

SECTION 12: Landscape and Visual

12.1 Introduction

12.1.1 Background

JBA Consulting Ireland Ltd. has been commissioned by J. B. Barry and Partners (JBB), to undertake a Landscape and Visual Impact Assessment (LVIA) in relation to the Proposed Development at Castletroy WwTP, Castletroy, Co. Limerick.

This assessment is accompanied by a set of photomontages of the Proposed Development which are included in **Appendix 12A**.

The development is described in full in Part A, Section 4 whilst the construction strategy is described in Part A, Section 5.

12.2 Assessment Methodology

The assessment is based on the recommendations in the Guidelines for Landscape and Visual Impact Assessment (GLVIA)⁵ as published by the Landscape Institute (UK) and the Institute of Environmental Management and Assessment (3rd Edition, 2013). The assessment also considers the landscape character assessment within the Limerick County Development Plan 2022-2028 that was adopted on the 17th June 2022 and came into effect on 29th July 2022.

The LVIA was carried out in February 2022 and was undertaken through a combination of desk studies and field surveys by an environmental scientist and a chartered landscape architect.

The site-work stage involves the verification of nearby views from the initial desk-based study and observations of the site and surrounding area for the purposes of the impact assessment. Field notes are recorded in relation to the likes of topography, land use, significant landscape features and overall landscape character.

Photomontages were produced by an external consultant using images taken on-site. The photomontages produced are verified and have been produced in order to accurately illustrate the Proposed Development in the operational phase. The assessment of impacts was based on the on-site observations of the surveyors with additional consideration given to the photomontages.

12.2.1 Landscape Impact Assessment Criteria

When assessing the potential impacts on the landscape resulting from a Proposed Development, the following criteria are considered:

- Landscape character sensitivity;
- Magnitude of likely impacts; and
- Significance of landscape effects.

12.2.2 Sensitivity of the Landscape

⁵ Landscape Institute and Institute of Environmental Management & Assessment, 2013 *Guidelines for Landscape and Visual Impact Assessment 3rd Edition*. Routledge

The sensitivity of the landscape to change is the degree to which a particular Landscape Character Area (LCA) can accommodate changes or new elements without unacceptable detrimental effects to its essential characteristics.

Landscape Sensitivity, often referred to as 'value', is classified using the following criteria which have been derived from a combination of industry guidelines¹ from the Landscape Institute for Landscape and Visual Impact Assessment and professional judgement.

- Very high - Areas where the landscape character exhibits a very low capacity for change in the form of development. Examples of which are very high value landscapes, protected at an international level e.g., World Heritage Site, where the principal management objectives are likely to be protection of the existing character;
- High - Areas where the landscape character exhibits a low capacity for change in the form of development. Examples of which are high value landscapes, protected at a national level e.g., National Park, where the principal management objectives are likely to be protection of the existing character;
- Medium - Areas where the landscape character exhibits a medium capacity for change in the form of development. Examples of which are medium value landscapes, protected at a Local or Regional level e.g., Open space areas mentioned within a County Development Plan, where the principal management objectives are likely to be protection of the existing character;
- Low - Areas where the landscape character exhibits a high capacity for change and has very few or no designated landscapes or open space areas; and
- Negligible - Areas of landscape character that include derelict, mining, industrial land or are part of the urban fringe where there will be a reasonable capacity to embrace change or the capacity to include the development proposals. Management objectives in such areas will be focused on change, creation of landscape improvements and/or restoration to realise a higher landscape value.

12.2.3 Magnitude of Likely Landscape Impacts

The magnitude of a predicted landscape impact is a product of the scale, extent or degree of change that is likely to be experienced as a result of the Proposed Development. The magnitude takes into account whether there is a direct physical impact resulting from the loss of landscape components and/or a change that extends beyond the boundary of the Proposed Development that may have an effect on the landscape character of the area.

- Very high - Change that will be large in extent and scale with the loss of critically important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an overall change of the landscape in terms of character, value and quality;
- High - Change that will be more limited in extent and scale with the loss of important landscape elements and features, that may also involve the introduction of new uncharacteristic elements or features that contribute to an overall change of the landscape in terms of character, value and quality;
- Medium - Changes that are modest in extent and scale involving the loss of landscape characteristics or elements that may also involve the introduction of new uncharacteristic elements or features that will lead to changes in landscape character, and quality;
- Low - Changes affecting small areas of landscape character and quality, together with the loss of some less characteristic landscape elements or the addition of new features or elements;
- Negligible - Changes affecting small or very restricted areas of landscape character. This may include the limited loss of some elements or the addition of some new features or elements that are characteristic of the existing landscape or are hardly perceivable;
- Neutral - Changes that do not involve the loss of any landscape characteristics or elements and will not result in noticeable changes to the prevailing landscape character; and

- Positive - Changes that restore a degraded landscape or reinforce characteristic landscape elements.

12.2.4 Significance of landscape effects

The significance of the landscape impact will be the combination of the sensitivity of the landscape against the magnitude of the change. It is summarised in Table 12.1 below.

Table 12.1: Significance of Landscape and Visual effects based on Magnitude and Sensitivity

MAGNITUDE	SENSITIVITY				
	Very high	High	Medium	Low	Negligible
Very high	Profound	Very significant	Significant	Moderate	Slight
High	Very significant	Significant	Moderate	Slight	Slight
Medium	Significant	Moderate	Slight	Slight	Imperceptible
Low	Moderate	Slight	Slight	Imperceptible	Imperceptible
Negligible	Slight	Slight	Imperceptible	Imperceptible	Imperceptible
Neutral	Imperceptible	Imperceptible	Imperceptible	Imperceptible	Imperceptible
Positive	Positive	Positive	Positive	Positive	Imperceptible

12.2.5 Sensitivity of Visual Receptors

Unlike landscape sensitivity, the sensitivity of visual receptors has an anthropocentric (or human-centric) basis. It considers factors such as the perceived quality and values associated with the view, the landscape context of the viewer, the likely activity they are engaged in and whether this heightens their awareness of the surrounding landscape.

Visual receptors most susceptible to changes in views and visual amenity are;

- Very high - Residents in properties within protected landscapes and travellers on a Scenic route where awareness of views is likely to be heightened;
- High – Residents in properties with predominantly open views from windows, garden or curtilage. People, whether residents or visitors, who are engaged in outdoor recreation including use of public rights of way, whose attention or interest is likely to be focussed on the landscape and on particular views, and those on a scenic route where the view is not specifically in the direction of the Proposed Development;
- Medium - Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience, and communities where views contribute to the landscape setting enjoyed by residents in the area.
- Low - People engaged in outdoor sport or active recreation on a local scale, which does not involve or depend upon appreciation of views of the landscape; and people at their place of work whose attention may be focussed on their work or activity, not their surroundings and where the setting is not important to the quality of working life, and people travelling in vehicles where their view is limited to a few minutes at any viewpoint; and
- Negligible - Changes affecting restricted viewpoints.

12.2.6 Magnitude of Visual Impact

The magnitude of a visual effect is determined on the basis of several factors: the relative numbers of viewers, the distance from the viewpoint, the visual dominance of the Proposed Development within a view and its effect on visual amenity, as follows:

- Very high - The proposal intrudes into a large proportion or critical part of the available vista and is without question the most noticeable element. A high degree of visual clutter or disharmony is also generated, strongly reducing the visual amenity of the scene;
- High - The proposal intrudes into a significant proportion or important part of the available vista and is one of the most noticeable elements. A considerable degree of visual clutter or disharmony is also likely to be generated, appreciably reducing the visual amenity of the scene;
- Medium - The proposal represents a moderate intrusion into the available vista, is a readily noticeable element and/or it may generate a degree of visual clutter or disharmony, thereby reducing the visual amenity of the scene. Alternatively, it may represent a balance of higher and lower order estimates in relation to visual presence and visual amenity;
- Low - The proposal intrudes to a minor extent into the available vista and may not be noticed by a casual observer and/or the proposal will not have a marked effect on the visual amenity of the scene; and
- Negligible - The proposal will be barely discernible within the available vista and/or it will not detract from, and may even enhance, the visual amenity of the scene.

Magnitude can also be described as:

- Neutral - Changes that are not discernible within the available vista and have no bearing the visual amenity of the scene; and
- Positive - Changes that enhance the available vista by reducing visual clutter or restoring degraded features.

12.2.7 Visual Impact Significance

As stated above, the significance of visual impacts is a function of visual receptor sensitivity and visual impact magnitude. This relationship is expressed in the same significance matrix as used earlier in respect of landscape impacts, see Table 12.1.

12.2.8 Impact Classification Terminology

Table 12.2 overleaf presents the Impact Classification Terminology as published in the EPA guidance document⁶. Standard definitions are provided in this glossary, which permit the evaluation and classification of the quality, significance, duration and type of impacts associated with a Proposed Development on the receiving environment.

