

**TA9.4: Assessment of the Effects of the Construction and Operation of the Access and Yellow Bog Tracks and the Associated Grid Connection to Qualifying Habitats of the Caithness and Sutherland Peatlands Special Area of Conservation**

## TECHNICAL APPENDIX 9.4

### Assessment of the Effects of the Construction and Operation of the Access and Yellow Bog Tracks and the Associated Grid Connection to Qualifying Habitats of the Caithness and Sutherland Peatlands Special Area of Conservation

Technical Appendix 9.4  
 Assessment of the Effect of the Construction and Use of the Access and Yellow Bog Tracks to Qualifying Habitats of the Caithness and Sutherland Peatlands Special Conservation Area  
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# 1 INTRODUCTION

## 1.1 Background

The Strathy South Wind Farm, which was consented in April 2018, was supported by an assessment of the likely significant effects of the construction, improvement and use of access routes running from the Strathy North Wind Farm to the northern boundary of the main site. The route was chosen following a detailed assessment of 13 potential options<sup>1</sup> which identified the route running from the A836 south through the Strathy North Wind Farm to the main site as having the least impact to potential environmental receptors associated with the area.

The consented access route comprises three parts as shown in Figure 9.4.1:

- Preferred Access – this refers to the access route that passes from Strathy North Wind Farm through Strathy Wood to the current forestry track utilising the western bridge crossing;
- Alternative Access - this refers to the access route that passes from Strathy North Wind Farm through Strathy Wood to the current forestry track utilising the eastern bridge crossing;
- Common Access – this refers to all sections of track which are common to both the Preferred and Alternative route options, this is primarily in the southern section of the access where the track passes through the Caithness and Sutherland Peatlands Special Area of Conservation (SAC).

There are no proposed alterations to the consented access track route for the Proposed Varied Development's submission.

Two reports were submitted to support the assessment of the likely significant effects of the consented access track route to ecological receptors:

- Report 5<sup>2</sup> – sought to provide a detailed description of the habitats present surrounding the sections of the consented access track route passing through the Caithness and Sutherland Peatland SAC, the current impacts caused to the qualifying habitats of the SAC from the construction of the existing track, and provide information regarding the method of construction for the access track and cable installation for grid connection for the Consented Scheme. This was in response to the objection from Scottish Natural Heritage (SNH) to the 2007 ES submission that the use of the access track would be likely to have a “*significant effect on the peatland habitat qualifying interests of the site [SAC]*”; and
- Technical Appendix A10.6 of the 2013 ES Addendum (Volume 4): Report 5b<sup>3</sup> (hereafter referred to as “Report 5b”) considered additional comments provided by SNH on Report 5 and sought to provide additional information relating to the likely significant effects of track construction (direct and indirect effects) to the qualifying habitats of the Caithness and Sutherland Peatland SAC. Improved accuracy was used (Differential GPS) to map the extent of the disturbed areas of habitat surrounding the current access track, allowing greater confidence in the assessment of likely significant effects. A copy of that report is provided in this EIAR as EIAR Volume 4: Technical Appendix 9.11 – Copy of the 2013 ES Addendum, Technical Appendix A10.6 Strathy South Wind Farm, Report 5b: An Updated Assessment of Impacts of Access Track Construction on the Caithness and Sutherland Peatlands Special Area of Conservation 2013.

The Yellow Bog track was not included in the above assessments as upgrading of the track was not proposed for the Consented Scheme. The Consented Scheme proposed that the track would be used by 4x4 vehicles only and any electrical cabling would be laid within the footprint of the existing track.

<sup>1</sup> Environ (2013). Strathy South Wind Farm Access Route Review.

<sup>2</sup> RPS (2012). Strathy South Wind Farm, Report 5: An Assessment of Impacts of Access Track Construction and Deer Grazing on the Caithness and Sutherland Peatlands Special Area of Conservation. A Report for Scottish and Southern Energy Renewables.

<sup>3</sup> 2013 ES Addendum: Technical Appendix A10.6: RPS (2013). Strathy South Wind Farm, Report 5b: An Updated Assessment of Impacts of Access Track Construction on the Caithness and Sutherland Peatlands Special Area of Conservation. A Report for Scottish and Southern Energy Renewables.

## 1.2 Scope of this Document

This report seeks to summarise the information collected and the assessments completed for the EIA work carried out to support the application for consent for the Consented Scheme, in relation to effects from the construction and operation of the consented access track route. The report will then outline the proposed revised construction methods associated with the Proposed Varied Development and will compare the predicted likely significant effects from the Consented Scheme and Proposed Varied Development to qualifying habitats of the Caithness and Sutherland Peatlands SAC.

The Yellow Bog track which joins the two “arms” of the Strathy South conifer plantation (the main site) was excluded from the previous assessment to qualifying interests of the Caithness and Sutherland Peatlands SAC as it was not proposed to be widened. The Proposed Varied Development proposes the use of the Yellow Bog track to enable its use by larger construction vehicles (excluding turbine deliveries). Consequently, this report will summarise the proposed construction methods, the assessments completed of the habitats surrounding the existing track and provide commentary on the potential effects of construction to qualifying and non-qualifying habitats of the Caithness and Sutherland Peatlands SAC.

