

## **GALWAY COUNTY COUNCIL**

### **N59 Maam Cross to Oughterard Road Project**

#### **REVISED SCHEDULE OF ADDITIONAL MITIGATION MEASURES & ENVIRONMENTAL COMMITMENTS**

20<sup>th</sup> August 2013



No.	Description
5.5	<p>The Contractor undertaking the construction of the works shall be obliged to undertake trial blasting in order to ensure blasting activities do not exceed permissible levels. Blasting trials shall follow the recommendations of NRA 'Guidelines for the Treatment of Noise and Vibrations in National Roads Schemes' (NRA, 2004).</p> <p>Noise and vibration monitoring shall be carried out at the nearest sensitive properties during critical stages of any rock blasting being carried out.</p> <p><b>The results of the noise level monitoring will be made available for inspection at the offices of Galway County Council, Roads Section, Second Floor 2, County Buildings, Prospect Hill, Galway City within 1 week of the measuring of the noise level. The results shall also be made available to the public on Galway County Council's website within 1 week of the measuring of the noise level.</b></p>
7.1	<p><b>Invasive Species Management</b></p> <p>The Contractor undertaking the construction of the works shall be obliged to manage non-native invasive plant species within the lands made available in accordance with:</p> <ul style="list-style-type: none"> <li>• 'Guidelines for the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads' (NRA 2010)</li> </ul> <p><b>Invasive Species Management shall be in accordance with the requirement outlined in 9.3.5 of the NIS.</b></p> <p>Where Non-Native Invasive Plant Species are found within designated sites <b>or the Owenriff Fresh Water Pearl Mussel Catchment</b>, only physical methods of eradication are to be applied. <b>All such physical methods shall only be carried out when the construction mitigation and control measures are in place including all measures listed in the Erosion and Sediment Control Plan.</b></p>
7.4	<p><b>Material Deposition and Peat Restoration Areas</b></p> <p>The measures, controls and mitigations described in the Preliminary Erosion and Sediment Control Plan shall be implemented in full.</p> <p>Material Deposition Areas shall reseeded with a verge grassland mix, similar to the species composition found in the locality, using a high concentration seed mix to encourage rapid re-colonisation to help control the spread of invasive species and rehabilitate the area.</p> <p>The overall aim for the Peat Restoration Areas is to try to maintain a water environment conducive to the establishment of a wet peat habitat that will encourage natural colonisation by peatland vegetation. In addition to blocking up drains it is proposed to mulch the cleared surface vegetation from cutover bog in the vicinity and distribute it over the finished peat surface.</p> <p><b>All peat and unsuitable soft soils below the proposed perimeter berms will be excavated and replaced with acceptable Class 6A or 1C granular engineering fill in accordance with NRA Specification for Road Works.</b></p>

No.	Description
7.8	<p data-bbox="304 271 560 300"><b>Watercourses (ER4)</b></p> <p data-bbox="304 322 1337 383">Mitigation measures are as set out in Sections 14.5 (Surface Water) of this EIS and the principal measures as detailed in Table 18.9 for Surface Water (Hydrology).</p> <p data-bbox="304 412 1358 472"><b>Elements of the scheme, including culvert design, realignments and construction methodologies will follow the relevant National Roads Authority (NRA) guidelines:-</b></p> <ul data-bbox="379 510 1406 757" style="list-style-type: none"> <li data-bbox="379 510 1406 571">• <b><i>Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (NRA 2008a).</i></b></li> <li data-bbox="379 607 1406 667">• <b><i>Guidelines for the Treatment of Otters during the Construction of National Road Schemes (NRA, 2008b).</i></b></li> <li data-bbox="379 703 1406 757">• <b><i>Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads (NRA, 2008c).</i></b></li> </ul> <p data-bbox="304 792 1366 853"><b>In addition measures for the mitigation of impacts on fisheries and aquatic ecology outlined in the following documents:-</b></p> <ul data-bbox="379 891 1390 1196" style="list-style-type: none"> <li data-bbox="379 891 1390 981">• <b>Murphy, D.F. (2004). Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites. Eastern Regional Fisheries Board, Dublin.</b></li> <li data-bbox="379 1016 1390 1106">• <b>Kilfeather, P.J. (2007) Maintenance and protection of the inland fisheries resource during road construction and improvement works. Southern Regional Fisheries Board, Clonmel, Co. Tipperary.</b></li> <li data-bbox="379 1142 1390 1196">• <b>SEPA (1996) SEPA Guidelines for Water Pollution Prevention from Civil Engineering Contracts. Scottish Environmental Protection Agency.</b></li> </ul>

## Appendix 1

### Rainfall Forecasting N59 Maam-Oughterard

#### Weather Forecast Services

Weather forecast information will be obtained from at least three sources including Met Éireann, Yr.no, and AccuWeather.com. The most pessimistic forecast will be used initially until a picture of which forecast is the more accurate for the area is established. All forecasts shall be ground verified.

