

# 11 MATERIAL ASSETS

## 11.1 Traffic

### 11.1.1 Introduction

This section assesses the likely significant effects that may be incurred on the receiving environment with respect to traffic and traffic safety during the construction and operational phases of the proposed 115 kilometre (km) long walking/cycling trail. The proposed route which follows the route of the existing Barrow Waymarked Trail on the existing towpath and tracks along the banks of the Grand Canal Barrow Line and River Barrow and so interactions with the existing public roads network are limited. The proposed Blueway is linear with multiple access locations and passes through the Counties of Kildare, Laois and Carlow. Given the long linear and off-road nature of the proposed Blueway it was not considered necessary to the assessment of effects to quantify existing traffic flows along the 115km route.

### 11.1.2 Proposed Works

The works proposed for the construction and operation of the Blueway are described in detail in Chapter 3. Aspects of the project which have the potential for particular effects on traffic include,

- Upgrade and re-surfacing of Barrow Way existing towpath and track to a multi-use leisure trail along Grand Canal (Barrow Line) and River Barrow (Barrow Navigation).
- Localised road widening (approximately 1.5km).
- Provision of 26 no. road crossings as well as interfaces for pedestrian and cyclists.
- Provision of passing bays at certain locations.
- Resurfacing of car parks at 11 no locations and two new proposed car parks.

The majority of construction activities will be off road and will not intersect in a significant way with the existing road networks as they will occur along the existing waterway navigation towpath and bridges.

It is noted that Waterways Ireland have reviewed design changes to public road intersections with the relevant Roads Authority representatives. The changes which were requested in the Further Information Request are presented in Appendix 1-1. A Designer's Report has also been prepared as part of this request and is included in Appendix 3-3. This details relaxations and departures for standards. The drawings are also contained in Appendix 3-1.

Construction materials will be transported from designated stockpile areas along the canal and/or river banks in dumpers for construction of the trail. It is not envisaged that there will be a need to remove any large quantities of excavated material from within the site boundary as excavated material will be used to create verges along the route.

Access to construct the proposed Blueway shall be gained via all existing national, regional and local road access points along the length of the route between Lowtown and St. Mullin's. These access points are:

Kildare:

- Local access road from Roberstown to Lowtown
- Regional Road at Littleton Bridge (R415)
- Local road at Skew Bridge and Ballyteague Bridge
- Local Road at Locks 20 & 21
- Local Road at Glenaree north of Lock 22
- Local Road at Glenaree Bridge
- Regional Road at Rathangan Bridge (R401)
- Regional/Local Road at Spencer Bridge (R414)
- Local Road at Wilson's Bridge
- Local Road at Ummeras Bridge
- Local Road at Macartney's Bridge
- Local Road at Shepherd's Brook Bridge (High Bridge)
- Local/Regional Roads in Monasterevin (R424)
- Local access road to Moore's Bridge
- Regional Road at Clogheen Bridge (R445) Local Road north of Milltown Bridge
- Local Road at Milltown Bridge
- Regional Road at Cardington Bridge (R428)
- Local Road at Lennon's Bridge
- National Road at Augustus Bridge (N78)
- Local access path in Athy
- Regional Road/Local Road at Ardreich Lock (R417)
- Regional Road south of Ardreich Lock (R417)
- Regional Road at Tankardstown Bridge (R417)
- Regional/Local Access Road at Levitstown Lifting Bridge (R417)
- Regional Road at Maganey Bridge (R429)
- Unnamed road crossing at Sleatyragre

Co. Laois:

- Local Road at Fisherstown Bridge
- Local Road at Courtwood Bridge
- Local Road north of Vicarstown
- Regional Road at Vicarstown Bridge

