

13. MATERIAL ASSETS

13.1 Introduction

Material Assets are defined as “resources that are valued and that are intrinsic to specific places”, which can be of human or natural origin. Material Assets are also defined as “built services and infrastructure”. Most assets of natural origin are assessed elsewhere within this Environmental Impact Assessment Report (EIAR), including biodiversity (in Chapter 6), land & soil (Chapter 7), water quality (Chapter 8), air quality and climate (Chapter 9), and landscape (Chapter 11).

This chapter of the EIAR addresses, therefore, the likely significant effects of the Proposed Development on assets which are intrinsically of human origin:

- Traffic and Transport – Section 13.1
- Utilities and Services – Section 13.2

Another material asset of human origin, archaeology and cultural heritage, is addressed in Chapter 12.

A full description of the Proposed Development is provided in Chapter 4 of this EIAR, including construction methodology details and phasing. While the developments described in Chapter 4 will be subject to separate planning applications, it was considered prudent to consider all six applications together under one EIAR, due to the proximity, construction timelines and shared infrastructure between the developments. Site A, Site B, Site C, MOOR, Kildare Bridge and Moyglare Bridge will be collectively referred to as the ‘Proposed Development’ henceforth.

13.1.1 Statement of Authority

This section of the EIAR has been compiled by Niamh McHugh, David Naughton, Daire O’Shaughnessy and reviewed by Michael Watson, of MKO. Niamh is a Graduate Environmental Scientist and holds a BSc (Hons) in Environmental Science from the National University of Ireland, Galway. Since joining the company, Niamh has been involved in the preparation of chapters for a number of Environmental Impact Assessment Reports for large-scale developments. David is an Environmental Scientist with over five years of consultancy experience with MKO and has been involved in a number of EIAR applications, predominantly in renewable energy, namely onshore wind. David has worked as project manager for a number of EIAR applications, providing a pivotal link liaising between the applicant and the EIAR project team to ensure all work is carried out to a high standard. David holds a BSc (Hons) in Environmental Science. Daire O’Shaughnessy is an Environmental Scientist who holds a B.Sc (Hons) in Environmental Science with three years of consultancy experience with MKO and has been involved in a range of EIAR applications. Michael Watson is a Project Director with MKO; with over 18 years’ experience in the environmental sector. His project experience includes the management and productions of Environmental Impact Assessments (EIS/EIAR), particularly within the wind energy sector.

This chapter of the EIAR takes into the account the details and findings of the following reports and assessments, which are presented in the Appendices of the EIAR:

- Volume 3a, 3b & 3c(i) - Appendix 4-1: Mobility Management Plans, prepared by O’Connor Sutton Cronin Consulting Engineers
- Volume 3a, 3b & 3c(i) Appendix 4-3 and Volume 3d, 3e, 3f – Appendix 4-2: Construction and Environmental Management Plans (including Construction Traffic), prepared by O’Connor Sutton Cronin Consulting Engineers
- Volume 3a, 3b & 3c(i) - Appendix 4-9: Engineering Services Reports, prepared by O’Connor Sutton Cronin Consulting Engineers

- Volumes 3a, 3b, 3c(i) & 3d Appendix 13-1: Traffic Impact Assessments, prepared by O'Connor Sutton Cronin Consulting Engineers
- Volume 3a, 3b & 3c - Appendix 13-2: Road Safety Audits, prepared by Bruton Consulting Engineers.

13.1.2 Policy Context, Guidance and Legislation

This chapter of the EIAR has been prepared in accordance with the guidance and legislation set out in Section 1.4 of Chapter 1. The relevant policy context for the Proposed Development is set out in Sections 2.4 to 2.7 of Chapter 2 of the EIAR, including reference to national, regional and local policy.

The Traffic Impact Assessments set out in Appendix 13-1 of this EIAR, which have informed the preparation of the Traffic and Transport section of this chapter, were prepared in accordance with the following:

- *Traffic & Transport Assessment Guidelines (2014)* as published by the former National Roads Authority (NRA) now Transport Infrastructure Ireland (TII);
- *Guidelines for Traffic Impact Assessment (1997)* as published by the Chartered Institute of Highways & Transportation.

13.2 Traffic and Transport

13.2.1 Introduction

The purpose of this Traffic and Transport EIAR Section is to assess the traffic impact of the Proposed Developments on the surrounding network. The effect of travel demands and movement generated by the Proposed Development are described throughout this Section, which also sets out the proposed measures to mitigate these effects where necessary.

This section of the EIAR is written as a concise summary of the Traffic Impact Assessments (TIA) and Mobility Management Plans (MMP), included in Appendices 13-1 and 4-1 in Volumes 3a, 3b 3c(i) & 3c(ii) and the Traffic Impact Assessment (TIA), included as Appendix 13-1 in Volume 3d for the MOOR of this EIAR. It also refers to the Road Safety Audits presented in Volumes 3a & 3b Appendix 13-2 of the EIAR. Rather than repeat the detailed information and traffic assessments carried out within these reports, they are referred to throughout this Section, with the impact assessment findings presented below.

The TIAs and MMPs for the Proposed Development have been prepared by Wian Marais of O'Connor Sutton Cronin & Associates (OCSC). Wian is a professional engineer under the Engineering Council of South Africa and the Institute of Municipal Engineering of Southern Africa. Wian has extensive knowledge in traffic engineering, traffic modelling/ simulation, geometric design and transportation planning. And has experience in traffic & transport assessment and traffic redistribution within mixed-use developments.

13.2.2 Scoping and Consultation

The scope for this assessment has been informed by consultation with statutory consultees, bodies with environmental responsibility and other interested parties as described in Chapter 2 of the EIAR. The relevant consultee responses are summarised below. Full copies of all scoping responses are provided in Appendices 2-1 of this EIAR.

Department of Transport

The Department of Transport responded to the Scoping Document on 1st September 2021, stating the following:

“Given the proximity of the Moygaddy sites to the Royal Canal Greenway and NTA plans for additional cycling and pedestrian facilities within Maynooth, it will be vital that the masterplan being developed includes significant provision for cycling and pedestrian access from the sites to Maynooth train station, the University and the Royal Canal Greenway and also significant provision for cycle parking within the sites.”

The Proposed Development includes for the provision of additional cycling and pedestrian facilities within Moygaddy, including provision of parking/storage for bicycles and road upgrade works to facilitate cycling and pedestrian access along the R157, L22143 and Kildare Bridge. Further details on these works are presented in the detailed development description in Chapter 4 of this EIAR and in the Mobility Management Plans in Volumes 3a, 3b & 3c(i) in Appendix 4-1.

Transport Infrastructure Ireland

Transport Infrastructure Ireland (TII) responded to the Scoping Document on 23rd September 2021. Their response provided recommendations to be followed when preparing the EIAR, which can be seen in full under Appendices 2-1 of this EIAR. All relevant TII guidelines and policies, primarily in relation to the environment and planning, have been taken into account in the preparation of this assessment.

