# 15 Schedule of Environmental Commitments

## 15.1 Introduction

This chapter provides a summary of the environmental commitments that have been described in each environmental topic chapter, which will need to be part of the scheme implementation.

Table 21.1 below reports the specific mitigation commitments outlined in each environmental topic chapter.

**Table 15.1** Schedule of Environmental Commitments (continued over)

| Mitigation Item no. | Approximate location | Mitigation Objective and Commitment | Potential Mitigation Measure | Potential Timing of Mitigation Measure | Potential Monitoring Requirements | Potential Additional Consultation Required |
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| **Policies and Plans (Chapter 5)** | | | | | | |
| N/A | | | | | | |
| **Landscape and Visual (Chapter 6)** | | | | | | |
| LV1 | Pulpit Rock | Breaking up and planting the existing road bed which will be disused when the viaduct is built to soften the appearance of the scheme and compensate for loss of trees. | Native tree planting and re-use of soils where possible | Detailed Design/ During Construction | Post Construction | Loch Lomond and Trossachs National Park Authority |
| LV2 | Pulpit Rock | Retention of existing trees and vegetation wherever possible and incorporation with new planting proposals | Retention of existing trees and replanting with native species | Pre-construction/ During construction | Post Construction | Loch Lomond and Trossachs National Park Authority |
| LV3 | Pulpit Rock | Enhancement of biodiversity through use of predominately native species, providing new wildlife habitats and complementing existing adjacent habitats. Replanting with native species | Replanting with native species | Detailed Design/ During Construction | Post Construction | Loch Lomond and Trossachs National Park Authority |
| LV4 | Pulpit Rock | For all disturbed areas, road verges and rock slopes, native grass seeding is proposed with an acidic upland plant community mix of local provenance. | Seeding with native species of local provenance. | Detailed Design/ During Construction | Post Construction | None |
| LV5 | Pulpit Rock | Construction compounds should be landscaped following completion of the works. | Remediation planting for construction compounds | During Construction (towards the end of construction) | Post Construction | None |
| LV6 | Pulpit Rock | Implementation of the landscape design proposal, including mitigation planting, shown in Figure 6.6 – Scheme Landscape Design | Replanting, grass seeding and hydro-seeding of rock promontory | During Construction | Post Construction | Loch Lomond and Trossachs National Park Authority |
| LV7 | Pulpit Rock | Adherence to Viaduct Design Structure in | Detailed design to incorporate minimum design requirements | Detailed Design/ During | Post Construction | Loch Lomond and Trossachs |

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| | | Appendix 2 which sets out minimum design requirements. | | Construction | | National Park Authority |
| LV8 | Pulpit Rock | Continued landscape architect input into the design of the treatment of the rock face during construction. Hydro-seeding is the proposed method for treating the exposed rock faces and slopes. Appropriate measures should also be taken to achieve rock cuts which reflect the natural strata and the existing rugged terrain, providing ledges, niches and benches to promote reestablishment of vegetation by natural regeneration. | Hydro-seeding of rock face/promontory and rock cutting to reflect natural strata. | During construction | Post Construction | Loch Lomond and Trossachs National Park Authority |
| LV9 | Pulpit Rock | Formation of drainage swale and grasscrete maintenance track | Seeding with native species of local provenance. | Detailed Design/ During Construction | Post Construction | Loch Lomond and Trossachs National Park Authority |
| LV10 | Pulpit Rock | Adherence to Viaduct Design Structure in Appendix 2, which has been informed by detailed input from specialists aesthetic advisors, aesthetic and design team workshops. Adherence to all other landscape mitigation measures to minimise impacts on views. | Detailed design to incorporate minimum design requirements and adherence of landscape proposals | Detailed Design/ During Construction | Post Construction | None |
| **Land-use (Chapter 7)** | | | | | | |
| LU1 | Sheep Creep under railway | Maintain access where possible | Contractor to ensure where possible that access is maintained | Detailed Design/ During Construction | During construction | Landowner |
| LU2 | Unknown – works compound | Minimise land take as far as possible | In preparing detailed design land take should be minimised as far as possible. | Detailed Design/ During Construction | N/A | Loch Lomond and Trossachs National Park Authority |
| LU3 | North of scheme – rough grazing land | Minimise land take as far as possible | In preparing detailed design land take should be minimised as far as possible. | Detailed Design/ During Construction | N/A | None |
| LU4 | On all sides of the scheme footprint | Minimise woodland land-take | In preparing detailed design woodland land take should be | Detailed Design/ During | N/A | None |