Co. Carlow

- Unnamed road crossing at Sleaty Street
- Carlow Town - various locations in the town
- N9 just south of Carlow Town
- Milford Bridge west of Milford cross roads on the N9
- N9 just south of Rathvinden Lock
- Leighlinbridge just west of the R705
- Bagenalstown R705 to Royal Oak Bridge on R724
- Fenniscourt R705
- Unnamed local road at upper Ballyellen Lock
- Goresbridge crossing R702
- Ballyteigelea Bridge Crossing the R705
- Clashganna Lock west of the R729
- Bridge crossing on the R703 at Graiguenamanagh
- Local unnamed road east of bridge crossing R703 Graiguenamanagh
- Local unnamed road west of R729 leading to Carriglead Lock
- Local unnamed road west of Glynn leading to St Mullins Lock
- Local unnamed road leading to St. Mullin's car park

Where the proposed Blueway path will cross a roadway (See Section 3.2.3) it is proposed that combined cyclist and pedestrian crossings be installed as indicated below. These combined crossings will be uncontrolled and road traffic will have priority. A variety of uncontrolled crossings will allow cyclists and pedestrians to stop and cross the main traffic safely.

Localised road widening is proposed in a number of locations, where some additional width is required to facilitate the upgraded trail. The locations for the road widening is shown on the Drawings in Appendix 3-1 and is as follows:

#### **Co. Kildare**

- Local road approaching Huband Bridge
- Local Road approaching Ballyteague Bridge- both directions
- Local Road at Junction South of Ballyteague Bridge
- Local Road south of Glenaree Bridge
- Local Road south of Ummeras Bridge
- Local Road south of High Bridge

Impacts to existing traffic will take the form of;

- Time - due to delays at road crossing locations as signage and road markings are installed and at road widening areas when the works are underway.
- Inconvenience – due to temporary displacement of cars while resurfacing carparks.
- Usage of the existing public road network to bring plant and construction materials to the site.

A Traffic Management Plan will be prepared by the Contractor for each location for site access, where road widening is proposed and where road crossings are to be redesigned.

### **11.1.3 Traffic Impacts Due to Development Works**

There are likely to be temporary delays to local traffic due to all works associated with the project along the route.

The main mitigating factors related to potential traffic impacts include;

- Completion of the Blueway will be spread over a 24-month period.
- There are existing and well established access locations to the existing way marked trail for members of the public which will continue to be used.
- There are existing well established access locations for Waterways Ireland maintenance equipment which will continue to be used, particularly for the transport of construction materials.
- Local traffic at the intersections between the Blueway and the public roads will only be impacted on a temporary basis during the construction phase, due to the transient nature of the construction project as it moves along the Blueway.
- The proposed crossings have been designed to ensure that existing traffic has priority and in compliance with safety requirements.
- A limited amount of road widening is required and will only cause potential negative impacts during the construction phase on a temporary basis.
- Vehicular traffic on all public roadways will continue to have the right of way.

#### 11.1.4 Road Crossings for Pedestrians & Cyclists

Some minor delays may apply during the construction phase to locations where the proposed Blueway intersects a public road. Where the Blueway path will cross a roadway it is proposed that combined cyclist and pedestrian crossings be installed as indicated below. These combined crossings will be uncontrolled and road traffic will have priority. A variety of uncontrolled crossings will allow cyclists and pedestrians to stop and cross the main traffic safely. These include solutions that passively reduce traffic speeds and/or address the crossing as a two-stage process. It is proposed that cyclists and pedestrians must wait for a suitable gap in the traffic before crossing. The volume and speed of traffic on the road will influence the choice of these solutions. Heavier traffic and higher speeds will generally require controlled crossings.

