



APPENDIX 15-2

TRAFFIC MANAGEMENT PLAN

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TRAFFIC MANAGEMENT PLAN FOR LAURCLAVAGH RENEWABLE ENERGY DEVELOPMENT

REVISION A

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1 INTRODUCTION

1.1 Purpose of note

The purpose of this Traffic Management Plan (TMP) is to set out traffic management measures that the Applicant will commit to provide during the construction stage of the proposed Laurclavagh Renewable Energy Development (Proposed Project). The successful completion of the Proposed Project will require significant coordination and planning and a comprehensive set of mitigation measures will be put in place before and during the construction stage in order to minimise the effects of the additional traffic generated on the surrounding road network. The measures are discussed and under the following headings;

- Section 2 – Delivery of abnormally sized loads transporting turbine components
- Section 3 – Management of standard HGVs from N83 to site access junction on the L-61461
- Section 4 – Traffic management measures during construction of the Grid Connection underground cabling route.
- Section 5 – General traffic management measures that will be implemented before, during and on completion of the construction of the Proposed Project.

It is confirmed that details for the Traffic Management Plan for the Proposed Project will be agreed with the Road Section of Galway County Council prior to construction.

On the occasions where reference is made to figures that are included in the EIAR prepared for the Proposed Project, these figures are included as Appendix A.

2 DELIVERY OF ABNORMALLY SIZED LOADS TRANSPORTING TURBINE COMPONENTS

2.1 Proposed delivery route for abnormally sized loads

The proposed port of entry for the large wind turbine components is Galway Harbour in Galway City. The Turbine Delivery Route (TDR) commences at this point and travels towards the Proposed Wind Farm site on the national, regional and local road network as shown in Figure 15-1a of the EIAR. The proposed TDR is as follows;

- From Galway Harbour the route travels northeast on Lough Atalia Road and the R339 for approximately 2.4kms to the signalised junction adjacent to Thermo King.
- The route continues left at this junction to travel north for approximately 0.3 kms to the junction adjacent to the Trappers Inn.
- At this point the route turns right onto the R336 to travel approximately 0.3 kms to the junction between the R336 / the N6 Bothar na dTreabh / N83.
- From this point the route travels straight through the R336 / the N6 Bothar na dTreabh / N83 junction onto the N83 and continues for approximately 19.4 kms through the village of Claregalway to the existing junction with the L-61461.
- At a point approximately 80m south of the L-61461 the TDR turns left where it is proposed that the abnormally sized loads will be accommodated on a new temporary access road of approximately 70m in length, before it connects into the L-61461 at a point approximately 70m to the west of the existing N83 / L-61461 junction.
- From this point the route travels west on the L-61461 for approximately 300m to the location of a new junction on the north side of the L-61461 that will provide access to the Proposed Wind Farm site.

An assessment of the turning requirements of the abnormally large loads transporting the turbine components was undertaken at the various pinch points along the route from the Galway Harbour to the site entrance, as identified in Figure 15-2a of the EIAR, with the swept path assessments undertaken for these locations discussed in Section 15.1.9 of the EIAR.

2.2 Traffic management measures for abnormally sized loads

The transport of large components is challenging and can only be done following extensive route selection, route proofing and consultation with An Garda Síochána, the local authority and its road section and roads authorities. Turbine components are usually transported in convoys of 3 vehicles (sometimes up to 5 vehicles subject to approval) at night when traffic is lightest. This will be undertaken in consultation with the roads authorities, An Garda Síochána Traffic Corp and special permits are generally required.

A swept path analysis was undertaken at all locations using Autotrack to establish the locations where the wind turbine transporter vehicles will be accommodated, and the locations where some form of remedial measure may be required. While transient traffic management measures will be implemented by An Garda Síochána as each convoy travels along the delivery route, it is not anticipated that any sections of the local road network will be closed.

A dry run involving a vehicle adapted to replicate the geometry of the extended transport vehicles will be undertaken over the entire turbine delivery route prior to the delivery of turbine components.

3 MANAGEMENT OF STANDARD HGVS FROM N83 TO SITE ACCESS JUNCTION ON L-61461

The proposed access route for standard HGVs between the N83 and the site access junction on the L-61461 is shown in Figure 1 appended to the rear of this TMP.

3.1 Temporary link between N83 and the L-61461

It is proposed that a temporary link road will be constructed linking the N83 to the L-61461 commencing at a location on the N83 at a point approximately 80m south of the existing N83 / L-61461 junction. The proposed temporary road connects into the L61461 at a point approximately 70m west of the N83 / L-61461 junction. The proposed temporary link road will facilitate the delivery of the turbine components, which will be accompanied by a Garda escort, and the access of all standard HGV deliveries to the Proposed Wind Farm site. On the 8 days that the concrete foundations are poured the temporary link road will also be used for these vehicles to exit the site. All other HGV movements will exit the site via the existing L-61461 / N83 junction. All staff vehicles will use the existing N83 / L-61461 junction.

The default for the temporary road connecting the N83 to the L-61461 will be that it is closed to all traffic by means of temporary gates / fencing / traffic barriers. During times when this area is being used for construction traffic the access at both ends will be opened and will be managed at all times by means of signing and site staff (Flagmen), and during the delivery of the abnormally sized loads, by Garda escort vehicles. On completion of the construction phase the temporary road will be permanently closed with boundary fencing re-instated. The proposed temporary road will only be re-established in the unlikely event of the replacement of large turbine component parts during the operational phase.


