North South 400 kV Interconnector Development

ESB Networks

Traffic Management Plan

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Change History of Report

Date	New Revision	Author	Summary of Change
14/05/2026	001	Rose Walsh	TMP updated incorporating Monaghan Coco's comments. References to addendums and work packages have been removed and text updated accordingly. Further information has been provided in most Sections of the document.
July 2025	000	Tobin Consultants & Rose Walsh	First submission of TMP to Monaghan, Cavan and Meath County Councils

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1 Introduction

This Traffic Management Plan (TMP) is being prepared for the sections of the North South 400kV Interconnector Development (hereafter referred to as “the development”) in the Republic of Ireland, specifically those that traverse the local authority boundaries of Monaghan County Council, Cavan County Council and Meath Council. Please refer to Section 2 of the TMP for a description of the permitted development.

This Traffic Management Plan (TMP) is a follow on from the outline construction TMP produced at the planning stage of the development. This stage of the plan has considered requirements attached to the grant of planning (ABP Planning Ref: 02.VA0017) and feedback as provided from meetings with local authority personnel. Consultation will continue with local authorities throughout the anticipated three-year construction period. The TMP will be a key construction contract document, the implementation of which will reduce possible impacts which may occur during the construction of the permitted development.

1.1 Scope of the TMP

The scope of this TMP includes the portion of the permitted development occurring within the Republic of Ireland in counties Monaghan, Cavan and Meath.

The permitted development, 103.35km long, consists of the following principal elements:

- A new single circuit 400 kV overhead transmission line (covering approximately 100.5km in the counties of Monaghan, Cavan and Meath)
- The proposed transmission line crosses the jurisdictional border with Northern Ireland at two points - from the townland of Lemgare, County Monaghan into the townland of Crossbane, County Armagh and back into the townland of Lemgare, County Monaghan. This transmission line comprises 299 No. new lattice steel support structures (ranging in height from approximately 26m to 51m over ground level), with associated conductors, insulators, and other apparatus;
- Modifications are required to 3 no. existing 110 kV overhead lines.
- The addition of a new 400 kV circuit for approximately 2.85km along the currently unused northern side of the existing Oldstreet to Woodland 400 kV transmission line
- Associated works within the existing ESB Woodland 400 kV Substation, in the townland of Woodland, County Meath
- A temporary construction material storage yard will be located in the townlands of Monaltyduff and Monaltybane, Carrickmacross, County Monaghan.

1.2 Purpose of the TMP

The preparation of a TMP for this development serves several key purposes:

- It fulfils a mitigation measure outlined in the Environmental Impact Statement (EIS) prepared for the development.
- It ensures compliance with Condition No. 3 of the planning permission (December 2016 – ABP Planning Ref: 02.VA0017).

The objective of this TMP is to ensure that the residual impacts to the public road network during the construction phase of the development which have been identified in the application documentation are minimised and that transport related activities are carried out as safely as possible and with the minimum disruption to other road users. The TMP has also been prepared for the purpose of identifying appropriate and safe methods of access for construction traffic to the proposed development.

This TMP describes the traffic management for the transportation of construction materials, equipment and personnel along the public road network to facilitate the construction of the proposed development. Light vehicles, such as cars and vans, will be used by site operatives travelling to and from the site. Heavy Construction Vehicles (HCV) will be required to deliver general construction materials, such as concrete, to the site.

This TMP remains a live document that will be reviewed by the contractor and expanded upon, where necessary, throughout the construction phase of the development.

1.3 Approach to the TMP

As outlined in Section 7.3.4 (Volume 3B) of the EIS, the proposed linear development is expected to require a construction period of approximately three years. A number of different contractors will be involved in the development. The core principles underpinning the initial traffic management plan outlined in this submission will remain consistent across all contractors and throughout the entire construction period. The plans will be continuously updated as live documents as the development progresses to ensure they reflect current environmental conditions, current legislation and best practices.

Consultation with Local Authorities

Since March 2024, ESB has engaged in ongoing consultation with Monaghan, Cavan, and Meath County Councils regarding the agreed approach to the discharge of planning conditions. During these meetings, in relation to Condition 3, it was agreed that ESB would submit a Construction Environmental Management Plan (CEMP), a Traffic Management Plan (TMP), and a Resource and Waste Management Plan (RWMP), collectively encompassing the entire development.

Due to the linear nature of the development in excess of 100km and estimated 3 year construction programme, it is impractical to provide information in this document for works that may not start for months or years into the future. In order for the TMP to reflect real time conditions, it needs to be based on the most current information available in advance of construction of a particular tower location. For example:

- Preconstruction site surveys at specific sites are typically carried out several weeks in advance of construction commencing.
- Similarly, a traffic management plan should be based on the road network and road conditions that exist close to the time when construction will commence.

1.4 Planning Compliance

As outlined in Section 1.2, the TMP, (along with the CEMP and R&WMP) has been prepared to demonstrate compliance with Condition 3 of the planning grant.

A requirement for the preparation of a Traffic Management Plan is set out in Condition 3 of the granted planning permission. Table 2.1 of the CEMP for the North South Interconnector (NSIC) development which accompanies this submission, provides a detailed overview of all applicable planning conditions, along with the current status of each.

This document addresses the items outlined in Condition 3 that relate to the Traffic Management Plan (TMP) only. See Table 1.1 below.

A Construction Environmental Management Plan (CEMP) and a Resource Waste Management Plan (RWMP) have also been prepared to satisfy this condition. Condition 3 also states that all plans shall incorporate the mitigation measures indicated in the environmental impact statement and shall provide details of intended construction practice for the permitted development. The full list of all traffic related mitigation measures are listed in Appendix 2.

Table 1.1: Condition 3 – Traffic Management Plan items

TMP items from Condition 3 (VA0017)	Addressed in Ref
c) site specific arrangements for each temporary access route, to include, where necessary:	Temporary Traffic Management Drawings are contained in Appendix 1 of the TMP and Access Route Maps for each tower location are included in Appendix 4 of the TMP.
i. arrangements for stepping down vehicle size,	Section 3.2.2 of TMP
ii. arrangements for off-loading of materials,	Section 3.2.3 of TMP
iii. short term road closures,	Section 4.9 of TMP
iv. the phasing of construction works which are accessed by single lane carriageways, and	Section 4.3 of TMP
v. the arrangements for the transfer and management of concrete, including wash out facilities,	Section 4.4 of CEMP
d) arrangements for the completion of pre and post-construction road surveys. The pre-construction survey	Section 4.8

TMP items from Condition 3 (VA0017)	Addressed in Ref
shall be completed three months prior to the commencement of the development,	
g) means to control dust at construction sites	Section 4.14

The employer (ESB) shall be responsible for ensuring that the contractor manages the construction activities in accordance with this TMP. The TMP will be a live document.

1.5 Constructability Report

Given the scale and significance of the North South Interconnector (NSIC) project, ESB has prepared a report outlining alternative and innovative construction methodologies for transmission tower foundations and erection. The report is informed by a desktop study and subsequent on-site trials undertaken to validate these methodologies under conditions representative of the NSIC. This report is provided in Appendix 5 – *400 kV North–South Interconnector Constructability Report* and demonstrates that the proposed construction activities and methods can be undertaken within the 30 m × 30 m working area at tower locations.

2 Development Description

2.1 The Proposed Development

This development consists of the construction of a new 400 kV overhead line linking the existing Woodland 400 kV substation, located approximately 8 km south of Dunshaughlin in Co. Meath, with a planned 400 kV substation, located approximately 3 km north of the village of Moy in Turleenan, Co. Tyrone.

