

Appendix 16A

Traffic Management Plan

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MWP

TRAFFIC MANAGEMENT PLAN

Ballinlee Wind Farm

Ballinlee Green Energy Ltd.

September 2025



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Appendices

Appendix 1 – Sample Schedule of Signs

Appendix 2 – Sample Traffic Management Drawings, Preliminary Traffic Diversion Drawings for Wind Farm and Grid Connection Cable Route Works, and Check Sheets



Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
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1. Introduction

This Traffic Management Plan (TMP) outlines the procedures to be implemented during the construction, commissioning, operation, maintenance and decommissioning of the Ballinlee Green Energy Project, comprising wind farm, substation site, turbine delivery and grid connection.

The Traffic Management Plan will be updated, appropriately, following the proposed project detailed design/tendering stage, and submitted for the approval of Limerick City and County Council, prior to construction.

The proposed development is located in a rural area of east Limerick approximately 18 kms south of Limerick City and 3 kms southwest of Bruff. The proposed development grid connection route is from the proposed wind farm and substation site to the existing 220/110kV Killonan substation which is located on the Tipperary Road (N24), on the east side of Limerick City.

The proposed turbine delivery route is detailed in **Volume III**, **Appendix 2C** Turbine Delivery Route Assessment of this EIAR.

The proposed development site location is shown in Figure 1.1.

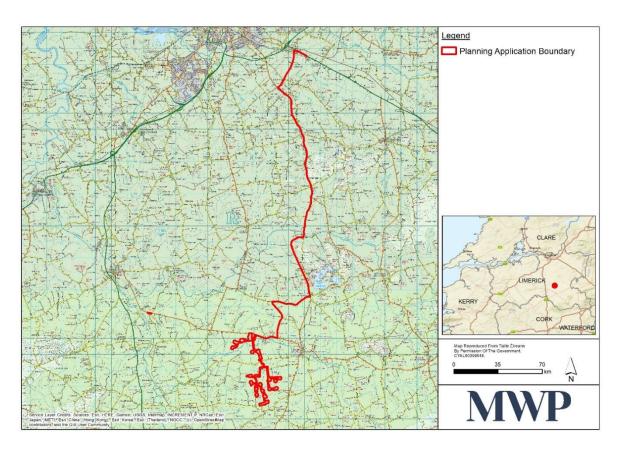


Figure 1-1: Location of Proposed Development

The proposed wind farm and substation site access location map is shown in **Figure 1-2**. The proposed wind farm and substation site is located on the south side of the R516 Regional Road, between Croom and Bruff, approximately 11 kms east of the N20 National Primary Road at Croom.



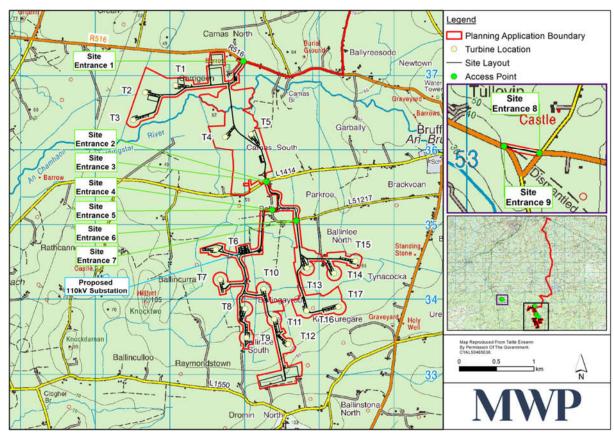


Figure 1-2: Proposed Wind farm and Substation Site Access Location Map

The existing roads along the proposed development grid connection are shown in the map provided in **Figure 1-3**. The proposed grid connection route extends along the R516 Regional Road; the L8012, L8011 and L1412 Local Roads; R512 Regional Road; the L1170 and L1171 Local Roads and the N24 National Primary Road. The grid connection extends north from the proposed wind farm and substation site through Holycross, Grange and Ballyneety to the existing 220/110kV Killonan substation.



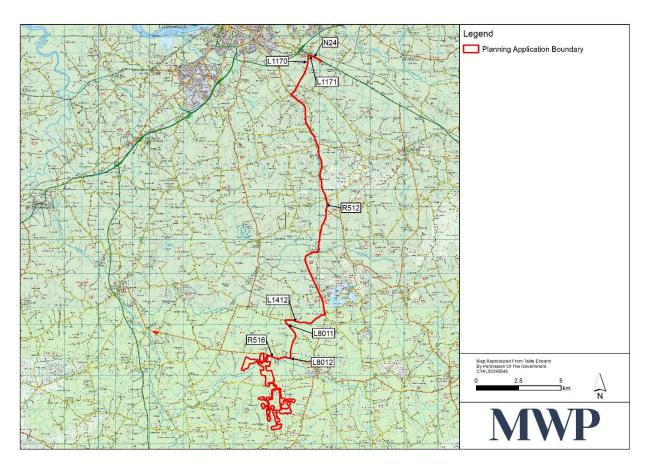


Figure 1-3: Proposed Development Grid Connection Roads Maps

A full description of the proposed development, development lands and all associated project elements is provided in **Volume II**, **Chapter 02** Description of Proposed Development of this EIAR.

The aim of the TMP is to provide a safe working environment for construction workers and efficient passage of traffic and other road users through the proposed development site and associated works. The procedures to be implemented by the contractor will include the provision of facilities for the safe passage of pedestrian and vehicular traffic and measures to separate them from the construction work.

The contractor will ensure traffic management controls are in accordance with the *Department of Transport (DoT)*Guidance for the Control and Management of Traffic at Road Works and Department of Transport (DoT) Traffic
Signs Manual Chapter 8: Temporary Traffic Measures and Signs for Roadworks.

This TMP is for planning purposes only and is a 'live document' that will be updated at construction stage by the appointed contractor. In addition, the appointed contractor will further discuss, adapt, and improve the project traffic management regime in consultation with the roads department of Limerick City and County Council through the road opening and road closure licence processes, if required.

In the event An Coimisiún Pleanála (ACP) decides to grant permission for the proposed development, the final TMP will address the requirements of any relevant planning conditions, including any additional mitigation measures which are conditioned by the planning authority. Prior to works commencing, the final TMP for construction traffic using the public road will be produced by the appointed contractor and agreed with the Council. Key to the implementation of the final TMP is the dedication of an on-site construction manager nominated by the contractor. All site personnel are required to ensure compliance with the requirements of the site's TMP.



2. Project Parameters

2.1 Project Staging

A detailed description of the proposed development construction is provided in **Volume II**, **Chapter 02** Description of the Proposed Development of this EIAR. Subject to planning permission, it is envisaged that work would commence at the proposed development site during Q1 2028, with a construction duration of approximately 24 months, followed by six months of commissioning. Accordingly, the proposed development is scheduled to be fully complete and operational during Q3 2030.

