18 Material Assets

18.1 Introduction

This section describes the likely significant effects of the proposed development on material assets. Material assets are defined[1] as:

"*Resources that are valued and that are intrinsic to specific places"*

Whilst the current draft EPA Guidelines[2] state that Material Assets:

"Can now be taken to mean built services and infrastructure."

The purpose of this assessment is therefore to consider the likely significant effects of the proposed development on existing services and infrastructure, including:

- Land Use and Properties;
- Electricity;
- Telecommunications;
- Gas;
- Water Supply Infrastructure; and
- Foul and Surface Water Drainage.

Material assets of natural origin are addressed separately in other chapters of this EIAR, such as **Chapter 8** (air quality), **Chapter 11** (biodiversity), **Chapter 14** (land and soils) **Chapter 15** (water), and traffic and transport assets are considered in **Chapter 7**.

Chapter 4 provides a full description of the proposed development and **Chapter 5** describes the construction strategy for the proposed development. The following aspects are particularly relevant to the material assets assessment:

- Design:
  - Proximity of the proposed development to existing material assets;
- Construction:
  - Diversions required to undertake construction activities in the vicinity of existing material assets; and
  - Intrusive construction activities occurring in proximity to existing material assets.
- Operation:
  - Operational demand requirements of the proposed development;

[1] EPA (2015) Advice Notes for Preparing Environmental Impact Statements.
[2] EPA (2017) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports: Draft August 2017.

18.2 Assessment Methodology

18.2.1 General

This chapter has been prepared having regard to the overarching EIA guidance as described in **Section 1.4.3 of Chapter 1**. The significance of effects has been determined based on the severity of potential disturbance to existing material assets.

18.2.2 Guidance and Legislation

The significance criteria used to categorise significant effects on material assets is set out in Table 18.1 and has been developed based on the description of significant effects as outlined in the guidance[2].

Table 18.1: Significance criteria for likely significant effects on material assets

Significance Level	Criteria
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 Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	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 Effects	An effect which obliterates sensitive characteristics

For the purpose of this assessment, likely significant effects on material assets are considered to be those effects that are categorised as significant, very significant or profound.

18.2.3 Categorisation of the Baseline Environment

In order to determine the existing utilities and services within the proposed development site, utility investigations have been undertaken to support the design development. A desk study, site visits and site-specific investigations were undertaken in August 2016 to provide the data to compile the description of the existing material assets. These survey findings reconciled with the relevant utility records at the time.

In early 2018 the design team reverted to utilities contacts for updated records on the following dates, with no further updates highlighted at that stage:

- Eir - maps downloaded from website 24 January 2018.
- ESB Networks – maps received 23 January 2018, 26 January 2018 and 26 February 2018.
- Gas Networks – maps received 23 January 2018.
- Virgin Media – maps received 20 March 2018.

Consultation with utility providers has also been undertaken where applicable to determine the location and details of existing utilities including ESB, gas, surface and wastewater sewers, telecommunications, public lighting and infrastructure within the site.

18.2.4 Impact Assessment Methodology

A desk study has been carried out to identify the existing material assets associated within the site and determine the likely significant effects of the construction and operation of the proposed development on those material assets.

Having regard to Chapters 4 and 5, the likely significant effects of the proposed development on existing material assets have been assessed in the context of the significance criteria set out in Table 18.1.

18.3 Baseline Conditions

18.3.1 Land-use and Property

The existing land use and property is described in detail in **Section 2.6 of Chapter 2.** The proposed development is concentrated in the waterfront area of Arklow, with the proposed interceptor sewers located along the north and south quays and the WwTP located at the Old Wallboard site at Ferrybank. The WwTP site is bounded to the east by Arklow Bay and to the south by the Arklow River, in a prominent location on the waterfront at the mouth of the estuary.

