good”. The EPA’s (EPA, 2015) Air Quality in Ireland 2014 identifies that air quality in Ireland continues to be good, with no exceedances for the pollutants measured.

#### Noise - The Environmental Noise Directive

Noise is unwanted sound. The Environmental Noise Regulations (SI No. 140 of 2006) transpose into Irish law the EU Directive 2002/49/EC relating to the assessment and management of environmental noise, which is commonly referred to as the Environmental Noise Directive or END. The END defines a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. The END does not set any limit value, nor does it prescribe the measures to be used in the action plans, which remain at the discretion of the competent authorities. Limit values are left to each member state. At this point in time, Ireland does not have any statutory limit values.

#### Climatic Factors

The key issue involving the assessment of the effects of implementing the plan on climatic factors relates to greenhouse gas emissions arising from transport. It is noted that the Plan contains a number of actions that respond to potential threats to environmental components arising from a changing climate.

Flooding (see Section 3.6) is influenced by climatic factors and the implications of climate change with regard to flood risk in relevant locations have been considered by the SFRA that has been undertaken for the Plan. There are emerging objectives relating to climate adaptation and that there is likely to be future Guidance for climate change proofing of land use plan provisions as is flagged in the National Climate Change Adaptation Framework (DECLG, 2012).

In 2009, Ireland's greenhouse gas emissions decreased across all sectors due to the effects of the economic downturn with a decline in total emissions of 7.9 per cent. In 2010, Ireland's emissions fell by a further 0.7 per cent. Ireland's emissions profile has changed considerably since 1990, with the contribution from transport more than doubling and the share from agriculture reducing since 1998.

Travel is a source of:

1. Noise;
2. Air emissions; and
3. Energy use (41.7% of Total Final Energy Consumption in Ireland in 2014 was taken up by transport, the largest take up of any sector)<sup>1</sup>.

Land-use planning contributes to what number and what extent of journeys occur. By addressing journey time through land use planning and providing more sustainable modes and levels of mobility, noise and other emissions to air and energy use can be minimised. Furthermore, by concentrating

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<sup>1</sup> Sustainable Energy Ireland (2014) *Energy in Ireland 1990 – 2014*

populations, greenfield development - and its associated impacts - can be minimised and the cost of service provision can be reduced.

Maximising sustainable mobility will also help Ireland meet its emission target for greenhouse gases under the 2020 EU Effort Sharing target that commits Ireland to reducing emissions from those sectors that are not covered by the Emissions Trading Scheme (e.g. transport, agriculture, residential) to 20% below 2005 levels.

## **3.8 Material Assets**

### **Waste Water**

The EPA's most recent report on waste water treatment performance 'Urban Waste Water Treatment in 2014', EPA 2015, identifies that the Courtown and Gorey Waste Water Treatment Plant (WWTP) passed the water quality standards set down under requirements of the Urban Waste Water Treatment Directive. The combined design capacity of both treatment plants is 16,500 PE with a current combined load of 17,708 PE and therefore demand/load exceeds current capacities.

An upgrade of the Courtown Waste Water Treatment Plant to a design capacity of 30,000 PE commenced in December 2014 and is due for completion by the third quarter of 2016. The existing WWTP at Gorey will be decommissioned.

### **Drinking Water**

Gorey Town and Environs is served by the Gorey Town Water Supply System, which is supplied by Water Treatment Plants at Creagh and Barnadown and smaller boreholes at Balykale and Coolishall. At present, the Gorey Town Water Supply System has limited headroom to meet future needs.

The Gorey Regional Water Supply Scheme is included in Irish Water's Capital Investment Programme (2014-2016). This scheme will include a new water treatment plant at Ballyminaun Hill and will bring into operation new wells. The scheme is scheduled to be completed approximately three and a half years from now. In order to facilitate orderly development and protection of the environment, it is essential that all drinking water infrastructure capacity to reach population and development targets is provided as required and in advance of development.

The Gorey Town Water Supply System is not listed on the EPA's most recent (Q1 2016) Remedial Action List (a list of public water supplies where remedial action is required to ensure compliance with drinking water standards).

## **3.9 Cultural Heritage**

### **Archaeological Heritage**

The archaeological heritage of Gorey Town and its Environs' is protected under the National Monuments Acts (1930-2004), Natural Cultural Institutions Act 1997 and the Planning Acts. The Record of Monuments and Places (RMP) is an inventory, established under Section 12 of the National Monuments (Amendment) Act 1994, of sites and areas of archaeological significance, numbered and mapped. The RMP includes all known monuments and sites of archaeological importance dating to before 1700 AD, and some sites which date from after 1700 AD. Figure 3.6 shows the spatial distribution of entries to the RMP in Gorey Town and Environs.

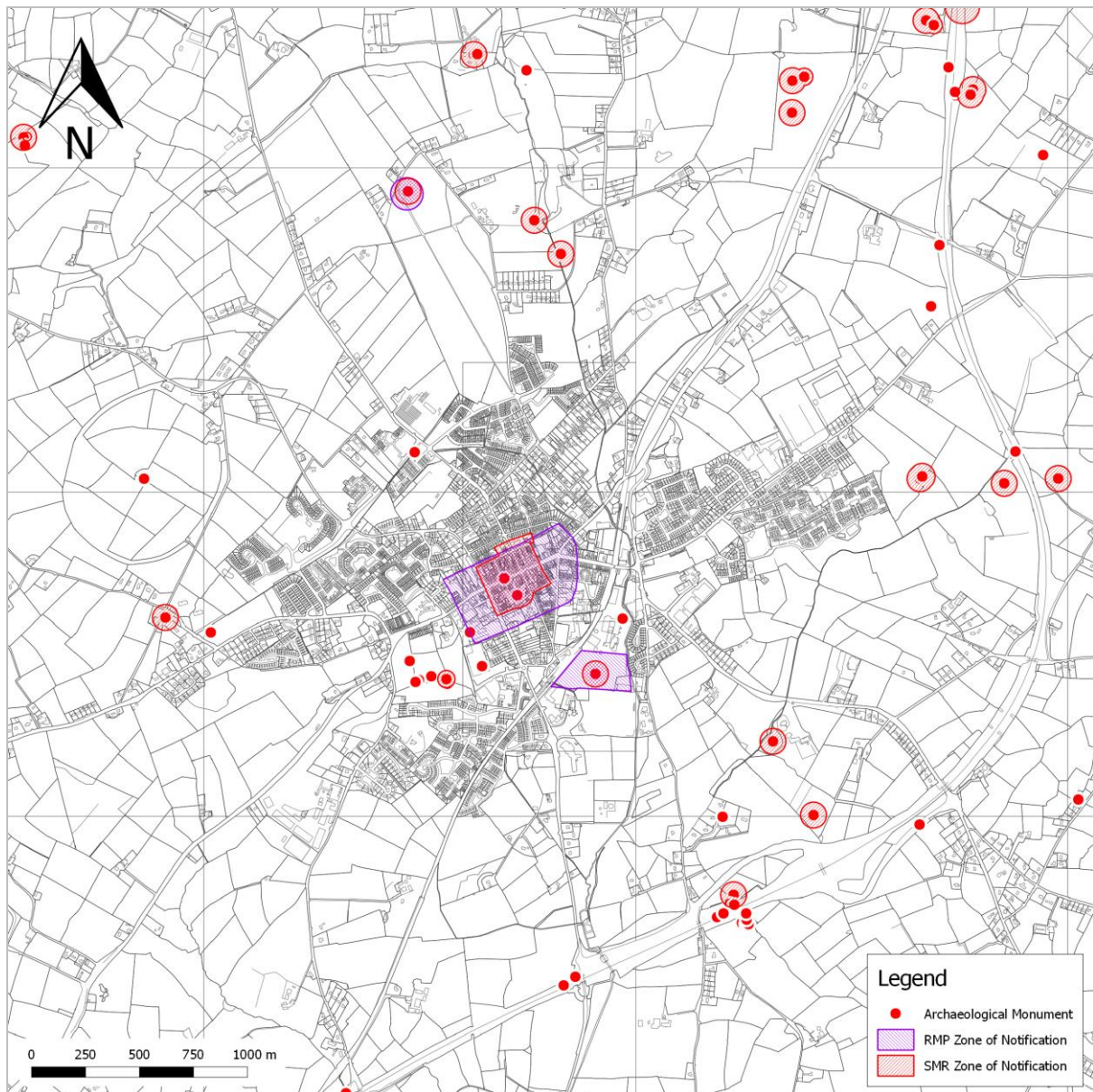
### **Architectural Heritage**

The term architectural heritage is defined in the Architectural Heritage (National Inventory) and Historic Monuments Act 1999 as meaning: all structures and buildings together with their settings and attendant grounds, fixtures and fittings; groups of structures and buildings; and, sites which are of technical, historical, archaeological, artistic, cultural, scientific, social, or technical interest.