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| | | | minimised as far as possible. | Construction | | |
| **Cultural Heritage (Chapter 8)** | | | | | | |
| CH1 | Pulpit Rock Scheduled Monument | Avoid impact to the monument | The scheduled area must be avoided. Historic Scotland may require the site to be protected by fencing during construction work. The course and nature of that fencing will need to be agreed with Historic Scotland. | During construction | None | Historic Scotland |
| CH2 | Effect on Tarbet to Crianlarich Military Road | Avoid impact to the monument | The road must be avoided. West of Scotland Archaeology Service (WoSAS) may require the site to be protected by fencing during construction work. The course and nature of that fencing will need to be agreed with them. | During construction | None | WoSAS |
| CH3 | Unknown archaeology (e.g. previously unidentified remains) | Appropriate archaeological mitigation measures to be adopted to ensure preservation by record of any remains that are present | Appropriate archaeological mitigation (e.g. watching brief, excavation) to be agreed with WoSAS. | During construction | None | WoSAS |
| **Ecology and Nature Conservation (Chapter 9)** | | | | | | |
| ECOL1 | Atlantic / Western Oak Wood | Minimise and off-set loss of habitat | Ecological Clerk of Works to be retained throughout the construction period, minimise habitat loss, minimise intervention with woodland and edge habitat, retaining mature trees where possible; site staff made aware of location of sensitive habitats; and fencing and signage of sensitive habitats; landscape planting will be mixes of native species; translocation of sections of tree trunk and/or rocks supporting diverse epiphytic communities. | During Construction | None | SNH |
| ECOL2 | Watercourses | Significantly reduce pollution risk to site during construction. | Appropriate pollution prevention controls including SUDS, including | During construction | Monitoring change in water | SNH |

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| | | | a bypass type fuel/oil interceptor providing primary treatment for the flows in advance of discharge to a watercourse. | | quality and success of SUDS systems/fuel interceptors in eliminating pollutants. | |
| ECOL3 | Loch Lomond | Significantly reduce pollution risk during construction. | An ecological clerk of works will be retained throughout the construction period; working areas will be clearly defined; litter management, stockpiles of earth will not be kept near stream channels; earth stockpiles will be covered; on site storage of chemical, fuel or construction materials shall be limited; fuel or chemical stores will be secure from vandalism and appropriately bunded to at least 110% capacity; all potentially polluting liquids and solids associated with vehicles, equipment and machinery need to be identified to site staff; pollution contingency plans will be developed; CIRIA Guide to Good Practice Report SP156 and Water Environment (Controlled Activities)(Scotland) Regs 2005 will be referred to; contractor shall not wash tools and equipment in any watercourse; mobile bunding or material for bund construction will be available should an emergency barrier need to be constructed to prevent material leakage from a works site into a watercourse; absorbent substrate or spill kits will be available to soak up spillages and leaks. SUDS will be used. | During construction and operation | Monitoring change in water quality and success of SUDS systems/fuel interceptors in eliminating pollutants. | SNH |