The general alignment of the overhead line route from Tyrone in Northern Ireland to Co. Meath in the Republic of Ireland (ROI) is approximately 137.6 km in length.

This TMP covers the new 400 kV overhead line in the ROI from structures 103 to 410, the material storage yard and the substation works at Woodland substation.

The following is a high-level breakdown of structures and sites per Local Authority:

- **Monaghan County Council (MoCC)**

  The Overhead Line (OHL) extends from the jurisdictional border with Northern Ireland for a distance of approximately 38 km, supported by 109 structures (Tower 103 to Tower 211). It includes an associated temporary construction material storage yard located on a site of approximately 1.4 ha in Carrickmacross, County Monaghan.

- **Cavan County Council (CCC)**

  The development extends for a distance of approximately 11 km, supported by 28 structures (Tower 212 to Tower 239).

- **Meath County Council (MeCC)**

  The development extends for a distance of approximately 54 km, supported by 162 structures (Tower 240 to Tower 401). It also includes the addition of a new 400 kV circuit for approximately 2.85km along the currently unused (northern) side of the existing double-circuit Oldstreet to Woodland 400 kV OHL, extending eastwards from Tower 402 to Tower 410 at the Woodland Substation, County Meath.

  The Turleenan – Woodland 400 kV line section in the Republic of Ireland will comprise of 299 no. new lattice steel support structures made up of:

  - 220 no. Intermediate Towers
  - 77 no. Angle Towers
  - 2 no. Transposition Towers

A detailed description of the proposed development was presented in Chapters 6 and 7, Volume 3B of the Environmental Impact Statement (EIS).

Figure 2.1 & Figure 2.2 below present a condensed map depicting the proposed OHL route in Cavan, Monaghan and Meath areas respectively.

