

21. Summary of Residual Impacts

21.1 Introduction

Residual Effects can be considered as those that remain significant following the application of mitigation measures, although they are likely to have been reduced in magnitude as a result of the mitigation measure implemented.

The proposed N9/N10 road development will have a number of positive residual impacts, including an improved and safer road network, and improved journey times. These benefits have secondary effects resulting in the potential to attract new businesses and people to the areas along the proposed new road. Further positive residual effects are detailed in the relevant chapters in this EIS.

The following chapter provides a summary of the residual effects that are likely to be present following implementation of the mitigation measures detailed in the previous chapters. The relevant chapters should be referred to for further detail of the residual effects.

21.2 Community Impacts

21.2.1 Regional and Sub-Regional Impacts

In general, the improved road network brought about by the completion of the scheme will have significant benefits at the regional and sub-regional levels. Travel times will be reduced, and journeys will be safer. This will enhance prospects for economic development and will improve accessibility of recreational and cultural facilities.

The inhabitants of Thomastown will enjoy the benefits resulting from the reduction in traffic volumes through the town, i.e. the relief from existing severance and the improvement in amenity and safety. The accessibility of schools, recreational facilities, etc. will also be significantly improved.

The communities in Mullinavat, Ballyhale, Knocktopher, Stoneyford, Gowran and Paulstown will likewise benefit from the improved social environment resulting from the reduced traffic volumes travelling through the villages.

Elsewhere along the rural stretches of the N9 and N10, the significantly reduced traffic volumes will create a more pleasant environment for local communities. Accessibility of neighbouring properties will be enhanced.

Certain businesses, particularly those situated in the villages and on the rural sections of the existing N9/N10, will suffer as a result of the loss of passing trade.

The improved road network will increase the attractiveness of the sub-regional study area for residential, retail and other commercial development. Areas in close proximity to access points onto the new roads will be particularly targeted. However, any such development would be subject to the usual development control policies/approvals of the planning authorities.

21.2.2 Local Impacts

Moderate or major negative impacts remaining after implementation of these mitigation measures are summarised in Tables 7.14a, b and c of Chapter 17.

21.2.3 Overall

On balance, with the provision of the proposed mitigation measures, the positive impacts of the scheme will considerably outweigh the negative impacts. The community as a whole will benefit from the completion of the scheme.

21.3 Noise and Vibration

21.3.1 Noise during Construction

During the construction phase of the project there will be some small impact on nearby residential and business properties due to noise emissions from site traffic and other activities. The application of binding noise limits and hours of operation, along with implementation of appropriate noise control measures, will ensure that noise impact is kept to a minimum.

21.3.2 Noise during Operation

There are a number of locations highlighted in this document where the proposed scheme meets the three conditions that must be satisfied before noise mitigation measures are deemed necessary in accordance with NRA guidelines. (See Table 20.1 of Chapter 20)

In these instances, mitigation measures have been considered and commented on. Once mitigation measures have been assessed all locations comply with the adopted criteria with the exception of locations A48 and A49.

At these locations, the Landscape and Visual aspects were key considerations, as discussed in Chapter 10 of this EIS.

However, it can be confirmed that in respect of these locations a structured approach has been taken in order to ameliorate road traffic noise as far as possible, thereby complying with the NRA guidelines.

It may be concluded that the proposed road scheme complies with the appropriate guidance in relation to noise; hence the associated impact is considered acceptable.

Furthermore it should be noted that traffic noise levels would be expected to decrease at a number of locations in the vicinity of existing national and primary routes in the area as a result of the proposed development.

21.3.3 Vibration during Construction

Measures shall be taken to reduce vibration due to plant and machinery on the site and no machine which uses the dropping of heavy weights for the purpose of demolition will be permitted. Where appropriate, at agreed locations, prior to construction activities, baseline vibration surveys may be carried out. There is therefore not likely to be any significant vibration impacts during the construction phase.

21.3.4 Vibration during Operation

The proposed road development is not expected to give rise to vibration that is either significantly intrusive or capable of giving rise to structural or even cosmetic damage.

21.4 Air Quality

21.4.1 Construction

Once the mitigation measures outlined in Chapter 9 are implemented, the residual impact of construction on air quality will not be significant.

21.4.2 Operation

No residual impacts are anticipated.

21.5 Landscape and Visual

For the purposes of discussing the impacts, the operation stage is considered to include the period after opening of the road when planting, as mitigation, has established.