The start date is dependent on planning being granted, receipt of a grid connection offer from EirGrid, funding and all permits being in place. A typical programme of work is outlined in **Table 2.1**. A number of these phases will however run concurrently as outlined:

Table 2.1: Preliminary Construction Programme

Phase	Activity	Duration
Phase 1	Clearfelling (to be complete ahead of construction site mobilisation)	2 months
Phase 2	Prepare site, pre-construction activities, site entrance, temporary compounds	1 month
Phase 3	Access track construction + Drainage plan implementation	3 months
Phase 4	Hard standing construction for turbines	3 months
Phase 5	Turbine Foundation construction	4 months
Phase 6	Trenching and ducting (underground electrical collection system)	2 months
Phase 7	Substation construction	4 months
Phase 8	Permanent meteorological mast erection	1 month
Phase 9	Turbine delivery	3 months
Phase 10	Turbine erection	4 months
Phase 11	Commissioning	6 months

The expected construction duration for the proposed grid connection works along the public road network, which will be carried out concurrently with the proposed substation works, is six months. The proposed grid connection works would be carried out on a linear basis, from the proposed windfarm and substation to the existing 220/110kV Killonan substation, by a single construction crew.

The expected durations of the proposed grid connection construction works along the public road network are provided in **Table 2.2**.

Table 2.2: Proposed Grid Connection Route Construction Durations Along Public Roads

Grid Connection Public Road Section	Length	Construction Duration
Section within R516 to L8012	1.4 kms	1-2 Weeks
Section within L8012 to L8011	1.4 kms	1-2 Weeks
Section within L8011 to L1412	1.1 kms	1 Week



Grid Connection Public Road Section	Length	Construction Duration
Section within L1412 to R512	2.5 kms	2-3 Weeks
Section within R512 to L1170	14.5 kms	15 Weeks
Section within L1170 to L1171	2.6 kms	3 Weeks
Section within L1171 to N24	0.2 kms	2 Days
Section within N24 to Killonan Substation	0.7 kms	4-5 Days
Total	24.4 kms	26 Weeks (6 Months)

The proposed grid connection works would extend across the L51217 and L1414 public roads at the proposed site public road crossings, with associated accesses, during construction. The expected duration of the grid connection construction works at these public road crossings is one to two days at each location.

2.2 Construction Works

A full description of the construction works is provided in **Volume II**, **Chapter 02** Description of the Proposed Development of this **EIAR** for the proposed development and a comprehensive description of activities is outlined in **Volume II**, **Chapter 04** Civil Engineering of this **EIAR**.

2.2.1 Proposed Development

The construction of the proposed development will principally comprise of the following works:

- Felling of any areas of coniferous forestry plantation necessary to facilitate construction works;
- Construction of site entrances and any sections of internal access tracks necessary to facilitate access to the temporary construction compound and proposed on-site borrow pit locations;
- Construction of temporary construction compound including fencing (for security and ecology, water and archaeological exclusion zones), site offices, parking, material laydown and storage areas, etc;
- Establishment of the on-site borrow pits and temporary storage of stockpiled overburden and surplus excavated materials within the material storage areas;
- Earthworks and drainage infrastructure associated with construction of new and upgraded internal access tracks, crane hardstand, turbine foundations and substation compound;
- Construction of upgraded and new watercourse crossings for construction of internal access tracks and underground cables;
- Excavation of turbine bases and permanent met mast foundations, and associated turbine hardstand areas;
- Installation of sections of underground cabling between turbines;
- Installation of underground cabling to existing 220/110kV Killonan substation;
- Construction of the substation compound;
- Turbine delivery, installation, and commissioning; and
- Meteorological mast delivery, installation, and commissioning.



2.2.2 Temporary Construction Compounds

Three temporary construction compounds will be provided at the proposed site, and will include materials' storage/laydown areas, parking and staff facilities.

Temporary construction materials' storage for the grid connection route along the public road network may be provided at existing site locations convenient to the works' locations, as the circa 24.4 kms route works progress, which would be subject to the pre-approval of the planning authority prior to the works.

2.2.3 Access

The wind farm site is located mainly in agricultural flatlands due southwest of the town of Bruff. Access to the wind farm site will be via the Local Road network. The R512 is located to the east of the wind farm site running from Bruff to Kilmallock. The closest National primary road is the N20 located to the west of the proposed development.

The main site entrance is via the R516 Regional Road between Croom and Bruff on the north side of the wind farm site. This will be a new entrance close to an existing farm/dwelling entrance along the R516.

In total there will be Nine (9) No. site entrances utilised for the operational and construction phase (see **Figure 1-2**). These entrances are required to facilitate construction traffic delivering material and to facilitate turbine deliveries, and operations and maintenance vehicles.

Entrances One (1 No.) to Seven (7 No.) provide access to the main wind farm site.

Entrance Eight (8 No.) and Nine (9 No.) are part of the turbine delivery route, avoiding the Tullovin bridge, and both are off the R-516.

2.2.4 Hours and Duration

The proposed construction hours are 7.00 a.m. to 7.00 p.m., Monday to Saturday inclusive, while works on public roads are 7.00 a.m. to 7.00 p.m. Monday to Friday inclusive and 9.00 a.m. to 2.00 p.m. on Saturday On occasion, the working day may extend outside normal working hours when critical elements of the works need to be advanced.

The construction duration for the proposed windfarm and substation site is 24 months, followed by six months of commissioning.

The expected construction duration for the proposed grid connection works along the public road network, which will be carried out concurrently with the proposed substation works, is six months. The proposed grid connection works will be carried out on a linear basis, from the proposed windfarm and substation to the existing 220/110kV Killonan substation.

2.2.5 Staff

The expected peak staff would be up to 80 construction personnel, which would generate approximately 60 car and van trips, both to and from the site each working day, based on an average vehicle occupancy rate of 1.33 personnel per vehicle, including staff that travel in contractor vehicles.

Canteen facilities for personnel will be provided on-site. Site personnel would travel to site prior to 7.00 a.m. and depart from site from 7.00 p.m., on weekdays, outside the peak traffic hours.

It is envisaged that the construction crew for the proposed grid connection works would include 15 to 25 construction personnel, which are included in the foregoing expected peak construction staff.



2.2.6 Delivery Vehicle Volumes

All construction excavated material for the proposed windfarm and substation site and associated proposed access tracks would be retained on-site. Proposed on-site borrow pits will provide 99,852m³ (61%) of aggregate materials required for the proposed development.

The 24-month construction would require the importation of a total of up to 14,714 loads of construction materials plus the removal of 3,105 loads from the grid connection works along the public road network to a licensed waste facility. Imported materials include aggregates, concrete and steel for both the wind farm site and grid connection route. All construction materials would be transported using standard heavy vehicle delivery trucks with capacities of 8 m³ and 20 tonnes for aggregates etc., and 7 m³ for concrete trucks. The peak daily imported loads would occur during the hardstanding, formation and access tracks' works, and during the turbine bases' concrete works. The proposed construction works heavy vehicle loads are provided in **Table 2.3**.

