

MORAY WEST

OFFSHORE WINDFARM

Onshore Transmission Infrastructure Environmental Impact Assessment (EIA)

Moray Offshore Windfarm (West) Limited

Technical Appendix 9.2

Preliminary Construction Traffic Management Plan



Table of Contents

Executive Summary	5	4.4 Base Traffic Flow Data	6
1. Introduction	1	5. The Moray West Onshore Transmission Infrastructure	6
1.1 Purpose of the Preliminary Construction Traffic Management Plan	1	5.1 Project Description	6
1.2 Sources of Information	1	5.2 Project Programme	6
1.3 Consultation	1	5.3 Key Transport Implications	6
1.4 Report Structure	1	5.4 Vehicle Classification	6
2. Policies, Procedures and Due Process	1	6. Proposed Construction Access Routes	7
2.1 Normal Loads	1	6.1 Local Road Issues and Constraints	7
2.2 Abnormal Loads	1	6.1.1 Width Restrictions	7
3. Responsibilities	2	6.1.2 Road Classifications	7
3.1 Introduction	2	6.1.3 Road Layout	7
3.2 The Client	2	6.1.4 Sensitive Receptors	8
3.3 Project Manager	2	6.1.5 Visibility Constraints	8
3.4 Site Manager	2	6.1.6 Speed Limits and Traffic Speeds	8
3.5 Construction Health and Safety Executive Manager	2	6.1.7 Construction Traffic Access Routes	8
3.6 Site HSE Manager	2	7. Site Access	8
3.7 All Site Based Staff	2	7.1 Access Overview	8
3.8 Sub-Contractors	2	7.2 Route Sections	8
4. Existing Conditions	3	7.3 Access Strategy	9
4.1 Proposed Scheme Location	3	8. Mitigation Measures	10
4.2 Existing Conditions	3	8.1 Introduction	10
4.2.1 National Road Network	3	8.2 Access	10
4.2.2 Local Road Network – Aberdeenshire	3	8.3 Working Hours	10
4.2.3 Local Road Network – Moray	3	8.4 Preferred Construction Routes for HGV, LV and Staff Locations	10
4.2.4 Core Paths and Cycle Routes	3	8.5 Timing of Deliveries	10
4.2.5 Cycling	4	8.7 Framework Core Path Management Strategy	10
4.3 Local Road Safety Considerations and Assessment	4	8.7.1 Identified Core Paths	10
4.3.1 A98 between Fochabers and Cullen	4	8.7.2 Core Path Management	11
4.3.2 A98 between Cullen and Portsoy	5	8.8 Vehicle Identification	12
4.3.3 A95 between Cornhill and Keith	5	8.9 HGV Emissions and Noise	12
4.3.4 A96 at Keith	5	8.10 Banksman	12
4.3.5 A96 between Keith and Huntly	5	8.11 Wheel / Street Cleaning	12
4.3.6 B9018	5	8.12 Temporary Traffic Management Procedures	12
4.3.7 B9022	5	8.13 Information Packs and Communications	12
4.3.8 Summary	5	8.14 Sustainable Travel Plan	12
		8.14.1 Introduction / Need for a Travel Plan	12

8.14.2 Nature of Construction Activities13

8.14.3 In-built Sustainable Travel Practices13

8.14.4 HGV Development Access13

8.15 Road Condition Surveys13

9. Summary14

Annex A: Communications with Moray Council, Aberdeenshire Council and Transport Scotland15

Figures19

List of Tables

Table 4.1: Moray Council Core Paths within The Study Area4

Table 4.2: Summary of Accident Records between 2013 and 20174

Table 7.1: Indicative Accesses8

Table 7.2: Relationship between Accesses, Compounds and Sections.....9

Table 8.1: Identified Core Paths Affected by the OnTI11

Table 9.1: Measures Addressed / Acknowledged as Part of the PCTMP and Further Actions Required14

List of Figures

Figure 4.1: Planning Application Boundary and Key Local and Strategic Roads

Figure 4.2: Core Paths and Cycle Routes

Figure 4.3: Accident Locations and Severity

Figure 4.4: Traffic Count Locations

Figure 4.5: 2017 Baseline Daily Traffic Flows Figure 5.1: Proposed Programme and Anticipated Vehicle Numbers per Week (Landfall)

Figure 5.2: Proposed Programmes and Anticipated Vehicle Numbers per Week (Cable)

Figure 5.3: Proposed Programmes and Anticipated Vehicle Numbers per Week (Substation)

Figure 6.1: Proposed Construction Traffic Routes and Temporary Construction Signage

Figure 7.1: Planning Application Boundary and Indicative Accesses

List of Images

Image 7.1 DMRB Field Access Layout Specification

Copyright © 2018 Moray Offshore Windfarm (West) Limited

All pre-existing rights reserved.

Liability

In preparation of this document Moray Offshore Windfarm (West) Limited has made reasonable efforts to ensure that the content is accurate, up to date and complete. Moray Offshore Windfarm (West) Limited shall have no liability for any loss, damage, injury, claim, expense, cost or other consequence arising as a result of use or reliance upon any information contained in or omitted from this document.

Acronyms	
Acronym	Term
AADT	24 hour Annual Average Daily Traffic flow
AC	Aberdeenshire Council
AIL	Abnormal Indivisible Load Study
ATC	Automatic Traffic Counts
DAQEMP	Dust and Air Quality Emissions Management Plan
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment Report
FCPMS	Framework Core Path Management Strategy
GIS	Geographic Information System
GPS	Global positioning system
HDD	Horizontal Directional Drilling
HGV	Heavy goods vehicles
MC	Moray Council
MLWS	Mean Low Water Spring
Moray West	Moray Offshore Wind Farm (West) Limited West
NCN	National Cycle Network
NETS	National Electricity Transmission System
NRASW	New Roads and Street Works Act
NVMP	Noise and Vibration Management Plan
OnTI	Moray Onshore Transmission Infrastructure

Executive Summary

This document sets out a Preliminary Construction Traffic Management Plan and mitigation for the proposed construction of the Moray West Onshore Transmission Infrastructure, as needed to connect the Moray West Offshore Wind Farm to the National Electricity Transmission System. It includes reference to all relevant policies and guidance, a review of the existing transport baseline, roles and responsibilities and site access arrangements. The document is also supported by a Transport Assessment and an Abnormal Invisible Loads study.

1. Introduction

1.1 Purpose of the Preliminary Construction Traffic Management Plan

This document is the Preliminary Construction Traffic Management Plan (PCTMP) for the Moray West Onshore Transmission Infrastructure (OnTI). The OnTI is required to connect the proposed Moray West Offshore Wind Farm and associated Offshore Transmission Infrastructure (OfTI) to the National Electricity Transmission System (NETS) at the existing Blackhillock substation approximately 1.5 km south of Keith, Moray. The PCTMP has been developed in order to avoid, minimise and mitigate the potential impacts of the construction works on the environment, local community and other local road users.

It is intended that this PCTMP be a live document to be updated and modified, as agreed with the relevant roads authorities, as the OnTI progresses and as details are clarified during the detailed design and planning processes prior to the start of works onsite.

A key potential concern for other road users is the disturbance caused by traffic generated during the construction phase of a development. Therefore, this PCTMP has been developed in order to:

- Identify construction routes that have the least impact on road infrastructure in the area;
- Provide safe access and egress from the sites for all construction vehicles; and
- Minimise the effects of all traffic travelling to and from the OnTI construction sites.

This report considers only the construction impacts of the OnTI. Once operational, the OnTI will not generate a significant amount of traffic (with trips associated with maintenance only) therefore, the long-term impact has been deemed negligible. No adverse effects on traffic and transport are anticipated once the OnTI has been constructed. For the decommissioning phase, the transport environment may have changed significantly and therefore it would be appropriate to develop new traffic management measures at the time.

The PCTMP will need to be submitted to, and approved by the relevant road authorities, in this case Moray Council (MC) and Aberdeenshire Council (AC). Construction will be carried out in accordance with this PCTMP and Moray Offshore Windfarm (West) Limited (Moray West) will use all reasonable endeavours to ensure compliance with this document.

This PCTMP or subsequent iteration will be embedded within the eventual construction Contractor documentation and will form an overarching and comprehensive management procedure for the Contractor to adhere to.

Further information on the OnTI is contained within the Environmental Impact Assessment Report (EIA) Report and this PCTMP should be read in conjunction with those documents.

1.2 Sources of Information

In order to produce this PCTMP, the following inputs have been used:

- A site visit was undertaken on 17, 18 and 19 October 2017. During the site visit extensive observations were taken of the road network surrounding and through the study area. Each road was visually assessed for its appropriateness to serve as a construction access for the OnTI. The road widths, surfacing, availability of passing places, location of sensitive receptors and safety concerns were identified and logged on a Geographic Information System (GIS) base; and
- Information relating to the local road network, such as traffic flows, existing access arrangements and Personal Injury Accidents (PIA) analysis.

1.3 Consultation

Wood Environment & Infrastructure Solutions Limited (Wood) has prepared this PCTMP in accordance with best practice and in consultation with the relevant officers within MC, AC and Transport Scotland. Initial consultation information was sent to each organisation on 8 November 2017 and this was followed with phone calls and subsequent emails. Copies of the relevant communications are included in Appendix A.

The response can be summarised as follows:

- In its response, Transport Scotland stated “We note your proposed scope for the AIL study and the CTMP. We can confirm that the proposed methodology and scope is acceptable. With regard to your proposal for a future Travel Plan for the development, Transport Scotland considers that the production of a robust CTMP which has a section covering workforce travel will suffice and, therefore, do not consider a Travel Plan to be necessary in this instance”.

1.4 Report Structure

The remainder of this report is structured as follows:

- Chapter 2 – Summarises the relevant procedures and policies;
- Chapter 3 – Sets out the roles and responsibilities;
- Chapter 4 – Describes the location of the proposed works and the surrounding road network;
- Chapter 5 – Describes the project and the key transport implications;
- Chapter 6 – Identifies the access routes to the work area;
- Chapter 7 – Presents details of the accesses and their treatment;
- Chapter 8 – Presents the proposed mitigation measures for the works; and
- Chapter 9 – Summarises this PCTMP.

2. Policies, Procedures and Due Process

2.1 Normal Loads

The co-ordination and notification of accommodation works and road closures, if required, is covered under the New Roads and Street Works Act (NRASW) of 1991 (2008 revision). In summary, as the principal local road authorities, MC and AC will be required to coordinate temporary traffic orders and works in the road with other authorities and the emergency services.

Moray West is required to give at least three months’ notice of temporary road closures and traffic management. This will allow the highway authority sufficient time to advertise and process the appropriate orders and to notify the emergency services and other traffic authorities. However, if the connection is constructed by the statutory undertaker then this process may be simplified.

2.2 Abnormal Loads

Abnormal loads are required within the OnTI scope of work and details of their management are contained with the Abnormal Indivisible Loads (AIL) study.

3. Responsibilities

3.1 Introduction

The chapter outlines the proposed roles and responsibilities for implementing the PCTMP during the construction of the OnTI. If there are any changes to the proposals, MC and AC will be notified in writing as appropriate.

3.2 The Client

Moray West will be responsible for:

- All communication with the regulator for matters pertaining to environmental impacts and incidents during construction;
- Obtaining environmental permits;
- Providing the Contractor with updated information relating to environmental permits and conditions; and
- Co-ordination with any appointed Environmental Consultants where required.

3.3 Project Manager

The Construction Project Manager will be responsible for:

- Being the main focal point for the Contractor; and
- Overall reporting to Moray West.

3.4 Site Manager

The Site Manager will:

- Ensure all site personnel and Contractors implement all the requirements of the PCTMP and legal obligations regarding traffic management and environmental protection in relation to materials and pollutants;
- Ensure appropriate resources are available for effective safeguarding of the environmental aspects identified within the PCTMP;
- Periodically review environmental and PCTMP monitoring report to ensure consistency and quality; and
- Reporting any significant pollution incidents to the Scottish Environment Protection Agency and the Project Manager.

3.5 Construction Health and Safety Executive Manager

The Construction Health and Safety Executive (HSE) Manager will:

- Audit and monitor all PCTMP implementation activities, advise the Discipline Supervisors, Field Superintendents and Resident Site Manager of any shortfalls and provide specialist support;
- Assign responsibilities of individual activities pertinent to specific requirements of the PCTMP to key individuals where appropriate, together with a clear remit and definition of the function;
- Carry out daily inspections of all work areas to ensure compliance on the part of the Contractor and Sub-contractor with regard to this PCTMP;
- Ensure all PCTMP deviations and environmental incidents are reported immediately to the Contractors home office and corrective action rapidly put into effect;
- Report all significant deviations from the PCTMP and environmental incidents to the Site Manager and Project Manager;

- Incorporate PCTMP requirements into the site induction programme and ongoing training / awareness programmes; and
- Ensure this PCTMP is made readily available to all Sub-Contractors and Supervisors.

3.6 Site HSE Manager

The Site HSE Manager shall:

- Take overall responsibility for compliance with all HSE requirements at the site and for achieving the required levels of HSE performance;
- Take responsibility for implementation and management of emergency response procedures. Ensure HSE roles are being enacted in accordance with the requirements of this procedures and in line with best industry practice; and
- Ensure HSE roles are provided with suitable environmental awareness training and provision of any specialist environmental training required generally to carry out their roles.

3.7 All Site Based Staff

In addition to any specific duties assigned by the Construction HSE Manager, all staff will be trained to:

- Ensure familiarity with the themes and requirements of this PCTMP that relate to the units and activities they are directly involved with;
- Monitor and encourage colleagues to ensure they also comply with the environmental requirements of this PCTMP and intervene or request supervisory / HSE office intervention if environmentally damaging activities or action that are non-compliant with any Construction Traffic are witnessed; and
- Report any environmental incidents or concerns to the appropriate line manager.

3.8 Sub-Contractors

Sub-Contractors must be provided with copies of this PCTMP and comply with it in full. Specifically, they will:

- Ensure the nominated HSE Manager is fully familiar with the requirements and manages their implementation;
- Report directly to the Construction HSE Manager for all PCTMP related issues;
- Comply with the responsibilities;
- Advise the Construction HSE Manager of any activity or need to deviate from any requirement within this PCTMP; and
- Liaise with the Construction HSE Manager on a regular basis to ensure any changes in scope that have environmental implications or new environmental requirements are accounted for and managed.