While landscape and visual impact will be most pronounced during the construction stage and in the short term thereafter (pre-establishment), general negative visual impact will continue to arise from residential and from other property close to or adjoining the road boundary. Visual

impact will arise primarily through visual intrusion of elevated sections of embankment, and operational traffic. Occasionally impact will arise through visual obstruction where properties are in proximity to embankments. Similarly, the major junctions have the potential for significant visual intrusion; embankments in combination with elevated traffic and illumination will significantly and permanently alter the local character of the immediate vicinity.

As planting establishes along the proposed road development the severity and prominence of visual intrusion will be mitigated especially where the scheme is at distance from impacted properties or where such properties are already similarly impacted by the existing infrastructure.

Of the 621 locations identified, 362 will have imperceptible impact in the post-establishment stage. A further 153 properties will have slight negative impact and 67 properties will have moderate levels of negative visual impact. However, 39 properties will continue to have significant (29) or profound (10) negative visual impact after the pre-establishment stage. Details of all the impacted properties are set out in Appendix 10.1 Landscape and visual and are illustrated on Figures 10.3 to 10.26.

The proposed development will have a positive impact in terms of reduced traffic and improved residential amenity for the many properties sited close to the existing N9 and N10, and particularly for those properties within the settlements of Mullinavat, Knocktopher, Lukeswell; Ballyhale, Stoneyford; Danesfort Cross; Clifden; Gowran and Dungarvan, Co Kilkenny.

21.6 Terrestrial Ecology

21.6.1 General

Habitats that are damaged and disturbed will be left to regenerate naturally or will be rehabilitated and landscaped, as appropriate, once construction is complete.

Temporary negative impacts on fauna during the construction stage will be reduced following construction.

Residual negative impacts will include loss and fragmentation of semi-natural habitats, severance of wildlife corridors and territories of larger mammals, and loss of existing and potential bat roosts. The proposed habitat recreation, replacement planting and landscaping will in the long term lessen the residual impacts with regard to the removal of woodland, hedgerows, treelines and other areas of semi-natural habitat.

21.6.2 Designated Areas Residual Impacts

The residual impacts on specific crossing points are outlined below:

River Nore

The proposed crossing of the River Nore will result in an impact on a priority Annex I habitat (Residual alluvial forest), wet grassland, marsh and ash-hazel woodland and hence is classified as a severe negative residual impact. A significant portion (0.15ha) of the area of alluvial woodland will be impacted. However, planting of 0.34ha of similar species in a suitable area of floodplain, will compensate for the area lost. A greater area of riparian woodland will be created, reducing the overall residual impact over time.

River Barrow

The southern tip of Cloghrick Wood pNHA (which is within the boundary of the River Barrow and River Nore System cSAC) will be impacted resulting in the loss of a small, area of woodland and, constituting a severe negative residual impact. However, its residual impact will be reduced over time due to the addition of oak trees by way of compensatory planting.

King's River

The loss of areas of high local ecological value within the King's River cSAC boundary, constitute a major negative residual impact.

There is some riparian woodland - a priority Annex I habitat (Residual alluvial forest) - on the southern bank upstream of the proposed crossing point at the King's River. The proposed road alignment will not impact it. However, a drainage outfall at Rathduff will run adjacent to this woodland, but within the boundary of the existing local road, thereby avoiding any impact on this woodland.

Other River cSAC Crossings

The impact on areas of low ecological value within the cSAC boundary adjacent to the proposed crossings of the Pocke River, the first order tributary of the Little Arrigle River and the Madlin River, each constitutes a moderate negative residual impact.

Hugginstown Fen

There will be no direct or indirect impact on Hugginstown Fen (cSAC) due to the construction of the roadway in close proximity to the fen. In-depth hydrological studies have found that the proposed route will have no hydrological impact on the fen. The residual impact on Hugginstown Fen is classified as neutral.

21.6.3 Other Residual Impacts

Residual Impacts on Fauna

There will be temporary negative impacts on fauna during the operation as a result of disturbance. These impacts will be reduced following habituation over time.

Given successful implementation of mitigation measures for bats, the overall impact of loss of the structures identified as having potential for bat use would have a minor negative impact.

