

# SEA STATEMENT

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OF THE

## TULLAMORE TOWN AND ENVIRONS DEVELOPMENT PLAN 2010-2016

### STRATEGIC ENVIRONMENTAL ASSESSMENT

**For: Tullamore Town Council & Offaly County Council**

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**JUNE 2010**

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# Section 1 Introduction

## 1.1 Terms of Reference

This is the SEA Statement of the Tullamore Town and Environs Development Plan 2010-2016 Strategic Environmental Assessment.

## 1.2 SEA Definition

SEA is a systematic process of predicting and evaluating the likely environmental effects of implementing a 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 and social considerations.

## 1.3 Legislative Context

Directive 2001/42/EC of the European Parliament and of the Council, of 27 June 2001, on the assessment of the effects of certain plans and programmes on the environment, referred to hereafter as the SEA Directive, introduced the requirement that SEA be carried out on plans and programmes which are prepared for a number of sectors, including land use planning.

The SEA Directive was transposed into Irish Law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI No. 435 of 2004), and, the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004). Both sets of regulations became operational on 21 July 2004.

The SEA Directive and the instruments transposing it into Irish Law require that after the adoption of a plan or programme, the plan or programme making authority is required to make a Statement available to the public, the competent environmental authorities and, where relevant, neighbouring countries. This Statement is referred to as an SEA Statement (DEHLG, 2004)<sup>1</sup>.

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<sup>1</sup> Department of the Environment, Heritage and Local Government (2004) *Implementation of SEA Directive (2001/42/EC): Guidelines for Regional Authorities and Planning Authorities* Dublin: Government of Ireland.

## 1.4 Content of the SEA Statement

The SEA Statement is required to include information summarising:

- a) how environmental considerations have been integrated into the Plan,
- b) how
  - the environmental report,
  - submissions and observations made to the planning authority on the proposed Plan and Environmental Report, and
  - any transboundary consultations [this is not relevant to this SEA]

have been taken into account during the preparation of the Plan,

- c) the reasons for choosing the Plan, as adopted, in the light of the other reasonable alternatives dealt with, and
- d) the measures decided upon to monitor the significant environmental effects of implementation of the Plan.

## 1.5 Implications of SEA for the Plan

As a result of the aforementioned legislation, the Tullamore Town and Environs Development Plan 2010-2016 was required to undergo SEA.

The findings of the SEA were expressed in a Draft Environmental Report which was submitted to the Elected Members alongside the proposed Draft Plan. The purpose of the report was to provide a clear understanding of the likely environmental consequences of decisions regarding the future accommodation of growth in Tullamore.

Changes made to the proposed Draft Plan were evaluated for their environmental consequences and the Draft Environmental Report was updated to become the Environmental Report.

The Environmental Report and the Draft Plan were placed on public display in July 2009.

Addendum I to the Environmental Report (which details responses to the submissions on the Environmental Report which were made during the first period of public display of the Draft Plan and the Environmental Report) was included in the Manager's Report circulated to Elected Members. Addendum I proposed updates to the Environmental Report as a result of submissions, as appropriate.

Proposed Amendments to the Draft Plan were evaluated for their environmental consequences and these were presented to the Elected Members and placed on public display alongside the Proposed Amendments in March 2010 the form of Addendum II to the Environmental Report. On adoption of the Draft Plan, this Addendum and Addendum I were used to update the original Environmental Report into a final Environmental Report which accompanies the adopted Plan.

At each stage of the process the Elected Members took into account the findings of the Environmental Report and/or the Addenda as appropriate.

## Section 2 How Environmental Considerations were integrated into the Development Plan

### 2.1 Consultations

The Environmental Protection Agency (EPA), the Department of the Environment, Heritage and Local Government (DEHLG) and the Department of Communications, Energy and Natural Resources (DCENR) were sent SEA scoping notices indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the Environmental Report could be made to the Councils. SEA scoping submissions were made by the DEHLG and the DCENR. These submissions were taken into account during the formulation of the scope of the SEA.

Each of the aforementioned environmental authorities was invited to a scoping consultations meeting. Representatives from Offaly County Council, CAAS, the EPA and the DEHLG attended. The information provided at this meeting was considered during the determination of the scope.

In addition, the EPA, DEHLG and DCENR made submissions on the Development Plan and Environmental Report while it was on public display. Further information on the aforementioned submissions is provided under Section 3.2.

### 2.2 Environmental Sensitivities

#### 2.2.1 Mapping and Early Communication

Environmental considerations were integrated into the Draft Plan before it was placed on public display for the first time.

Environmental sensitivities were mapped in order to identify which areas of Tullamore would be most sensitive to development and would suffer the most adverse effects if growth was to be accommodated in those areas unmitigated.

The sensitivities were communicated to the Plan-making team on a regular basis from the

outset of the Plan preparation process. Identifying areas with the most limited carrying capacity within the Plan area helped future growth to be diverted away from these areas.

The sensitivities considered by the SEA included the following:

- Designated ecological sites;
- Land cover;
- Soil Type;
- Water Framework Directive (WFD) Risk Assessments for Rivers, River Catchments and Ground Waters;
- WFD Register of Protected Areas;
- EPA River Water Quality Monitoring;
- GSI Aquifer Vulnerability and Productivity;
- Flooding Data;
- Waste Water Treatment capacity and demand;
- Drinking water supply;
- Drinking water quality;
- Archaeological Heritage;
- Architectural Heritage;
- Landscape Sensitivity Areas; and,
- Areas of High Amenity.

A number of these sensitivities are mapped on Figure 2.1, Figure 2.2 and Figure 2.3.

#### Overlay mapping

A Geographical Information System (GIS) was used in order to weight the above sensitivities and map them overlapping each other - this allowed the identification of where most sensitivities within and surrounding the Plan area occur. Figure 2.4 shows the overlay map of sensitivities that was used by the SEA.

Environmental sensitivities are indicated by colours which range from acute vulnerability (brown) to extreme vulnerability (dark red) to high vulnerability (red) to elevated vulnerability (orange) to medium vulnerability (light orange) and low vulnerability (yellow/green). 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. This is particularly the case where

the cumulative development of small-scale projects gradually causes a slow deterioration of a resource.

## **2.3 Early Identification and Evaluation of Alternatives**

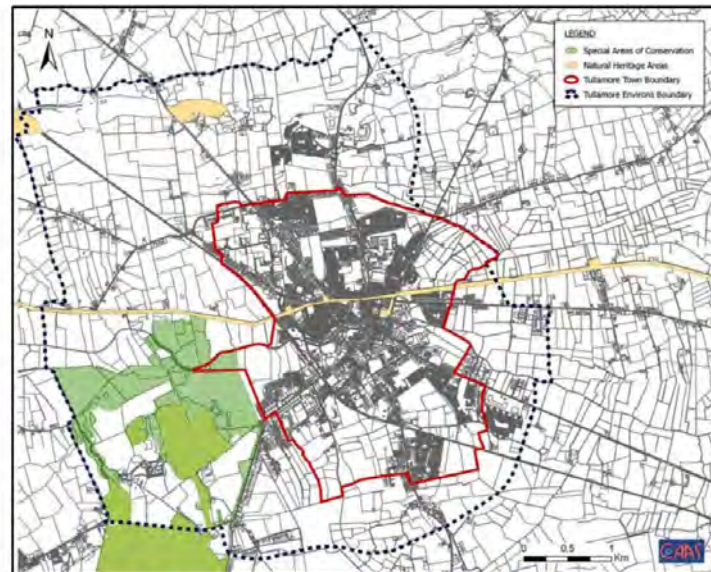
A range of potential alternative scenarios for the types of planning strategies adopted for the Development Plan were identified at an early stage in the process and evaluated for their likely significant environmental effects (see Section 4).

The environmental sensitivities and overlay mapping shown on Figure 2.1, Figure 2.2, Figure 2.3 and Figure 2.4 was used in order to predict and evaluate the environmental effects of implementing the scenarios.

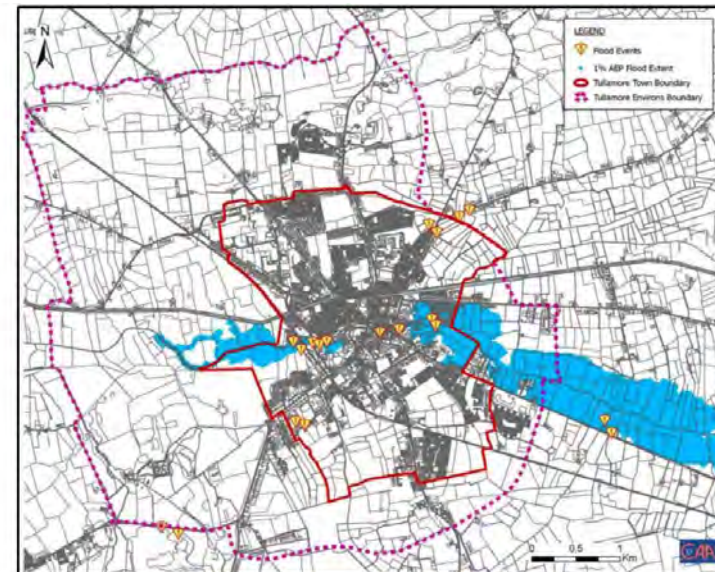
Communication of the findings of this evaluation helped the Plan-making team to make an informed choice as to which alternative was to be put before the Elected Members as the proposed Plan.