4. Existing Conditions

4.1 Proposed Scheme Location

The OnTI will connect the proposed Moray West Offshore Wind Farm to the existing Blackhillock substation approximately 1.5 km south of Keith.

The main components of the OnTI include:

- Up to two offshore export cables (between MLWS and the transition joint bays only);
- Transition joint bays (the interface between the offshore export cables and onshore cable circuits) at the Onshore Landfall Area;
- Up to two onshore underground cable circuits; approximately 29 km of underground cable circuits between the transition joint bays and a new onshore substation;
- Onshore substation (required to transform the electricity before feeding it into the NETS at the existing Blackhillock substation);
- Buried onshore cable circuits connecting the new onshore substation to the existing Blackhillock substation;
- Permanent access rights to underground cable circuits; and
- Temporary access roads, storage / laydown areas, and construction compounds (one main compound and three satellite compounds).

Upgrades to the existing Blackhillock substation at will be undertaken by Scottish Hydro Electric Transmission Ltd (the Onshore Transmission Owner) separately from the OnTI. Works will be undertaken using its permitted development rights. The effects of any construction needed have not been considered as part of this PCTMP.

The PAB for the OnTI is located in both AC and MC administrative areas. The study area extends from the A98 / A96 junction near Fochabers in the west to the B9022 in the east and from the coast in the north to the A96 just north of Cairnie in the south.

A visual overview of the PAB, the study area and the key local and national roads are set out as Figure 4.1.

4.2 Existing Conditions

4.2.1 National Road Network

Within the study area, both the A95 and A96 are trunk roads and hence the responsibility of the Scottish Government and Transport Scotland:

- A95 – The A95 is a two-way single carriageway road that runs between Keith and the A98 south-west of Boyndie. The speed limit of this road varies within the residential areas. Outside the residential areas it is subject to the national speed limit (in this case 60 mph). The sections of this road within residential areas have streetlights and footways, while all other sections do not. A national count site near Knock, shows a 24 hour Annual Average Daily Traffic flow (AADT) of 1,068 vehicles.
- A96 – The A96 is a major road in the north of Scotland. It is just over 160 km long and is the main route between the cities of Inverness and Aberdeen, passing through Aberdeenshire and Moray as part of its route. Within the study area it is a two-way single carriageway road that passes through Keith. The sections of the A96 within residential areas are subject to either a 30 mph or a 40 mph speed limit, while the rest of the road is subject to the national speed limit (in this case 60 mph). The sections of road within residential areas have streetlights and footways, all other sections do not. The A96 has an AADT of 7,544 vehicles just south of the junction with Denwell Road where Blackhillock substation is located.

4.2.2 Local Road Network – Aberdeenshire

There are two main roads that are situated within the TA study area that will be affected by the OnTI:

- B9022 – Two-way single carriageway road that runs from the south of Portsoy at the B9022 / A98 junction, travelling southwards until it reaches the B9022 / A95 junction at Gordonstown. The road stretches for a total distance of approximately 10 km. It is presumed that national speed limit applies as there are no signs to state otherwise, until it reaches the junction at Gordonstown and a 40 mph speed restriction is applied. There are no streetlights or footways / cycleways provided at any point on the road, with agricultural land on both sides of the road; and
- A98 – Two-way single carriageway road and in the vicinity of the TA study area it provides an east / west coastal link route. The road runs between the Fochabers junction with the A96 and Fraserburgh. The sections of road within residential areas are provided with street lights, have footways and are subject to either a 30 mph or a 40 mph speed limit. The rest of the A98 is subject to the national speed limit (in this case 60mph) and does not have streetlights or footways. To the west, south of Rathven, the A98 has an AADT flow of 5,602 vehicles. To the east near Kilnhillock, it has an AADT of 4,793.

4.2.3 Local Road Network – Moray

There are three main roads and a local road that are situated within the study area that will be affected by the OnTI. These include the following:

- A98 – See section 4.2.2
- B9018 – Runs parallel to the PAB. This is a cross-country two-way single carriageway road that commences south of Cullen, the road then travels south west until it reaches the A95 junction just east of Keith. The section of this road within the residential area of Lintmill is subject to a 40 mph speed limit, whilst the rest of the road is subject to the national speed limit (in this case 60 mph). The section of road within the residential area at Lintmill also has streetlights and footpaths, however the remaining stretch of road does not.
- B9115 – Runs from the A96 / 9115 junction south of Blackhillock in a south-eastern direction until it reaches the B9014 / B9115 junction at Drummur, running for approximately just over 6 km. It is a narrow two-way road of some 5.5 m, there are no streetlights or pedestrian footways and fields are surrounded either side of the road. It is assumed that the national speed limit applies to this short road, as there are no signs to state otherwise.
- Gallowhill Terrace – Runs from the B9018 to Crannach. It is a narrow single carriageway road some 5.5 m wide with a 3 m wide pinch point at the bridge over Bowie Burn. During the site visit HGV traffic was observed using this road. The road has some residential properties fronting and a school, there is some footway provision but no streetlights. The national speed limit (in this case 60 mph) applies.

In addition to this, there are a number of other C and unnamed / unclassified roads situated in the study area, some of which may be used by OnTI related traffic. These include locations such as Fordyce, Hoggie, Crannach and around Keith connecting to the main roads outlined above.

4.2.4 Core Paths and Cycle Routes

Core Paths - Aberdeenshire

Under the Land Reform (Scotland) Act 2003, every local authority and National Park Authority in Scotland is required to draw up a plan for a system of core paths to give the public reasonable access throughout their area. These core paths must be accessible to everyone including those with disabilities, authorities must seek to consider all when drawing up their core paths plan. In Aberdeenshire, three core paths have been identified within the study area that may be affected by the OnTI:

- A path that runs between Banff and Lintmill via Fordyce and Portsoy (National Cycle Network (NCN-1));

- A path connecting Fordyce and Cullen via Sandend; and
- A path connecting Portsoy to Sandend.

Figure 4.2 shows the core paths within the AC jurisdiction.

Core Paths - Moray

There are several core paths within the study area under MC jurisdiction that may be affected by the OnTI, many of the paths are concentrated in and around settlements.

The core paths identified are listed in Table 4.1 and are shown on Figure 4.2. In addition to these, named paths, the core paths plan maps may also identify some unnamed promoted paths.

Table 4.1: Moray Council Core Paths within The Study Area				
Location	Core Path Number	Description	Length	Intersection
Cullen	CU03	NCN Route 1 – Cullen to Lintmill	2.1 km	Shares the B9018
Cullen	CU05	Crannoch circular path (starts and finishes in Cullen square)	2.4 km	Crosses the A98
Buckie	BK03	Laird’s Way	3 km	Crosses the A98
Keith	KT03	Balloch Wood Path	7.5 km	Does not cross any public road
Keith	KT04	Auchoynanie Path	1.8 km	Crosses Edindiach Road at Keith
Keith	KT06	Den Path	1.3 km	2 Public road crossing points (unnamed roads)
Keith	KT07	Green Roadies Path	2.8 km	Crosses the A95
Keith	KT08	Town Centre Link	1.3 km	Crosses the A96

4.2.5 Cycling

The National Cycle Network (NCN) is a series of traffic free paths and quiet, on road cycling and walking routes that connect every major town and city. There is one NCN route that crosses through the study area.

Between Portsoy and Port Knockie the NCN-1 runs roughly parallel to the A98, via Fordyce and Lintmill, using both on-road and off-road cycleways. A short section of this route also runs on the A98. This is a long distance route from Dover to the Shetlands Islands some 2,700 km; the surface varies from on-road to traffic-free tarmac to compacted surface.

In addition to the NCN-1 there are also local cycle routes that could be potentially affected by construction traffic, these include local routes at Sandend, Fordyce and Portsoy. These are also shown on Figure 4.2.

4.3 Local Road Safety Considerations and Assessment

Records of Personal Injury Accidents (PIA) have been obtained from AC and MC for the five year period from 2013 to 2017 for the study area.

The area of the accident study and the location of all recorded accidents are shown on Figure 4.3. All of the identified key study links and junctions have been considered. The full accident records received from AC and MC are available on request.

It is important to analyse the locations and causation for each accident that has occurred over recent years. This can identify trends and numbers of accidents, which should highlight any specific location(s) where accidents are a significant issue and where increases in traffic flow could be detrimental.

As part of this report each individual accident has been reviewed to provide a detailed road safety background assessment of the area.

The data indicates that 78 accidents have occurred on the assessed local road network over the five year period. Table 4.2 presents a summary of the accident data according to location, severity and whether the accident involved vulnerable users (pedestrians, cyclists and motorcyclists) or HGV.

Table 4.2: Summary of Accident Records between 2013 and 2017						
Road	Number of Accidents between 2013 and 2017					
	Total Records	Fatal	Serious	Slight	Vulnerable	HGVs
A98 – between Fochabers and Cullen	19	1	8	10	2	0
A98 – between Cullen and Portsoy	8	3	2	3	2	0
A95 – between Cornhill and Keith	13	0	1	12	0	0
A96 – at Keith	24	1	9	14	8	4
A96 – between Keith and Huntly	6	0	2	4	0	0
B9018	3	0	1	2	1	0
B9022	5	0	1	4	0	0
Total	78	5	24	49	13	4

4.3.1 A98 between Fochabers and Cullen

A total of 19 accidents were recorded on this section of the A98, one fatal, eight serious and ten slight.

The fatal accident occurred when a vehicle travelling east lost control on a bend and collided with an oncoming vehicle.

The serious accidents occurred as follows:

- A vehicle struck another from behind as it indicated to turn right into a junction;
- A motorcyclist left the carriageway to avoid an oncoming vehicle (on the wrong side of the road) and landed on the side of the road;
- A right turning vehicle collided with the offside of another vehicle;
- A driver lost control on a bend and the vehicle left the carriageway and struck a wall / fence;
- A driver failed to see a vehicle already on the road resulting in the wing mirror of their car striking the other vehicle rider on the head, causing them to leave the carriageway; and
- The remaining three serious accidents were all because of driver error including nervous and inexperienced drivers, loss of control, aggressive and careless driving and finally a deposit on road leading to loss of control.

All the collisions labelled as slight were predominantly resultant of driver error although there have been influencing factors that have contributed to the incident. These factors include: poor weather conditions leading to a wet and slippery road surface and hazardous objects including animals in the road causing drivers to have to respond quickly.

4.3.2 A98 between Cullen and Portsoy

A total of eight accident were recorded on this section of the A98, three fatal, two serious and three slight accidents.

Two separate fatal accidents occurred when vehicles crossed the carriageway and collided head on with oncoming vehicles. A third fatal accident occurred when a pedestrian crossed into a vehicles path.

The serious accidents occurred as follows:

- One vehicle tried to overtake a HGV and entered the path of an oncoming vehicle; and
- A driver lost control on a bend.

There were three slight accidents that all occurred predominantly due to driver error. However, contributing factors include animals or objects in the carriageway; failing to look properly; poor weather conditions leading to loss of control; and careless / reckless driving in a hurry.

4.3.3 A95 between Cornhill and Keith

A total of thirteen separate accidents were recorded on the A95 between Cornhill and Keith, one serious and twelve slight.

The serious accident occurred when a driver lost control on a bend causing the vehicle to cross into the opposite carriageway and collide with another vehicle.

The twelve slight accidents that occurred on this section of road were principally a result of driver error, such as:

- Sudden braking;
- Loss of control;
- Failure to signal / misleading signal;
- Poor turn or manoeuvre;
- Following too close;
- Inexperienced / learner;
- Failure to look properly;
- Failure to judge another person's path or speed;
- Careless / reckless / driving in a hurry;
- Overloaded or poorly loaded vehicle or trailer;
- Failure to adapt to the conditions; and
- Disobeyed give way or stop signs or markings.

4.3.4 A96 at Keith

A total of 24 separate accidents were recorded on this section of the A96 at Keith. These included one fatal, nine serious and fourteen slight accidents.

The fatal accident occurred when the driver of a vehicle failed to see another vehicle ahead slowing and stopping, then subsequently collided directly into the rear of the other vehicle.

The serious accidents occurred as follows:

- A vehicle drifted across the road onto the opposing carriageway and collided with a pedestrian crossing the road;
- A driver lost control of a vehicle on a bend, clipping the verge and sending the vehicle into the opposite carriageway and into the path of an oncoming vehicle;

- A HGV collided with a vehicle waiting to turn right, resulting in the waiting vehicle colliding with the stone parapet of a bridge;
- A pedestrian stepped off a pedestrian island into the path of an oncoming vehicle;
- The second of two motorcyclists riding separate bikes fell at a junction, the first rider observed this in their rear view mirror, over corrected their bike and fell also;
- A driver mounted the nearside soft verge, over corrected, crossed both lanes and passed down an embankment;
- The driver of a parked van failed to observe a pedestrian standing behind it and reversed into them; and
- Two separate incidents where a pedestrian ran into the path of an oncoming vehicle.

There were also fourteen slight accidents recorded on the A96 through Keith that can mostly be attributed to driver and pedestrian error including failure to look; failure to judge speed and path of others; following too close; travelling too fast for conditions; sudden braking; exceeding speed limit; loss of control; distraction in vehicle; inexperience; illegal turn or direction of travel; illness (physical or mental); fatigue; and driving in a careless / reckless manner.

4.3.5 A96 between Keith and Huntly

A total of six accidents were recorded on this section of the A96 between Keith and Huntly, two were serious and four slight.

A serious accident occurred when a driver crossed into the opposing carriageway before rolling down an embankment.

The second serious accident occurred when a vehicle failed to notice that the vehicle in front had slowed down resulting in a collision.

The four slight accidents that occurred within this section were due to driver error, such as a poor turn or manoeuvre; careless / reckless driving; sudden braking; loss of control; failure to judge the path or speed of another individual; and failure to adapt to the conditions.

4.3.6 B9018

A total of three accidents were recorded on the B9018, consisting of one serious and two slight accidents. The serious accident occurred when a vehicle failed to slow down on approaching two horse riders, startling the horses, and dismounting the rider.

The two slight accidents, details are unknown however it is considered that driver error is the principal cause of the collisions.

4.3.7 B9022

A total of five accident were recorded on the B9022 one of which was serious and four were slight accidents.

The serious accident occurred when a vehicle collided with the road verge, left the carriageway, rolled down an embankment and collided with a tree.

