EC DIRECTIVE 97/11
ROADS (SCOTLAND) ACT 1984

RECORD OF DETERMINATION

Name of Project:	**Location:**
A83 Glen Kinglas Bund Formation	A83 Glen Kinglas Bund 2C centre point 221982, 709613 Bund 2H centre point 221586, 709626 Bund 4D centre point 219704, 709807

Description of project:

BEAR Scotland has been commissioned by Transport Scotland to carry out a suite of works to address landslide risk on the A83 trunk road at Glen Kinglas between Tarbet and Cairndow. See Location Plan in Appendix A.

This section of the A83 has been identified as high risk for landslides. This scheme will involve creation of three roadside bunds along the A83 and forms part of an overall strategy for landslide mitigation works on this section of the A83.

The proposed works will require excavation of existing ground within the trunk road verge and adjoining land to a depth of approximately 2m to provide suitable foundation for the bunds. It is proposed to import excavated rock from the on-going Rest and be Thankful Phase 1 works to be utilised in forming the new bunds. Bunds will be installed at three separate locations to a height between 2m and 3m above existing ground level. The bunds will be dressed using soil recovered from Phase 1 and any suitable material from that excavated at Glen Kinglas. It may be necessary to import topsoil and re-seed areas if existing material is not sufficient or of a suitable engineering standard. Works will generally be within 30m of the road edge.

The three separate bund dimensions are given below.

Bund 2C – 125m long x 24m wide (3000m^2)
Bund 2H – 100m long x 23m wide (2300m^2)
Bund 4D – 110m long x 30m wide (3300m^2)

There are several watercourses located within the footprints of the bunds that will require new culverts as part of proposed works. Drainage ditches will be provided along the rear edge of bunds and tie into the new culverts, which will be built in line with existing watercourses through each bund. Approximately 12,500m^3 of stone will be imported from the Phase 1 excavations.

Site compounds may be set up at the Butterbridge carpark and/or the location of the existing site compound for the Phase 1 works at Rest and Be Thankful.

Traffic management will be via two-way traffic lights with a 30mph speed restriction in place. Each bund will be formed separately so that traffic management is only in place over one bund frontage at any time. The traffic management area is estimated at 300m x 3m = 900m^2 with a total working area of 0.95 Hectares

The works are planned to commence of the 5th of October 2020 so that material excavated from the Rest and be Thankful Phase 1 works can be re-used in the bund construction. Works are expected to take approximately 6 months to complete and will be completed by the end of April 2020. 24-hour working may be required to ensure works are completed in the timeframes specified.

There are associated works ongoing on the Rest and Be Thankful Phase 1 and further works are planned on Phases 5, 6 and 3B at Rest and Be Thankful which will involve excavation of further catch pits as part of the landslide mitigation programme of works. This will be dealt with at a later date as detailed design has not yet been completed.

Project Procurement:

The scheme is executed by the operating company as site operations – '**As of Right' scheme**

Description of Local Environment: The following baseline descriptions have been sequenced to follow the appropriate Design Manual for Roads and Bridges (DMRB) chapters for environmental assessment and do not reflect a ranking of sensitivity.

AIR AND CLIMATE:

There are no air quality monitoring sites near the scheme location[1], with the closest monitoring site being at Greenock[2] which lies approximately 35km south of the scheme location. Air quality was recorded as Low (Index 1) on 3rd September 2020. The site does not lie within an Air Quality Management Area (AQMA)[3].

Local air quality in the area is likely to be reasonable due to its rural location, although the trunk road corridor itself will be affected to some degree by vehicle emissions. There are no residential properties or businesses within the scheme extents. There are a few laybys along the A83 trunk road within the scheme extents. There are a few junctions for access tracks along the scheme extent joining the A83 trunk road. Sensitive receptors in the area include visitors utilising the nearby car parks at Butterbridge, Rest and be Thankful viewpoint and laybys.

The proposed bunds lie in Glen Kinglas between Cairndow and Tarbet. The climate in Tarbet is recorded as warm and temperate. There is a great deal of rainfall in Tarbet, even in the driest month. According to Köppen and Geiger, this climate is classified as a temperate oceanic climate (Cfb). The average annual temperature is 8.4 °C in Tarbet. The rainfall here averages 1,625 mm[4]. Cairndow also has a warm and temperate climate. The rainfall in Cairndow is significant, with precipitation even during the driest month. This location is classified as Cfb and the annual temperature is 8.6 °C with about 1,730 mm of precipitation falls annually[5]. The climate in Glen Kinglas is expected to be similar to Cairndow and Tarbet with high volumes of rainfall throughout the year. The prevailing wind direction is from the southwest with 408 hours per year where wind speeds are at or above 12mph[6] which is generally considered capable of mobilising and transporting dust[7].