The Record of Protected Structures (RPS) is legislated for under the Planning and Development Acts 2000-2010. Protected Structures are defined as structures, or parts of structures that are of special

interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view. Current entries to the RPS in Gorey Town and Environs are mapped on Figure 3.7.

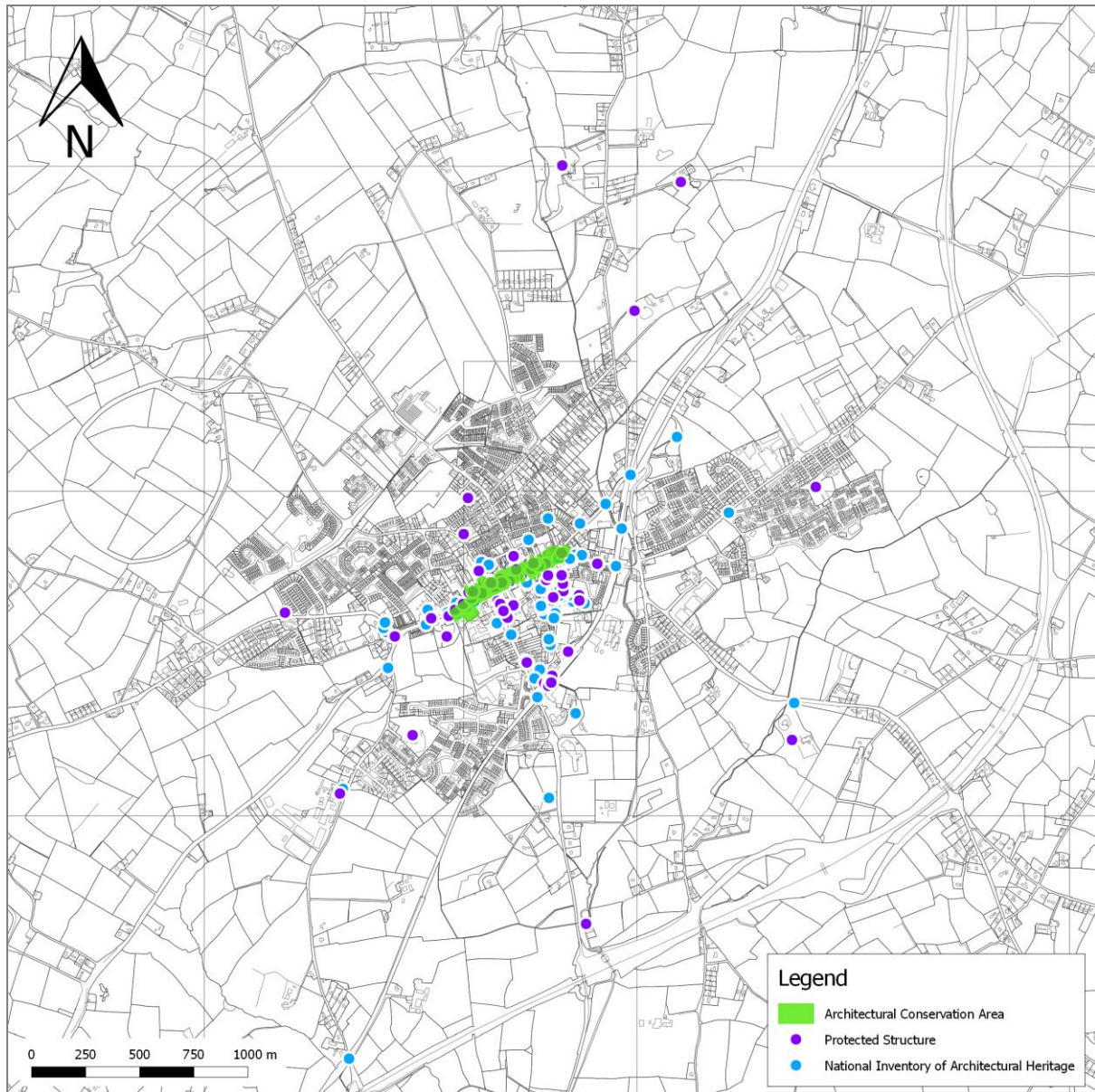
An Architectural Conservation Area (ACA) is a place, area, group of structures or townscape, which is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or contributes to the appreciation of a Protected Structure. There are currently no ACAs in the Plan area, however: as Gorey has a distinctive town centre in terms of scale, composition of streetscape and buildings of different periods and styles, it is proposed to review the town during the preparation of the next County Development Plan 2019-2025 with a view to designating ACAs. It is intended to designate at least one part of the town centre as an ACA and an indication of this area is identified on Figure 3.8.



**Figure 3.7 Archaeological Heritage**

Source: Wexford County Council (2016)





**Figure 3.8 Architectural Heritage**

Source: Wexford County Council (2016)

### 3.10 Landscape

A Landscape Character Assessment (LCA) is a study of a given landscape to determine its 'character'. Landscape character is the combination of physical, as well as, perceived aspects of the landscape.

The Landscape Character Assessment undertaken for County Wexford identifies the Gorey Towns and Environs LAP as part of Landscape Character Area No. 2 "The Lowlands".

The Landscape Character Assessment identifies various areas within County Wexford that are of greater sensitivity to new development. Gorey Town and its Environs are not considered one of these landscapes. Ask Hill and Ballyminaun Hill, both to the east of the town are the closest Landscapes of Greater Sensitivity to the town.

The Plan area does not contain protected scenic views or routes.

### 3.11 Overlay of Environmental Sensitivities

In order to identify where most sensitivities within Gorey Town and its Environs occur, a number of the environmental sensitivities described above were weighted and mapped overlapping each other. Figure 3.8 provides an overlay of environmental sensitivities for the town and its environs.

It is emphasised that the occurrence of environmental sensitivities does not preclude development; rather it flags at a strategic level that the mitigation measures - which have already been integrated into the Plan - will need to be complied with in order to ensure that the implementation of the Plan contributes towards environmental protection.