The following are locations where the route crosses the road:

##### Co. Kildare

- Bridge at Lock 19
- Haberton Bridge
- Ballyteague Bridge
- Glenaree Bridge
- Rathangan Bridge
- South of Rathangan Bridge
- Spencer Bridge, Rathangan
- Wilson's Bridge
- Ummeras Bridge
- McCartney's Bridge
- High Bridge (Shepherd's Brook)
- Monasterevin Lifting Bridge and Moore's Bridge
- Bridge at Skirteen/Lock 25, Monasterevin
- Clougheen Bridge, Monasterevin
- Milltown Bridge
- Cardington Bridge
- Lennon's Bridge
- Augustus Bridge, Athy
- Ardreigh Lifting Bridge
- Levistown Lifting Bridge

##### Co. Laois

- Fisherstown Bridge
- Courtwood Bridge
- Vicarstown Bridge

##### Co. Carlow

- Wellington Bridge, Carlow
- Leighlin Bridge
- Bagenalstown
- Graiguenamanagh Bridge

The drawings in Appendix 3-1 also show the trail uses an existing underpass under the M7 motorway where signage is proposed.

The existing crossing point at Augustus Bridge was initially assessed in conjunction with Kildare County Council Roads Section and the National Road Authority (NRA). The use of a staggered crossing on a busy national route (N78) was assessed to be unsafe due to the inadequate width of the bridge and the level of complexity required for a

pedestrian crossing, given the number of minor access roads onto the bridge at this location.

Therefore, in order to mitigate the risks and provide a suitable safe crossing point on the canal it was determined that a footbridge downstream of Augustus Road Bridge would be required. The purpose of the proposed footbridge is to provide users of the Blueway with an easy and safe crossing point on the canal upstream of Lock 28 on the Grand Canal Barrow Line, thus providing safe access to the existing Horse Bridge and onto the east bank of the River Barrow.

### **11.1.5 General Construction Traffic**

Access to construct the trail shall be gained via all existing national, regional and local road access points along the length of the route between Lowtown and St. Mullin's, as listed in Section 11.1.1. It is estimated that a crew of 4-5 people will work on a specified section. Given the length of the proposed Blueway, it is likely that several crews may operate at the same time however the construction phase will be across 24 months. It is estimated that a crew of this size will complete approximately 50 metres of the proposed Blueway per day.

While some earthwork materials may be recovered from excavations undertaken within the site, the majority of materials used in the construction will have to be transported to the site via public roads via the access points listed in Section 11.1.1 of this EIS.

Materials for construction of the works will be imported and stockpiled in small quantities within the site boundaries in temporary construction compounds at the local and regional road access points as detailed on the drawings in Appendix 3-1. The temporary construction compounds will consist of a towable site hut, a portaloos, and space for 4-6 lorry loads of construction material. The remaining space will include turning space for vehicles.

Construction materials will be transported from stockpiled areas along the canal and river banks in dumpers for construction of the trail. Excavation and levelling of materials will be carried out using traditional plant such as excavators and mini excavators in restricted areas. Excavated material will be used for the reinstatement of the edges of the new trail to reduce material importation costs as well as minimise the risk of the introduction of invasive species and will reduce potential traffic effects. It is anticipated that the majority of the excavated soil and subsoils will be used to reinstate verges and shoulders along the route. Any excess soils will be removed to an appropriately licensed waste soils recovery facility.

The Contractor will be responsible for ensuring that existing public roads are kept free from excessive debris, dust and mud through the use of road cleaning vehicles. Vehicles transporting loose materials to/from the site will have their loads covered where necessary.

### **11.1.6 Traffic Management**

The conceptual traffic management arrangements described hereunder will be developed at detailed design stage into the 'Temporary Traffic Management Plan - Design' which will be provided to the appointed Contractor for information purposes. The Contractor will be responsible for developing and implementing the 'Temporary Traffic Management Plan - Construction'. The 'Temporary Traffic Management Plans' will be developed in accordance with the guidance contained in:

- Guidance for the Control and Management of Traffic at Road Works (2010); and
- Chapter 8 of the Traffic Signs Manual (2010).

The temporary traffic management arrangements will be developed on the basis of maintaining to the greatest degree possible the existing traffic lanes on all roads. However particular construction operations may require the temporary reduction in width and the implementation of temporary traffic management measures (Stop-Go Systems).