## 2 2013 ASSESSMENT

### 2.1 2013 Assessment of Baseline Conditions

Figure 9.4.1 shows the route of the consented access route passing from the Strathy North Wind Farm to the main site. For the purposes of the 2013 assessment of the potential effects of the access track to ecological receptors (primarily habitats) the track was divided into two segments:

- Segment 1 – the northern section of the access track encompassing both the Preferred and Alternative Access routes, passing from the existing infrastructure of the Strathy North Wind Farm to the boundary of the Caithness and Sutherland Peatlands SAC;
- Segment 2 – the southern section of the access track (Common Access) which utilises the existing forestry access track running through the SAC to the northern boundary of the main site. The existing track will need to be widened for the use by construction traffic associated with either the Consented Scheme or the Proposed Varied Development. This segment is approximately 2.4 km in length with 2.3 km of this bordered by the SAC on both sides.

Segment 1 (both the Preferred and Alternative Access routes) passes through previously afforested ground. Habitats and vegetation surveys of this area found that the habitats are of low conservation value.

Figure 9.4.2a provides the results of the 2012 National Vegetation Classification surveys completed surrounding Segment 2 of the consented access route. Section 2.3 of Report 5b<sup>3</sup> details the baseline condition of the habitats surrounding Segment 2 of the consented access track crossing the SAC and the ground into which grid connection cables would be laid. The total aggregate area which these habitats occupy is summarised in the following paragraphs from that Report:

#### “Segment 2 – Main Site Access Route

Updated mapping, based on the January [2013] topographic survey of the track and associated disturbed habitat along Segment 2, indicated a total existing disturbance area of 8.7 ha within the SAC (Figure 2a-d). Results from this survey also indicate an average disturbance (existing track and adjacent non-qualifying habitat combined) width of c. 28 m. This updated assessment indicates a greater area and width of existing impact than that estimated from aerial photography in Report 5 (4.8 ha and 21 m respectively).

The further increase in area and width is due to the more accurate ground-based surveys which are able to pick up areas of disturbed habitat not distinguishable in aerial photography.”

#### “Grid Connection Route (Adjacent to Segment 2)

The area immediately adjacent to the western edge of the existing track, into which the grid connection cables would be laid, is comprised primarily of disturbed non-qualifying habitats. Cables will be confined to the disturbed habitat area wherever possible, however, it is expected the cable route will run through qualifying habitats in some places. Whilst it is believed habitats in these areas will have undergone some modification due to the presence of the track, there is relatively little obvious evidence of this which would suggest these habitats are resistant to the changes in hydrology brought about by the presence of the track.

Figures 9.4.3 a-d show the route of Segment 2 and the mapped areas of disturbance as detailed in Report 5b<sup>3</sup>.

### 2.2 2013 Proposed Methods of Track Construction and Cable Installation Outwith the Caithness and Sutherland SAC (Segment 1)

Both the Preferred and Alternative access route tracks were proposed to be constructed using a cut and fill method due to the limited peat depths and the gradient of the ground the route options pass through. The approximate width of the track would be 8 m comprising the running surface, ditches and batters as

necessary. Both route options are outwith the boundary of the Caithness and Sutherland SAC, consequently construction in Segment 1 would not affect qualifying habitats of the SAC.

### 2.3 2013 Proposed Methods of Track Construction and Cable Installation Within the Caithness and Sutherland Peatlands SAC

Report 5b<sup>3</sup> (Section 2.1.1) details the proposed methods of track construction and cable installation for Segment 2 which passes through the Caithness and Sutherland Peatlands SAC:

“For the purposes of the development, this segment of the access route will require upgrading by widening of the running surface and associated relocation of drains and batter. In addition, two passing places (15x3 m plus tapers at each end) will be required between the Strathy South Forest boundary and the point at which the existing track adjoins the edge of Strathy Wood Forest (NGR 543 813) within the SAC. The requirement for passing places was identified following the January 2013 topographic surveys. These surveys identified restrictions in ‘line of site’ along certain sections of the track which would create significant traffic management problems given the inability of these vehicles to pass one another due to the restricted width of the running surface.

Whilst, new or relocated drains may be required due to the widened running surface, no new discharge locations will be created ensuring only existing discharge points are used. In addition, improved sediment control measures (e.g. sediment traps) will be installed and maintained thereby improving water quality discharged from the drainage network.

The upgraded track will be constructed to a similar design as shown in Appendix 1 (Typical Access Track Diagram [provided as Appendix 1 of this report]). This diagram indicates an overall width of 11.6 m. The final track footprint (including the full extent of existing running surface and drains) is predicted to vary around this figure by +/- 2 m according to the updated design. This width includes any batter required on the down-slope side. Wherever possible, grid connection cables would be buried beneath this batter and as close to the road as possible.