Communication of this evaluation to the Elected Members through the Environmental Report helped the Elected Members to make an informed choice with regard to the making of the Development Plan.

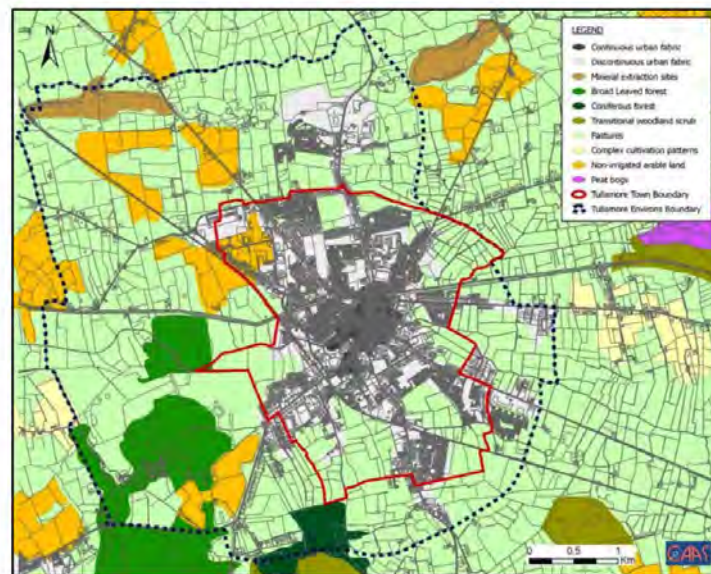
Mitigation measures which arose from the evaluation and which were integrated into the Plan are detailed under Section 2.4 of this report.



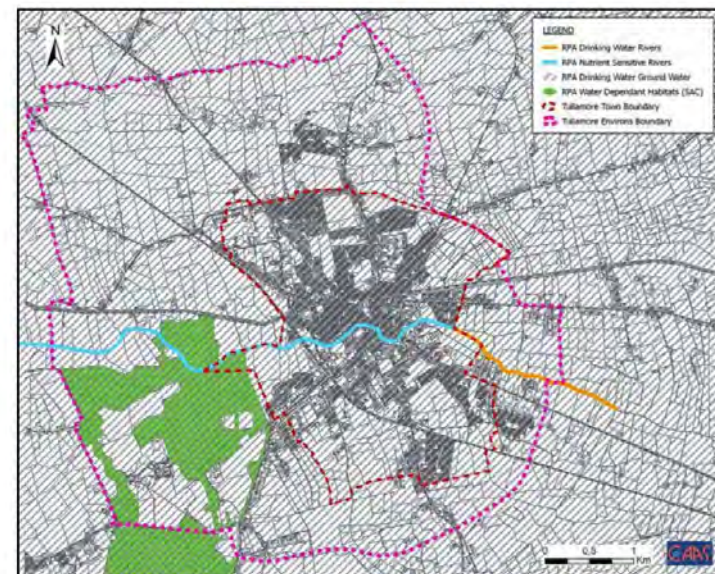
**Designated Ecological Sites**



**Flood Events & Extent**

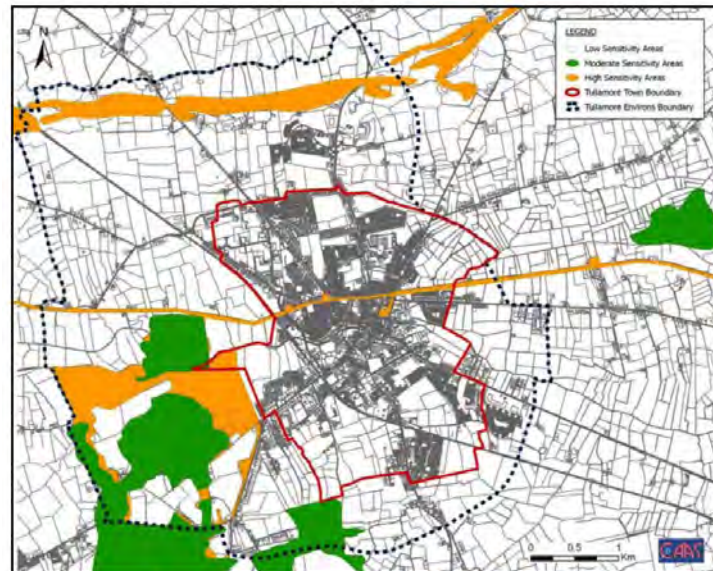


**CORINE Land Cover**

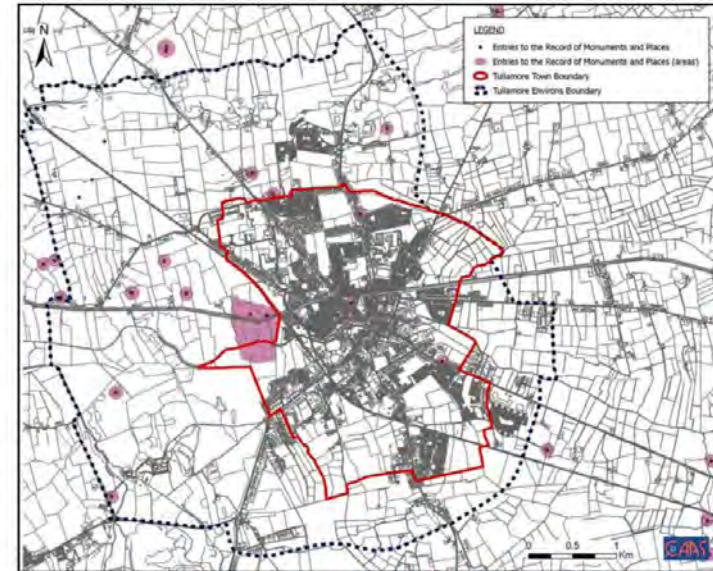


**WFD Register of Protected Areas**

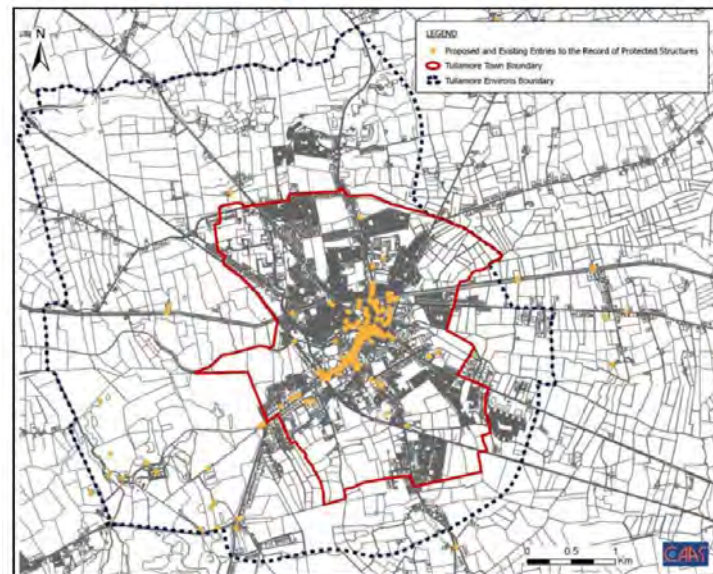
**Figure 2.1 Environmental Sensitivities - Plate 1**



