M7 Osberstown Interchange & R407 Sallins Bypass Scheme

Main Brief of Evidence
(Including Traffic, Non-agricultural Material Assets, Waste, Hydrology, Inter-relationships & Cumulative Impacts)

by

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1. Introduction

1.1 My name is Eileen McCarthy. I am an Associate Director with Arup. I hold an honours degree in Civil Engineering from University College Cork (UCC) (1987). I am a Chartered Member of the Institute of Civil Engineers in London, a Chartered Member of Engineers Ireland and a licensed professional engineer in USA.

1.2 I have over 25 years relevant experience and in particular, managed the planning and design for various road schemes including M20 Cork – Limerick Motorway Scheme, M7/N24 Ballysimon Road Improvement Scheme, N22 Baile Bhuirne to Macroom scheme and the Naas Southern Ring Road in Kildare.

1.3 I have been directly responsible for the project management of the M7 Osberstown Interchange and R407 Sallins Bypass Scheme since commencement of work on this application to An Bórd Pleanála in October 2012. I will be assisted as required by members of our design team when addressing specific queries which may arise during cross-examination.

1.4 The objective of my brief of evidence is to set the scene at the commencement of this hearing. I am mindful of the Boards direction to avoid repetition of the contents of the Environmental Impact statement, and therefore, make reference to various sections of the EIS throughout as opposed to repetition.

2. Executive Summary

Slide – EIS Figure 1.1

2.1 The proposed M7 Osberstown Interchange and R407 Sallins Bypass Scheme (i.e. the proposed scheme) comprises an interchange on the M7 between the M7 Maudlins and Newhall Interchanges, north and south of Naas respectively and a bypass of Sallins town. Refer to Figure 1.1 of the EIS.

2.2 The proposed scheme is justified for the following reasons:

- Addresses existing inadequate connectivity between national, regional and local road networks;
- Addresses inadequate capacity on the existing R407 Sallins Road;
- Removes regional traffic from the local road network in Naas;
- Removes regional traffic from the urban centre of Sallins town;
- Reduces current congestion levels on regional and local road network thus releasing capacity there for more sustainable transport modes;
- Enables delivery of Smarter Travel objectives;
- Regulates and reduces journey times for long distance and local traffic;
- Improves safety along the existing roads and junctions, and

- Facilitates planned and zoned development in accordance with National, Regional and local development.

2.3 The key benefits of the proposed scheme are:

- Removal of congestion thereby improving journey amenity for cyclists, pedestrians and vehicular traffic;
- Encourages modal shift as improves access to public transport;
- Provides additional recreational cycling routes and commuter cycling routes between Sallins and Naas;
- Facilitates major employment provision in the Naas Northwest Quadrant Masterplan Lands, and most importantly
- Gives the town of Sallins back to the people of Sallins by enabling the delivery of the principles of Smarter Travel.

2.4 My brief of evidence is structured as follows:

- Section 1 is an Executive Summary of the entire brief.
- Section 3 provides an overview of the scheme, including the background to and need for the scheme, a brief description of the scheme and a summary of the land-take requirements;
- Section 4 discusses the various alternatives considered for the proposed scheme;
- Section 5 deals with the operational traffic and transportation aspects of the scheme;
- Section 6 deals with the non-agricultural material assets impacted by the scheme;
- Section 7 deals with the waste assessment of the scheme;
- Section 8 provides an overview of the hydrology assessment of the scheme;
- Section 9 discusses construction aspects of the scheme;
- Section 10 discusses inter-relationships and cumulative impacts;
- Section 11 addresses submissions, and
- Conclusions are finally presented in Section 12.
- An outline Environmental Operating Plan is also available.

2.5 Where considered appropriate, the issues raised in submissions/observations to the Board by appellants will be addressed and elaborated upon in my evidence.

2.6 Responses to specific items raised by appellants are also provided as necessary.

3. Scheme Overview

Background

3.1 A Motorway Order Application including an EIS for the M7 Osberstown Interchange was submitted previously to An Bord Pleanála (ABP) in November 2008. In February 2010, ABP refused permission for the M7 Osberstown Interchange scheme indicating that the R407 Sallins Bypass should be considered in conjunction with this interchange proposal for the purposes of environmental impact assessment as set out in Section 3.1 of the EIS.

3.2 Both the proposed M7 Osberstown Interchange and R407 Sallins Bypass schemes are key transport objectives of Kildare County Council's integrated transportation plan in order to provide a new motorway connection to the existing road network together with additional linkage from this new motorway connection to bypass the town of Sallins, all of which are necessary to support continued expansion and growth of Naas and Sallins in a planned fashion and in accordance with National, Regional and Local planning policy. Following consideration of the decision from ABP on the initial interchange only application, this application has been prepared combining the M7 Osberstown Interchange and the R407 Sallins Bypass as a single scheme (i.e. the proposed scheme).

Slide – M7 Widening Scheme

3.3 Kildare County Council (KCC) is also advancing the planning and design of the M7 Naas to Newbridge By-Pass Upgrade Scheme, for which a separate application is being made to ABP. This scheme incorporates the widening of the M7, including the Naas bypass, from immediately north of the M7 Maudlins Interchange to the M7 / M9 Interchange The M7 Naas to Newbridge By-Pass Upgrade Scheme overlaps with the M7 Osberstown Interchange and R407 Sallins Bypass Scheme as widening of the M7 occurs through the proposed M7 Osberstown Interchange.

3.4 The planning and preliminary designs for each of these schemes has been carried out in a fully integrated manner taking cognisance of the potential development sequence of the schemes, and the cumulative traffic and environmental impacts arising.

3.5 This integrated approach has established that the proposed M7 Osberstown Interchange and R407 Sallins Bypass Scheme is dependent on the construction of the M7 Naas to Newbridge By-Pass Upgrade Scheme and this is discussed in greater detail in the traffic section of this brief.

Need for the Scheme

Slide – EIS Figure 1.1

3.6 The need for the proposed scheme is fully detailed in Chapter 3 of the EIS and can be summarised as follows:

- Addresses existing inadequate connectivity between national, regional and local road networks.

- There is a need to upgrade the level of connectivity between the Regional Road network and the M7 corridor.
- Inadequate capacity on the existing R407 Sallins Road.
- Removal of regional traffic from the local road network in Naas.
- Removal of traffic from the urban centre of Sallins town.
- Reduction in current congestion levels on regional and local road network thus releasing capacity there for more sustainable transport modes.
- Regulate and reduce journey times for long distance and local traffic.
- Improve safety along the existing roads and junctions.
- To facilitate planned and zoned development in accordance with National, Regional and local development plans and objectives.
- To facilitate the planned development of zoned lands within the Naas Northwest Quadrant Masterplan Lands.
- Urban centres can focus on development of sustainable transport policies for shorter commutes.
- Facilitates the development of a more balanced, hierarchical regional road network as part of KCC integrated transport planning objectives.
- Facilitates improved accessibility to the public transport network and allows advancement of sustainable transport planning at a local level.

The Department of Transport Tourism and Sport, the National Roads Authority (relative to Osberstown Interchange) and the National Transport Authority are fully supportive of this scheme (refer appended letters).

Slide – Sallins Town congestion

Description of the proposed Scheme

3.7 A detailed description of all the elements of the proposed scheme is contained in Chapter 4 of the EIS with a very brief summary provided in this brief as follows.

3.8 The proposed M7 Osberstown Interchange and R407 Sallins Bypass Scheme (i.e. the proposed scheme) is shown on Figure 1.2 Volume 3 with proposed cross-sections shown on Figure 4.1a and Figure 4.1b. The proposed scheme is located to the north of Naas and to the west of Sallins town, refer to Figure 1.1.

3.9 The grade separated junction, the M7 Osberstown Interchange, will be located between the existing M7 Maudlins and Newhall Interchanges, north and south of Naas respectively. This interchange will provide necessary connectivity between the national road network (M7) and the towns of Naas and Sallins. The

interchange will connect to the R407 Sallins Bypass to the north and the existing local and regional road network to the south. The interchange will be a typical dumbbell interchange with capacity to cater for future traffic needs to a design year of 2030.

3.10 The R407 Sallins Bypass will be located to the west of Sallins town commencing at the proposed M7 Osberstown Interchange and tying into the existing R407 Clane Road to the north of Sallins town. The bypass will proceed in a north easterly direction from the M7 Osberstown Interchange and will cross under the Dublin to Cork railway line, cross over the Grand Canal, and cross over the River Liffey at two locations before tying into the existing R407 Clane Road. The bypass will be approximately 3.6km in length.