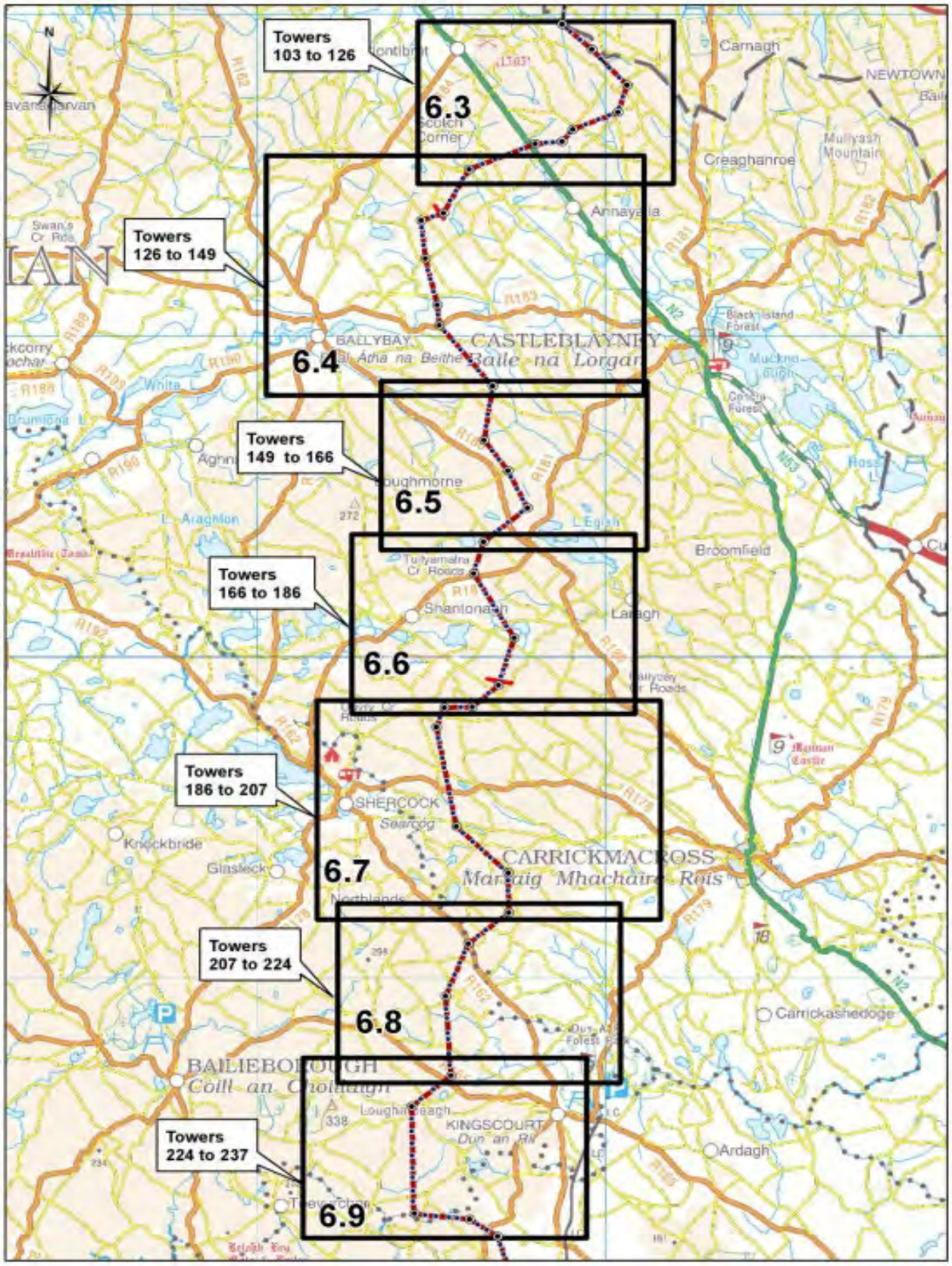

Figure 2.1: Cavan/Monaghan OHL Route

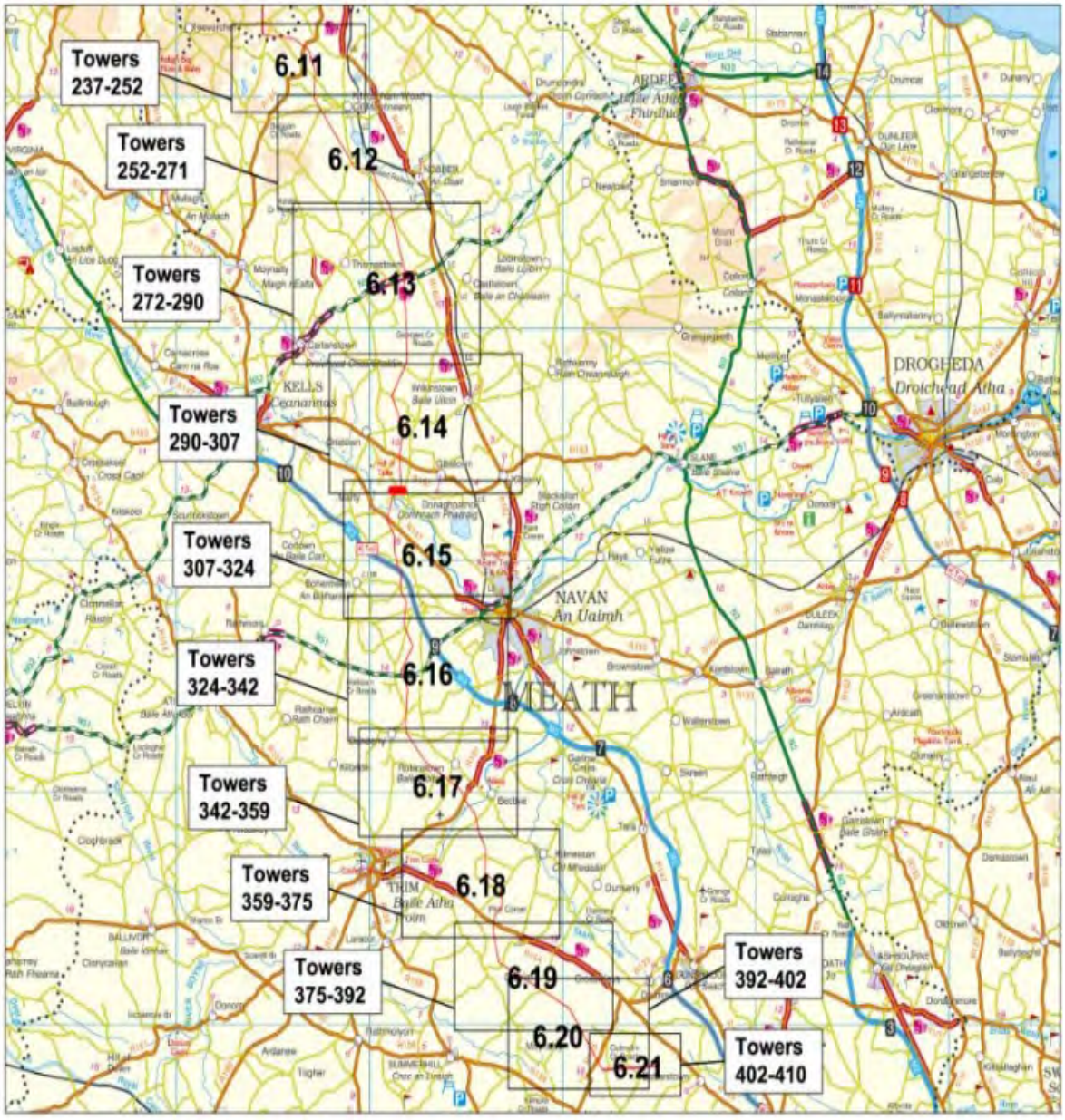

Figure 2.2: Meath OHL Route

Details of the proposed development, including proposed access locations, are detailed on Figure 6244-VOL 3B-Figure 16 to Figure 6244-VOL 3B-Figure 34 contained in the Environmental Impact Statement Volume 3B.

3 Envisaged Construction Traffic Routes

Details of the roads that may be impacted upon during the construction of the development are provided in Tables 3.1 and 3.2.

Table 3.1: Potentially Impacted National and Regional Roads

National Road Number	Regional Road Number
N2	R125
M3	R147
N51	R154
N52	R161
N2	R162 (Meath)
	R162
	R163
	R164
	R165
	R178
	R179 (Meath)
	R179
	R180
	R181
	R183
	R184

Table 3.2: Potentially Impacted Local Roads

Local Road Number		
L-6206-0	L-7414-12	LS08903
L-6207-0	L-7414-0	LT49051
L-62061-0	L-3408-0	L-49041
L-62051-0	L-74115-0	L-8912
L-62061-9	L-3406-44	L-4020
L-6205-0	L-74113-0	L-8010
L-2207-44	L-3406-30	L-8011
L-6202-32	L-34061-0	L-40121
L-22054-0	L-74116-0	L-40052
L-2205	L-74112-0	L-40312
L-22051	L-74051-7	L-4004
L-22030	L-3402	L-4011
L-40071-7	L-34021-0	L-4042
L-40231-0	L-7404-0	L-4010
L-4008	L-68371-0	L-40103
L-4024-2	L-74023-0	L-08201
L-4009-27	L-6837-0	L-4210
L-40063-0	L-28021-0	L-3201
L-40065-0	L-2802	L-7211

Local Road Number		
L-80091-16	L-6801-0	L-7200
L-8009-6	L-68011-0	L-3403
L-8790	L-68011-17	L-7430
L-40051-0	L-68017-0	L-7411
L-4005-0	L-2805-0	L-31031
L-4005-11	Old N2	L-34211
L-8008-0	L-3532-0	L-3420
L-80001-0	L-3533-0	L-7421
L-8001-0	L-3525-0	L-3510
L-7413-0	L-7557-0	L-03520
L-3409-18	L-7555-0	L-75031
L-34091-0	LT49033	L7503
L-3409-0	LT49032	L-4700
	LP04903	L-4700 – N2 Link Road

While it is likely that each road referred to in Tables 3.1 and 3.2, will be utilised at some stage during the construction phase, the use of the local roads will be minimised with the use of national and regional routes being prioritised due to their standard generally being higher.

Materials used in the construction of the proposed development, such as steel and concrete, are likely to be sourced from manufacturers that are not situated within the immediate vicinity of the proposed development. A construction material storage yard will be located at a site situated to the south-east of Carrickmacross and that construction traffic will emanate from this site, towards its destination.

Vehicles departing from the construction material storage yard will join the N2 from the L4700, turning north towards Carrickmacross or south towards Ardee, depending on the destination of the materials being delivered. Thereafter construction traffic will migrate onto national and regional roads as necessary. The use of local roads will be minimised as much as possible, particularly to avoid or minimise the encountering of narrow road widths, poorly maintained visibility and unsuitable bearing capacities. Haul routes have been identified, as shown in Appendix 1 of EIS (Volume 3B).

As the national and regional roads will be most used by the proposed development, a brief description of each is included in the following:

1. The N2 is a national primary road linking Dublin to the border with Northern Ireland in Monaghan. The cross section of this road varies between two lane dual carriageway, type 3 dual carriageway and single carriageway, the details of which can be found in the NRA TD27 Cross Section and Headroom.
2. A section of the old N2 which has been re-designated as a regional road is also likely to be used. This road has a carriageway width which varies between approximately 6m and 7m. The road is generally straight with adequate forward visibility.

3. The N3 / M3 is a national primary road linking Dublin to Donegal. The N3 / M3‘s cross section varies between two lane dual carriageway and single carriageway, the details of which can be found in the NRAs TD27 Cross Section and Headroom. Within the section to be used by the line construction traffic, the road is two lane dual carriageway to motorway standard.
4. The N51 is a national secondary road linking Delvin to Drogheda. This road has a carriageway width of approximately 7m. This road has several tight bends however, along the portion that will be used by construction traffic it is generally straight with sufficient forward visibility available.
5. The N52 is a national secondary road linking Nenagh to Dundalk. This road has a cross section of approximately 7m. This road has several tight bends along the portion that will be used by construction traffic.
6. The R125 is a regional road linking Dunshaughlin to Kilcock. This road has a cross section of approximately 6m. This road has several sharp bends which limits forward visibility in places.
7. The R147 is a regional road linking Clonee to Derver via Navan. The road‘s cross section varies but is typically 7m single carriageway with hard shoulders. The section of the road that will be used by construction traffic has sufficient forward visibility to safely accommodate construction traffic.
8. The R154 is a regional road linking Blackbull to Trim and Athboy. This road has a cross section of approximately 7m carriageway width with 0.5m hardstrips and grass verges. The speed limit along this road is generally 80km/h. This road is generally straight along the stretch that will be affected by construction traffic with sufficient forward visibility available.
9. The R161 is a regional road linking Navan to Kinnegad. This road has a cross section of between 6m and 7m. The speed limit along this road is generally 80km/h. This road is generally straight along the stretch that will be affected by construction traffic with sufficient forward visibility available.
10. The R162 is a regional road linking Navan to Shercock via Kingscourt. The section which construction traffic related to the proposed line route will use, has a carriageway width of approximately 7m. In general this road is subject to a speed limit of generally 80km/h; however, this is reduced in places. Forward visibility along the road is generally adequate to accommodate these speeds.
11. The R163 is a regional road linking Kells to Slane. The carriageway width of the road varies but is generally approximately 6m with grass verges on both sides. This road is generally subject to a speed limit of 80km/h but this reduces to 60km/h in places. Visibility along the sections of road, likely to be used in relation to the transmission line construction traffic is generally in keeping with the standards required for the speed limit.
12. The R164 is a regional road linking Mooneystown to Kingscourt via Kells. This road has a cross section of between 6m and 7m. The speed limit along this road is generally 80km/h. This road has several tight bends along the portion that will be

used by construction traffic and the specified forward visibility for this design speed is not available in places.