18.3.2 Electricity

ESB maintains both underground and overhead power lines within and around the site. ESB's infrastructure of relevance to the proposed development includes the following:

- Overhead ESB cables running from a central point at the Alps that cross the Avoca River in a north-easterly direction, travel west across the Alps site and south-east to the Arklow Court House;
- Underground ESB ducting running along a section of the riverfront, between the Alps site and River Walk;
- Underground ESB ducting running along River Walk to Arklow Bridge;

- Overhead ESB cable running along South Quay, from Arklow Bridge to the Anchor Mews residential estate. Additional ESB overhead cables from the town centre meet this cable at a number of points along South Quay;
- Underground ESB ducting running along the South Quay, from Arklow Bridge to Doyle's Lane;
- Underground ESB ducting traversing the WwTP site;
- Underground GE Energy cable running under the existing revetment;
- Underground ESB ducting running along Mill Road;
- Underground ESB ducting running along North Quay; and
- Overhead ESB cables running along North Quay, from Arklow Bridge to the Bridgewater Shopping Centre.

18.3.3 Telecommunications

There are telecommunication cables of relevance to the proposed development at the following locations within and around the site:

- Telecommunication cables running between River Walk and Arklow Bridge. Additional telecommunication cables from the town centre meet this cable at a number of points along River Walk;
- Telecommunication cables running across Arklow Bridge;
- Telecommunication cables running along Mill Road;
- Telecommunication cables running along North Quay, between Arklow Bridge and the Marina; and
- Telecommunication cables running across Arklow Bridge, from Ferrybank to Bridge Street.

18.3.4 Gas

There are gas mains of relevance to the proposed development at the following locations within and around the site:

- A 355mm diameter gas main running across Arklow Bridge which enters underground approximately 10m upstream of the River Walk – Arklow Bridge tie-in. This gas main supplies those parts of Arklow town to the south of the river channel;
- Gas main running along South Quay between Arklow Bridge and the Harbour. At South Green there is an existing surface water outfall, therefore the gas main is manifolded into three lines that occupy the majority of the footprint of the road carriageway to pass over this outfall;
- Gas main running along North Quay between Arklow Bridge and Marina Village; and

- Gas main running across Arklow Bridge, connecting to those on the North and South Quays.

18.3.5 Water Supply Infrastructure

There is water supply infrastructure (that have transferred, or will transfer under the ministerial order to Irish Water) of relevance to the proposed development at the following locations within and around the site:

- A watermain running along River Walk to Arklow Bridge;
- Two watermains running across Arklow Bridge. Although relatively small (160mm and 100mm diameter pipelines), these are the only water supplies to those parts of Ferrybank to the north of the river channel;
- A watermain traversing the WwTP site;
- A watermain running along North Quay between the Marina and the WwTP site;
- A watermain running along Mill Road;
- A watermain running along North Quay between Arklow Bridge and Marina Village; and
- Two watermains running across Arklow Bridge.

18.3.6 Sewer Network and Drainage Infrastructure

There is an existing combined sewer network (including outfalls to the Avoca River) and drainage infrastructure of relevance to the proposed development at the following locations within the site:

- A sewer running to the east of the Alps site and between the Alps and carpark at River Walk and an outfall discharging to the Avoca River at this point;
- A sewer running River Walk that picks up perpendicular sewers and discharges via outfalls to the Avoca River;
- A sewer running along South Quay between Arklow Bridge and Doyle's Lane that picks up perpendicular sewers and discharges via outfalls to the Avoca River;
- At South Green, there are existing surface water outfalls;
- A sewer and outfall at the junction of South Quay and Harbour Road that discharges to the Avoca River
- A sewer running along the back of the properties adjacent to Arklow Town Marsh pNHA and the R7228 that discharges via an outfall to the Avoca River;
- Existing outfalls on North Quay that discharge to the Avoca River;
- A sewer traversing the North Quay near the marina, with an outfall discharging to the Avoca River; and

- A surface water sewer located in the vicinity of the Marina Village apartments, traversing the North Quays, with an outfall to the Avoca River.
- Sewers along Mill Road that discharge to the Avoca River and an additional outfall to the marina.