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| ECOL4 | Bryophytes / epiphytes | Translocate sections of tree trunk/major limbs/rocks supporting flora | Ecological Clerk of Works to be retained throughout the construction period who will advise on which habitat features support scarce filmy fern and ensure features are translocated to a suitable location | During construction | Regular checks (monthly) to ascertain any re-growth. | SNH |
| ECOL5 | Non native invasive species (Japanese knotweed) | Manage Japanese knotweed on site. | Ecological Clerk of Works to be retained throughout the construction period; Japanese Knotweed Method Statement to be implemented; spraying and digging out Japanese knotweed rhizomes; and disposal of plant material in licensed landfill. | During construction | Regular checks (monthly) to ascertain any re-growth. | SNH |
| ECOL6 | Bats | Avoid killing or injuring bats<br>Minimise disturbance to and loss of roost sites<br>Minimise loss of foraging habitat<br>Minimise disturbance from artificial light spill over loch shore and into nearby woodlands | Pre-construction survey and obtain EPS mitigation licence<br>Install specified bat boxes on trees and on viaduct piers<br>Replanting of trees<br>Fit cowls to artificial lights and orientate to specific area to be illuminated | Pre construction | Monitor mitigation as required under terms of EPS licence or monitor bat boxes for use post construction | SNH/ Scottish Government |
| ECOL7 | Otter | Avoid killing, injuring or disturbing otters<br>Install artificial holts<br>Minimise loss/disturbance of habitat and minimise road mortality.<br>Install otter friendly culverts at minor watercourses crossing<br>Avoid light spill over loch shore | Pre-construction survey of cave system and obtain EPS mitigation licence | Pre construction | Monitor mitigation as required under terms of EPS | SNH/ Scottish Government |
| ECOL8 | Breeding birds | Minimise loss of habitat.<br>Avoid disturbance to breeding birds by undertaking clearance outwith breeding season.<br>Replant trees<br>Install specified nest boxes in appropriate locations | Ecological Clerk of Works to be retained throughout the construction period who will advise on which issues affecting breeding birds.<br>Install specified bird boxes on trees | Pre construction | Monitor any removal of vegetation if undertaken in breeding bird season | SNH |

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| ECOL9a | Fish and fisheries | Minimise impacts to fish by avoiding water pollution | Application of SEPA CAR licence terms and PPG best practice and containment of in-loch sediment. | During construction | Monitoring change in water quality and success of SUDS systems/fuel interceptors in eliminating pollutants. | SNH/ Loch Lomond Fisheries |
| ECOL9b | Fish and fisheries | Pre construction survey of importance of minor watercourse for salmonids | Ensure watercourses are not obstructed to enable continued passage by fish | Installation of new culverts avoiding autumn months | | SNH/ Loch Lomond Fisheries |
| ECOL10 | All habitat in off line sections including waterbodies | Minimise disturbance and loss of habitat | Ecological Clerk of Works will be retained through out the construction period; storage and construction compounds to be located in areas agreed by ECoW; observance of SEPA regulations; and landscape planting using species of local provenance | During Construction | None | SNH |
| **Pedestrians, Cyclists, Equestrians & Community Effects (Chapter 10)** | | | | | | |
| PCEC 1 | A82 at Pulpit Rock | Access to be maintained for all users by the temporary extension of the one-way traffic light controlled management system already in place on the A82 at Pulpit Rock. Appropriate advance warning signage should be installed to inform users of traffic management measures. | Temporary extension of the one-way traffic light controlled management system already in place on the A82 at Pulpit Rock | During Construction | None | None |
| PCEC 2 | Tarbet and Tyndrum/Crianlarich | Provision of advance signage information (e.g. signs at Tarbet and Crainlarich) warning receptors of temporary suspension of “through access” on the A82 at Pulpit Rock. Provision of advance signage information of the primary diversionary route from Tarbet to Crianlarich via Inveraray (and vice-versa) - using the A83/A819/A85 (and vice-versa). This mitigation should include signs at Tarbet and Crianlarich/, | Provision of advance signage information (e.g. at Tarbet and Tyndrum/Crianlarich) warning of the temporary full road closure of the A82 at Pulpit Rock | During Construction (in advance of full closure road period) | None | None |

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| | | radio station traffic bulletin updates and information displays on Traffic Scotland signs in the wider central Scotland road network). | | | | |
| PCEC 3 | General | A strategy should be prepared in liaison with the emergency service providers to ensure that service is maintained through the full closure construction period. | Consultation with Emergency Service Providers to prepare strategy acceptable to all parties | Prior to construction | Unknown | Emergency Service Providers |
| PCEC 4 | A82 at Pulpit Rock | Scheduled Bus Services - Discussions to be held between Transport Scotland and Scottish Citylink to identify options for temporary amendments to affected scheduled services (914/915/916). Options could include temporary suspension of these services during the full road closure period or temporary diversion of the affected services between between Tarbet and Crianlarich via Inveraray (and vice-versa) - using the A83/A819/A85 (and vice-versa).<br>Tour Bus Services - Discussions to be held between Transport Scotland and Tour Bus operators currently using the A82 between Tarbet and Crianlarich to provide advance warning of temporary severance of "through access" and the need to make route diversions during this period. | Consultation with Bus Service Providers | Prior to construction | None | Bus Service Providers |

