

## 6. Approach and Methods

### 6.1 Introduction

- 6.1.1 This ES reports in full the findings of an Environmental Impact Assessment (EIA) which has been undertaken. It describes the beneficial and adverse environmental impacts arising from the construction and operation of the development and, where appropriate, the measures designed to mitigate any potential adverse impacts.

### 6.2 Approach and Methods

- 6.2.1 There are chapters for each of the specialist environmental topics. Each specialist environmental topic chapter follows the same format and assessment hierarchy for ease of comparison, see table 6.1.

**Table 6.1: Chapter Format and Assessment Hierarchy**

<b>Introduction</b>	Introduces the environmental topic
<b>Methodology</b>	Describes the methodology that has been used in the assessment of the environmental topic. Unless specified as otherwise, the methodology used is generally based on the Design Manual for Roads and Bridges, Environmental Assessment, Volume 11.
<b>Consultations</b>	Describes the methodology that has been used in the assessment of the environmental topic. Unless specified as otherwise, the methodology used is generally based on the Design Manual for Roads and Bridges, Environmental Assessment, Volume 11
<b>Baseline</b>	Describes the study area used for the topic as well as the baseline information obtained and the date of any surveys undertaken. The baseline also takes into account any changes, which have been identified as likely to occur either prior to construction or prior to the operation of the Scheme. Information sources are generally identified at the end of each chapter.
<b>Environmental Effects</b>	<p>Identifies the possible range and location of potential impacts before mitigation comprising:</p> <ul style="list-style-type: none"> <li>• Effects of Construction</li> <li>• Effects of Operation</li> </ul> <p>Significance of environment effect – generally set out in tabular form. The assessment of significance comprises:</p> <ul style="list-style-type: none"> <li>• Consideration of the ‘nature of the effect’ (both positive and negative effects are identified and evaluated for both the construction and operational stages and whether or not the effects are direct or indirect; secondary; cumulative; short, medium and long-term; permanent and temporary)</li> </ul>

	<ul style="list-style-type: none"> <li>The 'magnitude of effect' (this considers the scale of change, the degree to which the environment is affected, the likelihood or probability of an effect occurring and the implications of any cumulative effects). For this ES, the magnitude of impact is based on a scale comprising 'Severe' (an acute change to the environment), 'Moderate' (a moderate change to the environment), 'Slight' (a small change to the environment) and 'Negligible' (a negligible change to the environment).</li> <li>The 'sensitivity of the receptor' to the effect based on a scale comprising 'Negligible', 'Low', 'Medium', 'High' and 'Very High'.</li> </ul>
<b>Mitigation</b>	Provides a hierarchy of measures to avoid adverse impacts to features where possible (e.g. by modifying the design or location), and where this is not possible then to minimise the scale, significance or degree of impact and finally to offset or compensate impacts where possible e.g. provision of new opportunities for access.
<b>Residual Impacts</b>	Describes the impacts, which are likely to remain after the application of mitigation measures.
<b>Summary</b>	Provides a brief summary of the assessment.

6.2.2 The Roads (Environmental Impact Assessment) Regulations (Northern Ireland) 1999 require that the ES should describe the likely main or 'significant' impacts on the environment of the Scheme. In order to determine the 'significance of environment effect', consideration has been given to both the magnitude of effect and the sensitivity of the receptor. This is a qualitative judgement where 'Substantial' (a significant implication for the environment), 'Moderate' (an implication for the environment), 'Minor' (a limited implication for the environment) and 'Negligible' (an insignificant implication for the environment) have been used to describe the 'significance of environment effect', which is set out in a matrix as shown in Table 6.2. Entries in the matrix shaded in grey represent where the main or significant impacts are expected to be experienced.