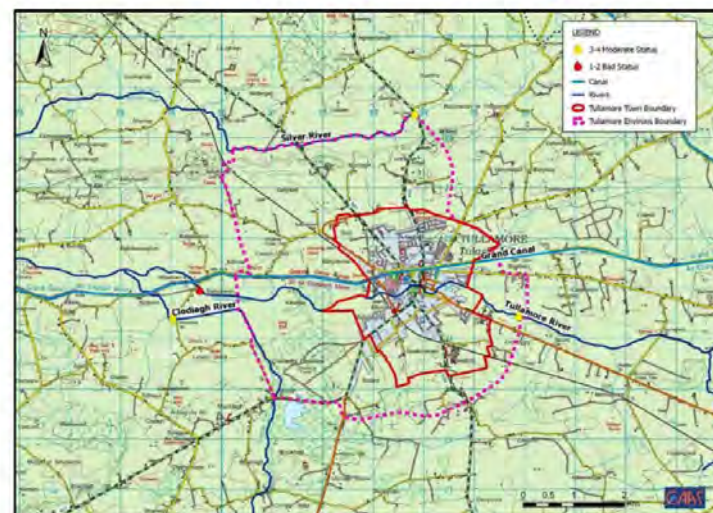
**Landscape Sensitivity Areas**



**Archaeological Heritage**

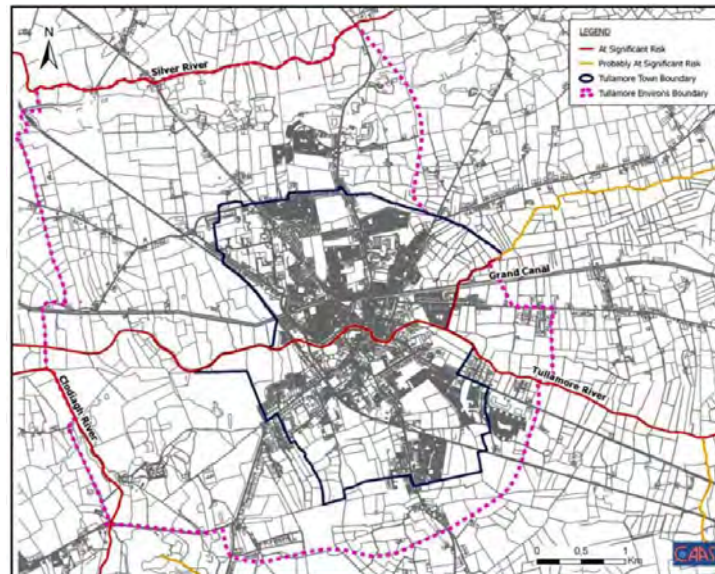


**Architectural Heritage**

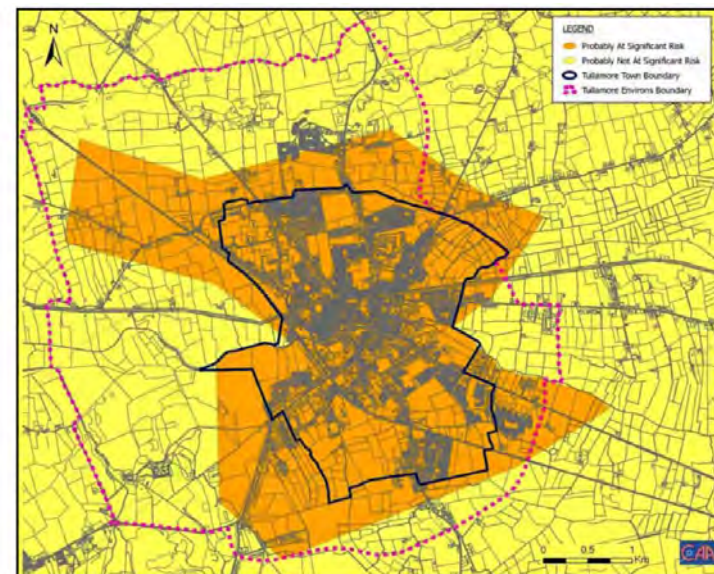


**River Water Quality (Q Values)**

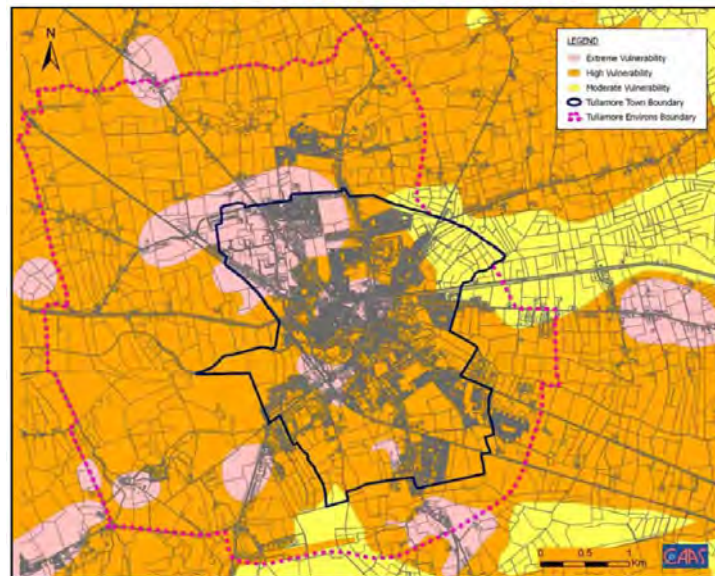
**Figure 2.2 Environmental Sensitivities - Plate 2**



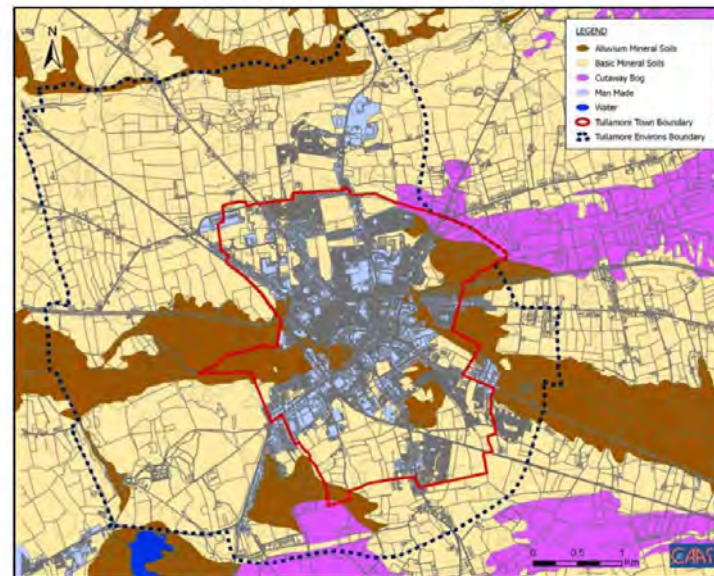
**Rivers Risk Assessment**



**Groundwaters Risk Assessment**



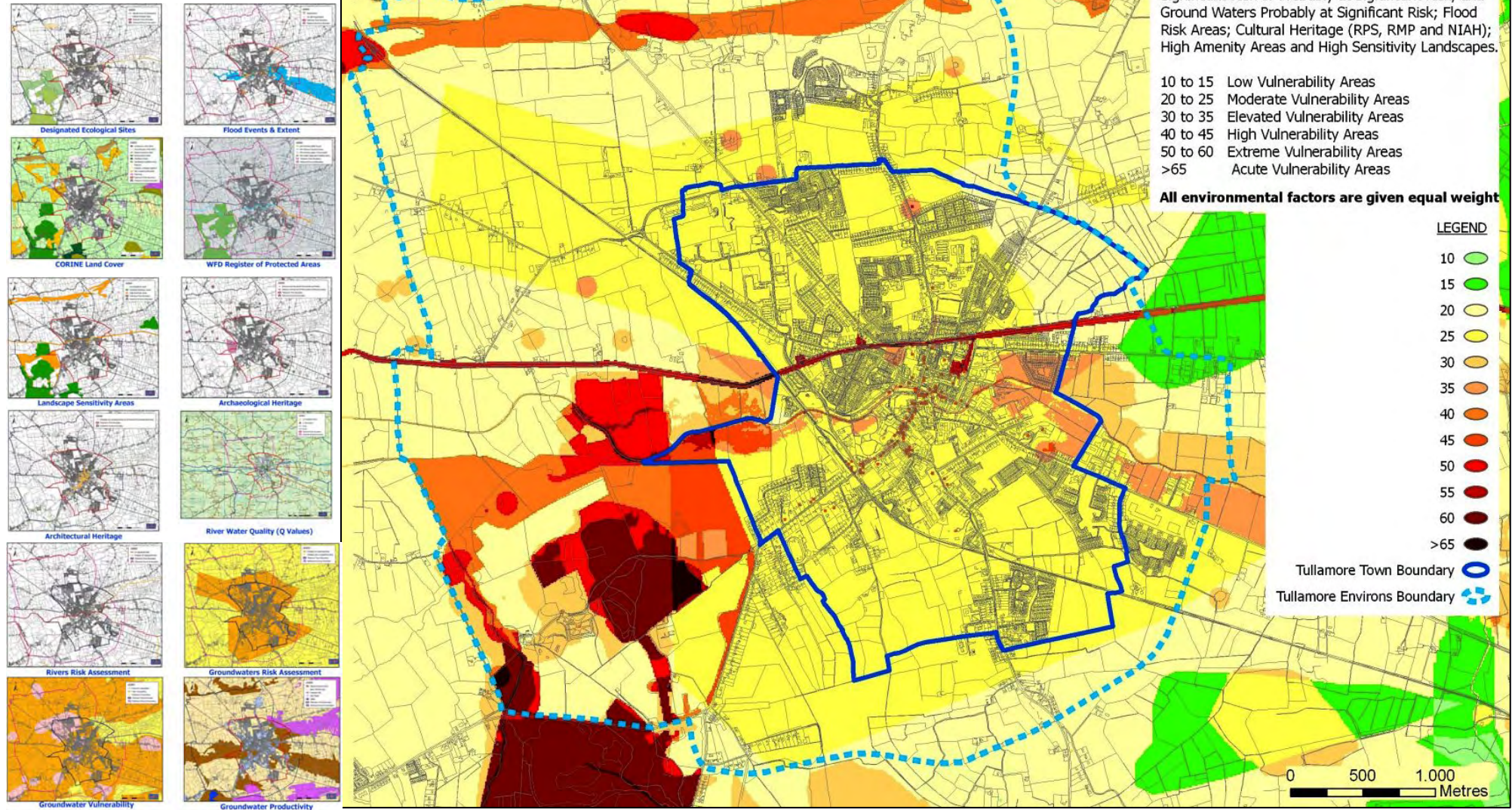
**Groundwater Vulnerability**



**Groundwater Productivity**

**Figure 2.3 Environmental Sensitivities - Plate 3**

Maps of sensitivities were weighted and mapped overlapping each other in order to identify where most sensitivities within and surrounding Tullamore occur.