While the details of the traffic management measures will be developed in detail and submitted for agreement with Galway County Council prior to the construction of the Proposed Project, they will include the following measures,



- An application to Galway County Council for the temporary reduction of the speed limit on the N83 from 100 km/h to 80 km/h during the construction phase of the Proposed Project, as discussed in principle with Galway County Council during pre-planning discussions.
- Similar in relation to the section of the L-61461 between the N83 and the proposed site access junction approximately 280m to the west for a temporary reduction in the speed limit from 80 km/h to 60 km/h (the default speed limit for this road could already be reduced from 80kmh to 60kmh under proposed government guidelines).
- Introduction of signage on northbound and southbound approached to the existing L-61461 and the temporary link of warning of approaching construction site (TMS Traffic Signs WK001).


- Signage on the N83 northbound indicating the temporary construction access approaching on the left (TMS traffic Sign WK052) and similar on southbound lane indication the temporary link approaching on the right (TMS Traffic Signs WK053).
- Signage on the N83 northbound and southbound approaches to temporary access of Flagmen (TMS traffic Sign WK061).
- It is also proposed that temporary signage indicating the overtaking is not permitted during the construction phase (TMS traffic Sign RUS 014). These may be introduced with temporary bollards on the centreline of the N83.
- It is proposed that the temporary speed limit of 80 km/h is indicated on this section of the N83 using Variable Message Signs in order to maximise conspicuity.
- Similarly, temporary signage will be introduced on the L-61461, including signage on eastbound and westbound approaches to the proposed temporary link (TMS Traffic Signs WK001), signage indicating the temporary construction access approaching on the L-61461 (TMS traffic Signs WK052 and WK053), signage on the L-61461 warning of the presence of Flagmen (TMS traffic Sign WK061).
- A temporary 60 km/h speed limit signs will also be introduced on the L-61461 (if not already established as the default speed limit).


The various traffic signs from the Traffic Signs Manual are included for information below.

Table 8.2.1 – Warning Signs for Use at Roadworks

| Sign No. | Sign Face | Description |
|----------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WK 001 |  | <p>Roadworks Ahead: this sign shall be the first temporary sign visible to the road user on the approach to any roadworks. It may be supplemented with a Supplementary Plate P 082 indicating the nature of the works.</p> <p>At some sites, it is necessary to provide additional Signs WK 001 well in advance of the start of the roadworks. Where this is the case, the signs shall have a Supplementary Plate P 001 indicating the distance to the start of the works.</p> <p>End of Roadworks: the 'Roadworks Ahead' sign shall be erected together with a Supplementary Plate P 010, End, as the last temporary sign visible to the road user leaving any roadworks. This 'End' plate marks the finish of all other roadworks warning signs used within the site.</p> <p>Cautionary Speed: the 'Roadworks Ahead' sign may also be used at intervals through the roadworks together with Supplementary Plate P 011, Cautionary Speed (see Section 8.3.3).</p> |

| | | |
|---------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>WK 052</p> |  | <p>Site Access on Left: this sign should be used to indicate the position of a site entrance and/or exit to the left.</p> <p>On roads with a speed limit of >80km/h., an additional sign WK 052 should be positioned 100m in advance of the entrance, with a Supplementary Plate P001 stating the distance.</p> <p>At sites with several entrances, a supplementary colour code or numbering system may be used with this sign.</p> |
| <p>WK 053</p> |  | <p>Site Access on Right: this sign should be used to indicate the position of a site entrance and/or exit to the right.</p> <p>On roads with a speed limit of >80km/h., an additional sign WK 053 should be positioned 100m in advance of the entrance, with a Supplementary Plate P 001 stating the distance.</p> <p>At sites with several entrances, a supplementary colour code or numbering system may be used with this sign.</p> |

| | | |
|---------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>WK 061</p> |  | <p>Flagman Ahead: this sign should be used to indicate the presence ahead of manual or automated traffic control by means of Stop & Go/Téigh discs.</p> <p>This sign may be used with a Supplementary Plate P 001 stating the distance if forward visibility is poor and on roads with speed limits of >80km/h.</p> |
|---------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Sign No. | Sign Face | Description |
|----------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>RUS 014</p> |  | <p>No Overtaking: No Overtaking sign prohibits overtaking at locations where it is considered dangerous to do so (see Chapter 5).</p> <p>At the point where the overtaking restriction ends, Sign RUS 014 shall be erected together with a Supplementary Plate P 010, End.</p> |

3.2 The L-61461 between the proposed link road and the proposed site access junction

It is proposed to strengthen and re-surface the approximately 280m section of the L-61461 between the proposed temporary road and the proposed site access junction in order to facilitate development construction generated traffic and background local traffic. It is also proposed that this section of the L-61461 will be widened to a minimum of 5m, which is wide enough for 2 HGVs to pass when moving

slowly. It is also noted that there are 3 sections of varying length (between 30m to 60m) where there is local widening, where the width increases to between 6.0m and 8.0m where 2 HGVs, with a typical width of 2.5m, will be able to pass. Background traffic flows on the L-61461 are low, as observed from the traffic counts, with a 2-way flow of 86 vehicles per hour or less than 10 per hour.