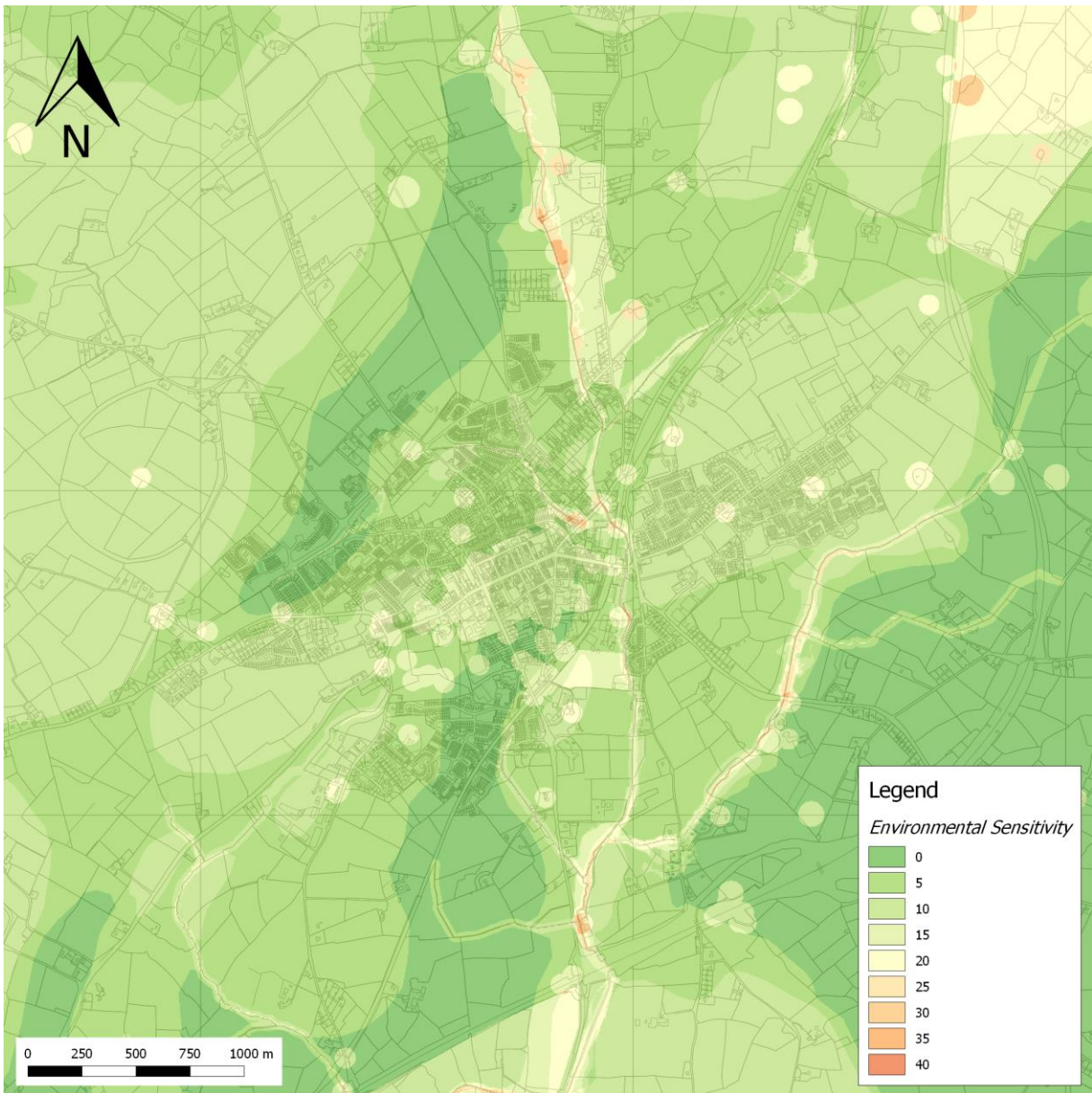
Environmental sensitivities are indicated by colours which range from acute vulnerability (brown), extreme vulnerability (red) to high vulnerability (dark orange) to elevated vulnerability (light orange) to moderate vulnerability (yellow) to low vulnerability (green). Only low and moderate levels of vulnerability occur within and adjacent to the Plan area. Where the mapping shows a concentration of environmental sensitivities there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration.

A weighting system applied through Geographical Information System (GIS) software was used in order to calculate the vulnerability of all areas in the town. Environmental considerations are given equal weight as follows, with a slight differentiation is made in certain layers:

- Cultural heritage (entries to the Record of Protected Structures, entries to the National Inventory of Archaeological Heritage and Archaeological Monuments - 10 points);
- Landscape greater sensitivity (10 points);
- Sensitive landcover categories (broad-leaved forests - 10 points);
- Surface and groundwaters with poor (5 points) status;
- Aquifers which are highly (5 points) or extremely (10 points) vulnerable to pollution;
- Flood Zones A (10 points) and B (5 points) from the Strategic Flood Risk Assessment; and
- WFD Register of Protected Areas for 'Groundwater in Salmonid Regs' (10 points).

The overlay of environmental sensitivities for Gorey Town and Environs and the surrounding area is provided at Figure 3.9. The overlay clearly shows the robustness of the environment in Gorey. The majority of areas are shown to be of a low vulnerability.

The most sensitive areas within Gorey Town and its Environs can be found along the River Banogue, particularly to the north of the town where flood risk areas have been identified. Other sensitive areas include cultural heritage and associated buffers applied by the overlay mapping exercise.



**Figure 3.9 Overlay of Environmental Sensitivities**  
Source: CAAS (2016)

### **3.12 Appropriate Assessment and Strategic Flood Risk Assessment**

An Appropriate Assessment (AA) Screening and a Strategic Flood Risk Assessment (SFRA) have both been undertaken alongside the preparation of the Plan.

The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DEHLG and OPW, 2009).

The AA Screening concluded that the Plan will not affect the integrity of the Natura 2000 network, consequently further stages of AA were not required. The SFRA has facilitated the integration of flood risk management considerations into the Plan.

The preparation of the Plan, SEA, AA and SFRA has taken place concurrently and the findings of the AA and SFRA have informed both the Plan and the SEA. All recommendations made by the AA and SEA were integrated into the Plan.

### **3.13 Strategic Environmental Objectives**

Strategic Environmental Objectives (SEOs) are methodological measures against which the environmental effects of the Plan can be tested. If complied with in full, SEOs would result in an environmentally neutral impact from implementation of the Plan. The SEOs are set out under a range of topics and are used as standards against which the provisions of the Plan can be evaluated in order to help identify areas in which potential adverse impacts may occur. SEOs are distinct from the objectives of the Plan and are developed from international and national policies that generally govern environmental protection objectives. Such policies include those of various European Directives which have been transposed into Irish law and which are intended to be implemented within the Plan area.



**Table 3.3 Strategic Environmental Objectives**

<b>SEO Code</b>	<b>SEO</b>
<b>B1</b>	To ensure compliance with the Habitats and Birds Directives with regard to the protection of Natura 2000 Sites/Annexed habitats and species <sup>2</sup>
<b>B2</b>	To ensure compliance with Article 10 of the Habitats Directive with regard to the management of features of the landscape which - by virtue of their linear and continuous structure or their function act as stepping stones - are of significant importance for wild fauna and flora and/or essential for the migration, dispersal and genetic exchange of wild species
<b>B3</b>	To avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites <sup>3</sup> and to ensure compliance with the Wildlife Acts 1976-2010 with regard to the protection of species listed on Schedule 5 of the principal Act
<b>PHH1</b>	To protect populations and human health from exposure to incompatible landuses
<b>S1</b>	To avoid damage to the hydrogeological and ecological function of the soil resource
<b>W1</b>	To maintain and improve, where possible, the quality and status of surface waters
<b>W2</b>	To prevent pollution and contamination of ground water
<b>W3</b>	To comply as appropriate with the provisions of the Flood Risk Management Guidelines
<b>M1</b>	To serve new development with adequate and appropriate waste water treatment
<b>M2</b>	To serve new development with adequate drinking water that is both wholesome and clean
<b>M3</b>	To reduce waste volumes, minimise waste to landfill and increase recycling and reuse
<b>C1</b>	To reduce travel related emissions to air and to encourage modal change from car to more sustainable forms of transport
<b>CH1</b>	To protect archaeological heritage including entries to the Record of Monuments and Places and/or their context
<b>CH2</b>	To protect architectural heritage including entries to the Record of Protected Structures and their context
<b>L1</b>	To avoid significant adverse impacts on the landscape

<sup>2</sup> 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

<sup>3</sup> The Planning and Development Act 2000 as amended defines a 'wildlife site', which includes proposed Natural Heritage Areas.

## Section 4 Alternative Development Strategies

### 4.1 Description of Alternative Development Strategies

The SEA Directive requires that reasonable alternatives (taking into account the objectives and the geographical scope of the plan or programme) are identified, described and evaluated for their likely significant effects on the environment.

The description of the environmental baseline (both maps and text) and Strategic Environmental Objectives (SEOs) are used in the evaluation of alternative development strategies.

Wexford County Council in preparing the Local Area Plan considered the three alternative development strategies for Gorey Town and its Environs detailed below:

#### **Alternative A**

##### **Concentric development ignoring the barrier provided by the rail line**

Alternative A (see Figure 4.1) provides a crude sequential development of the town, ignoring the barrier provided by the rail line. Ignoring this barrier would increase journey times (with associated effects on sustainable mobility). Development would be pushed out along the approach roads of the town putting pressure on the outer motorway which acts like a ring road to facilitate radial movement due to lack of internal linkages.