Table 2.3: Proposed Construction Works Heavy Vehicle Loads

	To	tal Number of Heavy Vehicle Lo	ads
Works	Total Construction (24 months)	Peak Daily	Highest Hour
Imported	14,714	142	16
Removal	3,105	42	6
Total (24 months)	17,819	142	16

The wind turbine abnormal loads would be delivered in consultation with Limerick City and County Council and An Garda Síochána, during off-peak traffic periods, typically at night and under Garda escort. A total of 170 vehicle deliveries would be required for the seventeen turbines in delivery convoys at nights. This could result in temporary delays for other local traffic during the off-peak traffic delivery periods.

2.2.7 Delivery Vehicle Routes

The potential material sources for the proposed development construction are detailed in **Volume II**, **Chapter 02** Description of the Proposed Development of this **EIAR**, and include suppliers located in the northeast, east, west and south of the proposed development site.

It is envisaged that the delivery of construction materials will be circa 50% via the R516 east of the proposed windfarm and substation site access, and circa 50% via the R516 west of the proposed windfarm and substation access. The site entrance on the L1414 will also be used for facilitating works in the early construction period. Apart from this, all deliveries will be via the main site entrance off the R516..

The routing for the delivery of windfarm components is summarised in this EIAR, Volume II, Chapter 02 Description of the Proposed Development and detailed in this EIAR Volume III, Appendix 2C Turbine Delivery Route Assessment Report and would be via the N69, N18, M20, N20 and R516.

All construction deliveries and construction traffic will access the windfarm and substation site via the proposed site access on the R516 at the north of the site; the two crossings on the L1414, and two crossing locations on the L51217 as required.

Construction access for the construction grid connection works along the R516, L8012, L8011, L1412, R512, L1170, L1171 and N24 public roads would be via the existing associated public roads' network.



2.3 Duties and Responsibilities

The following parties will have an input into traffic management and will be kept informed by the contractor of developments in relation to traffic management:

- Construction Manager;
- Project Supervisor Construction Stage (PSCS);
- Project Supervisor Design Process (PSDP);
- An Garda Síochána;
- Road Engineers for Local Authority, Transport Infrastructure Ireland (TII); and Emergency Services.

2.3.1 Contractor Construction Manager

The contractor's construction manager shall consult with An Garda Síochána, the emergency services and all relevant parties listed above during the preparation of traffic management proposals. The contractor as part of their role as PSCS will co-ordinate the implementation of the developed traffic management. Where any issues arise with the traffic management plan, they shall consult with the relevant parties to revise the traffic management plan to each parties satisfaction.

2.3.2 An Garda Síochána

An Garda Síochána shall have final authority with regard to day-to-day traffic control. The contractor will comply with all directions, instructions and requirements of An Garda Síochána.

2.3.3 Road Engineers for Local Authority/TII

Road Engineers for Limerick City and County Council are primarily engaged in the maintenance and management of the road network and its services in the area of the cable route. In respect of all works on, under, and above the road network, they are empowered as officers of the Roads Authority to issue directions to undertakers of all works in relation to timing, the manner in which works are carried out, reinstatement and satisfactory completion (this empowerment is exerted through the Road opening and closure licences processes). The contractor will ensure to work with the Roads Department of the Local Authority at all times. TII shall also be consulted in relation to the turbine delivery route and works on the N24 for the grid route.

2.3.4 Emergency Services

In relation to accidents occurring on, or caused by, the works, the contractor will provide all necessary assistance to deal with any emergency to An Garda Síochána, Ambulance Services and Fire Brigade services. The contractor will consult with the emergency services regarding the traffic proposals for work in public areas/on public roads.

In the event that emergency services need to travel past the works area where a lane closure is active, the existing traffic management system, be it stop/go or traffic lights, may need to be cancelled and priority given to the emergency vehicle. If the emergency is located along the works area, the contractor will allow the emergency services to pass the works area by removing machinery from the road in an orderly fashion and allowing the emergency services pass under the supervision of the team leader. If required, steel road plates will be available at the works area to span the trench in the event of an emergency.



2.3.5 Local Residents

The following measures will be used to communicate the necessary information to the households along the local haul route roads and along the grid connection public roads:

- Information signs will be erected in advance of the construction/traffic management works;
- An information flyer drop will be carried out to advise households along the local road leading to the site in relation to the programme of construction works; and
- Contact details for a Liaison Officer will be provided so that any concerns can be easily communicated to the Developer.

Complaints will be entered into the site complaints log and the relevant site environmental officer will arrange to meet with those affected. The situation will be acted upon immediately and reviewed by the Project Manager.

2.4 Procedures

2.4.1 Traffic Control Tools

The contractor will use a range of traffic control tools including temporary traffic lights, stop/go boards, two-way radios, safety barriers, cones, signage etc. Each crew on site will have personnel on site trained in Signing, Lighting and Guarding/Health and Safety at Road Works. Communication/Instruction of the TMP will be from the Project Manager and communicated to site personnel with the relevant training.

2.4.2 Lane Width Restrictions

Where lane width restrictions are necessary due to the construction of the cable route, the contractor will advise the relevant Road Authority of the following details:

- Reasons for lane width restrictions;
- Details of restricted width of traffic lane;
- Details of associated signage and warnings to motorists and pedestrians, including road markings;
- Details of proposed system of public communications and public liaison; and
- Temporary footways.

2.4.3 Road Closures

When a road closure is necessary to carry out works, the appointed contractor will seek a Temporary Closing of Roads Order. The appointed contractor will advise Limerick City and County Council of the following:

- Name of the road to be closed;
- Location of closing points;
- Date and period of closure required;
- Reasons for closure;
- Details of alternative routes; and
- Details of method of traffic management and maintenance of alternative routes, including sign posting and traffic control plans.



2.4.4 Traffic Diversions

Where traffic diversions are necessary due to temporary road closures associated with the wind farm and grid connection works, the appointed contractor will advise Limerick City and County Council of the following details:

- Location of proposed diversion;
- Reasons for specific traffic diversion;
- Duration of proposed diversion;
- Plan of diversion routes;
- Details for management and control of proposed method of diversion route traffic, including sign posting layouts and locations;
- Details of proposed system of diversion route maintenance and repair, including existing carriageway and street furniture etc; and
- Details of proposed system of public communications and public liaison.

Alternative routes where traffic is to be diverted on will require an inspection prior to diverting traffic. These will need to be inspected again closer to the time of the works to ensure no hazards have occurred since the traffic management plan was developed.

2.4.5 Public Notices

Public notices in respect of road traffic management tools are the responsibility of the Roads Authority who will undertake to publish such notices.

2.4.6 Communications

The employer is committed to providing a high level of communication to the general public and business community regarding the extent and duration of the project. The contractor will co-operate with the employer in this regard.

The employer/contractor will advise the public of the following:

- Commencement and duration periods for the works;
- Current and proposed lane closures or other traffic management tools;
- Alternative routes; and
- Provision for access/egress.

In the event of potential conflicts arising from construction activities, such conflicts shall be resolved, if possible, in consultation with the Roads Authority, the contractor and where necessary An Garda Síochána.

2.5 Traffic Management and Control Procedures

2.5.1 General

• Excavation, backfilling and reinstatement of trenches in roads will be completed within the shortest possible time frame.