The four slight accidents that occurred on this stretch of road were as a result of driver error and failure to adapt to the conditions.

4.3.8 Summary

The assessments above indicate that there were numerous accidents across the road network between 2013 and 2017. It is considered that these accidents are within normal parameters for trunk, A and B roads and assessment of the clusters of accidents on these links has shown that driver error is the predominate cause of accidents. No clusters of accidents involving vulnerable road users were identified on these routes.

In summary, the accident assessments set out above do not indicate any locations where accidents may be made worse by the OnTI traffic. All OnTI traffic will be routed to site, and instructions given on how to drive through the local area as set out in the PCTMP.

Overall there are no trends suggesting that the temporary construction traffic from the proposed OnTI will have an impact on road safety.

4.4 Base Traffic Flow Data

As part of the development of the PCTMP and to understand the existing traffic conditions within the study area, Wood commissioned Nationwide Data Collection to undertake a series of Automatic Traffic Counts (ATC). A random week was chosen during school term time for the survey and this resulted in a start date of Thursday 23 November 2017 and an end date of Wednesday 29 November 2017.

Figure 4.4 shows the location of these traffic counts as follows:

- Site 1 – A98 south of Buckie and west of the A98 / A942 junction;
- Site 2 – A98 Seafield Street in Cullen, south of The Square and Reidhaven Street;
- Site 3 – B9018 within Lintmill;
- Site 4 – A98 south of Sandend and east of Seaview Road;
- Site 5 – A98 Seafield Street in Portsoy between Burnside Street and Shillinghill;
- Site 6 – B9022 between Portsoy and Gordonstown, immediately south of Longmuir farm;
- Site 7 – B9018 at Deskford;
- Site 8 – B9018 south of the Grange Crossroads;
- Site 9 – A95 between Drumnagorrrach and Limehillock;
- Site 10 – A95 east of the B9018 / A95 junction;
- Site 11 – A96 Moss Street in Keith, south of Union Terrace;
- Site 12 – A96 between Keith and Fochabers;
- Site 13 – A95 between Keith and Mulben; and
- Site 14 – A96 east of the B9115 / A96 junction at Edintore.

The ATC for site 4 was resurveyed between Friday 01 December 2017 and Thursday 07 December 2017 as the original count was unavailable for interpretation.

This information provides base network flows which have been used to inform the calculation of future year traffic flows. Figure 4.5 presents a network plot of the 2017 base year surveyed daily traffic flows.

Details of the ATC traffic count data can be provided on request.

5. The Moray West Onshore Transmission Infrastructure

5.1 Project Description

The OnTI will connect the proposed Moray West Offshore Wind Farm to the existing Blackhillock substation approximately 1.5 km south of Keith.

The main components of the project will include:

- Up to two offshore export cables (between MLWS and the transition joint bays only);
- Transition joint bays (the interface between the offshore export cables and onshore cable circuits) at the Onshore Landfall Area;
- Up to two onshore underground cable circuits; approximately 29 km of underground cable between the transition joint bays and a new onshore substation;
- Onshore substation (required to transform the electricity before feeding it into the NETS at the existing Blackhillock substation);
- Buried onshore cable circuits connecting the new onshore substation to the existing Blackhillock substation;
- Permanent access rights to underground cables; and
- Temporary access roads, storage / laydown areas, and construction compounds (one main compound and three satellite compounds).

Upgrades to the existing Blackhillock substation at will be undertaken by Scottish Hydro Electric Transmission Ltd (the Onshore Transmission Owner) separately from the OnTI. Works will be undertaken using their permitted development rights. The effects of any construction needed have not been considered as part of this TA.

5.2 Project Programme

The estimated overall construction duration of the OnTI is approximately 30 months. As a basis of this plan, a 30 month programme has been used starting in week one commencing April 2022 and running to the end of September 2024.

The programme presented in Figures 5.1, 5.2 and 5.3 shows the anticipated number of vehicle trips per week over the whole construction period by activity and by route section.

5.3 Key Transport Implications

In terms of the Transport Assessment (TA), there are three distinct elements of the OnTI to consider:

- The Onshore Landfall Area;
- The underground cable circuits; and
- The onshore substation.

It is estimated that a majority of the trips generated by the OnTI in the construction period will be related to the plant and vehicles set out above; however there will be a need for some other occasional vehicles such as AILs, cable drum vehicles and cranes.

The construction method for the cable circuits will mainly be open cut trenching. However, Horizontal Directional Drilling (HDD) will be used to pass the cable circuits under sensitive features such as the River Isla and main roads.

5.4 Vehicle Classification

A number of vehicle types will be used for the construction and delivery of the proposed works. The list below identifies the vehicles that may be used as part of the construction programme.

- Staff vehicles – minibus / car / transit type vans;
- Crane;

- Grading tractors;
- Excavators;
- Fork lifts;
- Dumpers;
- 2 or 3 axle truck with HIAB;
- Flatbed HGV;
- Low Loader transporters; and
- AIL vehicles.

The vehicle types specified above have been based on projects of a similar type and is not an exhaustive list. It has been assumed that construction machinery and onsite plant, vehicles and generator fuel tanks will be re-fuelled onsite.

6. Proposed Construction Access Routes

6.1 Local Road Issues and Constraints

Site audits have been undertaken of the OnTI construction routes and the possible access points to the proposed work areas. Issues and constraints on the network have been considered under the following headings:

- Height restrictions – none apparent;
- Weight restrictions – none apparent;
- Width restrictions;
- Road classification;
- Road layout;
- Traffic calming measures – none apparent;
- Sensitive receptors (such as schools, areas of high pedestrian movements);
- Visibility constraints;
- Restricted access – none apparent;
- Speed limits and traffic speeds;
- Junctions at or near capacity during peak periods – none apparent; and
- Gradients – none apparent.

The issues and constraints that are evident in the vicinity of the works area and the access routes are proposed to be managed as follows.

6.1.1 Width Restrictions

With the exception of Gallowhill Terrace towards Crannach, all access roads are found to be at least 5.5 m wide so two HGV can pass one another side by side. Gallowhill Terrace, for the majority of its length is 5.5 m with a 3 m pinch point at the bridge over Bowie Burn. It is considered that in this location, controlled one-way operation will suffice, most likely manual control given the volume of traffic. If other narrow roads are identified for use as accesses, mitigation may be required in the form of:

- Providing additional passing places;
- Upgrading existing passing places; or
- Temporary widening of the road.

The preferred method of mitigation for each access road less than 5.5 m wide will be determined during a subsequent design stage.

6.1.2 Road Classifications

The routes to the work area have been assessed on the principle that the construction vehicles will use the major roads network (in this case A roads) followed by B and C roads before using the localised site accesses.

6.1.3 Road Layout

The routes to the work areas have been assessed on the principle that the construction vehicles avoid particularly sensitive junctions in the local area and areas where the road layout may be an issue.

6.1.4 Sensitive Receptors

The routes to the work areas have been assessed on the principle that the construction vehicles avoid, where possible, particularly sensitive receptors in the local area. However, a school is located on Gallowhill Terrace and it is suggested that the timing of traffic movements are adjusted to avoid school drop off and pick up times.

6.1.5 Visibility Constraints

During the site visit, it was identified that the likely locations for site access have sufficient visibility. However, this will need to be agreed by MC and AC.

6.1.6 Speed Limits and Traffic Speeds

As part of this PCTMP, all vehicles used for the OnTI will be required to stay well below the speed limits on the road routes used. All drivers will be briefed on the Moray West environmental policy and supplied with a driver information pack highlighting any restrictions, limitations and codes of conduct.

6.1.7 Construction Traffic Access Routes

The criteria set out above and the results of the site visit have been used to select those roads suitable to form part of the construction traffic access routes. It is considered that:

- Access through Fordyce, Kirktown of Deskford and Berryhillock will not be suitable for construction traffic due to sensitive receptors and narrow road widths;
- Access from the B9022 will not be suitable as the distance on minor roads will be too great; and
- Access from Drum Road or Edindiach Road will not be suitable for construction vehicles due to their horizontal alignments.

Typically, it is considered that access along roads less than 5 m wide would be inappropriate without significant infrastructure improvements. As the OnTI proposals include the construction of a 5.5 m internal haul road along the entire length of the underground cable circuits it is considered more appropriate to efficiently use this resource rather than undertake temporary improvements in many other locations.

Figure 6.1 highlights the construction traffic routes that will be used for vehicles wishing to access the proposed works area. These routes will be agreed MC and AC to ensure that they are the most appropriate access routes. However, they are considered to be a set of robust and appropriate access proposals considering all local limitations.

The route of the AIL vehicles are presented in the AIL study.

7. Site Access

7.1 Access Overview

Vehicular access is required to construct the various elements of the OnTI. This is proposed to be via seven indicative access locations. These accesses are varied in location, type, nature and size.

Figure 7.1 shows the proposed access numbers for reference.

Table 7.1 following, sets out the seven proposed accesses, including details such as:

- Designated access number;
- Indicative Ordinance Surveys (OS) grid reference;
- Classification of road access is onto; and
- Whether the access is existing or not.

Table 7.1: Indicative Accesses			
Access	Indicative OS Grid Reference	Road to Access	Existing Access?
1	NJ 55704 65586	A98	No
2	NJ 49125 57430	B9018	No
3	NJ 49007 56013	B9018	No
4	NJ 48086 54485	Gallowhill Terrace	No
5	NJ 46949 53104	B9018	No
6	NJ 47191 51826	A95	No
7	NJ 44615 46163	A96	Yes

7.2 Route Sections

With the number and the possible locations of the access points known, the OnTI is separated into sections for programming and trip generating purposes as follows:

- Onshore Landfall Area;
- Section 1 – Between the Onshore Landfall Area and the A98;
- Section 2 – Between the A98 and Access 3 near Burnend;
- Section 3 – Between Access 3 and Access 4 near Grange Crossroads;
- Section 4 – Between Access 4 and the A95;
- Section 5 – Between the A95 and the River Isla;
- Section 6 – Between the River Isla and the onshore substation site;
- Onshore substation site; and
- Section 7 – Between the onshore substation site and Blackhillock substation.

For the purpose of this report, the TA and EIA Report, it has been necessary to make assumptions as to the locations of the construction compounds in order to estimate traffic flows across the road network. These assumptions are indicative only. Final locations for the construction compounds will not be determined until the detailed design and planning processes are complete. For the assessment, it has been assumed that indicative relationships between the accesses, compounds and sections exist as presented in Table 7.2.

Table 7.2: Relationship between Accesses, Compounds and Sections		
Access	Serving Compound	Serving Section
1	Satellite compound 1	Landfall, 1 and 2 (north)
2	Satellite compound 2	3
3		2 (south) and 3 (north)
4		3 (south) and 4 (north)
5	Satellite compound 3	4 and 5
6		4 (south) and 5
7	Main compound	6, onshore substation site and 7

7.3 Access Strategy

Where possible, easily accessible construction compounds will be used to store materials and construction plant near to the works, minimising the need for large HGVs to use lower classification roads. However, due to the linear nature of much of the OnTI, access points along the cable circuit route will be required to serve each section. Where possible, existing field access points will be used and these will be temporarily upgraded to accommodate the largest anticipated vehicle and to ensure adequate visibility.

Accesses 2 to 6 will fall under the jurisdiction of AC and MC and as such consultation with both authorities should be undertaken to agree the requirements for these accesses. Transport Scotland should be consulted regarding temporary construction accesses 1 and 7. With low traffic numbers predicted at the access locations, it is considered that the accesses should be provided according to the specifications shown in the Design Manual for Roads and Bridges (DMRB) TD41 / 95 for a field access standard as shown in Image 7.1.

Layout 1 - Field Access
(Use by Large Vehicles)

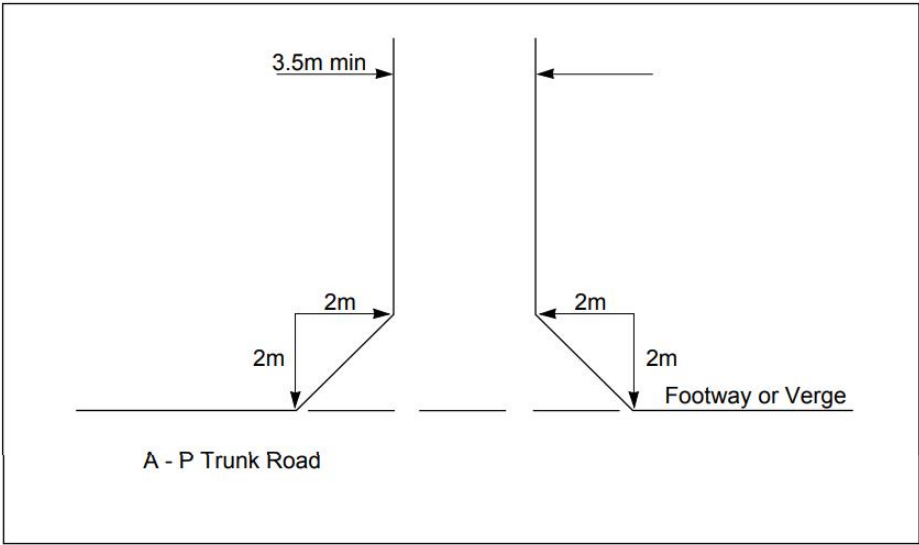


Image 7.1 DMRB Field Access Layout Specification

Access junctions may also need to be upgraded, some of these upgrades will be permanent where access will be ongoing, such as at the onshore substation site, but most upgrades will be temporary during the construction period only.

Details of the access locations, junctions and any upgrades will be determined during the detailed design and planning stages of the OnTI.

8. Mitigation Measures

8.1 Introduction

In order to minimise the impact of construction traffic on the local community and road network a number of mitigation measures are proposed in this chapter. The plan considers the following elements in more detail:

- Access;
- Working hours;
- Preferred construction routes for HGV, Light Vehicles and staff;
- Timing of deliveries;
- Temporary traffic signage;
- Framework Core Path Management Strategy (FCPMS);
- Vehicle identification;
- HGV emissions and noise;
- Banksman;
- Vehicle / street cleaning;
- Temporary traffic management procedures;
- Information packs and communications;
- Sustainable Travel Plan (TP); and
- Road condition survey.

8.2 Access

Chapter 7 presents possible access specifications for those accesses where upgrades are needed. This approach will need to be confirmed with the relevant road authorities.