Slide – EIS Figures 4.2b

3.11 Cyclist and pedestrian facilities are proposed on the R407 Sallins Bypass between the railway crossing and the tie-in at the existing R407 Clane Road. Refer to Figure 4.2a and 4.2b V3 for all proposed cyclist and pedestrian facilities.

3.12 An alternative cyclist and pedestrian route is proposed from the railway line to Naas, using existing local roads, to avoid routing cyclists and pedestrians through the M7 Osberstown Interchange. An additional dedicated pedestrian and cyclist connection is also proposed to connect the Canal Road to the Western Distributor Road, where full cyclist and pedestrian facilities exist (referenced in the National Transport Authority letter appended). This will facilitate a cyclist friendly route/connection between the proposed R407 Sallins Bypass and the employment areas in Millennium Park without the need to negotiate the proposed M7 Osberstown Interchange. These provisions are in line with the GDA Cycle Network Plan proposed cycle network for Naas and Sallins.

3.13 There are two link roads proposed as part of the proposed scheme. The Sallins Link Road will connect the R407 Sallins Bypass to the centre of Sallins town and the Distributor Link Road will connect the M7 Osberstown Interchange to the Western Distributor Road. Provisions for cyclists and pedestrians will be made in both directions on the Sallins Link Road.

3.14 The design of the M7 Osberstown Interchange and R407 Sallins Bypass Scheme has been completed in accordance with the National Roads Authority (NRA) current design standards contained in the Design Manual for Roads and Bridges (DMRB) and Manual of Contract Documents for Road Works (MCRW). The design of the Sallins Link Road and Distributor Link Road has been completed in accordance with the Design Manual for Urban Roads and Streets (DMURS) as published by the Department for Transport, Tourism and Sport (DTTAS).

3.15 The following is a listing of the key elements of the proposed road development:

<u>Road Alignments</u>

1. Length of Motorway Slip lanes = 3.9 km

2.	Length of Type 2 Dual Carriageway	= 1.75 km
3.	Length of Type 1 Single Carriageway	= 1.9 km
4.	Length of Sallins Link Road	= 1.2 km
5.	Length of Local Roads	= 0.7 km
6.	Number of bridge crossings - Roads	= 1 No.
7.	Number of bridge crossings - Rivers	= 2 No.
8.	Number of bridge crossings – Rail	= 1 No.
9.	Number of bridge crossings – Canal	= 1 No.
10.	Number of Accommodation Underpasses (incl. in bridges)	= 3 No.
11.	Number of pipe/box culverts (>2m) at stream crossings	= 1 No.

Motorway Order

12.	Number of habitable dwellings taken in the MO	= 0 No.
13.	Number of commercial buildings taken in MO	= 0 No.
14.	Number of other buildings	= 0 No.
15.	Total land within MO	= 26.3 ha

Compulsory Purchase Order

16.	Number of habitable dwellings taken in the CPO	= 1 No.
17.	Number of commercial buildings taken in CPO	= 0 No.
18.	Number of other buildings	= 4 No.
19.	Total land within CPO	= 32.5 ha

Slide – EIS Figure 3.2

3.16 There are three junctions proposed on the scheme, the grade separated M7 Osberstown Interchange located on the M7 motorway, the at-grade Sallins Link Road Roundabout approximately 1.75 km to the north of the interchange and the at-grade Clane Road Roundabout at the northern terminus of the scheme at the tie-in with the existing R407 Sallins Road.

3.17 I can confirm that the proposed scheme, as designed, can be accommodated within the landtake which is the subject of the Motorway and Compulsory Purchase Orders and that this land is necessary and required for the purposes of the proposed scheme.

4. Consideration of Alternatives

Slide – EIS Figure 3.2

4.1 Section 3.3 of the EIS outlines the main alternatives considered and the reasons for choosing the proposed scheme. This section summarises the main alternatives to the development of the proposed scheme.

Do Nothing Alternative

4.2 The Do Nothing is covered in Section 3.3.2 of the EIS.

4.3 A 'Do Nothing' option will only compound existing congestion issues on the inter-urban M7 corridor and interfaces with the regional and local road network at Naas. Development in accordance with regional and local land use planning policy and objectives will be limited by capacity constraint on transport networks in the Do Nothing scenario. The delivery of an integrated transportation plan for Naas and environs will not be possible with the Do Nothing option.

4.4 The Do Nothing Alternative does not allow for the construction of the M7 Osberstown Interchange and R407 Sallins Bypass Scheme.

Do Minimum Alternative

4.5 The Do Minimum is covered in Section 3.3.2 of the EIS.

4.6 Analysis of the traffic model shows that the implementation of the M7 Naas to Newbridge By-Pass Upgrade Scheme is required in advance of the M7 Osberstown Interchange and R407 Sallins Bypass Scheme. Therefore, the 'Do Minimum' scheme scenario for the M7 Osberstown Interchange and the R407 Sallins Bypass Scheme assumes that the proposed M7 Naas to Newbridge By-Pass Upgrade Scheme will be operational in advance of the interchange and bypass.

4.7 The proposed M7 Naas to Newbridge By-Pass Upgrade Scheme which includes motorway widening and a junction upgrade will effectively address mainline capacity constraints along the M7 inter-urban route on the Naas Bypass.

4.8 However, the Do Minimum scheme will not resolve the following issues:

- Congestion issues on the regional and local road network which result in significant sections of the road network being congested currently at peak commuter periods;
- Lack of capacity in the medium to long term which will ultimately have an impact on the extent of planned development;
- Traffic volumes, driven by the R407 regional route, through Sallins town centre which will continue to increase, and
- Exacerbation of existing severance and traffic related environmental impacts within the built-up urban area.

4.9 In the Do Minimum scenario, it is likely that there will be continued investment in public transit services, associated road or street based public transport infrastructure in line with Smarter Travel objectives, as well as walking and cycle networks at a local and regional level, which will continue to encourage a move away from private car use for both local and commuter travel / trips. In a lot of instances, the deliverability, effectiveness and attractiveness of these improvements is constrained by existing and increasing levels of traffic congestion. Therefore, the delivery of an integrated transportation plan for Naas and environs will not be possible with the Do Minimum option.

Non-road Alternatives

4.10 The Public Transport Only Alternative is covered in Section 3.3.3 of the EIS.

4.11 A potential alternative to the proposed scheme would be to provide additional public transport infrastructure and intervention to improve public transport level of service provision.

4.12 The sustainable means by which current levels of commuter travel by private car can be reduced combines some or all of the following:

- Land-use planning, including attracting significant additional employment locally, such as the Kerry Group facility in Millennium Park, which negates the need to commute to Dublin for work;
- Provision of new and improved regional public transport linkages to Dublin, and
- Continued investment in local public transport infrastructure.

4.13 There already exists a high level of regional bus connectivity, particularly between Naas and Dublin.

4.14 While there is an already good quality rail service (commuter and some inter-city) also stopping at Sallins train station, accessibility and connectivity at a local level provides limitations on patronage uptake. For example, options to improve bus connections to the rail station on the local road network are limited by existing traffic congestion and land-availability along roads to provide for additional bus priority, all of which results in poor journey time and journey-time reliability.

4.15 Even with major investment in a further upgrade of the rail service, its effectiveness will remain constrained by connectivity and accessibility locally to Sallins Station from Naas and environs.

4.16 A public transport only alternative is not therefore considered to be a practical or deliverable alternative solution.

4.17 Instead, the proposed scheme has been planned to form part of a more strategic integrated transport strategy for the following reasons:

- Removal of regional traffic volumes from the local road network in Naas and Sallins will facilitate continued investment at a local level in walking, cycling and public transport services.
- Facilitates improved access immediately to the existing Sallins rail station.
- In the longer term, the proposed scheme seeks to maximise the benefits of the proposed Kildare Route project through the facilitation of a new Regional Transport Hub, including a strategic park and ride on lands adjacent to the proposed R407 Sallins Bypass, which is discussed later in Section 5 Transportation.

4.18 Therefore, all other options for servicing the development needs and, in particular, the regional and local roads network and the use of public transport solutions have been examined and exploited to the fullest extent practicable in advance of promoting the scheme.

4.19 Appended to this brief is a letter in support of the scheme from the Department of Transport Tourism and Sport, whereby they acknowledge that the proposed scheme allows improvement of access to the Sallins railway station and better facilitates the feeder bus between Naas and Sallins by relieving congestion.