Each impact is described in terms of its quality, significance, extent, duration & frequency and type, where possible.

12.2.9 Cumulative Impact Assessment

The area in which the proposal site is located contains other developments including other wastewater treatment infrastructure, and therefore there is potential for cumulative effects on landscape and visual amenity. The cumulative effect of a set of developments is the combined effect of all the developments taken together.

Cumulative effects on visual amenity consist of combined visibility and sequential effects.

Combined visibility occurs where the observer is able to see two or more developments from one viewpoint.

⁶ Environmental Protection Agency (August 2017) *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (Draft)

- Combined visibility may either be in combination (where several developments are within the observer's arc of vision at the same time) or in succession (where the observer has to turn to see the structures).
- Sequential effects occur when the observer has to move to another viewpoint to see different developments, for example, when travelling along roads or paths. The occurrence of sequential effects may range from frequently sequential (the features appear regularly and with short time lapses between, depending on speed of travel and distance between the viewpoints) to occasionally sequential (long time lapses between appearances, because the observer is moving very slowly and / or there are large distances between the viewpoints).

Cumulative landscape effects affect the physical fabric or character of the landscape, or any special values attached to the landscape.

- Cumulative effects on the physical fabric of the landscape arise when two or more developments affect landscape components such as woodland, dykes or hedgerows. Although this may not significantly affect the landscape character, the cumulative effect on these components may be significant – for example, where the last remnants of former shelterbelts are completely removed by two or more developments.

Approach

This cumulative assessment focuses on any impacts arising from the development of the proposals in combination with the presence of other existing wastewater treatment infrastructure in the area. Although other developments are present within the wider area, these are either sufficiently small in scale and/or at sufficient distance that significant cumulative effects are not expected.

Table 12.2: Impact Classification Terminology taken from Environmental Protection Agency (August 2017) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports2

Impact Characteristics	Term	Description
Quality of Effects	Positive	A change that improves the quality of the environment.
	Neutral	No effects or effects that are imperceptible, within normal bounds of variation within the margin of forecasting error.
	Negative/ Adverse	A change that reduces the quality of the environment.
Significance of Effects	Imperceptible	An effect capable of measurement, but without significant consequences.
	Not significant	An effect which causes noticeable changes in the character of the environment, but without significant consequences.
	Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
	Significant	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
	Very significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
	Profound	An effect which obliterates sensitive characteristics.
Extent and Context of Effects	Extent	Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.
	Context	Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions.
Probability of Effects	Likely	The effects that can reasonably be expected to occur because of the planned project, if all mitigation measures are properly implemented.

	Unlikely	The effects that can reasonably be expected not to occur because of the planned project, if all mitigation measures are properly implemented.
Duration and Frequency of Effects	Momentary	Effects lasting from seconds to minutes.
	Brief	Effects lasting less than a day.
	Temporary	Effects lasting less than a year.
	Short-term	Effects lasting one to seven years.
	Medium-term	Effects lasting seven to fifteen years.
	Long-term	Effects lasting fifteen to sixty years.
	Permanent	Effects lasting over sixty years.
	Reversible	Effects that can be undone, for example through remediation or restoration
	Frequency	Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)
Types of Effects	Indirect/ Secondary)	Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
	Cumulative	The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
	‘Do-Nothing’	The environment as it would be in the future should the subject project not be carried out.
	‘Worst case’	The effects arising from a project in the case where mitigation measures substantially fail.
	Indeterminable	When the full consequences of a change in the environment cannot be described.
	Irreversible	When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
	Residual	The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
	Synergistic	Where the resultant effect is of greater significance than the sum of its constituents.

12.3 Baseline Conditions

12.3.1 Timing of Surveys

Surveys and fieldwork were carried out in February 2022 when deciduous vegetation was not in leaf. The level of screening by vegetation was therefore low. Where deemed relevant, consideration of seasonal changes in vegetation has been given within the assessment.

12.3.2 Viewpoints

The site visit took place in February 2022. Photography was carried out during the site visit from location where the Proposed Development location was expected to be visible representing groups of visual receptors. Ten panorama photographs were taken from viewpoints around the Proposed Development. The locations of these viewpoints are shown in Figure 12-1, and the viewpoints shown in Figures 12.2 to 12.11.



Figure 12-1: Viewpoint locations



Figure 12-2: VP1, view from public footpath looking east towards the Proposed Development.



Figure 12-3: VP2, view from the riverside walk looking southeast into the existing site.



Figure 12-4: VP3, view from public footpath near Plassey's Mill, looking southwest into the existing site and the location of the Proposed Development.



Figure 12-5: VP4, from the riverside walk, looking southwest towards the Proposed Development.



Figure 12-6: VP5, view from the University Bridge, looking southwest over the Lower River Shannon towards the Proposed Development.



Figure 12-7: VP6, view from the public footpath on the north bank of the Lower River Shannon, looking south towards the Proposed Development.

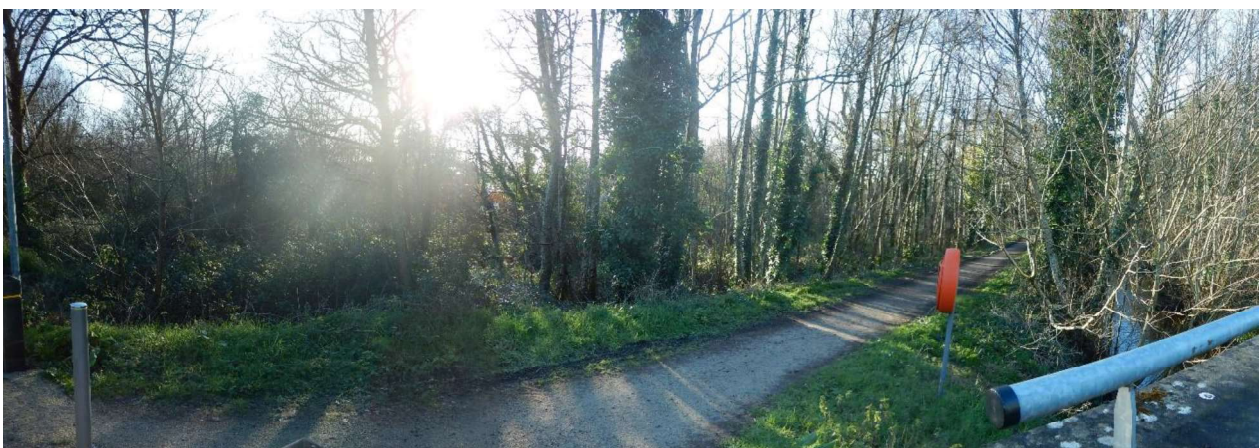


Figure 12-8: VP7, view from the footpath opposite Drumroe Student Village, looking west towards the Proposed Development.



Figure 12-9: VP8, view from College Court, looking north towards the Proposed Development.



Figure 12-10: VP9, view from Castletroy Travelodge Hotel, looking over the open ground of the Groody Wedge towards the Proposed Development.



Figure 12-11: VP10, view from the public footpath on Grove Island over the Lower River Shannon, looking east towards the Proposed Development.

12.3.3 Landscape Character

Immediate Site Surrounds

The site is located at the existing Castletroy WwTP, on the south bank of the Lower River Shannon in Castletroy, east of Limerick City. The site is approximately rectangular and 3.15 ha in size. The site is surrounded by mature treelines/hedgerows, which largely filter the WwTP from the surrounding areas, allowing only glimpse views through gaps in the vegetation.

To the south is a surface carpark, part of the University of Limerick. There is public open space to the west, with a walkway and the UL Boathouse. To the north is a public walkway along the Lower River Shannon, lined in many parts with trees on both sides. The public path continues on the eastern side of the site, which is a thick natural woodland, which also contains a small stream flowing towards the Shannon.

Wider character

The wider landscape is both rural and suburban, being on the outskirts of Limerick City, near to Castletroy and the UL campus, but with large green areas of both public open space and agricultural fields, with the Lower River Shannon being an important aspect. The topography is generally flat, with low hills to the northwest in Co. Clare providing some high ground in the distance.

Castletroy and the UL campus to the southwest are suburban in nature, composed of large housing estates and small to medium sized open areas. South of the site, separating Castletroy and the eastern outskirts of Limerick City, is the Groody 'Green Wedge'. a large open area composed of agricultural fields around the River Groody, which flows north through the 'Green Wedge' to the Lower River Shannon.

The land on the north bank of the Lower River Shannon is generally more rural in nature than the south bank. On that bank there are large fields generally bordered by mature hedgerows. An exception is the UL North Campus to the northeast, which contains three apartment blocks used for student housing. These blocks are five storeys tall and are of a larger scale than other buildings on the north bank of the Lower River Shannon in the area.