8.3 Working Hours

Core working hours will be a 12 hour working day for five days a week and a half day on Saturdays. This will include but not be limited to deliveries, movement to place of work, unloading, maintenance and general preparation works.

Except in cases of emergency, any work required to be undertaken outside of core working hours (not including repairs or maintenance) will be agreed with MC and AC prior to undertaking the works.

Any proposed changes to the core working hours will require agreement from MC and AC.

8.4 Preferred Construction Routes for HGV, LV and Staff Locations

Figure 6.1 highlights the construction traffic routes that will be used for vehicles wishing to access the proposed works areas. These routes will be agreed MC and AC to ensure that they are the most appropriate access routes. However, they are considered to be a set of robust and appropriate access proposals accounting for all local limitations.

The route of the AIL vehicles are presented in AIL study.

8.5 Timing of Deliveries

It is estimated that the works will take some 30 months with a start to be agreed once the Contractor has been appointed.

HGV movements to and from site should be evenly spaced throughout the day where possible, to minimise the impact of HGV traffic during the road peak hours. In the interests of road safety and reducing possible nuisance, HGV construction traffic will be subject to a timing restriction whereby vehicles will not be able to gain access to site, or depart at certain times of the day.

It is also important that construction vehicles associated with the OnTI avoid travelling to / from site during peak hours, 08:00 to 09:00 and 16:00 to 17:00 or in the case of Access 3 between 8:30 and 9:30 and 15:00 and 16:00 (the school peaks). There may be unavoidable situations during construction where in exceptional circumstances a small number of trips may occur during these peak periods. It is expected that these situations would only arise by exception. The Contractor will be required to monitor and log these exceptions to maintain construction flexibility.

A delivery timetable will help minimise queues and delays in the vicinity of the proposed works areas by ensuring that HGV are spread across the working day where possible.

Figures 5.1, 5.2 and 5.3 present the likely weekly two-way construction traffic flows throughout construction programme, for both light vehicle and HGV. Assessment within the TA and the EIA Report chapter have shown that with the mitigation proposed in this PCTMP the effects of these traffic flows on the existing road network are acceptable.

AIL deliveries shall only take place during the hours agreed with the police and the relevant roads authorities and that they should be timed to avoid the morning or afternoon school run periods or other predictable peak traffic periods. Should the AIL deliveries be undertaken at the weekend approval in principle should be sought from the relevant roads authority and the Police. The AIL study provides further details on AIL deliveries.

8.6 Temporary Traffic Signage

Temporary signage will be erected on the construction traffic route to provide directional routing information from the strategic road network.

Temporary signage will be placed in the vicinity of each site access to warn other road users of the likely presence of construction vehicles as shown in Figure 6.1. In the event that further physical traffic management is required, temporary signage will be installed in accordance with Chapter 8 Traffic Signs Regulations and General Directives (TSRGD) and in agreement with MC and AC.

8.7 Framework Core Path Management Strategy

A FCPMS is required to address the interactions between the core paths and the OnTI. It needs to identify all the impacted core paths that are affected by the OnTI and then consider methodologies and management for their mitigation.

Once the OnTI proposals have been finalised, this section of the PCTMP should be revised and updated.

8.7.1 Identified Core Paths

Table 8.1 present those core paths that have been identified as possibly having an interaction with the OnTI construction, either as part of the construction vehicle routes or the location of the OnTI.

Table 8.1: Identified Core Paths Affected by the OnTI

ID No.	Core Path Number / Name	Effect on Core Path
1	Path – NCN Route 1 - Banff and Lintmill	The core path directly crosses the route of the underground cable circuits. The core path also shares the A98 (construction traffic route) from Portsoy to Boggierow.
2	Path - Fordyce and Cullen	The core path crosses both the A98 (construction traffic route) and the route of the underground cable circuits. For a short section the core path may also run alongside them both.
3	Path – Portsoy to Sandend	The core path directly crosses the underground cable circuit.
4	CU03, NCN Route 1 – Cullen to Lintmill	The core path shares the B9018 (construction traffic route) from just south of A98 to Lintmill.
5	CU05, Crannoch circular path	The core path directly crosses the A98 (construction traffic route) at almost a right angle.
6	BK03, Laird’s Way	The core path crosses the A98 (construction traffic route). For a short section the core path runs alongside the A98.
7	KT03, Balloch Wood Path	The core path may cross or run alongside the route of the underground cable circuits depending on the final alignment.
78	KT04, Auchoynanie Path	The core path directly crosses the route of the underground cable circuits at almost a right angle.
9	KT06, Den Path	The core path directly crosses the A96 (construction traffic route) at almost a right angle.
10	KT07, Green Roadies Path	The core path crosses the A95 (construction traffic route). For a short section the core path runs alongside the A95.
11	KT08, Town Centre Link	The core path crosses the A96 (construction traffic route). For a short section the core path runs alongside the A96.

8.7.2 Core Path Management

The transport specialists revising this FCPMS should assess the frequency of use of each footpath affected by the OnTI. This will provide important context when considering the impact on users and thus suitable mitigation.

With 11 affected core paths, mitigation for each individual location will need to be considered. As set out in Table 8.1 above some of the core paths simply cross the construction route or underground cable circuits for a short distance while others share these routes. The types of mitigation required will, as a result, be different depending on the nature of the location of the core path and how the OnTI affects it.

There are several management solutions that should be considered including:

- Temporary re-routing of core paths (and associated closure) during construction of the OnTI;
- Provision of signage and other information alerting the public to construction works;
- Active management plan for crossing points for the core paths; and
- Active management plan for shared use access routes over the length of interaction with the core paths.

Active Management Plan for Signage

Main Council offices and Tourist Information Centres will have notice boards installed which will include information about the OnTI and the construction process including timings and maps. The nearest access points of any affected core path will also have signs in order to keep people informed. These will be prominently displayed and clearly indicate relevant information.

The signage described above will be provided and any necessary diversion routes waymarked in advance of construction to allow users to plan their journey so as to avoid the need to turn back on themselves. Signage will also emphasise that the right to wander from any core path within the order limits is not permitted.

All signage will contain contact details for Moray West and the Principal Contractor. Contact numbers will be provided to enable visitors to report any problems encountered when accessing the site, particularly with regard to the condition of the core path.

Signs will be regularly inspected to ensure that they remain in place, are readable and have not been tampered with or altered. This signage will be removed once construction is complete and all core paths returned to their form use / routes.

Active Management Plan for Crossing Points

All points where footpaths cross either the construction traffic route or the cable circuits, the appropriate warning signage will be provided, which will advise of dates and hours of working. Along access roads, appropriate signage will be erected to alert drivers of upcoming locations where there is an interface between the construction traffic and core path.

During certain periods in the construction programme it may be necessary to adopt active management measures with contractor staff patrolling key crossing points during periods of high construction activity. The need for active management on certain routes will be identified within the construction programme which will take into account delivery timescales and movements of plant and machinery. The need for active management will be subject to specific risk assessments prepared by the Principal Contractor when analysing impacts of any construction activities which may bring core path users into proximity with construction traffic.

In these instances, core path users may have to wait for a short period of time whilst the crossing is in use by the construction team. Users will be advised by the Contractor's staff when works are completed and it is safe to use the core path again.

Active Management Plan for ‘Shared Routes’

Where a core path currently routes along a proposed construction accesses or along the cable circuits, these are known as ‘shared routes’. Along shared routes, appropriate signage will be erected to alert drivers of their presence and the potential interface between construction traffic and core path users. The speed limit signage will be provided along the shared route to make sure that all construction vehicles travel under manageable speed (nominally 5 mph) to avoid the uncertain conflict with core path users.

During certain periods in the construction programme it may be necessary to adopt active management measures with Contractor staff patrolling the shared route. The need for active management on certain routes will be identified within the construction programme which will take into account delivery timescales and movements of plant and machinery. The need for active management will be subject to specific risk assessments prepared by the Principal Contractor when analysing impacts of any construction activities which may bring core path users into proximity with construction traffic.

In these instances, core path users may have to wait for a short period of time whilst the shared route is in use by the construction team (for example for the conveyance of a difficult load such as a cable drum or crane). Users will be advised when works are completed and it is safe to use the shared route by the Contractor's staff. If the length of shared route is significantly long then a safe standing area may be provided off the track. It may also be prudent depending on the circumstances to provide a safe crossing point of any shared route depending on traffic flows.

Initial Inspection and Monitoring of the Existing Core Paths

In addition to the case specific mitigation that will be required for the affected core paths, Moray West will undertake to inspect the core path routes impacted at the following times:

- Prior to construction;
- During the construction period; and
- Following completion.

A detailed onsite record (including photographs) will be produced to record the situation at each inspection point. This will enable a baseline of the condition of the core paths to be made, to make sure that during construction no obstructions or impediments to using routes are created and to enable Moray West to reinstate the core paths to their previous condition once the construction period has ceased.

An inspection and maintenance programme, at agreed timescales, will fall within the scope of the Core Path Management Strategy and will be vital if paths and other infrastructure are to be maintained in a safe and usable condition. Maintenance will only be focused on damage caused by the ongoing construction works to existing core paths. Failure to deal with problems quickly may also result in more widespread problems and require more costly repairs. Maintenance operations may include:

- Inspection, repair / re-surfacing of paths;
- Inspection and repair of drains associated with access routes;
- Maintenance of access infrastructure including signage, waymarkers, interpretation boards and bridges; and
- Clearance of any site / works related litter that may blight the core path.

In addition to the above, the advance warning signage will include contact details enabling recreational users to notify Moray West or its Principal Contractor of any problems noted.

Treatment of Core Paths Post Construction

Following completion of the construction works, all core paths will be subject to an inspection and review against the baseline conditions observed during the pre-construction survey. As a minimum, all paths will be returned to the same condition as they were prior to construction works commencing.

There may be locations where improvements may be implemented for the long-term benefit of the core path users but this is not a requirement of Moray West. The specific nature of any improvement works will be subject to discussion and agreement with MC, AC and any third party land owners following the completion of the baseline survey undertaken.

8.8 Vehicle Identification

If necessary, all HGVs and LVs related to the construction of the OnTI will be identifiable through the use of a vehicle marking scheme.

It is envisaged that this will be a sign within the windscreen of all HGVs and LGVs entering and exiting the proposed works area. The exact wording is to be determined. However, wording stating 'Working on behalf of Moray West', or similar will be used.

8.9 HGV Emissions and Noise

All vehicles used in the construction of the proposed works will be to Euro standard IV class. The drivers should also avoid idling their engines for large periods of time and keep speeds low.

Reference to a Dust and Air Quality Emissions Management Plan (DAQEMP), and a Noise and Vibration Management Plan (NVMP) should be made if these documents are available.

8.10 Banksman

If necessary, a qualified banksman will be stationed at each site access who will ensure that any gate is opened, to assist HGVs entering the proposed work areas and thus reducing the risk of vehicles queuing on the local highway network during the construction phase. This measure will ensure that through traffic will remain unimpeded during construction.

In addition to the above, the banksman may also be required to perform traffic management duties during HGV deliveries, to minimise potential conflict with vulnerable users (pedestrians / cyclists) or local road users and to record arrivals and departure of vehicles against the deliveries schedule, if required.

8.11 Wheel / Street Cleaning

If considered appropriate:

- Internal stone haul road that are used heavily by vehicles may be temporarily surfaced or covered with geotextiles (and the condition of the surface monitored throughout the works);
- Vehicles exiting the proposed works areas may be required to pass over a rumble strip and wheel wash to minimise the amount of debris which is transferred to the road network;
- Moray West or their contractor may deploy a mechanical road sweeper, manual sweeping, scraping and / or jet washing to further ensure the local road network remains clear of dirt and debris; and
- Internal haul routes should be damped down in dry weather.

Reference to a Water Management and Site Drainage Plan (WMSDP), should be made if this document is available.

8.12 Temporary Traffic Management Procedures

Although unlikely, temporary traffic management procedures may be used to enhance safety conditions on the local road network in the vicinity of the site access. All temporary traffic management measures will be discussed and agreed with MC and AC before applications are submitted. Advanced notice to other roads users, pedestrians and cyclists will be given at the earliest possible opportunity.

8.13 Information Packs and Communications

Information packs will be provided to all contractors which will form part of the contractual agreement between the contractors and Moray West. The information pack will contain the details of the following PCTMP requirements:

- Construction routes;
- Non-compliance guidance;
- Complaints procedure;
- PCTMP protocols and Code of Good Practice;
- Guidance on standard communication procedures between contractors and site; and
- PCTMP contacts (emergency and non-emergency).

Information packs will be shared with the local road authority ahead of any construction works.

Prior to commencement of construction, residences and businesses within close proximity to the proposed work area or the construction route may receive a letter advising of construction commencing, working hours and key milestone during the construction process.

8.14 Sustainable Travel Plan

8.14.1 Introduction / Need for a Travel Plan

Local and national guidance sets out that where traffic flow impacts are considered significant that a Travel Plan (TP) is required. TPs are aimed at developing a sustainable travel pattern for employees and service users to access their place of work, residence or leisure. The establishment of a sustainable travel pattern is aimed at minimising the use of the

private (normally single occupancy) car and their detrimental impacts upon the road network in terms of capacity and safety amongst other considerations.

For the OnTI, Moray West takes this issue seriously and inbuilt within the working practices and methodology for the construction activities are certain set principals. Therefore, a TP will be implemented which sets out many travel planning initiatives including:

- Travel planning awareness;
- Public transport;
- Car sharing;
- Modal shift monitoring;
- TP Coordinator (TPC); and
- Planned collections and deliveries to avoid unnecessary journeys.

These will be adopted to promote sustainable travel and minimise the impact upon the local road network.

8.14.2 Nature of Construction Activities

It is assumed for the purpose of this plan that all staff will originate from outside of the Moray / Aberdeenshire area to ensure that a worst case scenario is assessed. Each team within a workforce generally consists of up to three people and has a van they will use to travel from the lodgings to site daily. Each team will travel to a compound every morning for a brief on the day's operations, collection of materials required to complete the day's tasks and to fulfil the health and safety requirements. The team will then travel to site from the local compound. Due to the working day being longer than a conventional working day, these trips are generally outside the normal peak hours.

At the end of the day each team will generally return to a compound for a debrief and check in. They will then return to the lodgings in the evening. This ensures that progress can be monitored, appropriate work can be planned for the subsequent days and that all health and safety requirements are completed.