Widening would be undertaken to the down-slope side (western side) of the access track as this side is considered likely to have undergone a greater degree of modification due to historic track construction activity. The only exception to this is for some minor adjustments necessary to existing drains and embankments along the eastern edge of the running surface. These adjustments would be undertaken entirely within disturbed habitats and would therefore result in minimal (<0.05 ha) additional disturbance to peatland habitats. All proposed construction upgrade works have been designed to ensure all additional land-take occurs within the disturbed non-qualifying habitats as defined by the updated January 2013 surveys (Figure 2a-d [provided with this document as Figures 9.4.3a-d]).

Construction proposals include the removal of the peat spoil heaps where this area is required for widening and cable installation. Following construction, reinstatement of these former spoil heap areas would take place, the aim of which would be to return these to a similar condition as those which support adjacent qualifying habitats.”

Further to the above, Appendix 4 of Report 5b<sup>3</sup> provided a typical cable trench diagram for the grid connection with Appendix 5 providing the Mybster – Camster Report<sup>4</sup> where this method of cabling was used. A copy of the typical cable trench diagram is included as Appendix 2 of this report.

No additional information was provided regarding the method of construction of cable installation for the Yellow Bog track as all works for the Consented Scheme are to be completed within the footprint of the existing track.

<sup>4</sup> Ash Design + Assessment (2012). Mybster – Camster Revised Method Statement and Ecology Report for the Shielton Peatlands SSSI.

## 2.4 Assessment of Predicted Effects to the Caithness and Sutherland SAC from Segment 2 of the Consented Scheme

Predicted likely significant effects on the qualifying habitats of the Caithness and Sutherland Peatlands SAC were considered separately for the widening of the consented access route in Segment 2 and for the installation of cables. Effects associated with the installation of cables were predicted to be of a short-term duration with such areas restored to habitats similar to those of the surrounding SAC, whilst widening of the existing access track would cause direct habitat loss which would persist in the long-term.

In consideration of the most appropriate methods by which likely significant effects should be predicted, Section 3.1 of Report 5b<sup>3</sup> details the parameters used and the reasoning behind these. Direct effects were defined as those beneath the footprint of the track and within 10m of the running surface. Indirect effects were defined as those causing alterations in habitat composition due to hydrological changes within the peatland habitats; these were considered for an additional 15m outside of the 10m buffer of direct impacts. These were agreed with SNH via email in 2012.

Three different methods were used to assess the likely significant effects of the consented access route to the qualifying habitats of the SAC:

1. Application of the impact buffers along both sides of the full length of the track for Segment 2 to be upgraded within the SAC.
2. Application of the impact buffers along those lengths of track in which widening extends into areas of peatland habitats where a normal functioning water table is present: i.e. to the west of the track (this may be in either disturbed or undisturbed habitat).
3. Application of the principles of a cumulative impact assessment, which takes into account existing permanent long term impacts due to the existing track infrastructure and calculates the cumulative effect of additional track widening.

The results of each assessment are provided in Table 9.4.1, below.

**Table 9.4.1: Summary of Potential Likely Significant Effects on Qualifying Habitats**

Potential Habitat Loss			
Estimation Method	Direct / Indirect	Habitat (NVC Code)	Impact Area (ha)
Method 1	Direct	Wet Heath (M15)	0.66
		Blanket Bog (M17/M25)	0.37
	Indirect	Wet Heath (M15)	3.56
		Blanket Bog (M17/M25)	1.55
<b>Total</b>			<b>6.14</b>
Method 2	Direct	Wet Heath (M15)	0.29
		Blanket Bog (M17/M25)	0.37
	Indirect	Wet Heath (M15)	1.26
		Blanket Bog (M17/M25)	0.99
<b>Total</b>			<b>2.91</b>
Method 3	Direct	Wet Heath (M15)	0.24
		Blanket Bog (M17/M25)	0.35
	Indirect	Wet Heath (M15)	0.62
		Blanket Bog (M17/M25)	0.33
<b>Total</b>			<b>1.54</b>

In consideration of the above assessment of likely significant effects, the true representative value was deemed to lie somewhere between the impacts assessed using Methods 2 and 3. However, due to the sensitivity of the qualifying features of a Natura 2000 site a precautionary approach was taken, and the higher value was considered most appropriate from Method 2.

Taking the above into account, the predicted likely significant effects from the widening of the consented access track were assessed as of being of low magnitude and moderate significance. Consequently, it was

concluded that further mitigation directly comparable to the predicted likely significant effects of the Consented Scheme was required within the SAC in order to reduce impacts to an acceptable level. Details of this mitigation were included within the Outline Habitat Management Plan<sup>5</sup> for the Consented Scheme; an updated version of which is provided as Technical Appendix 9.5 (EIAR Volume 4) of this 2020 EIAR.

## 2.5 Assessment of Effects from Cable Installation for the Consented Scheme

Section 4 of Report 5b<sup>3</sup> assessed the likely significant effects from the proposed method of cable installation through the Caithness and Sutherland Peatlands SAC. Appendix 2 of this document presents a typical a cross section of the proposed cable installation for the Consented Scheme.