**Figure 2.4 Overlay of Environmental Sensitivities**

accompany the relevant measures in both the Plan and Section 8 of the Environmental Report.

## 2.4 Mitigation

### 2.4.1 Introduction

In order to comply with various statutory requirements and in order to comply with the requirements of the statutory consultees, mitigation measures<sup>2</sup> were recommended to be integrated into the Plan.

The topics which these mitigation measures cover include:

- Biodiversity and Flora and Fauna - Natura 2000 Sites
- Ecological Connectivity
- Human Health
- Sustainable Development of Brownfield Lands
- Water Quality
- Flooding
- Waste Water Treatment
- Drinking Water Supply and Quality
- Travel Related Greenhouse Gas Emissions
- Archaeological Heritage
- Architectural Heritage
- Landscape

Mitigation measures generally benefit multiple environmental components i.e. a measure providing for the 'protection of surface water resources' could beneficially impact upon the protection of biodiversity, flora and fauna, drinking water resources, human health and provision of appropriate waste water treatment infrastructure.

The mitigation measures are identified in Section 9 of the Environmental Report and this identification is reproduced on Table 2.1. The reference codes identified are those which

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<sup>2</sup> Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing a human action, be it a plan, programme or project. Mitigation measures can be roughly divided into those that: prevent effects; reduce the magnitude or extent, probability and/or severity of effect; repair effects after they have occurred, and; compensate for effects, balancing out negative impacts with other positive ones. Where there are likely to be significant negative effects, consideration should be given in the first instance to preventing these effects or, where this is not possible, to reducing the effects.

<b>Mitigation Measure Topic</b>	<b>Provisions Integrating Considerations into the Plan</b>
Biodiversity and Flora and Fauna - Natura 2000 Sites	Policies: TTEP 13-01, TTEP 13-02 and TTEP 13-03 Objectives: TTEO 13-01 and TTEO 13-02
Biodiversity and Flora and Fauna - Ecological Connectivity	Policies: TTEP 13-04, TTEP 13-05, TTEP 13-07, TTEP 13-08, TTEP 13-09 and TTEP 13-11 Objective: TTEO 13-04
Human Health	Policies: TTEP 10- 26 and TTEP 10-27 Also see measures related to water quality, flooding, waste water treatment and drinking water supply and quality.
Sustainable Development of Brownfield Lands	Various provisions of Plan including provisions contained in the Overall Strategy and Policies TTEP 06-11 and TTEP 04-25 and Objective TTEO 04-09.
Water Quality	Policies: TTEP 10-21, TTEP 10-22, TTEP 10-23, TTEP 10-24 and TTEP 10-25 Objectives: TTEO 10-02, TTEO 10-06, TTEO 10-07, TTEO 10-08, TTEO 10-09, TTEO 10-10, TTEO 10-11 and TTEO 10-12
Flooding	Policies: TTEP 10-15, TTEP 10-16, TTEP 10-17 and TTEP 10-18
Waste Water Treatment	Policies: TTEP 10-01, TTEP 10-02, TTEP 10-03, TTEP 10-04, TTEP 10-09, TTEP 10-10 TTEP 10-11 and TTEP 10-12 Objectives: TTEO 10-02 and TTEO 10-04
Drinking Water Supply and Quality	Policies: TTEP 10-01, TTEP 10-02, TTEP 10-03, TTEP 10-04, TTEP 10-05 and TTEP 10-06 Objective: TTEO 10-02, TTEO 10-03 and TTEO 10-07
Travel Related Greenhouse Gas Emissions	Policies: TTEP 08-01, TTEP 08-05, TTEP 08-10, TTEP 08-12, TTEP 08-13, TTEP 08-14, TTEP 08-21 and TTEP 08-24 Objective: TTEO 08-14
Archaeological Heritage	Policies: TTEP 12-10, TTEP 12-11, TTEP 12-12, TTEP 12-13 and TTEP 12-14 Objectives: TTEO 12-01, TTEO 12-05, TTEO 12-06, TTEO 12-07 and TTEO 12-08
Architectural Heritage	Policies: TTEP 12-01, TTEP 12-02, TTEP 12-03, TTEP 12-04, TTEP 12-07, TTEP 12-08 and TTEP 12-09 Objectives: TTEO 12-01, TTEO 12-02, TTEO 12-03, TTEO 12-04, TTEO 12-05 and TTEO 12-06
Landscape	Policies: TTEP 13-14, TTEP 13-16 and TTEP 13-17

**Table 2.1 Mitigation Measures**

## Section 3 Environmental Report and Submissions & Observations

### 3.1 Introduction

This section details how both the Environmental Report and submissions and observations made to the planning authority on the Environmental Report and SEA process have been taken into account during the preparation of the Plan.

### 3.2 SEA Scoping Submissions

The EPA, DEHLG and DCENR were all sent SEA scoping notices indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the Environmental Report could be made to the Councils. Each of the aforementioned environmental authorities was invited to a scoping consultations meeting. Representatives from Offaly County Council, CAAS, the EPA and the DEHLG attended. The information provided at this meeting was considered during the determination of the scope.

SEA scoping submissions were made by the DEHLG and the DCENR. These submissions were taken into account during the formulation of the scope of the SEA and while undertaking the SEA.

The DEHLG made two submissions one of which related to architectural heritage and one of which related to archaeological heritage.

- Architectural Heritage
  - How to define architectural heritage;
  - The level of detail at which architectural heritage should be considered;
  - Data gaps with regard to architectural heritage;
  - Scoping of Baseline information to be included in the Environmental Report;
  - How to deal with the 'do-nothing' scenario; and,
  - Monitoring and Cumulative Effects.

- Archaeological Heritage
  - Archaeological heritage legislation and international strategic actions to which the SEA must have regard;
  - Information on the National Heritage Plan 2002;
  - Sources of information on archaeological heritage;
  - Development issues with regard to archaeological heritage; and,

The DCENR's submission consisted of its Guidelines for Local Authorities which provide SEA-related information under the following topics:

- Form of Submission
- Consultation Deadlines
- Screening Requirements
- Scoping Requirements
- Relevant Objectives And Environmental Standards That May Influence Plans Or Programmes.
- Sources of Environmental Information

### 3.3 Submissions and Observations

The EPA, DEHLG and DCENR made submissions on the Development Plan and Environmental Report while it was on public display. The information contained in these submissions was taken into account by the SEA as well as the Habitats Directive Assessment which was undertaken for the Plan.

The submission from the EPA resulted in the updating of Section 9 of the Environmental Report.

The EPA submission provided information and advice under the following headings:

- Water
- Water Quality/Water Framework Directive
- Drinking Water/Water Supply
- Waste Water Treatment
- Groundwater Protection
- Flood Prevention and Management

- Integration of infrastructure, zoning and development
- Master Plan areas and Critical Water and Waste Water related infrastructure
- Biodiversity
- EU Protected Habitats and Species in Ireland
- Management Plans for Designated Areas
- Non-Designated Habitats and Species
- Buffer Zones
- Appropriate Assessment
- Habitat Mapping
- Alien species and Noxious Weeds
- Annex I/ Annex II Habitats Directive
- Air, Noise and Climatic Factors
- Landscape Character Assessment
- Infrastructure Planning
- Urban Waste Water Discharge Licensing
- Waste Management
- Environmental Impact Assessment
- Legislative Obligations
- Main Environmental Challenges
- Environmental Report
- SEA Statement
- Amendments to the Draft Plan

The EPA's submission resulted in the following updates to the Environmental Report:

- Throughout the Environmental Report, replacing references to the "DEHLG's Consultation Draft Guidelines for planning authorities entitled *The Planning System and Flood Risk Management*" by references to the "DEHLG's Guidelines for planning authorities entitled *The Planning System and Flood Risk Management*".
- Including reference to the findings of the Stage One Appropriate Assessment (AA) in the final Environmental Report and SEA Statement (A Stage One<sup>3</sup> AA under Article 6 of the Habitats Directive is being undertaken for the Plan and a Draft AA Screening Report has been prepared).
- Including a summary table outlining how significant environmental effects are linked directly to mitigation measures (and their corresponding measures in the Plan) and monitoring measures.