All existing car parking facilities will be used as indicated on the drawings in Appendix 3-1 and these areas shall be resurfaced with a bound or surface dressed finish as specified. Two new car parking locations are proposed at Rathangan and along the L-39321-0 near the M7 underpass south of Monasterevin. These include the sites listed below;

**Co. Kildare:**

- Lowtown
- Rathangan
- Spencer Bridge (proposed new car park)
- Athy
- Maganey Bridge

**Co. Laois:**

- Vicarstown
- L39321-0 near M7Underpass (proposed new car park)

**Co. Carlow:**

- Milford Canal Bridge
- Bagenalstown
- Ballyteiglea
- Clashganna
- Graiguenamanagh
- St.Mullins

These locations will be also provided with bicycle storage racks as detailed on Drawing No's T01/EBN/AA309/P/ K68, L25 & C55 contained in Appendix 3-1.

## **11.1.7 Operational phase of the Proposed Barrow Blueway**

### **11.1.7.1 Maintenance**

There will be ongoing maintenance of the Blueway after the initial development. Ongoing activities will include; periodic surface maintenance to ensure the design specification is upheld along with management of the grassy verge. After storm conditions there will be a need to make storm repairs to both the surface and the clearing of any debris left on the track from broken tree branches or fallen trees. Track wash outs, surface damage, etc. will require repair or redressing to provide a suitable surface again.

### **11.1.7.2 Potential ongoing traffic impacts due to use of the Blueway**

The previous application included a reference to the River Barrow Cycling Trail – Feasibility and Technical Specifications Report, 2012 a calculation on the existing and proposed users of the River Barrow walking trail was carried out. Based on information extrapolated from other similar public trail projects, it is assumed that existing walkers would represent 50% of the final number of walkers and that existing cyclists are at

10% of the projected number of cyclists. Visitors that both walk and cycle during their trip are estimated at being 20% of their final estimated number. This will increase the number of trips on roads in the area, however such trips will be divided between the many access points along the entire length of the proposed Barrow Blueway, and so the impacts will be imperceptible. This is included in Appendix 3-4.

However, in order to provide the Planning Authorities with additional information, and as a response to the Further Information Request, a further document was produced entitled 'Analysis of Existing and Projected Visitor Numbers along the Proposed Barrow Blueway Trail. This is included in Appendix 3-5. This document includes both data gathered from automated counters as well as physical recordings to validate this data. Both documents support the rationale for designing the upgraded trail to cater for less than 1,500 users per day.

An assessment of the 'current' and 'projected' usage of the proposed Barrow Blueway trail was undertaken on behalf of Waterways Ireland as part of the Further Information Request. The assessment

All existing car parking facilities will be utilised as indicated in Chapter 3 and these areas shall be resurfaced with a bound finish. These locations will provide safe access / egress to the Blueway and provide facilities such as parking for cars and bicycles, seats / picnic tables and trail information signage.

Two new car parking locations are proposed at Rathangan and near the M7 underpass south of Monasterevin Villages and towns within which official street parking can be found are:

- Robertstown (approximately 1 km from Barrow Blueway via Grand Canal Way)
- Rathangan
- Monasterevin
- Vicarstown
- Athy
- Maganey
- Carlow town
- Leighlinbridge
- Bagenalstown
- Goresbridge
- Borris (approximately 1 km from Blueway)
- Graiguenamanagh
- Saint Mullins

## **11.1.8 Likely and Significant Impacts and Associated Mitigation Measures**

### **11.1.8.1 Do-Nothing Effect**

If the proposed Blueway development were not to proceed, there would be no change to the existing use of the various road networks which currently includes the use of the Barrow way marked trail and its ongoing maintenance.