Danganbeg Wetland

In relation to Danganbeg wetland, provided the mitigation measures proposed by the hydrologists are implemented, the proposed road will not result in a significant overall hydrological effect on the integrity of the site. The localised impacts on the western side of the wetland will not have any hydrological or ecological effect on the eastern side of the wetland where the tufa springs are located. However there will be loss of some wet grassland, which is of high local ecological value. Due to the importance of the site as a whole, the residual impact is considered to be a major negative.

21.6.4 Summary

The residual impacts of the terrestrial sites are outlined in Table 11.5 of Chapter 11.0 Terrestrial Ecology. Of the 74 ecological sites within the route corridor, two are of severe negative impact, eight are of major negative impact, 35 are of moderate negative impact, 26 sites are of minor negative impact and three result in a neutral impact.

21.7 Aquatic Ecology and Hydrology

21.7.1 Construction

Provided good working practices are adopted during construction, there will be no significant residual impact on water quality.

21.7.2 Operational Phase

Designated Conservation Areas

The residual impact assessment assumes that there will be no direct or indirect impact on the designated watercourses and that every possible mitigation measure will be employed to minimise the risk. It is difficult to assess the residual impact of a watercourse, as any impact arising during the operational stage of a roadway could lead to any level of impact due to the possible risks.

When a roadway crosses a cSAC, whose qualifying interest is the watercourse, there is an inherent risk associated with it which, despite all the proposed mitigation, still exists. These risks are minimised through the design and standards with which the roadway is constructed, but it cannot be ruled out entirely. Any permanent negative impact on a watercourse that is a designated cSAC, is severe. Any temporary or short-term localised impact on a designated watercourse constitutes

The proposed clear span crossings over the watercourses within the River Barrow/River Nore cSAC have been selected to avoid any direct impacts on the river channel thus protecting the qualifying interest of the cSAC. Where all reasonable mitigation measures are taken to prevent any indirect impacts on the qualifying interests of the cSAC, the proposed project will not adversely affect the integrity of the site and hence the resultant residual impact is not significant (Table 12.2 of Chapter 12).

Summary of Ecological Residual Impacts

The residual impacts on each watercourse along the proposed route within this section are outlined in Table 12.5 of Chapter 12. Of the 39 watercourse crossings, 15 are subject to moderate negative residual impact, 13 are subject to minor negative residual impact and the 11 remaining have no significant impacts.

Summary of Hydrological Residual Impacts

Through the provision of a hydraulically adequate road surface water drainage network, appropriate cross drainage and attenuation at appropriate points of discharge points, no adverse residual impacts are anticipated on the existing hydrological setting.

21.8 Soils, Geology and Hydrogeology

21.8.1 Construction

Depending on ground conditions encountered, construction dewatering is likely to be required at certain locations. Road drainage and construction dewatering may affect well water levels adjacent to the road. This is not anticipated to be significant.

Some local dewatering by cuttings may occur locally to Danganbeg wetland, but the hydraulic impact is likely to be of low magnitude and of insignificance to the wetland.

21.8.2 Operation

There is likely to be a reduction in catchment size and associated groundwater recharge to

Hugginstown Fen. The maximum reduction in catchment and associated impact on groundwater recharge is 1.6 to 1.8%. However, this is not considered to be a significant impact in terms of wetland hydrology.

The permeability of subground conditions to the west of Danganbeg wetland will be changed. With the mitigation measures outlined, it will be improved in places such as in Fill 2. With the mitigation measure proposed, it is likely to lead to a positive impact on the wetland by manipulating construction design to improve recharge to the wetland.

21.9 Climate

The residual impact on climate from the operation of the scheme will be insignificant.

21.10 Material Assets – Agriculture

Residual impacts will depend to some extent on the measures relating to drainage, land acquisition and loss of farming facilities that may be agreed.

Further measures to compensate farmers due to land acquisition, drainage works, reinstatement of boundaries and loss of facilities are part of the compensation under the compulsory purchase system.

21.11 Material Assets – Non-agricultural Properties

It is anticipated that there will be no significant residual impact in relation to non-agricultural material assets.

21.12 Archaeology and Cultural Heritage

No significant residual impacts are anticipated if the mitigation measures presented for the impacted archaeological sites, areas of potential and waterways are implemented.

The provision of the car parking and pedestrian access facility at Sheepstown will have a beneficial residual impact on visitors to the National Monument site, following the completion of the scheme.

21.13 Architectural Heritage

Residual impacts may take the form of visual intrusion on sites or as a result of the loss of amenity value of affected sites.