

ANNEX B

INFORMATION TO INFORM THE APPROPRIATE  
ASSESSMENT

**INFORMATION TO INFORM  
THE APPROPRIATE  
ASSESSMENT**

**Transport Scotland**

**A82(T) Crianlarich Bypass**

**Appraisal of the Implications of the Proposed A82(T) Crianlarich Bypass on  
the Qualifying Interests of the River Tay Special Area of Conservation (SAC)**

**Information to Inform the Appropriate Assessment**

**September 2009**

*natural* CAPITAL

13 Coates Crescent  
Edinburgh  
EH3 7AF

Telephone: 0131 220 6121

Facsimile: 0131 220 6131

Email: [info@naturalcapital.co.uk](mailto:info@naturalcapital.co.uk)

Website: [www.naturalcapital.co.uk](http://www.naturalcapital.co.uk)

**INFORMATION TO INFORM AN  
APPROPRIATE ASSESSMENT**

**Transport Scotland**

**A82(T) Crianlarich Bypass**

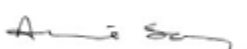
**Appraisal of the Implications of the Proposed A82(T) Crianlarich Bypass on  
the Qualifying Interests of the River Tay Special Area of Conservation (SAC)**

**Information to Inform the Appropriate Assessment**

**September 2009**

For and on behalf of  
Natural Capital Ltd

Approved by: Dr Annie Say

Signed: 

Position: Director

Date: September 2009

This report has been prepared by Natural Capital Ltd. with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

In line with our company environmental policy we purchase paper for our documents only from suppliers who supply recycled and/or sustainably sourced paper.

Registered Office: Natural Capital Ltd, 3 Ormidale Terrace, Edinburgh, EH12 6DY. Registered in Scotland. No: 185394

## 1 INTRODUCTION

Transport Scotland<sup>1</sup> is proposing to bypass the village of Crianlarich. The proposed scheme would connect with the existing A82 at the south of the village of Crianlarich by means of a new roundabout. The new road would run through an open corridor of land between the western edge of the village and Ewich Forest. It would connect with the Tyndrum Road (existing A82) at the western edge of Crianlarich via a second new roundabout. The proposed line of the bypass is shown on Figure 1.

The bypass would be constructed in a corridor which drains to the River Fillan which is part of the catchment of the River Tay Special Area of Conservation (SAC)<sup>2</sup>. Scottish Natural Heritage (SNH) recognised that construction had potential for significant effects on interests of the SAC and requested that information to inform an Appropriate Assessment was provided (November, 2006). Information is provided in the Environmental Statement (ES) for the scheme which presents the findings of the environmental impact assessment (EIA). This report, included as an annex in the ES, collates the information together for ease of reference.

A ground investigation was undertaken (May, 2008) and it was agreed with SNH following provision of a method statement (1<sup>st</sup> May 2008) that those works did not require Appropriate Assessment but that the full construction works had greater risk of impact and would require collation of information to inform an Appropriate Assessment.

### 1.1 THE CONSERVATION (NATURAL HABITATS, &C.) REGULATIONS 1994

The Conservation (Natural Habitats, &c.) Regulations 1994 (the Habitats Regulations) place a statutory duty on the competent authority (that is the authority which has powers to grant permission for the development), to meet the requirements of Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the Habitats Directive). Where it is considered that a plan or project could have a significant effect on a site designated for its European nature conservation interests and that the plan or project is not directly connected with the site, such sites are protected by the duties placed on Competent Authorities to make an Appropriate Assessment of the implications for the site in view of the site's conservation objectives. In general terms the competent authority should agree to the plan or project only after having ascertained that it would not affect the integrity<sup>3</sup> of the site.