For the busiest 8 delivery days, when the turbine foundations are poured, a total of 107 trips will be made by concrete mixers (2.39m wide) to and from the site during a 10 hour day. On average 11 trips will be made to and from the site per hour, which will be made by convoys to minimise the occasions when opposing vehicles will meet each. This will be managed by site staff located at the site access and at the temporary link who will be in permanent radio contact. Priority will be given to local traffic and convoys exiting the site, and, when required, convoys accessing the site will be held on the temporary link road.

For the remainder of the construction period there will be an average of 29 hgv trips per day, or 3 per hour. Based on this demand it will be relatively rare that opposing vehicles will meet, and as indicated above, there is ample opportunities for HGVs to pass on the widened 280m section of the L-61461 between the proposed temporary road and the proposed site access junction.

4 TRAFFIC MANAGEMENT MEASURES DURING CONSTRUCTION OF PROPOSED GRID CONNECTION UNDERGROUND CABLING ROUTE

In addition to traffic management measures required for additional traffic movements generated during the construction of the Proposed Wind Farm site, traffic arrangements and diversion routes identified for the Proposed Grid Connection underground cabling route works are included in Section 15.1.7 of the EIAR. Sections along the Proposed Grid Connection underground cabling route where there will be road and pedestrian footpath closures, diverted traffic, and Stop/Go traffic control are identified.

The proposed 110kV onsite electrical substation will be connected by means of 110kV underground cabling to the existing 110kV Cloon Substation. The underground cabling route measures approximately 14.3km of which approx.12km is located within the public road corridor. For the extent of the underground cabling route that will impact on the public road network, this is considered in the following 6 sections, as indicated in Figure 15-4a of the EIAR. All EIAR Figures 15-4a to 15-4c which are referred to in the following text are included as Appendix A.

The 6 sections of the route on the public road network are as follows;

Section 1 – (length 2.1 kms) – The underground cabling route commences at the proposed on-site 110 kV substation located within the Proposed Wind Farm site and continues east for approximately 2.1kms to link into the L-61461. It is estimated that the construction of this section will take approximately 21 days. As this section is within the Proposed Wind Farm Site no delays will be incurred by local traffic.

Section 2 – (length 0.4 kms) – The underground cabling route then continues east along the L-61461 for approximately 0.4 kms to a point where it meets the N83 to the northeast. During the 4 days required to construct this section of the underground cabling route, local access will be maintained using steel plates and local traffic management measures. The location of the construction will be transient in nature with the extent of the section of road closed kept to a minimum.

Section 3 – (length 7.5 kms) – The underground cabling route then travels north on the N83 for approximately 7.5kms to the point where it meets the L-6141 which connects into the N83 from the east. This section of the carriageway has sufficient width for the construction of the underground cabling to take place while operating a “stop-go” arrangement in order to retain 2-way traffic flow on the National Secondary Road. This section of the grid connection will take approximately 50 days to construct.

Section 4 – (length 2.1kms) – This section of the Proposed Grid Connection underground cabling route heads east from the N83 on the L-6141 for approximately 2.1 kms. During the 21 days required

to construct this section of the underground cabling route, traffic will require to divert onto the route shown in Figure 15.4b within the chapter, which will result in a diversion of 3.7kms. The location of the construction will be transient with the extent of the section of road closed kept to a minimum.

Section 5 – (length 2.0kms) – This section of the Proposed Grid Connection underground cabling route continues east on the L-6141 for approximately 2.0 kms and will take approximately 20 days to construct. During the 20 days required to construct this section of the underground cabling route, traffic will require to divert onto the route shown in Figure 15.4c within the chapter, which will result in a diversion of an additional 6.0kms. The location of the construction will be transient with the extent of the section of road closed kept to a minimum.

Section 6 – (length 0.2kms) – The final short section of the Proposed Grid Connection underground cabling route turns off the L-6141 into the site of the existing 110kV Cloon substation. No delays will be incurred by local traffic during the 2 days required to construct this section.

It is estimated that the underground cabling route will take approximately 118 days, or 6 months to construct.

With respect to the traffic volumes that will be generated during the construction of the underground cabling route, it is estimated that there will be approximately 14 daily return trips made by a truck transporting materials, and 4 made by a car to transport 15 construction staff to and from the site.

5 GENERAL TRAFFIC MANAGEMENT MEASURES

A detailed **Traffic Management Plan (TMP)** will be finalised and confirmatory detailed provisions in respect of traffic management agreed with the Roads Authority and An Garda Síochána prior to construction works commencing on site.

The detailed TMP will include the following:

Traffic Management Coordinator – a competent Traffic Management Co-ordinator will be appointed for the duration of the construction of the Proposed Project and this person will be the main point of contact for all matters relating to traffic management.

Delivery Programme – a programme of deliveries will be submitted to Galway County Council and other relevant authorities in advance of deliveries of turbine components to the Proposed Project site.

Information to locals – Locals in the area will be informed of any upcoming traffic related matters e.g. delivery of turbine components at night, via letter drops and posters in public places. Information will include the contact details of the Contract Project Co-ordinator, who will be the main point of contact for all queries from the public or local authority during normal working hours. An "out of hours" emergency number will also be provided.

A Pre and Post Construction Condition Survey – A pre-condition survey of roads associated with the Proposed Project will be carried out prior to construction commencement to record the condition of the road. A post construction survey will be carried out after works are completed. Where required the timing of these surveys will be agreed with the local authority.

Liaison with the relevant local authorities - Liaison with the relevant local authorities including the roads sections of local authorities that the delivery routes traverse, and An Garda Síochána, during the delivery phase of the large turbine vehicles, when an escort for all convoys will be required.