This alternative facilitates a high amount of edge development, which by nature reduces the walkability of the town and environs, as new development is concentrated a distance out of the town.

#### **Alternative B**

##### **Skewed concentric development with consolidation of town centre**

Alternative B (see Figure 4.2) recognises the barrier provided by the rail line and would allow for development in all directions from existing development, on either side of the rail line.

This alternative also makes additional efforts to intensify uses within the existing town centre, through increased density redevelopment of sites within proximity to public transport nodes.

This skewed concentric model would facilitate the delivery of some inner link roads, however: the barrier provided by the rail line would limit the long-term balanced growth of the town.

#### **Alternative B1**

##### **Skewed concentric development with consolidation of town centre and strategic reserve to secure long-term linkages**

Alternative B1 (see Figure 4.3) is a variation of Alternative B that secures important linkages to address the severance that the railway line provides. By securing these linkages, Alternative B1 would facilitate a long-term sustainable development and growth of the town.

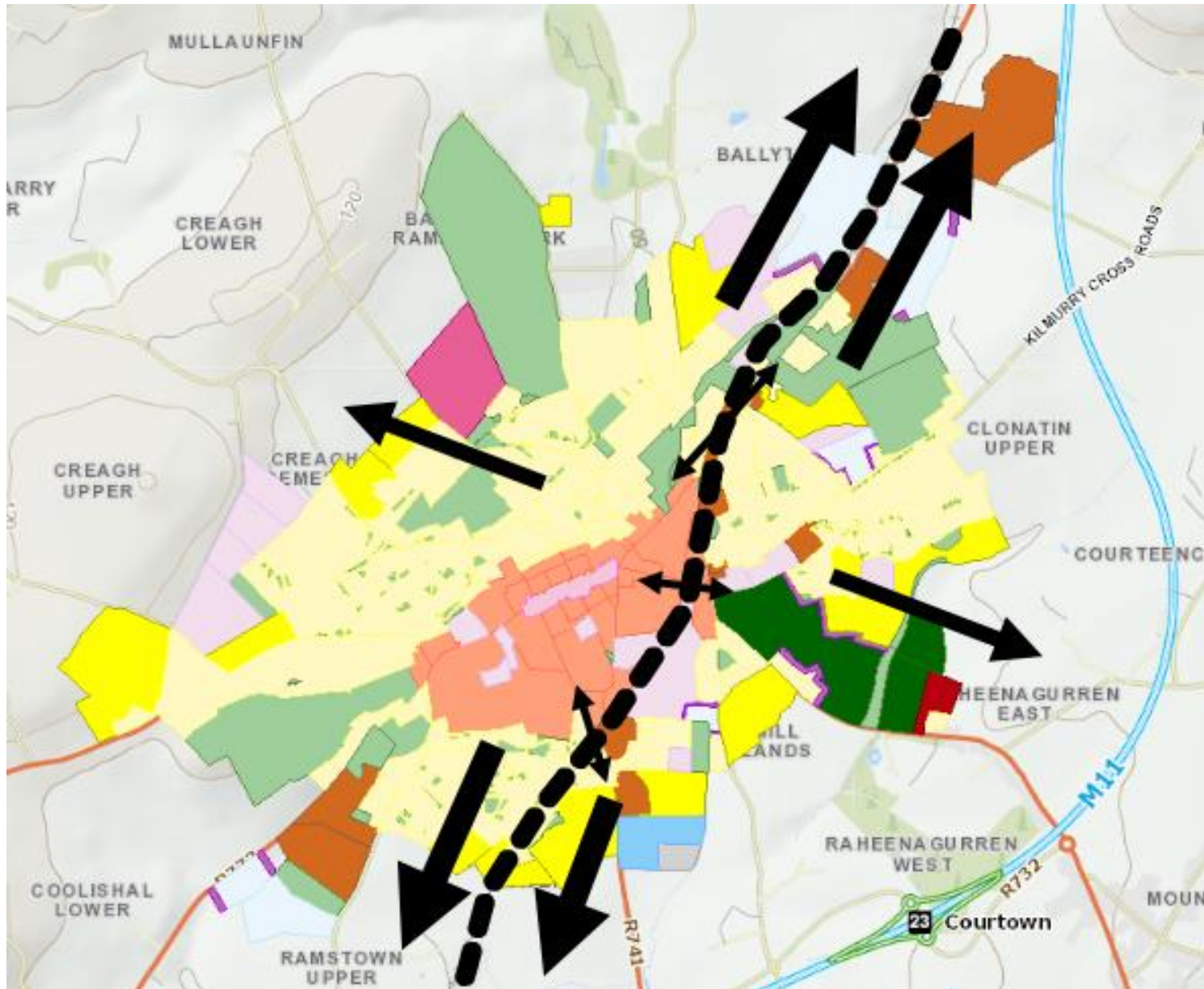
#### **Alternative C**

##### **Development right up to motorway**

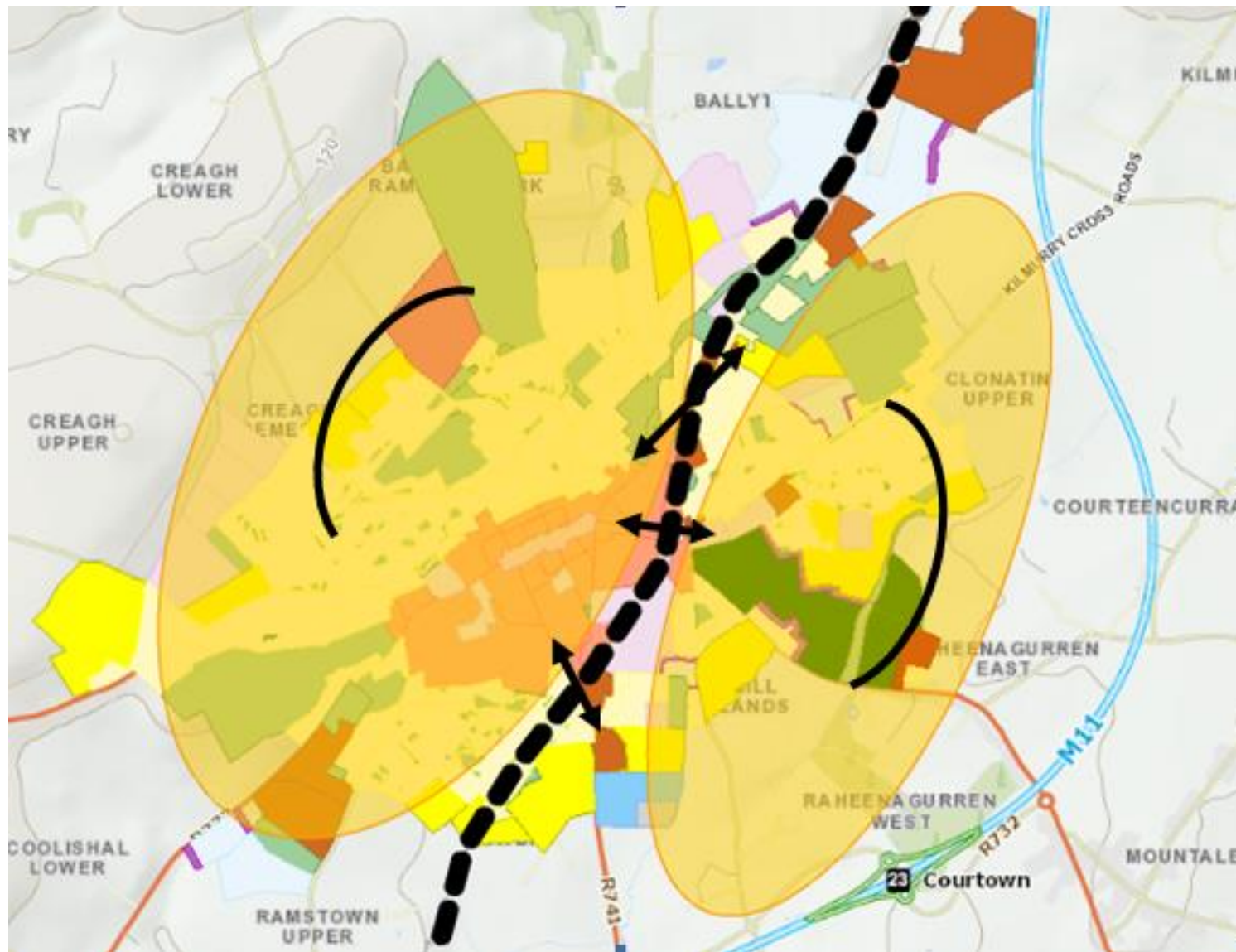
Alternative C (see Figure 4.4) allows for a mirrored type development of the town and environs, with the eastern side developing at a more rapid rate, right out to the M11 Motorway and walkability significantly reduced due to an extended town centre.