Route alternatives for M7 Osberstown Interchange and the R407 Sallins Bypass

Slide 6 – EIS Figure 3.1

4.20 The alternative locations for the interchange and bypass are covered in Section 3.3.5 of the EIS.

4.21 In 2007, Fehily Timoney Gifford Ltd. (FTG) confirmed a preferred route for the R407 Sallins Bypass project as a stand-alone project which was adopted as an objective in the Sallins Local Area Plan, 2009. The FTG Preferred Route Corridor Report is contained in Appendix A3.1 V4 of the EIS.

4.22 Both the R407 Sallins Bypass and the M7 Osberstown Interchange went through route option assessment as separate projects independently of each other previously.

4.23 In order to assess both projects as one scheme, a supplementary route selection assessment was carried out by Arup in June 2013, whereby Arup carried out a full assessment of the original FTG R407 corridors, the original Arup M7 interchange options, plus any additional viable route options that presented given that both the bypass and the interchange were being assessed as a single combined scheme. Arup then developed an emerging preferred route for the overall combined scheme. This supplementary route selection assessment is contained in Appendix A3.2, V4 of the EIS.

4.24 As part of this supplementary route selection assessment, three potentially feasible interchange options and three potential route options were considered for the R407 Sallins Bypass, based on existing constraints and allowable design standards relating to geometry and traffic safety considerations.

4.25 The M7 Osberstown Interchange location options and R407 Sallins Bypass route options considered are illustrated on Figure 3.1 V3 of the EIS. The combination of three potential interchange locations with three potential route options for the R407 Sallins Bypass generated a total of nine overall options, which were then assessed under engineering and environmental criteria.

4.26 The conclusion of the supplemental route selection was that the R407 Sallins Bypass Option A, under the railway at an eastern location, combined with the M7 Osberstown Interchange Option A, most western option, was the most favourable option. On this basis, the preferred route Option AA was chosen to be progressed through design and environmental assessment.

4.27 As part of public consultation, various other options were proffered for consideration by members of the public, affected landowners and/or others, and were assessed against the preferred route Option AA. These included but are not limited to the following additional options:

- Option D – To the west of Osberstown House.
- Option E – Through Castlesize Housing Estate via tunnel.

4.28 These options did not alter the choice of the preferred route as they did not rank better than the preferred route when assessed under the engineering and environmental criteria as set out in Section 3.3.5 of the EIS.

4.29 With respect to Option E, which is the subject of the submission from Maguire & Associates on behalf of Kieran O'Flaherty & Morgan O'Flaherty of Barrettstown, Sallins, Co. Kildare, the only environmental criteria which favoured Option E over Option AA were ecology and agriculture. Drainage was a major negative for Option E due to the difficulty of draining the tunnel. The existing ground level at the southern end of Castlesize housing estate is almost the same level as the top of the bank level at the River Liffey. Therefore the finished road level (FRL) would be approximately 6m below the river top of bank, and would result in a major drainage and flooding issue through the tunnel section of the road. For this reason Route Option AA is preferable in relation to drainage. The submission also states that there would be a major cost saving with advancing Option E, but the cost of a cut and cover tunnel versus the cost of a bridge is of the order of magnitude of four times more expensive in construction costs alone. Finally, the construction of a 425m long tunnel in between the houses on either side of a green space in the Castlesize housing estate would have major construction impacts on the residents in terms of noise, dust and amenity. Therefore, Option E was not progressed further.

Interchange Form for M7 Osberstown Interchange & Cross-section of R407 Sallins Bypass

4.30 The selection of the interchange form and bypass cross-section are covered in Section 3.3.6 of the EIS.

4.31 Three potential interchange forms were identified for the proposed M7 Osberstown Interchange as follows:

- Option 1: Dumbbell Interchange.
- Option 2: Rotary Interchange.
- Option 3: Dumbbell Interchange with Partial Signalisation.

Slide – EIS Figure 3.3 to 3.5

4.32 Layouts for each of these options are presented on Figure 3.3 V3 to Figure 3.5 V3 respectively.

4.33 The interchange options were evaluated on the basis of cost comparison and assessment of traffic capacity and impact utilising a combination of the regional traffic model developed for the schemes and the development of a 'local area' traffic micro-simulation (VISSIM) model.

4.34 Option 1 Dumbbell Interchange as provided at year of opening will meet traffic demand up to design year, is consistent with existing junction form on the M7 Naas Bypass, and on that basis was brought forward as the preferred interchange option.

Slide – EIS Figure 3.2

4.35 The cross-sections along the proposed R407 Sallins Bypass have been considered in the assessment in a segmental fashion allowing different cross-section types to be considered in different sections, with sections segregated by a junction or node.

4.36 A detailed report on the Incremental Assessment of Scheme Cross-Section and Interchange form is included in Appendix A3.3, V4 of the EIS for reference.

4.37 Two types of cross-section were used in the assessment namely Type 1 Single Carriageway (S2) and Type 2 Dual Carriageway (D2AP). Three scenarios were assessed with variations in cross-section from a single carriageway throughout, S1 to a dual carriageway throughout, S3. Scenario 2 comprises dual carriageway to Sallins Link Road with single carriageway to the northern tie-in.

4.38 Economic criteria, as generated by COBA, are used in the scenario assessment. The criteria are incremental criteria that assess the increase in benefits gained for the increase in costs over the previous cross-section scenario.

4.39 The assessment shows a clear justification for provision of a dual carriageway cross-section from the M7 Osberstown Interchange to the proposed Sallins Link Road Roundabout. However, as traffic numbers decrease to the north of the proposed Sallins Link Road Roundabout and construction costs increase there is not sufficient justification for the additional spend and therefore,

the cross-section on the northern section of the R407 Sallins Bypass is a single carriageway.

4.40 The outcome of this analysis has confirmed that Scenario 2, dual carriageway cross-section from the M7 Osberstown Interchange to the proposed Sallins Link Road Roundabout with a single carriageway cross-section from the Sallins Link Road Roundabout to the Clane Road Roundabout is the most appropriate provision for the following reasons:

- Four lives saved over 30 years.
- Accident savings of approximately €5.17 M, which equates to around 188 accidents on the network over 30 years.
- Dual carriageway provision on Link 1 ensures no further impacts in the future to the railway line.
- It gives value for money in terms of combined economic and environmental impacts.
- Maximised value of benefits.

5. Transportation

5.1 The traffic and transport assessment of the proposed scheme is covered in Chapter 5 of the EIS.

5.2 This section presents a summary of the findings of the traffic and transportation assessment under the following headings:

- Transport context
- Transport assessment of the proposed scheme

Slide – EIS Figure 5.1

Transport Context

5.3 The key elements of the existing road network are outlined as follows:

- M7 - A two lane motorway with hard shoulders as it bypasses Naas;
- M7 Maudlins motorway interchange to the north east of Naas;
- M7 Newhall motorway interchange to the west of the town;
- Western Distributor Road – A ring road around Naas paralleling the M7;
- R407 Regional Route which is an important north-south traffic corridor linking Naas with Clane and Kilcock and the N4 to the north;
- Monread Road which is a local distributor road which runs parallel to the M7;
- Osberstown Road, a local rural road, to the north of the N7, and
- Mill Lane / Canal Road which runs north-south passing underneath the M7 to the east of the proposed interchange location.

5.4 The key elements of public transport serving Naas are outlined as follows:

- Approximately 99 buses northbound and 79 southbound (20 operators) are routed through and stop in Market Square in the centre of Naas on a daily basis.
- Rail access to Naas and environs is facilitated by the Sallins Train Station on the Dublin to Cork railway line, which is approximately 3 km from the proposed scheme. There are 400 car parking spaces available at the station.
- There are 23 commuter trains and 5 intercity trains heading northbound, which stop at Sallins en route to Dublin, and 20 and 5 commuter trains / intercity trains respectively in the other direction, southbound (i.e. total 53 scheduled services stopping in Sallins).
- Appended to this brief is a letter of support for this scheme from Bus Eireann, as this scheme addresses the congestion which impedes the 123/126 Naas/Clane bus corridor.

5.5 Provision for cyclists and pedestrians in Naas and Sallins is outlined as follows:

- Cyclist facilities along the Western Distributor Road and the R409 Carragh Road are provided as off-road dedicated cycle tracks;
- Cycle lanes are also provided along sections of the Sallins Road but are not continuous along the route between Sallins and Naas Town Centre, and
- The majority of the roundabouts along these roads are designed to accommodate pedestrian crossings (unsignalised with dropped kerbs) on all their approaches.

5.6 The detail of proposed public transport network improvements is presented in Section 5.3.2.3 of the EIS and can be summarised as follows:

- The Kildare Route Project on the South-western (Kildare) rail corridor which is intended to provide additional rail line capacity and frequency on the Cork-Dublin rail line for commuter train services is considered to be a long-term transport objective in terms of delivery.
- The Sallins LAP transport objective PT5 envisages the establishment of a Regional Public Transport Interchange (PTI) on lands adjacent to the proposed R407 Sallins Bypass; again the objective is long term in nature and is unlikely to precede the delivery of Phase 2 of the Kildare Route Project.