### **11.1.8.2 Construction Phase Impacts**

### **11.1.8.3 Road Crossings & Road Widening**

To facilitate safe access at road crossing points, a number of crossings for pedestrians and cyclists are proposed. Where the trail path will cross a roadway it is proposed that combined cyclist and pedestrian crossings be installed as described above in Section

11.1.4. Localised road widening is also proposed in a number of locations, where some additional width is required to facilitate the upgraded trail (Section 11.1.3).

The drawings in Appendix 3-1 contain the details of the proposed crossings and widenings, which vary depending on the location. In general, the road crossings include signs indicating priority signage to warn both motorists as well as cyclists and pedestrians, and a change in surfacing on the road. At some locations, zebra crossings, Toucan crossings and raised 'traffic tables' are proposed

The proposed changes at both the crossing locations and the road widening locations are considered relatively minor and will not cause significant impacts to the local road network or users of that network during the construction phase.

### **Mitigation Measures**

The conceptual traffic management arrangements described in this chapter will be developed at detailed design stage into the 'Temporary Traffic Management Plan – Design' which will be provided to the appointed Contractor for information purposes. The Contractor will be responsible for developing and implementing the 'Temporary Traffic Management Plan – Construction'. The 'Temporary Traffic Management Plans' will be developed in accordance with the guidance contained in:

- Guidance for the Control and Management of Traffic at Road Works (2010); and
- Chapter 8 of the Traffic Signs Manual (2010).

The temporary traffic management arrangements will be developed on the basis of maintaining to the greatest degree possible the existing traffic lanes on all roads. However particular construction operations may require temporary reduction in width and the implementation of temporary traffic management measures (Stop-Go Systems).

Consultation will take place with Kildare, Laois and Carlow County Councils regarding all works related to the public road network. All traffic management measures including diversions will be agreed with the relevant County Council roads department. If required, road users will be notified of any works with the potential to cause inconvenience. Machinery will be transported to site during non-peak traffic hours.

### **Residual Impacts**

The proposed changes, when implemented with the benefit of the proposed mitigation measures will be negative imperceptible and temporary.

#### **11.1.8.4 General Construction Traffic Impacts**

It is proposed to carry out the work using teams working in tandem and the machinery may include lorries, excavators, mini excavators, dumpers, and rollers. It is anticipated that a crew of approximately 4-5 workers will be in any particular part of the site at any one time.

The delivery and collection of the plant by a Heavy Goods Vehicle (HGV) will be required at the onset of any construction phase, when it will be delivered to site and removed at the end of construction period. Plant items will remain on location at the temporary construction compounds over-night.

A small number of HGV movements will occur each day for delivering and removing materials as required. The majority of the route consists of an unbound surface, for which approximately 750m<sup>3</sup> of material (Clause 804 topped with 6mm crushed gravel)



will be required per kilometer. The estimated construction materials volumes which will be required for the entire Blueway are shown in Chapter 3, Section 3.2.1.1. Although the materials volume is large for the entire project the materials will be delivered at numerous locations and over a long period of time (24 months).

In order to determine potential effects, it is prudent to calculate a 'worst case' scenario for the laying of 1km of new surfacing for a 1km stretch of the route assuming just one access location is available. In this situation, it will take 20 working days to complete 1km assuming 50m per day will be completed.

Estimates of the construction traffic which will be generated for each of the surfacing types is included in Table 11.1. It is assumed that the construction materials are delivered in standard 13m<sup>3</sup> capacity trucks for the surface dressings and unbound surfaces, 10m<sup>3</sup> capacity trucks for the bitmac/asphalt surfacing and 7m<sup>3</sup> capacity trucks for the concrete trucks.