13.2.3 Assessment Methodology

The Traffic Impact Assessments in Volumes 3a, 3b, 3c(i) & 3d - Appendix 13-1 of this EIAR, which have informed the preparation of this Section, were carried out in line with the Transport Infrastructure Ireland's (TII) Traffic and Transport Assessments Guidelines as follows:

- **Baseline Transportation Review:** Undertaking of a desktop review of current planning policies and objectives, existing public transport services, walking and cycling network and existing and roads infrastructure. This also included a review of relevant committed developments adjacent the proposed development site.
- **Baseline Traffic Flow Review:** Undertake site visits to review current traffic conditions and to make observations on same. Identify key junctions where traffic count survey information is required.
- **Future Transport Infrastructure Review:** Undertake review of current transport policies, plans and strategy to identify future short, medium and long terms transport proposals which may have a material impact on the travel behaviour associated with the proposed development.
- **Development Proposals Review:** Review the proposed development in terms of provision for access by walking, cycling, public transport and car.
- **Transport Characteristics Review:** Undertake an assessment of the likely modal share, trip generation, assignment and distribution having regard to existing and potential future traffic patterns on the local road network.
- **Identification of Local Road Network Proposals:** Identify proposed junction works on the local road network in terms of new junctions, improvements for pedestrians, cyclists and traffic at existing junctions.
- **Assessment of Road Traffic Impact:** Undertake an assessment of the key junctions during the base year, opening year, opening year plus five and opening year plus fifteen assessment years for both ‘without development’ and ‘with development’ scenarios in order to determine future operation and any necessary mitigation measures required

13.2.4 Receiving Environment

Chapter 4 of this EIAR on Description of the Proposed Development sets out a detailed description of the Proposed Development site, including reference to existing site access routes and proposed updates to same. A summary of the relevant study areas, as per the TIAs is provided as follows:

13.2.4.1 Strategic Employment Zone (Site A)

The subject site is located on the southernmost extent of County Meath, aligning with the county boundary to Co. Kildare. It is approximately 2km north of the town of Maynooth, Co. Kildare, which forms part of a larger strategic landbank on zoned lands known as Maynooth Environs. The site is immediately bound by:

- R157 Maynooth – Dunboyne Regional Road, to the east;
- Agricultural lands to the north and south; and
- Moygaddy Stream to the west.

13.2.4.2 Healthcare Facilities (Site B)

The subject site is located on the southernmost extent of County Meath, aligning with the county boundary to Co. Kildare. It is approximately 1.5km north of the town of Maynooth, Co. Kildare, which forms part of a larger strategic landbank on zoned lands known as Maynooth Environs. The site is immediately bound by:

- R157 Maynooth – Dunboyne Regional Road, to the east;
- Agricultural lands to the north and west; and
- River Rye Water, to the south.

13.2.4.3 Strategic Housing Development (SHD, Site C)

The subject site is located on the southernmost extent of County Meath, aligning with the county boundary to Co. Kildare, and is approximately 1.5km north of the town of Maynooth, Co. Kildare, and is immediately bound by:

- Agricultural lands to the east, north and west;
- River Rye Water to the south.

13.2.4.4 Maynooth Outer Orbital Road (MOOR)

The planning application for the MOOR includes for the construction of c1.7km of new distributor road linking the existing R157 Regional Road, located to the east of Site B, to the Moyglare Hall road in Mariavilla, located southwest of the SHD (Site C) site. The distributor road will comprise of 7.0m carriageway with turning lanes where required, footpaths, cycle tracks and grass verges. Road upgrade works will also be required to facilitate the delivery of the MOOR, including approximately 750m section of proposed road upgrade works along the existing R157 Regional Road from the existing Kildare Bridge up to the new proposed signalised junction with the MOOR.

Access to the proposed MOOR will be via the R157 Regional Road to the south and east, with access also being provided from the L2214 and L6219 Local Roads to the north and west of the site. Access will also be provided to the MOOR via the proposed Moyglare Bridge to the south.

13.2.4.5 Kildare Bridge

The road network associated with the Kildare Bridge planning application can be broken-up in two distinct elements, mainly:

1. *Approximately 115m section of proposed road upgrade works along the existing R157 Regional Road between the existing Kildare Bridge and the Dunboyne Roundabout in County Kildare; and*
2. *Installation of new standalone pedestrian and cycle link adjacent to the Kildare Bridge.*

The main access to the Kildare Bridge site will be via the R157 Regional Road (Dunboyne Road).

13.2.4.6 Moyglare Bridge

The road network associated with the Moyglare Bridge planning application can be broken-up in two distinct elements, mainly:

1. *Installation of 2 no. new single span bridge over the River Rye and Blackhall Little Stream to facilitate the delivery of the MOOR; and*
2. *Construction of approximately 160m section of new access road linking the existing Moyglare Hall Road to the south of the site to the proposed single span bridge crossing the River Rye.*

The main access to the Moyglare Bridge Planning Application site will be via the existing Moyglare Hall Road to the south of the site.

13.2.5 Likely and Significant Effects and Associated Mitigation Measures

The findings of this section are based on the Traffic Impact Assessments prepared by O'Connor Sutton Cronin Consulting Engineers, presented in Volumes 3a, 3b, 3c & 3d - Appendix 13-1 of this EIAR. It also refers to the Construction and Environmental Management Plans (CEMPs, including Construction Traffic), also prepared by O'Connor Sutton Cronin Consulting Engineers, and the Road Safety Audits prepared by Bruton Consulting Engineers, presented in Volume 3a, 3b & 3c as Appendix 13-2.

The impact classification is based on the Environmental Protection Agency (EPA) terminology presented in Table 1-1 in Chapter 1 of this EIAR.

13.2.5.1 'Do-Nothing' Scenario

If the proposed development does not proceed, there will be no additional traffic generated or accommodation works carried out on the local road network and therefore no direct or indirect effects on roads and traffic. This includes no positive impacts resulting from the junction and road upgrades, additional capacity or improved pedestrian and cycling infrastructure to be provided by the proposed development.

13.2.5.2 Construction Phase

13.2.5.2.1 Strategic Employment Zone (Site A)

Pre-Mitigation Impact

The Traffic Impact Assessment in Volume 3a, Appendix 13-1 estimates that there will be a maximum of twelve HGVs serving the site during any given daytime hour. The two-way HGV traffic is unlikely to be higher than 24 vehicles per hour at any point of the day. Based on an 8-hour day and a 22 working day month, 24 vehicles per hour equates to 4,224 vehicles per month.

In the absence of mitigation measures, the additional traffic would give rise to a short-term, moderate negative impact on the surrounding transport network.

Proposed Mitigation Measures

- Excavated soil will be re-used within the site where possible, for fill or landscaping purposes, to reduce the amount of material to be transported off-site.
- The contractor will maximise the use of precast materials or prefabricated materials wherever possible and economically viable.
- Adequate storage space will be provided on site for the storage of materials and a site strategy will be put in place to manage the timing of deliveries to the site.
- Trips by construction workers will be limited by the provision of car-sharing and Travel to Work Scheme benefits. Construction workers will be encouraged to use public transport to the maximum possible extent.
- The appointed contractor will put in place measures to keep public roads free of detritus and debris. This will include undertaking regular road sweeping by a mechanical sweeper and the provision of wheel wash facilities on the site.
- A design stage Construction and Environmental Management Plan (CEMP) is presented in Volume 3a Appendix 4-3 of this EIAR. The CEMP includes traffic management measures for the proposed development site, which will be finalised upon agreement with the relevant Local Authority in advance of the commencement of construction.