13. The R165 is a regional road linking the N2 and the N3, passing through Kingscourt and Baileborough. This road has an approximate carriageway width of between 6 and 7m. This road has several sharp bends which limits forward visibility in places.
14. The R178 is a regional road linking Shercock to Dundalk. This road has an approximate carriageway width of between 6 and 7m. This road has several tight bends along the portion that will be used by construction traffic for the proposed line route and the specified forward visibility for the road's speed limit is not available in places.
15. The R179 is a regional road linking Kingscourt to the Border via Carrickmacross. This road has several tight bends along the portion that will be used by construction traffic for the proposed line route and the specified forward visibility for the road's speed limit is not available in places.
16. The R180 is a regional road linking Castleblayney to Ballybay. This road has an approximate carriageway width of between 6 and 7m. Within the section of road where the construction phase traffic is likely to use the road, it is generally straight with adequate forward visibility.
17. The R181 is a regional road linking Shercock to the Border via Castleblayney. This road has a cross section of approximately 7m. This road has several sharp bends which limits forward visibility in places.
18. The R183 is a regional road linking Clones to the N2 near Castleblayney. This road has an approximate carriageway width of between 6 and 7m. This road has several tight bends along the portion that will be used by construction traffic for the line route and the specified forward visibility for the road's speed limit is not available in places.
19. The R184 is a regional road linking Ballybay to the N2. This road has an approximate carriageway width of 6m. Within the section of road construction phase traffic is likely to use, the road is generally straight with adequate forward visibility.

3.1 Traffic Generated at Material Storage Yard

The permitted development includes the construction of a material storage yard for the overhead line works. It is located in the townlands of Monaltyduff and Monaltybane, Carrickmacross, County Monaghan. The yard is 1.4ha in area and is located beside the N2 Dublin to Donegal Road. Construction traffic to and from the yard will be accessed via a link road from the N2 and the L4700.

The location of the yard is shown in Figure 3.1 below.

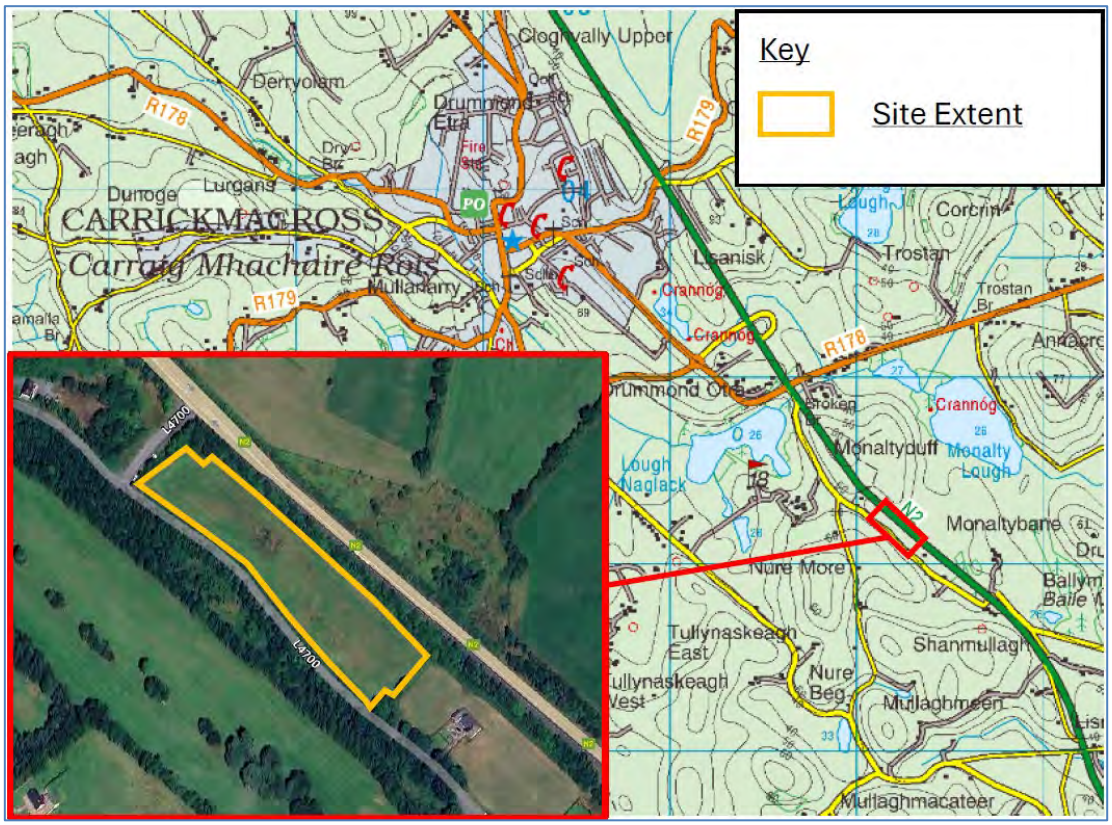

Figure 3.1: Material Storage Yard Location

The construction of the temporary construction material storage yard has the potential to generate traffic associated with the construction of the yard. It is considered that there will not be any likely significant effects as a result of the construction of the yard when compared to the operational traffic volumes during the construction of the proposed line route.

As the material storage yard will serve the entire development, this will be a focal point for traffic. It is assumed that seven construction teams will be employed to work on different sections of the overall proposed linear scheme, which is broken down into three teams working on the Cavan Monaghan section and four teams working on the Meath section.

The worst case for traffic generation at the storage yard will be if each of the seven teams were constructing angle towers at the same time and each were in process of constructing the foundations (the peak flows at angle towers occur during pouring of foundations).

Using the haul routes identified will result in three of the construction teams travelling north along the N2 towards Carrickmacross and three travelling south towards Ardee. The remaining team would be split between travelling north and travelling south on the N2 depending on the location of the construction site they were destined for. The origin of materials for delivery to the construction material storage yard is not certain at this stage and would likely vary dependent on the material and the availability of supply. It is assumed that deliveries will be split evenly between the north and south (after exiting the N2).

Traffic leaving the storage yard will turn right onto the L4700 and then turn right again at the junction between the L4700 and the Link Road. Traffic will then travel to the N2 where it is distributed as described above.

3.2 Traffic Generated at Tower Sites

Traffic management along the OHL route will ensure strategic use of existing national roads for efficient movement of construction vehicles. Safety at entry and exit points is emphasised through clear signage and road protocols. The access routes will also utilise lower-capacity routes – regional and local roads in a way that minimises disruption. Entry points are selected based on proximity to tower sites and material delivery needs, aiming for operational efficiency with minimal community impact.

The roads servicing the construction of the towers are listed above in Section 3. As noted, the use of the local roads will be minimised with the use of national and regional routes being prioritised due to their standard generally being higher.