The following appraisal has been prepared for the Competent Authority (in this case the Scottish Ministers) to assist with the Appropriate Assessment of the above proposals. The framework is based on that provided in the European

<sup>1</sup> Transport Scotland is the national transport agency for Scotland. Its purpose is to help deliver the Scottish Government's vision for transport

<sup>2</sup> Special Areas of Conservation (SACs) are strictly protected sites designated under the Habitats and Species Directive (92/43/EEC). Article 3 of the Habitats Directive requires the establishment of a European network of important high-quality conservation sites that will make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive (as amended). The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds). Of the Annex I habitat types, 78 are believed to occur in the UK. Of the Annex II species, 43 are native to, and normally resident in, the UK ([www.jncc.gov.uk](http://www.jncc.gov.uk))

<sup>3</sup> The integrity of a site can be defined as the coherence of all its ecological structure, across its whole area, which enables it to sustain habitat, complex of habitats and/or populations for which it was classified

Commission's guidance document "Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC".

**Table 1: Appropriate Assessment Appraisal Table**

<b>Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)</b>		
<b>Introduction</b>		
1	Brief Description of the Project	<p>Transport Scotland<sup>4</sup> is proposing to bypass the village of Crianlarich with a western bypass which would leave the A82 near the southern edge of the town and rejoin the A82 immediately west of the village (see Figure 1). The entire A82 Tarbet to Fort William route is acknowledged by road users to have difficult operating conditions in particular areas and at certain times. In 2003 the A82 RAP Study<sup>5</sup> was undertaken and the findings published in 2006. Crianlarich was identified as a key operational problem area due to:</p> <ul style="list-style-type: none"> <li>• queuing at the Glen Falloch Road/Callander Road junction;</li> <li>• delays due to the two constrained railway bridges; and</li> <li>• a higher than average accident rate although the majority of accidents are minor</li> </ul> <p>The RAP recommended the provision of a western bypass of Crianlarich and in June 2006 Transport Scotland instructed Grontmij to proceed with its development</p> <p>The new off-line single carriageway road leaves the A82 at the southern end of Crianlarich and sweeps round on the west of the village to rejoin the A82 at the north west end of the village, just after Tyndrum Terrace. There would be two roundabouts; one at the southern end and one at northern end of the bypass. Key elements of the proposals include:</p> <ul style="list-style-type: none"> <li>• the carriageway;</li> <li>• junctions and ancillary works;</li> <li>• structures including culverts;</li> <li>• embankments and cuttings;</li> </ul>

<sup>4</sup> Transport Scotland is the national transport agency for Scotland. Its purpose is to help deliver the Scottish Government's vision for transport

<sup>5</sup> Scott Wilson, 2006. A82 Tarbet to Fort William Route Action Plan Study. Transport Scotland

Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)		
		<ul style="list-style-type: none"> <li>• safety fences;</li> <li>• drainage; and</li> <li>• signing and lighting</li> </ul> <p>No works would be carried out within the boundaries of the River Tay SAC and no construction access would be required through it. The route of the proposed bypass would however cross eight burns which drain to the River Fillan and it is proposed that the road drainage would also drain to the river via detention ponds or swales</p> <p>It has been assumed that <b>construction</b> would include:</p> <ul style="list-style-type: none"> <li>• fencing the site boundary (it has been assumed that all construction activities would be carried out in the corridor within the boundary of the land to be acquired for the permanent and temporary works. If the contractor chose to use additional areas of land outwith the land made available for construction for the construction compound, temporary storage etc the contractor would be required to make all necessary arrangements including obtaining necessary permissions and licences);</li> <li>• establishing a site compound which would probably be located at the southern end of the scheme to allow access from the A82;</li> <li>• access to the works primarily via the site accesses off the existing A82 trunk road. Local roads which construction traffic would be restricted from would be agreed with Stirling Council and listed in the contract;</li> <li>• removal of existing vegetation and peat from the road corridor;</li> <li>• establishing a haul route through the site;</li> <li>• construction of site cut-off ditches to control drainage;</li> <li>• taking excess materials off site and bringing required materials to site;</li> <li>• establishing detention basins (with underdrains) to control run-off during construction and drainage from the bypass once operational;</li> <li>• construction of the bypass offline apart from two areas of online construction:                         <ul style="list-style-type: none"> <li>○ the approach roads linking the south roundabout with the Glen Falloch Road; and</li> <li>○ the approach roads linking the north roundabout with the Tyndrum Road and access to The</li> </ul> </li> </ul>

Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)		
		<p>Shielding;</p> <ul style="list-style-type: none"> <li>potential rock chipping at the northern end of the scheme where rock cuts may be required; and</li> <li>completing the earthworks and final landform for the scheme</li> </ul> <p><b>Operation</b></p> <p>The annual average daily traffic (AADT) on the new bypass once operational is predicted to be 2,700 vehicles per day, two way. This compares with 3000 vehicles on the current road</p>
2	Brief Description of the Natura 2000 Site	<p>The River Fillan (see Figure 2) is some 0.2km to the north of the proposed works and is part of the River Tay Special Area of Conservation (SAC). The River Tay SAC covers an area of 9498ha and is designated for:</p> <ul style="list-style-type: none"> <li><b>Habitat<sup>6</sup>:</b> oligotrophic<sup>7</sup> to mesotrophic<sup>8</sup> standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i></li> <li><b>Species<sup>9</sup>:</b> <ul style="list-style-type: none"> <li>Atlantic salmon (<i>Salmo salar</i>)</li> <li>Otter (<i>Lutra lutra</i>)</li> <li>River lamprey (<i>Lampetra fluviatilis</i>)</li> <li>Brook lamprey (<i>Lampreta planeri</i>)</li> <li>Sea lamprey (<i>Petromyzon marinus</i>)</li> </ul> </li> </ul>
3	Conservation Objectives for the River Tay SAC	<p><b>Habitat Conservation Objectives:</b> To avoid deterioration of the qualifying habitat (listed below) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to</p>

<sup>6</sup> Habitats present that are listed in Annex I of the Habitats and Species Directive (92/43/EEC)

<sup>7</sup> Containing little nutrient material

<sup>8</sup> Containing medium levels of nutrients

<sup>9</sup> Species present that are listed in Annex II of the Habitats and Species Directive (92/43/EEC)



<b>Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)</b>		
		<p>achieving favourable conservation status for each of the qualifying features; and</p> <p>To ensure for the qualifying habitat that the following are maintained in the long term:</p> <ul style="list-style-type: none"> <li>• Extent of the habitat on site</li> <li>• Distribution of the habitat within site</li> <li>• Structure and function of the habitat</li> <li>• Processes supporting the habitat</li> <li>• Distribution of typical species of the habitat</li> <li>• Viability of typical species as components of the habitat</li> <li>• No significant disturbance of typical species of the habitat</li> </ul> <p><b>Species Conservation Objectives:</b> To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and to ensure for the qualifying species that the following are maintained in the long term:</p> <ul style="list-style-type: none"> <li>• Population of the species, including range of genetic types for salmon, as a viable component of the site</li> <li>• Distribution of the species within site</li> <li>• Distribution and extent of habitats supporting the species</li> <li>• Structure, function and supporting processes of habitats supporting the species</li> <li>• No significant disturbance of the species</li> </ul>
<b>Assessment</b>		
4	Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site	<p>The following individual elements of the project have the potential to give rise to impacts on the Natura 2000 site:</p> <ul style="list-style-type: none"> <li>• the risk of soil erosion and pollution from oils etc during and after the construction stage;</li> <li>• the use of machinery and vehicles, and activities of people, would cause some disturbance, noise and vibration in the surrounding area;</li> </ul>

Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)		
		<ul style="list-style-type: none"> <li>• the input of sediment and nutrient into watercourses may occur during construction and operation;</li> <li>• changes to surface water morphology through realignment, culverting etc of watercourses and alterations to the beds of watercourses and drains could have implications to the River Fillan;</li> <li>• changes to drainage characteristics, aquatic habitats and hydrology in the locality of the site through physical works;</li> <li>• changes to the hydrogeology/hydrology of the area through physical works;</li> <li>• impacts on groundwater;</li> <li>• impacts to existing discharges;</li> <li>• the potential for the scheme to affect flooding in the area;</li> <li>• discharge of construction drainage potentially contaminated with sediments or materials used on site (fuels, lubricants, hydraulic fluids, cement etc);</li> <li>• impacts from dust deposition in existing water features;</li> <li>• impacts from discharge of sewage and effluent from the site compound facilities;</li> <li>• pollution from accidental spillages or discharges of fuels, oils, chemicals etc;</li> <li>• pollution from waste materials, dust etc from handling contaminated land on-site;</li> <li>• pollution of watercourses and groundwater from road run-off (fuel, oil, metals from vehicle wear and tear, rubber, de-icing etc);</li> <li>• impacts from spills of fuel as a result of accident;</li> <li>• release of polluted materials from maintenance activities such as cleaning gully pots; herbicides used to control plant growth on verges or the central reserves and;</li> <li>• biological effects from pollution incidents</li> </ul>
5	<p>Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of:</p> <ul style="list-style-type: none"> <li>• size and scale;</li> <li>• land-take;</li> <li>• distance from the Natura 2000</li> </ul>	<ul style="list-style-type: none"> <li>• There would be no direct impact on any of the Annex I qualifying habitats of the River Tay SAC</li> <li>• There is potential for polluted run-off (e.g. oil spills from machinery, increased sediment etc) from construction works entering burns close to the site and indirectly impacting on the River Fillan. The closest works would be some 0.2km from the River Tay</li> <li>• The contractor would be required to comply with all mitigation set out in the ES and in the contract documents and to prepare detailed Method Statements demonstrating how water quality in the river would be maintained during construction. The contractor would be required to discuss and agree these Method Statements with SNH and SEPA in advance of construction beginning. Measures could include early construction of cut-off ditches and detention ponds to control run-off</li> </ul>

Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)		
	<p>site or key features of the site;</p> <ul style="list-style-type: none"> <li>• resource requirements (water abstraction etc);</li> <li>• emissions (disposal to land, water or air);</li> <li>• excavation requirements;</li> <li>• transportation requirements;</li> <li>• duration of construction, operation, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• The contractor would be required to ensure that all materials were stored to ensure the risk of sediment enriched run-off to the burns would be controlled. All works would be undertaken in accordance with recognised best practice and the success of these measures would be audited on site. Any increased sedimentation in any watercourse would be localised, temporary and likely to be small and similar to localised events which could occur during heavy rainfall and storms</li> <li>• Refuelling of machinery would only be undertaken in designated fuel stations or in the contractor's compound which would be distant from the burns draining into the European site</li> <li>• No water abstraction from the burns would be permitted and the contractor would be required to bring all water needed for activities on site to site</li> <li>• All drainage from the road once operational would pass through filter drains and one of two unlined detention basins or a filter trench (with underdrains) before discharge to the burns draining to the River Fillan. The detention basins (with underdrains) would offer secondary and tertiary levels of treatment and hold the designed treatment volume for 24 hours allowing treatment of the run-off by settling sediment out etc. The basins and the filter trench have been designed to accommodate peak flow times and accidental spillages</li> <li>• Shut-off valves would be provided in order to control any potential oil spills to ensure that the watercourses into which the basins would discharge were protected in the event of an accident on the new road</li> </ul>
6	<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> <li>• reduction of habitat area;</li> <li>• disturbance to key species;</li> <li>• habitat or species fragmentation;</li> <li>• reduction in species density;</li> <li>• changes in key indicators of conservation value (water quality etc.);</li> <li>• climate change</li> </ul>	<ul style="list-style-type: none"> <li>• There would be no direct impacts on the designated site</li> <li>• Implementation of all committed mitigation would ensure that sediment pollution risk was controlled and that the water quality of the SAC was protected</li> <li>• There would be no significant disturbance to the Annex II species for which the river is designated because construction is 0.2km from the river and there is a road and houses in between which would provide some protection from noise etc during construction. Once operational it would not be dissimilar to the current situation</li> <li>• Water discharged to burns draining to the river during construction and operation would be controlled by passing through the detention basins and would therefore not significantly affect the current discharges into the river</li> <li>• Water draining from the hills above the bypass would be carried under the new road by means of culverts</li> <li>• All new culverts would include ledges designed in accordance with best practice to facilitate animal</li> </ul>