18.4 Likely Significant Effects

18.4.1 Do-Nothing Scenario

In the scenario where the proposed development does not proceed as planned, the existing land and material assets in the study area will remain as currently identified in the desk study, site visits and site-specific investigations.

The existing sewer network and drainage infrastructure associated with the current practise of discharging untreated wastewater to the Avoca River will remain as currently identified.

As previously outlined in **Chapters 1 and 2**, the European Commission is currently taking a case against Ireland at the Court of Justice of the European Union for its failure to ensure that urban wastewater in 38 agglomerations (of which Arklow is one such named agglomeration) is adequately collected and treated to prevent serious risks to human health and the environment.

It is clear therefore, that from a legislative perspective alone, the 'do-nothing' scenario is not a reasonable alternative in the context of the proposed development. In any case, the do nothing scenario will result in no significant effects on material assets.

18.4.2 Assessment of effects during construction

18.4.2.1 Land-Use and Property

Overview

Construction of the proposed development will require temporary land take to accommodate construction activities and permanent land take to accommodate specific above ground elements of the proposed development. (as described in detail in **Chapter 4**).

The Compulsory Purchase Order (CPO) accompanying the planning application outlines the extent of:

- Lands to be acquired (purchased);
- Permanent wayleaves;
- Temporary working areas;
- Permanent rights of way.

Supporting documentation is provided as part of the planning application submission, in the form of an Engineer's Report, CPO drawings and land schedules.

Land which will be temporarily acquired to facilitate working areas during the construction phase of the proposed development include lands within the planning boundary at the Alps, lands along River Walk, lands north of the WwTP site and lands along the North and South Quays. The temporary acquisition of lands to facilitate temporary working areas or temporary rights of way during the construction of the proposed development is predicted to result in a slight, negative and short-term effect on land-use. On completion of the construction phase, the contractor will be obliged to return these lands to their original land-use classifications.

Land which will be permanently acquired in order to facilitate the proposed development includes the site of the existing overflow (SWO), located in the north-east corner of 'the Alps' development site, and the site of the proposed WwTP at Ferrybank.

The permanent acquisition of land is predicted to result in a slight, negative and long-term effect on the existing land-owner's due to the compulsory purchase of land. However, a significant, positive and long-term effect on land-use at these locations is predicted by means of physical improvements to the land in question and fulfilment of land-use zoning objectives and land-use classifications.

Land subject to permanent wayleaves and permanent rights of way in order to facilitate the proposed development include lands at the Alps, along River Walk, North Quay and South Quay. The requirement of permanent wayleaves and permanent rights of way is predicted to result in a slight, negative and long-term impact on land-use.

Foreshore License/Lease

As outlined in **Section 4.5.2 of Chapter 4**, the provisions of the Foreshore Act 1933 to 2014, as amended, require that a lease or licence must be obtained from the Minister for Housing, Planning and Local Government for development works on the State-owned foreshore. Foreshore consent applications will therefore be required for the following elements of the proposed development:

- The underpinning of Arklow Bridge;
- Construction works in the Avoca River to construct the interceptor sewer and sheet pile walls;
- The tunnelling of the interceptor sewer under the Avoca River from the South Quay to Mill Road;
- Construction works to construct the long sea outfall in the Irish Sea; and
- Construction works for the SWO and upgraded revetment at the WwTP site.

Foreshore consent application(s) for the above works are being submitted to the Department of Housing, Planning and Local Government in parallel to the application for consent that is being submitted to An Bord Pleanála.

A pre-application consultation meeting was held with the Foreshore Unit in the Department of Housing, Planning and Local Government on 20 June 2018.