Information regarding local roads—including any proposed closures or diversions—will be shared with the relevant local authorities as part of ongoing consultations prior to the commencement of works.

3.2.1 Guarding

Guarding is a safety measure that is carried out during the installation of overhead lines, specifically during the stringing phase when conductors are installed across long spans supported by towers.

Guarding refers to the temporary protective measures used to ensure that conductors do not accidentally come into contact with sensitive areas below such as:

- Public roads
- Railway crossings
- Transmission or distribution lines
- Rivers

Guarding will be required at locations where the line route passes over roads, railways, rivers and other overhead lines. The erection of guarding will result in the requirement of some temporary road closures. The exact duration of each road closure will be determined at the construction phase and an all stop arrangement (refer to section 4.9) may be employed on local and low volume use roads.

Consultation with the relevant authorities on temporary road closures will take place in advance of the works.

3.2.2 Stepping Down Vehicle Size

Condition 3 (c) (i) from the planning permission states '*arrangements for stepping down vehicle size'.* The following paragraph addresses how this will be achieved during the construction works.

The approach to stepping-down of vehicle size will be similar to the approach in Section 3.2.3 whereby the appropriately sized vehicle will be used to transport material to tower sites, without the need to step down.

Taking account of the planning stage requirements a step-down arrangement will be put in place where necessary noting the intention is to avoid stepping-down where possible. Where step-down may occur, agricultural scale vehicles will be utilised. Proposed Locations for stepping-down will be discussed with the relevant County Council Roads Department.

Due to narrower rural roads, there will be a deliberate transition to smaller, lighter vehicles for the final leg of material delivery where required. While lorries facilitate long-distance transport from the steelyard, the final approach may require stepping down to tractors and trailers which can better navigate rural or uneven terrain. This strategy reduces soil compaction, preserves local land conditions, and mitigates risks near public road crossings. The use of smaller vehicles ensures precision in delivering materials directly to their required locations while maintaining adherence to site-specific mitigation measures outlined in the Environmental Impact Statement.

Refer to the *North South Interconnector Constructability Report* contained in Appendix 5 of the TMP for the estimated construction type at each tower location in Monaghan.

3.2.3 Off-loading Construction Materials

Condition 3 (c) (ii) from the planning permission states '*arrangements for off-loading of materials'*

Off-loading involves the safe and methodical transfer of overhead line materials from the material storage yard to tower sites along the transmission route. Transport is carried out either by tractor-trailer or lorry with a hi-ab crane, depending on distance and terrain. Larger transport lorries may not be suitable for rural terrain or narrow roads leading to remote tower bases, so the construction teams will deploy tractors and trailers or smaller vehicles for final delivery if required. All off-loading operations will comply with strict safety measures to protect workers and avoid disruption near sensitive ecological or archaeological zones.

The intention for the NSIC is for plant and materials to be transported to tower sites from the material storage yard using the required vehicle to access the relevant tower site. In this way, transferring of materials or plant from one transport type to another will be removed.

If it transpires that at any specific tower sites this approach is not viable, locations for stepping down of vehicle size will be proposed and discussed with the relevant County Council Roads Department prior to finalisation.

Table 3 notes the vehicle size and concrete delivery mechanism for the foundations and tower erection methods.

Category	Foundation Construction	Tower Erection	Largest Transport Vehicle	Concrete Delivery Mechanism
Widest	Standard Pad & Chimney	Crane	Crane	Concrete truck to excavation
⇩	Standard Pad & Chimney	Telehandler	Telehandler / Concrete truck	Concrete truck to excavation
	Standard Pad & Chimney/Mini Piles	Gin Pole	13-tonne Excavator	Dumper to excavation from site entrance
Narrowest	Mini Piles	Gin Pole	Tractor & Trailer	Dumper to excavation from site entrance

Table 3: Vehicle and concrete delivery categories

3.3 Woodland Substation Traffic

The Woodland 400 kV Station is situated in the townland of Woodland, County Meath. It lies approximately 2.5 km northwest of Batterstown and 4.5 km southwest of Dunshaughlin. Access to the site is via the L6207which connects to the R154 Regional Road, running from Blackbull in County Meath to Crossdoney in County Cavan, and the R156 Regional Road, which links Dunboyne in County Meath to an area near Mullingar in County Westmeath. The station is set within a predominantly rural, agricultural landscape, characterised by well-established hedgerows that define the field boundaries.

The traffic generated at Woodland Station will have associated vehicles for the construction of the foundations, the removal of soil offsite, the delivery of concrete trucks to site, delivery of electrical equipment etc.

Information regarding any proposed closures or diversions—will be shared with the relevant local authorities as part of ongoing consultations prior to the commencement of works.

3.4 Staffing Levels

As noted above in Section 3.1, it has been assumed that seven construction teams will be employed to work concurrently on different sections of the development Arrivals and departures to the sites are to be carried out in as few vehicle movements as possible to minimise parking requirements and potential impacts on the local road network.

Staff shall access each site location via a vehicle pooling system to be put in operation between the Temporary Material Storage yard and each of the site locations. Such

measures shall be adopted in order to reduce traffic levels on the local road networks. Parking of staff vehicles will not be permitted on public roads.

4 Traffic Management Requirements

This section outlines the content of the Traffic Management Plan (TMP) which has been prepared prior to construction of the proposed development. Post planning, and as per the planning conditions, initial consultations took place with each of the three local authorities regarding further development of the construction stage traffic management plan. The initial meetings provided samples of the proposed traffic routing plans and proposed signage details in line with Chapter 8 requirements to demonstrate how sequencing of traffic management works may be undertaken to facilitate, in the first instance, Stage 1, 2 and 3 construction works. There was also a concept of one-way traffic flow systems outlined to facilitate continuity of flow, along narrow local roads, while also helping to reduce the potential impact of vehicle damage to the road edge and grass margin interface, during construction.

Feedback provided from the consultation included the following observations/requirements:

1. There was a concern that the implementation of unmanned one-way systems will not stop traffic from continuing to use the roads as a two-way system. This would result in an unsafe situation as well as damage to road edges and verges. There was a request that "*traffic movements would be monitored and, should this situation arise, additional measures would be immediately put in place to ensure traffic only travels in the allowed direction.*"
2. Pre- and post-condition road surveys and repairs to any damage to roads and verges.
3. A full programme of traffic management to be provided, with detailed traffic management plans and sequencing for each phase of works.
4. Liaison with the local community, including advance letter drops and a dedicated contact person.
5. Road closures to be applied for at least 8 weeks in advance.
6. Signage with 24-hour contact number/email address to be erected at traffic management locations.
7. Ongoing liaison to co-ordinate works around roadworks and works by third parties under road opening licences.
8. The provision of evidence of insurances and indemnities to local authorities, and the provision of a bond, amount to be agreed.

Prior to construction commencement, further engagement will be undertaken with the relevant authorities including the Transport Infrastructure Ireland, Local Authorities and Emergency Services.

The TMP is termed a "Live Document", such that any changes to construction programme or operations can be incorporated.

Monitoring measures to confirm the effectiveness of the mitigation measures outlined in the TMP will be implemented during the construction of the development.