Limerick County Development Plan

The Limerick County Development Plan 2022-2028 was adopted on the 17th June 2022 and came into effect on 29th July 2022. It sets out the proposed policies and objectives for the development of Limerick. Limerick has a diverse character including urban and rural areas, the coast, the Lower River Shannon and Estuary, and upland areas. Castletroy is situated east of Limerick City and is characterised by its riverside location and the University of Limerick campus.

The CDP defines 10 landscape character areas (LCA) in Limerick. The Proposed Development is situated within the Shannon Integrated Coastal Management Zone (ICMZ) LCA. The Shannon Estuary is the defining characteristic of the area, with the landscape generally composed of irregular enclosed farms.

The Limerick County Development Plan 2022-2028 also aims to see Limerick become a "green City region", with a focus on the Lower River Shannon Estuary.

The Landscape Character Assessment for Limerick is to be altered with the LDP; the Proposed Development will therefore be in Urban Character Area (UCA) 02, Castletroy. The specific objectives for UCA 02 are:

- Infill and brown field development patterns to be favoured.
- Building Height Strategy to inform design of higher buildings.
- River Groody Green Wedge to be retained.
- Existing green spaces to be retained.

12.3.4 Visual Amenity

Summary of visual amenity

The site is located on level, low ground on the banks of the Lower River Shannon. The site is rectangular and surrounded by tall trees and hedgerows. There are medium distance views from the site looking north towards the river, which is visible via glimpse views through the existing vegetation. Vegetation on the eastern, western, and southern boundaries is thicker than the northern boundary, effectively screening the site.

The wider landscape is relatively flat, but with frequent vegetation. Overall, the impression is of a landscape with medium distance views, with limited long-distance views due to existing vegetation.

A Zone of Theoretical Visibility (ZTV) was produced for the assessment. In the absence of vegetation or buildings, visibility is good to the west, north, and east, with views to the south constrained by landform.

Zone of Theoretical Visibility

The ZTV (Figure 12-12) gives an indication of the surrounding landscape with potential visibility of the Proposed Development site. For this site, the ZTV illustrates the area with potential visibility within a 2km radius from the centre of the site, using a viewer eye height of 1.6m and based on a maximum development height of 9m. The ZTV is based on a digital terrain model (DTM) and represents a bare ground scenario i.e., with no trees, hedgerow or built features present to provide screening.

The existing vegetation in the area means that visibility on the ground is constrained to a greater extent than is implied with the DTM ZTV. Visibility of the existing WwTP is limited to glimpse views through vegetation, and indirect views from certain tall buildings.

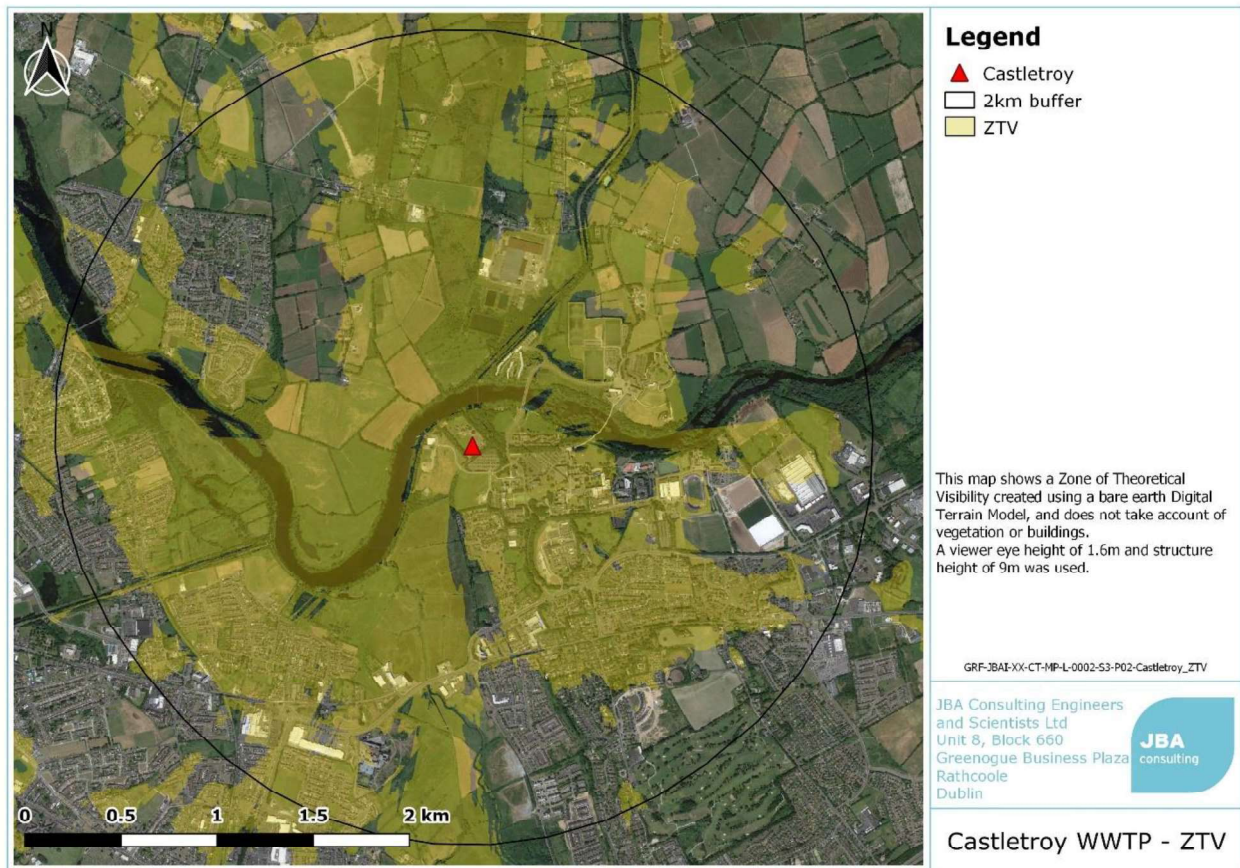


Figure 12-12: Zone of Theoretical Visibility

Protected Views and Prospects

The Limerick County Development Plan 2022-2028 identifies protected views and prospects which have important amenity, tourism, economic and cultural value for the County and its people.

The objectives for scenic views and prospects are:

Objective EH O31:

- It is the objective of the Council to safeguard the scenic views and prospects by integrating them into landscape character areas, which will ensure a more balanced approach towards landscape issues within the County.
- In areas where scenic views and prospects are listed in Map 6.2 (Limerick Development Plan 2022-2028) there will be a presumption against development except that which is required in relation to farming and appropriate tourism and related activities, or a dwelling required by a long-term landowner or his/her family that can be appropriately designed so that it can be integrated into the landscape.
- The Planning Authority will exercise a high level of control (layout design, siting, materials used, landscaping) on developments in these areas. In such areas site specific designs are required. It should be noted that in areas outside these delineated areas, high standards will also be required.

No such scenic routes or views are situated around the site, and so will not be impacted by the Proposed Development.

Architectural Conservation Area

The Proposed Development is within the Castletroy-Dromore Architectural Conservation Area (ACA), which is included in the Draft Limerick Development Plan 2022-2028 and is shown on **Error! Reference source not found.** Development proposals within the ACA must safeguard views out from or in toward the university's principal buildings. They must also ensure that the setting of the university is safeguarded from insensitive development.

12.4 Characteristics of the Proposed Development

Details of the Proposed Development are provided in the EIAR **Part A, Section 4**.

12.5 Likely Significant Effects

12.5.1 Do-nothing impacts

The do-nothing scenario will result in a continuation of the existing landscape and visual environment in the area. There would be no construction work at the site and no new structures. There is the possibility that without upgrade works taking place, the WwTP would have insufficient capacity, which could result in untreated sewerage being discharged to the Lower River Shannon. This would impact negatively on the landscape and views from visual receptors. The visual and landscape impact in this scenario is *low*.

12.5.2 Assessment of effects during construction

The construction phase will be temporary and is expected to be completed on a phased basis. There will be periodical use of construction cranes that will temporarily break beyond the ridge of the existing site boundary screening vegetation.

Construction is expected to be confined to the site. All existing boundary vegetation is expected to be retained. All the Proposed Development is expected to remain partly concealed by the existing mature vegetation surrounding the site as well as by the existing buildings within the site.

Impacts on the Landscape Character

The LCA Shannon Integrated Coastal Management Zone (ICMZ) is a very broad-scale character area extending along a long stretch of the Lower River Shannon, characterised by the Lower River Shannon's long sweep towards the sea. The landscape is dominated by hedgerow-enclosed farmland.

Construction traffic, plant, compounds, materials, and personnel will form new temporary elements in the landscape. It is expected that construction will be contained entirely within the existing site and will not require the removal of any mature vegetation which is currently along the site boundary.