This alternative would result in short trip traffic on the Motorway.

This alternative would require major infrastructural investment in new linkages to cater for the movement of cars. The unbalanced development would have a negative effect of the west side of the Town.

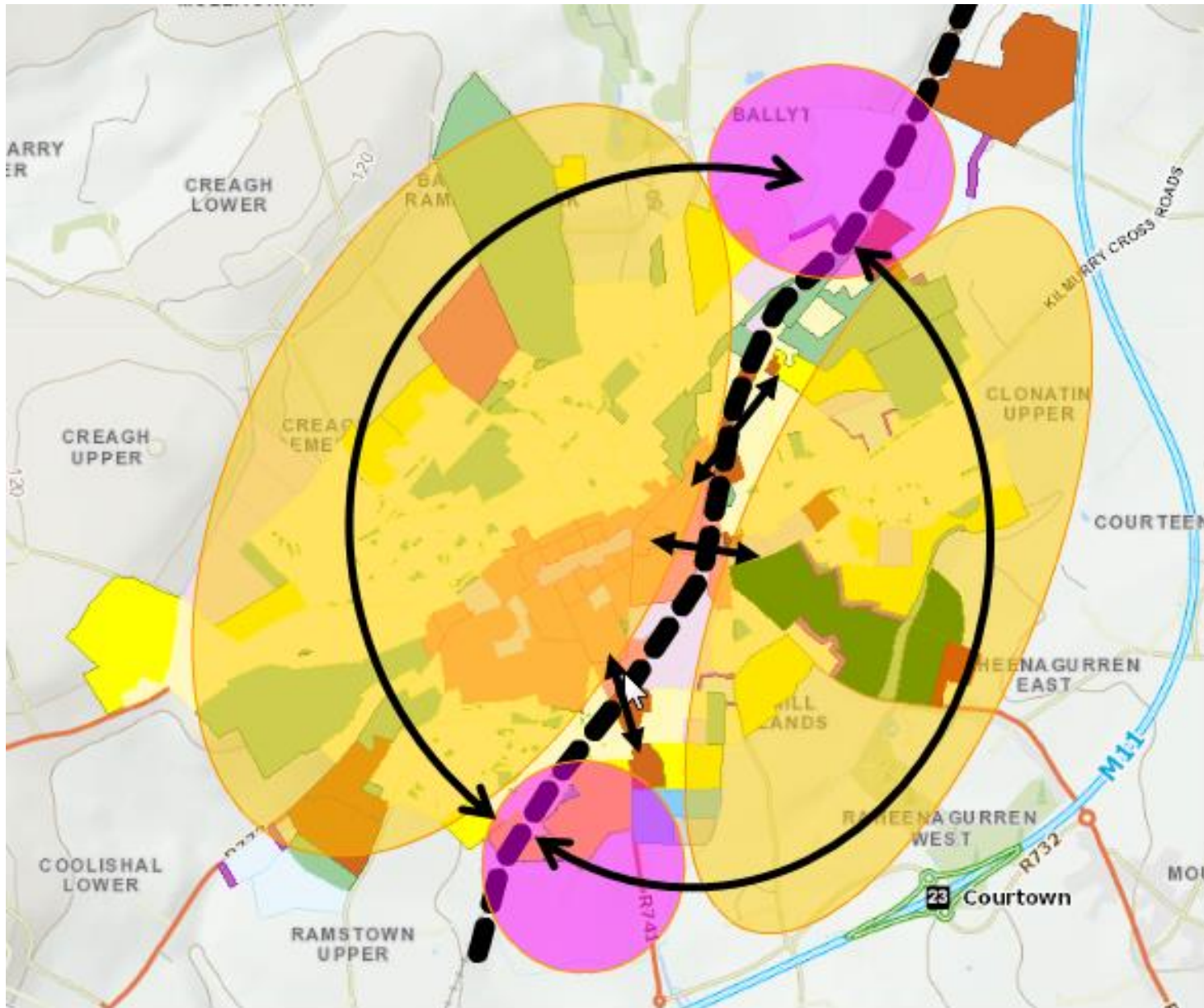


**Figure 4.1 Alternative A: Concentric development ignoring the barrier provided by the rail line**

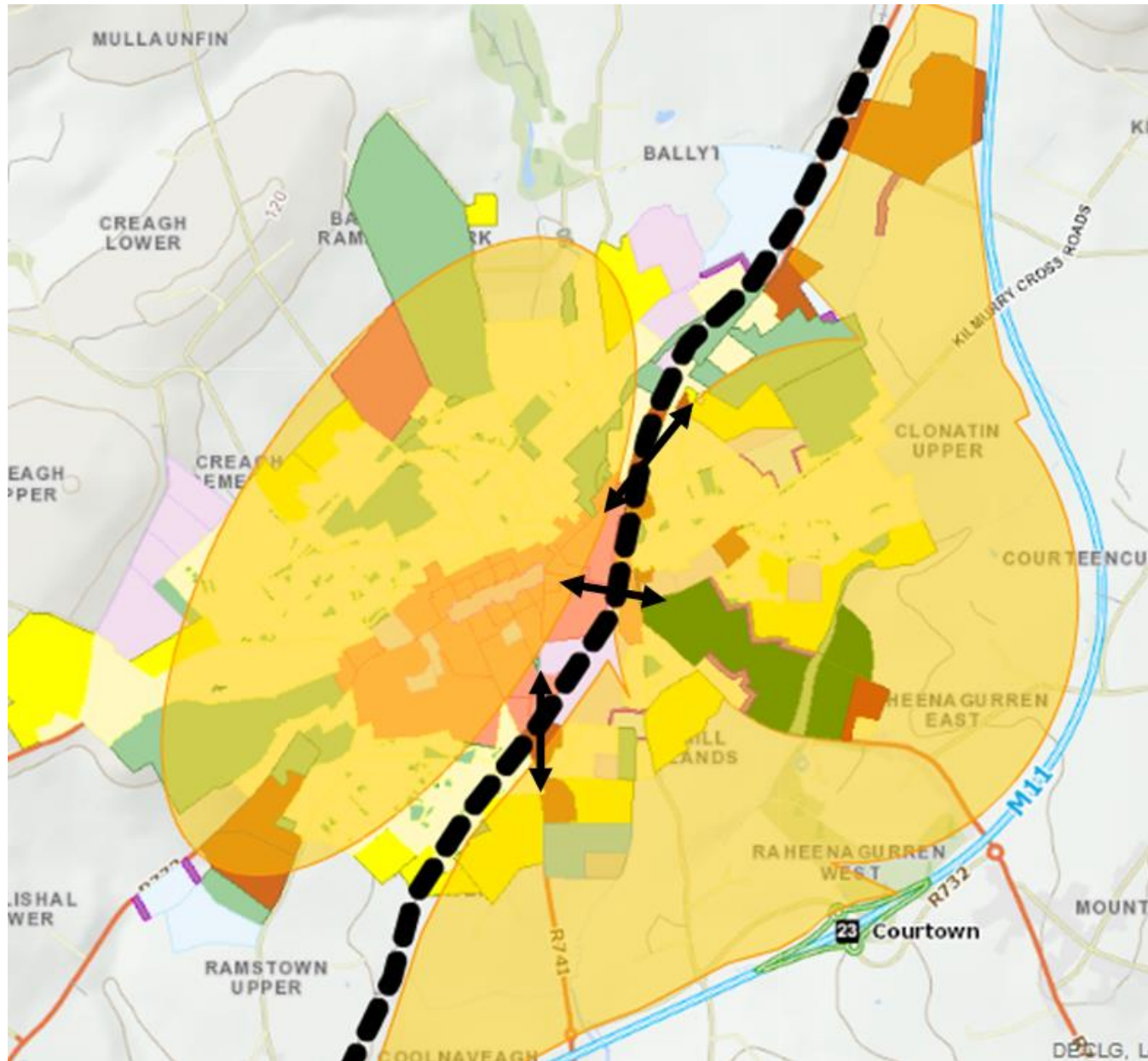


**Figure 4.2 Alternative B: Skewed concentric development**





**Figure 4.3 Alternative B1: Skewed concentric development with strategic reserve to secure long-term linkages**



**Figure 4.4 Alternative C: Development right up to motorway**

## 4.2 Comparative Evaluation of All Alternative Development Strategies

### 4.2.1 Significant Positive Effects Common to all Alternatives

The Gorey town and environs area contains relatively low levels of environmental sensitivities and designations and has capacity in transport and wastewater services. By providing for growth and development in this area, each of the four alternative development strategies would be likely to contribute towards a reduced need to develop more sensitive towns and rural and coastal areas elsewhere in the County and wider region. This would be likely to result in significant positive environmental effects on the following environmental components:

- Biodiversity and flora and fauna
- Population and human health
- Soil (especially soil on greenfield lands)
- Water (status of rivers and groundwater and flooding)
- Material Assets (provision of adequate and appropriate wastewater and drinking water services and waste management)
- Sustainable mobility and associated effects (energy usage and emissions to air including noise and greenhouse gases)
- Cultural Heritage (architectural and archaeological heritage)
- Landscape

### 4.2.1 Potentially Significant Adverse Effects Common to all Alternatives

A number of potentially significant adverse environmental effects are common to all alternatives and are described on Table 4.1. For the Draft Plan, these effects will be mitigated by measures that have been integrated into the Draft Plan.

**Table 4.1 Potentially Significant Adverse Environmental Effects common to all alternatives**

Environmental Component	Likely Significant Effect, if unmitigated
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> <li>○ Arising from both construction and operation of development and associated infrastructure: loss of/damage to biodiversity in designated sites (including Natura 2000 Sites/Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna</li> <li>○ Habitat loss, fragmentation and deterioration, including patch size and edge effects.</li> <li>○ Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species.</li> </ul>
Population and Human Health	<ul style="list-style-type: none"> <li>○ Potential interactions if effects upon environmental vectors such as water and air are not mitigated</li> </ul>
Soil (especially soil on greenfield lands)	<ul style="list-style-type: none"> <li>○ Damage to the hydrogeological and ecological function of the soil resource.</li> </ul>
Water (including the Banoge River, its tributaries and underlying groundwater)	<ul style="list-style-type: none"> <li>○ Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology.</li> <li>○ Increase in the risk of flooding.</li> </ul>
Material Assets (it is the function of Irish Water to provide for water services needs)	<ul style="list-style-type: none"> <li>○ Failure to provide adequate and appropriate wastewater treatment (water services infrastructure and capacity ensures the mitigation of potential conflicts).</li> <li>○ Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (water services infrastructure and capacity ensures the mitigation of potential conflicts)</li> <li>○ Increases in waste levels</li> </ul>
Air and Climatic Factors	<ul style="list-style-type: none"> <li>○ Emissions to air including greenhouse gas emissions and other emissions.</li> </ul>
Cultural Heritage	<ul style="list-style-type: none"> <li>○ Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities.</li> </ul>
Landscape	<ul style="list-style-type: none"> <li>○ Occurrence of adverse visual impacts and conflicts with the appropriate protection of the landscape.</li> </ul>

## 4.2.2 Other Specific Effects for Alternatives

Wexford County Council in preparing the Local Area Plan considered the three alternative development strategies for Gorey Town and its Environs detailed below:

### **Alternative A**

#### **Concentric development ignoring the barrier provided by the rail line**

Alternative A would result in a significant amount of conflict with efforts to improve sustainable mobility.

Ignoring the barrier presented by the rail line would increase journey times and would contribute towards increases in levels of unsustainable mobility and associated effects (energy usage and emissions to air including noise and greenhouse gases). This barrier would limit the long-term balanced growth of the town thereby limiting maximisation of those positive effects detailed under Section 4.2.1 above.