<sup>3</sup> Methodological guidance on the provisions of Article 6 (3) and (4) of the Habitats Directive 92/43/EEC. Stage One is the screening stage.

- Referring to the additional mitigation measures in Section 9 of the Environmental Report.
- Including the following sentence at the end of Section 10.5 *Reporting*: Indicators and targets will be reviewed during the preparation of the preliminary monitoring evaluation report.

The EPA's submission also resulted in the integration into the Plan of General Objective TTEO 10-02 (regarding the preparation and implementation of an Integrated Phased Implementation Plan/Programme for Critical Water, Surface Drainage and Waste Water related infrastructure to service the Town and Environs). This objective will contribute towards the provision of appropriate infrastructure and the protection of human health, water resources and biodiversity and flora and fauna.

The part of the DEHLG's submission relevant to the SEA related to the *treatment of development alternatives*. The DCENR submission stated that they had no comments to make. No update was required to be made to the Environmental Report on foot of either Department's submission.

### 3.4 Environmental Report

The findings of the SEA were expressed in a Draft Environmental Report which was submitted to the Elected Members alongside the proposed Draft Plan. The purpose of the report was to provide a clear understanding of the likely environmental consequences of decisions regarding the future accommodation of growth in Tullamore.

Changes made to the proposed Draft Plan were evaluated for their environmental consequences and the Draft Environmental Report was updated to become the Environmental Report.

The Environmental Report and the Draft Plan were placed on public display in July 2009.

Addendum I to the Environmental Report (which details responses to the submissions on the Environmental Report which were made during the first period of public display of the Draft Plan and the Environmental Report) was included in the Manager's Report circulated to Elected Members on 18 August 2009. Addendum I

proposed updates to the Environmental Report as a result of submissions, as appropriate. Addendum I also detailed the updating of Section 9 *Mitigation Measures* of the Environmental Report.

Proposed Amendments to the Draft Plan were evaluated for their environmental consequences and these were presented to the Elected Members and placed on public display alongside the Proposed Amendments in March 2010 in the form of Addendum II to the Environmental Report. On adoption of the Draft Plan, this Addendum and Addendum I were used to update the original Environmental Report into a final Environmental Report which accompanies the adopted Plan.

At each stage of the process the Elected Members took into account the findings of the Environmental Report and/or the Addenda as appropriate.

## Section 4 Alternatives and the Plan

### 4.1 Introduction

This section describes the alternative scenarios for the Development Plan, summarises the evaluation for likely environmental effects which is provided in the Environmental Report and identifies the reasons for choosing the Plan, as adopted, in the light of the other reasonable alternatives dealt with.

### 4.2 Description of the Alternative Scenarios

The environmental consequences of 4 scenarios for the Plan were examined.

#### 4.2.1.1 Alternative Scenario 1: *Gateway Approach*

Alternative Scenario 1: *Gateway Approach* (see Figure 4.1) represents the land use plan for the Town and Environs should the recently adopted variation no. 4 to the Tullamore Town and Environs Development Plan 2004-2010 be retained. The variation represented a measured and coherent response to the designation of Tullamore as part of the Midlands Linked Gateway Town. In land use terms, this scenario includes 4 new Masterplan Areas for the Town which would be developed in a phased manner in order to accommodate targeted sequential population growth over the period of the Plan and beyond to 2020 (in line with the Midlands Regional Planning Guidelines 2004 targets). The promotion of these 4 new areas for growth in the Town is a key element for the focus of this scenario with consolidation and enhancement of the Town Centre. Under this scenario 4 new Masterplans would be developed to accommodate a higher level of new development and deliver the maximum quantitative efficiency of new population and associated infrastructure (hard and soft), facilities and neighbourhood communities. The Masterplan Areas identified under this scenario include Grand Canal Quarter; Tullamore Southern Environs; Tullamore Northern Environs and Tullamore North-Eastern Environs. This scenario allows for a greater degree of coordination of employment, public infrastructure, amenities, community facilities, schools, public transport etc. through a plan-led approach.

#### 4.2.1.2 Alternative Scenario 2: *Minimalist Approach*

Alternative Scenario 2: *Minimalist Approach* (see Figure 4.2) examines the retention of the current zoning for the Town and Environs (as per Variation no. 4) but removes the final phase from each of the Masterplan Areas i.e. a reduction in the amount of land zoned. The growth of the Town, in its role as part of the linked Gateway, may be inhibited by such a scenario as it would not focus on accommodating the needs of the Linked Gateway Town, as the Masterplans intended, but rather, reduce the contribution that Tullamore would make to the Midlands Gateway and subsequently the wider county area and the region. This scenario would restrain the Masterplan Areas from attaining a sustainable mix of population, employment and neighbourhood services and the associated services required to sustain new communities.

#### 4.2.1.3 Alternative Scenario 3: *Market-Driven Approach*

Alternative Scenario 3: *Market-Driven Approach* (see Figure 4.3) includes additional lands to be zoned which further extend the urban footprint of the Town to the extreme boundaries of the Environs. The additional lands would comprise a mix of uses including residential, business/ employment, public/ community/ educational and open space. This scenario is likely to detract from the Town Centre and existing areas of employment as increased available large scale land parcels become available for business/employment uses. The focus in this scenario would be more market driven and developer led and may lead to an unbalanced development pattern within the Town and Environs. In addition as these additional lands were not part of the overall Masterplan approach, the sequential development of the Town would be hindered as ad hoc development could be accommodated. This scenario would not support the overall vision for the Town of improving the quality of life for people living in Tullamore.

#### 4.2.1.4 Alternative Scenario 4: *Precautionary Approach*

Alternative Scenario 4: *Precautionary Approach* (see Figure 4.4) involves retaining the current land use zoning, aside from those areas identified as being 'at risk' from flooding under the Tullamore Flood Risk Assessment and Management Study (FRAM) as undertaken by the OPW (2008). In addition, this scenario would involve 'dezoning' lands that are affected by flooding to the east (developed areas - Whitehall and Riverside - and undeveloped areas) and to the west (undeveloped area) of the Town. The Tullamore FRAM has identified mitigation measures to avoid against flooding in the case of undeveloped land and has also identified a programme of measures to be implemented to mitigate against flooding in developed areas. Should this scenario be adopted, the floodplains identified would not be developed. However this scenario would not be in a position to provide for the needs of a linked gateway town, in that dezoning lands designated for development use including business/employment use would negatively impact on the potential of accommodating employment generating uses in a linked gateway town. Dezoning lands would also impact on the Masterplan areas, in particular the Grand Canal Quarter, as the lands were initially identified as part of a strategic response to Tullamore's designation as part of the Midlands Linked Gateway. Further development of the Town would also be jeopardised in that dezoning lands in the floodplain would create a fragmented and disjointed urban footprint and would have the potential of undermining the principle of connectivity and hindering accessibility within the Town.

The FRAM addresses the issues that arise regarding development in the floodplains and provides a series of measures to be implemented, should lands be developed. Where land is already developed, the FRAM has clear recommendations to implement measures to avoid against further flooding. Whilst the floodplains would be preserved, this scenario would not lead to a successful, prosperous and networked linked gateway town. Through implementing the provisions of the FRAM, a balance can be reached which reflects a precautionary approach without having to dezone lands.