2.5.2 Access for Residents

- The contractor shall make provision for safe access at all times to private residences in proximity to the construction works.
- Steel plates or stone will be made available to allow access to residential properties where necessary. This will be done in co-operation/communication with local residents in the area.
- The contractor will inform local residents of the programme of works in their area and local access will be maintained where possible.

2.5.3 Access to Commercial/Business/School Properties

• The contractor shall make provision for safe access to commercial, business and school premises for all users, including staff, customers, the general public and for deliveries.

2.5.4 Pedestrian Safety

- The contractor shall ensure that throughout the course of the works its operations do not put pedestrians at any risk.
- Where the construction work necessitates the restriction or partial closure of a pedestrian walkway where they may exist, the contractor shall provide adequate safety barriers, signposts, lighting and temporary surfacing (if applicable) to ensure safe passage for pedestrians.
- Where the construction work necessitates the closure of a pedestrian walkway, the contractor shall provide a safe and reasonable alternative. The contractor shall provide adequate safety barriers, signposts, and lighting (if applicable) to direct pedestrians and ensure their safe passage.
- With respect to pedestrians, the contractor shall refer to and observe the requirements of the latest version of the Department of Transport (DoT) Traffic Signs Manual Chapter 8: Temporary Traffic Measures and Signs for Roadworks.

2.5.5 Signage

- All sign faces will be retro-reflective material to Class Ref 2 of EN 12899. The colours, chromaticity and luminance factors shall be as specified in Specification TS4.
- Signage shall be inspected at least twice daily by the contractor so as to ensure that it is in place, secure
 and appropriately fitted with warning lights as required.

2.5.6 Cleanliness of Roads

• The contractor will provide sufficient resources on site, including wheel washes at site entrances and road sweeping equipment, to ensure the cleanliness of the road network.

2.5.7 Operator Training

The contractor will provide training to operatives in the traffic control systems being used on site. The
importance of transport management, the safety of motorists, pedestrians and site staff shall be
emphasised to all construction staff.



 There will be at least one competent person with the valid and relevant Construction Skills Registration (CSR) or Construction Skills Certification Scheme (CSCS) Card on site at all times when work is being carried out on roads.

2.5.8 Emergency Crew

- The contractor's emergency contact telephone number shall be displayed at the contractor's site office
 and shall be notified to the Local Authority Roads Engineer, Utility companies and the Emergency
 Services Providers. This telephone will be manned by the contractor's Project Manager or by an
 authorised deputy capable of making decisions in an emergency situation.
- The contractor shall set up an emergency crew, led by an experienced foreman or an engineer, for
 dealing with emergencies arising as a result of the works on roads outside of normal working hours. The
 emergency crew shall be available to respond to an event seven days a week.
- The contractor will issue the emergency crew with contact details for the emergency services and the utility companies, in the event that they are required.

2.6 Traffic Management Plan

2.6.1 Materials Haulage Routes

The potential material sources for the proposed development construction are detailed in this EIAR **Volume II**, **Chapter 02** Description of the Proposed Development, and include suppliers located in the northeast, east, west and south of the proposed development site.

It is envisaged that the delivery of construction materials will be circa 50% via the R516 east of the proposed windfarm and substation site access, and circa 50% via the R516 west of the proposed windfarm and substation access.

The routing for the delivery of windfarm components is summarised in EIAR **Volume II**, **Chapter 02** Description of the Proposed Development and detailed in EIAR **Volume III**, **Appendix 2C** Turbine Delivery Route Assessment Report and will be via the N69, N18, M20, N20 and R516.

The main site entrance is via the R516 Regional Road between Croom and Bruff on the north side of the wind farm site. This will be a new entrance close to an existing farm/dwelling entrance along the R516.

In total there will be Nine (9) No. site entrances utilised for the operational and construction phase (see **Figure 1-2**). These entrances are required to facilitate construction traffic delivering material and to facilitate turbine deliveries, and operations and maintenance vehicles.

Entrances One (1 No.) to Seven (7 No.) provide access to the main wind farm site.

Entrance Eight (8 No.) and Nine (9 No.) are part of the turbine delivery route, avoiding the Tullovin bridge, and both are off the R-516.

Construction access for the construction grid connection works along the R516, L8012, L8011, L1412, R512, L1170, L1171 and N24 public roads will be via the existing associated public roads' network.

2.6.2 Grid Connection Public Roads

A stop/go alternating direction temporary traffic management arrangement will be provided during grid connection works along the public road network, to facilitate the grid connection construction works. Local access



will be maintained. Temporary traffic diversions on public roads are proposed for the grid connection works along the L8012 and L8011 public roads, via R516, R512 and L1412.

The temporary construction traffic management arrangements will be provided in accordance with the *DoT Traffic Signs Manual Chapter 8 Temporary Traffic Measures and Signs for Roadworks*, with the prior approval of the planning authority.

The expected construction duration for the proposed grid connection works along the public road network, which will be carried out concurrently with the proposed substation works, is six months. The proposed grid connection works will be carried out on a linear basis, from the proposed windfarm and substation site to the existing 220/110kV Killonan substation.

It is envisaged that a system of single lane closures will be implemented along the grid connection cable route in the public roadway. This is to ensure the cable route can be constructed safely to protect construction workers and members of the public.

The type of closure required for construction works is subject to change. Prior to works commencing, a final Traffic Management Plan (TMP) for construction traffic using the public road will be produced by the appointed contractor and agreed with Limerick City and County Council. The contractor will apply to Limerick City and County Council for a Road Opening Licence (ROL), prior to works commencing and follow the relevant procedures set out in the latest version of the Department of Transport (DoT) Guidance for the Control and Management of Traffic at Road Works and Department of Transport (DoT) Traffic Signs Manual Chapter 8: Temporary Traffic Measures and Signs for Roadworks. Any specific conditions set out in the grant of the Road Opening License (ROL) will be complied with.

2.6.3 Single Lane Closures

Single lane closures will be implemented as the construction of the cable trench progresses along the cable route. It is envisaged that approximately 165 metres will be constructed each day and, therefore, single lane closures will move with the works. The single lane closure will be controlled by way of either a stop-go system, or by temporary traffic lights. The contractor will ensure that procedures and works for single lane closures are in accordance with the *Department of Transport (DoT) Guidance for the Control and Management of Traffic at Road Works*. Temporary traffic management and roadwork signs will be in accordance with and *Department of Transport (DoT) Traffic Signs Manual Chapter 8: Temporary Traffic Measures and Signs for Roadworks*.

It is envisaged that the local roads will have single lane closures during the construction of the cable route.

2.6.4 Diversions

If required, diversions will be implemented to provide an alternative route for road closures during construction. Road closures will be sequenced in order to prevent unnecessary delays to the public and allow the appointed contractor to achieve their construction timeline. Information and directional signage will be provided to inform the public of road closures and direct them along diversion routes. Local access will be maintained for residents. The appointed contractor will ensure that procedures and works for diversions are in accordance with TII's Temporary Traffic Management Guidance Handbook, December 2022. Temporary traffic management and roadwork signs will be to Chapter 8 of the Traffic Signs Manual 2024.