Residual Impact

Following the application of traffic control measures throughout the construction phase, the overall short-term impact on the receiving network will be slight.

Significance of Effects

The construction phase of the proposed development will have a short-term slight negative effect on the surrounding transport network. There will be no significant effects on the network.

13.2.5.2.2 Healthcare Facilities (Site B)

Pre-Mitigation Impact

The Traffic Impact Assessment in Volume 3b Appendix 13-1 estimates that there will be a maximum of twelve HGVs serving the site during any given daytime hour. The two-way HGV traffic is unlikely to be higher than 24 vehicles per hour at any point of the day. Based on an 8-hour day and a 22 working day month, 24 vehicles per hour equates to 4,224 vehicles per month.

In the absence of mitigation measures, the additional traffic would give rise to a short-term, moderate negative impact on the surrounding transport network.

Proposed Mitigation Measures

- Excavated soil will be re-used within the site where possible, for fill or landscaping purposes, to reduce the amount of material to be transported off-site.
- The contractor will maximise the use of precast materials or prefabricated materials wherever possible and economically viable.
- Adequate storage space will be provided on site for the storage of materials and a site strategy will be put in place to manage the timing of deliveries to the site.
- Trips by construction workers will be limited by the provision of car-sharing and Travel to Work Scheme benefits. Construction workers will be encouraged to use public transport to the maximum possible extent.
- The appointed contractor will put in place measures to keep public roads free of detritus and debris. This will include undertaking regular road sweeping by a mechanical sweeper and the provision of wheel wash facilities on the site.
- A design stage Construction and Environmental Management Plan (CEMP) is presented in Volume 3b Appendix 4-3 of this EIAR. The CEMP includes traffic management measures for the proposed development site, which will be finalised upon agreement with the relevant Local Authority in advance of the commencement of construction.

Residual Impact

Following the application of traffic control measures throughout the construction phase, the overall short-term impact on the receiving network will be slight.

Significance of Effects

The construction phase of the proposed development will have a short-term slight negative effect on the surrounding transport network. There will be no significant effects on the network.

13.2.5.2.3 Strategic Housing Development (SHD, Site C)

Pre-Mitigation Impact

The Traffic Impact Assessment in Volume 3c(ii) Appendix 13-1 estimates that there will be a maximum of twelve HGVs serving the site during any given daytime hour. The two-way HGV traffic is unlikely to be higher than 24 vehicles per hour at any point of the day. Based on an 8-hour day and a 22 working day month, 24 vehicles per hour equates to 4,224 vehicles per month.

In the absence of mitigation measures, the additional traffic would give rise to a short-term, moderate negative impact on the surrounding transport network.

Proposed Mitigation Measures

- Excavated soil will be re-used within the site where possible, for fill or landscaping purposes, to reduce the amount of material to be transported off-site.
- The contractor will maximise the use of precast materials or prefabricated materials wherever possible and economically viable.
- Adequate storage space will be provided on site for the storage of materials and a site strategy will be put in place to manage the timing of deliveries to the site.

- Trips by construction workers will be limited by the provision of car-sharing and Travel to Work Scheme benefits. Construction workers will be encouraged to use public transport to the maximum possible extent.
- The appointed contractor will put in place measures to keep public roads free of detritus and debris. This will include undertaking regular road sweeping by a mechanical sweeper and the provision of wheel wash facilities on the site.
- A design stage Construction and Environmental Management Plan (CEMP) is presented in Volume 3c(i) Appendix 4-3 of this EIAR. The CEMP includes traffic management measures for the proposed development site, which will be finalised upon agreement with the relevant Local Authority in advance of the commencement of construction.

Residual Impact

Following the application of traffic control measures throughout the construction phase, the overall short-term impact on the receiving network will be slight.

Significance of Effects

The construction phase of the proposed development will have a short-term slight negative effect on the surrounding transport network. There will be no significant effects on the network.

13.2.5.2.4 **Maynooth Outer Orbital Road (MOOR)**

Pre-Mitigation Impact

The Traffic Impact Assessment in Volume 3d Appendix 13-1 estimates that there will be a maximum of twelve HGVs serving the site during any given daytime hour. The two-way HGV traffic is unlikely to be higher than 24 vehicles per hour at any point of the day. Based on an 8-hour day and a 22 working day month, 24 vehicles per hour equates to 4,224 vehicles per month.

In the absence of mitigation measures, the additional traffic would give rise to a short-term, moderate negative impact on the surrounding transport network.

Proposed Mitigation Measures

- Excavated soil will be re-used within the site where possible, for fill or landscaping purposes, to reduce the amount of material to be transported off-site.
- The contractor will maximise the use of precast materials or prefabricated materials wherever possible and economically viable.
- Adequate storage space will be provided on site for the storage of materials and a site strategy will be put in place to manage the timing of deliveries to the site.
- Trips by construction workers will be limited by the provision of car-sharing and Travel to Work Scheme benefits. Construction workers will be encouraged to use public transport to the maximum possible extent.
- The appointed contractor will put in place measures to keep public roads free of detritus and debris. This will include undertaking regular road sweeping by a mechanical sweeper and the provision of wheel wash facilities on the site.
- A design stage Construction and Environmental Management Plan (CEMP) is presented in Volume 3e Appendix 4-2 of this EIAR. The CEMP includes traffic management measures for the proposed development site, which will be finalised upon agreement with the relevant Local Authority in advance of the commencement of construction.

Residual Impact

Following the application of traffic control measures throughout the construction phase, the overall short-term impact on the receiving network will be slight.

Significance of Effects

The construction phase of the proposed development will have a short-term slight negative effect on the surrounding transport network. There will be no significant effects on the network.

13.2.5.2.5 **Kildare Bridge**

Pre-Mitigation Impact

The traffic impact assessment of the proposed Kildare Bridge works has been considered as part of the above proposed works. If the proposed Kildare Bridge works were to be carried out as a stand-alone project, there would be a temporary slight negative impact on the receiving network, in the absence of any mitigation or control measures.

Proposed Mitigation Measures

- Excavated soil will be re-used within the site where possible, for fill or landscaping purposes, to reduce the amount of material to be transported off-site.
- The contractor will maximise the use of precast materials or prefabricated materials wherever possible and economically viable.
- Adequate storage space will be provided on site for the storage of materials and a site strategy will be put in place to manage the timing of deliveries to the site.
- Trips by construction workers will be limited by the provision of car-sharing and Travel to Work Scheme benefits. Construction workers will be encouraged to use public transport to the maximum possible extent.
- The appointed contractor will put in place measures to keep public roads free of detritus and debris. This will include undertaking regular road sweeping by a mechanical sweeper and the provision of wheel wash facilities on the site.
- Traffic management measures will be finalised upon agreement with the relevant Local Authority in advance of the commencement of construction.