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| PCEC 5 | Ardlui and Inversnaid Hotel | Discussions to be held between Transport Scotland/ Contractor and the seasonal ferry service operators (the Ardlui Hotel and the Inversnaid Hotel) to consider options for temporary amendments to the affected services in order to maintain the ferry links e.g.:-<br>Explore possibility of a temporary "circular" ferry service linking Inveruglas/Inversnaid/Ardleish/Ardlui (and vice-versa) to avoid temporary severance of public access to the baseline ferry services during the full A82 Pulpit Rock road closure period. | Consultation with seasonal ferry service operators | Prior to construction | None | Ferry service operators |
| PCEC 6 | A82 at Pulpit Rock | During the scheme construction period implement a temporary "exclusion zone" for leisure craft (on health & safety grounds) around the works extending into Loch Lomond. | Provision of exclusion zone | During Construction | None | None |
| PCEC 7 | A82 at Pulpit Rock | Appropriate signage should be installed for Pedestrians, Cyclists and Vehicle Drivers if in the future non-motorised provision is provided north and south of the scheme. Signage should providing advance warning of new off-road facility provision. No signage to be provided until such time as non-motorised provision is provided north and south of the scheme | Provision of Signage | Post construction | None | None |
| PCEC 8 | N/A | N/A | N/A | N/A | N/A | N/A |
| **Water Quality and Drainage (Chapter 11)** | | | | | | |
| WQD1 | Loch Lomond, Watercourses 1 – 3 & Drainage Paths 1 - 4 | The Contractor shall produce a Site Management Plan (SMP), which will describe the specific procedures to be put in place to control sediment mobilisation, surface water discharges, and spillages. The SMP shall be discussed and agreed with SEPA prior to commencement of site works, and all staff on site shall be briefed on and trained in the | Site Management Plan & obtain CAR licence | Prior to & During Construction | The SMP shall identify a clear monitoring regime to confirm the application of the above mitigation | SEPA |

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| | | procedures contained within the SMP. The SMP shall incorporate best practice guidance as detailed in PPG's published by SEPA and CIRIA Reports C532 & C648, as a minimum. In particular, the following measures shall be adopted on site: -<br>▪ CAR Licences shall be obtained prior to start on site (note this is a separate consenting regime from the approval of the planning application) for work in the loch and the Watercourses, and these shall be displayed prominently on a notice board in the site offices,<br>▪ Identify and clearly sign all surface water features during site set up and brief personnel on their location during induction,<br>▪ Site compound and site access routes shall be clearly defined during site set up with the minimum number of watercourse crossing points clearly defined. Formal watercourse crossings shall consist of a piped culvert and vehicle access over the top,<br>▪ The Contractor shall provide bunds around all fuel, oil, and other chemical stores, and shall centralise and minimise the number of these stores,<br>▪ A formal wheel wash and concrete wash out area shall be set up on site and this shall drain to a lined sump with the surface water either treated on site or disposed of to a licensed facility off site,<br>▪ Overburden shall be stripped in sections and shall be the minimum area required for that phase of the works,<br>▪ Stripped areas and stockpiles shall have silt fences placed so as to intercept the surface water run off from these areas,<br>▪ The Contractor shall give consideration to creating the sustainable drainage system | | | requirements. It is anticipated that the Contractor's site management personnel would be made responsible for monitoring and in practice many of the measures could be monitored based on a daily or weekly inspection of the site and the completion of a "mitigation requirements" tick sheet. These tick sheets would then be retained as auditable evidence of the monitoring of the mitigation requirements. | |