This alternative facilitates a high amount of edge development and does not provide for a consolidated, compact urban form. This edge development would have the potential to result in higher levels of environmental conflicts with brownfield development not maximised and unnecessary greenfield development occurring on the fringes of the town and environs.

Greenfield development has a greater potential to result in higher levels of direct effects as a result of developing semi-natural lands – such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping stones), visual impacts, the sealing of greenfield soils and threats to the status of waters (which has the potential to interact with aquatic ecology and human health). Greenfield development is less likely to facilitate sustainable mobility. Greenfield development is also less likely to facilitate the enhancement of cultural (archaeological and architectural) heritage and its context in urban areas.

By providing for development that does not take account of the rail barrier and by pushing development out along the approach roads of the town, this alternative would result in pressure on the outer motorway that acts like a ring road to facilitate radial movement due to lack of internal linkages (this would be contrary to the policies contained in the National Planning Roads Guidance documents). This would further contribute towards unsustainable mobility with walkability of the town reduced and development increasingly dispersed.

### **Alternative B**

#### **Skewed concentric development with consolidation of town centre**

Alternative B would contribute towards efforts to improve sustainable mobility by recognising the barrier provided by the rail line and making efforts to intensify uses within the existing town centre.

Intensifying uses, by providing for increased density redevelopment of sites within proximity to public transport nodes, and delivering some inner link roads would contribute towards a more consolidated and compact town with associated benefits with respect to sustainable mobility, energy usage and emissions to air including noise and greenhouse gases.

Associated with a consolidated and compact town is lower levels of greenfield development and higher levels of brownfield development. This would have the potential to result in decreased levels of environmental conflicts. Regeneration of town centre sites would have the potential to contribute towards the protection of cultural heritage.

Brownfield development has a greater potential to result in lower levels of direct effects as a result of reducing the need to develop semi-natural greenfield lands – such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping stones), visual impacts, the sealing of greenfield soils and threats to the status of waters



(which has the potential to interact with aquatic ecology and human health). Brownfield development is more likely to facilitate both sustainable mobility and enhancement of cultural (archaeological and architectural) heritage and its context in urban areas. Brownfield development is also more likely to conflict, if unmitigated, with concentrations of cultural heritage – as these often occur in urban areas.

The barrier provided by the rail line would limit the long-term balanced growth of the town thereby limiting maximisation of those positive effects detailed under Section 4.2.1 above. These effects include improvements in sustainable mobility and associated effects (energy usage and emissions to air including noise and greenhouse gases) that could be achieved within the town.

### **Alternative B1**

#### **Skewed concentric development with consolidation of town centre and strategic reserve to secure long-term linkages**

Alternative B1 is a variation of Alternative B that secures important linkages to address the severance that the railway line provides. By securing these linkages, Alternative B1 would facilitate a long-term sustainable development and growth of the town and a maximisation of those positive effects detailed under Section 4.2.1 above. These effects include improvements in sustainable mobility and associated effects (energy usage and emissions to air including noise and greenhouse gases) that could be achieved within the town.

### **Alternative C**

#### **Development right up to motorway**

Alternative C would result in a significant amount of conflict with efforts to improve sustainable mobility.

Allowing for a mirrored type development of the town and environs as transected by the railway line, the eastern side of the town would develop at a more rapid rate, right out to the M11 Motorway. This extended area would increase journey times, reduce walkability and contribute towards increases in levels of unsustainable mobility and associated effects (energy usage and emissions to air including noise and greenhouse gases). The barrier provided by the rail line would limit the long-term balanced growth of the town thereby limiting maximisation of those positive effects detailed under Section 4.2.1 above.

This alternative would result in short trip traffic on the Motorway (this would be contrary to the policies contained in the National Planning Roads Guidance documents). This would further contribute towards unsustainable mobility with walkability of the town reduced and development increasingly dispersed. Major infrastructural investment in new linkages would be required to cater for the movement of cars.