18.4.2.2 Electricity

The interceptor sewer will interact with the underground electricity infrastructure in a number of locations along River Walk, hence local re-routing will be required prior to the commencement of construction.

On South Quay, the overhead ESB cable will have to be diverted prior to the commencement of construction. Tunnelling of the interceptor sewer along the downstream section of South Quay should minimise the risk of interaction with existing ESB overhead cables in this location.

Tunnelling of the interceptor sewer on North Quay and along Mill Road should minimise the risk of interaction with existing ESB ducting in this location.

The diversion of services along River Walk and South Quay may require planned power outages. Should the event of unplanned or prolonged disturbance occur, a negative, temporary effect is predicted. However, the contractor will be required to consult with ESB in advance of any works and it is anticipated that the service provider will arrange the diversion and consult with the relevant affected premises as required. The contractor will be obliged to put measures in place to ensure that there are no interruptions to existing utilities and services unless this has been agreed in advance with the relevant service provider.

It should be noted that there is an existing cable (owned by GE Energy) that runs under the existing revetment. The proposed development will encroach within the existing 50m cable buffer zone for this cable, however as agreed with GE, a 10m buffer zone around the cable will be adhered to and thus the proposed development will not directly affect the cable.

The proposed development will be connected to the existing ESB distribution network via a new 10kV connection at the WwTP site boundary on Mill Road (adjacent to the administration building). The maximum demand for the WwTP is currently estimated at 900kVA. The new 10kV connection will require a dedicated ESB substation room in the Process building. This substation room will house all ESB equipment and access will be restricted to ESB personnel only.

Therefore, the likely effect of the proposed development on existing electricity infrastructure will be slight, negative and temporary.

18.4.2.3 Telecommunications

The interceptor sewer will interact with the telecommunications infrastructure in a number of locations along River Walk, hence local rerouting will be required to facilitate the open-cut construction along this section.

In addition, the proposed underpinning of Arklow Bridge has the potential to interact with the Eir line running underneath the bridge deck.

Should the event of unplanned or prolonged disturbance occur, a negative, temporary effect is predicted. However, the contractor will be required to consult with the service provided in advance of any works and it is anticipated that the service provider will arrange the diversion and consult with the relevant affected premises as required. The contractor will be obliged to put measures in place to ensure that there are no interruptions to existing utilities and services unless this has been agreed in advance with the relevant service provider.

Tunnelling of the interceptor sewer should minimise the risk of interaction with existing underground telecommunication infrastructure on both North Quay and downstream on South Quay.

Therefore, the likely effect of the proposed development on existing telecommunications infrastructure will be slight, negative and temporary.

18.4.2.4 Gas

On South Quay and North Quay, tunnelling of the interceptor sewer should minimise the risk of interaction with existing services. On South Quay, all gas infrastructure is located in the road corridor.

The proposed underpinning of Arklow Bridge has the potential to interact with the gas main running underneath the bridge deck, as well as the connection at the southern, upstream tie-in on River Walk.

Should the event of unplanned or prolonged disturbance occur, a negative, temporary effect is predicted. However, the contractor will be obliged to put measures in place to ensure that there are no interruptions to existing utilities and services unless this has been agreed in advance with the relevant service provider.

Therefore, the likely effect of the proposed development on existing gas mains will be slight, negative and temporary.

18.4.2.5 Water Supply Infrastructure

Generally, the watermains adjacent to the Alps SWO and stormwater storage tank will not be impacted by the construction of the interceptor sewer as it will be undertaken ‘off line’ and appropriate diversions for water supply infrastructure will be put in place in advance of the commencement of construction as described in **Chapter 5**.

Along South Quay and North Quay, tunnelling should minimise the risk of interaction with existing water supply infrastructure.

The proposed underpinning of Arklow Bridge has the potential to interact with the two watermains running underneath the bridge deck.