**Table 11.1 – Construction Phase Traffic Generation**

| Development Component     | Distance (m) (approximate) | Construction Materials (m <sup>3</sup> ) | Traffic Generated per day                 |
|---------------------------|----------------------------|--|---|
| Unbound Surface (Type A)  | 1,000                      | 695                                      | 2.6                                       |
| Bitmac/Asphalt (Type B)   | 1,000                      | 880                                      | 3.5                                       |
| Surface Dressing (Type C) | 1,000                      | 125                                      | 0.5                                       |
| Concrete (Type D)*        | 1,000                      | 1,600                                    | **5.2                                     |
| Employees                 | -                          | -  | 4-5 cars                                  |
| Plant & Equipment***      |                            |  | 2 No load loaders with dumper & excavator |

\*c 1km in Co Carlow only (7m<sup>3</sup> capacity truck)

\*\*20m to be laid per day

\*\*\*Plant and equipment will be transported to the works areas once and will be parked overnight at the designated temporary construction compounds, which are off road.

To complete a 1km stretch of the Blueway with an unbound finish (mainly rural sections of the route) will generate approximately 2.6 trucks per day over a 20-day period which may have a slight impact as some of the access locations are rural with inherently low traffic volumes.

Where bitmac/asphalt surfacing is required (generally more urban areas) approximately 3.5 trucks per day will be generated which will be imperceptible in the context of the inherently higher traffic volumes in these areas.

There are two sections where concrete surfacing will be required. This includes the tidal section of the river at St Mullins Lock, as well as an area north of Leighlinbridge (in the vicinity of the M9 Motorway bridge) Co Carlow. It is expected that these sections of the route will be constructed over a number of months and that approximately 20m per day will be constructed. In this scenario, approximately 5.2 concrete trucks per day will be generated which may have a slight impact at these locations. There is an existing public roadway providing access to an existing extensive car park area at St Mullins Lock. The car park is proposed for upgrade and a temporary construction compound is proposed for this area. The existing car parking area provides sufficient

area for vehicle manoeuvring. Access to the Leighlinbridge site will via the N9 south of Rathvinden Lock and Leighlinbridge just west of the R705.

As noted in Section 11.1.5 above, it is anticipated that a majority of the excavated soil and subsoils will be used to reinstate verges and shoulders along the route. However, for the purposes of this assessment, it was estimated that approximately 5m<sup>3</sup> or 8 tonnes of material per 50m of track per day would require off-site recovery. Assuming that material will be removed from site using a 20 tonne tipper truck, this will result in 4 truck movements to/from the site a week or a total of 1,470 truck movements to/from the site over the duration of the project. This is considered to be a 'worst-case' estimate and the volume of soil and overburden material requiring off-site recovery will be much smaller.

In general, the traffic impacts resulting from the construction of the Blueway will last approximately 24 months, but due to the temporary and transient nature of the development, will only impact isolated locations of the local road network and will be generally slight in nature.

### **Mitigation**

The conceptual traffic management arrangements will be developed at detailed design stage into the 'Temporary Traffic Management Plan – Design' which will be provided to the appointed Contractor for information purposes. The Contractor will be responsible for developing and implementing the 'Temporary Traffic Management Plan – Construction'. The 'Temporary Traffic Management Plans' will be developed in accordance with the guidance contained in:

- Guidance for the Control and Management of Traffic at Road Works (2010); and
- Chapter 8 of the Traffic Signs Manual (2010).

Consultation will take place with Kilkenny, Kildare, Laois and Carlow County Councils regarding all works related to the public road network. All traffic management measures including diversions will be agreed with the relevant County Council roads department. If required, road users will be notified of any works with the potential to cause inconvenience. Machinery will be transported to site during non-peak traffic hours.

### **Residual Impacts**

It is anticipated that the additional traffic movements generate by the workers and general construction traffic will have a negative imperceptible temporary impact on the local road network.

#### **11.1.8.5 Operational Phase**

#### **11.1.8.6 Ongoing Maintenance Impacts**

There is currently ongoing maintenance of the existing way marked trail which will be ongoing after the initial development of the Blueway. There will be ongoing maintenance of the Blueway after the initial development. Ongoing activities will include; periodic surface maintenance to ensure the design specification is upheld along with management of the grassy verge. After storm conditions, there will be a need to make storm repairs to both the surface and the clearing of any debris left on the track from broken tree branches or fallen trees. Surface damage, etc. will require repair or redressing to provide a suitable surface again.