8.14.3 In-built Sustainable Travel Practices

The use of construction teams traveling in vans means that single occupancy private vehicle travel associated with the OnTI will be kept to a minimum. Given the nature and rural location of the construction activities, it is considered that the methodology suggested provides for the most efficient and sustainable pattern.

8.14.4 HGV Development Access

In overall terms, it is not possible to limit access to the OnTI by HGV. The majority are necessary to deliver plant or materials to the locations where they will be required. However, where possible, bulk deliveries will be made to one of the compounds, thus minimising the number of long distance vehicle trips. At each of these compounds, these bulk deliveries will be divided and delivered to the individual work locations on appropriately scaled vehicles to suit the area they are delivering to. It should be noted that a proportion of materials required to construct the cable circuits will be transported to site on the same vehicles that will be driven by the work team.

By this method, it is considered that the OnTI will limit the impact of the need for HGV access to the individual accesses to the most sustainable transport option as possible.

8.15 Road Condition Surveys

In order to establish if there is any damage to the road caused as a result of construction traffic movements, global positioning system (GPS) video capture technology will be used to inform a road condition survey, undertaken to the satisfaction of MC and AC at agreed locations prior to construction. This survey will identify locations where damage is more likely to occur due to the nature of the road and anticipated traffic flows.

An interim survey during the construction phase may be required, subject to agreement by all parties.

The final survey will be undertaken post construction which will be compared to the original survey, the outcome of which will be to identify areas where there has been a deterioration to the road surface / edge. This will be used to design a scheme that returns the road to its original state.

9. Summary

Construction vehicles and construction employee vehicles are expected to follow the proposed routes through the study area, using A and B roads or the internal haul road. The exception being Gallowhill Terrace, which will be utilised when works are being undertaken on Section 3 (south) and Section 4 (north). No significant height, weight or width restrictions were identified on these routes (that could not be managed) that impact upon the proposed HGV traffic used as part of the construction.

As part of this PCTMP, a number of mitigation measures have been proposed. These include:

- Access;
- Core paths;
- Working hours;
- Preferred construction routes for HGV, LV and staff;
- Timing of deliveries;
- Temporary traffic signage;
- Vehicle identification;
- HGV emissions;
- The requirement for banksman at accesses;
- Vehicle / wheel washing;
- Temporary traffic management procedures;
- Information packs and communications;
- Sustainable staff travel; and
- Road condition survey.

By implementing the proposed mitigation measures, this will reduce any potential impact of the movement of construction traffic in the road network. The construction phase is only temporary and therefore it is not expected that there will be any lasting effects on the local environment.

Table 9.1 summarises the measures which have been addressed and acknowledged as part of the PCTMP and provides information regarding any further actions required.

Table 9.1: Measures Addressed / Acknowledged as Part of the PCTMP and Further Actions Required		
Measure	General Construction Traffic	Further Actions
Delivery routes	Required	Contractor informed of approved HGV access routes in contract documentation.
Site access / management of junctions	Required	As per PCTMP and TA.
AIL test run	May be required	Possibly required, although it is a route used previously.
Vehicle escorts	May be required	Haulier will contact Police Scotland in due course to arrange vehicle escorts.
Route enforcement	Required	Standard contractor enforcement measures to be adopted
Road accommodation works (access)	Not required	As per PCTMP. Temporary dismantling of street furniture will be carried out for AIL delivery.
Dilapidation surveys	Required	As PCTMP. Video surveys to be used at agreed locations with AC and MC to be focused on specific locations.
Coordination / emergency contact	Required	As per PCTMP and TA.
Route and access signage	Required	As per PCTMP and TA.
Wheel cleaning / street cleaning	Required	As per PCTMP and TA.
Scaffolding	May be required	If required, as per PCTMP and TA.
Road closures	May be required	As per PCTMP. Diversion to be agreed with Transport Scotland, AC and MC.
Overhead lines and vegetation	Required	As Per PCTMP and TA.

Annex A: Communications with Moray Council, Aberdeenshire Council and Transport Scotland

From: Harding, Helen
Sent: 08 November 2017 12:05
To: transport.develop@moray.gov.uk; transportation@aberdeenshire.gov.uk;
Fred.Abercrombie@transport.gov.scot
Cc: Lavery, Noel <noel.lavery@amecfw.com>
Subject: Moray West Onshore Transmission Infrastructure - transport scoping request

To whom it may concern,

My name is Helen Harding and I work for Wood PLC Traffic and Transport Planning team. This e-mail relates to the Moray West Onshore Transmission Infrastructure (OnTI) project, for which both Moray and Aberdeenshire Councils provided an Environmental Impact Assessment (EIA) Scoping Opinion in August of this year. The design of the OnTI has since been progressed on behalf of Moray West, and Wood PLC is preparing the traffic and transport documents which will support the request for Planning Permission in Principle. As there are roads within your jurisdiction included as part of the proposed construction traffic route, we would like to inform you of this development and request your opinions on our proposed assessment methodology.

PROPOSED DEVELOPMENT INTRODUCTION

As agreed in the Scoping Opinion, the traffic and transport effects during the operational phases are assumed to be negligible as this development will only require minimal maintenance which will be carried out by standard maintenance vehicles, infrequently.

The current proposed alignment of the cable corridor is from a landfall in the vicinity of Sandend travelling on a northeast/southwest alignment towards Keith. Construction will take approximately 33 months and the works are proposed to commence in 2022 with the proposed development becoming operational in 2025, subject of course to the necessary permissions being granted.

The proposed traffic and transport study area encompassing the intended cable corridor extends from Fochabers in the west, to the coast in the north, to Portsoy in the east and to just south of Keith in the south. During the construction phase there would be vehicular trips associated with the construction of:

- the landfall location;
- the cable circuits; and
- the onshore substation.

These aspects of the proposed development may require the following activities (not limited to) excavation, piling, construction, laying, jointing, backfill, foundations, installation and reinstatement. These activities will of course require the movement of plant, materials, waste and staff. At this early stage in the proposed development, it is anticipated that during the most intensive period of construction (4 month duration) some 190 vehicle trips will be expected per day on the adjacent road network of which 50 would be light vehicle trips and 140 would be HGV trips. Please be aware that these traffic estimates are our first cut and are based on many robust assumptions. During the course of the assessment these will be refined, as design and construction decisions are made. We have estimated the potential traffic volumes based upon proposed development experience elsewhere and this assumes that the construction work will be carried out 24 working days per month and 12 hours per day.

In terms of Abnormal Indivisible Load (AIL) it is anticipated that transformers, reactors and cranes would all be required at the substation location and these would generate AIL movements. It may also be appropriate to transport the cable drums by AIL vehicle as well and the assessment will ensure that this options is included. Police Scotland will be contacted in due course to notify the AIL movements.

PROPOSED ASSESSMENT METHODOLOGY

Our proposed methodology includes preparing a Transport Assessment (TA), an AIL Access Study, an EIA Report Chapter and a Preliminary Construction Traffic Management Plan (PCTMP). The broad contents of each of these documents are as follows:

TA Scope

The preparation of the TA will be based upon the Transport Assessment Guidance prepared by Transport Scotland, and includes

- details of the EIA Scoping and engagement that has been undertaken on the proposed development.
- the background to policy and guidance relevant to the proposed development.
- a summary of the current conditions within the defined study area and review of the transportation network. Such as the site visit findings, public transport services, core paths, traffic flows and accidents.
- a summary of the development proposals, including the access requirements for the construction activities.
- the traffic predicted to be generated by the proposed development and distributing this across the network.
- details on traffic growth and details of a local cumulative assessment.
- the impacts of the Proposed Development traffic generation, including the effect on Core Paths.
- a summary of the CTMP and proposed mitigation for the proposed development.
- the proposals and strategies for any future Travel Plan (TP) for the proposed development.

AIL Access Study

My colleague Noel Lavery will contact you directly about this, however the points that will be covered in the AIL report will be:

- Scope of works
- Legislation
- AIL types specific to this job
- Route options (appraisal and assessment)
- Photos section & table of all the pinch-points observed
- Swept Path Analyses (SPA)
- Consultation responses
- Management strategy

EIA Report Scope

The methodology we are proposing to use is the “Guidelines for the Environmental Assessment of Road Traffic - Institute of Environmental Assessment (GEART), 1993 which considers the transportation changes at relevant receptors across the network. Given the haulage route identified above, below are my suggestions for the receptors and their “sensitivity”.

Receptor Number	Road	Sensitivity
1	A98 near Buckie	Not considered sensitive
2	A98 in Cullen	Sensitive (frontage residences)
3	B9018 near Lintmill	Sensitive (frontage residences)
4	A98 near Sandend	Not considered sensitive
5	A98 in Portsoy	Sensitive (frontage residences)
6	A9022 north of A95	Not considered sensitive
7	B9018 near Berryhillock	Not considered sensitive
8	B9018 near Grange Crossroads	Sensitive (frontage residences and school)
9	A95 near Drumnagorrrach	Not considered sensitive
10	A95 east of B9018	Not considered sensitive
11	A96 in Keith	Sensitive (frontage residences)
12	A96 between Fochabers and Keith	Not considered sensitive
13	A95 west of Keith	Not considered sensitive
14	A96 south of Keith	Not considered sensitive

The rules set out in the guidance document and in the EIA Scoping Report (June 2017), state that receptors that are not considered sensitive should be assessed if traffic flows are predicted to increase by more than 30% (or where the number of HGVs are predicted to increase by more than 30%); and receptors that are sensitive where traffic flows are predicted to increase by 10% or more. Any assessment will consider **Driver Delay, Pedestrian Delay, Amenity and Severance, Core Paths, Accidents and Safety and Public transport Delay.**

Preliminary CTMP

This preliminary CTMP will address, the haulage routes, access points, vehicle types and any mitigation necessary to avoid, minimise and mitigate the potential impacts of the construction works on the environment, the local community and other road user. The PCTMP will:

- summarise the relevant procedures and policies;
- set out the roles and responsibilities;
- describe the location of the proposed works and the surrounding highway network;
- identify access routes to the work area; and
- present the proposed mitigation measures for the works.

SUMMARY

Once you have had the opportunity to digest the information above I would really appreciate it if you could comment on the methodology proposed, including:

- the extent of the study area and any roads/junctions that are of particular interest;
- the documents proposed and agree that our approaches to use the Transport Scotland Guidance and GEART are appropriate;
- any committed development you would like us to considered in the future base;
- any committed transport schemes that may have an influence on the existing transport network over the next 10 years; and
- the assessment year being the most intensive construction period (somewhere between 2022 and 2025) and the appropriateness of using TEMPRO 7.2 to determine background traffic growth rate, to that assessment year;
- providing the contact details for those involved in sharing accident data; and
- whether the raw data (hourly and over a neutral week) collected for the DFT traffic counts <https://www.dft.gov.uk/traffic-counts/cp.php?la=Aberdeenshire> and <https://www.dft.gov.uk/traffic-counts/cp.php?la=Moray> are available to us at the following locations:
 - A98 near Buckie #50790 or #20792
 - A98 near Sandend #786
 - A98 in Portsoy #80037
 - A95 near Drumnagorrrach #40867
 - A95 west of Keith #20866
 - A96 in Keith #781
 - A96 between Fochabers and Keith #30786
 - A96 south of Keith #74321

I trust that this information has helped add to the picture of the proposals and our methodology, and it would be much appreciated if you could provide your initial feedback about these proposals. if you require any further information please do let me know; otherwise I look forward to hearing from you as soon as possible.

Kind Regards

Helen

Helen Harding

Principal	Consultant
Direct: +44 (0)1743 342725	
Mobile: +44 (0)7870 972845	
www.woodplc.com	

Development Management and Strategic Road Safety

Trunk Road and Bus Operations

Buchanan House, 58 Port Dundas Road, Glasgow G4 0HF Direct Line: 0141 272 7386,
Fax: 0141 272 7350

John.McDonald@transport.gov.scot

helen.harding@woodplc.com

Your ref:

Our ref: TS00200

Date: 22/11/2017

Der Helen,

MORAY OFFSHORE WINDFARM (WEST) LIMITED, ONSHORE TRANSMISSION INFRASTRUCTURE - TRANSPORT SCOPING REQUEST

Thank you for your recent email on the above development in which you seek agreement on your proposed transport assessment methodology for the above proposed development.

Your email has been passed to SYSTRA Limited for review in their capacity as Term Consultants to Transport Scotland – Trunk Road and Bus Operations (TRBO). Based on the review undertaken, Transport Scotland would provide the following comments.

We understand the proposed development is the Moray West Onshore Transmission Infrastructure (OnTI) project. This will involve construction of a cable corridor from a landfall in the vicinity of Sandend travelling in a northeast/southwest alignment towards Keith in Moray. The installation of the cable will have a potential impact upon the A96(T) and the A95(T) at Keith.

It is noted that your proposed assessment methodology includes preparation of a Transport Assessment (TA), an AIL (Abnormal Indivisible Load) Access Study, an Environmental Impact Assessment (EIA) Report Chapter and a Preliminary Construction Traffic Management Plan (PCTMP).

Given the nature of the project, we would note that we have no real requirement for two separate assessment documents to deal with the effects of traffic generated by the development. We would be satisfied with an EIA Report Chapter which identifies the potential traffic impacts of the development and associated environmental impacts.

We would also comment that the potential environmental impacts only require to be assessed where:

- Traffic flows will increase by more than 30%, or
- The number of HGVs will increase by more than 30%, or
- Traffic flows will increase by 10% or more in sensitive areas.

Your proposed methodology indicates that during the most intensive period of construction (4 month duration) it is estimated that some 190 vehicle trips will be expected per day, of which 50 would be light vehicle trips and 140 would be HGV trips. In the event that your trip generation does not trigger the above thresholds on the trunk road base traffic, then no further transport assessment would be required. We note your proposal to use



TEMPRO 7.2 to determine growth factors for base traffic. Transport Scotland would accept the use of either TEMPRO 7.2 or National Road Traffic Forecasts (NRTF).

AIL Access Study and Preliminary CTMP

We note your proposed scope for the AIL study and the CTMP. We can confirm that the proposed methodology and scope is acceptable. With regard to your proposal for a future Travel Plan for the development, Transport Scotland considers that the production of a robust CTMP which has a section covering workforce travel will suffice and, therefore, do not consider a Travel Plan to be necessary in this instance.