The construction process will result in an increase in activity at the site and on the surrounding access roads, which will have a temporary impact on the surrounding landscape. However, these impacts will be temporary in nature, for the construction phase only.

Due to the existing mature vegetation surrounding the site, views of the construction activity and associated materials, machinery, and personnel will be intermittent, experienced primarily through glimpse views from the riverside walk or surrounding buildings. The works will be filtered to a large degree by this vegetation.

In accordance with the methodology, within 0.5km the localised magnitude of change during construction will be *medium*. In accordance with Tables 12.1 & 12.2 the effect on landscape character during the construction phase within 0.5km will be *temporary, moderate, negative*.

Effects will reduce with distance and beyond 0.5km the magnitude of change on the Landscape Character Area will be *negligible*. In accordance with Tables 12.1 & 12.2 the effect on landscape character beyond 0.5km will be *temporary, slight, negative* reducing to *imperceptible* with distance.

Although there will be *moderate* landscape effects experienced during the construction phase these will all be *temporary* to *short-term* and *reversible*.

Impacts on the Visual Amenity

Receptor groups were identified during the initial desktop investigation using aerial imagery and verified on site during the site visit. Receptors were grouped in terms of function, i.e., residential buildings, community buildings, etc., and location. Receptors with the same function and general location, i.e., the three apartment blocks on the north bank of the Lower River Shannon with south-facing views, were grouped. See **Error! Reference source not found.** for a plan of the receptor groups. These receptor groups are discussed below with an assessment of the effects on their visual amenity during construction.

Visually Sensitive Residential Receptors and Settlements

R1 (0.4km northeast) A group of three five-storey apartment blocks in use as student accommodation for the University of Limerick (UL). The blocks contain south-facing apartments which face toward the Proposed Development, and include balconies. The view from R1 is shown in Figure 12-7, and a similar view is shown in Figure 12-6, which was taken from the bridge directly east of the receptor.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude The dwellings have views facing to the south over the Lower River Shannon and the landscape beyond it. Construction materials and activities are expected to be filtered from the receptor by the existing mature vegetation on the northern boundary of the site. The main views of the Lower River Shannon to the west, southwest and east will not be affected. In accordance with methodology the magnitude of change will be *low*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *temporary, slight, negative*.

R2 (0.2km northeast) A group of seven single storey detached dwellings, situated on the riverside walk with frontages to the north and partly screened views over the Lower River Shannon. Views from the houses to the south and east towards the Proposed Development are well filtered, with trees and woodland between them and the site. The main views from the receptors are to the Lower River Shannon to the north. The view towards the Proposed Development from R2 is shown in Figure 12-5.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude Views from the dwellings and gardens are primarily to the north, looking out at the river. Views of the construction phase will be screened by the existing vegetation. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *imperceptible*.

R3 (0.2 – 0.5km east) A group of two- to four-storey apartment blocks, in use as student accommodation, with generally north-south facing alignments. There are indirect views to the west through some windows or from balconies, or from the ground between the buildings.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude These dwellings have primary frontages facing away from the site, with indirect, angled views towards the site. Due to the tall vegetation between the site and the receptors, construction works, machinery, and materials will be visible from the upper floors through glimpse views. Residents will infrequently view construction traffic along the roads in the area. In accordance with the methodology the magnitude of change is *low*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *temporary, slight, negative*.

R4 (0.7km southeast) A housing estate comprising two-storey semi-detached dwellings, primarily in use as student housing. The area is well filtered by vegetation along its northern boundary, with only the tallest element of the development likely to be visible through gaps in the vegetation. The houses all have front and rear gardens, generally with low walls or hedgerows on the boundaries. A view from the housing estate is shown in Figure 12-9.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude Views from the dwellings are filtered by tree planting and hedgerows in the adjoining field to the north. From the upper floors, construction machinery will be partially visible, glimpsed through existing vegetation. Construction traffic is expected to be visible at restricted times on the roads to the south of the houses. In accordance with the methodology the magnitude of change is *negligible*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect during construction will therefore be *temporary, slight, negative*.

R5 (0.9 – 1.8km southwest) The residential parts of Castletroy which are within the ZTV for the Proposed Development. These are mainly two-storey semi-detached homes, arranged in several housing estates, with small front and rear gardens, generally bounded by garden walls and small hedgerows or trees.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude The dwellings are primarily two-storey houses and are arranged in housing estates. Views from the houses are close-distance and are focused on the immediate areas surrounding the houses, i.e., the streets and gardens to their front and rear. Construction activities at the site will not be visible from any of these dwellings. Residents will experience construction traffic on its way to the site, however given the high usage of the road by traffic already, the construction vehicles will not significantly change the visual impact of the road. In accordance with methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *imperceptible*.

R6 (1.8 – 2.0km southeast) A large group of semi-detached two-storey dwellings at Castletroy View, Devon Close, Chesterfield, and Carnaree. The houses have small front and rear gardens, typically separated by a low wall or hedge, and are mostly oriented in a northeast-southwest direction.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude These dwellings are filtered from the site by mature trees and hedgerows to the edges of garden areas, and to nearby road and field boundaries. Construction activities at the site will not be visible from the dwellings. In accordance with methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *imperceptible*.

R7 (1.2 – 1.7km southwest) A large group of semi-detached two-storey dwellings at Drominbeg, Dromroe, Angler's Walk, and Rhebogue Meadows. The houses have small front and rear gardens, typically separated by a low wall or hedge, and are oriented in a range of directions. Some of the houses face in the direction of the Proposed Development, whereas others have indirect or no views towards the site.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude The dwellings are primarily two-storey houses and are arranged in housing estates. Views from the houses are limited to the immediate areas surrounding the houses, i.e., the streets and gardens to their front and rear. Construction activities at the site will not be visible from the dwellings. In accordance with methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *imperceptible*.

R8 (1.7 – 2.1km west) This group comprises a mix of single and two-storey houses on Grove Island, both detached and semi-detached, across several housing estates.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude The dwellings are primarily two- and single-storey houses and are arranged in housing estates. Views from the houses are close-distance and are focused on the immediate areas surrounding the houses, i.e., the streets and gardens to their front and rear. Construction activities are not expected to be visible from these dwellings. Views towards the Proposed Development are expected only from the upper windows of a very limited number of the houses, namely within Carabullawn housing estate, towards the southern end of the receptor group. Where these views exist, they will be indirect and through existing vegetation.

In accordance with methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *imperceptible*.

R9 (1.3km northwest) This is a group of two-storey semi-detached houses to the northwest of the Proposed Development. There is a mixture of single and two-storey houses in a range of orientations, but typically with at least an indirect view towards the Proposed Development. There is mature vegetation to the east, between the group and the site.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude Views from these houses are focused on their immediate surroundings, being their front and rear gardens and the green open spaces in the area. There is mature vegetation in the form of trees and scrub between the proposal and the receptor, screening the site from these houses. In accordance with the methodology the magnitude of change during construction will be *neutral*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *imperceptible*.

R10 (1.9km northwest) This group comprises several dwellings to the northwest of the Proposed Development. There is a mixture of single and two-storey houses, surrounded by trees or low hedgerows. The dwellings face to the northwest, with rear windows facing the southeast towards the Proposed Development site.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude Views from these houses are constrained by existing vegetation which borders their front and rear gardens. There is mature vegetation in the form of trees and scrub between the proposal and the

receptor, as well as the houses in R9, screening the site from these houses. In accordance with the methodology the magnitude of change during construction will be *neutral*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *imperceptible*.

Community Receptors

C1 (0.18km west) This is the UL Boathouse, a rowing clubhouse on the Lower River Shannon, located directly west of the Proposed Development. The clubhouse is a low building with a primary frontage facing onto the river, away from the site. The viewpoint shown in

is representative of the view from the clubhouse looking towards the site.

Sensitivity Receptors are people using the building for recreation. Sensitivity is *low*.

Magnitude The clubhouse entrance is facing towards the site, however the main views are in the other direction towards the river, while visitors to the clubhouse will be focused on the river itself. During construction, the movement of machinery and activities will be visible from the clubhouse as they enter the site. Glimpse views of hoarding and construction machinery will be visible through the vegetation along the site boundary. In accordance with the methodology the magnitude of change during construction will be *medium*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect will therefore be *temporary, slight, negative*.

C2 (1.8km north) This receptor is the Plassey Mill ruins. The building was originally in use as a water mill, built between 1820 and 1830. The remains are now ruinous and partially overgrown with signs of antisocial activity. The view from the site is shown in Figure 12-4.

Sensitivity Receptors are visitors to the site. Sensitivity is *medium to low*.

Magnitude The existing woodland in the area gives the footpath and the ruins an enclosed, isolated impression. Glimpse views of the existing development are visible through the vegetation; construction activities will have a similar level of visibility. In accordance with the methodology the magnitude of change will be *low*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *temporary, slight to imperceptible, negative*.