**Table 6.2: Example Matrix for Determination of Level of Impact**

MAGNITUDE OF EFFECT	SENSITIVITY OF RECEPTOR				
	Very high	High	Medium	Low	Negligible
SEVERE	Substantial	Substantial	Moderate	Minor	Negligible
MODERATE	Moderate	Moderate	Minor	Minor	Negligible
SLIGHT	Moderate	Minor	Minor	Negligible	Negligible
NEGLIGIBLE	Negligible	Negligible	Negligible	Negligible	Negligible

6.2.3 Table 6.2 shows an assessment of the effect before any mitigation measures have been considered. The magnitude of the effect considered against the sensitivity of the receptor gives a measure of the significance of the effect.

- 6.2.4 A glossary of the main terms used throughout this ES is given in section ii to provide a clearer understanding of the technical language.

### **6.3 Changes to the Scheme Design**

- 6.3.1 In developing the proposals from the Preferred Option to the Scheme a number of matters were confirmed and these are described as follows.

#### **The road cross-section**

- 6.3.2 It was confirmed the Scheme would have two distinct parts. The southern part from Shore Avenue to Station Road will be an urban dual carriageway with no facilities for right-turn manoeuvres and with a 40mph restriction. As a result all property and estate accesses will be limited to left-in / left-out manoeuvres, though this concept was described at the public consultation and in the Stage 2 Scheme Assessment Report. North of Station Road, the road will be a rural dual carriageway with no direct access to the road and with a 50mph restriction.

#### **The junctions**

- 6.3.3 The junctions at Shore Avenue, Shorelands and Station Road will be 24hr signalised roundabouts. This will provide U-turn facilities for those properties that are restricted to left-in / left-out movements between those junctions. Signalising the roundabouts helps to minimise the impact of land acquisition on adjacent properties.

- 6.3.4 There will be a restricted junction north of Station Road. This will permit northbound buses only to turn into the bypassed section of Shore Road but allow all vehicles to turn left-out out onto the new road. No other movements will be permitted. This will limit the use of the junction as described and in particular the right-turn movements across the main traffic flow. The access to the bypassed section of Shore Road will be from the amended traffic signal junction at Seapark at the north end of the Scheme.

#### **Rear accesses**

- 6.3.5 Several properties will in future have rear access only for vehicles as it is considered impractical to retain accesses direct from Shore Road. Pedestrian access will be retained from Shore Road. The properties are Nos. 12-26 (even numbers), 38-44 (even numbers) and 74-82 (even numbers).

#### **Pedestrian and public transport facilities**

- 6.3.6 Controlled pedestrian crossings are proposed on the approaches to the 3 roundabouts. They will also be provided near the Belfast High School and Neill's Lane. The existing bus stops have had to be repositioned to accord with the new road layout. The location of pedestrian crossings and bus stops has been co-ordinated as far as practicality permits.

#### **Townscape**

- 6.3.7 It is confirmed that the road boundaries between the improved urban road and residential gardens will be achieved by retaining walls. A common theme has been developed that will be promoted in accommodation works discussions in order to mitigate the works along the road of townscape value.

#### **Whinfield Lane Accommodation Bridge**

- 6.3.8 An accommodation bridge will be provided across the new road at Whinfield Lane. This will provide an alternative to Whinfield Lane where it is cut by the new road. The bridge will provide access between fields that will be on opposite sides of the new road.

#### **Road surface water drainage**

- 6.3.9 The drainage of the improved road will differ between the urban and rural sections. In the urban section surface water will be directed to one of a number of existing watercourses to Belfast Lough. A water quality assessment has indicated that measures will be required to intercept oil and other pollutants at the outfalls. Attenuation of flow will be provided if required.
- 6.3.10 On the new rural road, Sustainable Urban Drainage Systems (SUDS) will be provided. Surface water will be direct to a pond system that will outfall to Jointure Bay Stream. The pond system will provide both attenuation and pollution control.
- 6.3.11 There will be benefit in that road drainage will no longer be outfalled to public sewers.

#### **Jointure Bay Stream**

- 6.3.12 Provision has been made at Jointure Bay Stream for the new road to be taken over the stream in accordance with current best environmental practice.

### **6.4 References**

- The Roads (Environmental Impact Assessment) Regulations (Northern Ireland)1999.