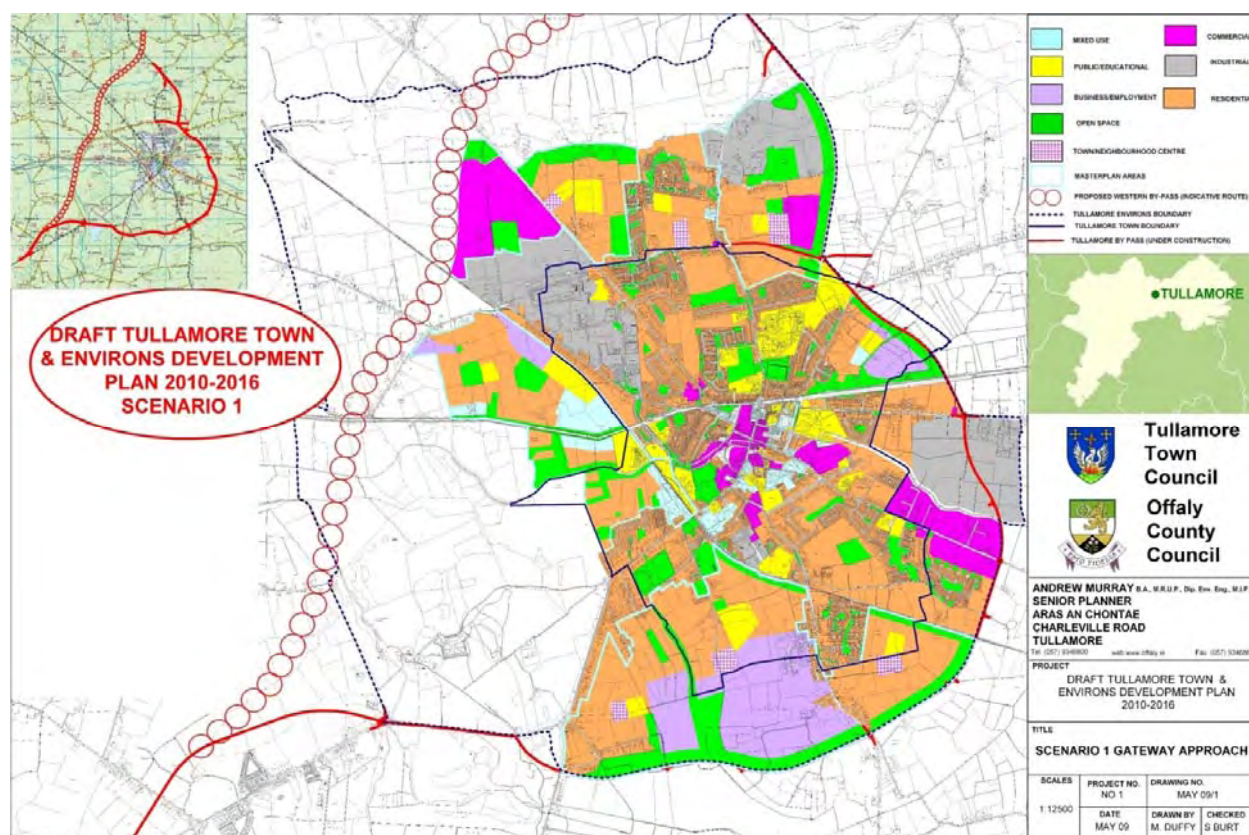


Figure 4.1 Alternative Scenario 1: *Gateway Approach*

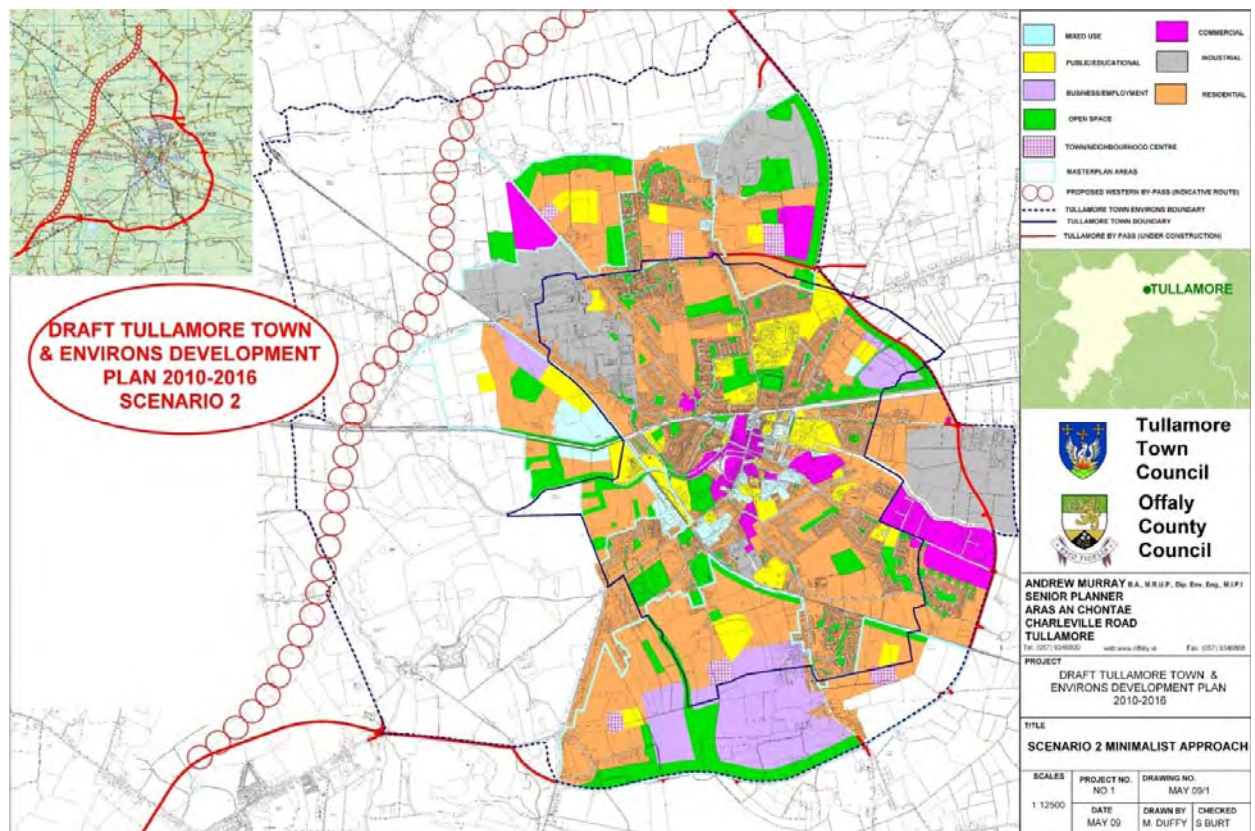


Figure 4.2 Alternative Scenario 2: *Minimalist Approach*

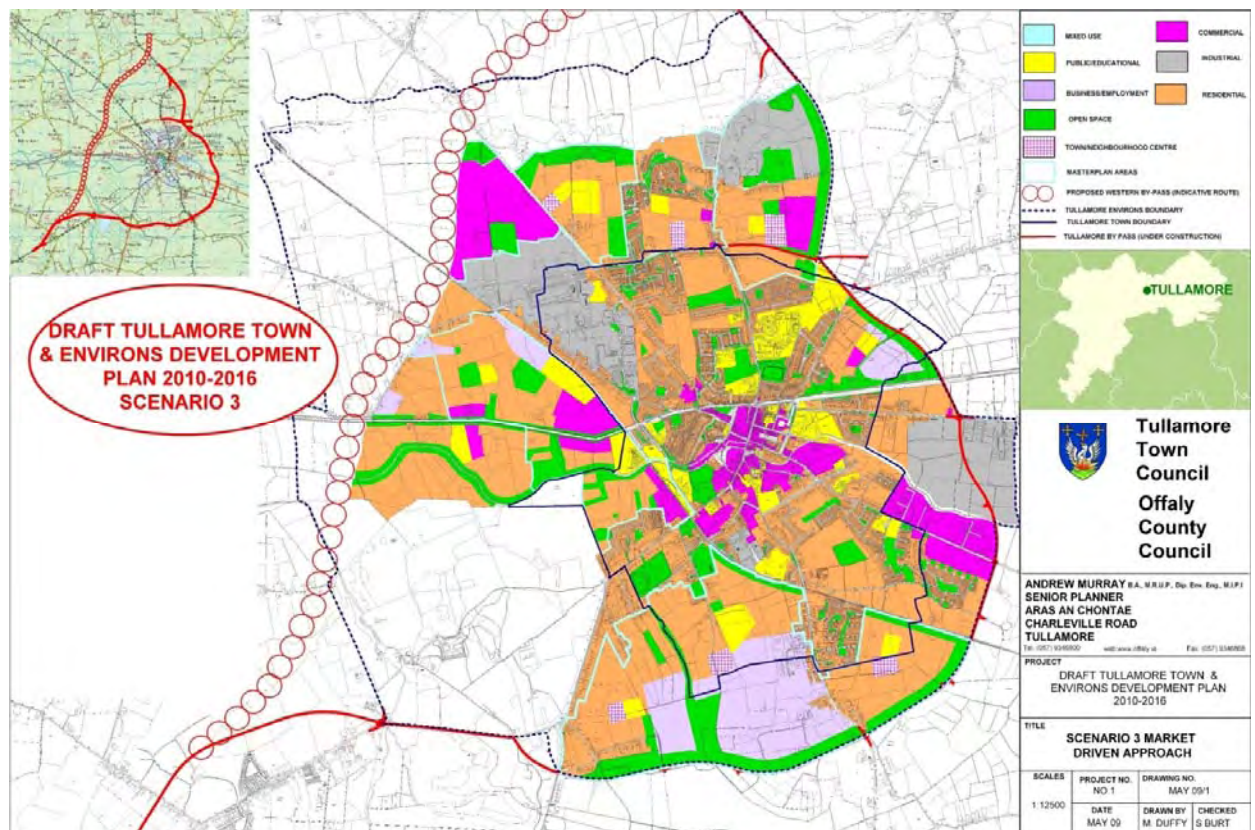


Figure 4.3 Alternative Scenario 3: *Market-Driven Approach*

### 4.3 Evaluation of the Alternative Scenarios

#### 4.3.1.1 Existing Environment and Overlay Mapping

#### 4.3.1.2 Strategic Environmental Objectives (SEOs)

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Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs
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**Table 4.1 Criteria for appraising the effect of Plan provisions on Strategic Environmental Objectives**