C3 (0.7 – 1.1km northeast) This is the UL north campus, on the northern bank of the Lower River Shannon. The northern campus is comprised of all-weather pitches, student spaces, teaching buildings, and student accommodation. The Campus is bordered by trees and contains a large amount of open space.

Sensitivity Receptors are students and staff at the university and people engaged in activities. Sensitivity is *low*.

Magnitude The campus has vegetation planting on its boundaries, particularly along the river and in the direction of the Proposed Development. Any views towards the site during the construction phase will be filtered by this vegetation. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *imperceptible*.

C4 (0.2 – 1.0km southwest) This is the UL main campus. It is comprised of teaching buildings, libraries, student spaces, open space, and car parking. It is part of the Castletroy-Dromore ACA; the main university

buildings and public art on the campus are important in terms of the character of the area. The campus is spread over a large area, with open spaces between many of the buildings.

Sensitivity Receptors are students and staff at the school. Sensitivity is *low*.

Magnitude The campus feels quite open in places but is closed in on its boundaries by taller buildings. Consequently, the enclosed open spaces do not have views towards the site, but some of the taller buildings may have indirect views over it and therefore construction activities and materials will be partially visible. In addition to this, construction traffic will reach the site by the roads through the campus. In accordance with the methodology the magnitude of change will be *medium*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *temporary, slight, negative*.

C5 (0.7km southwest) This is the Milford Care Centre. It includes nursing homes, a health centre, and hospice care. The site is surrounded by tall mature trees, particularly on its northern and western boundaries, those facing towards the Proposed Development. Most buildings on site are two to three storeys tall.

Sensitivity Receptors are staff, patients, and residents. Sensitivity is *high*.

Magnitude The site is currently well screened by the existing vegetation, and the buildings to the north and northwest on the UL campus. Any views towards the site are seen in this context, and thus are highly constrained. Construction activities may be partially visible from the upper floors through vegetation, and these views will be angled. Construction traffic will be visible on the roads approaching the site in the vicinity. In accordance with the methodology the magnitude of change will be *low*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *temporary, slight, negative*.

C6 (1.7km southwest) This receptor includes Kilmurry Church and Graveyard. The church and graveyard date from approximately the 18th Century, while the modern Kilmurry Cemetery is directly adjacent to the graveyard. A mature treeline runs along the northern and north-western boundaries, while another group of mature trees line the boundary between the graveyard and the modern cemetery, acting to close the Church and graveyard in somewhat.

Sensitivity Receptors are visitors to the graveyard and cemetery. Sensitivity is *medium*.

Magnitude There are no views of the existing development from this receptor, due to the tall mature vegetation on the northern and western boundaries, and the large built-up area of Castletroy in between the two sites. Construction activities at the site will not be visible. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *imperceptible*.

C7 (1.1km south) This is the Castletroy Park Retail Park. It is a two-storey building with retail and office space. The retail park is filtered to the north by tree planting. The retail park includes a car parking area at the northern edge with extensive tree planting, and another central car park.

Sensitivity Receptors are staff and customers at the retail park. Sensitivity is *low*.

Magnitude The intervening buildings and vegetation mean that views towards the site during the construction phase will only be available from the upper floors, and in those cases will also be filtered through the existing vegetation bordering the site. In accordance with the methodology the magnitude of change will be *low*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *temporary, slight, negative*.

C8 (1.0km south) This is the Castletroy Park Hotel. It is a part two-storey, part three-storey building with a large car park on its northern edge. The hotel has windows facing north towards the Proposed Development. These windows do not have screening vegetation immediately adjacent, but there is vegetation in the intervening land and bordering the Proposed Development site.

Sensitivity Receptors are staff and visitors to the hotel. Sensitivity is *high*.

Magnitude As with C7, the intervening buildings and vegetation mean that views towards the site during construction from this receptor will only be available from the upper floors, and in those cases will also be filtered through the existing vegetation bordering the site. In accordance with the methodology the magnitude of change will be *low*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *temporary, slight, negative*.

C9 (1.0km south) This is the Travelodge Limerick Castletroy. It is a tall building, with the hotel occupying the first five storeys. Rooms in the hotel have views over the open space to the east and towards the site. A view from the ground at the hotel is shown in Figure 12-10.

Sensitivity Receptors are staff and visitors to the hotel. Sensitivity is *high*.

Magnitude The hotel has expansive views out over the open space to the east and northeast. The site during construction will be visible in this view, but will form a very small part of it, and will be filtered through vegetation. The views will also be indirect, visible only at an angle. In accordance with the methodology the magnitude of change will be *low*.

Effect In accordance with Table 12.1& Table 12.2 the visual effect during construction will therefore be *temporary, slight, negative*.

C10 (1.25km southwest) This is a large commercial park to the southwest of the site. It is comprised of large outlet-style shops and a large car park. The buildings are one storey only and the car park is surface only, with no long-distance views towards the development site.

Sensitivity Receptors are staff and customers. Sensitivity is *low*.

Magnitude The site during construction will not be visible from the commercial park. Any potential views are screened by the intervening topography, buildings, or existing vegetation. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect during construction will therefore be *imperceptible*.

Open Space Receptors

OS1 (0.19km north) The public footpath along the southern bank of the Lower River Shannon runs directly adjacent to the wastewater treatment plant. People walking along the path have views over the river, with vegetation on both sides of the path restricting views in places. The walk is highly scenic, with the main views focused on the river, away from the Proposed Development. Views from the footpath are shown in Figure 12-3 and Figure 12-5.

Sensitivity Receptors are people walking on the footpath. In accordance with the methodology their sensitivity is *high*.

Magnitude The existing development is already visible from the footpath and impacts a small aspect of the visual amenity of the route. During construction, this impact will be increased due to the erection of hoarding, and the delivery of materials and machinery to the site. In accordance with the methodology the magnitude of change will be *medium*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect during construction will therefore be *temporary, moderate, negative*.

OS2 (1.1 – 1.5km west) The public footpath on Grove Island along the Lower River Shannon. People walking along the path have views over the river, with vegetation on both sides of the path restricting views in certain places. There is less vegetation along the path itself than with OS1, leading to a more open setting. A view from the footpath is shown in Figure 12-11.

Sensitivity Receptors are people walking on the footpath. In accordance with the methodology their sensitivity is *high*.

Magnitude While there is less existing vegetation on both sides of this footpath than with OS1, the site is not visible from this area due to the topography of the intervening land and the tall vegetation between the two sites. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect during construction will therefore be *imperceptible*.

OS3 (0.36km north) The public footpath on the north bank of the Lower River Shannon, adjacent to the student accommodation of R1. People walking along the path have views over the river, with vegetation on both sides of the path restricting views in certain places. A view from the footpath is shown in Figure 12-7.

Sensitivity Receptors are people walking on the footpath. In accordance with the methodology their sensitivity is *high*.

Magnitude Parts of the existing development are visible from the footpath, glimpsed through existing vegetation both along the route and bordering the site. During construction, there will be increased visual clutter due to the erection of hoarding and machinery and materials being stored and used at the site. However, the main focus of views from the footpath is the river itself. In accordance with the methodology the magnitude of change will be *low*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect during construction will therefore be *temporary, slight, negative*.

Other Open Space Other open spaces in the area include agricultural land, which makes up the vast majority of the land surrounding the Proposed Development, and open spaces such as the Groody Valley Wedge to the southwest, the open space on Grove Island to the west, and small green spaces within housing estates in the area. Farmers working on their land are receptors, as are people walking in the area. Significant effects are not expected on open space beyond 0.5km.

Sensitivity Receptors are farmers engaged in work, and walkers in the open spaces. In accordance with the methodology their sensitivity is *low*.

Magnitude Construction works and their associated activities will create visual clutter in an otherwise largely rural area. Views of the site where they exist will be primarily glimpse views, partially filtered by existing vegetation around the site boundary. In accordance with the methodology the magnitude of change will be *high* in the immediate vicinity of the proposals (within 0.5km) grading out to *negligible* with distance and levels of intervening screening.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect during construction will therefore be *temporary, slight, negative* within 0.5km reducing to *imperceptible* with distance.

Protected Views

The sensitivity of designated views is *high*. There are no protected views designated in the CDP in the vicinity of the proposal; the closest are over 8km to the southwest. Those views are not looking towards the site.

The views to and from the main university buildings within the Castletroy-Dromore ACA (**Error! Reference source not found.**) are to be protected, however. These buildings include those within C4, the residential buildings at R3, and the Milford Care Centre buildings at C5. The magnitude of change to these receptors was assessed above as being *low to medium*.

In accordance with Table 12.1 & Table 12.2 the visual effect during construction will therefore be *temporary, slight to moderate, negative*.