Should the event of unplanned or prolonged disturbance occur, a negative, temporary effect is predicted. However, the contractor will be obliged to put measures in place to ensure that there are no interruptions to existing utilities and services unless this has been agreed in advance with the relevant service provider.

Therefore, the likely effect of the proposed development on existing water supply infrastructure will be slight, negative and temporary.

18.4.2.6 Sewer Network and Drainage Infrastructure

During the enabling works, sewer network diversions will be undertaken and temporary drainage infrastructure installed at working areas (as described in detail in **Chapter 5**) to maintain the operational sewer network in Arklow town throughout construction.

The sewer network and drainage infrastructure will be required to be functional throughout construction until the proposed development becomes operational. Upon completion of testing and commissioning, the existing wastewater sewers will be diverted to the interceptor sewers. Short sections of the existing sewers will then be abandoned, infilled with concrete and left insitu.

Therefore, the likely effect of the proposed development on the sewer network and drainage infrastructure will be long-term and neutral.

18.4.2.7 Cumulative

As outlined in **Section 2.6.6 and 2.6.7 of Chapter 2**, relevant developments have been considered in relation to cumulative effects.

Given the nature and scale of the developments identified, no cumulative effects on material assets is predicted to occur if any one, or all of these developments occur concurrent to the construction of the proposed development. However, there is the potential for physical and temporal overlap between the proposed development and the proposed Arklow Flood Relief Scheme.

Both proposals have been designed having regard to the existence of the other scheme and the potential for interaction, and the design and construction of the overlapping elements of each of the schemes will be implemented in an integrated manner in so far as possible. Further, it will be the responsibility of contractors to ensure effective coordination and communication throughout construction in relation to utilities and services diversions.

This approach therefore ensures that the cumulative effects on material assets arising from the construction of the proposed development and the proposed Arklow Flood Relief Scheme is mitigated and avoided in so far as possible.

18.4.3 Assessment of Effects during Operation

18.4.3.1 Land-Use and Property

As outlined in **Section 18.4.2.1**, some land within the planning boundary will be permanently acquired in order to facilitate the proposed development, including the site located in the north-east corner of the Alps and the site of the proposed WwTP at Ferrybank.

The permanent acquisition of land will occur during construction, but will remain in place throughout the operation of the proposed development. The permanent acquisition of land is predicted to result in a slight, negative and long-term effect on the existing land-owner's due to the compulsory purchase of land.

Similarly, and as outlined in **Section 18.4.2.1**, some land within the planning boundary will be subject to permanent wayleaves and permanent rights of way in order to facilitate the proposed development, including lands at the Alps, lands along River Walk, and lands along the North and South Quays.

The acquisition of permanent wayleaves and permanent rights of way will occur during construction, but will be maintained and enforced throughout the entire operation of the proposed development.

As previously outlined, a foreshore consent application is being submitted for the permanent infrastructure which will remain in place within the foreshore during the operation of the proposed development.

Therefore, a slight, negative and long-term effect on land-use at these locations is predicted during the operation of the proposed development.

18.4.3.2 Electricity

There will be no effect on existing underground ESB or GE cables during the operation of the proposed development.

The proposed development will be connected to the existing ESB distribution network via a new 10kV connection at the boundary of the WwTP site (i.e. on Mill Road as described in detail in **Section 4.3 of Chapter 4**). The maximum demand estimated for the WwTP is currently estimated at 900kVA.

The proposed development will therefore increase demand on the electricity network in Arklow town, however the demand will be offset through the provision of the PV installation on the Process building. Further, it is expected that the network has capacity to accommodate the proposed development. Therefore, the likely effect of the proposed development on the existing electricity network is considered to be permanent, but not significant.

18.4.3.3 Telecommunications

The proposed development will require a telecommunications connection to facilitate operational activities at the WwTP site. It is expected that the existing telecommunications network in the vicinity will have the capacity and thus be able to accommodate the connection.

The likely effect of the proposed development on the existing telecommunications network is therefore considered to be permanent, but imperceptible.