#### Forecasts

Longer term 5 and 10day forecasts for work activity planning

Shorter term 12hr, 24hr and 3-day forecasts during construction (rainfall forecasts updated every 3hours.).

#### Planning/ scheduling of work

Use longer term forecast of 5 and 10day forecasts to plan/schedule high risk activities so as to coincide with forecasted dry periods.

#### Implementation of Works

Use 12 hour and 3 day forecast during the construction process to manage and reduce risk

#### Proposed Rainfall Triggers

Activities should cease or protective measures implemented if the following rainfall amounts are forecasted

**A Protective High Risk Activities (Schedule 1 Activities)**

6 hour rainfall exceeding 3mm

12hour rainfall exceeding 4mm

24hour rainfall exceeding 5mm

No overland flow or pathway for water movement

Conditions on the ground match the forecast

**B High Risk Activities (Schedule 2 Activities)**

6 hour rainfall exceeding 6mm

12hour rainfall exceeding 8mm

24hour rainfall exceeding 10mm

Conditions on the ground match the forecast

**B Intermediate Risk Activities (Schedule 3 Activities)**

6 hour rainfall exceeding 9mm

12hour rainfall exceeding 12mm

24hour rainfall exceeding 15mm

Conditions on the ground match the forecast

<b>Schedule 1</b> <b>Protective High Risk Activities</b> <b>(non exhaustive)</b>	
<b>1</b>	<b>Installation of boundary fencing and silt fencing</b>
<b>2</b>	<b>Installation of Erosion and Sediment Control facilities</b>
<b>3</b>	<b>Removal of Erosion and Sediment Control Facilities</b>
<b>Schedule 2</b> <b>High Risk Activities</b> <b>(non exhaustive)</b>	
<b>1</b>	<b>Excavation and Transportation of Peat</b>
<b>2</b>	<b>Intercepting and diversion of land drains intersection the site boundary</b>
<b>3</b>	<b>Excavation within 5m of a minor watercourse</b>
<b>4</b>	<b>Excavation within 10m of a Discovery Watercourse</b>
<b>5</b>	<b>Any in stream work or bank works</b>
<b>6</b>	<b>Installation of the crash deck on Letterfore and Glengowla Bridges</b>
<b>7</b>	<b>Installation of over-pumping facilities</b>
<b>8</b>	<b>Concrete works associated with watercourse crossings</b>
<b>Schedule 3</b> <b>Medium Risk Activities</b> <b>(non exhaustive)</b>	
<b>1</b>	<b>Trimming of slopes and preparation for landscaping</b>
<b>2</b>	<b>Hedge/ Tree Removal</b>
<b>3</b>	<b>Installation of utilities</b>
<b>4</b>	<b>Site Clearance involving the removal of cover vegetation/ topsoil</b>
<b>5</b>	<b>Concrete works associated with retaining walls</b>
<b>6</b>	<b>Any other activities with a risk of causing erosion or generating sediment laden runoff</b>

**Turbidity Investigatory Levels**

The continuous turbidity meters will be installed as per the Erosion and Sediment Control Plan at locations upstream and downstream of the works. The meters will be calibrated to take readings at 5 minute intervals. Where the difference in turbidity readings between the upstream and the downstream readings equals or exceeds 5 NTUs for a minimum period of 30 minutes an “intervention required” signal will be automatically sent to the EAO. The EAO will immediately investigate the site using a portable handheld turbidity meter. The EAO will establish whether or not the elevated turbidity readings are as a result of the works. Where this is the case, the EAO will have the necessary powers under the construction contract to instruct the contractor to take immediate corrective actions including stopping of sediment generating works if considered appropriate.

The EAO will also take handheld turbidity readings and check the integrity of the silt fencing and other mitigation measures regularly on a daily basis.