Slide – GDA Sheet N18

5.7 The detail of proposed pedestrian and cycle networks improvements is presented in Section 5.3.2.4 of the EIS and can be summarised as follows:

- The National Transport Authority's (NTA) 'Draft Greater Dublin Area' Cycle Network Plan sets out an integrated plan for the continued development of the Urban, Inter-Urban and Green Route cycle networks for the seven Local Authorities comprising the Greater Dublin Area (GDA), including Kildare County Council.
- The GDA Cycle Network Plan includes a cycle network for Naas, Sallins and Kill (Sheet N18).
- KCC are engaged in the provision of new or upgrading of existing cycle infrastructure and facilities on a number of the cycle routes identified in the Cycle Network Plan.
- These include Primary Cycle Route N2, aimed at improving the pedestrian and cyclist environment along the R407 between Sallins and Naas, the N6 Cycle Route along the Monread Road and the N1 Cycle Route along the R445 Dublin Road.
- The proposed improvements on Route N2, in proximity to the proposed scheme, primarily involve the provision of dedicated cycle facilities and improvements to the operation of the various junctions located along the roadway including the Sallins Road Roundabout.
- The Cycle Network Plan includes for the development of an amenity Green Route, K13, from Naas Town Centre, along Mill Lane / Canal

Road, connecting to Route K10, extending along the Grand Canal. Route K10 will ultimately provide a continuous amenity cycle and pedestrian route into Dublin, with sections of the route already well established.

- Appended to this brief is a letter from the National Transport Authority. The NTA are fully supportive of the provision for cyclists and pedestrians in this scheme.

5.8 In respect of the submissions from Mr Lloyd of 179 Osberstown, Sallins, stating that the proposed egress point for pedestrians and cyclists from the R407 is dangerous due to proximity to the railway structure and a private entrance, further provision has been made for pedestrians to egress/access the proposed shared cycle track/footpath on the R407 Sallins Bypass to the south of the existing railway bridge. This is included in additional commitments since EIS publication.

5.9 The submission from An Taisce states that this scheme is in breach of national policy as it is not integrated with the achievement of the Department of Transport's policy, Smarter Travel: A sustainable Transport Future – A New Transport Policy for Ireland 2009-2020 (i.e. Smarter Travel). This scheme provides an appropriate cycle route from Sallins town to Millennium Park and Naas Town Centre – thus supporting alternatives such as walking and cycling which is one of the overriding policy objectives of Smarter Travel. The rerouting of the regional traffic onto the proposed R407 Sallins Bypass will allow for sustainable transport modes on the local road network which is also a far more appropriate, safer and desirable cycle route from the cyclist perspective – again in line with the objectives of Smarter Travel. Furthermore, the Department of Transport Tourism and Sport have clearly stated in their letter that this scheme accords with the objectives of Smarter Travel (letter appended).

Slide – EIS Figure 5.1

Transport Assessment

5.10 The transport assessment is presented in Section 5.4 of the EIS.

5.11 The detail of the development of the traffic model is presented in Appendix A5.1 V4 of the EIS.

5.12 Key items of note in carrying out the traffic modelling are outlined as follows:

- Traffic count information obtained in 2012, has shown an increase in peak period traffic volumes on the M7, which is critical to the actual capacity of a roadway.
- For consistency, the transport model developed initially by AECOM for the 'M7 Naas to Newbridge By-Pass Upgrade Scheme' was used for the M7 Osberstown Interchange and R407 Sallins Bypass Scheme, with increased refinement to reflect existing and future zoned land-uses within the Naas and Sallins hinterland as identified

by the Development Plans. Mr Philip Shiels of AECOM is available should any queries arise on the model development.

- Traffic modelling demonstrates that the proposed M7 Osberstown Interchange and R407 Sallins Bypass Scheme is dependent on the construction of the M7 Naas to Newbridge By-Pass Upgrade Scheme.
- On this basis, the proposed 'M7 Naas to Newbridge By-Pass Upgrade Scheme' is included as part of the scheme 'do minimum' scenario in terms of traffic impact assessment.
- The existing R407 Sallins Road / Monread Road roundabout is currently operating over capacity during peak morning and evening commuter traffic periods and requires upgrading to cater for existing traffic flows.
- The upgrading of the R407 Sallins Road / Monread Road Roundabout has also been included in the 'do minimum' scenario as the upgrade is required to meet more immediate local road network.

5.13 The transport assessment looks at the impact of the proposed scheme for an opening year, 2015 and a design year, 2030. The assessment is based on comparing the AADT on the road network for the 'without scheme' (or 'Do Minimum' or 'DM') and for the 'with scheme' ('Do Something' or 'DS') scenarios. The forecasts indicate that the introduction of the proposed scheme will have significant benefits in terms of reducing traffic volumes and releasing traffic capacity on key sections of the regional and local road network. The R407 Sallins Bypass and its connection to the M7 via the proposed new interchange will provide immediate traffic relief to Sallins Main Street, effectively removing regional orbital 'through traffic', including HGV's (e.g. a 46% reduction in HGV's is predicted in the 2015 DS scenario) accessing the motorway.

5.14 The reductions in 'through traffic' from Sallins Main Street will present an opportunity for greater ease of movement for local traffic. It will also facilitate a focus on sustainable transport policies for shorter commutes within Sallins and connecting to Naas, including the development of safer, more pleasant cyclist and pedestrian routes following reallocation of road space.

5.15 With respect to the National Road network, the proposed scheme will also benefit the adjacent M7 interchange at Maudlins and Newhall in terms of further improved operational performance.

5.16 The proposed scheme results in a small increase in traffic demand on the M7 mainline as the interchange and bypass offers regional traffic a more direct route to the Naas North–West Quadrant and the R407 Clane Road. This reinforces the objective of the proposed scheme where regional traffic is able to stay on the motorway for a longer part of their journey and therefore have less impact on the local road network. Appended to this brief is a letter of support from National Roads Authority relative to the Osberstown Interchange.

5.17 The proposed scheme will, in particular, have significant benefits in relieving traffic congestion along a number of existing busy local traffic corridors

such as the R407 Sallins Road, Monread Road and the Western Distributor Road. Full details are contained in Chapter 5 of EIS.

5.18 The operational performance of each of the junctions on the proposed scheme has been assessed and shown to have sufficient capacity to accommodate the projected traffic levels associated with the proposed bypass and link road.

5.19 Therefore, the additional traffic loading can be satisfactorily accommodated at the proposed interchange and on the national road network.

5.20 The submission from Castlesize Residents Association queries the performance of the junction of Sallins Link Road / Millbank Road junction. Table 5.12 of the EIS demonstrates that the overall performance of the Sallins Link Road / Millbank Road junction will improve with the introduction of the proposed scheme as the proposed scheme reduces traffic volumes significantly along Sallins Road (Main Street), which in turn will release capacity at the Sallins Link Road approach to the junction to cater for any projected increase in traffic levels to and from the Sallins Link Road.

5.21 The impacts of the proposed scheme on public transport are considered to be positive in both the short and longer term. In the short term, the proposed scheme will have a positive impact in terms of reducing traffic volumes on the local and regional road network, thereby improving journey time and its reliability for existing and potential additional future public transport services. This will also facilitate increased accessibility and connectivity with Sallins Train Station.

5.22 Longer term, the proposed scheme will enable the strategic public transport objectives of the Local Authorities in terms of facilitating an enhanced public transport interchange (PTI) and strategic park and ride adjacent to the railway, accessed off the proposed R407 Sallins Bypass.

5.23 Careful consideration has been given as part of the scheme design to the provision of new cyclist and pedestrian facilities and their integration into the wider existing and future proposed networks.

5.24 This is achieved by providing alternative cycle and pedestrian connectivity to the north and south of the M7 via the proposed connection between the existing cycle and pedestrian route along the Western Distributor Road (Cycle Route N6) and a new connection to the Canal Road (green Way Route K13), which in turn will connect to the R407 Sallins Bypass north of the proposed rail underbridge.

Slide – EIS Figures 4.2b

5.25 The proposed scheme specifically incorporates an amenity cycle track and footway provision on the Sallins Town side of the Bypass and makes provision for connection to future cycle network and pedestrian routes along the Canal (Cycle Route K10).

5.26 In general, the proposed scheme will have a positive impact in terms of enhancing the existing pedestrian and cyclist environment and adding new amenity walking and cycling routes to the area.