This alternative would have the potential to result in higher levels of environmental conflicts as unnecessary greenfield development on the fringes of the town and environs would occur and brownfield development not maximised would not be maximised. Greenfield development has a greater potential to result in higher levels of direct effects as a result of developing semi-natural lands – such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping stones), visual impacts, the sealing of greenfield soils and threats to the status of waters (which has the potential to interact with aquatic ecology and human health). Greenfield development is less likely to facilitate sustainable mobility. Greenfield development is also less likely to facilitate the enhancement of cultural (archaeological and architectural) heritage and its context in urban areas.

### 4.2.3 Summary Evaluation Against SEOs

Table 4.2 below provides a comparative evaluation of the environmental effects of alternative development strategies against Strategic Environmental Objectives (see Section 3.13). This is supported by the narrative above.

**Table 4.2 Comparative Evaluation of Alternative Development Strategies**

Alternative Development Strategy	Likely to <u>Improve</u> status of SEOs to a <u>greater</u> degree	Likely to <u>Improve</u> status of SEOs to an <u>intermediate</u> degree	Likely to <u>Improve</u> status of SEOs to a <u>lesser</u> degree	<u>Least Potential Conflict</u> with status of SEOs - likely to be mitigated to greater degree, significant adverse effects <b>less likely</b>	<u>More Potential Conflict</u> with status of SEOs - likely to be mitigated to an intermediate degree, significant adverse effects <b>more likely</b>	<u>Most Potential Conflict</u> with status of SEOs - likely to be mitigated to lesser degree, significant adverse effects <b>more likely</b>
Alternative Development Strategy A			✓			✓
Alternative Development Strategy B		✓			✓	
Alternative Development Strategy B1	✓			✓		
Alternative Development Strategy C			✓			✓

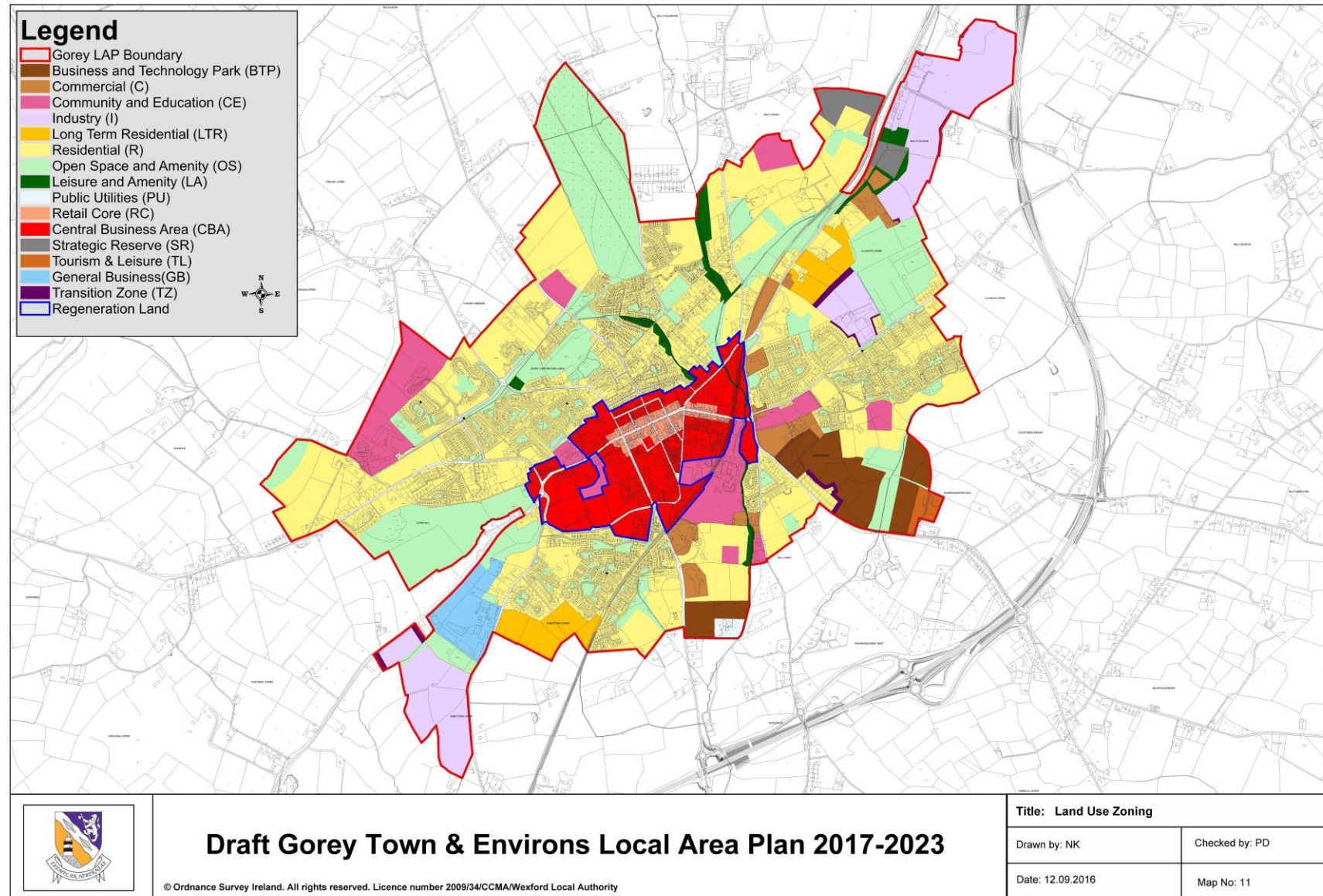
### 4.3 The Selected Alternative for the Plan

The Alternative Development Strategy for the Draft Plan that emerged from the planning/SEA process is Alternative Development Strategy B1.

This strategy has been developed by the Planning Team and placed on public display as the Draft Plan by the Council having regard to both:

1. The environmental effects which were identified by the SEA and are detailed above; and
2. Planning - including social and economic - effects that were also considered by the Council.

The Land Use Zoning map from the Draft Plan that evolved from and which is consistent with Alternative Development Strategy B1 is shown on Figure 4.5 overleaf.



**Figure 4.5 Land Use Zoning Map from the LAP**

## Section 5 Evaluation of Plan Provisions

### 5.1 Summary of Findings

- The Council have integrated all recommendations arising from the SEA, Appropriate Assessment Screening and Strategic Flood Risk Assessment processes into the Plan (see Section 9 for details of these measures), facilitating compliance of the Plan with various European and National legislation and Guidelines relating to the protection of the environment and the achievement of sustainable development;
- Some Plan provisions would be likely to result in significant positive effects upon all of the environmental components (biodiversity, fauna, flora, population, human health, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape); and
- Some Plan provisions would have the potential to result in significant negative environmental effects (these are described below) however, these effects will be mitigated by the mitigation measures that have been integrated into the Plan.

### 5.2 Potential Adverse Effects and their Determination

Environmental impacts which occur, if any, will be determined by the nature and extent of multiple or individual projects and site-specific environmental factors. The potentially significant adverse environmental effects arising from implementation of the Plan are detailed on Table 4.1.

### 5.3 Residual Adverse Effects

Residual adverse effects likely to occur - considering the extent of detail provided by the Plan and assuming that all mitigation measures are complied with by development - are identified for each of the environmental components on Table 5.1 below.