The assessed likely significant effects from the cable installation were identified as:

1. Direct disturbance to vegetation and peat from mechanical damage from the mole plough. It was predicted that c.0.51 ha of qualifying habitat would be affected;
2. Direct disturbance of vegetation and peat due to mechanical damaged caused by vehicles / machinery traversing the cable route. These effects were predicted to be of a localised and temporary duration;
3. Erosion as a result of lines of weakness in the peat along which water is channelled. The likely significant effects were predicted to be localised along the lines of individual cable channels, and the effects predicted to be temporary in nature as the peat soil is expected to reform around the cables;
4. Changes to hydrology as a result of excavation of cable jointing areas. Effects were considered to be localised with the potential to impact a total area of <0.05 ha.

Taking the above into account, the residual predicted overall likely significant effects from the cable installation were assessed as being of low magnitude and minor significance and no mitigation was required in regard to these.

<sup>5</sup> RPS (2015). Strathy South Wind Farm Outline Habitat Management Plan.

## 3 PROPOSED VARIED DEVELOPMENT DESCRIPTION

### 3.1 Proposed and Alternative Access Routes – Segment 1

No changes to the Preferred or Alternative access routes are proposed for the Proposed Varied Development. The construction would utilise “cut and fill” methods as for the Consented Scheme due to the shallow depth of the peat present and the gradients associated with the routes. These access routes would continue to have no effect to qualifying habitats of the Caithness and Sutherland Peatlands SAC.

### 3.2 Common Access Route and Grid Connection - Segment 2

Consideration has been given to the methods of upgrade and construction of Segment 2 of the access route (Common Access), coupled with installation of the associated grid connection cables. This sought to identify methods which would cause the least impact to the surrounding habitats of the Caithness and Sutherland Peatland SAC. Appendix 3 provides a schematic diagram of the revised cross section for the upgrade and construction for the Common Access and cable trench. In summary these are proposed as:

- The track width would be increased to 6 m, with 0.5 m hardstrips either side of the main running surface;
- On the eastern edge of the track the existing ditch would be re-profiled and the access track overlaid on this area. No excavations would be required of the eastern bund;
- The current ground profile to the west of the existing track and within the spoil bund would be excavated to make space for the wider running surface;
- Current vegetation turves on the western spoil bund would be removed and stored vegetation side up. These would be used for reinstatement of vegetation following construction activities;
- A trench for the required grid connection cables would be dug 2 m from the western edge of the track running surface. The grid connection would require a single trench approximately 1 m in depth and 0.6 m in width, in contrast to that previously required for the grid connection with a working footprint of a width of c.8.5 m. This trench is shown in Appendix 3 to the right of the cross-section of the road;
- Excavated materials from construction activities would be placed on top of the western spoil bund and the bund re-profiled to a 1 in 3 slope, the bund would not be removed as proposed for the Consented Scheme;
- Following cable installation and bund reprofiling the cable trench would be back filled and all vegetation turves reinstated across the spoil bund.

The use of spoil from the track construction for reprofiling of the western spoil bund, the requirement for a single trench, and the proposal not to remove the bund in its entirety to allow appropriate machinery to operate, would result in a substantial reduction in the potential effects to habitats of the Caithness and Sutherland Peatlands SAC and ecological receptors, namely:

- A reduction in vehicle movements which would have been associated with removal of the spoil bund, thereby reducing the potential for pollution events resulting from large scale earthworks;
- Reduced disturbance to avian receptors through a shorter construction period;
- The bund would continue to provide a potential bat foraging and commuting line across the SAC linking areas of important habitats;
- A reduced footprint of the proposed grid connection which would be limited to a single trench and would decrease the disturbance to peatland habitats;
- Reduced potential impacts to surrounding habitats of the Caithness and Sutherland Peatlands SAC as works would be limited to the current spoil bund, and as such in isolation from habitats which could be affected from alterations to hydrological flows;
- Machinery would not be required to operate outside of the construction footprint of non-qualifying habitats.

Report 5b<sup>3</sup> for the Consented Scheme sought to quantify the condition of habitats surrounding the existing track running through the SAC. Detailed assessments of the boundary of the affected habitats from previous track construction were completed defining the boundary of qualifying habitats of the SAC and those which could no longer be classified as such due to alterations to hydrology caused by the existing track. This information was subsequently used to determine the likely significant effects to qualifying habitats of the SAC through widening of the existing track and installation of the associated grid connection.

Appendix 4 uses the information collected for Report 5b<sup>3</sup> and demarcates the area of disturbance caused by construction of the existing track (the area within the red line “Edge of Habitat”) and shows the revised construction activities for the Common Access for the Proposed Varied Development which are placed within this red line boundary. Construction activities have been planned to minimise disturbance to habitats outwith the mapped area of current non-qualifying disturbed habitat, hence minimising any potential effect to the SAC.

The Strathy South Wind Farm Outline Habitat Management Plan produced for the Consented Scheme provides more than sufficient mitigation for the consented methods of construction. Section 4 – Off Site Management of the Outline Habitat Management Plan has been updated for the Proposed Varied Development (EIAR Volume 4: Technical Appendix 9.5) and details the proposed activities to be undertaken within the SAC to mitigate for any likely significant effects to qualifying habitats of the SAC. The Applicant is committed to delivering the identified measures, thereby providing additional enhancement to habitats over and above the requirement to mitigate the likely significant effects associated with the access track upgrade and those associated with construction and operation of the Proposed Varied Development itself.