4.1 Site Access & Egress

The following provides general details on the access routes to construction site(s):

- *Access to tower sites:* Temporary access using existing routes and access points as far as possible.
- *Access to stringing locations*: Generally, from the nearby proposed angle tower to the stringing location, where the two points are in the same fields and there are no obstructions.
- *Access to guarding locations*: The guarding locations will typically be accessed by 4x4 vehicle and excavator through existing access routes
- *Access to Material Storage Yard*: A new entrance will be required from the L4700 at a central location along the southern boundary of the site. Refer to the layout drawing in Appendix 2 of the CEMP to view the new entrance location
- *Access to Woodland Substation*: Woodland substation is an existing station, with site entrance already in place

A detailed set of preliminary access maps were prepared and submitted as part of the planning application for the proposed development. Please refer to **EIS Volume 3B Figures 1 to 34**.

Appendix 4 of this TMP provides Access Route Maps for Tower structures along the overhead line route. These maps depict environmental constraints and impeding conditions as well as appropriate mitigation measures e.g. temporary culvert(s), silt fencing, bog mats, access routes etc. specific to each location.

These maps will be updated for each tower location showing finalised access routes and all civil and environmental measures that need to be implemented prior to work commencing, following pre-confirmatory ecology surveys and engineer walk over surveys

A safe system of traffic management will be utilised, including the use of Traffic Management Operatives (TMOs) where required, for the control of traffic during access/egress operation at the site access location during peak activities.

In addition to this, as mentioned in Section 4.2, Traffic Management Plan – Temporary Signage Drawings will be completed for all access routes. See also Appendix 1 for Temporary Traffic Management Route Drawings – these drawings illustrate an indicative routing plan along the local road network, with sequencing arrangements proposed to manage construction traffic.

ESB will arrange a meetings with Monaghan, Cavan and Meath to discuss traffic in more detail.

4.1.1 National Road Network

Three number existing accesses will be utilised along the following national routes:

- Proposed Temporary Access to Tower 281 from N52 Road; and
- Proposed Temporary Accesses" to Towers 334 and 335 from the N51 Road.

The contractor(s) shall utilise a safe system of permanent flag men for the control of traffic during all access / egress operations at each site location outlined above.

4.1.2 Regional & Local Road Network

The majority of access / egress to proposed sites shall be facilitated from the local road networks. To mitigate against possible restrictions in visibility requirements, where necessary safe system of permanent flag men for the control of traffic during all access / egress operations will be used at site locations.

4.1.3 Construction Material Storage Yard

A temporary material storage yard will be developed to the south-east of Carrickmacross for this development. The location of this yard is to the west of the N2 and will be accessed by the L4700. The existing access into the site of the proposed storage yard is located adjacent to a junction on the public road network and has restricted visibility. A new entrance onto the L4700 further south of the existing entrance will be constructed. A speed survey along the L4700 indicated that 85th percentile speeds along the road are 70km/h. A visibility splay of 160m from a 3m set back is achievable to the left and 120m from a 3m setback is achievable to the right. Please refer to drawing MT-009-002 of the planning drawings for sightlines.

4.1.4 Woodland 400kV Substation

The existing entrance to the Woodland 400kV substation is situated at the end of an existing private entrance road, which itself extends from the public road. Visibility at the entrance to the substation is not an issue as the there is no requirement for turning left or right to access the public road network

4.2 Traffic Management Signage

The contractor(s) shall provide advanced warning signs, in accordance with Chapter 8 of the Department of Transport Tourism and Sport "*Temporary Traffic Measures and signs for Roadworks*" August 2019, on the approach to proposed site access locations a minimum of two weeks prior to construction works commencing at the site.

See Appendix 3 for the Chapter 8 Traffic Management Layout for the Material Storage Yard.

For OHL tower locations, the contractor(s) shall undertake additional consultation with the relevant authorities for the purpose of identifying and agreeing signage requirements. Such signage shall be installed prior to works commencing on site.

A series of sequenced plans have been devised to service each of the Tower sites with associated Traffic signage. These are to be reviewed and further developed and in

summary, the contractor will be required to ensure that the following elements are implemented:

- Consultation with the relevant authorities for the purpose of identifying and agreeing signage requirements;
- Provision of temporary signage indicating site access route and locations for contractors and associated suppliers; and
- Provision of general information signage to inform road users and local communities/schools of the nature and locations of the works, including development contact details.
- Letter drops are also to be facilitated particularly as each sequencing of works progress through each stage of the development and where signage is not provided outside each individual house/property that may fall under the short-term one way system.
- Completion of Traffic Management Plan – Temporary Signage Drawings for all access routes – refer to Appendix 1 on the Temporary Traffic Management Drawings.

4.3 Routing of Construction Traffic

Condition 3 (c) (iv) of the planning conditions asks for '*the phasing of construction works which are accessed by single lane carriageways'*.

As outlined in Section 3.1 a temporary construction material storage yard will be utilised for the proposed development. Vehicles will be permitted to access the road network via the L4700 and onto the N2 before turning north towards Carrickmacross or south towards Ardee, depending on the destination of the materials being delivered. Figure 13.9 to Figure 13.13 (Volume 3C) contained in the Environmental Impact Statement and Figure 13.9 to Figure 13.13 (Volume 3D) contained in the Environmental Impact Statement, detail the envisaged routes to be utilised in the delivery of materials and supplies to each of the tower locations.

It is envisaged that three of the seven construction teams will travel north along the N2 towards Carrickmacross and the remaining four construction teams will travel in a southerly direction towards Ardee.

Traffic leaving the storage yard will turn right onto the L4700 and right again at the junction between the L4700 and the link road. Traffic will then travel along the N2 where it will distribute along the works area as described above.

The use of local roads will be minimised as much as possible, particularly to avoid / minimise the encountering of narrow road widths, poor visibility and unsuitable bearing capacities.

A series of sequencing arrangements have been developed primarily demonstrating a routing plan along the local road network, where samples of these plans have been

previously discussed with each of the local authorities, these are presented in Appendix 1. Where roads are narrow a one-way system has been developed to help ensure a level of continuity of traffic flow is maintained, while also helping to contain traffic movements to within the bound carriageway. The plan is developed in sequences such that where works are progressing under say sequence 1, sequence 2 shall not progress in tandem, where this could delay and affect the local detour arrangements. This is to ensure that combined construction and local traffic movements are not adversely affected. The appointed contractor is to take account of this sequencing arrangement, in forming their programme for the delivery of the works

4.4 Programming

In order to reduce impacts on local communities and residents adjacent to the proposed sites, it is proposed that:

- Engagement will take place with the management of other construction developments and the local authorities to co-ordinate deliveries e.g. details on current Irish Water scheduled works programme https://www.water.ie/projects/?map=our-projects
- Deliveries will be scheduled in such a way that construction activities and deliveries activities do not run concurrently e.g. avoiding pouring of concrete on the same day as material deliveries in order to reduce the possibility of numbers of construction delivery vehicles arriving at each tower location simultaneously, resulting in buildup of traffic on the road network.
- Scheduling of deliveries to and from the proposed temporary construction materials storage yard such that traffic volumes on the surrounding road network is kept to a minimum.
- Road closures to be applied for at least 8 weeks in advance .
- A construction phase programme of works shall be developed in liaison with the relevant local authorities, taking into account potential road repair works that are included in the local authorities road works schedule.
- HGV deliveries to the development site will be suspended on the days of any major agricultural shows, sports events, etc. that have the potential to cause larger than normal traffic volumes.
- Engagement with members of the local community to ensure that deliveries will not conflict with sensitive events such as funerals.
- HGV deliveries will avoid passing schools at opening and closing times where it is reasonably practicable.
- Construction activities will be undertaken during normal working hours for all construction stages. It is not anticipated that construction works will be carried

out on Sunday, or Bank Holidays or that any construction works will be carried out in hours of darkness. See Section 4.12 for working hours.