I trust that the above is satisfactory and will allow you to proceed with your assessment. Should you wish to discuss any issues raised in greater detail, please do not hesitate to contact Alan DeVenny at SYSTRA's Glasgow Office on 0141 226 6923.

Yours sincerely,

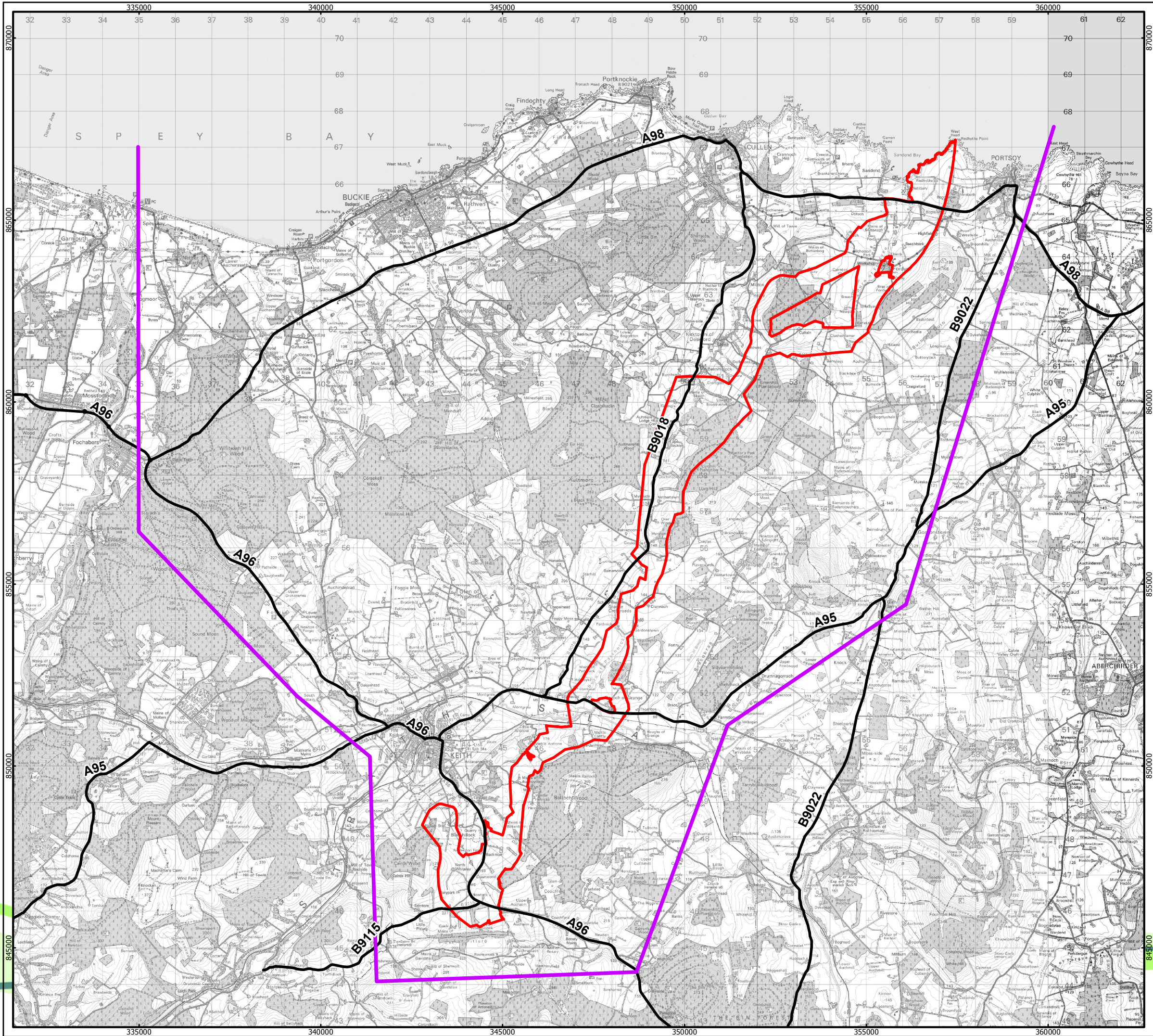
John Mc Donald

Transport Scotland

Trunk Road and Bus Operations

CC Alan DeVenny - Systra Ltd

Figures



MORAY WEST OFFSHORE WINDFARM

- KEY**
- Planning Application Boundary
 - Transport Study Area
 - Road Network

Horizontal Scale: 1:100,000 A3 Chart N

0 2,500 5,000 Meters

Geodetic Parameters: British National Grid

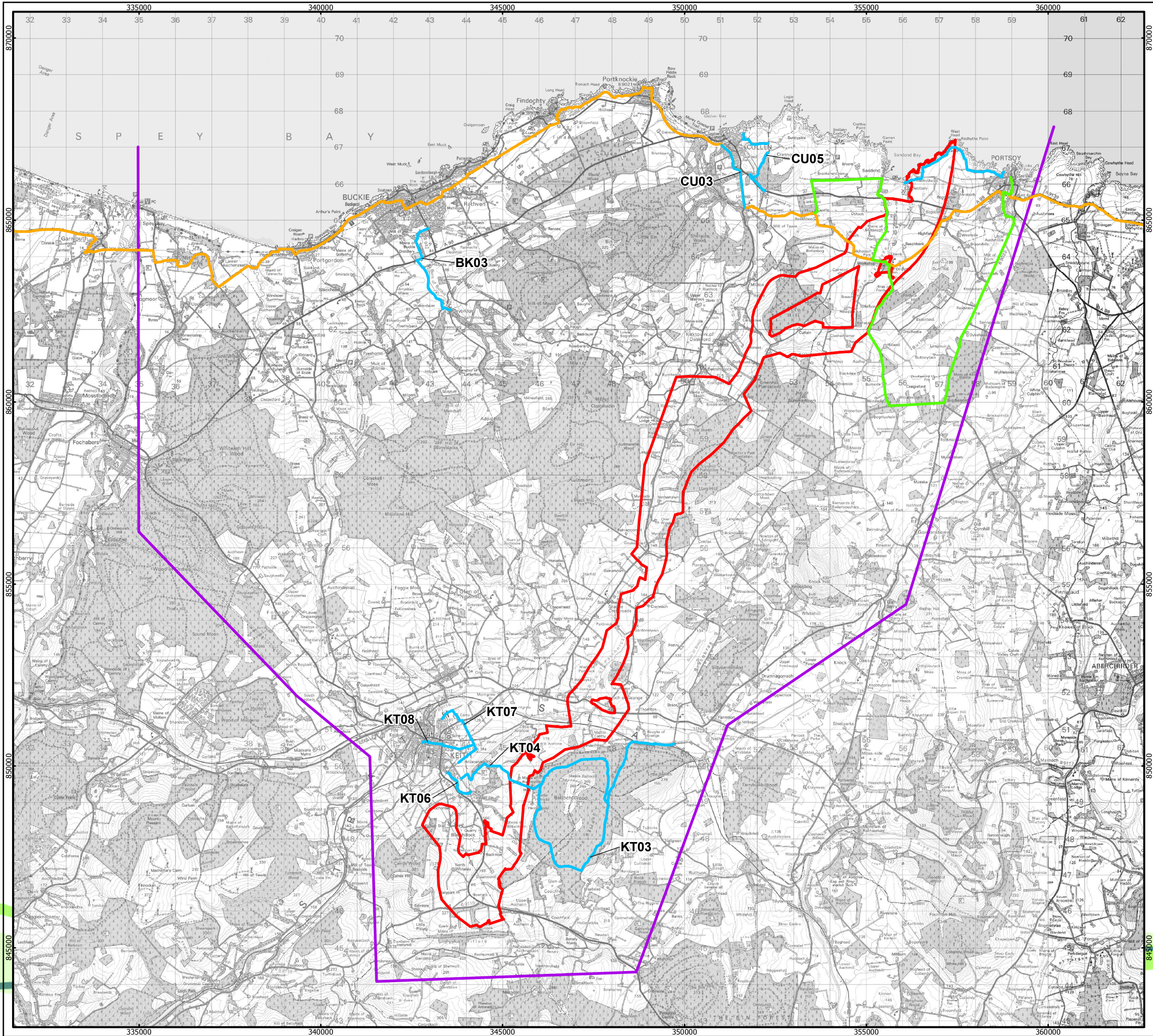
Produced: SG
Reviewed: RC
Approved: FG

Date: 06/07/2018 Revision: B

REF: N/A

Figure 4.1
Planning Application Boundary and
Key Local and Strategic Roads

Moray Offshore
Windfarm (West) Ltd



MORAY WEST OFFSHORE WINDFARM

KEY

- Planning Application Boundary
- Transport Study Area
- Core Paths
- Cycle Route**
 - Local Cycle Route
 - Sustrans National Cycle Network Route 1

Horizontal Scale: 1:100,000 A3 Chart

0 2,500 5,000 Meters

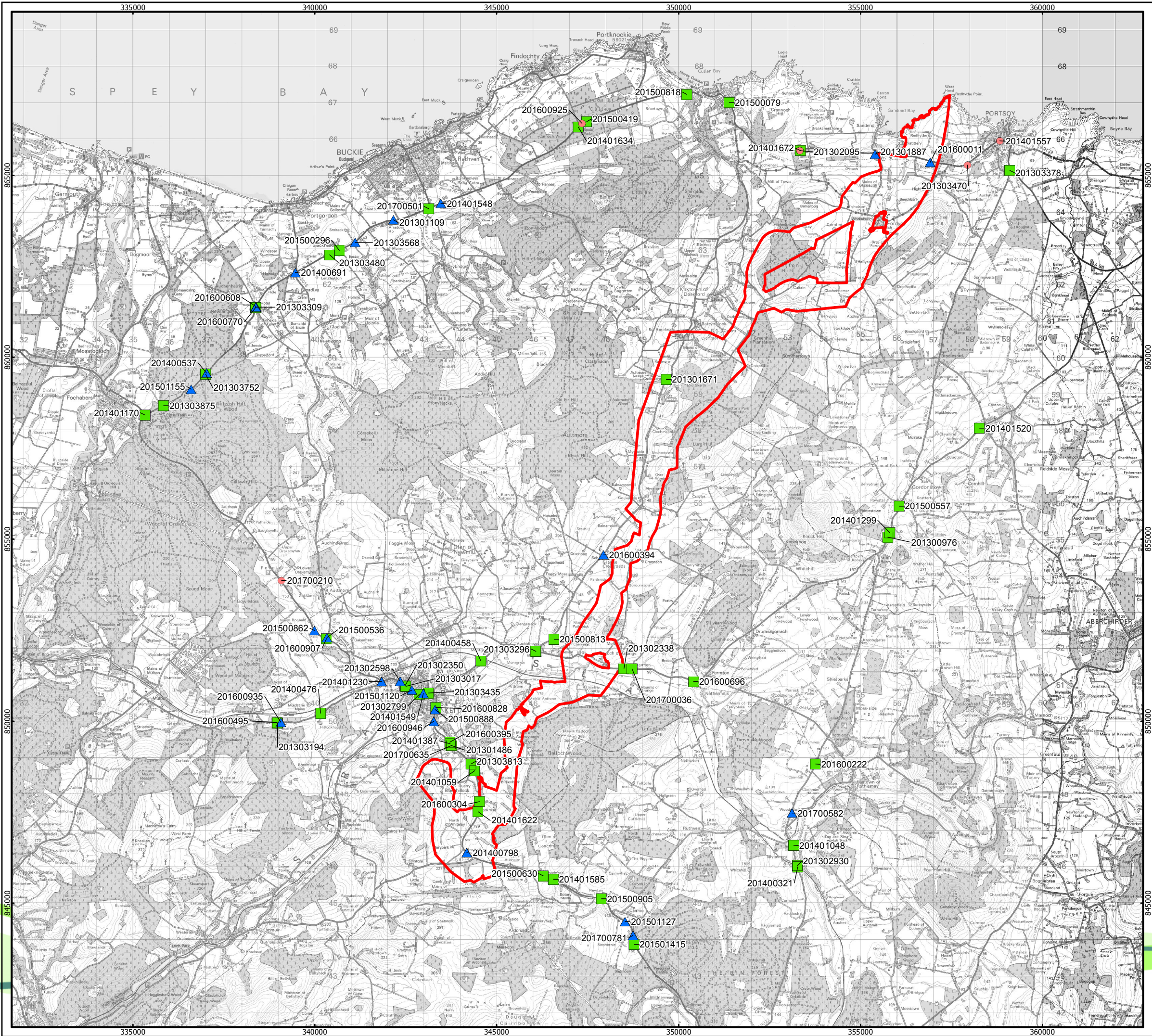
Geodetic Parameters: British National Grid

Produced: SG
Reviewed: RC
Approved: FG

Date: 11/07/2018 Revision: C
REF: N/A

Figure 4.2
Core Paths and Cycle Routes

Moray Offshore
Windfarm (West) Ltd



MORAY WEST OFFSHORE WINDFARM

- KEY**
- Planning Application Boundary
 - Accident Severity**
 - Slight
 - Serious
 - Fatal