<b>Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)</b>		
		<p>passage including otter</p> <ul style="list-style-type: none"> <li>The inclusion of cut off valves in the detention basins ensure that water quality in the River Fillan was maintained if an accident were to occur</li> </ul>
7	<p>Describe any likely impacts on the Natura 2000 site as a whole in terms of:</p> <ul style="list-style-type: none"> <li>interference with the key relationships that define the structure of the site;</li> <li>interference with key relationships that define the function of the site</li> </ul>	<ul style="list-style-type: none"> <li>The required construction works would not interfere with any of the key relationships that define the structure or function of the site provided all committed mitigation measures were successfully delivered</li> <li>The success of delivery would be audited during construction</li> <li>Once operational the situation would not be significantly different from the current situation although the risk of accidents would be reduced because of the improved standard of road which the bypass would provide</li> </ul>
8	<p>Provide indicators of significance as a result of the identification of effects set out above in terms of:</p> <ul style="list-style-type: none"> <li>loss</li> <li>fragmentation</li> <li>disruption</li> <li>disturbance</li> <li>change to key elements of the site (e.g. water quality etc.)</li> </ul>	<ul style="list-style-type: none"> <li>It is considered very unlikely that there would be any effects on the European site as a result of construction or operation of the scheme</li> <li>Implementation of mitigation and location of the main construction works distant from the River Fillan mean that it is unlikely that water quality could be affected in the burns draining into the river</li> <li>The contractor would be required to identify emergency procedures which would be implemented immediately in case of accident to protect the water quality of the burns draining into the river and the River Fillan itself</li> <li>The contractor would be required to check run-off from the works each day and implement protective measures to control any polluted run-off and to ensure that all sediment was controlled</li> </ul>
9	<p>Describe from the above those elements of the project where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known</p>	<ul style="list-style-type: none"> <li>No significant direct or indirect effects on the European site are predicted as a result of construction or operation of the bypass</li> </ul>
<b>Appraisal of Impacts on Site Integrity</b>		
10	<p>Elements of project likely to give</p>	<ul style="list-style-type: none"> <li>It is considered unlikely that construction works could give rise to significant effects on the River Tay SAC, its conservation objectives or its qualifying features, provided all agreed mitigation was</li> </ul>

<b>Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)</b>		
	rise to significant effects on the site	<p>SAC, its conservation objectives or its qualifying features provided all agreed mitigation was successfully implemented</p> <ul style="list-style-type: none"> <li>• Any slight risk of impacts occurring is manageable on the site and the actual risk of significant effects is considered negligible</li> <li>• Once the bypass is operational it is not considered that there would be higher risks to the river than at present and the provision of SUDS measures and ledges for animals under the new road would provide some additional benefits</li> </ul>
11	Describe how the project will affect key habitats and key species  (Acknowledge uncertainties and any gaps in information)	<ul style="list-style-type: none"> <li>• There would be no loss of habitats from the site and no significant disturbance or effects on the associated species</li> </ul>
12	Describe how the integrity of the site (determined by structure and function and conservation objectives) is likely to be affected by the project (e.g. loss of habitat, disturbance, disruption, chemical changes, hydrological changes and geological changes, etc.).  (Acknowledge uncertainties and any gaps in information)	<ul style="list-style-type: none"> <li>• There would be no loss of habitat within the SAC boundary, and no significant effects on any other qualifying interests and therefore no loss of site integrity, function or structure</li> <li>• Temporary or permanent changes to the key elements of the site are considered extremely unlikely and carry a negligible risk of occurrence</li> <li>• The proposed scheme would not affect the ability of the site to sustain current habitats or species</li> </ul>
13	Describe what mitigation measures are to be introduced to avoid or reduce the adverse effects on the integrity of the site. (Acknowledge uncertainties and any gaps in information)	<ul style="list-style-type: none"> <li>• Noise limits for construction agreed with Stirling Council would be set out in the contract and required to be implemented by the contractor</li> <li>• The contractor would be required to produce and implement an Environmental Management System (EMS) for the construction and maintenance period</li> <li>• The scheme drainage would include appropriate sustainable urban drainage system measures</li> <li>• Ledges to allow animal passage would be included in the new culverts</li> <li>• All cascades water features would be designed to be as natural as possible in character</li> <li>• Herring-bone drainage would be designed to sit underneath the topsoil layers of the cutting to minimise visual intrusion</li> <li>• Habitat loss would be restricted to that required for safe construction of the works</li> </ul>