### 3.3 Yellow Bog Track

As noted in Section 1.2 of this report, Report 5b<sup>3</sup> excluded an assessment of the potential effects of the use of the Yellow Bog track for the Consented Scheme. Proposals for the use of the track as part of the ancillary development for the Consented Scheme were limited, with all grid connections to be placed within the track’s footprint, and the track to be used only by 4x4 traffic and therefore not requiring any widening.

To allow efficient construction of the Proposed Varied Development and removal of the Strathy South conifer plantation, the upgrade of the Yellow Bog track is proposed to allow its safe use by large construction traffic. Appendix 5 provides a schematic diagram of the upgraded track design. A high level summary of the proposed construction methods are as follows:

- Increase of the track’s running surface width from c.3.3 m to 4.0 m, the footprint of which would fit into the existing roadside ditch / drain system;
- A trench for the grid connection cables would be dug to the northern side of the track within the current drain. Spoil from these excavations would be placed on top of the bund with the excavation approximately 2 m in width;
- Excavation and reprofiling of the existing batters to form new roadside drainage would be completed;
- Spoil from the excavation activities would be placed on the existing northern spoil bund. Turves from this bund would have been removed and stored vegetation side up;
- The turves would be replaced following the addition of all spoil from the works, the total footprint of the upgraded track and grid connection would be approximately 7 m in width.

To inform the above construction methods and ensure that works could be completed without affecting the surrounding qualifying habitats of the Caithness and Sutherland Peatlands SAC, a suite of surveys were completed in 2019 of the track and immediate surrounding ground, these included:

- Aerial photographic survey using drones;
- Topographical survey using drone’s internal altimeter;
- Topographical survey using static ground survey points;
- Ground truthing survey by an ecologist of the footprint and extent of disturbance caused from the current track’s construction to the surrounding blanket bog habitats.

Full details and results of these surveys are provided in Appendix 6: Yellow Bog Access Track Assessment (EIAR Volume 4), appended to this Technical Appendix.

In summary, surveys found the mean width of the track and surrounding drains to be c.10 m, with the area of disturbance to habitats outwith this area of between 10 m to 15 m either side of the track. The surveys demonstrate there would be sufficient space within which to accommodate the footprint of the track upgrades and grid connection cables, and for the construction works to be completed with no direct effects and limited permanent habitat change (indirect effects) to qualifying habitats of the surrounding Caithness and Sutherland Peatlands SAC.

Using the information collected in Appendix 6 to this Technical Appendix, Appendix 7 to this Technical Appendix, provides the proposed construction activities for the upgrade of the Yellow Bog track.

## 4 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS OF CONSTRUCTION AND OPERATION OF THE COMMON ACCESS AND YELLOW BOG TRACK AND THE ASSOCIATED GRID CONNECTIONS TO QUALIFYING INTERESTS OF THE CAITHNESS AND SUTHERLAND PEATLANDS SAC

As detailed in Section 2.4, the assessment of likely significant effects for the Consented Scheme assumed the following parameters for the construction and operation of the access route:

- direct habitat loss was limited to the footprint of the upgraded track;
- a 10 m buffer of direct impact was applied outside of the construction footprint – the grid connection would be placed in this area;
- within peatlands or hydrologically dependent habitats an indirect impact of an additional 15 m was applied outwith the 10 m direct impact buffer; and
- all buffers were applied to the western (downslope) side of the track as construction, disturbance and hydrological effects would be limited to this area.

Based on increased knowledge of the construction process in peatland habitats and in particular for wind farm developments, the Applicant is confident that the predicted long-term likely significant effects from construction and operation for both the Common Access and the Yellow Bog track would be limited to:

- the footprint of the upgraded tracks which is termed direct habitat loss;
- some small areas of the current mapped areas of disturbance outwith the footprint of the current tracks into which the grid connection would be laid. These areas would be restored following construction operations and are classified as temporary habitat loss;
- a 10 m buffer of the permanent footprint of the new track where habitat change post-construction to hydrologically dependent habitats could occur. These areas are referred to as permanent habitat change (indirect effects). This buffer excludes the areas of mapped disturbance as shown in Appendix 4 and Appendix 7 and documented in Appendix 6, which has already been affected by construction of the existing track and are therefore not qualifying habitats of the SAC; and
- a 4 m buffer has not been applied to the Common Access or Yellow Bog tracks to account for temporary disturbance during construction. The Applicant has committed to all machinery working from the running surface of the tracks rather than within the surrounding habitats, and as such an area of temporary disturbance would not be required. Construction would not encroach outwith the areas mapped in Appendices 3 and 5 to this Technical Appendix.

As for the Consented Scheme, for the Proposed Varied Development the above buffers were applied to the downslope (western) side for the Common Access. However, as there is no definable direction of flow associated with areas surrounding the Yellow Bog track, buffers were applied to both sides to ensure a conservative approach has been adopted.

For reference, potentially hydrologically dependent habitats present in the area of the Proposed Varied Development are provided in Table 9.4.2 below.