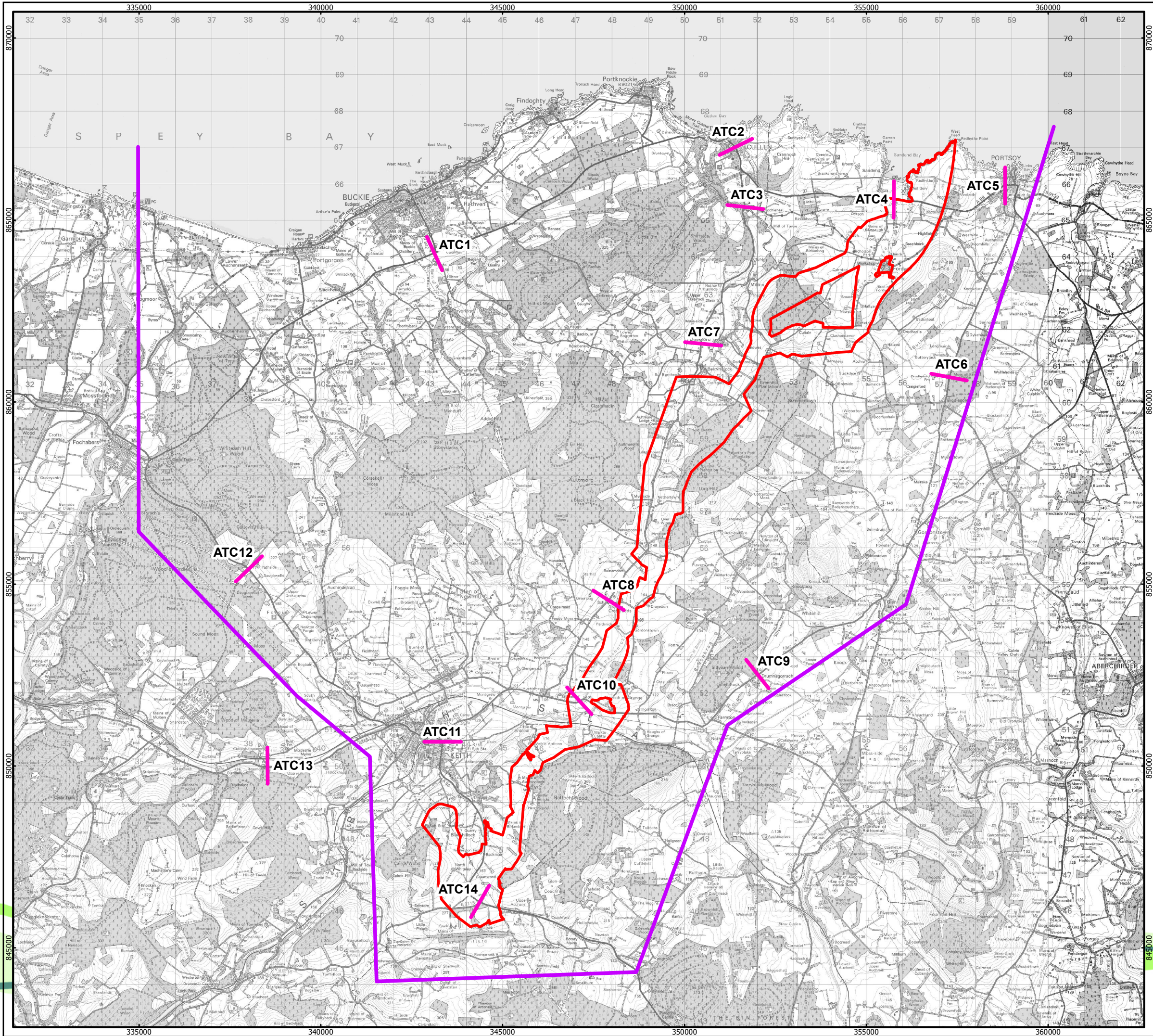
Horizontal Scale: 1:100,000		A3 Chart
		
Geodetic Parameters:		British National Grid
Produced: SG		
Reviewed: RC		
Approved: FG		
Date: 06/07/2018		Revision: B
REF: N/A		




Figure 4.3
Accident Locations and Severity

Moray Offshore
Windfarm (West) Ltd



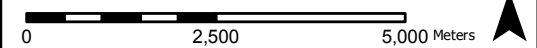
MORAY WEST OFFSHORE WINDFARM

KEY

-  Planning Application Boundary
-  Transport Study Area
-  Traffic Count Locations

Horizontal Scale: 1:100,000

A3 Chart



Geodetic Parameters: British National Grid

Produced: SG
Reviewed: RC
Approved: FG

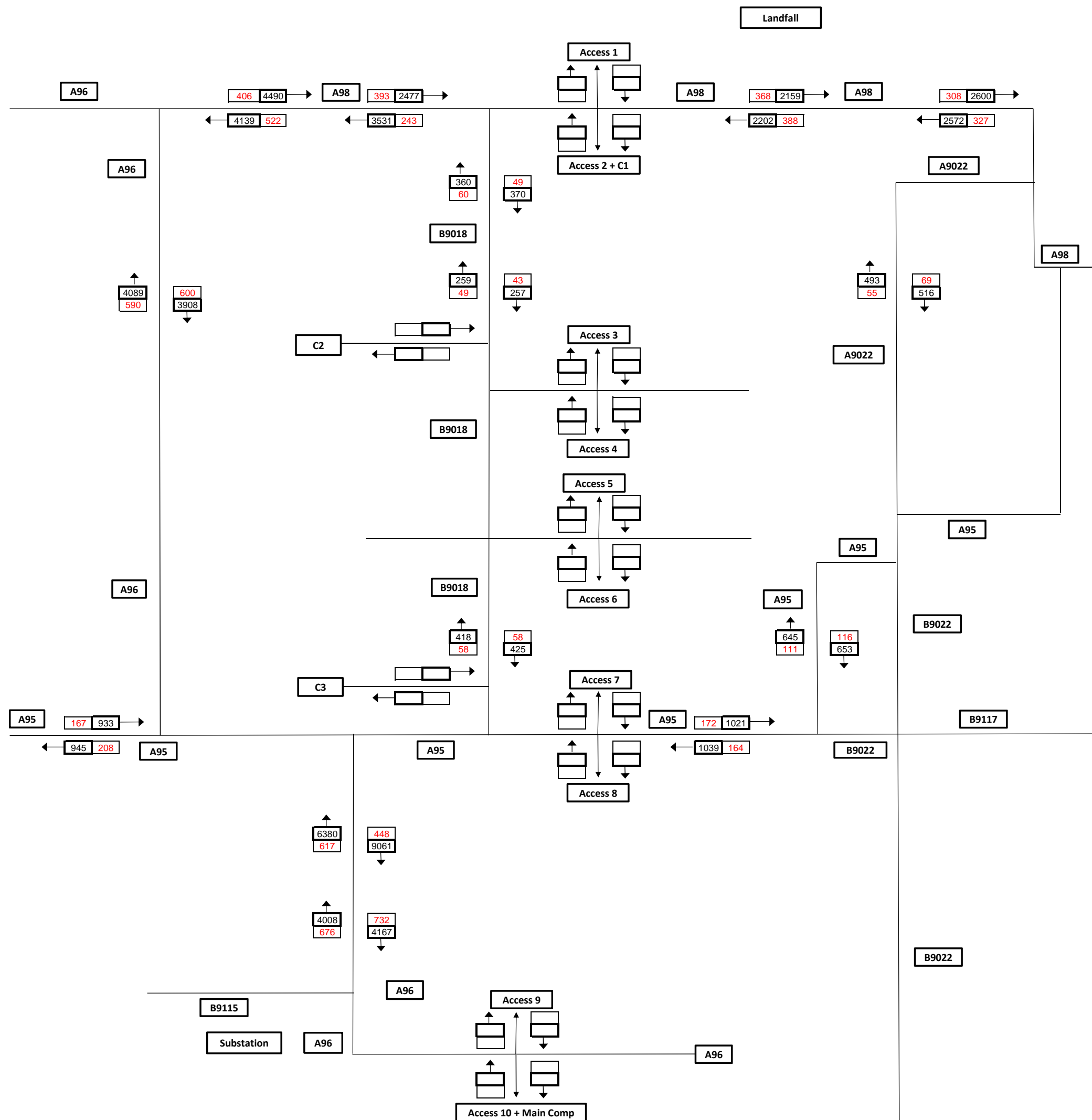
Date: 06/07/2018

Revision: B

REF: N/A

Figure 4.4
Traffic Count Locations

Moray Offshore
Windfarm (West) Ltd



MORAY WEST OFFSHORE WINDFARM

KEY

Surveyed Daily Traffic Flows:

4490 Total vehicle

69 HGV

A3 Chart
N

Geodetic Parameters: N/A

Produced: JP
Reviewed: RC
Approved: FG

Date: 08/05/2018 Revision: A

REF: N/A

Figure 4.5
2017 Baseline Daily Traffic Flows

Moray Offshore
Windfarm (West) Ltd

Week	Landfall								OnTi			
	Set UP	Excavation	Pilling	Construction Works	Cable Instalation	Remediation	General Supplies (Light Veh)	Staff (Light Veh)	Total Vehicles	Total HGV	Total Vehicle Movements	Total HGV Movements
1	12	2					1	15	915	35	1,831	70
2	12	2					1	15	915	35	1,831	70
3	12	2					1	15	915	35	1,831	70
4	12	2					1	15	915	35	1,831	70
5	12	2					1	15	915	35	1,831	70
6		3	5	1			2	18	900	15	1,801	30
7		3	5	1			2	18	900	15	1,801	30
8		3	5	1			2	18	900	15	1,801	30
9		3	5	1			2	18	900	15	1,801	30
10		3		1			2	18	895	10	1,791	20
11		3		1			2	18	895	10	1,791	20
12		3		1			2	18	895	10	1,791	20
13		3		1			2	18	895	10	1,791	20
14		2		1			1	15	914	34	1,829	68
15		2		1			1	15	914	34	1,829	68
16		2		1			1	15	914	34	1,829	68
17		2		1			1	15	914	34	1,829	68
18		2		1			1	15	914	34	1,829	68
19					4	8	2	18	930	45	1,861	90
20					4	8	2	18	930	45	1,861	90
21					4	8	2	18	930	45	1,861	90
22					4	8	2	18	930	45	1,861	90
23				1					890	26	1,781	52
24									890	26	1,781	52
25									890	26	1,781	52
26									890	26	1,781	52
27									890	26	1,781	52
28									897	32	1,795	64
29									897	32	1,795	64
30									897	32	1,795	64
31									897	32	1,795	64
32									905	40	1,811	80
33									905	40	1,811	80
34									905	40	1,811	80
35									905	40	1,811	80
36									876	10	1,753	20
37									876	10	1,753	20
38									876	10	1,753	20
39									0	0	0	0
40									0	0	0	0
41									873	8	1,747	16
42									873	8	1,747	16
43									873	8	1,747	16
44									873	8	1,747	16
45									873	8	1,747	16
46									873	8	1,747	16
47									873	8	1,747	16
48									873	8	1,747	16
49									870	6	1,741	12
50									870	6	1,741	12
51									870	6	1,741	12
52									870	6	1,741	12
53									870	6	1,741	12
54									939	34	1,879	68
55									939	34	1,879	68
56									1,554	185	3,109	370
57									1,554	183	3,109	366
58									1,520	151	3,041	302
59									1,520	151	3,041	302
60									1,520	151	3,041	302
61									1,520	151	3,041	302
62									1,518	151	3,037	302
63									1,518	151	3,037	302
64									1,518	157	3,037	314
65									1,524	163	3,049	326
66									1,530	163	3,061	326
67									1,544	180	3,089	360
68									1,544	180	3,089	360
69									1,544	180	3,089	360
70									1,597	660	3,195	1,320
71									2,065	493	4,131	986
72									1,899	484	3,799	968
73									1,890	484	3,781	968
74									1,838	432	3,677	864
75									1,853	639	3,707	1,278
76									2,044	639	4,089	1,278
77									2,024	619	4,049	1,238
78									2,044	599	4,089	1,198
79									1,994	637	3,989	1,274
80									2,047	633	4,095	1,266
81									2,039	633	4,079	1,266
82									2,039	633	4,079	1,266
83									1,725	319	3,451	638
84									1,990	584	3,981	1,168
85									2,000	594	4,001	1,188
86									1,980	570	3,961	1,140
87									1,976	570	3,953	1,140
88									1,785	378	3,571	756
89									1,775	368	3,551	736
90									1,775	216	3,551	432
91									84	0	168	0
92									84	0	168	0
93									958	9	1,917	18
94									958	9	1,917	18
95									1,109	160	2,219	320
96									1,566	160	3,133	320
97									1,564	158	3,129	316
98									1,564	158	3,129	316
99									1,564	158	3,129	316
100									1,564	158	3,129	316
101									690	149	1,380	298
102									690	149	1,380	298
103									690	149	1,380	298
104									696	155	1,392	310
105									702	161	1,404	322
106									702	161	1,404	322
107									702	161	1,404	322
108									702	161	1,404	322
109									702	161	1,404	322
110									702	161	1,404	322
111									702	161	1,404	322
112									725	184	1,450	368
113									725	184	1,450	368
114									704	184	1,408	368
115									704	184	1,408	368
116									651	152	1,302	304
117									651	152	1,302	304
118									611	112	1,222	224
119									687	188	1,374	376
120									687	188	1,374	376
121									634	156	1,268	312
122									634	156	1,268	312
123									634	156	1,268	312
Total Vehicles	60	44	20	17	16	32	34	366	140,050	20,395	280,100	40,790
Total Movements	120	88	40	34	32	64	68	732				



Geodetic Parameters: N/A

Produced: JP
Reviewed: RC
Approved: FG

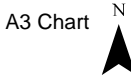
Date: 12/06/2018 Revision: A

REF: N/A

Figure 5.1
Proposed Programme and Anticipated
Vehicle Numbers per Week (Landfall)