Fences, gates, cattle stops and signage will also require maintenance effort with age, weather, stock, vehicle and vandalism damage. The access required for this maintenance will be infrequent and localised to where the maintenance is required.

The potential impacts on traffic related to the required maintenance of the Blueway are imperceptible over the 'Do Nothing' scenario.

#### **Mitigation Measures**

No mitigation measures are proposed as the potential impacts are imperceptible.

#### **Residual Impacts**

Negative imperceptible permanent impact.

### **11.1.8.7 Increased Visitor Numbers**

The existing way marked trail is currently used by walkers and cyclists and the waterways are used by canoeists, anglers and others some of whom travel to the site using the local road networks throughout its length. The proposed upgrade of the trail to a Blueway will mean additional users of the existing trail. Not all of the additional users will necessarily travel to the site via the local road network however it is likely that a portion of the additional users will use the various local road networks and parking facilities along the route.

It is expected that users will continue to use existing parking facilities at locations where the Blueway passes built up areas. The Blueway passes through a number of towns and villages and it is important to note that one of the key functions of Blueways Trails is to support local enterprise and employment in the tourism/recreation sectors. They maximise the potential of existing assets and infrastructure by stimulating local communities and attracting tourism to areas which have not been traditionally associated with national or international visitors.

Additional trips will be divided between the many access points along the entire length of the proposed Barrow Blueway, and so the impacts will be imperceptible.

#### **Mitigation Measures**

All existing car parking facilities will be used and the locations listed in Chapter 3 shall be resurfaced with a bound finish. Two new car parking locations are proposed at Rathangan and near the M7 underpass south of Monasterevin. As stated above, it is not envisaged that there will be a further requirement for additional parking along the Blueway, as the above existing parking arrangements will allow people to park at numerous locations along the length of the route.

No further mitigation measures are proposed as the potential impacts are imperceptible.

#### **Residual Impacts**

Negative imperceptible permanent.

### **11.1.8.8 Cumulative Impacts**

The potential cumulative impacts between the proposed Blueway development and the projects described in Section 2.3.2 of this EIS, hereafter referred to as the other projects, have been considered in terms of traffic and transport.

As the potential for traffic impacts associated with a project of this nature is limited and can be considered imperceptible, the potential for cumulative impacts is also

limited. Other users of the waterway i.e. those using the canoe trail and recreational boating and fishing activities do not generate significant volumes of traffic and so cumulative impacts will be permanent and imperceptible.

## **11.2 Other Material Assets**

Other material assets include physical resources in the environment which may be of either human or natural origin. In the context of the proposed development and its location the main material assets include adjacent residential dwellings and any services which may be present along the route, the existing way marked trail, the Barrow Valley and the Grand Canal as well as the cultural heritage assets in the vicinity of the route.

### **11.2.1 Adjacent Residential Amenities**

The proposed Blueway is essentially an upgrade of the existing way marked trail which is currently used for recreational purposes by the public and is subject to ongoing maintenance by Waterway Ireland.

### **11.2.2 Existing Underground Services**

The construction methodology detailed in Section 3.3 of this EIS describes the manner in which the proposed Blueway will be constructed. Prior to works, the area where excavations are planned will be surveyed and all existing services will be identified. All relevant bodies i.e. ESB, Bord Gáis, Eir, etc. will be contacted and all drawings for all existing services sought.

Any underground services encountered at any point along the Blueway will be avoided.

### **11.2.3 Existing Way Marked Trail**

The existing way marked trail comprises the entire length of the proposed Blueway. The proposed Blueway is essentially an upgrade of the existing way marked trail which is currently used for recreational purposes and is subject to ongoing maintenance by Waterway Ireland.

### **11.2.4 Barrow Valley & Grand Canal**

The Barrow River and Grand Canal are existing economic assets to the Counties of Kildare, Laois and Carlow and their immediate environs.