**Table 9.4.2: Hydrologically Dependent Habitats to which the Permanent Habitat Change Buffer is Applied**

Hydrologically Dependent Habitats	
Phase 1 Habitat Type	National Vegetation Classification Community
Blanket bog	M17 <i>Trichophorum germanicum</i> – <i>Eriophorum vaginatum</i> mire
Wet heath	M15 <i>Trichophorum germanicum</i> – <i>Erica tetralix</i> mire
Wet heath	M25 <i>Molinia caerulea</i> – <i>Potentilla erecta</i> mire

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Hydrologically Dependent Habitats	
Blanket bog	M19 <i>Calluna vulgaris</i> – <i>Eriophorum vaginatum</i> mire
Modified bog	M20 <i>Eriophorum vaginatum</i> mire
Rush pasture	M23 <i>Juncus effusus/acutiflorus</i> – <i>Galium saxatile</i> mire
Blanket bog	M18 <i>Erica tetralix</i> – <i>Sphagnum papillosum</i> mire
Blanket bog	M1 <i>Sphagnum denticulatum</i> bog pool
Blanket bog	M2 <i>Sphagnum cuspidatum/fallax</i> bog pool
Acidic flush	M6 <i>Carex echinata-Sphagnum fallax/denticulatum</i> mire
Acidic flush	M29 <i>Hypericum elodes</i> – <i>Potamogeton polygonifolius</i> soakway
Swamp	S4 <i>Phragmites australis</i> swamp
Swamp	S9 <i>Carex rostrata</i> swamp
Swamp	<i>Menyanthes trifoliata</i> swamp

Table Notes

Information within this table is taken from EIAR Volume 4: Technical Appendix 9.8: Copy of Technical Appendix A10.2 Strathy South Wind Farm Habitats, Vegetation and Protected Species

Any temporary disturbance to habitats during the construction phase of the Common Access and Yellow Bog track for the Proposed Varied Development would be limited to the laying of the grid connection cables into the areas of previously disturbed habitat as shown in Appendices 4 and 7. All construction works would be completed from the tracks' running surfaces to minimise disturbance.

Using the revised buffers and the information regarding the existing effects to habitats from the existing tracks as shown in Appendices 4 and 7, the NVC information collected in 2012 and provided in Figures 9.4.2a-b, and the areas of mapped current disturbance as shown in Figure 9.4.3a-d, the predicted effects to qualifying habitats of the SAC have been calculated; these are provided in Table 9.4.3.

**Table 9.4.3: Predicted Effects of Construction and Operation of the Access Route and Yellow Bog Track to Qualifying Habitats of the Caithness and Sutherland Peatlands SAC**

Predicted Effects to Habitats			
Track	Effect	Habitat (NVC Code)	Impact Area (ha)
Common Access	Direct Habitat Loss	-	0.00
	Temporary Habitat Loss	-	0.00
	Permanent Habitat Change	M15 <i>Trichophorum germanicum</i> – <i>Erica tetralix</i> mire	0.14
		M25 <i>Molinea caerulea</i> – <i>Potentilla erecta</i> mire	0.12
	<b>Sub Total</b>		<b>0.26</b>
Yellow Bog Track	Direct Habitat Loss	-	0.00
	Temporary Habitat Loss	-	0.00
	Permanent Habitat Change	M17b <i>Trichophorum germanicum</i> – <i>Eriophorum vaginatum</i> mire	0.43
	<b>Sub Total</b>		<b>0.43</b>
	<b>Total</b>		<b>0.69</b>

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Effects to habitat from the Preferred and Alternative Access routes (Segment 1) have also been recalculated using the revised parameters. As these fall out with the SAC, details of this assessment are provided in EIAR Volume 4: Technical Appendix 9.7: Habitat Loss Calculation Methodology. Effects to non-qualifying habitats surrounding the Common Access and Yellow Bog tracks are similarly provided in Technical Appendix 9.7 (EIAR Volume 4).

## 5 SUMMARY

The Consented Scheme predicted a residual effect on qualifying habitats of the Caithness and Sutherland Peatlands SAC from widening of the Common Access (Segment 2) of between 0.59 and 0.66 ha using the predicted direct effects; i.e. those within 10 m of the running surface of the upgraded Common Access track and as provided in Table 9.4.1 above. Adopting a conservative approach, the higher of these values was used within the assessment for the Consented Scheme. Due to the differing construction methods, these are the most appropriate values to use when comparing the likely significant effects of the Consented Scheme to those predicted for the Proposed Varied Development.

An increased understanding of the potential effects of construction in peatland environments has determined that more appropriate buffer distances should be used in the assessment of the likely significant effects for the Proposed Varied Development to peatland habitats. Similarly, this increased understanding of construction processes has enabled the Applicant to refine the construction methods of all sections of track to reduce the potential effects to surrounding habitats. This has included the refinement of the laying of the grid connection cables and negated the necessity to remove the current spoil bunds bordering the tracks, which in turn, reduces the potential effects on the habitats of the surrounding SAC.