12.5.3 Assessment of Effects during Operation

Landscape Character

The LCA Shannon Integrated Coastal Management Zone (ICMZ) is a very broad-scale character area extending along a long stretch of the Lower River Shannon, characterised by the Lower River Shannon's long sweep towards the sea. The landscape is dominated by hedgerow-enclosed farmland.

The proposal will form a utilitarian structure within the landscape, but it will not introduce a new form of development into the area. The existing infrastructure has altered the landscape baseline through its presence, reducing the sensitivity of the landscape to change from development of this kind.

The Proposed Development will not change the fabric of the existing landscape, as the proposed elements are similar in scale and layout to the existing wastewater treatment infrastructure at the same site. The proposals will not affect significantly the existing vegetation in the area, and access for operational maintenance will be off the existing access road minimising any land-take required.

The position of the site in a relatively flat area, surrounded by tall trees and hedgerows, acts to constrain views of the existing development from the surrounding areas. The Proposed Development will be similarly screened or filtered by the existing vegetation and proposed planting, part of the ecological enhancements. The proposals will not feel out-of-scale with the landscape due to the existing WwTP and the vegetation.

The proposals are not expected to have a mid to long term negative effect on any of the key characteristics of the Landscape Character Area. Within a radius of 0.5km, the Proposed Development will appear as a prominent, utilitarian element within the landscape and will increase visual clutter in the short term. However, the effect is reduced due to the presence of the existing WwTP infrastructure as stated above and the significant number of proposed tree planting along the perimeter of the site.

In accordance with the methodology, within 0.5km the localised, short term magnitude of change will be *low*. In accordance with Tables 12.1 & 12.2 the effect on landscape character during the operational phase within 0.5km will be *permanent, slight, negative*. This is not expected to change to *positive* over time, as the proposed planting reaches maturity.

Effects will reduce with distance and beyond 0.5km the magnitude of change on the Landscape Character Area will be *negligible*. In accordance with Tables 12.1 & 12.2 the effect on landscape character beyond 0.5km will be *permanent slight negative* reducing to *imperceptible* with distance and *positive* with time as the proposed planting reaches maturity..

Visual Amenity

Receptor groups were identified during the initial desktop investigation using aerial imagery and verified on site during the site visit. Receptors were grouped in terms of function, i.e., residential buildings, community buildings, etc., and location. Receptors with the same function and general location, i.e., the three apartment blocks on the north bank of the Lower River Shannon with south-facing views, were grouped. See **Error! Reference source not found.** for a plan of the receptor groups. These receptor groups are discussed below with an assessment of the effects on their visual amenity during the operational phase of the development.

Visually Sensitive Residential Receptors and Settlements

R1 (0.4km northeast) A group of three five-storey apartment blocks in use as student accommodation for the University of Limerick (UL). The blocks contain south-facing apartments which face toward the Proposed Development, and include balconies.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude The dwellings have views facing to the south over the Lower River Shannon and the landscape beyond it. The proposals, in particular the 4m tall tank, will appear in the background of the view of the Lower River Shannon, albeit filtered through vegetation. The main views of the Lower River Shannon will not be affected, however. In accordance with methodology the short-term magnitude of change will be *medium to low*. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect during operation will therefore be *temporary, moderate to slight, negative to permanent positive*.

R2 (0.2km northeast) A group of seven single storey detached dwellings, situated on the riverside walk with views out over the Lower River Shannon. Views from the houses to the south and east towards the Proposed Development are well filtered, with trees and woodland between them and the site. The main views from the receptors are to the Lower River Shannon to the north. The view towards the Proposed Development from R2 is shown in Figure 12-5.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude Views from the dwellings and gardens are primarily to the north, looking out at the river. Views of the Proposed Development will be screened by the existing vegetation, and as the proposed planting reaches maturity will be further screened. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect during operation will therefore be *imperceptible*.

R3 (0.2 – 0.5km east) A group of two- to four-storey apartment blocks, in use as student accommodation, with generally north-south facing alignments. There are indirect views to the west through some windows or from balconies, or from the ground between the buildings. The view from this receptor is represented by **Verified Photomontage 3** in Appendix 12.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude These dwellings have primary frontages facing away from the site, with indirect, angled views towards the Proposed Development. Due to the tall vegetation between the site and the receptors, only small sections of the proposals will be visible from the upper floors. In accordance with the methodology the short-term magnitude of change will be *negligible*. As the proposed planting reaches maturity, any views of the proposal from the upper floors will be further screened. In accordance with the methodology the mid to long-term magnitude of change will be *positive*,

Effect In accordance with Table 12.1 & Table 12.2 the visual effect during operation will therefore be *temporary, slight, negative, to permanent positive*.

R4 (0.7km southeast) A housing estate comprised of two-storey semi-detached dwellings, primarily in use as student housing. The area is well filtered by vegetation along its northern boundary, with only a small section within the ZTV. The houses all have front and rear gardens, generally with low walls or hedgerows on the boundaries. A view from the housing estate is shown in Figure 12-9.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude Views from the dwellings are filtered by tree planting and hedgerows in the adjoining field to the north. The upper parts of the proposed tank may be visible from the upper floors of some of the houses, but most parts of this receptor group are fully screened from the Proposed Development. In accordance with the methodology the short-term magnitude of change will be *negligible*. As the proposed planting reaches maturity, any views of the proposal from the upper floors will be further screened. In accordance with the methodology the mid to long-term magnitude of change will be *positive*,

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *temporary, slight, negative to permanent positive*.

R5 (0.9 – 1.8km southwest) The residential parts of Castletroy which are within the ZTV for the Proposed Development. These are mainly two-storey semi-detached homes, arranged in several housing estates, with small front and rear gardens, generally bounded by garden walls and small hedgerows or trees.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude The dwellings are primarily two-storey houses and are arranged in housing estates. Views from the houses are close-distance and are focused on the immediate areas surrounding the houses, i.e., the streets and gardens to their front and rear. The scale and distance of the proposal mean that there will be no visual impact on this receptor group. In accordance with methodology the short-term magnitude of change will be *neutral*. Over time as the proposed planting reaches maturity, parts of it may be visible from this receptor group. In accordance with the methodology the mid to long-term magnitude of change will be *neutral to positive*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *imperceptible to positive* in the long-term.

R6 (1.8 – 2.0km southeast) A large group of semi-detached two-storey dwellings at Castletroy View, Devon Close, Chesterfield, and Carnaree. The houses have small front and rear gardens, typically separated by a low wall or hedge, and are mostly oriented in a northeast-southwest direction.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude These dwellings are filtered from the Proposed Development by mature trees and hedgerows to the edges of garden areas, and to nearby road and field boundaries. The scale and distance of the proposal mean that there will be no visual impact on this receptor group. In accordance with methodology the short-term magnitude of change will be *neutral*. Over time as the proposed planting reaches maturity, parts of it may be visible from this receptor group. In accordance with the methodology the mid to long-term magnitude of change will be *neutral to positive*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *imperceptible to positive* in the long-term.

R7 (1.2 – 1.7km southwest) A large group of semi-detached two-storey dwellings at Drominbeg, Dromroe, Angler's Walk, and Rhebogue Meadows. The houses have small front and rear gardens, typically separated by a low wall or hedge, and are oriented in a range of directions. Some of the houses face in the direction of the Proposed Development, whereas others have indirect or no views towards the site.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude The dwellings are primarily two-storey houses and are arranged in housing estates. Views from the houses are close-distance and are focused on the immediate areas surrounding the houses, i.e., the streets and gardens to their front and rear. The scale and distance of the proposal mean that there will be no visual impact on this receptor group. In accordance with methodology the short-term magnitude of change will be *neutral*. Over time as the proposed planting reaches maturity, parts of it may be visible from this receptor group. In accordance with the methodology the mid to long-term magnitude of change will be *neutral to positive*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *imperceptible to positive* in the long-term.

R8 (1.7 – 2.1km west) This group comprises a mix of single and two-storey houses on Grove Island, both detached and semi-detached, across several housing estates.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude The dwellings are primarily two- and single-storey houses and are arranged in housing estates. Views from the houses are close-distance and are focused on the immediate areas surrounding the houses, i.e., the streets and gardens to their front and rear. The scale and distance of the proposal mean that there will be no visual impact for the majority of this receptor group. Views towards the Proposed Development are expected only from the upper windows of a very limited number of the houses, namely within Carabullawn housing estate, towards the southern end of the receptor group. Where these views exist, they will be indirect and through existing vegetation. In accordance with methodology the magnitude of change will be *neutral*. For the houses with indirect views to the site, the long-term effect will be *positive* as the planting proposals reach maturity.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *imperceptible to positive* in the long-term.