<b>Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)</b>		
		<ul style="list-style-type: none"> <li>• New habitats created as part of the landscaping works for the scheme would be designed to enhance the biodiversity of the road corridor</li> <li>• The new basins created as part of the site drainage would be designed to benefit nature conservation and new planting at their edge would be designed to enhance local biodiversity</li> <li>• Culverts would be designed for wildlife in accordance with best practice</li> <li>• The site would be checked for the presence of protected species prior to construction work beginning and appropriate mitigation measures would be discussed and agreed with SNH and implemented if any new activity was identified before or during construction</li> <li>• Specific measures to protect otters (fencing, culverts with ledges etc) have been identified and these would be included in the contract requirements. The detailed location would be finalised when the final scheme is defined with input from an appropriate expert</li> <li>• All tunnels and culverts would be checked regularly when the scheme was operational by Transport Scotland's maintenance contractor to ensure fencing was in good condition and that no culverts or tunnels were blocked</li> <li>• Any surface water features affected by the proposals would be made good unless destroyed by construction of the scheme</li> <li>• Best site management practices would be implemented on site to minimise the risk of intrusion into adjacent habitats and the risk of pollution incidents which could affect neighbouring habitats</li> <li>• Method statements would be drawn up by the contractor and those for activities which could affect the freshwater/marine environment would be agreed with SEPA to ensure all necessary pollution prevention measures were included within them</li> <li>• The contractor would be required to give all site staff and sub-contractors a toolbox talk highlighting the importance of the River Fillan as part of the Tay SAC and reinforce the importance of the mitigation measures that should be implemented to prevent any significant impact on the river.</li> <li>• The contractors would follow best practice including the relevant SEPA pollution prevention guidelines (see <a href="http://www.sepa.org.uk">www.sepa.org.uk</a>)</li> <li>• Detailed contingency plans would be developed by the contractors for implementation in case of spillage during construction</li> <li>• Wooden ramps (or similar) would be placed in any excavations during construction with potential to trap animals to allow easy escape. Open trenches would be checked each day for entrapments</li> <li>• Surface road run-off from the A82 would pass through sustainable urban drainage systems (SUDS) prior to discharge to a local watercourse</li> </ul>