Implementation of temporary alterations to road network at critical junctions – At locations where required highlighted in Section 15.1.9 of the EIAR.

Identification of delivery routes – These routes will be agreed and adhered to by all contractors.

Travel plan for construction workers to Site– While the assessment above has assumed a robust case that construction workers will drive to the site the construction company will be required to

provide a travel plan for construction staff, which will include the identification of a routes to / from the site and identification of an area for parking.

Temporary traffic signs – As part of the traffic management measures temporary traffic signs will be put in place at all key junctions, including the temporary access linking the N83 and L-61461 and the access junction on the L-61461. All measures will be in accordance with the “*Traffic Signs Manual, Section 8 – Temporary Traffic Measures and Signs for Road Works*” (DoT now DoTT&S) and “*Guidance for the Control and Management of Traffic at Roadworks*” (DoTT&S). A member of construction staff (flagman) will be present at key junctions during peak delivery times.

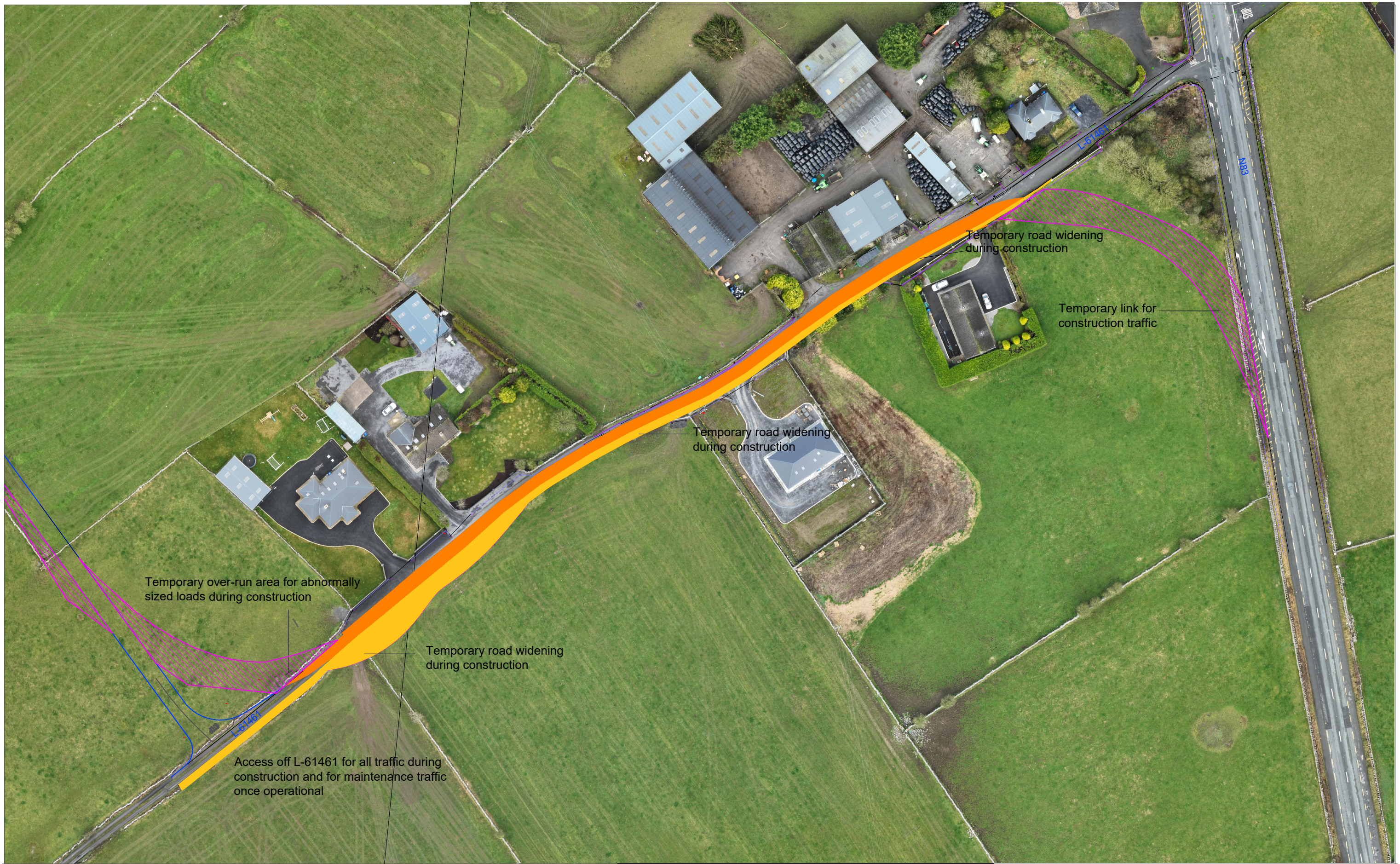
Delivery times of large turbine components - The management plan will include the delivery of large wind turbine plant components at night in order to minimise disruption to general traffic during the construction stage.

Additional measures - Various additional measures will be put in place in order to minimise the effects of the development traffic on the surrounding road network including sweeping / cleaning of local roads as required.

Re-instatement works - All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers.

It is confirmed that details for the Traffic Management Plan for the subject development will be agreed with Galway County Council prior to construction and contact will be maintained with the Road and Traffic Section throughout the construction phase.