Residual Impact

The proposed works will have a temporary imperceptible negative impact on the receiving network.

Significance of Effects

There will be no significant effect on the receiving network during the construction phase.

13.2.5.2.6 **Moyglare Bridge**

Pre-Mitigation Impact

The traffic impact assessment of the proposed Moyglare Bridge works has been considered as part of the above proposed works. If the proposed Moyglare Bridge works were to be carried out as a stand-alone project, there would be a temporary slight negative impact on the receiving network, in the absence of any mitigation or control measures.

Proposed Mitigation Measures

- Excavated soil will be re-used within the site where possible, for fill or landscaping purposes, to reduce the amount of material to be transported off-site.
- The contractor will maximise the use of precast materials or prefabricated materials wherever possible and economically viable.
- Adequate storage space will be provided on site for the storage of materials and a site strategy will be put in place to manage the timing of deliveries to the site.
- Trips by construction workers will be limited by the provision of car-sharing and Travel to Work Scheme benefits. Construction workers will be encouraged to use public transport to the maximum possible extent.
- The appointed contractor will put in place measures to keep public roads free of detritus and debris. This will include undertaking regular road sweeping by a mechanical sweeper and the provision of wheel wash facilities on the site.
- Traffic management measures will be finalised upon agreement with the relevant Local Authority in advance of the commencement of construction.

Residual Impact

The proposed works will have a temporary imperceptible negative impact on the receiving network.

Significance of Effects

There will be no significant effect on the receiving network during the construction phase.

13.2.5.3 **Operational Phase**

13.2.5.3.1 **Strategic Employment Zone (Site A)**

Pre-Mitigation Impact

Traffic modelling for the operational phase of the proposed development has been completed as part of the Traffic Impact Assessment in Volume 3a Appendix 13-1 of this EIAR.

The traffic modelling compares the ‘Do-Nothing’ scenario to the ‘Do-Something’ (i.e. the proposed development proceeds) and ‘Do Maximum’ (i.e. the proposed development plus other developments which form part of the Moygaddy masterplan proceed) scenarios.

The traffic modelling results include the following key findings:

- Potential trip redistribution through Kilcloon / L2214 local road is negligible.
- Upgrade of the L6219 and R157 road junction will allow for redistribution of traffic away from Moynooth town.
- All key junctions within the study area have been modelled and found to have adequate capacity for the proposed development without any significant delays. Where some congestion or delays were identified during morning or afternoon peaks, this will be addressed by way of the measures set out below.

In the absence of any control or mitigation measures the operational phase of the proposed development could have a long-term moderate negative impact on the receiving traffic and transport network.

Proposed Mitigation Measures

Where any potential negative impacts were identified as part of traffic modelling, these will be addressed by way of the junction upgrades and additional road capacity to be provided as part of the proposed development. Upgrades will include new signalised junctions, road improvements, and provision of extensive new pedestrian and cycling facilities. Operation of the proposed development will be carried out in a phased manner initially.

Residual Impact

The operational phase of the proposed development will have a long-term moderate positive impact on the receiving traffic and transport network.

Significance of Effects

The operational phase of the proposed development will have a long-term moderate positive effect on the receiving traffic and transport network.

13.2.5.3.2 **Healthcare Facilities (Site B)**

Pre-Mitigation Impact

Traffic modelling for the operational phase of the proposed development has been completed as part of the Traffic Impact Assessment in Volume 3b Appendix 13-1 of this EIAR.

The traffic modelling compares the ‘Do-Nothing’ scenario to the ‘Do-Something’ (i.e. the proposed development proceeds) and ‘Do Maximum’ (i.e. the proposed development plus other developments which form part of the proposed Moygaddy masterplan proceed) scenarios.

The traffic modelling results include the following key findings:

- Potential trip redistribution through Kilcloon / L2214 local road is negligible.
- Upgrade of the L6219 and R157 road junction will allow for redistribution of traffic away from Moynooth town.
- All key junctions within the study area have been modelled and found to have adequate capacity for the proposed development without any significant delays. Where some congestion or delays were identified during morning or afternoon peaks, this will be addressed by way of the measures set out below.

In the absence of any control or mitigation measures the operational phase of the proposed development could have a long-term moderate negative impact on the receiving traffic and transport network.

Proposed Mitigation Measures

Where any potential negative impacts were identified as part of traffic modelling, these will be addressed by way of the junction upgrades and additional road capacity to be provided as part of the proposed development. Upgrades will include new signalised junctions, road improvements, and provision of extensive new pedestrian and cycling facilities. Operation of the proposed development will be carried out in a phased manner initially.

Residual Impact

The operational phase of the proposed development will have a long-term moderate positive impact on the receiving traffic and transport network.

Significance of Effects

The operational phase of the proposed development will have a long-term moderate positive effect on the receiving traffic and transport network.

13.2.5.3.3 Strategic Housing Development (SHD, Site C)

Pre-Mitigation Impact

Traffic modelling for the operational phase of the proposed development has been completed as part of the Traffic Impact Assessment in Volume 3c(ii) Appendix 13-1 of this EIAR.

The traffic modelling compares the 'Do-Nothing' scenario to the 'Do-Something' (i.e. the proposed development proceeds) and 'Do Maximum' (i.e. the proposed development plus other developments which form part of the proposed Moygaddy masterplan proceed) scenarios.

The traffic modelling results include the following key findings:

- Potential trip redistribution through Kilcloon / L2214 local road is negligible.
- Upgrade of the L6219 and R157 road junction will allow for redistribution of traffic away from Moynooth town.
- All key junctions within the study area have been modelled and found to have adequate capacity for the proposed development without any significant delays. Where some congestion or delays were identified during morning or afternoon peaks, this will be addressed by way of the measures set out below.

In the absence of any control or mitigation measures the operational phase of the proposed development could have a long-term moderate negative impact on the receiving traffic and transport network.

Proposed Mitigation Measures

Where any potential negative impacts were identified as part of traffic modelling, these will be addressed by way of the junction upgrades and additional road capacity to be provided as part of the proposed development. Upgrades will include new signalised junctions, road improvements, and provision of extensive new pedestrian and cycling facilities. Operation of the proposed development will be carried out in a phased manner initially.

Residual Impact

The operational phase of the proposed development will have a long-term moderate positive impact on the receiving traffic and transport network.

Significance of Effects

The operational phase of the proposed development will have a long-term moderate positive effect on the receiving traffic and transport network.

13.2.5.3.4 **Maynooth Outer Orbital Road (MOOR)**

Pre-Mitigation Impact

Traffic modelling for the operational phase of the proposed development has been completed as part of the Traffic Impact Assessment in Volume 3d Appendix 13-1 of this EIAR.