Taking the above into account, likely significant effects to the SAC from upgrading the Common Access and Yellow Bog tracks are predicted to be limited to 0.69 ha of permanent habitat change caused by alterations to hydrological flow to qualifying habitats. This is a maximum potential increase of 0.1 ha in comparison to those associated with the Consented Scheme.

The approved Outline Habitat Management Plan made provision to mitigate the likely significant effects associated with the Consented Scheme. Technical Appendix 9.5 (EIAR Volume 4) provides the updated Outline Habitat Management Plan for the Proposed Varied Development. The potential effects of both the Consented Scheme and the Proposed Varied Development are comparable, and as such the implementation of the Outline Habitat Management Plan for the Proposed Varied Development would continue to deliver appropriate mitigation to reduce likely significant effects to qualifying habitats of the Caithness and Sutherland Peatlands SAC to a level that is not significant.

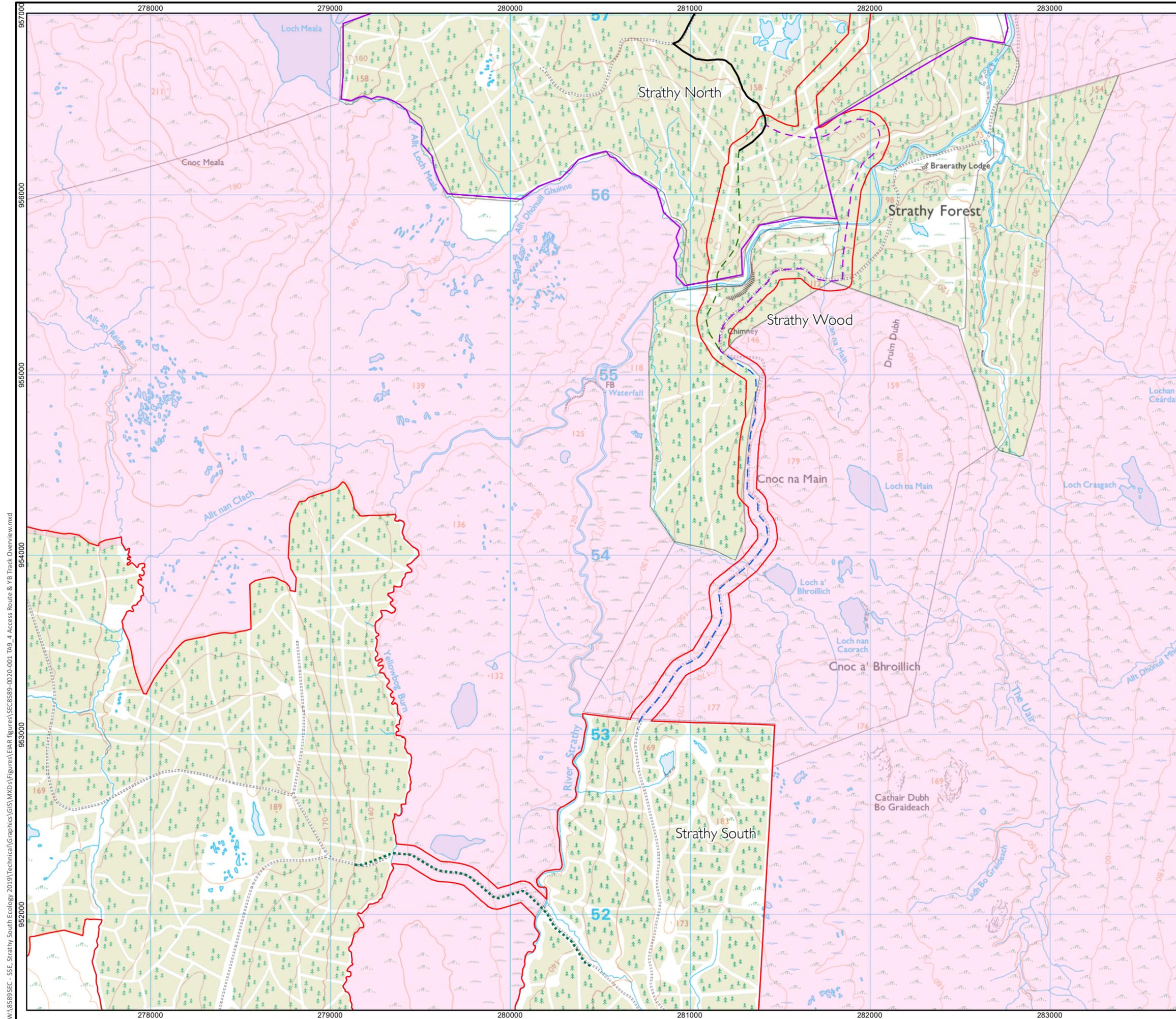
## Figures

**Figure 9.4.1: Access Track and Yellow Bog Track Route Overview**

**Figure 9.4.2a: National Vegetation Classification Survey Results (2012) Common Access (Segment 2)**

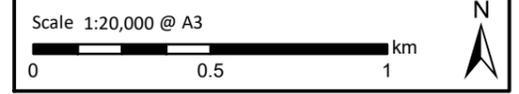
**Figure 9.4.2b: National Vegetation Classification Survey Results (2012) Yellow Bog Track**