18.4.3.4 Gas

As there are no requirements for gas during operation of the proposed development, there will be a neutral effect on gas infrastructure during the operation of the proposed development.

18.4.3.5 Water Supply Infrastructure

A dedicated watermain, connected to the public water supply will be provided as part of the overall site infrastructure at the WwTP site. As outlined in **Section 4.3 of Chapter 4,** this incoming water main will be metered upon entry after which it will be distributed below ground to serve each of the individual buildings.

A complete water services installation including for the provision, as required, of mains, cold and hot water will service each building. The mains water will feed a number of mains water break tanks within the Inlet Works and Process buildings which will in turn service the respective cold-water service requirements such as safety showers, wash-down hose reels, process equipment etc. The mains water will also feed a 24hr cold water storage tank which will in turn service the cold-water service requirements of the Administration building. Point of use type electric water heaters will be provided to service any hot water service requirements of areas such as the sanitary accommodation.

The proposed development will therefore increase demand on the water supply network in Arklow town, however it is expected that the network has capacity to accommodate the proposed development.

Therefore, the likely effect of the proposed development on the existing water supply network is considered to be not significant.

18.4.3.6 Sewer Network and Drainage Infrastructure

Drainage infrastructure will be provided for all buildings on the WwTP site. This will include for the provision for drainage from all equipment, from all sanitary accommodation and from all items of equipment within ancillary spaces including workshop, laboratory, canteen etc. provided in the Administration building. Condensate drainage will also be provided as necessary from any HVAC equipment installations within each of the buildings. Further, appropriate drainage in the vicinity of the interceptor sewers will be maintained throughout Arklow town. Rainwater collection from the roofs of the various buildings will be discharged directly to drain.

Therefore, the likely effect of the proposed development on the existing drainage infrastructure is considered to be permanent, but not significant.

The nature of the proposed development will provide a robust wastewater network across Arklow town that is capable of accommodating population growth and will eliminate in as far as reasonable possible, the current practice of discharging untreated wastewater to the Avoca River. An appropriate WWDA will be obtained for the operation of the proposed development.

Therefore, there will be a significant, positive and long-term and permanent effect on the wastewater network during the operation of the proposed development.

18.4.3.7 Cumulative

There are no cumulative effects identified during the operation of the proposed development.

18.5 Mitigation Measures and Monitoring

18.5.1 Mitigation

18.5.1.1 Mitigation During Construction

Wherever possible, mitigation by avoidance of negative effects on property was a priority during the design development of the proposed development. Landowners will be compensated as appropriate for permanent and temporary land acquisition, in accordance with the relevant legislation. The details of any individual agreements will be private and confidential and therefore mitigation measures in the form of compensation are not specific or detailed herein.

A Property Protection Scheme will be put in place by Irish Water prior to works commencing on site. This will involve advance condition surveys prior to construction for all properties within the zone of influence of the proposed development. If it is determined that any reported minor cosmetic damage has been caused by construction of the proposed development, suitable remedial works will be undertaken to repair the damage to the properties with the use of the appropriate conservation technique.

Mitigation measures for all areas of temporary land acquisition will involve reinstatement to their original condition so far as is reasonably practicable.

Access to all existing properties will be maintained at all times during the construction of the proposed development. This may require temporary alternate access arrangements at some locations. All access will be reinstated upon completion of construction.

The contractor will be obliged to put measures in place to ensure that there are no interruptions to existing utilities and services unless this has been agreed in advance with the relevant service provider. As outlined in **Section 5.5.2 of Chapter 5**, all utilities and services diversions will be agreed and undertaken as part of the enabling works and in advance of the commencement of construction activities. All construction activities in the vicinity of existing services and utilities will be carried out in ongoing consultation with the relevant service provide and undertaken in compliance with any requirements or guidelines they may have.

Sewer diversions will be undertaken as part of the enabling works prior to the commencement of construction activities.