4.5 Recommended Traffic Management Speed Limits

Adherence to posted / legal speed limits will be emphasised to all staff / suppliers and contractors during induction training. Speed limit restricted of 30km/hr in sensitive locations on public roads

Construction traffic on access routes to tower locations, which are off the public road network will have a speed limit of 15 km/hr.

4.6 Road Cleaning

Road sweeping operations will be carried out to remove any development related dirt and material deposited on the road network by construction / delivery vehicles. Road Sweepers will dispose of material following sweeping of road network, to licensed waste facility.

4.7 Vehicle Cleaning

Wheel washing will be utilised where required, and any other necessary measures to remove mud and organic material from vehicles exiting tower sites. In addition, the cleaning of delivery trucks such as concrete chutes from delivery trucks shall be carried out prior to exiting onto the public road.

Mobile water bowser units, which can be towed by 4×4 vehicles or vans or transported by trailer. These units are typically of a size allowing them to be parked within the working area and used as required. IBC water containers fitted with spray hoses may also be used, which provide a compact and flexible solution.

Tractor-mounted water bowsers, which may be used on site access tracks and, where necessary, on public roads.

4.8 Road Condition

Pre-condition surveys will be carried at all sites prior to construction commencing and post condition surveys will be carried out on completion of works.

Upon completion of the construction of the proposed development, the surveys carried out at pre-construction phase shall be repeated and a comparison of the pre and post construction surveys carried out. Where such comparative assessments identify a section of road as having been damaged or as having deteriorated as a result of construction traffic, the road will be repaired to the pre- construction standard.

Prior to contractor appointment, ESB intends to engage with the Municipal District Engineering Staff of Monaghan County Council to discuss arrangements for road condition surveys.

4.9 Temporary Road Closures

Condition 3 (c) (iii) of the planning permission asks for site specific arrangements for '*short term road closures*'. The following paragraphs address this condition.

During the course of the works, it is not envisaged that full scale road closures will be required. In areas where existing carriageways are narrow, it is envisaged that traffic management measures such as one-way systems and as necessary temporary traffic lights will be utilised to facilitate traffic movements.

Temporary road closures will be required at some guarding locations during their removal once construction has completed. For the local roads and subject to work being of short-duration and in agreement with the road's authority, as per Chapter 8 from the Traffic Signs Manual, an "All Stop" arrangement may be utilised. Where these criteria cannot be met then traffic management will default to the arrangement proposed for the other construction operations.

The most notable of the more strategic temporary road closures will be on the M3 Motorway. These closures will be short in duration, with road closure times and appropriate measures to be agreed with the local authority, Transport Infrastructure Ireland and other relevant stakeholders prior to the removal of guarding. For the more strategic road routes, it is envisaged that road closures will be undertaken during night time when traffic volumes are at their lowest, subject to agreement with Transport Infrastructure Ireland and other relevant stakeholders

4.10 Site Traffic Control Measures

- All vehicle movements within the site will be strictly monitored and controlled.
- The contractor(s) shall use a safe system of permanent Traffic Management Operatives (TMO's) for the control of traffic during all access / egress operations at each site location.
- Having regard to the limited sightlines in place at some of the proposed access points, a system of permanent TMO's for the control of traffic during all access/egress operations at each site location.
- Appropriate road signage to be erected to provide warning of temporary access locations to construction sites and,
- Parking on public roads is strictly prohibited.

- Speed limit restricted of 30 km/hr in sensitive locations (e.g. schools, residential development, farmyards). Construction traffic on access routes to tower locations, which are off the public road network will have a speed limit of 15 km/h
- Construction traffic and personnel must use pre-designated access routes and zones at all times to minimise interaction with the public.
- Traffic control measures will be implemented at all site locations once access agreements are finalised.
- Entry and exit points may involve movement between public roads and private property access lanes, requiring clear coordination
- Close communication between the ALO & CLO, local authorities and An Garda Síochána during construction.
- Prior to works commencing, the appointed contractor will assess site-specific risks related to traffic access and egress and incorporate appropriate mitigations.
- Road signage, compliant with Chapter 8 of the Department of Transport's Traffic Signs Manual, will be installed as needed.
- Pedestrian access will be clearly defined and physically separated from vehicular routes to enhance safety.
- Refer to Section 4.13 on Emergency Procedures to align traffic control measures with maintaining emergency access along all routes and site access locations.

4.11 Enforcement of Traffic Management Plan

All contractor staff and material suppliers will be required to adhere to the final TMP. As outlined above, monitoring measures will be implemented to confirm the effectiveness of the TMP and compliance will be monitored by the Project Manager or Project Supervisor. Regular inspections / spot checks will also be carried out to ensure that all contractor staff and material supplies follow the agreed measures adopted in the TMP.

Routine inspections of construction traffic activities will be carried out by the appointed Contractors staff to ensure all control measures to ensure the proposed works are being carried out in accordance with the TMP and traffic mitigation measures.

Records of traffic inspections shall be maintained by the appointed contractor. Site inspections will be carried out by suitably trained staff.

The effectiveness of the TMP will be demonstrated through a regular audits and inspections by the Construction Supervisor and adherence to agreed mitigation measures (routing, signage, speed controls, and programming) will ensure compliance. Pre- and post-road condition surveys will provide measurable evidence that the TMP has minimised disruption and maintained road safety. The TMP will operate as a live document, allowing for continuous improvement where monitoring identifies the need for corrective actions.

Roles and Responsibilities

ESB, appointed contractors and sub-contractor have responsibility for the effectiveness of the TMP throughout the construction stage. The following lists the key roles and responsibilities:

ESB are responsible for the following during construction:

- Acting as the Client and maintaining oversight on environmental management of construction works
- Liaison with other stakeholders regarding proposed environmental management of construction works
- Discharge the conditions of planning permission, including preparation of any details to be submitted to, and agreed with the planning authorities prior to commencement of development.
- Appointment of a Contractor to undertake the construction of the development
- ESB, as Transmission Asset Owner (TAO), has responsibility for the construction of the project. Accordingly, ESB will appoint project-specific Construction Supervisor(s) with responsibility for supervising ESB-appointed contractors.
- ESB Construction Supervisors will also be responsible for liaison with Contractor(s) and landowners and will maintain communication with affected landowners prior to, during, and following completion of construction works. Construction Supervisors will ensure that Traffic Mitigation Measures are being implemented.
- Appointment of a suitably qualified ECoW to ensure that all environmental and ecological mitigation measures detailed in the Contractor's CEMP and any associated Method Statements, are implemented in full, as well as on-site monitoring and reporting.
- Appointment of a project archaeologist to oversee the archaeological elements of the proposed works.
- Notify the Contractor immediately in writing of any identified non-conformance in the Contractor's approach to environmental management.
- Conduct regular audits of the Contractor's environmental management processes, traffic management processes and resource waste management processes.
- Act as the technical and environmental lead on the overall development
- Provision of an Ecological Clerk of Works

- Submission of monitoring reports to the relevant planning authority and other relevant statutory bodies in accordance with the requirements of the relevant planning authority.

Contractors are responsible for the following during construction:

The construction contractors will be responsible for appointing an appropriate Project team for the duration of the construction project and ensure that they have the resources to ensure compliance with the measures set out in this TMP and Appendix 2 and undertake the responsibilities set out below.