The traffic modelling compares the ‘Do-Nothing’ scenario to the ‘Do-Something’ (i.e. the proposed development proceeds) and ‘Do Maximum’ (i.e. the proposed development plus other developments which form part of the proposed Moygaddy masterplan proceed) scenarios.

The traffic modelling results include the following key findings:

- Potential trip redistribution through Kilcloon / L2214 local road is negligible.
- Upgrade of the L6219 and R157 road junction will allow for redistribution of traffic away from Moynooth town.
- All key junctions within the study area have been modelled and found to have adequate capacity for the proposed development without any significant delays. Where some congestion or delays were identified during morning or afternoon peaks, this will be addressed by way of the measures set out below.

In the absence of any control or mitigation measures the operational phase of the proposed development could have a long-term moderate negative impact on the receiving traffic and transport network.

Proposed Mitigation Measures

Where any potential negative impacts were identified as part of traffic modelling, these will be addressed by way of the junction upgrades and additional road capacity to be provided as part of the proposed development. Upgrades will include new signalised junctions, road improvements, and provision of extensive new pedestrian and cycling facilities. Operation of the proposed development will be carried out in a phased manner initially.

Residual Impact

The following benefits to the Maynooth Transport Strategy are expected as part of this development:

- Improvements to the connectivity in the area of the development;
- Increase in capacity of roads and junctions in the immediate vicinity;
- Provision of dedicated pedestrian and cycle infrastructure, enabling a strong modal shift towards sustainable transport;
- The proposed development will also allow the BusConnects proposal to take account of the new infrastructure and further service the Maynooth area.

In summary, the infrastructural upgrades proposed as part of the Moygaddy development will have an overall long-term significant positive impact on Maynooth and its environs.

Significance of Effects

The operational phase of the proposed development will have a long-term significant positive effect on the receiving traffic and transport network.

13.2.5.3.5 **Kildare Bridge**

Pre-Mitigation Impact

The traffic impact assessment of the proposed Kildare Bridge works has been considered as part of the above proposed works. The operation phase of this development will provide upgrades to a section of existing road and additional new pedestrian and cycling facilities, thereby having a long-term moderate positive impact on the receiving environment.

Residual Impact

The proposed development will have a long-term moderate positive impact in terms of traffic and transport.

Significance of Effects

The proposed development will have a long-term moderate positive effect in terms of traffic and transport.

13.2.5.3.6 **Moyglare Bridge**

Pre-Mitigation Impact

The traffic impact assessment of the proposed Kildare Bridge works has been considered as part of the above proposed works. The operation phase of this development will provide upgrades to a section of existing road and additional new pedestrian and cycling facilities, thereby having a long-term moderate positive impact on the receiving environment.

Residual Impact

The proposed development will have a long-term moderate positive impact in terms of traffic and transport.

Significance of Effects

The proposed development will have a long-term moderate positive effect in terms of traffic and transport.

13.2.5.4 **Cumulative Effects Resulting from Interactions between Various Elements of the Proposed Development**

The proposed development has been subject to traffic impact modelling, including the assessment of cumulative effects between the various elements of the proposed development. This assessment has found that due to the nature of the works associated with the proposals, including the upgrade of the existing network and the provision of new routes, including enhanced pedestrian and cycling infrastructure, the network is capable of accommodating the increased traffic associated with the project. The proposed development is predicted to have a long-term positive cumulative effect with regard to traffic and transport.

13.2.5.5 Cumulative In-Combination Effects

The proposed development has been subject to traffic impact modelling, including the assessment of cumulative effects with the potential future traffic volumes associated with key junctions in the study area. This assessment has found that due to the nature of the works associated with the proposals, including the upgrade of the existing network and the provision of new routes, including enhanced pedestrian and cycling infrastructure, the network can accommodate the increased traffic associated with the project.

13.3 Utilities and Services

13.3.1 Introduction

This section of the EIAR sets out the impact assessment of the proposed development with regard to utilities and services, including electricity, telecommunications, gas, water supply, sewage, land-use and waste management. This section uses details and information provided in the following:

- Chapter 4 of this EIAR: Description of the Proposed Development, including Section 4.4 Construction Methodologies;
- Volumes 3a, 3b & 3c(i), Appendix 4-4 and Volumes 3d, 3e & 3f, Appendix 4-3: Construction and Demolition Waste Management Plans, prepared by O'Connor Sutton Cronin Consulting Engineers;
- Volumes 3a, 3b, & 3c(i) Appendix 4-5: Operational Waste Management Plans, prepared by Byrne Environmental;
- Volumes 3a, 3b & 3c(i), Appendix 4-9: Engineering Services Reports, prepared by O'Connor Sutton Cronin Consulting Engineers.

13.3.2 Scoping and Consultation

The relevant national and regional authorities and bodies listed in Chapter 2 of this EIAR were consulted as part of this assessment. The responses of the consultees were taken into account during preparation of this assessment, as summarised below. Copies of all scoping responses are provided in Appendices 2-1 of the EIAR.

Health Service Executive

The Health Service Executive (HSE) set out a number of recommendations in their scoping response, including that the EIAR should assess the impacts of the proposed development with regard to construction works, including waste management, pest control management, dust, noise and emissions to surface and groundwater.

13.3.3 Receiving Environment

The proposed development site is a greenfield site, currently being used for agricultural purposes, so the possible presence of underground infrastructure is limited in extent. A development of this nature has the potential to impact the following types of utilities and services:

- Electricity Network
- Telecommunications Network (including phone and broadband)
- Gas Distribution Network
- Water Supply Network
- Wastewater Drainage (Sewage Network)

- > Land Use
- > Waste Management.

The construction methodology detailed in Chapter 4: Section 4.4 of this EIAR describes the manner in which the Proposed Development will be constructed, including any excavations and installations of services. 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, EirGrid, Irish Water, Meath County Council, Kildare County Council, etc. will be contacted and all drawings contacted and drawings for all existing services sought.

Any underground services encountered during the works will be surveyed for level and where possible will be left in place. If there is a requirement to move the service, then the appropriate body (ESB, Gas Networks Ireland, Irish Water, etc.) will be contacted, and the appropriate procedure put in place. Back fill around any utility services will be with dead sand/pea shingle where appropriate. All works will be in compliance with required specifications. Further details are provided in Section 4.4 of this EIAR and in the Engineering Services Reports in Appendix 4-9. A summary is provided below with regard to each type of service.

13.3.3.1 Electricity

All proposed works for the project have been designed to avoid these services as much as possible, but where any moving of electricity lines are required, this will be carried out in consultation with ESNB.

13.3.3.2 Telecommunications

All proposed works for the project have been designed to avoid any underground telecommunications services as much as possible, but where any moving of lines are required, this will be carried out in consultation with the relevant operator.

13.3.3.3 Gas

There are no major Gas lines on the site of the Proposed Development. All proposed works for the project have been designed to avoid these services as much as possible.

13.3.3.4 Water Supply

The potable water supply is addressed in the Engineering Services Report, provided in Volumes 3a, 3b & 3c(i) Appendix 4-9 of this EIAR, prepared by O'Connor Sutton Cronin Consulting Engineers.