Upon commissioning, the older pipelines being abandoned will be sealed off and/or removed as described in **Chapter 5**.

Surface water management measures will be adopted along the entire site, as outlined in **Section 15.5 of Chapter 15**.

As described in **Chapter 5** and outlined in **Appendix 5.1**, the contractor will be required to prepare and maintain a detailed CEMP during the construction phase of the proposed development. The appointed contractor will be required to comply with the Outline CEMP. Effective implementation of the CEMP will ensure that disruption and nuisance are kept to a minimum throughout the construction of the proposed development. The detailed CEMP will be required to have regard to the guidance[3] and industry best practice. The CEMPs will be effective throughout construction and the contractor will be required to review and update the CEMP as construction progresses.

In addition to the CEMP, it is anticipated that the contractor will prepare relevant management plans and Works Method Statements in advance of any works commencing on site. Every effort will be made to ensure that any significant effects on material assets will be avoided, prevented or reduced during the construction of the proposed development.

18.5.1.2 Mitigation During Operation

Landowners will be compensated as appropriate for permanent land acquisition, in accordance with legislation. As noted in **Section 18.5.1.1**, the details of any individual agreements will be private and confidential and therefore mitigation measures in the form of compensation are not specific or detailed in this EIAR.

18.5.2 Monitoring

18.5.2.1 Monitoring During Construction

Construction phase mitigation measures have been proposed to ensure that significant negative effects on material assets will be avoided, prevented or reduced during the construction of the proposed development. As such, no monitoring measures are proposed during the construction phase.

18.5.2.2 Monitoring During Operation

As no significant, negative operational effects of the proposed development on material assets are identified, no operational monitoring measures have been proposed.

[3] CIRIA (2015) Environmental Good Practice on Site Guide, 4th Edition

18.6 Residual Effects

18.6.1 Residual Effects during Construction

A slight negative long-term effect on existing land-owner's is predicted where land will be permanently acquired to facilitate the proposed development.

For areas of temporary land acquisition where compensation will be agreed and which will be reinstated to their original condition as a minimum, it is concluded that there will be no residual significant effects. A slight negative long-term effect on land-use is predicted where land will subject to permanent wayleaves and permanent rights of way in order to facilitate the proposed development.

Following implementation of mitigation measures outlined in **Section 18.5.1.1**, it is anticipated that the residual effects of the proposed development on electricity, telecommunications, gas, water supply, sewer network and drainage infrastructure during construction is not considered to be significant.

18.6.2 Residual Effects during Operation

A slight negative long-term effect on existing land-owner's is predicted where land will be permanently acquired to facilitate the proposed development. However, once operational the proposed development is considered to be an improvement over the 'do-nothing' scenario as the re-development of a brownfield site at Ferrybank and the removal of dilapidated buildings by the provision of vital infrastructure for Arklow town is considered to be a significant positive long-term residual effect.

A slight negative long-term effect on land-use is predicted where land will be subject to permanent wayleaves and permanent rights of way in order to facilitate the proposed development. Following implementation of mitigation measures outlined above, it is anticipated that the residual effects of the proposed development on electricity, telecommunications, gas, water supply, sewer network and drainage infrastructure during operation are not considered to be significant.

The proposed development will result in a permanent, positive residual effect on the wastewater network by providing a robust, reliable collection network and treatment capacity that is capable of accommodating anticipated population growth in Arklow town.

18.7 References

CIRIA (2015) *Environmental Good Practice on Site Guide, 4th Edition*

EPA (2017) *Guidelines on Information to be contained in Environmental Impact Statements*

EPA (2015a) *Revised Guidelines on the information to be contained in Environmental Impact Statements Draft*

EPA (2015b) *Advice Notes for Preparing Environmental Impact Statements Draft.*

EPA (2003) *Advice Notes on Current Practice in the preparation of Environmental Impact Statements*