FIGURE



NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Figure 1 Delivery route from N83 to proposed access junction on the L-61461

PROJECT: Laurclavagh Renewable Energy Development - TMP

CLIENT: Laurclavagh Ltd

SCALE: 1:1000

PROJECT NO: 9730

DATE: 14.02.24

DRAWN BY: AL

ALAN LIPSCOMBE
TRAFFIC & TRANSPORT CONSULTANTS

Appendix A

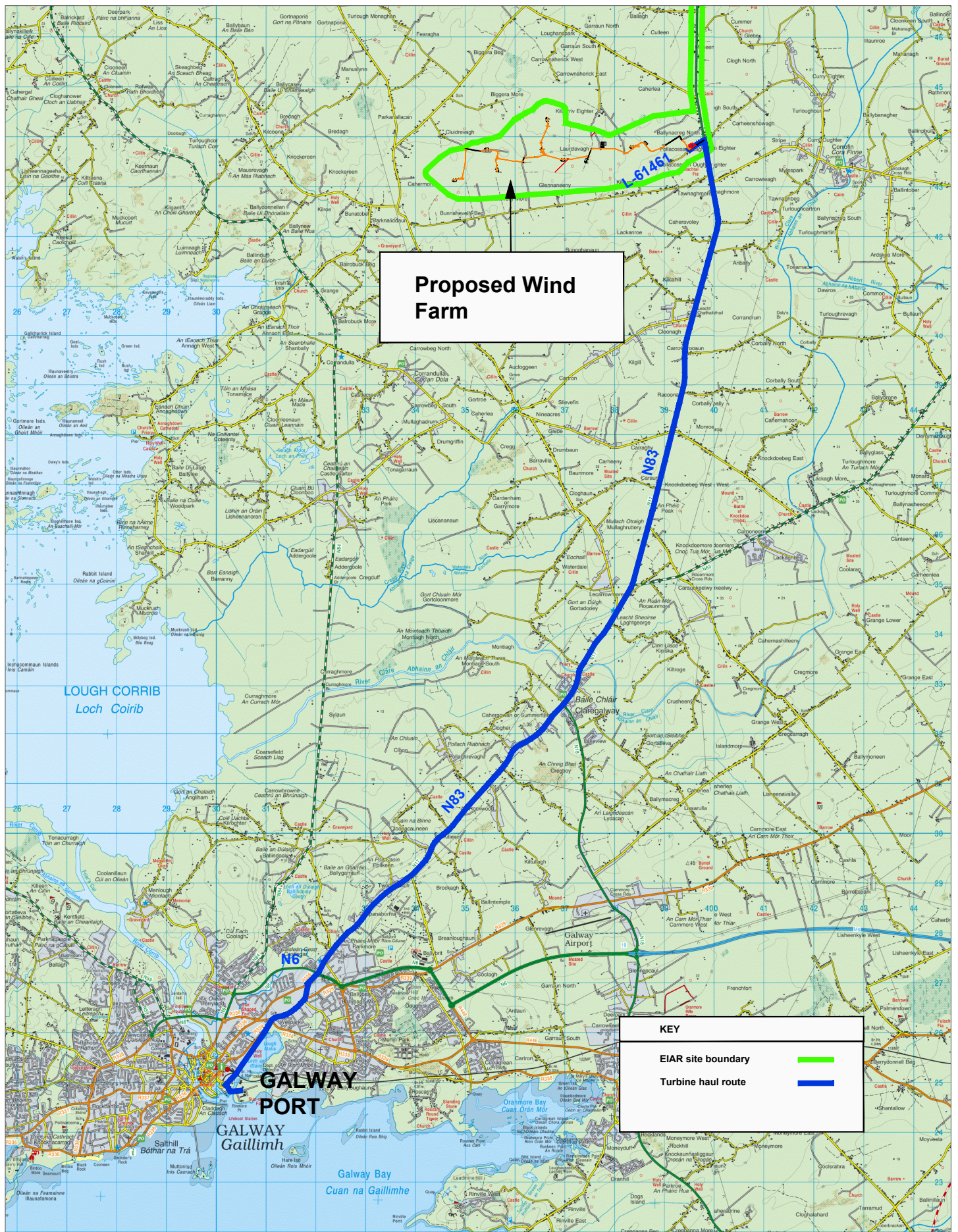


Figure 15-1 Site location and turbine delivery route

PROJECT: Laurclavagh Renewable Energy Development

CLIENT: Laurclavagh Ltd

SCALE: NTS

PROJECT NO: 9730

DATE: 05.03.24

DRAWN BY: AL

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TRAFFIC & TRANSPORT CONSULTANTS