2.6.5 Junction Crossings

The grid connection route crosses road junctions. There is a potential construction works' duration of one to two days at junctions. Temporary construction traffic management arrangements in accordance with the *Department*



of Transport (DoT) Traffic Signs Manual Chapter 8: Temporary Traffic Measures and Signs for Roadworks will be provided.

Where the cable route is planned to cross the local public roads or private accesses/roads, the contractor will decide on the best method for controlling traffic.

Steel plates or stone will be made available to allow access to accesses and junctions. This will be done in cooperation/communication with local residents in the area.

A road safety and courtesy protocol will be implemented for the duration of construction. All companies delivering to site will have to sign up to this protocol as part of their supply contract. The protocol will consist of restricted delivery hours, speed limits along roads and site. Fundamental to the protocol is courtesy for other road users. In this vehicles will always give way to oncoming residential traffic and will always slow down or stop as appropriate for pedestrians and cyclists.

2.6.6 Road Closures

Road closures and traffic diversion will only be necessary where single lane closure are not permitted by the planning authority (ACP) or approved by Limerick City and County Council. A road closure will be controlled by way of diversions but local access will be accommodated on the route where possible with all residents on the route informed of the programme for a road closure. The appointed contractor will ensure that procedures and works for closures are in accordance with the *Department of Transport (DoT) Guidance for the Control and Management of Traffic at Road Works*. Temporary traffic management and roadwork signs will be in accordance with the *Department of Transport (DoT) Traffic Signs Manual Chapter 8: Temporary Traffic Measures and Signs for Roadworks*.

2.6.7 Joint Bays

It may be necessary that joint bays on the cable route are required to be left open overnight for pulling cables through the ducts and jointing the cables together. Joint bays will be individually assessed to determine what type of traffic management system will be required at each location. Safety barriers or fencing will be erected around each open joint bay with either a priority yield or temporary traffic light system utilised to safely navigate vehicles around.

The contractor will ensure traffic management controls are in accordance with Chapter 8 of the *Traffic Signs Manual 2024* and the *Department of Transport (DoT) Guidance for the Control and Management of Traffic at Road Works*.

2.6.8 Appendices - Samples

A sample schedule of signs, in accordance with the DoT Traffic Signs Manual, is provided in Appendix 1.

Sample traffic management drawings, preliminary traffic diversion drawings for wind farm and grid connection cable route works along public roads, and associated construction check sheets are provided in Appendix 2.

2.6.9 Working Hours

Works along public roads will be carried out from 7.00 a.m. to 7.00 p.m., Monday to Friday and 9.00 a.m. to 2.00 p.m. on Saturday. On occasion, the working day may extend outside normal working hours when critical elements of the works need to be advanced. No work will take place on Sundays or bank holidays unless pre-approved by the Local Authority.



Working hours will be confirmed at the outset of the project and any changes in hours will be agreed with the Local Authority.

2.6.10 Personnel Vehicles

For the grid connection route, site operatives who's vehicles are not required for the construction works will park their vehicles at the contractor's main site temporary compounds which will be located within the proposed wind farm site.

2.6.11 Control Measures for Heavy Goods Vehicles

The mitigation measures outlined below will be implemented so as to minimise the impacts of construction phase traffic associated with the project.

- Ensure a strict protocol for Heavy Goods Vehicle (HGV) drivers to follow designated haulage routes;
- Advance warning will be given to the local residents and road users for specific times when peak volumes
 of HGV traffic may occur;
- A maximum speed limit will be imposed for HGVs on the local road network during the construction phase;
- A well planned and executed delivery programme avoiding peak traffic on typical days will be ensured (i.e. local school start and finish times);
- A road sweeping vehicle will be provided, as required, to remove any mud that is deposited on the road network; and
- Enforcement of existing regulatory markings and signage shall be implemented.

2.6.12 Road Pavements Monitoring

Heavy vehicle traffic volumes generated by the proposed development construction could result in damage to existing and proposed road pavements on public roads, including at vehicle turning, accelerating and decelerating locations. Road pavements would be regularly monitored and reinstated in accordance with the requirements of Limerick City and County Council.

A pre-construction bridge and road survey will be carried out on the haul routes on the R516, which will be monitored on a regular basis and any damage rectified promptly. Once construction has been completed a post construction road and bridge survey will be carried out. Any sections identified as damaged after the preconstruction survey will be reinstated

The Traffic Management Plan will be updated, appropriately, following the proposed project detailed design/tendering stage, and submitted for the approval of Limerick City and County Council, prior to construction.

A construction wheel wash facility at site entrances to wash truck tyres leaving the construction site.

2.6.13 Operational Stage

A detailed description of the proposed operational phase is provided in **Volume II**, **Chapter 02** Description of the Proposed Development of this EIAR.

The proposed development will typically have two operational staff and will generate negligible operational traffic volumes. Occasional traffic will be generated by routine inspection and maintenance.



2.6.14 Decommissioning

A detailed description of the proposed decommissioning and restoration phase is provided in **Volume II**, **Chapter 02** Description of the Proposed Development of this EIAR.

Traffic management would be similar to the construction phase mobilisation and the turbine abnormal loads delivery phase should decommissioning occur. The grid cable and substation will remain a permanent part of the national grid infrastructure and will not be removed.



Appendix 1

Sample Schedule of Signs





WK 001 - Roadworks Ahead / End





WK 052 / 053 - Site Access on Left / Right



WK 061 - Flagman Ahead



WK 090 - Detour



WK 094 - Road Closed



WK 032 / 033 - Road Narrows on Left / Right





WK 091 - Diverted Traffic



WK 060 - Temporary Traffic Signals



WK 092 - End of Detour

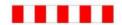


WK 095 - Stop Here on Red

W 183 / 184 / 185 - Barrier Boards









RUS 001 - Keep Left







RUS 014 - No Overtaking / End



WK 073 - Loose Chippings



RUS 060 / 061- Stop and Go





RUS 002 - Keep Right



WK 071 - Uneven Surface



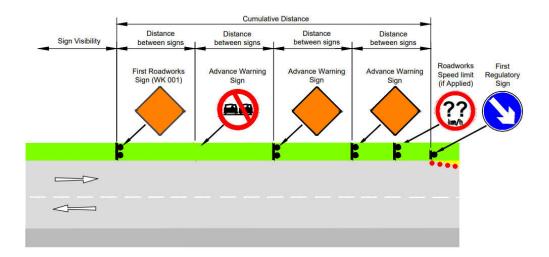
WK 052 - Site Access



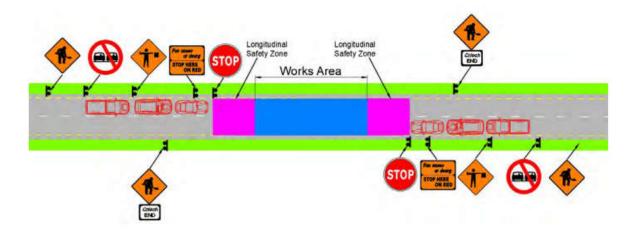
Appendix 2

Sample Traffic Management Drawings and Check Sheets





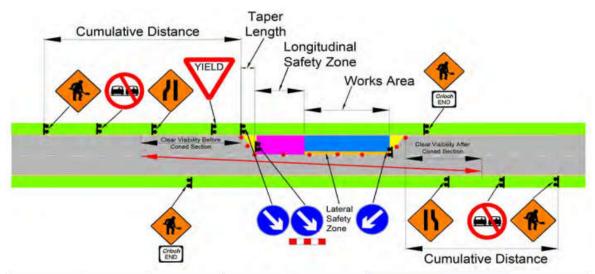
Required Locations for Advance Warning Signs to Roadworks