**Table 5.1 Residual Adverse Effects**

<b>Environmental Component</b>	<b>Residual Adverse Effects</b>
Biodiversity and Flora and Fauna	<ul style="list-style-type: none"> <li>• Loss of an extent of non-protected habitats and species arising from the replacement of semi-natural land covers with artificial surfaces.</li> <li>• Losses or damage to ecology (these would comply with relevant legislation).</li> </ul>
Population and Human Health	<ul style="list-style-type: none"> <li>• Potential interactions with residual effects on environmental vectors. This has been mitigated by provisions that have been integrated into the Plan, including those relating to sustainable mobility and infrastructural provision.</li> </ul>
Soil	<ul style="list-style-type: none"> <li>• Loss of an extent of soil function arising from the replacement of semi-natural land covers with artificial surfaces.</li> </ul>
Water	<ul style="list-style-type: none"> <li>• Increased loadings as a result of development to comply with River Basin Management Plans.</li> <li>• Flood related risks remain due to uncertainty with regard to extreme weather events.</li> </ul>
Air and Climatic Factors	<ul style="list-style-type: none"> <li>• An extent of travel related greenhouse gas and other emissions to air. This has been mitigated by provisions that have been integrated into the Plan, including those relating to sustainable mobility.</li> </ul>
Material Assets	<ul style="list-style-type: none"> <li>• Residual wastes to be disposed of in line with higher level waste management policies.</li> </ul>
Architectural Heritage	<ul style="list-style-type: none"> <li>• Potential alteration to the context and setting of architectural heritage however, these will occur in compliance with legislation.</li> </ul>
Archaeological Heritage	<ul style="list-style-type: none"> <li>• Potential alteration to the context and setting of archaeological heritage however, this will occur in compliance with legislation.</li> <li>• Potential loss of unknown archaeology however, this loss will be mitigated by measures integrated into the Draft Plan.</li> </ul>
Landscape Designations	<ul style="list-style-type: none"> <li>• None. The Draft Plan contributes towards the protection of the landscape. The Town and Environs landscape will change overtime as a result of natural changes in vegetation cover combined with new developments.</li> </ul>

## Section 6 Mitigation and Monitoring Measures

### 6.1 Mitigation

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan. Various environmental sensitivities and issues have been communicated to the Council through the SEA, Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA) processes. By integrating all related recommendations into the Plan, the Council have ensured that both the beneficial environmental effects of implementing the Plan have been and will be maximised and that potential adverse effects have been and will be avoided, reduced or offset.

Mitigation was achieved through the:

- Strategic work undertaken by the Council to ensure contribution towards environmental protection and sustainable development;
- Integration of individual SEA, AA and SFRA provisions into the text of the Plan; and
- Integration of environmental considerations into zoning provisions of the Plan.

As detailed in the LAP, new applications for development must comply with the various provisions and development management standards included in the Wexford County Development Plan 2013-2019 (or subsequent County Development Plan), including those relating to sustainable development and environmental protection and management.

Consequently, Table 6.1 links the potential significant effects of implementing the Plan, if unmitigated, to both LAP and County Development Plan provisions that will ensure the mitigation of potentially adverse environmental effects arising from implementation of the LAP.

### 6.2 Monitoring

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. This section details the measures that will be used in order to monitor the likely significant effects of implementing the Plan.

Monitoring can enable, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action.

Monitoring is based around indicators that allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives (see Section 3.13).

Table 6.1 provides a summary table outlining how likely significant effects (if unmitigated) are linked to relevant mitigation measure(s) - which have been integrated into the Plan - and indicator(s) which will be used for monitoring.

**Table 6.1 SEA Summary Table: Likely Significant Effects, Mitigation Measures and Indicators for Monitoring**

Topic	Potentially Significant Adverse Effect, if Unmitigated	CDP Measures References, where not included in LAP	LAP Measures References	Indicators
<b>Biodiversity and flora and fauna</b>	<ul style="list-style-type: none"> <li>Arising from both construction and operation of development and associated infrastructure: loss of/damage to biodiversity in designated sites (including Natura 2000 Sites/Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna</li> <li>Habitat loss, fragmentation and deterioration, including patch size and edge effects.</li> <li>Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species.</li> </ul>	Also see measures under soil, water and material assets below.	Objective AA01, Objective NH01, Objective NH02, Objective NH03 and Objective NH04	<p>B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive</p> <p>B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Plan</p> <p>B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Plan</p> <p>B3ii: Number of significant impacts on the protection of species listed on Schedule 5 of the Wildlife Act 1976</p>
<b>Population and human health</b>	<ul style="list-style-type: none"> <li>Potential interactions if effects upon environmental vectors such as water and air are not mitigated</li> </ul>	Also see measures under environmental vectors soil, water and air below. Objective ED15, Objective ED19, Objective WS06 and Objective COMAH02	Objective EM03	PHH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Plan, as identified by the Health Service Executive and Environmental Protection Agency
<b>Soil</b>	<ul style="list-style-type: none"> <li>Damage to the hydrogeological and ecological function of the soil resource.</li> </ul>	Objective HL01 and Objective HL02	Objective EM02	S1: Soil extent and hydraulic connectivity
<b>Water</b>	<ul style="list-style-type: none"> <li>Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology.</li> <li>Increase in the risk of flooding</li> </ul>	Also see measures under soil above and material assets below. Objective ED21, Objective WS01, Objective WW01, Objective WW02, Objective WW04, Objective WW05, Objective WW06, Objective ED21, Objective TM14, Objective WS01, Objective WW01, Objective WW02, Objective WW04, Objective WW05, Objective WW06, Objective WQ01, Objective WQ04, Objective RS13, Objective RS24 and Objective CF12	Objective FRM01, Objective FRM02, Objective FRM03 and Objective FRM04	<p>W1: Classification of Overall Status (comprised of ecological and chemical status) under the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009)</p> <p>W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC</p> <p>W3: Number of incompatible developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk</p>

Appendix II: Non-Technical Summary

Topic	Potentially Significant Adverse Effect, if Unmitigated	CDP Measures References, where not included in LAP	LAP Measures References	Indicators
<b>Air and Climatic Factors</b>	<ul style="list-style-type: none"> <li>Emissions to air including greenhouse gas emissions and other emissions.</li> </ul>	<p>Also see measure under human health above</p> <p>Objective GI01, Objective GI02, Objective GI03, Objective GI04, Objective GI05, Objective GI06 and Objective GI07</p>	<p>Various Plan provisions relating to:</p> <ul style="list-style-type: none"> <li>Improvement of the public realm;</li> <li>Development of the town centre;</li> <li>Improved permeability;</li> <li>Implementation of the Neighbourhood Framework Plan for the Town Centre;</li> <li>Implementation of Urban Design Guidelines;</li> <li>Reuse and regeneration of derelict land and buildings; and</li> <li>Development and regeneration of areas that are in need of regeneration</li> </ul> <p>Objective AM01, Objective AM02, Objective AM03, Objective AM04 and Objective EM01</p>	C1: Percentage of population travelling to work, school or college by public transport or non-mechanical means
<b>Material Assets</b>	<ul style="list-style-type: none"> <li>Failure to provide adequate and appropriate wastewater treatment (water services infrastructure and capacity ensures the mitigation of potential conflicts).</li> <li>Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (water services infrastructure and capacity ensures the mitigation of potential conflicts)</li> <li>Increases in waste levels</li> </ul>	<p>Objective WW02, Objective WS02, Objective WM09, Objective WM10, Objective WM01, Objective WM02, Objective WM03, Objective WM04, Objective WM05, Objective WM06, Objective WM07, Objective WM08, Objective WM11 and Objective WM12</p>	<p>Objective WW01, Objective WW02, Objective WW03 and Objective WW04</p>	<p>M1: Number of new developments granted permission which can be adequately and appropriately served with waste water treatment over the lifetime of the Plan</p> <p>M2: Number of non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Plan</p>
<b>Cultural Heritage</b>	<ul style="list-style-type: none"> <li>Potential effects on protected and unknown archaeology and protected architecture arising from construction and operation activities.</li> </ul>		<p>Objective AH01, Objective AH02, Objective AH03, Objective AH04, Objective AH05, Objective ACA02, Objective ACA03, Objective ARH01 and Objective ARH02</p>	<p>CH1: Percentage of entries to the Record of Monuments and Places - and the context these entries within the surrounding landscape where relevant - protected from adverse effects resulting from development which is granted permission under the Plan</p> <p>CH2: Percentage of entries to the Record of Protected Structures and their context protected from adverse effects resulting from development which is granted permission under the Plan</p>
<b>Landscape</b>	<ul style="list-style-type: none"> <li>Occurrence of adverse visual impacts and conflicts with the appropriate protection of the landscape.</li> </ul>		<p>Various urban design guidelines including those relating to character, coherence, connectivity and permeability, continuity and enclosure, scale, landscape, adaptability, diversity, building style and materials and urban blocks.</p>	L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape resulting from development which is granted permission under the Plan