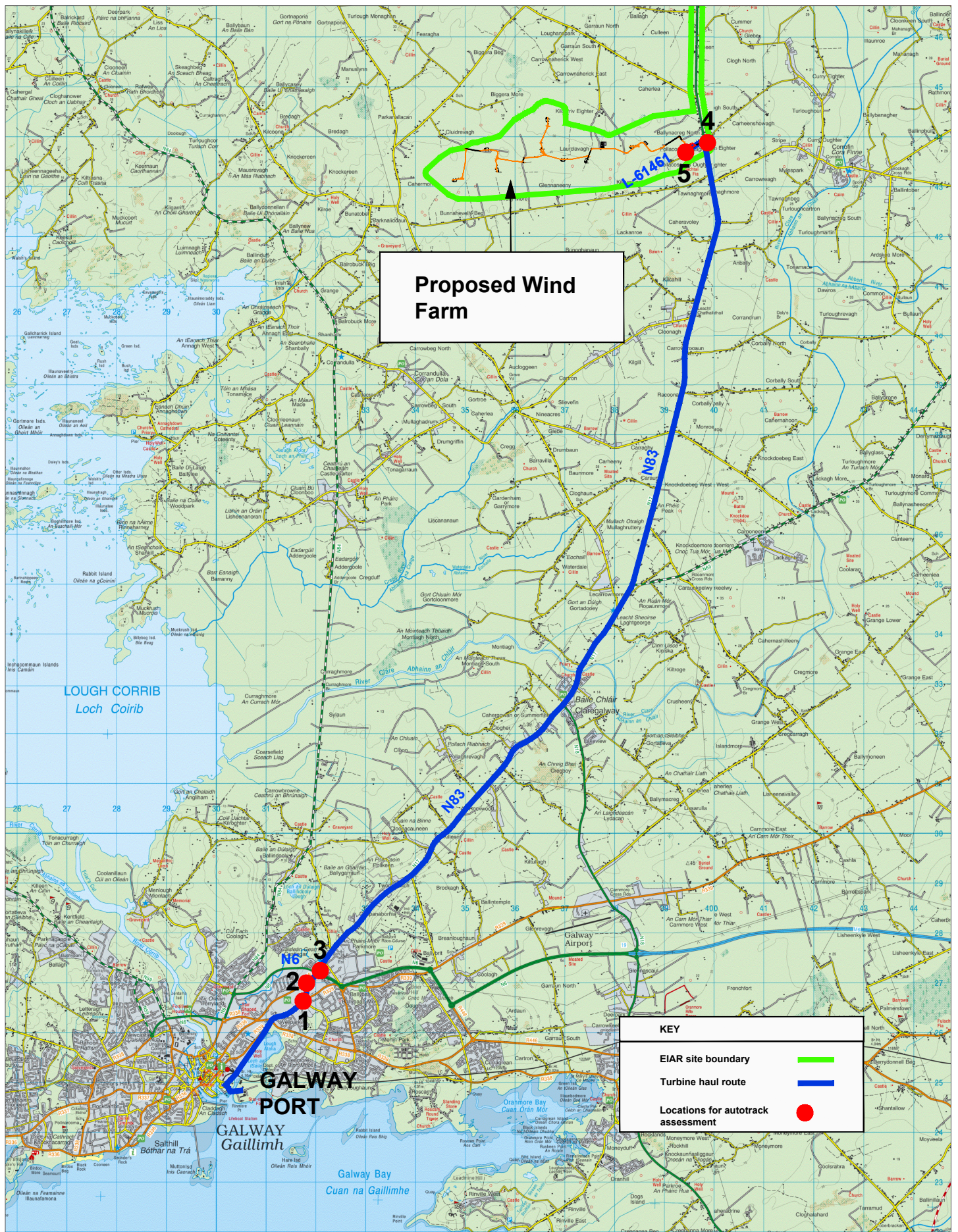


Figure 15-2a Route assessment location plan

PROJECT: Laurclavagh Renewable Energy Development

CLIENT: Laurclavagh Ltd

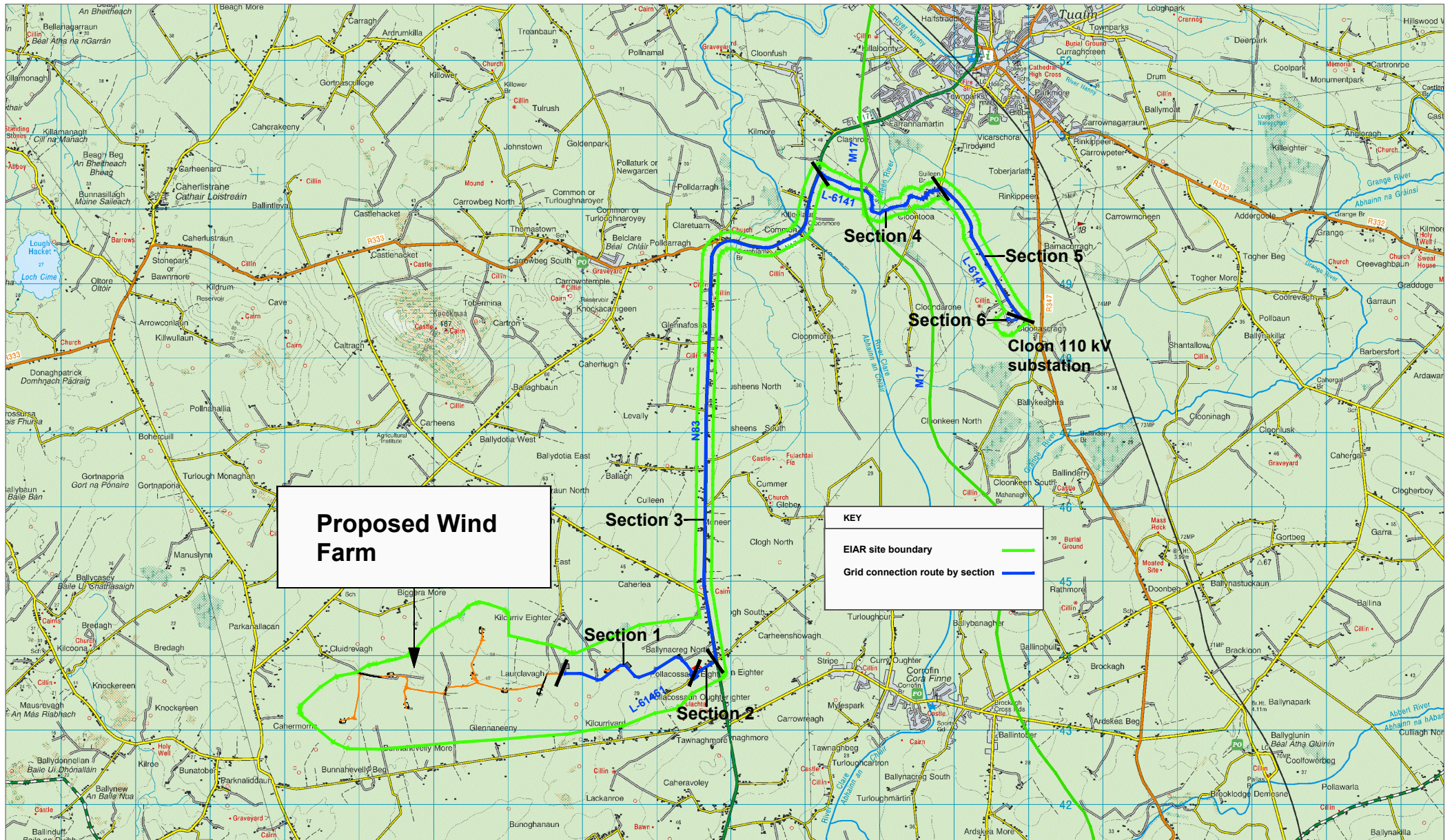
SCALE: NTS