<b>Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)</b>		
		<ul style="list-style-type: none"> <li>• Existing watercourses would be culverted under the bypass at their current location. The drainage pattern would not be altered</li> <li>• Where peat deposits are to be excavated, pumping of inflowing groundwater to settlement lagoons would be implemented if required</li> <li>• All fuel and other chemicals would be stored in accordance with best management practice within the site compounds. All oil and fuel storage facilities and small static plant would be well managed to minimise the risks of leaks to soil and groundwater</li> <li>• Plant and vehicles used for the construction works would be maintained on impermeable surfaces to contain oil spills</li> <li>• All earth bunds and soil storage areas would be well managed to minimise run-off and erosion</li> <li>• Any contaminated ground that is encountered would be dealt with according to best practice and contained in the works or disposed of following best practice to a suitably licensed disposal facility</li> <li>• The contractor would be required to design the detailed drainage system in accordance with the DMRB, SEPA<sup>10</sup>, CIRIA<sup>11</sup> and other best practice guidance and to meet all requirements of CAR</li> <li>• All detailed drainage proposals would be discussed and agreed with SEPA. Method statements for works in proximity to or on all burns would also be discussed with SNH because of the importance of the River Fillan as part of a site designated for its European importance</li> <li>• The detailed design would include appropriate SUDS measures including filter drains, detention basins (with underdrains) and a filter trench</li> <li>• All detailed drainage measures would be designed to benefit nature conservation where this is practical and feasible taking account of the future maintenance requirements. The contractor would be required to follow best practice guidance</li> <li>• The filter trench would be infilled with suitable material and covered with geotextile and a layer of topsoil.</li> <li>• All existing crossed watercourses would be culverted at their current location to maintain the existing flow path. Culverts would be provided under the road and would be of adequate size for predicted flows and to minimise the risk of blockage</li> <li>• All surface water drainage from the new road works would pass through detention basins (with underdrains) before being discharged to watercourses (providing balancing and pollution benefits)</li> </ul>

<sup>10</sup> Current list of relevant guidance available at: SEPA website [www.sepa.org.uk](http://www.sepa.org.uk)

<sup>11</sup> CIRIA, Control of Water Pollution from Linear Construction Projects, Technical guidance (C648)

<b>Appraisal of the Implications of the Proposed Pre-construction Supplementary Ground Investigation on the River Tay Special Area of Conservation (SAC)</b>		
		<ul style="list-style-type: none"> <li>• The contractor would be required to identify and implement measures to prevent any sediment rich or polluted run-off or contaminated groundwater produced by the works, entering and polluting the local drainage system and water courses, and to adopt all specific measures identified in the contract requirements</li> <li>• The contractor would be required to develop contingency plans, emergency procedures and joint response plans which would be implemented in the case of accidental spillages during construction. These would be developed in compliance with all best practice guidance and would include a drainage catchment plan detailing the drainage system. This would be made available by the contractor to emergency services to aid in the event of a major spill</li> <li>• During operation of the road, the maintenance contractors would be required to comply with current SEPA guidance and specifications to avoid the risk of pollution</li> <li>• All SUDS measures would be maintained by Transport Scotland contractors during the life of the road scheme</li> </ul>
<b>Findings from Consultation</b>		
14	Name of agency consulted Scottish Natural Heritage	Scottish Natural Heritage (SNH) confirmed in its consultation response dated 24 <sup>th</sup> November 2006 that Appropriate Assessment would be required for the scheme and information should be provided within the ES to inform the Appropriate Assessment



## 2 CONCLUSION

### *The SAC*

The River Tay (SAC), of which the River Fillan is part, is designated for its nature conservation interests including freshwater habitats and fish populations (Atlantic Salmon *Salmo salar*, River lamprey *Lampetra fluviatilis*, Brook lamprey *Lampetra planer* and Sea lamprey *Petromyzon marinus*). No direct access to the River Tay SAC would be required for works. There is however some potential for additional run-off from the works entering watercourses which flow to the Fillan and impacting upon the site.

### *Potential Threats*

The principal threats to the SAC from construction and operation of the bypass are:

- sediment run-off;
- change in the hydrogeology of the area;
- pollution incidents and;
- culverting of watercourses that feed into the River Fillan.

### *Mitigation*

In order to mitigate the potential treats to the SAC, a number of measures have been outlined within the Environmental Statement that refer to the design of the bypass, its drainage, its construction and the activities of personnel on site.

These measures will be accompanied by an overall design which accords with best practice and all relevant pollution prevention legislation.

The importance of the River Tay SAC would be described to all working on site and the importance of protecting the river from pollution stressed. The contractor would be required to comply with all mitigation set out in the Environmental Statement and submit Method Statements. These would include detailed contingency plans for implementation in case of spillage during the works. Method Statements, once approved, would be consulted on with SEPA and SNH.

These measures would ensure the European site is protected and the site's integrity would not be adversely affected.