Moray Offshore
Windfarm (West) Ltd

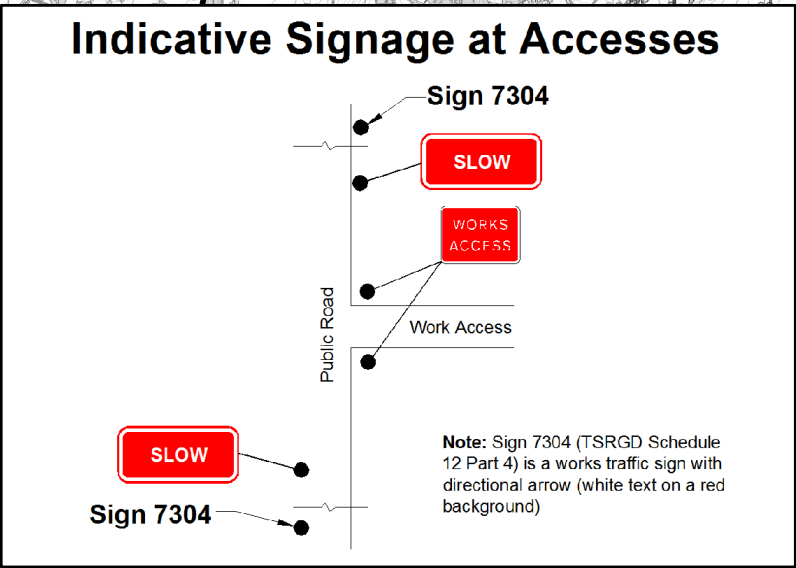
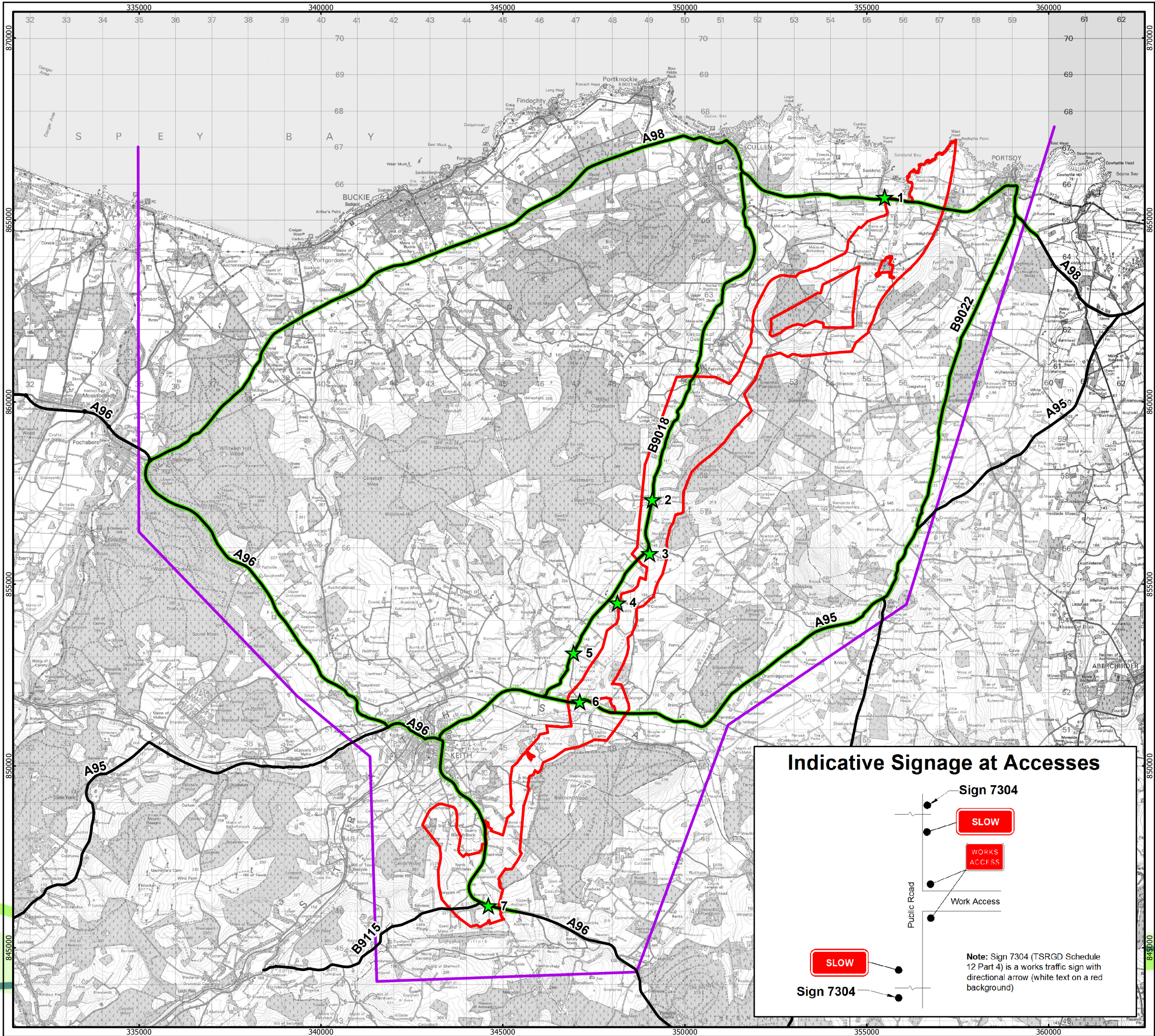
Week	Substation											OnTI			
	Set UP	Site Preperation	Foundations	Buildings	AIL deliveries (Light Veh)	AIL deliveries (HGV)	Installation	Commissioning	Remediation	General Supplies (Light Veh)	Staff (Light Veh)	Total Vehicles	Total HGV	Total Vehicle Movements	Total HGV Movements
1	21									5	859	915	35	1,831	70
2	21									5	859	915	35	1,831	70
3	21									5	859	915	35	1,831	70
4	21									5	859	915	35	1,831	70
5	21									5	859	915	35	1,831	70
6		6								6	859	900	15	1,801	30
7		6								6	859	900	15	1,801	30
8		6								6	859	900	15	1,801	30
9		6								6	859	900	15	1,801	30
10		6								6	859	895	10	1,791	20
11		6								6	859	895	10	1,791	20
12		6								6	859	895	10	1,791	20
13		6								6	859	895	10	1,791	20
14		5	26							5	859	914	34	1,829	68
15		5	26							5	859	914	34	1,829	68
16		5	26							5	859	914	34	1,829	68
17		5	26							5	859	914	34	1,829	68
18		5	26							5	859	914	34	1,829	68
19			32							6	859	930	45	1,861	90
20			32							6	859	930	45	1,861	90
21			32							6	859	930	45	1,861	90
22			32							6	859	930	45	1,861	90
23			26							5	859	890	26	1,781	52
24			26							5	859	890	26	1,781	52
25			26							5	859	890	26	1,781	52
26			26							5	859	890	26	1,781	52
27			26							5	859	890	26	1,781	52
28			32							6	859	897	32	1,795	64
29			32							6	859	897	32	1,795	64
30			32							6	859	897	32	1,795	64
31			32							6	859	897	32	1,795	64
32			32	8						6	859	905	40	1,811	80
33			32	8						6	859	905	40	1,811	80
34			32	8						6	859	905	40	1,811	80
35			32	8						6	859	905	40	1,811	80
36				10						7	859	876	10	1,753	20
37				10						7	859	876	10	1,753	20
38				10						7	859	876	10	1,753	20
39												0	0	0	0
40												0	0	0	0
41				8						6	859	873	8	1,747	16
42				8						6	859	873	8	1,747	16
43				8						6	859	873	8	1,747	16
44				8						6	859	873	8	1,747	16
45				8						6	859	873	8	1,747	16
46				8						6	859	873	8	1,747	16
47				8						6	859	873	8	1,747	16
48				8						6	859	873	8	1,747	16
49				6						5	859	870	6	1,741	12
50				6						5	859	870	6	1,741	12
51				6						5	859	870	6	1,741	12
52				6						5	859	870	6	1,741	12
53				6						5	859	870	6	1,741	12
54			0		5	2				6	859	939	34	1,879	68
55					5	2				6	859	939	34	1,879	68
56					5	2				6	859	1,554	185	3,109	370
57					5	2				6	859	1,554	183	3,109	366
58					5	2				6	859	1,520	151	3,041	302
59					5	2				6	859	1,520	151	3,041	302
60					5	2				6	859	1,520	151	3,041	302
61					5	2				6	859	1,520	151	3,041	302
62					4	2				5	859	1,518	151	3,037	302
63					4	2				5	859	1,518	151	3,037	302
64					4	2				5	859	1,518	157	3,037	314
65					4	2				5	859	1,524	163	3,049	326
66					4	2				5	859	1,530	163	3,061	326
67							19			6	859	1,544	180	3,089	360
68							19			6	859	1,544	180	3,089	360
69							19			6	859	1,544	180	3,089	360
70										6	859	1,597	660	3,195	1,320
71										6	859	2,065	493	4,131	986
72										6	859	1,899	484	3,799	968
73										6	859	1,890	484	3,781	968
74										6	859	1,838	432	3,677	864
75										5	859	1,853	639	3,707	1,278
76										5	859	2,044	639	4,089	1,278
77										5	859	2,024	619	4,049	1,238
78										5	859	2,044	599	4,089	1,198
79										5	859	1,994	637	3,989	1,274
80										6	859	2,047	633	4,095	1,266
81										6	859	2,039	633	4,079	1,266
82										6	859	2,039	633	4,079	1,266
83							19			6	859	1,725	319	3,451	638
84								8		6	859	1,990	584	3,981	1,168
85								8		6	859	2,000	594	4,001	1,188
86								8		6	859	1,980	570	3,961	1,140
87								8		6	859	1,976	570	3,953	1,140
88								11		7	859	1,785	378	3,571	756
89								11		7	859	1,775	368	3,551	736
90								11		7	859	1,775	216	3,551	432
91												84	0	168	0
92												84	0	168	0
93									9	6	859	958	9	1,917	18
94									9	6	859	958	9	1,917	18
95									9	6	859	1,109	160	2,219	320
96									9	6	859	1,566	160	3,133	320
97									9	6	859	1,564	158	3,129	316
98									9	6	859	1,564	158	3,129	316
99									9	6	859	1,564	158	3,129	316
100									9	6	859	1,564	158	3,129	316
Total Vehicles	105	73	644	156	60	26	303	65	72	552	82,500	140,050	20,395	280,100	40,790
Total Movements	210	146	1,288	312	120	52	606	130	144	1,104	165,000				



Geodetic Parameters:		N/A
Produced: JP		
Reviewed: RC		
Approved: FG		
Date: 12/06/2018		Revision: A
REF: N/A		

Figure 5.3
Proposed Programmes and Anticipated
Vehicle Numbers per Week (Substation)

Moray Offshore
Windfarm (West) Ltd



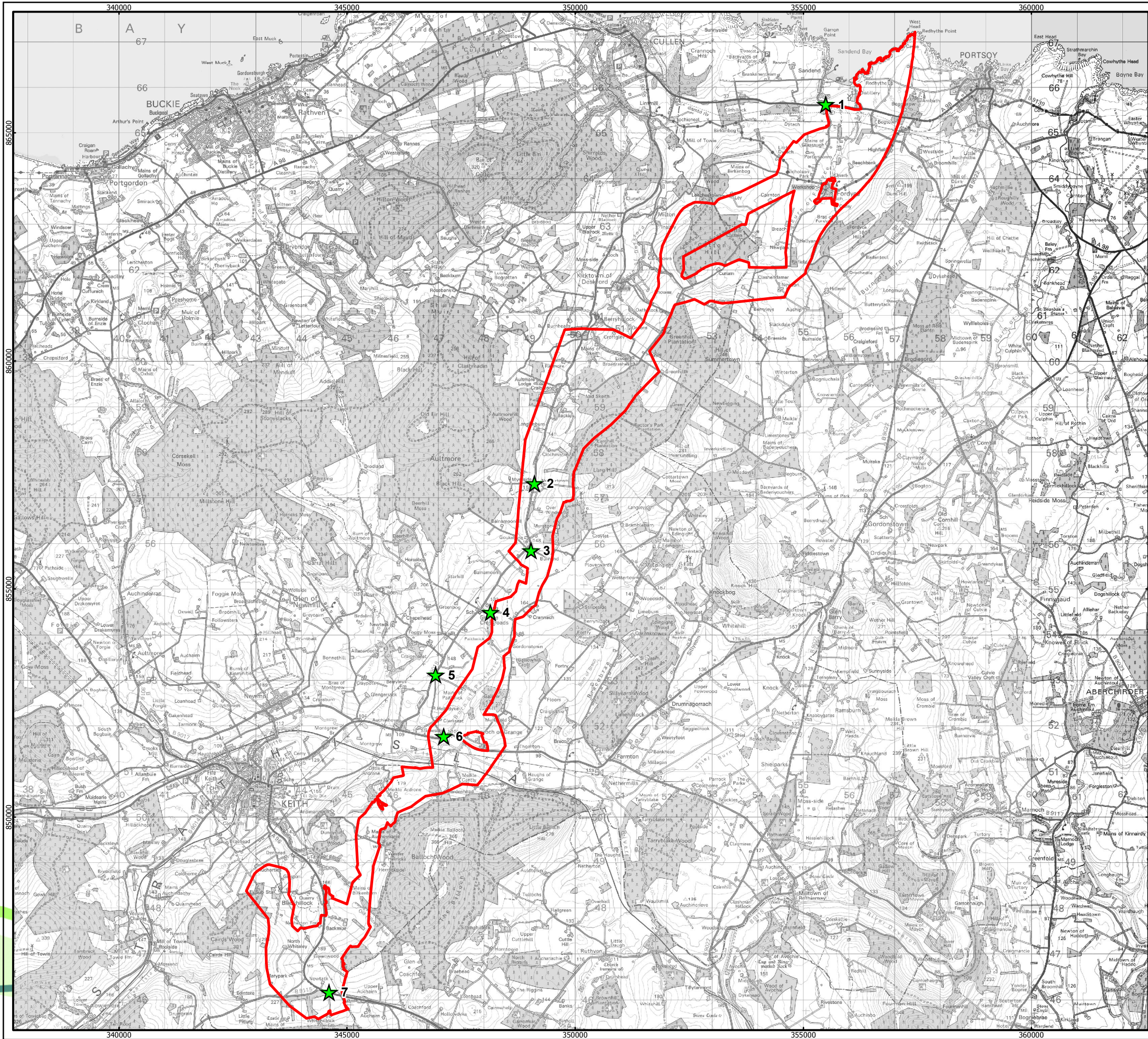
MORAY WEST OFFSHORE WINDFARM

- KEY**
- Planning Application Boundary
 - Transport Study Area
 - Road Network
 - Construction Routes
 - Indicative Accesses

Horizontal Scale: 1:100,000 A3 Chart
0 2,500 5,000 Meters
Geodetic Parameters: British National Grid
Produced: SG
Reviewed: RC
Approved: FG
Date: 06/07/2018 Revision: B
REF: N/A

Figure 6.1
Proposed Construction Traffic Routes
and Temporary Construction Signage

Moray Offshore
Windfarm (West) Ltd



MORAY WEST OFFSHORE WINDFARM

- KEY**
- Planning Application Boundary
 - ★ Indicative Accesses


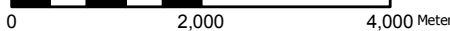
Horizontal Scale: 1:80,000		A3 Chart	
			
Geodetic Parameters:		British National Grid	
Produced: SG			
Reviewed: RC			
Approved: FG			
Date: 06/07/2018		Revision: B	
REF: N/A			

Figure 7.1
Planning Application Boundary
and Indicative Accesses

Moray Offshore
Windfarm (West) Ltd

MORAY WEST

OFFSHORE WINDFARM

Contact

Moray Offshore Windfarm (West) Limited
4th Floor, 40 Princes Street
Edinburgh EH2 2BY
Tel: +44 (0)131 556 7602