R9 (1.3km northwest) This is a group of two-storey semi-detached houses to the northwest of the Proposed Development. There is a mixture of single and two-storey houses in a range of orientations, but typically with at least an indirect view towards the Proposed Development. There is mature vegetation to the east, between the group and the site.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude Views from these houses are focused on their immediate surroundings, being their front and rear gardens and the green open spaces in the area. There is mature vegetation in the form of trees and scrub between the proposal and the receptor, screening the site from these houses. As the proposed planting reaches maturity, the proposed development will be further screened. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *imperceptible*.

R10 (1.9km northwest) This group comprises several dwellings to the northwest of the Proposed Development. There is a mixture of single and two-storey houses, surrounded by trees or low hedgerows. The dwellings face to the northwest, with rear windows facing the southeast towards the Proposed Development site.

Sensitivity Receptors are residents at home. Sensitivity is *high*.

Magnitude Views from these houses are constrained by existing vegetation which borders their front and rear gardens. There is mature vegetation in the form of trees and scrub between the proposal and the receptor, as well as the houses in R9, screening the site from these houses. As the proposed planting reaches maturity, the proposed development will be further screened. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *imperceptible*.

Community Receptors

C1 (0.18km west) This is the UL Boathouse, a rowing clubhouse on the Lower River Shannon, located directly west of the Proposed Development. The clubhouse is a low building with a primary frontage facing onto the river, away from the Proposed Development. The viewpoint shown in **Verified Photomontage 1** in Appendix 12 is representative of the view from the clubhouse looking towards the site.

Sensitivity Receptors are people using the building for recreation. Sensitivity is *low*.

Magnitude The clubhouse entrance is facing towards the Proposed Development, however the main views are in the other direction towards the river, while visitors to the clubhouse will be focused on the river itself. The Proposed Development will be partially filtered from the receptor by the existing screening vegetation. In accordance with the methodology the short-term magnitude of change will be *low*. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *temporary, slight, negative to permanent positive*.

C2 (1.8km north) This receptor is the Plassey Mill ruins. The building was originally in use as a water mill, built between 1820 and 1830. The remains are now ruinous and partially overgrown with signs of antisocial activity. The existing view from the site is shown in Figure 12-4.

Sensitivity Receptors are visitors to the site. Sensitivity is *medium to low*.

Magnitude The existing woodland in the area gives the footpath and the ruins an enclosed, isolated impression. Glimpse views of the existing development are visible through the vegetation; the Proposed Development will have a similar level of visibility. Visitors to the site are likely to be focused on the immediate surroundings. In accordance with the methodology the short-term magnitude of change will be *low*. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *temporary, slight to imperceptible, negative, to permanent positive*.

C3 (0.7 – 1.1km northeast) This is the UL north campus, on the northern bank of the Lower River Shannon. The northern campus comprises of all-weather pitches, student spaces, teaching buildings, and student accommodation. The Campus is bordered by trees and contains a large amount of open space.

Sensitivity Receptors are students and staff at the school. Sensitivity is *low*.

Magnitude The campus has vegetation planting on its boundaries, particularly along the river and in the direction of the Proposed Development. Any views towards the Proposed Development are filtered by this vegetation and will be further filtered by the proposed planting as it reaches maturity. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *imperceptible*.

C4 (0.2 – 1.0km southwest) This is the UL main campus. It is comprised of teaching buildings, libraries, student spaces, open space, and car parking. It is part of the Castletroy-Dromore ACA; the main university buildings and public art on the campus are important in terms of the character of the area. The campus is spread over a large area, with open spaces between many of the buildings.

Sensitivity Receptors are students and staff at the school. Sensitivity is *low*.

Magnitude The campus feels quite open in places, but is closed in on its boundaries by taller buildings. Consequently, the enclosed open spaces do not have views towards the Proposed Development, but some of the taller buildings may have indirect views over the proposed WwTP. In accordance with the methodology the short-term magnitude of change will be *low*. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Table 12.1 & Table 12.2 the visual effect will therefore be *imperceptible to permanent positive*.

C5 (0.7km southwest) This is the Milford Care Centre. It includes nursing homes, a health centre, and hospice care. The site is surrounded by tall mature trees, particularly on its northern and western boundaries, those facing towards the Proposed Development. Most buildings on site are two to three storeys tall.

Sensitivity Receptors are staff, patients, and residents. Sensitivity is *high*.

Magnitude The site is currently well screened by the existing vegetation, and the buildings to the north and northwest on the UL campus. Any views towards the Proposed Development will be seen in this context, and thus are highly constrained. The Proposed Development will be partially visible from upper floors, and these views will be angled. In accordance with the methodology the short-term magnitude of change will be *low*. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect will therefore be *temporary, slight, negative to permanent positive*.

C6 (1.7km southwest) This receptor includes Kilmurry Church and Graveyard. The church and graveyard date from approximately the 18th Century, while the modern Kilmurry Cemetery is directly adjacent to the graveyard. A mature treeline runs along the northern and north-western boundaries, while another group of mature trees line the boundary between the graveyard and the modern cemetery, acting to close the Church and graveyard in somewhat.

Sensitivity Receptors are visitors to the graveyard and cemetery. Sensitivity is *medium*.

Magnitude There are no views of the existing or Proposed Development from this receptor, due to the tall mature vegetation on the northern and western boundaries, and the large built-up area of Castletroy in between the two sites. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect will therefore be *imperceptible*.

C7 (1.1km south) This is the Castletroy Park Retail Park. It is a two-storey building with retail and office space. The retail park is filtered to the north by tree planting. The retail park includes a car parking area at the northern edge with extensive tree planting, and another central car park.

Sensitivity Receptors are staff and customers at the retail park. Sensitivity is *low*.

Magnitude The intervening buildings and vegetation mean that views of the Proposed Development from this receptor will only be available from the upper floors, and in those cases will also be filtered through the existing vegetation bordering the site. In accordance with the methodology the short-term magnitude of change will be *low*. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect will therefore be *imperceptible to permanent positive*.

C8 (1.0km south) This is the Castletroy Park Hotel. It is a part two-storey, part three-storey building with a large car park on its northern edge. The hotel has windows facing north towards the Proposed Development. These windows do not have screening vegetation immediately adjacent, but there is vegetation in the intervening land and bordering the Proposed Development site.

Sensitivity Receptors are staff and visitors to the hotel. Sensitivity is *high*.

Magnitude As with C7, the intervening buildings and vegetation mean that views of the Proposed Development from this receptor will only be available from the upper floors, and in those cases will also be filtered through the existing vegetation bordering the site. In accordance with the methodology the short-term magnitude of change will be *low*. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect will therefore be *temporary, slight, negative to permanent positive*.

C9 (1.0km south) This is the Travelodge Limerick Castletroy. It is a tall building, with the hotel occupying the first five storeys. Rooms in the hotel have views over the open space to the east and towards the Proposed Development.

Sensitivity Receptors are staff and visitors to the hotel. Sensitivity is *high*.

Magnitude The hotel has expansive views out over the open space to the east and northeast. The Proposed Development will be visible in this view, but will form a very small part of it, and will be filtered through vegetation. The views will also be indirect, visible only at an angle. In accordance with the methodology the short-term magnitude of change will be *low*. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect will therefore be *temporary, slight, negative to permanent positive*.

C10 (1.25km southwest) This is a large commercial park to the southwest of the Proposed Development. It is comprised of large outlet-style shops and a large car park. The buildings are one storey only and the car park is surface only, with no long-distance views towards the development site.

Sensitivity Receptors are staff and customers. Sensitivity is *low*.

Magnitude The Proposed Development will not be visible from the commercial park. Any potential views are screened by the intervening topography, buildings, or existing vegetation, and will be further screened as the proposed planting matures. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect will therefore be *imperceptible*.

Open Space Receptors

OS1 (0.19km north) The public footpath along the southern bank of the Lower River Shannon runs directly adjacent to the wastewater treatment plant. People walking along the path have views over the river, with vegetation on both sides of the path restricting views in places. The walk is highly scenic, with the main views focused on the river, away from the Proposed Development. Existing views from the footpath are shown in Figure 12-3 and Figure 12-5, and the proposed view is shown in **Verified Photomontage 2** in Appendix 12.

Sensitivity Receptors are people walking on the footpath. In accordance with the methodology their sensitivity is *high*.

Magnitude The existing development is already visible from the footpath and impacts a small aspect of the visual amenity of the route. The Proposed Development will not change the overall visual amenity of the footpath, but will have a negative impact, being an artificial, industrial presence in the otherwise natural surroundings. In accordance with the methodology the short-term magnitude of change will be *medium*. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect will therefore be *temporary, moderate, negative to permanent positive*.

OS2 (1.1 – 1.5km west) The public footpath on Grove Island along the Lower River Shannon. People walking along the path have views over the river, with vegetation on both sides of the path restricting views in certain places. There is less vegetation along the path itself than with OS1, leading to a more open setting. A view from the footpath is shown in Figure 12-11.