The project has received a confirmation of feasibility for connection to Irish Water assets.

13.3.3.5 Wastewater Drainage

Wastewater drainage is addressed in the Engineering Services Report, provided in Volumes 3a, 3b & 3c(i) Appendix 4-9 of this EIAR, prepared by O'Connor Sutton Cronin Consulting Engineers.

There is currently no existing wastewater infrastructure in the immediate vicinity of the site. The nearest public wastewater infrastructure is Maynooth's public Wastewater Pumping Station (WWPS).

13.3.3.6 Land Use

The site of the Proposed Development is currently a greenfield site, used currently for agricultural purposes and is subject to moderate pastoral livestock grazing.

The Proposed Development site is bounded by the River Rye Water along the southern boundary and agricultural fields to the north and west, while Carton House Demesne (Demense Wall - RPS Ref: 91556) is located directly adjacent to the east. The Dunboyne Road (R157) and local road L2214-3/L6219 (included as part of the proposed Maynooth Outer Orbital Road (MOOR)) roads are located to the south-east and north/ north-west respectively. Access to the site is currently from the Dunboyne Road (R157) and the local road L2214-3/L6219.

13.3.3.7 **Waste Management**

The site is currently used for agricultural purposes and therefore not subject to a waste management service at present. Waste management plans for the proposed development are presented in Volumes 3a, 3b, 3c(i) Appendices 4-4 and Volumes 3d, 3e, 3f, Appendix 4-3 (Construction and Demolition Stage) and Volumes 3a, 3b, 3c(i) Appendix 4-5 (Operational Phase) of this EIAR.

13.3.4 **Likely and Significant Effects and Associated Mitigation Measures**

13.3.4.1 **'Do-Nothing' Scenario**

The site currently comprises greenfield agricultural lands which are used for pastoral grazing. Should the Proposed Development not proceed, the current state of the site would not change materially and there would be no impacts in terms of services or utilities.

13.3.4.2 **Construction Phase**

13.3.4.2.1 **Strategic Employment Zone (Site A)**

Pre-Mitigation Impact

The potential construction phase impacts of the proposed development with regard to utilities and services include the following:

- Potential disturbance or damage to underground services;
- The generation of construction phase waste, including wastewater;
- Changes to land-use.

In the absence of any control or mitigation measures, the construction phase could give rise to a short-term moderate negative impact on utilities or services.

Proposed Mitigation Measures

The below measures have been incorporated into the design of the proposed development and will be used to avoid any negative impacts on utilities or services during the construction phase of the proposed development:

- The area where excavations are planned will be surveyed and all existing services will be identified. All relevant bodies i.e., ESB, Bord Gáis, Irish Water, Eircom, Meath County Council, Kildare County Council etc. will be contacted prior to construction works and all drawings for all existing services sought. All plant operators and general operatives will be inducted and informed as to the location of any services.
- Design stage Construction and Environmental Management Plans (Volume 3a, Appendix 4-3) and Waste Management Plans (Volume 3a, Appendix 4-4) have been prepared and will be updated prior to the commencement of construction works to take account of all requirements

of the Planning Authority. The waste hierarchy will always be employed to ensure that the least possible amount of waste is produced during the construction phase, through reuse, recovering and recycling.

- Water will be supplied on site by water tankers for general use. Unless a temporary water supply is secured from Irish Water, potable water will be provided in the form of bottled water for staff use during the construction phase (prior to connections to the municipal water supply).
- Portable toilets will be provided for those working on the construction sites throughout the Proposed Development. Wastewater arising on-site from these toilets is stored in a sealed tank located within the portable toilets, and these will be emptied periodically (as required) by permitted waste contractors and transported to municipal wastewater treatment plants for treatment.

Residual Impact

There will be a short-term neutral imperceptible impact on services and utilities during the construction phase.

Significance of Effects

Based on the assessment above there will be no significant effects on services and utilities during the construction phase.

13.3.4.2.2 **Healthcare Facilities (Site B)**

Pre-Mitigation Impact

The potential impacts of the proposed development with regard to utilities and services include the following:

- Potential disturbance or damage to underground services;
- The generation of construction phase waste, including wastewater;
- Changes to land-use.

In the absence of any control or mitigation measures, the construction phase could give rise to a short-term moderate negative impact on utilities or services.

Proposed Mitigation Measures

The below measures have been incorporated into the design of the proposed development and will be used to avoid any negative impacts on utilities or services during the construction phase of the proposed development:

- The area where excavations are planned will be surveyed and all existing services will be identified. All relevant bodies i.e., ESB, Bord Gáis, Irish Water, Eircom, Meath County Council, Kildare County Council etc. will be contacted prior to construction works and all drawings for all existing services sought. All plant operators and general operatives will be inducted and informed as to the location of any services.
- Design stage Construction and Environmental Management Plans (Volume 3b, Appendix 4-3) and Waste Management Plans (Volume 3b, Appendix 4-4) have been prepared and will be updated prior to the commencement of construction works to take account of all requirements of the Planning Authority. The waste hierarchy will always be employed to ensure that the least possible amount of waste is produced during the construction phase, through reuse, recovering and recycling.

- Water will be supplied on site by water tankers for general use. Unless a temporary water supply is secured from Irish Water, potable water will be provided in the form of bottled water for staff use during the construction phase (prior to connections to the municipal water supply).
- Portable toilets will be provided for those working on the construction sites throughout the Proposed Development. Wastewater arising on-site from these toilets is stored in a sealed tank located within the portable toilets, and these will be emptied periodically (as required) by permitted waste contractors and transported to municipal wastewater treatment plants for treatment.

Residual Impact

There will be a short-term neutral imperceptible impact on services and utilities during the construction phase.

Significance of Effects

Based on the assessment above there will be no significant effects on services and utilities during the construction phase.

13.3.4.2.3 Strategic Housing Development (SHD, Site C)

Pre-Mitigation Impact

The potential impacts of the proposed development with regard to utilities and services include the following:

- Potential disturbance or damage to underground services;
- The generation of construction phase waste, including wastewater;
- Changes to land-use.

In the absence of any control or mitigation measures, the construction phase could give rise to a short-term moderate negative impact on utilities or services.

Proposed Mitigation Measures

The below measures have been incorporated into the design of the proposed development and will be used to avoid any negative impacts on utilities or services during the construction phase of the proposed development:

- The area where excavations are planned will be surveyed and all existing services will be identified. All relevant bodies i.e., ESB, Bord Gáis, Irish Water, Eircom, Meath County Council, Kildare County Council etc. will be contacted prior to construction works and all drawings for all existing services sought. All plant operators and general operatives will be inducted and informed as to the location of any services.
- Design stage Construction and Environmental Management Plans (Volume 3c(i) Appendix 4-3) and Waste Management Plans (Volume 3c(i) Appendix 4-4) have been prepared and will be updated prior to the commencement of construction works to take account of all requirements of the Planning Authority. The waste hierarchy will always be employed to ensure that the least possible amount of waste is produced during the construction phase, through reuse, recovering and recycling.
- Water will be supplied on site by water tankers for general use. Unless a temporary water supply is secured from Irish Water, potable water will be provided in the form of bottled water for staff use during the construction phase (prior to connections to the municipal water supply).