5.27 Along the local road network the pedestrian and cyclist environment will benefit from the resulting reduction in traffic levels. The reduction in traffic along Sallins Main Street in particular will provide considerable relief from severance and afford opportunities to enhance existing and provide for new pedestrian and cycle facilities, such as the N2 Cycle Route.

5.28 The proposed development will not give rise to an undesirable precedent for further traffic generating development at or in the vicinity of the proposed scheme; rather it will facilitate an enhancement of bus services, pedestrian services and cyclist services in the local area plus provide better connectivity for regional public transport needs.

5.29 The ability to facilitate integration with public transport and to facilitate additional provision of cycling and walking routes is in line with the demand management required to ensure that the proposed scheme does not promote increased private car usage for short commutes.

6. Material Assets Non-Agricultural/ Utilities/ Services

Impact Assessment

6.1 The proposed scheme will not cause significant disruption to existing major utilities. The affected utilities have been identified and consultations with the associated service providers have taken place in order to establish their requirements in dealing with the identified conflicts.

6.2 It is proposed to provide public lighting at the M7 Osberstown Interchange and associated slip roads, the Clane Road Roundabout, the Sallins Link Road Roundabout, Sallins Link Road and Distributor Link Road. Refer to Figure 1.2 V3 for proposed road lighting extents.

6.3 As there is currently lighting on the R407 Clane Road, it is proposed that Clane Road Roundabout lighting provision be extended to tie into this existing network. This will not impact negatively on the existing lighting network.

Mitigation Measures

6.4 As set out in Chapter 19 of the EIS, any services that are interfered with as a result of the proposed road development, e.g. drinking water, electricity, phone, gas, sewage, septic tanks, septic tank percolation areas, will be maintained in an effective condition during the construction works and, where applicable restored to a condition as good as that pertaining before the commencement of the works. Any repairs/replacement works required will be carried out without unreasonable delay.

Residual Impacts

6.5 No significant residual impact on services is envisaged following the implementation of the mitigation measures outlined above.

6.6 The residual impact on non-agricultural material assets cannot be assessed as the compensatory measures to be agreed are outside the scope of the Motorway Order / CPO process

Slide – EIS Figures 10.8c

Response to Submissions

6.7 In respect of the submissions from Mr Patrick Garvey of Waterfort, Osberstown, and Mr Lloyd of 179 Osberstown, Sallins, requiring water and sewage connections to their properties adjacent to the bridge structure over the canal, provision has been made for future services to be installed in the verges by means of duct provision at this stage. However, this scheme does not provide sewage and water services as part of the scheme.

6.8 Submissions from Mr Patrick Garvey of Waterfort, Osberstown, and Mr Lloyd of 179 Osberstown, Sallins, claim that there will be significant light pollution at their properties. There will be lighting on the R407 Sallins Bypass once it crosses the Canal Road to the Sallins Link Road Roundabout. However, the lighting will be

fully cut-off flat glass type, to minimise light spill and to ensure that light is concentrated on the road surface. In addition, landscaping is proposed along the embankments which will further reduce the impact of road lighting on the adjacent properties.

6.9 In response to the submission from Castlesize Residents Associations, existing foul sewers impacted by the proposed scheme will be diverted / maintained as required.

7. Waste

Slide – EIS Figure 5.1

Impact Assessment

7.1 An assessment of the resource and waste management impact of the proposed scheme was carried out and is included in Chapter 18 of the EIS.

7.2 The impact assessment identified the arisings from excavation on site as the largest potential source of waste on the proposed scheme. As the majority of the proposed scheme is on embankment, the waste generated from excavation is low and over 60% of it will be reused on site. The resulting predicted impact of excavation waste will be moderate, negative and short term.

7.3 Construction and demolition (C&D) waste is likely to be generated during the demolition of six existing structures. The impact of generation of C&D waste will be slight, negative and short term.

Mitigation Measures

7.4 A Construction and Demolition Waste Management Plan, which is an integral part of the Environmental Operating Plan, meeting the requirements of the DoEHLG Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects (DoEHLG, 2006a) will be prepared in advance of the works.

7.5 Where waste generation cannot be avoided this will maximise the quantity and quality of waste delivered for recycling and facilitate its movement up the waste hierarchy away from landfill disposal and reduce its environmental impact.

Residual Impacts

7.6 The impact assessment concluded the following:

- The resulting residual impact of excavation waste will be slight, negative and short term.
- The resulting residual impact of construction and demolition waste will be slight, negative and short term.
- Based on the scheme description the residual impact of operational waste will be neutral.

7.7 There is likely to be significant available capacity within existing Irish waste management infrastructure to manage the excavation, construction and operational waste from the M7 Osberstown Interchange and R407 Sallins Bypass Scheme.

8. Hydrology/Watercourses/Drainage

Slide – EIS Figure 17.2

8.1 The hydrology impact assessment methodology is set out in Section 17.2 of Volume 2 of the EIS.

8.2 The description of the existing environment is described in Section 17.3 of Volume 2 of the EIS.

8.3 The proposed scheme crosses three existing watercourses, the River Liffey, the Naas Stream and the Osberstown Stream. These watercourses will require structures and culverts to carry their flow under the proposed scheme.

8.4 Two River Bridges are required to cross the River Liffey. The Naas Stream crosses under the existing M7 via a 750mm diameter pipe culvert. This culvert will be extended to carry the stream under the auxiliary lanes of the proposed M7 Osberstown Interchange as part of this road development.

8.5 Three existing M7 culverts east of the Naas Stream carry water flow under the M7 motorway. The flow from these three M7 culverts converges downstream into the Osberstown Stream which then converges with the Naas Stream further downstream. The three existing M7 culverts, associated land drains and Osberstown Stream will be extended and diverted as required to carry water flow under the proposed M7 Osberstown Interchange slip lanes as part of this proposed road development.

8.6 The proposed road development will cross the Grand Canal between the Leinster Aqueduct and the town of Sallins. The canal is a proposed Natural Heritage Area (pNHA). The Grand Canal is designated as an Artificial Water Body (AWB) by the Water Framework Directive.

8.7 The proposed scheme traverses the north western corner of the Osberstown Attenuation Pond. The attenuation pond will have to be reshaped to ensure adequate flood storage is maintained.

Impact Assessment

8.8 The predicted impacts on hydrology are set out in detail in Section 17.4 of the EIS. The assessment was carried out on each of the above hydrological features for the construction phase and the operation phase. The results of the impact assessment can be summarised as follows:

- Construction risks associated with the construction of bridges, culverts, culvert extensions, attenuation ponds and outfalls include but are not limited to silt loading, deterioration of water quality and stream morphology changes.
- Risks of potential hydrological impacts during the operation phase of the proposed scheme may arise as a result of contamination from road runoff, winter maintenance operations (e.g. salt spreading) and accidental spillages, all of which can potentially contribute to deterioration of water quality. In addition, the construction of new paved areas can result in rapid runoff of surface water, with

increased risk of flooding downstream. Any work modifying the floodplain and river channel itself can result in morphological change as well as alteration of flooding patterns.

Mitigation Measures

Construction Phase

8.9 Prior to construction an Environmental Operating Plan will be prepared by the Contractor, an outline of such a plan is available here. This Plan will ensure procedures are implemented during construction to address water quality impacts and flood risk, and ensure compliance with legislation, requirements of relevant public bodies and particular construction product requirements (e.g. pesticide and herbicide products).

8.10 Water quality monitoring will be required prior to, during and post construction to ensure water quality parameters are analysed regularly throughout the construction phases. Further details of particular mitigation measures for construction phase are included in the EIS section 17.5.1.

Operation Phase

8.11 All road runoff will be prevented from discharging directly to the receiving surface waters by the proposed road sustainable drainage system. A combination of grassed swales and filter drains have been identified as among the most effective treatment measures for routine highway runoff.

8.12 The propose drainage attenuation system will be sized to accommodate any potential increase in surface water runoff due to a design event of up to the 30 year return period event, with the exception of the River Liffey catchment where the attenuation will be designed for up to the 100 year return period event. In addition to attenuating runoff, the ponds will provide water quality improvement by providing a permanent pool of water where suitable.

8.13 The installation of emergency spill containment facilities will mitigate against any potential adverse impacts to the receiving surface waters arising from an accidental spillage.

Slide – EIS Figure 4.8 and 4.9

8.14 All culverts and bridges are designed to prevent impact to river morphology and alteration to flow hydraulics. These measures will ensure that there will be negligible increase to upstream or downstream water levels and flood risk from the proposed road development. The two proposed River Liffey bridges will be multi span bridges with bridge piers setback from the existing river banks to prevent impact to river morphology and alteration to flow hydraulics, as shown in figure 4.8 and 4.9 of the EIS.