SEO Code	SEO
<b>B1</b>	To avoid loss of relevant habitats, geological features, species or their sustaining resources in designated ecological sites
<b>B2</b>	To avoid significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites
<b>B3</b>	To sustain, enhance or - where relevant - prevent the loss of ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity
<b>HH1</b>	To protect human health from hazards or nuisances arising from exposure to incompatible landuses
<b>S1</b>	Maximise the sustainable re-use of brownfield lands, and maximise the use of the existing built environment rather than developing greenfield lands
<b>W1</b>	To maintain and improve, where possible, the quality of rivers
<b>W2</b>	To prevent pollution and contamination of ground water
<b>W3</b>	To prevent development on lands which pose - or are likely to pose in the future - a significant flood risk
<b>W4</b>	To serve new development with appropriate waste water treatment
<b>W5</b>	To serve development within the Plan area with drinking water that is both wholesome and clean
<b>C1</b>	To minimise increases in travel related greenhouse emissions to air
<b>C2</b>	To reduce car dependency within the Plan area by way of, inter alia, encouraging modal change from car to more sustainable forms of public transport and encouraging development which will not be dependent on private transport
<b>CH1</b>	To protect the archaeological heritage of Tullamore with regard to entries to the Record of Monuments and Places - including Zones of Archaeological Potential - and the context of the above within the surrounding landscape where relevant
<b>CH2</b>	To preserve and protect the special interest and character of Tullamore's architectural heritage with regard to entries to the Record of Protected Structures and their context within the surrounding landscape where relevant
<b>L1</b>	To avoid significant adverse impacts on the landscape - especially with regard to landscapes which are identified as being highly sensitive

**Table 4.2 Strategic Environmental Objectives (SEOs)<sup>4</sup>**

<sup>4</sup> Strategic Environmental Objectives (SEOs) are methodological measures which are developed from international and national policies which generally govern environmental protection objectives and against which the environmental effects of the Plan were tested. The SEOs are used as standards against which the provisions of the Plan were evaluated in order to help identify areas in which significant adverse impacts are likely to occur, if unmitigated against.

### 4.3.2 Evaluation against Overlay Mapping

Significant Effects [i.e. High, Extreme and Acute] are highlighted below.

Vulnerability Area	Area (km <sup>2</sup> ) affected	% of Vulnerability Areas most likely to experience development pressure
Low	0.15	1.23
Moderate	11.42	90.37
Elevated	0.9	7.19
High	0.13	1.04
Extreme	0.02	0.16
Acute	<0.01	0.01
Total	12.62	100

**Table 4.3 Quantification of Environmentally Vulnerable Areas most likely to be significantly affected by Scenario 1: *Gateway Approach* [i.e. 0.16 km<sup>2</sup> or 1.21% of areas of vulnerability]**

Vulnerability Area	Area (km <sup>2</sup> ) affected	% of Vulnerability Areas most likely to experience development pressure
Low	0.16	1.31
Moderate	10.66	89.94
Elevated	0.88	7.46
High	0.13	1.11
Extreme	0.02	0.17
Acute	<0.01	0.01
Total	11.85	100

**Table 4.4 Quantification of Environmentally Vulnerable Areas most likely to be significantly affected by Scenario 2: *Minimalist Approach* [i.e. 0.16 km<sup>2</sup> or 1.29% of areas of vulnerability]**

Vulnerability Area	Area (km <sup>2</sup> ) affected	% of Vulnerability Areas most likely to experience development pressure
Low	0.15	1.14
Moderate	12.04	88.24
Elevated	0.99	7.24
High	0.16	1.16
Extreme	0.30	2.21
Acute	<0.01	0.01
Total	13.64	100

**Table 4.5 Quantification of Environmentally Vulnerable Areas most likely to be significantly affected by Scenario 3: *Market Driven Approach* [i.e. 0.47 km<sup>2</sup> or 3.38% of areas of vulnerability]**

Vulnerability Area	Area (km <sup>2</sup> ) affected	% of Vulnerability Areas most likely to experience development pressure
Low	0.16	1.26
Moderate	11.38	92.08
Elevated	0.71	5.72
High	0.09	0.77
Extreme	0.02	0.16
Acute	<0.01	0.01
Total	12.36	100

**Table 4.6 Quantification of Environmentally Vulnerable Areas most likely to be significantly affected by Scenario 4: *Precautionary Approach* [i.e. 0.12 km<sup>2</sup> or .94% of areas of vulnerability]**

Tables 4.3 to 4.6 quantify the vulnerability areas which are likely to be impacted upon by the areas of Scenarios 1 to 4 which are most likely to come under development pressure. These areas were mapped and calculated using GIS software.

The measurements indicate that:

- Scenario 3 would be likely to have a greater impact upon each of the more of the higher vulnerability classes (0.47 km<sup>2</sup> or 3.38%) i.e. *High Vulnerability, Extreme Vulnerability and Acute Vulnerability* to a greater extent than all the other scenarios (0.16km<sup>2</sup> or 1.14%, 0.16 km<sup>2</sup> or 1.21%, 0.12 km<sup>2</sup> or 1.00%);
- Scenario 3 would be likely to result in significantly more adverse environmental impacts than the other scenarios; and,
- Scenarios 1 and 2 cover similar extents of higher vulnerability areas as each other (0.16km<sup>2</sup>) with Scenario 4 covering the smallest extent of higher vulnerability areas (0.12km<sup>2</sup>).

### 4.3.3 Evaluation against SEOs

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs - unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs - would be mitigated	<u>Uncertain</u> interaction with status of SEOs	<u>Neutral</u> Interaction with status of SEOs	<u>No Likely</u> interaction with status of SEOs
<b>Scenario 1: Gateway Approach</b>	CH1 CH2		B1 B2 B3 S1 W1 W2 W3 C1 C2 W4 W5 CH1 CH2	L1		
<b>Scenario 2: Minimalist Approach</b>	CH1 CH2		B1 B2 B3 S1 W1 W2 W3 C1 C2 W4 W5 CH1 CH2	L1		
<b>Scenario 3: Market-Driven Approach</b>	CH1 CH2	B1 B2	B3 S1 W1 W2 W3 C1 C2 W4 W5 CH1 CH2	L1		
<b>Scenario 4: Precautionary Approach</b>	CH1 CH2		B1 B2 B3 S1 W1 W2 W3 C1 C2 W4 W5 CH1 CH2	L1		

**Table 4.7 Evaluation of Alternative Scenarios against SEOs**

Table 4.7 provides the evaluation of Alternative Scenarios 1, 2, 3 and 4 against the Strategic Environmental Objectives (SEOs). Note that with regard to Scenarios 1, 2 and 3, conflicts between new development and SEO W3 (which relates to avoiding flood risk) could be mitigated by complying with measures outlined in the Tullamore Flood Risk and Assessment Management Study (Office of Public Works, 2008) and with the Flood Risk Management approach set out in the DEHLG's Planning Guidelines on the Planning System and Flood Risk Management.

#### **4.4 Reasons for choosing the plan in light of the other reasonable alternatives dealt with**

The Alternatives that were examined were produced and evaluated at an earlier - more embryonic - stage to facilitate the evaluation and selection of a plan - having regard, *inter alia* to environmental consequences.

The Draft Development Plan that emerged from the Plan preparation process was Scenario 1 – this is one of the Scenarios with the least impact on the environment and one of the highest conformances with relevant national and regional planning objectives. The assessment showed that a market-led approach – Scenario 3 - had the potential to give rise to environmental effects on nearly 3 times more vulnerable lands than this scenario and was regarded as the least environmentally compatible version.

Note that all scenarios [including Scenario 4] examined appear to have lands prone to flooding that are zoned for development.

A number of relatively minor changes were made to the land use zoning map for Scenario 1 – the Draft Development Plan – before the Plan was adopted.

The evaluation for the adopted Development Plan against the SEOs is the same as the evaluation for Scenario 1 – the Draft Development Plan – against the SEOs.

The evaluation for the adopted Development Plan against the Overlay Mapping is slightly different to the evaluation for Scenario 1 – the Draft Development Plan – against this Mapping. A comparison of both of these evaluations can be made by examining the tables overleaf.

Both the Draft Development Plan and the adopted Development Plan would be likely to have conflicts to the same extent with the higher (i.e. *High Vulnerability, Extreme Vulnerability and Acute Vulnerability*) vulnerability classes (0.16km<sup>2</sup>). The adopted Development Plan would be likely to conflict with marginally less areas of vulnerability (12.48km<sup>2</sup>) than the Draft Development Plan (12.62km<sup>2</sup>).