Sensitivity Receptors are people walking on the footpath. In accordance with the methodology their sensitivity is *high*.

Magnitude While there is less existing vegetation on both sides of this footpath than with OS1, the Proposed Development will not be visible from this area due to the topography of the intervening land and the tall vegetation between the two sites, and will be further screened from the site as the proposed planting matures. In accordance with the methodology the magnitude of change will be *neutral*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect will therefore be *imperceptible*.

OS3 (0.36km north) The public footpath on the north bank of the Lower River Shannon, adjacent to the student accommodation of R1. People walking along the path have views over the river, with vegetation on both sides of the path restricting views in certain places. A view from the footpath is shown in Figure 12-7.

Sensitivity Receptors are people walking on the footpath. In accordance with the methodology their sensitivity is *high*.

Magnitude Parts of the existing development are visible from the footpath, glimpsed through existing vegetation both along the route and bordering the Proposed Development site. The Proposed Development will not change the overall visual amenity of the footpath, but will have a negative impact, being an artificial, industrial presence in the otherwise natural surroundings. However, the main focus of views from the footpath is the river itself. In accordance with the methodology the short-term magnitude of change will be *low*. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect will therefore be *temporary, slight, negative to permanent positive*.

Other Open Space Other open spaces in the area include agricultural land, which makes up the vast majority of the land surrounding the Proposed Development, and open spaces such as the Groody Valley Wedge to the southwest, the open space on Grove Island to the west, and small green spaces within housing estates in the area. Farmers working on their land are receptors, as are people walking in the area. Significant effects are not expected on open space beyond 0.5km.

Sensitivity Receptors are farmers engaged in work, and walkers in the open spaces. In accordance with the methodology their sensitivity is *low*.

Magnitude The proposals will form an industrial feature in the suburban landscape, albeit one which is within the existing WwTP. In accordance with the methodology the short-term magnitude of change will be *high* in the immediate vicinity of the proposals (within 0.5km) grading out to *negligible* with distance and levels of intervening screening. As the proposed planting reaches maturity, any views of the proposed tank are expected to be further screened. In accordance with methodology the mid to long-term magnitude of change will be *positive*.

Effect In accordance with Tables 12.1 & 12.2 the visual effect will therefore be *temporary, slight, negative* within 0.5km reducing to *imperceptible* with distance, and *permanent positive* over time.

Protected Views

The sensitivity of designated views is *high*. There are no protected views designated in the CDP in the vicinity of the proposal; the closest are over 8km to the southwest. Those views are not looking towards the site.

The views to and from the main university buildings within the Castletroy-Dromore ACA (Figure 12.13) are to be protected, however. These buildings include those within C4, the residential buildings at R3, and the Milford Care Centre buildings at C5. The magnitude of change to these receptors was assessed above as being *low to negligible* in the short-term, to *permanent positive* in the long-term as the planting proposals reach maturity.

In accordance with Table 12.1 & Table 12.2 the visual effect during operation will therefore be *temporary, slight, negative to permanent positive*.

12.5.4 Cumulative effect assessment

There is an existing wastewater treatment plant at Bunlicky located approx. 6.7km southwest of the Proposed Development. Due to the distance between the three sites, the height of the tallest elements on site, and the intervening built-up area of Limerick City, there is no intervisibility between the two sites.

In accordance with the methodology the cumulative magnitude of change for visual receptors will be *negligible*. In accordance with Table 12.1 & Table 12.2 the cumulative visual effect on visual receptors will therefore be *imperceptible*.

Due to the similar form, scale and location of the three developments, and the minimal change to any landscape features, the proposals will not have any significant cumulative effects on landscape fabric or character. In accordance with the methodology the cumulative magnitude of change for landscape fabric and character will be negligible. In accordance with Table 12.1 & Table 12.2 the cumulative effect on landscape fabric and character will therefore be *imperceptible*.

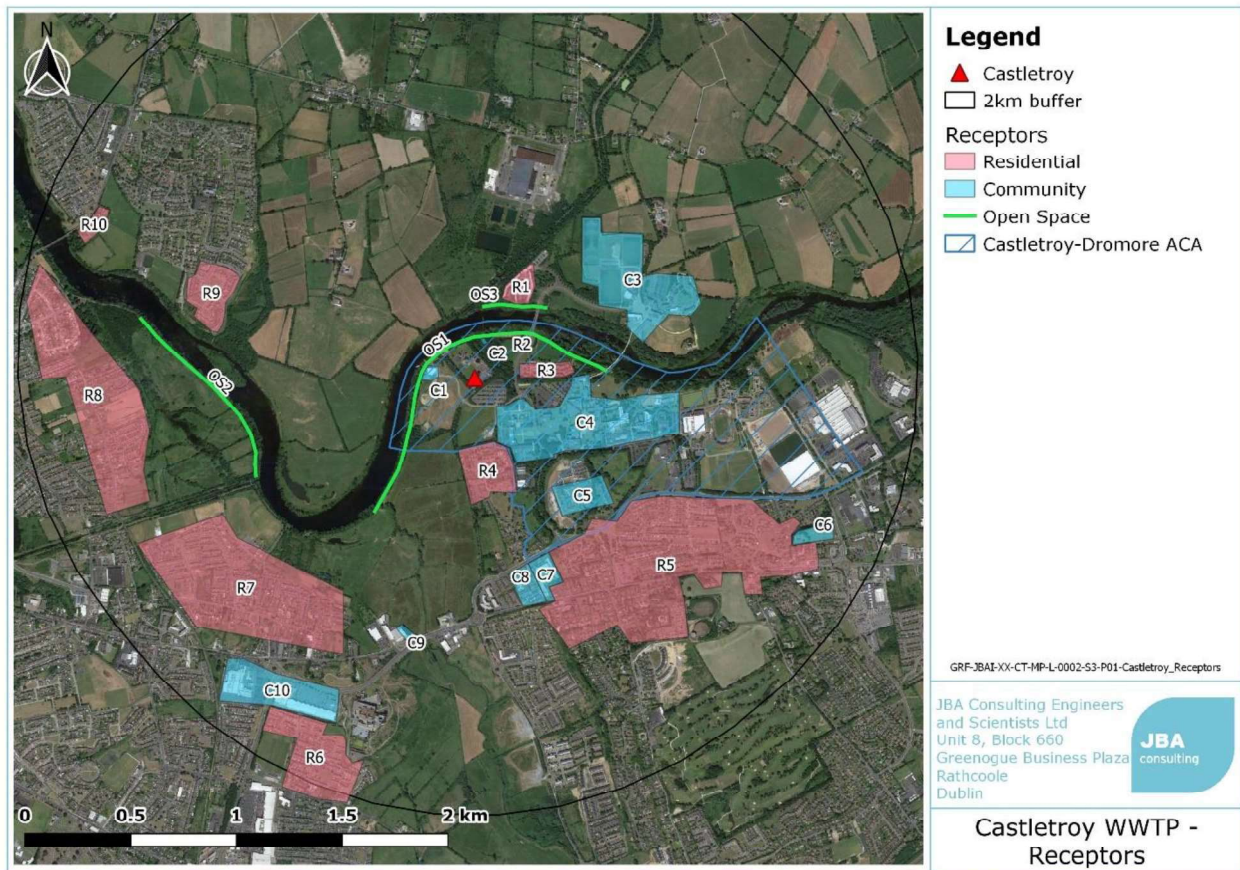


Figure 12-13: LVIA receptor groups

12.6 Mitigation Measures and Monitoring

12.6.1 Mitigation Measures

The existing WwTP has mature vegetation on the boundaries which filter the site from the surrounding area. No vegetation is expected to be removed for the Proposed Development. This existing vegetation will be supplemented with additional planting proposals as outlined in the ecological landscape proposals.

The existing vegetation surrounding the WwTP is critically screening views towards the Proposed Development. Its protection and enhancement, with additional planting as described in the ecological landscape proposals will further enhance visual screening to the inside of the site. This is expected to reduce further the visual impacts to the assessed visual receptors. It is also expected to have a positive impact to the landscape character along the Lower River Shannon by improving the quality of the vegetation and provided amenity.

12.7 Residual Effects

The residual effects are described in **Section 12.4** of this report. No significant effects are expected from the proposed development, therefore there are no significant residual effects. As the planting proposals reach maturity, the highest residual effects will be *imperceptible to positive*.

12.8 References

Environmental Protection Agency, 2017 *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (Draft)

Landscape Institute and Institute of Environmental Management & Assessment, 2013 *Guidelines for Landscape and Visual Impact Assessment 3rd Edition*. Routledge

Limerick County Council, 2010 *Limerick County Development Plan 2010-2016*

Limerick City and County Council, 2021 *Draft Limerick Development Plan 2022-2028* (Draft)