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| | | infrastructure at the outset of construction work, and this could then be used to treat some of the construction stage site run off prior to discharge. If this is not done the Contractor shall provide some other form of treatment to the surface water run off from the site prior to it reaching the watercourses,<br>▪ Construction materials and other stockpiles shall be stored away from the surface water features (minimum 10m),<br>▪ Plant shall be stored and maintained away from surface water features,<br>▪ The Contractor shall instigate re-vegetation of stripped areas on a sectional basis as early as possible within the programme to reduce the potential for silt laden run off,<br>▪ Measures to minimise sediment disturbance, increased turbidity, and spread of spillages during works in the Loch shall be implemented to prevent a plume of sediment or other pollutant extending out into the loch. This may involve floating booms and a silt fence around the working area,<br>▪ Watercourse realignments and culvert extensions shall be undertaken prior to road widening | | | | |
| WQD2 | Surrounding land | ▪ The Contractor shall ensure that all culverts are inspected on a daily basis and shall keep all culverts clear of construction / non-construction debris for the entire duration of the construction period,<br>▪ The Contractor shall keep close control of permanent and temporary earthworks operations in the vicinity of Watercourses 1, 2, & 3 and Drainage Paths 1 – 4 to prevent any obstructions of the Watercourse / Drainage Path channels,<br>▪ The Contractor shall not store materials | Construction Method Statements & CAR licence | Prior to & During Construction | The Contractor's SEPA site management personnel will ultimately be responsible for monitoring the application of most of these mitigation requirements. Again it is | |

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| | | within or immediately adjacent to watercourse / drainage path channels,<br>▪ Where works in the watercourse / drainage path channels are required (i.e. for culvert extension / replacement), the Contractor will be required to provide temporary flow bypass facilities (e.g. temporary damming of the watercourses / drainage paths just upstream and the provision of pumps on a duty and stand by arrangement) with sufficient capacity to pass a 1:20yr flow or other such temporary requirement agreed with SEPA in the CAR Licensing process,<br>▪ All engineering works within the watercourses and drainage paths will need to be carried out in accordance with the Controlled Activities Regulations (i.e. a CAR Licence will be required),<br>▪ The timescale of such operations would need to be limited to prevent significant effects on the passage of flows (i.e. works to be undertaken during low flow periods only),<br>▪ All work within watercourses or drainage paths shall be undertaken in accordance with a detailed construction method statement to be produced by the Contractor and discussed and agreed with SEPA in advance of the works | | | suggested that the monitoring of the application of mitigation requirements is completed via regular inspections of the site and the completion of a tick sheet which summarises the mitigation measures in a readily useable for rapid assessment on site. | |
| WQD3 | Loch Lomond, Small Watercourses & Drainage Paths | Geomorphology<br>▪ Working areas on the loch shore and within the loch, and around and within the Watercourses & Drainage Paths shall be clearly set out prior to commencement of construction works, and these shall be the minimum areas required to safely complete the works,<br>▪ The Contractor shall not store materials within or immediately adjacent to watercourse / drainage path channels, | Site Management Plan<br>Construction Method Statements<br>Temporary Site Drainage Design<br>Pre Works Survey<br>CAR Licence<br>Reinstatement of Watercourses | Prior to & During Construction | Monitoring of the mitigation measures would be achieved via the Client's Agent inspecting the site during set up to supervise the working areas being set up and | SEPA |

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| | | ▪ Plant movements should be kept to a minimum on the loch shore and on the banks of the Watercourses / Drainage Paths,<br>▪ A survey to record the form and vegetation along the loch shore and the watercourse / drainage path channels shall be completed by an ecologist or a water engineering specialist covering the area predicted to be disturbed during the works. This information shall provide sufficient detail to allow the alignment, levels, and form of the shore and channels to be reinstated after the works,<br>▪ Reinstatement shall include re-vegetation with local plant species to stabilise the structure of the completed shore / banks,<br>▪ As noted above, all engineering works within the watercourses and drainage paths will need to be carried out in accordance with the Controlled Activities Regulations (i.e. a CAR Licence will be required)<br>Hydrology<br>▪ As noted above, the Contractor shall ensure that all culverts are inspected on a daily basis and shall keep all culverts clear of debris,<br>▪ As noted above, construction materials and other stockpiles shall be stored away from the surface water features (minimum 10m),<br>▪ As noted above, consideration shall be given to creating the sustainable drainage system infrastructure at the outset of construction work, as this could then be used to attenuate some of the construction stage site run off prior to discharge. If this is not done the Contractor shall provide an alternate means of controlling the surface water run off from the site to ensure the | | | ensure they are the minimum practical working areas, and also inspecting the site during the works to confirm the working areas, material storage areas, and reinstatement works are being undertaken satisfactorily. | |