Vulnerability Area	Area (km <sup>2</sup> ) affected	% of Vulnerability Areas most likely to experience development pressure
Low	0.15	1.23
Moderate	11.42	90.37
Elevated	0.9	7.19
High	0.13	1.04
Extreme	0.02	0.16
Acute	<0.01	0.01
Total	12.62	100

**Table 4.8 Quantification of Environmentally Vulnerable Areas most likely to be significantly affected by Scenario 1: *Gateway Approach* [i.e. 0.16 km<sup>2</sup> or 1.21% of areas of vulnerability]**

Vulnerability Area	Area (km <sup>2</sup> ) affected	% of Vulnerability Areas most likely to experience development pressure
Low	0.13	1.08
Moderate	11.33	90.76
Elevated	0.87	6.94
High	0.13	1.05
Extreme	0.02	0.16
Acute	<0.01	0.01
Total	12.48	100

**Table 4.9 Quantification of Environmentally Vulnerable Areas most likely to be significantly affected by Scenario 1: *Gateway Approach* [i.e. 0.16 km<sup>2</sup> or 1.22% of areas of vulnerability]**

With the integration of appropriate mitigation measures (including those identified in Section 2.4 of this report) potential adverse environmental effects which could arise as a result of implementing this scenario would be likely to be avoided, reduced or offset.

Scenario 1 was chosen to be developed for the Development Plan by the plan-making team and put on public display and adopted – with amendments – by the Elected Members having regard to both:

1. The environmental effects which were identified by the Strategic Environmental Assessment; and,
2. Planning - including social and economic - effects.

The land use zoning map from the adopted Development Plan can be seen at Figure 4.5.

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## Section 5 Monitoring Measures

### 5.1 Introduction

The SEA Directive requires that the likely significant environmental effects of the implementation of plans and programmes are monitored. This section and Section 10 of the Environmental Report contain the measures for monitoring the likely significant effects of implementing the Development Plan.

Monitoring enables, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action. In addition to this, monitoring can also play an important role in assessing whether the Plan is achieving its environmental objectives and targets - measures which the Plan can help work towards - whether these need to be reexamined and whether the proposed mitigation measures are being implemented.

### 5.2 Indicators and Targets

Monitoring is based around the indicators which were chosen earlier in the process. These indicators allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives used in the evaluation. Focus is given to indicators which are relevant to the likely significant environmental effects of implementing the Development Plan and existing monitoring arrangements are to be largely used in order to monitor the selected indicators. Each indicator to be monitored is accompanied by the relevant target(s) which were identified with regard to the relevant legislation. Table 5.1 shows the indicators and targets which have been selected with regard to the monitoring of the plan.

### 5.3 Sources

Measurements for indicators generally come from existing monitoring sources. Existing monitoring sources exist for each of the indicators and include those maintained by Offaly County Council and Tullamore Town Council and the relevant authorities e.g. the Environmental Protection Agency, the National

Parks and Wildlife Service and the Central Statistics Office.

The *Development Management Process* in both Offaly County Council and Tullamore Town Council will provide passive monitoring of various indicators and targets on an application by application basis. Where significant adverse effects - including positive, negative, cumulative and indirect - are likely to occur upon, for example, entries to the RMP, entries to the RPS or ecological networks as a result of the undertaking of individual projects or multiple individual projects such instances should be identified and recorded and should feed into the monitoring evaluation.

### 5.4 Excluded Indicators and Targets

As noted in Table 5.1, monitoring data for Indicator W2 (Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC) may not be available for the preliminary monitoring evaluation as the groundwater threshold values to which this indicator relates have not yet been identified by the EPA.

### 5.5 Reporting

A preliminary monitoring evaluation report on the effects of implementing the Plan will be prepared to coincide with the Manager's report to the elected members on the progress achieved in securing Plan objectives within two years of the making of the Plan (this Manager's report is required under section 15 of the 2000 Planning Act).

Indicators and targets will be reviewed during the preparation of the preliminary monitoring evaluation report.

### 5.6 Responsibility

Offaly County Council and Tullamore Town Council are responsible for collating existing relevant monitored data, the preparation of a monitoring report, the publication of this report

and, if necessary, the carrying out of corrective action.

It is recommended that a Steering Committee be established to oversee the monitoring process.

## **5.7 Thresholds**

Thresholds at which corrective action will be considered include the following:

- boil notices on drinking water;
- fish kills;
- complaints received from statutory consultees regarding avoidable impacts resulting from development which is granted permission under the Plan; and,
- court cases taken by the DEHLG regarding impacts upon archaeological heritage including entries to the Record of Monuments and Places.

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source
<b>Biodiversity, Flora and Fauna</b>	<p>B1: Percentage of relevant habitats (i.e. qualifying interests) and designated ecological sites lost as a result of implementation of the Development Plan</p> <p>B2: Number of significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites as a result of implementation of the Development Plan</p> <p>B3: Percentage loss of connectivity without remediation as a result of implementation of the Development Plan – as evidenced from a resurvey of CORINE mapping</p>	<p>B1: No losses of relevant habitats (i.e. qualifying interests), species or their sustaining resources in designated ecological sites as a result of implementation of the Development Plan</p> <p>B2: No significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites as a result of implementation of the Development Plan</p> <p>B3: No ecological networks or parts thereof to be lost without remediation as a result of implementation of the Development Plan</p>	<p>CORINE Mapping, DEHLG Records &amp; Development Management Process in the Councils</p> <p>Development Management Process in the Councils &amp; Consultation with the National Parks and Wildlife Service</p> <p>CORINE mapping and possibly new habitat mapping for the Plan area</p>
<b>Population and Human Health</b>	HH1: Occurrence (any) of a spatially concentrated deterioration in human health	HH1: No spatial concentrations of health problems arising from environmental factors as a result of implementing the Plan	The Councils, EPA, Health and Safety Authority and Health and Service Executive
<b>Soil</b>	S1: Area of brownfield land developed over the plan period	S1: Reduced availability of brownfield land (subject to availability on the open market, the demand for such land and the ability for such lands to be sustainably re-used within the provisions of the Development Plan) at the end of the Development Plan lifespan	Development Management Process the Councils

Environmental Component	Selected Indicator(s)	Selected Target(s)	Sources
<b>Water</b>	W1: Biotic Quality Rating (Q Value)	W1a: To maintain a biotic quality rating of Q4, in line with the requirement to achieve good water status under the Water Framework Directive, by 2015  W1b: To improve biotic quality ratings, where possible, to Q5	EPA
	W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	W2: Compliance with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC	As noted under Section 0, monitoring data may not be available for this indicator when the monitoring evaluation is being prepared.
	W3: Number of developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk and/or which do not comply with the mitigation measures as outlined in the Tullamore Flood Risk and Assessment Management Study (OPW, 2008)	W3: Minimise developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk and/or which do not comply with the mitigation measures as outlined in the Tullamore Flood Risk and Assessment Management Study (OPW, 2008)	Development Management Process in the Councils
	W4: Number of new developments granted permission which can be adequately served with waste water treatment over the lifetime of the Development Plan	W4: New developments granted permission to be connected and adequately served by waste water treatment over the lifetime of the Development Plan	Development Management Process in Offaly County Council
	W5: 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	W5: No 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	The Councils and EPA

<b>Environmental Component</b>	<b>Selected Indicator(s)</b>	<b>Selected Target(s)</b>	<b>Sources</b>
<b>Air and Climatic Factors</b>	<p>C1i: Percentage of population within the Plan area travelling to work or school by public transport or non-mechanical means</p> <p>C1ii: Average distance travelled to work or school by the population of the Plan area</p>	<p>C1i: An increase in the percentage of the population travelling to work or school by public transport or non-mechanical means</p> <p>C1ii: A decrease in the average distance travelled to work or school by the population of the Plan area</p>	<p>Central Statistics Office:</p> <p>As noted under Section 0, future monitoring data may not be available for these indicators until results from the next Census are made available.</p>
<b>Cultural Heritage</b>	<p>CH1: Percentage of entries to the Record of Monuments and Places - including Zones of Archaeological Potential - (and their context of the above within the surrounding landscape where relevant) protected</p> <p>CH2i: Percentage of entries to the Record of Protected Structures (and/or their context within the surrounding landscape where relevant) protected</p> <p>CH2ii: Number of additions to the Record of Protected Structures and the number of additional ACAs</p>	<p>CH1: Protect entries to the Record of Monuments and Places - including Zones of Archaeological Potential - (and their context of the above within the surrounding landscape where relevant)</p> <p>CH2i: Protect entries to the Record of Protected Structures (and/or their context within the surrounding landscape where relevant)</p> <p>CH2ii: Make Additions to the Record of Protected Structures and make additional ACAs, where appropriate</p>	<p>Development Management Process in Offaly County Council; Complaints from statutory consultees</p> <p>Development Management Process in the Councils; Complaints from statutory consultees</p> <p>The Councils</p>
<b>Landscape</b>	<p>L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape - especially with regard to landscapes which are identified as being highly sensitive - resulting from development which is granted permission under the Development Plan</p>	<p>L1: No developments permitted which result in avoidable impacts on the landscape - especially with regard to landscapes which are identified as being highly sensitive - resulting from development which is granted permission under the Development Plan</p>	<p>Development Management Process in the Councils; Complaints from statutory consultees</p>

Table 5.1 Selected Indicators, Targets and Monitoring Sources