- Portable toilets will be provided for those working on the construction sites throughout the Proposed Development. Wastewater arising on-site from these toilets is stored in a sealed tank located within the portable toilets, and these will be emptied periodically (as required) by permitted waste contractors and transported to municipal wastewater treatment plants for treatment.

Residual Impact

There will be a short-term neutral imperceptible impact on services and utilities during the construction phase.

Significance of Effects

Based on the assessment above there will be no significant effects on services and utilities during the construction phase.

13.3.4.2.4 **Maynooth Outer Orbital Road (MOOR)**

Pre-Mitigation Impact

The potential impacts of the proposed development with regard to utilities and services include the following:

- Potential disturbance or damage to underground services;
- The generation of construction phase waste, including wastewater;
- Changes to land-use.

In the absence of any control or mitigation measures, the construction phase could give rise to a short-term moderate negative impact on utilities or services.

Proposed Mitigation Measures

The below measures have been incorporated into the design of the proposed development and will be used to avoid any negative impacts on utilities or services during the construction phase of the proposed development:

- The area where excavations are planned will be surveyed and all existing services will be identified. All relevant bodies i.e., ESB, Bord Gáis, Irish Water, Eircom, Meath County Council, Kildare County Council etc. will be contacted prior to construction works and all drawings for all existing services sought. All plant operators and general operatives will be inducted and informed as to the location of any services.
- Design stage Construction and Environmental Management Plans (Volume 3d Appendix 4-2) and Waste Management Plans (Volume 3d Appendix 4-3) have been prepared and will be updated prior to the commencement of construction works to take account of all requirements of the Planning Authority. The waste hierarchy will always be employed to ensure that the least possible amount of waste is produced during the construction phase, through reuse, recovering and recycling.
- Water will be supplied on site by water tankers for general use. Unless a temporary water supply is secured from Irish Water, potable water will be provided in the form of bottled water for staff use during the construction phase (prior to connections to the municipal water supply).
- Portable toilets will be provided for those working on the construction sites throughout the Proposed Development. Wastewater arising on-site from these toilets is stored in a sealed tank located within the portable toilets, and these will be emptied periodically (as required) by

permitted waste contractors and transported to municipal wastewater treatment plants for treatment.

Residual Impact

There will be a short-term neutral imperceptible impact on services and utilities during the construction phase.

Significance of Effects

Based on the assessment above there will be no significant effects on services and utilities during the construction phase.

13.3.4.2.5 **Kildare Bridge**

Pre-Mitigation Impact

The potential impacts of the proposed development with regard to utilities and services include the following:

- Potential disturbance or damage to underground services;
- The generation of construction phase waste, including wastewater;
- Changes to land-use.

In the absence of any control or mitigation measures, the construction phase could give rise to a short-term moderate negative impact on utilities or services.

Proposed Mitigation Measures

The below measures have been incorporated into the design of the proposed development and will be used to avoid any negative impacts on utilities or services during the construction phase of the proposed development:

- The area where excavations are planned will be surveyed and all existing services will be identified. All relevant bodies i.e., ESB, Bord Gáis, Irish Water, Eircom, Meath County Council, Kildare County Council etc. will be contacted prior to construction works and all drawings for all existing services sought. All plant operators and general operatives will be inducted and informed as to the location of any services.
- Design stage Construction and Environmental Management Plans (Volume 3e Appendix 4-2) and Waste Management Plans (Volume 3e Appendix 4-3) have been prepared and will be updated prior to the commencement of construction works to take account of all requirements of the Planning Authority. The waste hierarchy will always be employed to ensure that the least possible amount of waste is produced during the construction phase, through reuse, recovering and recycling.
- Water will be supplied on site by water tankers for general use. Unless a temporary water supply is secured from Irish Water, potable water will be provided in the form of bottled water for staff use during the construction phase (prior to connections to the municipal water supply).
- Portable toilets will be provided for those working on the construction sites throughout the Proposed Development. Wastewater arising on-site from these toilets is stored in a sealed tank located within the portable toilets, and these will be emptied periodically (as required) by permitted waste contractors and transported to municipal wastewater treatment plants for treatment.

Residual Impact

There will be a short-term neutral imperceptible impact on services and utilities during the construction phase.

Significance of Effects

Based on the assessment above there will be no significant effects on services and utilities during the construction phase.

13.3.4.2.6 **Moyglare Bridge**

Pre-Mitigation Impact

The potential impacts of the proposed development with regard to utilities and services include the following:

- Potential disturbance or damage to underground services;
- The generation of construction phase waste, including wastewater;
- Changes to land-use.

In the absence of any control or mitigation measures, the construction phase could give rise to a short-term moderate negative impact on utilities or services.

Proposed Mitigation Measures

The below measures have been incorporated into the design of the proposed development and will be used to avoid any negative impacts on utilities or services during the construction phase of the proposed development:

- The area where excavations are planned will be surveyed and all existing services will be identified. All relevant bodies i.e., ESB, Bord Gáis, Irish Water, Eircom, Meath County Council, Kildare County Council etc. will be contacted prior to construction works and all drawings for all existing services sought. All plant operators and general operatives will be inducted and informed as to the location of any services.
- Design stage Construction and Environmental Management Plans (Volume 3f Appendix 4-2) and Waste Management Plans (Volume 3f Appendix 4-3) have been prepared and will be updated prior to the commencement of construction works to take account of all requirements of the Planning Authority. The waste hierarchy will always be employed to ensure that the least possible amount of waste is produced during the construction phase, through reuse, recovering and recycling.
- Water will be supplied on site by water tankers for general use. Unless a temporary water supply is secured from Irish Water, potable water will be provided in the form of bottled water for staff use during the construction phase (prior to connections to the municipal water supply).
- Portable toilets will be provided for those working on the construction sites throughout the Proposed Development. Wastewater arising on-site from these toilets is stored in a sealed tank located within the portable toilets, and these will be emptied periodically (as required) by permitted waste contractors and transported to municipal wastewater treatment plants for treatment.

Residual Impact

There will be a short-term neutral imperceptible impact on services and utilities during the construction phase.

Significance of Effects

Based on the assessment above there will be no significant effects on services and utilities during the construction phase.

13.3.4.3 Operational Phase

13.3.4.3.1 Strategic Employment Zone (Site A)

Pre-Mitigation Impact

The potential operational phase impacts of the proposed development with regard to utilities and services include the following:

- Provision of new underground services;
- Requirement for additional resources, including electricity and potable water.
- The generation of operational phase waste, including wastewater;
- Changes to land-use.

In the absence of any control or mitigation measures, the generation of waste and the use of additional resources could give rise to a long-term moderate negative impact in terms of services and utilities.

The creation of new underground services and the change in land-use, in compliance with the relevant zoning for the subject lands, will give rise to a long-term moderate positive impact in terms of services and utilities.