Residual Impacts

8.15 The surface water and road drainage systems for the proposed road development have been designed such that water quality of receiving watercourse will result in a beneficial impact and flood risk will not increase.

8.16 The flood risk impacts associated with culvert and bridge crossing will be negated with adherence to OPW requirements. No properties or infrastructure will be affected.

8.17 As a consequence of compliance with the construction and operational mitigation measures there will be negligible permanent impacts across the catchments traversed by the proposed road development with respect to water quality or flood risk.

8.18 The residual impact to the River Liffey, Grand Canal, Naas Stream, Osberstown Attenuation Pond and Osberstown Stream are considered imperceptible and permanent.

Slide – EIS Figure 17.2

Response to Submissions on Hydrology/Watercourses/Drainage

Submission from Alan Lloyd, Desmond Ward, Patrick O'Brien, Patrick Garvey and Peter Traynor

8.19 These property/land owners are all located in the one area, in the vicinity of the railway and Grand Canal crossing. Their submissions have raised concerns relating to the scheme exacerbating the existing drainage/flooding issues in the area.

8.20 The drainage design has been completed to ensure all existing surface water drains which are being crossed will be culverted / diverted as required to ensure surface water flows are not impacted. The existing drainage problems result from inadequate culverts to convey the existing overland flow collecting in the low spot at the Canal Road. This issue will be resolved with the proposed scheme as an interceptor ditch will be constructed to the west of the proposed R407 Sallins Bypass which will collect and convey this overland flow to suitably sized culverts under the canal and on north to the River Liffey.

Submission from Kieran & Morgan O'Flaherty

8.21 Messrs. O'Flaherty are located in the vicinity of the northern River Liffey bridge crossing. During public consultation, Messrs. O'Flaherty suggested investigating a route option through the green area at Castlesize housing estate.

8.22 A detailed assessment was carried out of the alternative alignment proposed by Mr Maguire on behalf of Messrs. O'Flaherty. There was difficulty designing a free draining tunnel as the invert or floor level of the tunnel would be below the River Liffey top of bank level therefore creating a drainage/flood risk for outfall of drainage from the tunnel.

Briargate Developments

8.23 The height of Sallins Link Road is necessary to ensure road drainage/flooding is not an issue. Outfalls of road drainage systems will be above the River Liffey flood level. Surface water drainage paths have been identified and will be culverted / diverted as necessary to ensure additional flooding is not created. This submission / objection has been withdrawn.

Inland Fisheries Ireland

8.24 Mitigation measures as identified by Inland Fisheries Ireland are incorporated into the Schedule of Mitigation Measures.

HSE Environmental Health Service

8.25 Prior to construction an Environmental Operating Plan (EOP) will be prepared by the Contractor. This Plan will ensure procedures are implemented during construction to address water quality impacts and flood risk, and ensure compliance with legislation, requirements of relevant public bodies and particular construction product requirements (e.g. pesticide and herbicide products). An outline EOP for this scheme is appended to this brief.

8.26 There shall be no use of herbicides, pesticides or artificial fertilisers in any landscaping or subsequent maintenance within a 2m minimum buffer zone of a watercourse. If a further distance is specified on the label of the particular herbicide or pesticide to be used, then that specified distance shall be maintained. Applications of herbicides or pesticides shall be in accordance with manufacturer's recommendations. In particular such applications shall be confined to periods when the vegetation is not wet from rainfall or dew within a zone of 10 m from any watercourse or groundwater abstraction. Applications of herbicides or pesticides should be postponed if significant rainfall is forecast within 48 hours

Landowners of Plot 105 namely Brendan Heavey, Anthony Keogh, Michael O'Connor, Leo Heavey, Damien Woods, Patrick Shanahan, Sean Shanahan

8.27 Road drainage attenuation in this area is designed for a 1 in 100 year return period storm event as it outfalls to the River Liffey.

8.28 Pre-earthworks drainage cross-drains/culverts are designed for 1 in 75 year return period storm event in accordance with UK HA 106/04.

8.29 This submission / objection has been withdrawn.

9. Construction Phase

9.1 Section 4.4 of the EIS deals with the general activities and issues associated with the construction of the proposed scheme including the following:

- Duration of works.
- Construction traffic management, staging and working hours.
- Construction compounds.
- Material requirement and construction traffic.
- General construction controls.

Slide – EIS Figure 4.13

Duration of Works

9.2 Subject to confirmation of approval of the scheme and availability of funds, the earliest projected start date for the works to commence would be late 2015.

9.3 The construction of the proposed scheme cannot proceed in advance of the adjacent M7 Naas to Newbridge By-Pass Upgrade Scheme. However, it may be constructed in combination with it, or the M7 Osberstown Interchange may be constructed first in time on its own after the M7 Naas to Newbridge By-Pass Upgrade Scheme and the R407 Sallins Bypass may follow at a later stage as originally set out in the ABP decision on the earlier interchange only application.

9.4 It is currently anticipated that the proposed scheme construction phase will extend over a period of approximately 18 months if progressed as a single construction contract.

9.5 Potential cumulative construction impacts have been considered of the worst-case scenario of both the M7 Naas to Newbridge By-Pass Upgrade Scheme and M7 Osberstown Interchange and R407 Sallins Bypass Scheme constructed concurrently.

Construction traffic management, staging and working hours

9.6 Requirements for temporary traffic management during the construction of the proposed scheme will be explicitly written into the Employer's Requirements and tenderers will have to demonstrate compliance with these requirements during the tender process.

9.7 Construction traffic impacts will be kept to an absolute minimum through the implementation of a Construction Traffic Management Plan, which is prepared by the successful contractor and enforced by Kildare County Council, controlling access routes and site access locations, traffic diversions and any necessary road closure requirements.

9.8 Two lanes of traffic flow will be maintained along the M7 in both directions between 6am and 10pm. Localised single lane operation may be permitted, subject to approval from KCC, from 10pm to 6am along the M7 in both directions.

9.9 During the construction of the approach embankments and the bridge structure at the proposed M7 Osberstown Interchange, access and egress points will be adopted to enable the contractor to access and depart from the site primarily onto the M7. This access/egress from the M7, coupled with access from the Western Distributor Road, will allow construction traffic to advance north to the proposed railway structure within the lands made available without using any of the local road network.

9.10 Use of the local road will be restricted to the extents under the railway bridge with a connection from the site on either side of the railway crossing. This is necessary to access the area to the north of the railway for the purposes of constructing the foundations for the temporary supports to the railway track only.

9.11 Once the supports are in place, the bypass will be constructed under the railway line and there is no further requirement for any site traffic to use the local roads.

9.12 As there is a height restriction on the existing crossing under the railway, the contractor will be limited to the use of smaller concrete trucks and machinery to construct the foundations for the temporary supports for the railway track at the railway crossing.

9.13 This work will have to take place during off-peak travel times on the railway, and as a result some limited night-time working is envisaged. My colleague Jennifer Harmon will deal with the issue of noise associated with this night time working in her brief in response to submissions received.

9.14 In order to minimise disruption to existing traffic, the Construction Traffic Management Plan will set out that construction vehicles would be confined to appropriate roads and that safe access and egress points are identified along the extent of the proposed scheme, in accordance with the requirements set out in the EIS.

9.15 Construction of the realigned Osberstown Road is likely to result in a temporary parallel road diversion with single lane traffic in operation for a period of up to four months. This is to allow the construction of the embankment and bridge on the line of the final road alignment. Therefore, there will not be a lengthy diversion for residents in the vicinity of Osberstown Road as the parallel temporary road will be immediately adjacent to the existing Osberstown Road and available at all times during the construction of the bridge.

9.16 In order to minimise the impact on local residents, landowners and the public, access to existing residential areas, business premises and public facilities will be maintained during construction.

Construction compounds

9.17 Temporary construction compounds will be located within the lands being made available to the contractor. Figure 4.13 V3 indicates the potential locations of the proposed compound in the vicinity of the interchange and in the vicinity of the Sallins Link Road, which are selected due to ease of access from an existing major road and proximity to proposed structures.

9.18 The construction compounds will be fully engineered with appropriate services and will be fenced off for security purposes. Following completion of construction, these areas will be cleared and reinstated.

Material requirement and construction traffic

9.19 The proposed scheme construction will involve some excavation and disposal of materials and importation of construction materials for scheme embankments and road construction.

9.20 Overall, it is estimated that material excavated during the construction will be reutilised on site in line with the principles of sustainable development.