PROJECT NO: 9730

DATE: 16.01.24

DRAWN BY: AL

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Proposed Wind Farm

KEY

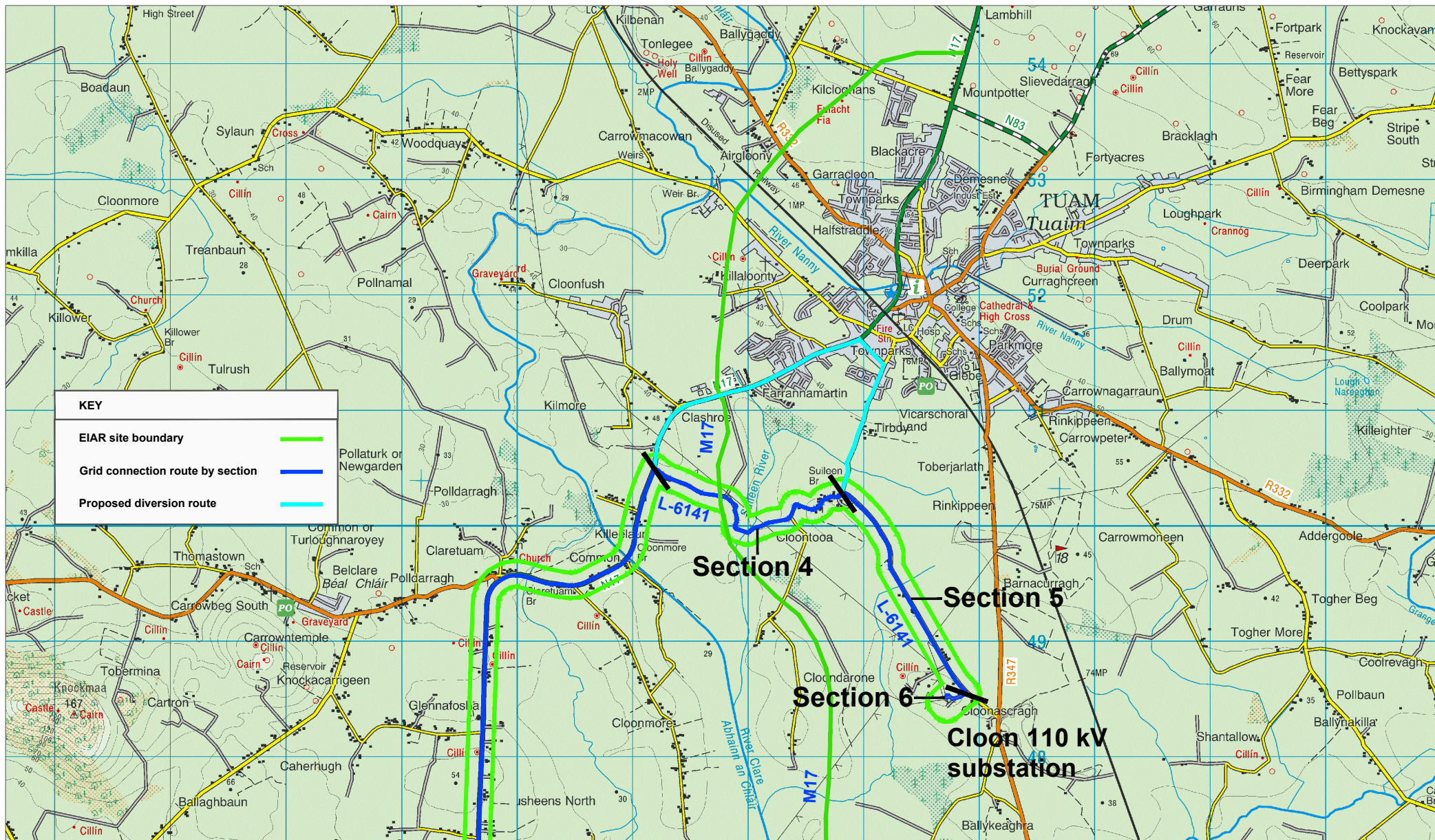
- EIA site boundary —
- Grid connection route by section —