Proposed Mitigation Measures

The below measures have been incorporated into the design of the proposed development and will be used to avoid any negative impacts on utilities or services during the operational phase of the proposed development:

- An operational phase Waste Management Plan has been prepared (Volume 3a Appendix 4-5) and will be updated prior to operation to take account of all requirements of the Planning Authority.
- The Engineering Services Reports in Volume 3a Appendix 4-9 of this EIAR present the proposals for the proposed development with regard to Surface Water Drainage, Wastewater Drainage and Potable Water Supply. These elements have been taken into consideration throughout the design of the proposed development and will be implemented in line with all required legislation and relevant best-practice guidelines.
- Solar PV panels have been incorporated into building design throughout the development where appropriate, to facilitate the supply of renewable electricity for the energy demands of the buildings.

Residual Impact

There will be a long-term neutral imperceptible impact on services and utilities during the operational phase.

Significance of Effects

The change in land-use, in compliance with the relevant zoning for the subject lands, will give rise to a long-term moderate positive effect in terms of services and utilities.

13.3.4.3.2 **Healthcare Facilities (Site B)**

Pre-Mitigation Impact

The potential operational phase impacts of the proposed development with regard to utilities and services include the following:

- Provision of new underground services;
- Requirement for additional resources, including electricity and potable water.
- The generation of operational phase waste, including wastewater;
- Changes to land-use.

In the absence of any control or mitigation measures, the generation of waste and the use of additional resources could give rise to a long-term moderate negative impact in terms of services and utilities.

The creation of new underground services and the change in land-use, in compliance with the relevant zoning for the subject lands, will give rise to a long-term moderate positive impact in terms of services and utilities.

Proposed Mitigation Measures

The below measures have been incorporated into the design of the proposed development and will be used to avoid any negative impacts on utilities or services during the operational phase of the proposed development:

- An operational phase Waste Management Plan has been prepared (Volume 3b Appendix 4-5) and will be updated prior to operation to take account of all requirements of the Planning Authority.
- The Engineering Services Reports in Volume 3b Appendix 4-9 of this EIAR present the proposals for the proposed development with regard to Surface Water Drainage, Wastewater Drainage and Potable Water Supply. These elements have been taken into consideration throughout the design of the proposed development and will be implemented in line with all required legislation and relevant best-practice guidelines.
- Solar PV panels have been incorporated into building design throughout the development where appropriate, to facilitate the supply of renewable electricity for the energy demands of the buildings.

Residual Impact

There will be a long-term neutral imperceptible impact on services and utilities during the operational phase.

Significance of Effects

The change in land-use, in compliance with the relevant zoning for the subject lands, will give rise to a long-term moderate positive effect in terms of services and utilities.

13.3.4.3.3 **Strategic Housing Development (SHD, Site C)**

Pre-Mitigation Impact

The potential operational phase impacts of the proposed development with regard to utilities and services include the following:

- Provision of new underground services;
- Requirement for additional resources, including electricity and potable water.
- The generation of operational phase waste, including wastewater;
- Changes to land-use.

In the absence of any control or mitigation measures, the generation of waste and the use of additional resources could give rise to a long-term moderate negative impact in terms of services and utilities.

The creation of new underground services and the change in land-use, in compliance with the relevant zoning for the subject lands, will give rise to a long-term moderate positive impact in terms of services and utilities.

Proposed Mitigation Measures

The below measures have been incorporated into the design of the proposed development and will be used to avoid any negative impacts on utilities or services during the operational phase of the proposed development:

- An operational phase Waste Management Plan has been prepared (Volume 3c(i) Appendix 4-5) and will be updated prior to operation to take account of all requirements of the Planning Authority.
- The Engineering Services Reports in Volume 3c(i) Appendix 4-9 of this EIAR present the proposals for the proposed development with regard to Surface Water Drainage, Wastewater Drainage and Potable Water Supply. These elements have been taken into consideration throughout the design of the proposed development and will be implemented in line with all required legislation and relevant best-practice guidelines.
- Solar PV panels have been incorporated into building design throughout the development where appropriate, to facilitate the supply of renewable electricity for the energy demands of the buildings.

Residual Impact

There will be a long-term neutral imperceptible impact on services and utilities during the operational phase.

Significance of Effects

The change in land-use, in compliance with the relevant zoning for the subject lands, will give rise to a long-term significant positive effect in terms of services and utilities.

13.3.4.3.4 **Maynooth Outer Orbital Road (MOOR)**

Pre-Mitigation Impact

The operational stage of the proposed development will have a long-term moderate positive impact with regard to the change in land-use. The proposed development will assist in improving transport links in the area, including enhanced networks for pedestrians and cyclists.

Residual Impact

The proposed development will have a long-term moderate positive impact.

Significance of Effects

The proposed development will have a long-term moderate positive effect.

13.3.4.3.5 **Kildare Bridge**

Pre-Mitigation Impact

The operational stage of the proposed development will have a long-term moderate positive impact with regard to the change in land-use. The proposed development will assist in improving transport links in the area, including enhanced networks for pedestrians and cyclists.

Residual Impact

The proposed development will have a long-term moderate positive impact.

Significance of Effects

The proposed development will have a long-term moderate positive effect.

13.3.4.3.6 **Moyglare Bridge**

Pre-Mitigation Impact

The operational stage of the proposed development will have a long-term moderate positive impact with regard to the change in land-use. The proposed development will assist in improving transport links in the area, including enhanced networks for pedestrians and cyclists.

Residual Impact

The proposed development will have a long-term moderate positive impact.

Significance of Effects

The proposed development will have a long-term moderate positive effect.

13.3.4.4 **Decommissioning Phase**

The proposed development will become a permanent part of the local infrastructure, and therefore the requirement for decommissioning is not foreseen. There is therefore considered to be no potential for decommissioning phase impacts on non-traffic material assets.

13.3.4.5 **Cumulative Effects Resulting from Interactions between Various Elements of the Proposed Development**

The elements of the proposed development have been considered as stand-alone and cumulative works as part of this impact assessment. Following the application of the design, control and mitigation measures described in this section of the EIAR and the supporting engineering documents, it is considered that the proposed development will have a long-term slight neutral impact with regard to services and utilities. The proposal will have a long-term positive effect with regard to the change in land use.

13.3.4.6

Cumulative In-Combination Effects

The potential cumulative impacts and associated effects between the proposed development and the projects described in Section 2.10 of this EIAR, hereafter referred to as the other projects, have been considered in terms of utilities and services.

The measures outlined above, and in the Construction and Environmental Management Plan (CEMP), included as Appendix 4-3 in Volumes 3a, 3b & 3c(i) and Appendix 4-2 in Volumes 3d, 3e & 3f of this EIAR, will eliminate the potential for cumulative effects in relation to electricity, gas, water, sewage and telecommunications networks during the construction phases of the proposed development with other projects.

There will be no cumulative operational phase effects in relation to electricity, gas, water, sewage and telecommunications networks. There will be a positive cumulative effect on land use in the area when the proposed development is considered with the projects listed in Section 2.10 of this EIAR.