9.21 The proposed scheme will have a requirement for imported materials, primarily comprising of high standard fill and stone for embankment construction, concrete for road kerbs and the bridge construction, and asphalt for the road pavement construction.

9.22 It is estimated that the following approximate quantities of materials will be brought in for the construction contract:

- Structural Fill : 703,000m³
- Asphalt : 43,000m3
- Roadstone : 29,000m³
- Drainage Pipe : 12,000m
- Reinforcement Steel : 500t
- Structural Concrete : 5,000m³

9.23 Construction vehicle activity has been quantified using the required volumes of materials above and locating suitable sources for same as close to the proposed scheme. The impact of these additional construction vehicle movements along the road network is covered in Section 4.4.11 of the EIS. Overall there is an increase in HGVs of approximately 21% for the 18 months duration of construction on the existing road network. This is considered and assessed in terms of noise and air quality.

General construction controls

9.24 An Environmental Operating Plan will be in place before the start of construction to ensure that best practice is employed for all the elements of work and to safeguard the environment. The Contractor, its sub-contractors and all site employees will be required to undertake all construction works in accordance with the Environmental Operating Plan.

9.25 Independent checks and audits will also be undertaken by KCC and other statutory bodies to ensure compliance with the Environmental Operating Plan.

9.26 An Outline Project Construction & Demolition (C&D) Waste Management Plan (WMP) which is an integral part of the Environmental Operating Plan has been formulated to ensure that waste arising during the construction and

demolition phase of the development on site will be managed and disposed of in compliance with waste management regulations.

9.27 A scheme specific Incident Management Plan which also forms part of the Environmental Operating Plan has been prepared. This primary objective of this document is to establish procedures that enable personnel to respond to incidents with an integrated multi-departmental effort in a manner that minimises the potential for affecting health, property, and the environment.

9.28 The Construction Stage Erosion and Sediment Control Plan forms an integral part of the Environmental Operating Plan for the proposed road development. The purpose of a Construction Erosion and Sediment Control Plan (CESCP) is to minimise erosion potential by effective planning, procedures and water management.

10. Interactions, Inter-relationships and Cumulative Effects

Slide – EIS Figure 1.2

Interactions and Inter-relationships

10.1 Inter-relationships/interactions relate to the reactions between impacts within a project and the inter-relationships between impacts identified under each topic with impacts identified under another topic. Whilst it can be argued that all environmental factors are inter-related to some extent, the relationships can range from tenuous to highly complex.

10.2 The major interactions between the recorded environmental impacts are assessed within the individual chapters and a summary is tabulated in Chapter 20 of the EIS. To facilitate the identification and consideration of interactions, a workshop was held on 23 May 2013 with attendees including all environmental sub-consultants and the Arup EIS and Design Team.

10.3 Interactions/inter-relationships include but is not limited to the following:

- Transportation interacts with a wide range of environmental parameters including but not limited to noise, human beings, air quality, climate, and hydrology.
- Removal of visual screening can have a negative impact on human beings.
- Removal of habitats impacts on both ecology and landscape.
- Impacts to architectural heritage relate to landscape impacts.
- Soils interact with air quality as excavated soils when disturbed or eroded can be dispersed as dust. Equally changes to air quality impact on flora and fauna.
- Excavated soils and soil removal generate noise and vibration.
- Potential impacts to surface water and flooding are linked to possible climatic effects.
- Soils and geology are interlinked with hydrogeology.

Cumulative Effects

10.4 In addition to the interactions between the individual environmental elements of this proposed scheme, there is potential for cumulative effects arising from adjacent road and development schemes which are either proposed or in the vicinity of the M7 Osberstown Interchange and R407 Sallins Bypass Scheme. These include the M7 Naas to Newbridge By-pass Upgrade Scheme and the zoned lands within the northwest quadrant of Naas as a minimum

10.5 As outlined earlier, Kildare County Council (KCC) is also advancing the planning and design of the M7 Naas to Newbridge By-Pass Upgrade Scheme, for which a separate application is being made to ABP. The M7 Naas to Newbridge By-Pass Upgrade Scheme overlaps with the M7 Osberstown Interchange and

R407 Sallins Bypass Scheme as widening of the M7 occurs through the proposed M7 Osberstown Interchange.

10.6 The planning and preliminary designs for each of these schemes has been carried out in a fully integrated manner taking cognisance of the potential development sequence of the schemes, and the cumulative traffic and environmental impacts arising.

10.7 This integrated approach has established that the proposed M7 Osberstown Interchange and R407 Sallins Bypass Scheme is dependent on the construction of the M7 Naas to Newbridge By-Pass Upgrade Scheme and this is discussed in greater detail in the transportation section of this brief.

10.8 The traffic impact assessment assumes that the M7 Naas to Newbridge By-Pass Upgrade Scheme has been developed in advance of the M7 Osberstown Interchange and R407 Sallins Bypass Scheme. The Do Minimum scenario includes for the provision of the M7 Naas to Newbridge By-Pass Upgrade Scheme. Therefore the air quality, climate and noise assessments have assessed the cumulative impact of both schemes by adding the impacts associated with the M7 Osberstown Interchange and R407 Sallins Bypass Scheme to the Do Minimum.

10.9 Regular project co-ordination meetings between the Design Teams on the M7 Naas to Newbridge By-pass Upgrade Scheme and the M7 Osberstown Interchange and R407 Sallins Bypass Scheme were conducted throughout the course of the last year to ensure that each team was aware of the work by the other team.

10.10 An environmental workshop was held on 17 July 2013 attended by all specialists on the M7 Osberstown Interchange and R407 Sallins Bypass Scheme and the M7 Naas to Newbridge By-Pass Upgrade Scheme to discuss cumulative impacts of the respective schemes and to ensure accurate coverage of cumulative impacts

10.11 A fully co-ordinated approach has been adopted during the EIA to assess the cumulative impacts of the proposed scheme in conjunction with the adjacent schemes and adjacent potential future development. The fact that the major adjacent schemes/developments are already included in the baseline information ensures that the cumulative impacts are considered and included in the assessment.

10.12 Nevertheless, all road construction projects give rise to some degree of unavoidable impacts and measures are proposed to mitigate such impacts wherever possible in each chapter of this EIS. Provided that all design, construction methodology and mitigation measures for the proposed scheme are implemented in accordance with best practice; it is considered that no additional likely significant residual impacts will arise as a result of the cumulative impacts.

11. Conclusions

11.1 A modern economy requires a world-class road transport network that is sustainable from an economic, social and environmental perspective. Better national roads improve access to the regions, enhancing their attractiveness for inward investment and new employment opportunities and contribute to enhanced competiveness by reducing transport costs.

11.2 Effective provision for public transport modes on the road network is an important consideration in road planning. Bus services operating on the national road network currently constitute a very significant part of the overall public transport network. Therefore, the proposed scheme provides relief to congestion on the R407 Sallins Road which in turn frees capacity for busses which will improve journey times of public transport vehicles. Further demand management can be put in place along the existing R407 to give bus priority at appropriate locations. Once journey time reliability is achieved on public transport, increased modal shift to public transport is possible.

11.3 Removal of the congestion along the existing R407 Sallins Road facilitates the implementation of more sustainable transport modes for shorter commutes in line with the principles of Smarter Travel.

11.4 Therefore, the key benefits of the proposed scheme are:

- Four lives saved over 30 years.
- Removal of congestion thereby improving journey amenity for cyclists, pedestrians and vehicular traffic;
- Encourages modal shift as improves access to public transport;
- Provides additional recreational cycling routes and commuter cycling routes between Sallins and Naas;
- Facilitates major employment provision in the Naas Northwest Quadrant Masterplan Lands, and most importantly
- **Gives the town of Sallins back to the people of Sallins by enabling the delivery of the principles of Smarter Travel.**

Appendix A
Referenced Correspondence

Department of Transport, Tourism and Sport – Scheme in accordance with Smarter Travel

National Roads Authority – Scheme in agreement with the objectives of Naas Town Development Plan

National Roads Authority – Approval of Section 85

National Transport Authority

Bus Eireann – Support of scheme as allows improved bus services along the Naas/Clane bus corridor

An Roinn Iompair Turasóireachta agus Spóirt
Department of Transport, Tourism and Sport

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Mr David O'Grady
A/Senior Engineer
Kildare National Roads Office
Maudlins
Dublin Road
Naas
County Kildare

26th May 2014

Your Ref: NRO-700-12.8

Re: NRO-700 – M7 Osberstown Interchange and R407 Sallins By-Pass (Ref No. MA0013, KA0031 and HA0046)

Dear David,

I refer to the above scheme and to the prescribed form of notice sent to the Minister for Transport, Tourism and Sport dated 13th January 2014 and to supporting documentation which includes the Environmental Impact Statement.