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| | | culvert capacities are not exceeded,<br>▪ The Contractor shall apply for a temporary discharge licence under the Controlled Activity Regulations if required by SEPA for the works. | | | | |
| WQD4 | Groundwater | None required at this stage | None | N/A | None | - |
| WQD5 | Groundwater | As noted above, the Contractor shall produce a Site Management Plan (SMP), which will describe the specific procedures to be put in place to control site discharges and the potential for pollutant spillages. The SMP shall be discussed and agreed with SEPA prior to commencement of site works, and all staff on site shall be briefed on and trained in the procedures contained within the SMP. The SMP shall incorporate best practice guidance as detailed in PPG's published by SEPA and CIRIA Reports C532 & C648, as a minimum. In particular, the following measures shall be adopted on site in relation to mitigating the potential effects on groundwater quality: -<br>▪ The Contractor shall provide bunds around all fuel, oil, and other chemical stores, and shall centralise and minimise the number of these stores,<br>▪ The Contractor shall complete all servicing, fuelling, and storage of vehicles at construction compounds,<br>▪ The Contractor shall provide dedicated wash down areas for concrete and other delivery vehicles,<br>▪ The Contractor shall implement drainage control measures at the site to prevent areas of standing surface water that could become contaminated and leach into the shallow groundwater. Where collection of water at the site is unavoidable (e.g. within excavations), provision should be made for this water to be collected and passed | Site Management Plan | During Construction | As noted above, these are to be monitored by the Contractor's site personnel and the Client's Agent based on regular inspections using a tick sheet assessment. | SEPA |

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| | | through some form of treatment before discharge),<br>▪ The Contractor shall liaise with SEPA regarding any proposed discharge from the site in respect to the Controlled Activities Regulations. | | | | |
| WQD6 | Loch Lomond, Watercourses 1-3 & Drainage Path 4 | The new sections of road incorporate SUDS principles as far as practical, by providing a mixture of filter drains and a dry swale for the treatment of the road run off. These measures have been agreed with SEPA (refer to email dated 04/08/10 in Appendix B). In addition, it is noted that the proposed road alignment and profile has been designed to improve safety and hence reduce the risk of serious accidents and spillages from such accidents in the first place. | Drainage Design | Design Stage and During Operation | Design Review & During regular maintenance | SEPA |
| WQD7 | Loch Lomond, Watercourses 1-3 & Drainage Path 4 | Works to road infrastructure shall be completed under an approved method statement (approved by route manager within maintenance authority) and shall incorporate best practice measures (including the SEPA Pollution Prevention Guidelines, General Binding Rules, and CIRIA Reports C532 & C632) to reduce the risk of significant of major sediment disturbance and spillages of potential contaminants to the surrounding water resources features. | Method Statement | During Operation | Provisions for monitoring the application of the best practice measures would also need to be noted in the method statement, and in practice this will likely mean that the supervisor of the works will be responsible for ensuring the application of the best practice measures on site. | - |
| WQD8 | Surrounding land from development | The realigned channels and extended / replaced culverts shall be designed in accordance with the | Drainage Design | During Design | Design Review | SEPA |

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| | | guidance in CIRIA Report C689 in regard to hydraulic capacity. This would generally be the acceptance of a 1:200yr flow. However, given the rural nature of the area upstream of A82 at this location SEPA may accept design to a lower return period. The designers of the scheme shall confirm the design return period with SEPA for all the culverts. The storm flows shall be calculated for the watercourses / drainage features where works are proposed using FEH or similar accepted hydrological assessment methods.<br><br>The designers shall ensure that the rates of release of the surface water run off from the surface water drainage system are in accordance with the guidance provided in CIRIA Report C697 for acceptable rates of run off and advice from SEPA and the Local Authority regarding acceptable Greenfield run off rates. | | | | |
| WQD9 | Loch Lomond, Small Watercourses & Drainage Paths | The design of the extended culverts shall ensure that, as a minimum, the existing hydraulic capacity is maintained, but also refer to flood risk mitigation requirements noted above. The design of all new or extended culverts shall be undertaken with due consideration to the guidance contained in "River Crossing and Migratory Fish: Design Guidance", and where fish passage is considered possible then the new or extended culverts shall be designed in accordance with the above guidance. The channel realignment proposals shall include the replication of the form and vegetation of the natural channels. Where bank protection works are considered necessary these shall be "green" bank protection works (refer to "The Water Environment (Controlled Activities) (Scotland) Regulations 2005 - A Practical Guide" for details). Any bank protection works on the watercourses upstream and downstream of the realigned A82 shall be kept to the minimum length required, and shall not extend beyond the extent of the channel | Drainage Design & General scheme Design | During Design | Design Review | SEPA |