### **11.2.5 Cultural Heritage**

Chapter 10 describes the Cultural Heritage features and significance of the site and its surrounds. It also assesses the potential for impacts on the cultural heritage assets.

### **11.2.6 Likely and Significant Impacts and Associated Mitigation Measures**

#### **11.2.6.1 Construction Phase**

**Adjacent Residential Amenities** – There will be temporary impacts at localised locations associated with the construction of the Blueway which will impact the amenity of the adjacent residential properties. This will be a negative, slight, temporary impact. The consideration of potential impacts on human health are examined separately in the Air & Climate, Noise & Vibration, Hydrology & Hydrogeology and Traffic Sections of the EIS.

**Services** -The proposed development will not impact any above ground networks (e.g. telecommunications), and below ground services will be avoided. In the event of an

accidental damage to an underground service, this will create a short-term slight negative impact for users of local services.

**Way Marked Trail** – There will be temporary impacts at localised locations associated with the construction of the Blueway. Localised sections of the route may be closed temporarily to allow for the new surfacing and other infrastructure to be installed. In general, the way marked trail will however remain open and available for use to the general public. Every effort, subject to health and safety considerations, will be made to ensure the uninterrupted access to the way marked trail. The potential impacts during the construction phase is a negative, slight, temporary impact for existing users.

**Barrow Valley & Grand Canal** - There will be temporary impacts at localised locations associated with the construction of the Blueway which will impact the scenic setting. This will however be a negative, slight, temporary impact.

**Cultural Heritage** – Potential impacts on cultural heritage as described in Chapter 10.

### **Mitigation**

Mitigation measures for each potential receptor are detailed in each relevant chapter of this EIS and include the following:

- Any area where excavations are planned will be surveyed and all existing services will be identified prior to commencement of any works.
- Construction traffic will be subject to standard construction health and safety requirements which will ensure traffic speeds are limited to 15 mph/25 kph.
- All works will be carried out in a safe manner and members of the public will be informed through the provision of advance notification and advised in relation to any temporary localised traffic management protocols (e.g. local stop-go traffic control systems etc.).
- Liaison will be held with the relevant sections of the Local Authority including all the relevant area engineers to ensure all services are identified.
- Where possible the way marked trail will remain open to the public during the construction phase.

### **Residual Impacts**

The residual impacts during the construction phase will be negative, temporary and slight.

#### **11.2.6.2 Operational Phase**

**Adjacent Residential Amenities** – Whilst the proposed Blueway is anticipated to increase visitor numbers, this is likely to have a neutral imperceptible long-term impact on adjacent residential properties.

**Services** -There will be no impacts on services during the operational phase.

**Way Marked Trail** – The existing way marked trail will be upgraded, this will have a positive moderate permanent impact.

**Barrow Valley & Grand Canal** – The potential impacts on landscape and visual amenity is described in detail in Chapter 9. In general, the proposed upgrade will have an imperceptible impact on the scenic quality of the existing Barrow Valley and Grand Canal but will have a permanent positive impact on these assets from an economic viewpoint.

**Cultural Heritage** – Potential impacts on cultural heritage is described in Chapter 10. The potential for negative impacts on cultural heritage is limited during the operational phase and it is more likely that these assets will gain greater appreciation due to the proposed development.

**Mitigation Measures**

Detailed mitigation measures related to Human Beings including material assets are described in Chapter 4, related to landscape in Chapter 9 and related to Cultural Heritage in Chapter 10.

**Residual Impacts**

The residual impacts on other material assets during the operational phase will be generally permanent and positive.

**11.2.6.3 Cumulative Impact**

The potential cumulative impacts between the proposed Blueway development and the projects described in Section 2.3.2 of this EIS, hereafter referred to as the other projects, have been considered in terms of materials assets.

On balance, there will be a permanent positive cumulative operational phase impact in relation to other material assets.