Level	Longitudinal Safety Zone (m)
2(i)	45
2(ii)	60

Example Layout of an "All Stop" Traffic Operation





Roadworks Type	Speed (km/h)	No. Adv. Warning Signs	Cumulative Distance (m)	Sign Visibility (m)	Longitudinal Safety Zone (m)	Lateral Safety Zone (m)	Max Cone / Lamp Spacing (m)
Level 2 (i) A	80	4	480	90	45	1.2	12/24
Level 2 (i) B	80	3	360	90	45	1.2	12/24
Level 2 (ii) A	100	4	800	120	60	1.2	12/24
Level 2 (ii) B	100	3	600	120	60	1.2	12/24

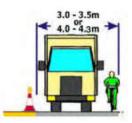
Summary Criteria

Speed (km/h)	Coned Area Length	Max Traffic Flow (3 min count)	Clear Visibility Before and After Coned Area (m)
80	80m	40 cobletes	80
100	maximum	40 vehicles	100

Lane Widths

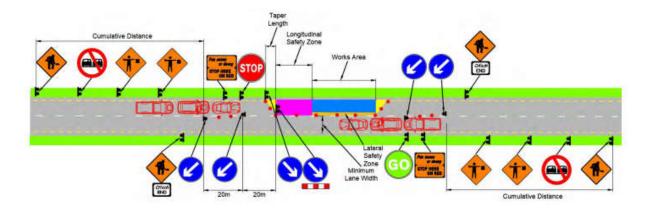
Cars only	≥ 2.5m	
HGVs present	≥ 3.0m	
Preferred width	3.3m	
Preferred (with cyclists)	4.0 - 4.3m	





Example Layout of a Priority Yield Operation





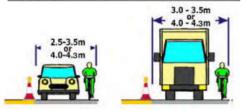
Roadworks Type	Speed (km/h)	No. Signs	Cumulative Distance (m)	Sign Visibility (m)	Longitudinal Safety Zone (m)	Lateral Safety Zone (m)	Max Cone / Lamp Spacing (m)
Level 2 (i) A	80	4	480	90	45	1.2	12/24
Level 2 (i) B	80	3	360	90	45	1.2	12 / 24
Level 2 (ii) A	100	4	800	120	60	1.2	12/24
Level 2 (ii) B	100	3	600	120	60	1.2	12/24

Summary Criteria

Shuttle Length	Maximum Traffic / 3 mins	Notes
500m	45	
400m	50	Shall be 2 operators, 2 discs when ≥ 200m
300m	55	1
200m	60	May be 1 operator with remote discs. Operator must be s
100m	70	100m from each disc and have clear view of each
20m	25	May be 1 operator, 1 disc

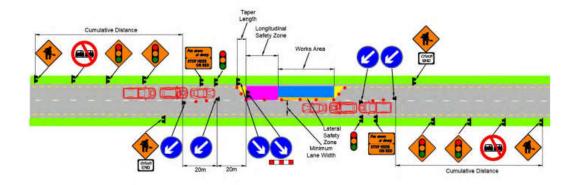
Lane Widths

Cars only	≥ 2.5m	
HGVs present	≥ 3.0m	
Preferred width	3.3m	
Preferred (with cyclists)	4.0 - 4.3m	



Example Layout of a Stop and Go Operation





Roadworks Type	Speed (km/h)	No. Adv. Warning Signs	Cumulative Distance (m)	Sign Visibility (m)	Longitudinal Safety Zone (m)	Lateral Safety Zone (m)	Max Cone / Lamp Spacing (m)	
Level 2 (i) A	80	4	480	90	45	1.2	12 / 24	
Level 2 (i) B	80	3	360	90	45	1.2	12/24	
Level 2 (ii) A	100	4	800	120	60	1.2	12/24	
Level 2 (ii) B	100	3	600	120	60	1.2	12/24	

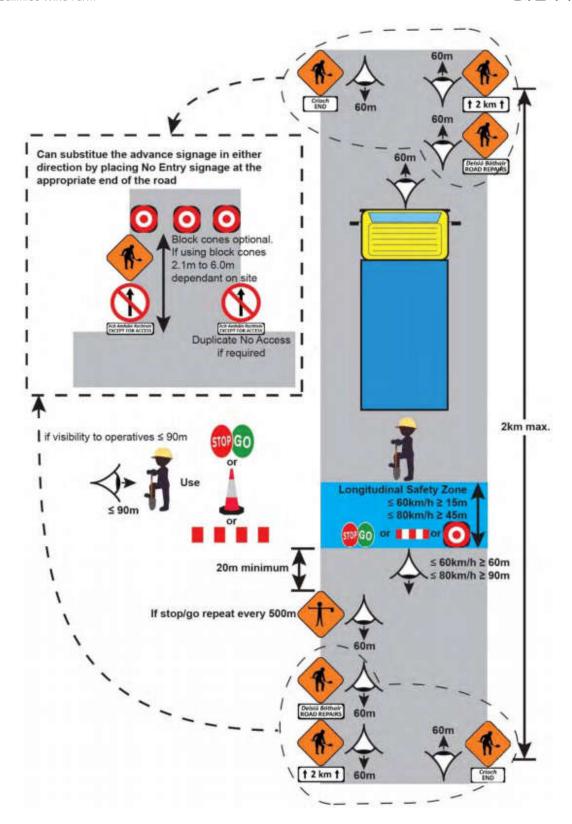
Signal Checks Batteries Bulb / LEDs operating Signals communicating with each other Housing is in good condition Signal Sequence Red - time is set by Operative Green - time is set by Operative Amber - 3 seconds

Summary Criteria

Max Speed Limit (km/h)	Max Coned Area Length (m)	Max Traffic Flow		
60	500	No Restrictions		
Lane Widths	Cars only	≥ 2.5m		
	HGVs present	≥ 3.0m		
	Preferred width	3.3m		
	Preferred (with cyclists)	4.0 - 4.3m		
	Preferred (with cyclists)	4.0 - 4.3m 3.0 - 3.5m 4.0 - 4.3m		

Example Layout for a Temporary Traffic Signals Operation

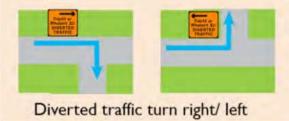


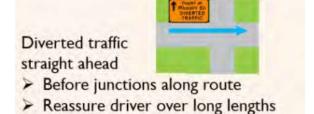


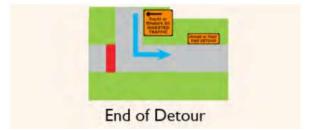
Example of a Road Opening Works Operation