NOTES:
 PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES
 Base mapping provided by MKO

Figure 15-4a Proposed Grid Connection route

| | |
|---------------------------------------------------|----------------|
| PROJECT: Laurclavagh Renewable Energy Development | |
| CLIENT: Laurclavagh Ltd | |
| PROJECT NO: 9730 | DATE: 05.03.24 |
| SCALE: NTS | |
| DRAWN BY: AL | |

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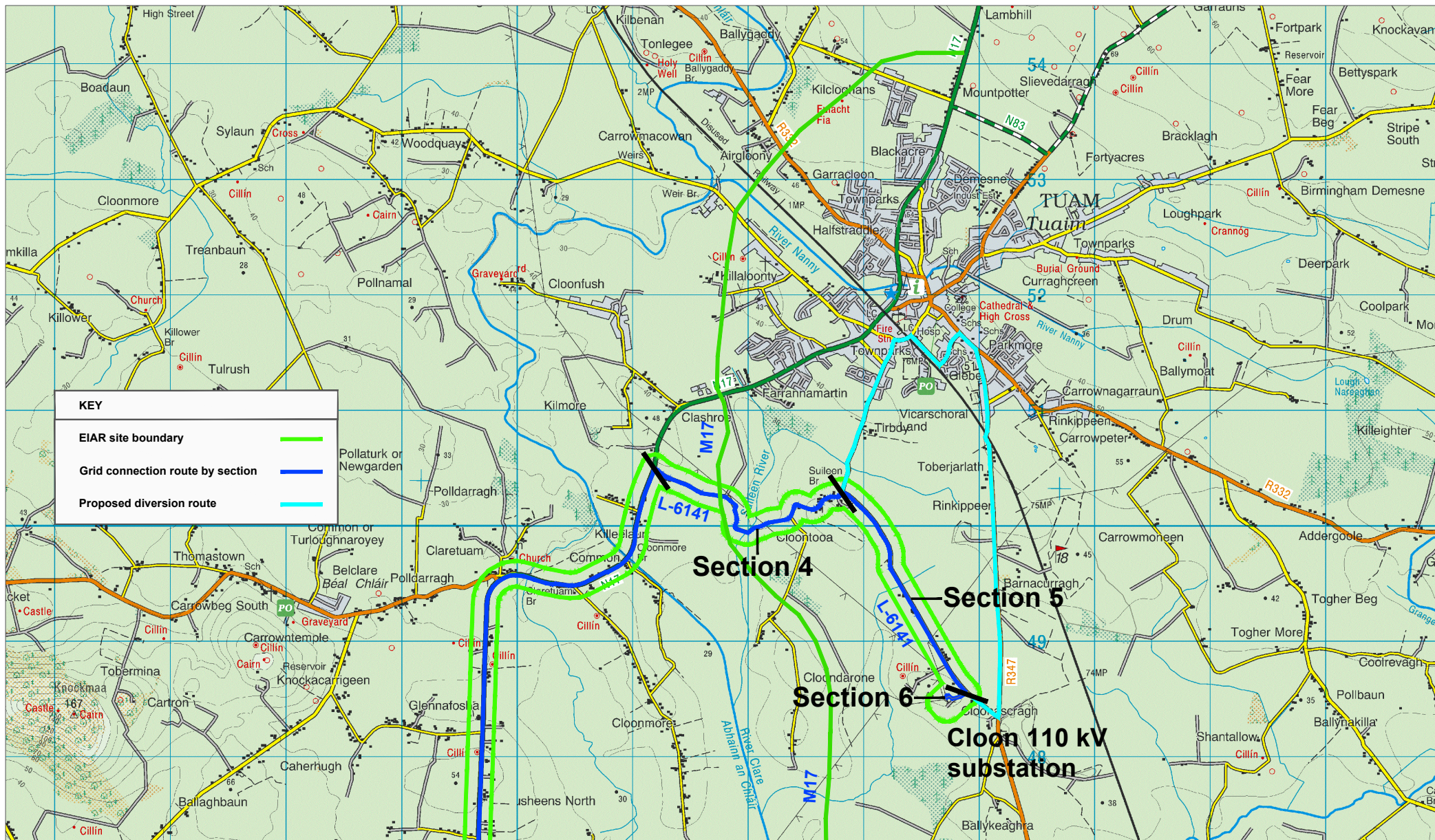


NOTES:
 PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES
 Base mapping provided by MKO

Figure 15-4b Proposed Grid Connection route - diversion route for Section 4

| | |
|---------------------------------------------------|----------------|
| PROJECT: Laurclavagh Renewable Energy Development | |
| CLIENT: Laurclavagh Ltd | SCALE: NTS |
| PROJECT NO: 9730 | DATE: 05.03.24 |
| | DRAWN BY: AL |

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NOTES:

PLANNING DRAWING ONLY - NOT FOR CONSTRUCTION PURPOSES

Base mapping provided by MKO

Figure 15-4c Proposed Grid Connection route - diversion route for Section 5

PROJECT: Laurclavagh Renewable Energy Development

CLIENT: Laurclavagh Ltd

SCALE: NTS

PROJECT NO: 9730

DATE: 05.03.24

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