The general key personnel on site implementing the TMP are listed below with roles and responsibilities detailed in the following sections:

1. Project Manager:

The Project Manager is appointed by the contractor to manage and oversee the entire project. The Project Manager is responsible for:

- Implementing and updating the Construction and Environmental Management Plan (CEMP), Traffic Management Plan (TMP) Resource Waste Management Plan (RWMP),
- Liaison with the client/developer;
- Liaison with the project team;
- Management of the construction project in accordance with the NIS, EIS, Planning Conditions and CEMP, TMP and RWMP
- Assigning duties and responsibilities in relation to the CEMP, TMP and RWMP
- Production of construction schedule;
- Materials procurement; &
- Maintaining a site project diary

2. Site Manager

The Site Manager manages all the works to construct the development, on behalf of the contractor. The Site Manager reports to the Project Manager. In relation to the environmental, traffic and waste management, the Site Manager is responsible for:

- Ensuring all operatives/personnel are inducted prior to commencing works on site. The induction process will include requirements of CEMP, TMP & RWMP
- Ensure all works are carried out by operatives with relevant competency;
- Ensure all risk assessment / method statements cover requirements of CEMP where applicable;
- Supervise and monitor works to ensure compliance with CEMP, TMP & RWMP

- Ensure the correct management of all waste / retired materials from work sites and its appropriate segregation as required, to facilitate subsequent compliant collection / disposal.
- Ensure all monitoring is carried out as specified in CEMP, TMP & RWMP
- Liaising with the ECoW in preparing site-specific method statements for all works activities where there is a risk of environmental impact, by incorporating relevant mitigation measures; and
- Maintaining records of all site inspections.

3. Environmental Officer / Environmental Manager

The Environmental Officer or Manager shall have the following responsibilities:

- Liaising with the project team in assigning duties and responsibilities in relation to the CEMP to the project team;
- Responsibility for all aspects of waste management during the construction and for the implementation of the R&WMP;
- Completion of documented environmental audits to ensure that work is being carried out in accordance with environmental mitigation measures and method statements, etc.;
- Ensuring that the findings of all audits and inspections are addressed in a timely manner;
- Liaising with the Site Manager to ensure that the control measures set out in the Schedule of Environmental Mitigation are implemented;
- Liaising with the client, Ecological Clerk of Works, specialist consultant etc. in relation to environmental issues;
- Reviewing the management of waste on site;
- Ensuring that site inductions and toolbox talks contain the relevant environmental information and reviewing the effectiveness of the induction process to ensure that site staff have received suitable awareness training;
- Liaise with ECoW in the implantation of mitigation measures across the site; and
- Monitor the effectiveness of mitigation measures.

4. Specialist Sub-Contractors

The contractor(s) shall use a safe system of permanent Traffic Management Operatives (TMO’s) for the control of traffic during all access / egress operations at each site location.

These specialist sub-contractors shall be responsible for liaising with the various stakeholders regarding construction traffic management and complying with the various requirements of these stakeholders and with compliance traffic mitigation measures.

A full outline of Roles and Responsibilities is provided in Section 5 of the CEMP.

4.12 Details of Working Hours and Days

Site development and building works will generally be carried out during normal working hours - 07:00 to 18:00 Monday to Friday and 08:00 to 14:00 Saturdays. No site development works shall take place outside of these hours, or on Sundays or Public Holidays. Any alterations to these times shall be subject to the prior written agreement of the Planning Authority.

Full opening of roads may be required outside of the designated working hours so it is imperative the integrity of the road network is maintained.

4.13 Emergency Procedures During Construction

Unobstructed access will be provided to all emergency vehicles along all routes and site accesses.

Contact details of the contractors personnel responsible for construction traffic management will be provided to the local authorities.

Unobstructed access for emergency vehicles will be safeguarded through the implementation of this TMP which includes provisions for traffic control, temporary road closures and the use of TMO's - all of which will be coordinated with Monaghan County Council to ensure that roads remain passable or can be rapidly cleared if required. All measures outlined in Section 4.10 on *Site Traffic Control Measures* will be implemented along all routes and site access locations allow for emergency access.

The use of stepping-down of vehicles and confinement of HGV's to suitable roads further reduces the likelihood of blockage on narrow routes. Advanced planning, liaison with local authorities and affected landowners and controlled access arrangements at each work location will ensure that emergency services can maintain access at all times.

In the case of an emergency the following procedure shall be followed:

- Emergency Services will be contacted immediately by dialling 112;
- Exact details of the emergency / incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner;
- The emergency will then be reported to the Site Team Supervisors and the Safety Officer;
- All construction traffic shall be notified of the incident (where such occurs off site);
- Where required, appointed site first aiders will attend the emergency immediately; and

- The Safety Officer will ensure that the emergency services are en route.

4.14 Stakeholder Management

Close communication with the relevant local authorities and the emergency services will be maintained throughout the construction phase. Such communications will include:

- Arranging meetings with County Council Municipal District Engineering Staff, discuss the arrangements of pre and post construction road surveys, traffic routes, road closures etc.
- Ongoing reporting relating to the condition of the road network and updates to construction programming; and
- Information relating to local and community events that could conflict with proposed traffic management measures and construction traffic in order to implement alternative measures to avoid such conflicts.

The local community will be informed of proposed traffic management measures in advance of their implementation. Such information shall be disseminated by posting advertisements in local newspapers and delivering leaflets to houses in the affected areas. Such information shall contain contact information for members of the public to obtain additional information and to provide additional knowledge such as local events, sports fixtures etc. which may conflict with proposed traffic management measures.

The TMP will be updated following consultation with Local Authorities.

4.15 Air Quality & Dust Management

Condition 3 (g) of the planning permission states ‘means to control dust at construction sites’.

Dust management on the North-South 400 kV Interconnector development is addressed through proactive measures designed to minimise air quality impacts during construction. Stockpiled materials will be covered where feasible, and vehicle movements will be controlled to reduce dust generation.

In periods of extended dry weather, dust suppression may be necessary at the material storage yard, along overhead line routes and at Woodland substation to minimise the nuisance risk. Dust suppression control measures to be implemented are listed below:

- A water bowser will be used to dampen down the internal access tracks and temporary work(s) areas to prevent the generation of dust
- In the event of dust nuisance occurring within or outside the site boundary, movements of materials likely to raise dust would be curtailed and satisfactory procedures implemented by the appointed contractor to rectify the problem before the resumption of construction operations

- All roads and access routes will be inspected frequently by the site management
- If required, a road sweeper and water bowser will be deployed to clean and spray the local roads with water during dry periods when there is a risk of dust nuisance

Dust suppression equipment suitable for the 30 m × 30 m working area will be available during periods of dry weather and deployed as required on site. A range of appropriate dust control measures will be available, including:

- Mobile water bowser units, which can be towed by 4×4 vehicles or vans or transported by trailer. These units typically are of a size to allow them to be parked within the working area and used as required.
- IBC water containers fitted with spray hoses, which provide a compact and flexible dust suppression solution.
- Tractor-mounted water bowsers, which may be used on site access tracks and, where necessary, on public roads.
- Road sweepers, which may be deployed on access roads and public roads to remove deposited material and prevent the generation of dust nuisance.

These steps form part of the wider Construction Environmental Management Plan (CEMP) mitigation measures, ensuring compliance with regulatory standards and maintaining community health and amenity.

Section 4.6 Air Quality & Dust Management of the CEMP has been updated accordingly. In addition, reference is made to the Constructability Report in Appendix 5 of the TMP.

5 Conclusion

This Traffic Management Plan (TMP) will form part of the construction contract and is designed to reduce possible impacts which may occur during the construction of the proposed development.

The TMP is a live document and shall be developed throughout the construction phase with ongoing consultation with local authorities.