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| | | realignments (i.e. anticipated to be a maximum of around 60m across the three watercourses). The advice within CIRIA Report C551 Manual on Scour at Bridges and other Hydraulic Structures shall be taken into account in the design of the culverts. | | | | |
| WQD10 | Watercourses 2 & 3 and Drainage Path 4 | The surface water drainage proposals for the scheme include an element of SUDS design (including filter drains and a dry swale) fitted within the physical constraints of the site (refer to Figure 11.2 for further details). These features will provide some level of attenuation of the run off before discharge to the proposed northern and southern outfalls. It is understood that Argyll & Bute Council have confirmed that no specific surface water drainage attenuation is required for the development, presumably based on the fact that the loch is immediately downstream of the discharge points. However, it is always preferable to adopt best practice where possible, and it is therefore recommended that the designers try (physical restrictions permitting) to ensure that the rates of release of the surface water run off from the road drainage system is in accordance with the guidance provided in CIRIA Report C697 for allowable rates of run off and that the combined flows (watercourse flows and surface water run off flows) do not exceed the capacity of the culverts. | Drainage Design | During Design | Design Review | SEPA |
| WQD11 | Watercourses 2 & 3 and Drainage Path 4 | None required at this stage. | None | N/A | None | SEPA |
| WQD12 | Groundwater | None required at this stage. | None | N/A | None | SEPA |
| WQD13 | Groundwater | The surface water drainage proposals for the scheme include an element of SUDS design (including filter drains and a dry swale), and the use of linear filter drains wherever possible assists in reducing the risk to groundwater (refer to DMRB Method C). It is therefore considered | Drainage Design | During Design | Design Review | SEPA |

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| | | that these proposals be adopted as mitigation requirements to assist in reducing the potential effect on the groundwater. | | | | |
| **Destruction due to Construction (Chapter 12)** | | | | | | |
| DDC1 | At Pulpit Rock | Liaison with Transport Scotland and other local transport authorities to ensure road closures are outside the tourist season. | Co-ordination of construction programmes with other road schemes | Prior to Construction | Monitoring to be carried out throughout construction period | Transport Scotland and Loch Lomond and Trossachs National Park Authority |
| DDC2 | At Pulpit Rock | Timely consultation should be conducted with communities between Tarbet and Crianlarich to alleviate as far as possible disruption during the construction period | Consultation with Local Communities | Prior to Construction | During construction period | Transport Scotland and Loch Lomond and Trossachs National Park Authority |
| DDC3 | At Pulpit Rock | Minimise environmental impacts by adopting best practice for all construction activities; produce Environmental Management Plan and Code of Construction Practice. Approval for site compounds should only be granted through discussions with Loch Lomond and the Trossachs National Park Authority. | Contractor to produce Environmental Management Plan and adhere to Code of Construction Practice | Prior to and during Construction | During construction period | Transport Scotland and Loch Lomond and Trossachs National Park Authority |
| DDC4 | At Pulpit Rock | Produce Traffic Management Plan | Produce Traffic Management Plan in liaison with Transport Scotland and Loch Lomond and Trossachs National Park Authority | Prior to and during Construction | During construction period | Transport Scotland and Loch Lomond and Trossachs National Park Authority |
| DDC5 | At Pulpit Rock | Current best practice mitigation and abatement measures should be applied to minimise impacts on air quality | Contractor to install appropriate measures such as wheel washing facilities to minimise impacts on air quality | During Construction | During construction period | Transport Scotland and Loch Lomond and Trossachs National Park Authority |
| DDC6 | At Pulpit Rock | None proposed as receptors are located over a distance of 800m away | N/A | N/A | N/A | N/A |