**Figure 9.4.3a-d: Segment 2 Non-Qualifying Habitat and Construction Disturbance**



- Site Boundary
- Strathy North Site Boundary
- Caithness and Sutherland Peatlands SAC and SPA
- Strathy North Access
- Existing Yellow Bog Track to be Upgraded for use by Construction Traffic

- Potential Access Routes
- Segment 1:  
Strathy North to Strathy Wood
- Preferred Access Route
  - Alternative Access Route
- Segment 2:
- Common Access Route



**Figure 9.4.1**  
**Access Route and**  
**Yellow Bog Track Overview**

**Strathy South Wind Farm**  
**EIAR 2020**

Site Boundary  
 Caithness and Sutherland Peatlands  
 SAC and SPA

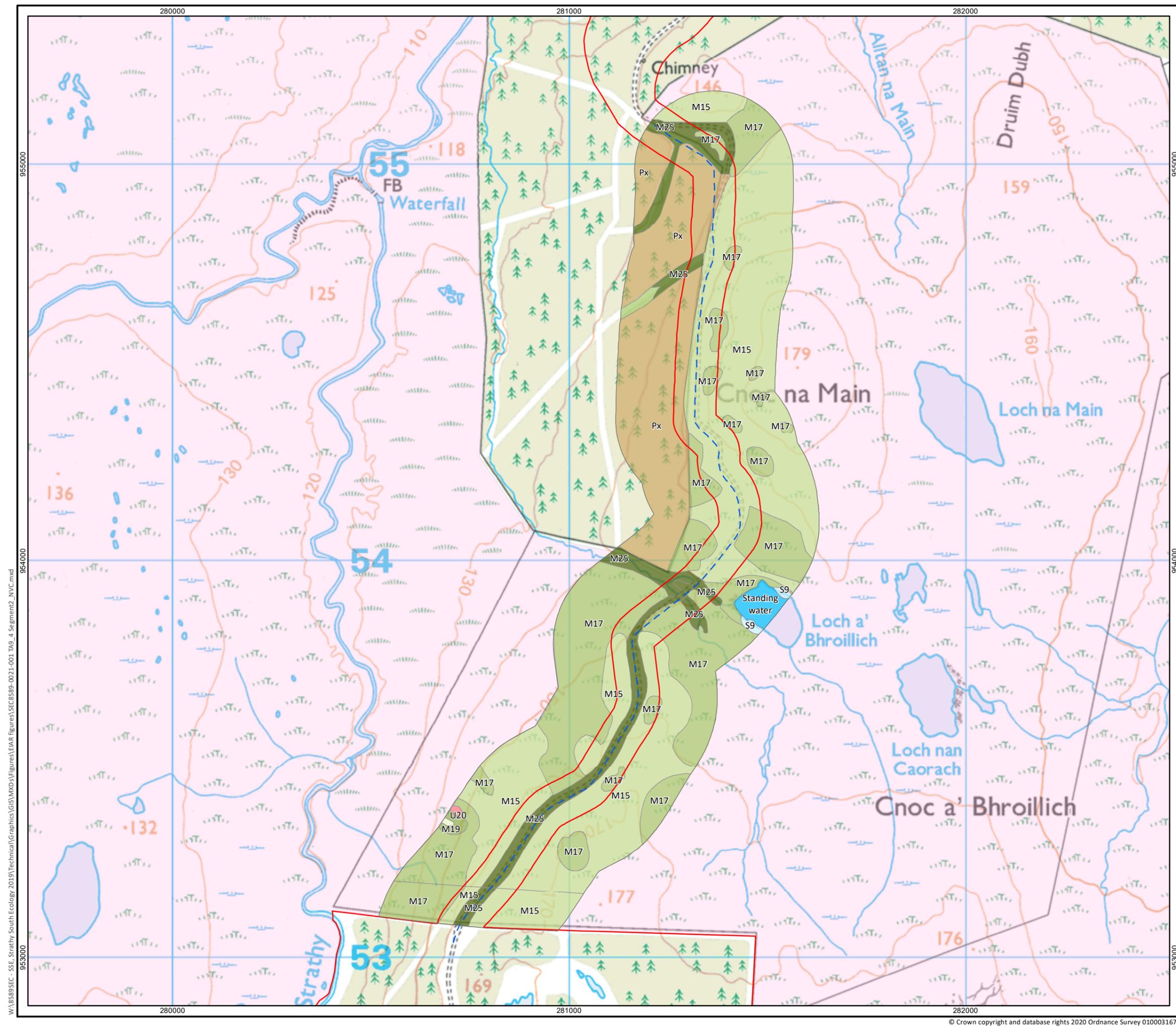
Segment 2:  
 Common Access Route

NVC habitats

- M4
- M15
- M17
- M19
- M25
- S9
- U20
- Coniferous woodland
- Standing water

Scale 1:9,000 @ A3  
 0 0.2 0.4 km

**Figure 9.4.2a**  
**NVC Survey Results (2012)**  
**Common Access (Segment 2)**  
**Strathy South Wind Farm**  
**EIAR 2020**



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