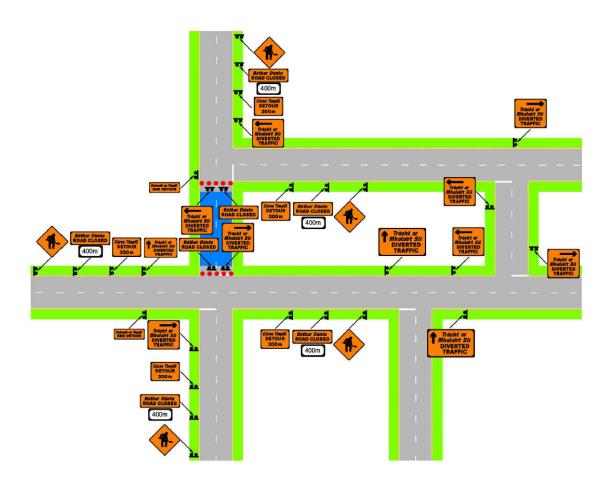












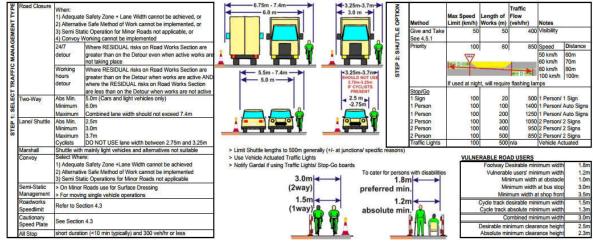
Example of a Road Detour and Signage Operation



PLANNED WORKS TRAFFIC MANAGEMENT DESIGN SHEETS

Guidance for the Control and Management of Traffic at Roadworks. Second Edition - 2010

TRAFFIC MANAGEMENT LAYOUT PARAMETER DESIGN SHEET



Type of Road	Type of Works		Min. Number Of Advance Signs	Min. clear visibility of Signs (m)	size of signs	Min. height of cones (mm)	Zone	Safety	Cone	Long. Lamp Space	Hard Shoulder Taper Multiply Factor	2 WAY Lane Taper Multiply Factor	Lane Taper	Lamp	Lane Lead-in cone tapers Recommended lengths	Width of haz	RE TWO TE	RAFFIC MAI	
227		A TOLE	29	Merch.	20	BO 125		Olonean		2			M 1988	A		1m	2m	3m	4m
	All works	50	1 (rwa)	50	600	750	5	0.5	6	12	5	10	3	6	Length of taper (T) in (m)	10	20	30	4
carriageway		***	1 (tm)												Minimum no. of Cones	5	8	12	15
road, 30km/h	250-141/20151120	N Section	1935 1 - 193	12 11992	No. of Street, Street,	277.20	76 - 17- 5	0.000	52 22	233252				G 0807	Minimum no. of Lamps	3	5	7	
LIXAGES.	Single Vehicle	25	1 (rwa)	50	600	750	5	0.5	6	12	5	5	3	6	Length of taper (T) in (m)	5	10	15	20
												1			Minimum no. of Cones	3	5	7	
															Minimum no. of Lamps	2	3	4	
Single	All Works	75	1 (rwa)	50	600	750	25	0.5	6	12	10	15	3	6	Length of taper (T) in (m)	15	30	45	60
carriageway,			2 (tm)	11.00											Minimum no. of Cones	7	12	17	22
31km/h to			-1200									1			Minimum no. of Lamps	4	7	9	12
60km/h	Single Vehicle	50	1 (rwa)	50	600	750	5	0.5	6	12	5	5	3	6	Length of taper (T) in (m)	5	10	15	20
		17000	1 (tm)	5000	0.000000	2,500	231	69.0	100	11057	SH	1000	10523	0.000	Minimum no. of Cones	3	5	7	
4.			10000												Minimum no. of Lamps	2	3	4	
Single	All Works	800	1 (rwa)	120	600*	750	60	1.2	12	12	30	55	3	6	Length of taper (T) in (m)	55	110	165	220
Carriageway	\$600 000 Miles	10000	1 (no)	93/2005	750*	5000	9886	280	5,51	100	8555	6.00	100	2505	Minimum no. of Cones	20	38	57	75
61 to 100 km/h			2 (tm)					ļ							Minimum no. of Lamps	11	20	29	38
Charles-Carles Assets	Single Vehicle	600	1 (rwa)	120	600*	750	45	1.2	12	12	20	40	3	6	Length of taper (T) in (m)	40	80	120	160
	- 300	9000	1 (no)		750*	100	1							15	Minimum no. of Cones	15	28	42	55
			1 (tm)			1						l .	1		Minimum no. of Lamps	8	15	22	28

^{*} Use 600mm signs where Vehicles Per Day < 5,000. Use 750mm signs where Vehicles Per Day > 5,000

Design Prepared By:



PLANNED WORKS TRAFFIC MANAGEMENT DESIGN SHEETS SITE SPECIFIC SHEET OF HEALTH, SAFETY AND RISK ASSESSMENT MASTER SHEET Works Name: TDRAM Job Location Works Period 1 Period 2 Period 3 Period 4 Period 5 Period 6 Period 7 Period 8 Period 9 Period 10 Period 11 Period 12 PSCS (CMO) Job Code Budget Holder Budget Total No. Work Days Tot. No. Person Days Work Days > 30 or Person Days > 500 then Notify HSA **Physical Data** Traffic Data Particular Risk Items Traffic Management Items Brief Description of Works: AADT Accident History Burial Underground works Fall from height % HCV edestrians Diving Chemical/Biological Compressed air Speed Limit Schools Road Classification Radiation Explosives Operating Speed Shops Road ID (incl. Seg) Cyclists HV Power Lines Heavy components Road Width Equestrian/Rail Crossing Drowning Other Works Length Vulnerable Road Users Bus Route/School Route Roadside Development Identified Items (For Map Reference see overleaf) Risk Risk Control Map Ref. Item Hi Med Lv Hi Med Ly

Design Prepared By:

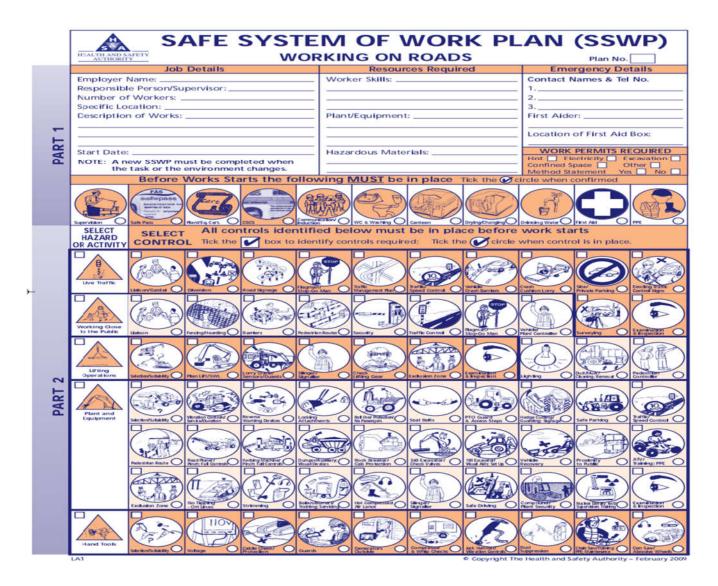


PLANNED WORKS TRAFFIC MANAGEMENT DESIGN SHEETS SITE SPECIFIC SHEET OF TRAFFIC MANAGEMENT DESIGN CIVIL WORKS SHEET Works Name: TDC **Layout Parameters** Inspections Traffic Management Selection Advance Distance Number of Advance Signs Min. Advance Sign Visibility Monday Tuesday Wednesday Road Closure: 24/7 - Working Hours Detour Min. Advance Sign Visibility Size of Signs Height of Cones Taper Length Sideways Safety Zone Longways Safety Zone Lane Width Carriageway Width Longitudinal Cone/ Lamp Spacing Taper Cone/ Lamp Spacing Maximum Length of Shuttle Repeater Sign Distances Two Way Shuttle: Give & Take Priority Stop/Go Traffic Lights Thursday Friday Saturday Sunday Marshall Convoy Semi-Static Roadworks Consultation Buses/School Bu Roadworks Speedlimit Cautionary Speed Plate All Stop Buses/School Buses Milk Lorries Local Residents Emergency Services Gardaí for Roadworks Speedlimit 7 or Positive TM Sign Sign Sign Sign Sign Hump or Ramp WK 050 Overtake End No Overtaking Side Road Left RUS 001 \odot Oscalt Chedte CONCEALED ENTRANCE 4 Keep Left WK 051 Roadworks Speedlimit RUS 002 Side Road Right Oscoil Cheils CONCEALED ENTRANCE C Keep Righ Cone m W 062L Chevron Le 1 Road rrows Le Site Access Left Workman Barrier Road Narrows Right Road Narrows Both W Chevron Right m Site Access Right Steady Sta Lamp 10 LS W183 W184 Flashing Warning Lamp WK 074 1 Barrier Board Soft Verge LF Temporary Traffic Signal RUS 060/ 061 WK 080 Pedestrians Cross Left Rotating Reflector Stop and Go Temporar Traffic Signal m T Flagman Ahead TL Pedestrain Barrier m 👍 WK 095 Queues Likely Stop Here Red PB WK 030 Single Lane Shuttle Herace Style Fencing PF

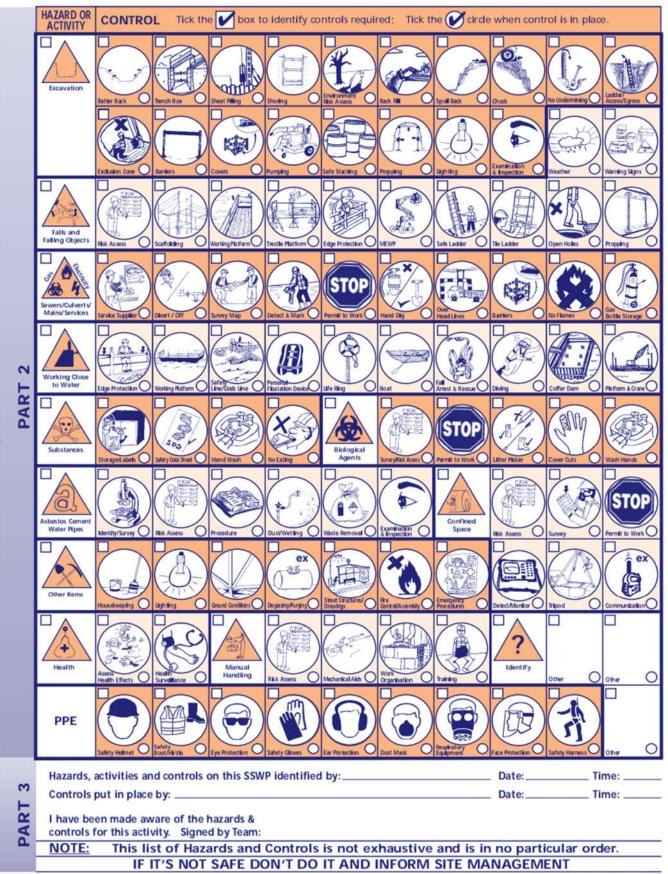


PL	ANNED WORKS	TRAFFIC MANA	GEMENT SIT	TE INSPECT	ION SHEET		
PROJECT NAM				Phase:			
Date:		Time:	1).		2).		
1) TRAFFIC N	MANAGEMENT S	SET-UP/ MODIF	ICATION, IN	SPECTIONS			
	tallation Checks						
Does the Traffic	Management con	form to the Design	Layout and Pa	arameters?		\rightarrow	_
		in the Traffic Mana		100			_
E		delivery and remov					_
E 84		Traffic Lights/ Sto		Sec. 10.00		\rightarrow	_
		adworks Speed Lim		duced?			
		OPERATION INS	PECTIONS			Щ	
2–1) Op	eration Checks						1 2
Are Safety Zones	being kept clear	of operatives, plan	t and material	ls?			
		n/ are all cones in			s?		
Are sign vision li	nes free from ber	nds, hills/dips in th	ne road, parke	d vehicles, he	edges etc?		
Will the site be s	afe at night or in	wind, fog, snow or	rain? (delete a	as appropriat	e)		
Are all misleadin	g permanent sigr	ns and road markin	gs covered?				1
Is the carriagewa	y/footway being	kept clear of mud	and surplus ed	quipment?			
Are materials/ p	lant that are left of	on verges or lay-by	s being prope	rly guarded a	and lit?		
2-2) Tra	affic Checks						
Is there safe acc	ess to adjacent pr	remises?					
Does Signing and	d Guarding meet	the (changing) con	ditions?				
Are traffic contro	ol arrangements w	vorking at the opti	mum level to r	educe traffic	delays?		
If present, are th	e needs of cyclist	s or horse riders in	ncorporated in	to the layout	?		
2-3) Pe	destrian and Vuln	erable Road User C	hecks			- N	
Have the needs	of pedestrians and	d vulnerable road u	isers been add	ressed in the	a layout?		
If pedestrian rou	te blocked, has a	suitable alternativ	e route been p	rovided?			
Are pedestrian re	outes clearly evid	ent/ indicated?					\perp
If a footway in th	e road is to be us	sed, are ramps to t	he kerb provid	led?			\perp
Are pedestrian h	azards sufficientl	y GUARDED at nigh	nt?				
3) TRAFFIC N	IANAGEMENT (CESSATION INPE	CTIONS				
3–1) Wo	rks Complete Ch	ecks					24
Have all signs, co	ones, barriers, an	d lamps been remo	oved?				
Have any covere	d permanent sign	s been restored?					
Have Gardal bee	n informed that S	peedlimits/ Traffic	Signals/ Stop	-Go removed	17		
4) EXCEPTION	NS REPORT						
(Append att	achments as nece	ssary)					
l							
Check Comple	eted By:						









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Site Specific Record for Standard Traffic Management Plan