I can confirm that the Department supports the provision of an additional interchange adjacent to Millennium Park in Naas and the provision of a Sallins By Pass. In doing so it is conscious of the need to provide suitable national and local road infrastructure to facilitate industrial development (and the provision of extra jobs) especially where there are clear "bottlenecks" in the transport system. It is considered that this project accords with one of the key goals of the Department's Smarter Travel document (on page 27) which states:

- Improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks

This project would also improve access to Sallins railway station and relieve congestion in the immediate vicinity of the station thereby improving journey times for the feeder bus service between Naas and Sallins station and also for

other local bus services which operate in the Naas/Sallins and surrounding area.

Yours Sincerely

Dominic Mullaney
Principal Adviser
Roads Division

cc: Sonya Kavanagh, Director of Service, Kildare County Council

An tÚdarás um Bóithre Náisiúnta
National Roads Authority

Teach Naomh Máirtín / Bóthar Waterloo / Baile Átha Cliath 4
St. Martin's House / Waterloo Road / Dublin 4
Teil: / Tel: + 353 1 660 2511 Facs: / Fax: + 353 1 668 0009

Mr. Michael Malone
County Manager
Kildare County Council
Áras Chill Dara
Devoy Park
Naas
Co. Kildare

Dáta | Date	Ár dTag. | Our Ref.	Bhur dTag. | Your Ref.
22 November 2013	NRA13 88998	

KILDARE COUNTY COUNCIL
National Roads Design Office
11 DEC 2013
FILE REF. LETTER NO. 1693

Re: M7 Osberstown Interchange and R407 Sallins Bypass Scheme

Dear Mr. Malone

Thank you for your letter of 11 November 2013 regarding the above.

I wish to confirm the Authority's agreement to Kildare County Council's proposal regarding the development of an interchange on the M7 at Osberstown, in accordance with objective RP06 of the Naas Town Development Plan 2011-2017.

The Authority reserves the right to comment, as a prescribed body under statute, on the M7 Osberstown Interchange and R407 Sallins Bypass scheme proposal, when submitted to An Bord Pleanála.

Yours sincerely

Olivia Morgan

Olivia Morgan
Programme & Regulatory Unit

Comhairle Contae
Chill Dara
Kildare
County Council

11th November, 2013

Mr. Fred Barry,
Chief Executive,
National Roads Authority,
St. Martin's House,
Waterloo Road,
Dublin 4.

Dear Fred,

Re: **M7 Osberstown Interchange and R407 Sallins By-Pass Scheme**

Kildare County Council propose to submit the M7 Osberstown Interchange and Sallins Bypass scheme to An Bord Pleanala over the coming weeks. In addition and simultaneously Kildare County Council will also submit the M7 Naas to Newbridge Bypass Upgrade scheme to the board.

The Naas Town development Plan 2011-2017 contains the following objective:

"RP06: To facilitate provision of an additional motorway interchange along the M7 Naas By-pass, subject to NRA agreement. The Interchange shall be appropriately designed and scaled to provide access to the Millenium Park and Northwest Quadrant Masterplan Lands."
(Section 7.8.4 of the NTDP)

In accordance with this clause, I now seek NRA agreement and support for the M7 Osberstown Interchange and Sallins By-pass scheme, the interchange to be located between Maudlins and Newhall Interchanges on the M7. This interchange will facilitate improved integration between the Regional and local road network in the Northwest Quadrant of Naas, Sallins and the National Road network.

Yours sincerely,

Michael Malone,
Kildare County Manager.

Comhairle Contae Chill Dara, Áras Chill Dara, Páirc Devoy, An Nás, Co. Chill Dara.
Kildare County Council, Áras Chill Dara, Devoy Park, Naas, Co. Kildare.
T 045 980200 • **F** 045 980240 • **E** secretar@kildarecoco.ie • www.kildare.ie/countycouncil

An tÚdarás um Bóithre Náisiúnta
National Roads Authority

Ms. Aoife O'Malley
Administrative officer
Kildare County Council
National Roads Office
Maudlins
Naas
Co. Kildare

Teach Naomh Máirtín / Bóthar Waterloo / Baile Átha Cliath 4
St. Martin's House / Waterloo Road / Dublin 4
Teil: / Tel: + 353 1 660 2511 Facs: / Fax: + 353 1 668 0009

Dáta | Date 28 November 2013 Ár dTag. | Our Ref. NRA13 89036 Bhur dTag. | Your Ref.

Re: M7 Naas-Newbridge Upgrade Scheme & M7 Osberstown Interchange Scheme
Section 85 Agreement under the Local Government Act 2001

Dear Ms. O'Malley

With reference to the above, I hereby convey the approval of the Authority, in accordance with Section 14 of the Roads Act, 1993, to the Agreement dated 16 April 2013 persuant to Section 85 of the Local Government Act, 2001 between Kildare County Council and Naas Town Council in respect of the Naas-Newbridge Upgrade Scheme and the Osberstown Interchange Scheme.

Yours sincerely

Fred Barry

Fred Barry
Chief Executive

KILDARE nro NATIONAL ROADS OFFICE

Mr Hugh Creegan
Director of Transport Investment and
taxi regulation
National Transport Authority
Dún Scéine
Harcourt Lane
Dublin 2

Our Ref: NRO-700(O/S)-10.25
Your Ref:

30th April 2014

Re: M7 Osberstown Interchange and R407 Sallins Bypass - Motorway Order/CPO Application (Ref No. PL09.MA0013 and PL09.HA0046) and NTA Submission

Dear Hugh,

I refer to the above scheme and to your letter to An Bord Pleanála dated 28th February 2014 highlighting no objection in principle to the scheme, welcoming the overall proposal in relation to provision of facilities for cyclists and pedestrians, and suggesting items that are addressed at the detailed design stage.

The item raised in your letter to be addressed at detailed design stage is:

- To make adequate provision for the connecting ramps from the Grand Canal Cycle Route to the Western Distributor Road.

I confirm that should the scheme receive a successful outcome from the statutory process, as requested, Kildare County Council and their designers will liaise with the National Transport Authority at detailed design stage to address, to the satisfaction of the Authority, all issues raised in your submission.

Should this be satisfactory, I would appreciate if you could reply and acknowledge that this is acceptable to the Authority.

Yours sincerely,

David O'Grady
A/Senior Engineer

Direct Dial No. 045 988 908
Mobile: 086 829 5322

Údarás
Náisiúnta Iompair
National **Transport** Authority

Harcourt Lane, Dublin 2
Dún Scéine, Baile Átha Cliath 2
tel: 01 879 8300
fax: 01 879 8333
email: info@nationaltransport.ie
web: www.nationaltransport.ie

David O'Grady,
A/Senior Engineer
Kildare National Roads Office,
Kildare County Council
Block B,
Maudlins,
Naas,
Co. Kildare.

12th May 2014

Re: M7 Osberstown Interchange and R407 Sallins Bypass - Motorway Order Application (Reference No. PL09.MA0013 & PL09.HA0046).

Dear David,

I acknowledge receipt of your letter dated 30th April regarding the above matter (Your Ref: NRO-700 (O/S)-10.25).

I confirm that the arrangement set out in your letter is satisfactory to us and I look forward to liaising with you at the detailed design stage of the project.

Yours sincerely,

Hugh Creegan,
Director of Transport Investment and Taxi Regulation.

Bus Éireann
At the heart of the community

Ms Sonya Kavanagh
Director of Services, Roads and Transportation
Kildare County Council
Aras Cill Dara
Naas
Co. Kildare

28th May 2014

Re: M7 Osberstown Interchange & R407 Sallins Bypass Scheme

Dear Ms Kavanagh,

With reference to the above proposed scheme, may I take this opportunity to make representations on this matter.

Bus Eireann operate a very extensive commuter network of services in the Greater Dublin Area and offer a sensible and cost effective alternative to driving into and from Dublin City Centre from most major towns and urban centres in the Kildare area. However, our ability to deliver a reliable and consistent timetable is being affected by traffic congestion, especially at peak travelling times.

The proposed M7 Osberstown Interchange and R407 Sallins By-Pass Scheme if completed will address some of the traffic disruption currently being encountered by services operating through our 123/126 Naas/Clane corridor and will be pivotal to any future public transport considerations for this entire area.

In view of the above, I wish to put on the record our full support for the proposed upgrade works.

Yours sincerely,

Adrian O'Loughlin
Services Manager
Bus Eireann
Broadstone

Appendix B
Outline Environmental Operating Plan