CULTURAL HERITAGE AND MATERIAL ASSETS:

According to Pastmap[8], there are no Scheduled Monuments, Conservation Areas or Battlefields within 300m of the scheme extent. The Ardkinglas and Strone Garden & Designed Landscape (G&DL) lies approximately 1.4km distant from the works at the closest point. There is a single category B Listed Building, Butterbridge Bridge[9], 40m to the south of the Butterbridge car park, which may be used as a site compound

The following sites of local cultural heritage interest recorded on Canmore and/or Historic Environment Record (HER) are located within proximity to the proposed works:

- Loch Fyne Strone Estate, Field Survey Area, Archaeological Event Record
- Dumbarton - Tarbet - Inveraray - Tyndrum Military Road, Military Road
- Glen Kinglas Bothy

[1] http://www.scottishairquality.scot/latest/ (Accessed 03/09/2020)
[2] http://www.scottishairquality.scot/latest/site-info?site_id=INC2 (Accessed 03/09/2020)
[3] https://uk-air.defra.gov.uk/aqma/maps (Accessed 03/09/2020)
[4] https://en.climate-data.org/europe/united-kingdom/scotland/tarbet-64617/ (03/09/2020)
[5] https://en.climate-data.org/europe/united-kingdom/scotland/cairndow-484294/ (03/09/2020)
[6] https://www.meteoblue.com/en/weather/forecast/modelclimate/cairndow_united-kingdom_2654069 (03/09/2020)
[7] https://iaqm.co.uk/text/guidance/mineralsguidance_2016.pdf
[8] https://pastmap.org.uk/map (Accessed 09/07/2020)
[9] http://portal.historicenvironment.scot/designation/LB50538 (Accessed 10/09/2020)

A few other local/regional sites of cultural heritage interest are present in the wider area; however, all lie more than 300m distant from the proposed works.

BIODIVERSITY:

Site surveys were carried out in August 2020 by experienced ecologists. Results of the desk study and site visits are detailed below under the relevant headings.

Designated Sites: The A83 trunk road within the scheme extents forms the southern boundary of the Glen Etive and Glen Fyne Special Protection Area (SPA) . Beinn an Lochain Site of Special Scientific Interest (SSSI)[10] lies 300m south of the proposed works at the closest point. The SSSI is notified for the following upland habitats:

- siliceous scree (includes boulder fields);
- tall herb ledge; and
- upland assemblage.

Terrestrial:

SNH advised during consultation that the invasive non-native species *Rhododendron ponticum* borders the trunk road at some locations along the A83 in Glen Kinglas.

During the site walkover survey an otter couch and otter spraint were found on the main stem of the Kinglas Water between bunds 2C and 2H. The couch was over 100m distant from working areas; however, otters are likely to be foraging and commuting along the length of the Kinglas Water.

No evidence of other protected species was recorded within the survey area. There are small areas of conifer woodland close to the sites and the Kinglas Water below the site does provide some ideal riparian foraging habitat for bats. However, the area within 100m is generally open and exposed. None of the trees along the roadside or within the bund areas or adjacent forestry plantations had features suitable for roosting bats.

Habitats: A Phase 1 habitat survey was carried out in August 2020. The survey area covered the footprint of the proposed bunds and an area of 50m around these bunds (areas south of the A83 trunk road were not surveyed). National Vegetation Classification (NVC) communities were identified for habitats that are listed in Annex 1 of the EU Habitats Directive, and any habitats that could be classified as Ground Water Dependant Terrestrial Ecosystems (GWDTE) were identified. The survey area across all three survey sites contains roadside embankments upslope of the roadside verges. Across most of the area, a drainage ditch runs behind the embankment, and further upslope a deer fence is present which encloses a relatively new native woodland planting scheme. In general, ground vegetation is dominated by either rush (*Juncus* sp.) or hummocky purple-moor grass (*Molinia caerulea*) in damp areas, and bracken (*Pteridium aquilinum*) on higher ground. A summary of the habitats in each of the survey areas are provided below.

Bund 2C
Phase 1 habitats in Bund 2C are predominantly a mixture of B1.2 acid grassland, B5 marshy grassland and C1 bracken. The roadside embankment has been recorded as acid grassland and is well drained with a scattering of native broadleaf trees. Upslope from the roadside embankment there is a range of wet and damp swards (B5 marshy grassland) interspersed with bracken-dominated swards (C1 bracken). Marshy grassland is potentially a GWDTE and the areas identified on site can be broken down into two NVC communities: M23 *Juncus acutiflorus - Galium palustre* rush-pasture, which occurs in damp hollows on the slope, and M25 *Molinia caerulea - Potentilla erecta* mire occurring on higher ground above the damp hollows. Both of these habitats are described as species-poor compared to typical examples of these habitats due to an existing, or previous, history of grazing, which has caused disturbance. Bracken is present across much of the surveyed area where it is dominant and dense. A small area of A1.1 woodland ground flora is recorded along a drainage line to the west of the bund footprint but within the 50m survey buffer. This is reminiscent of the ground flora associated with NVC W7 *Alnus glutinosa - Fraxinus excelsior - Lysimachia nemorum* woodland.

Bund 2H
Habitats in Bund 2H are similar to those described for Bund 2C, primarily comprising a mixture of Phase 1 habitats B1.2 acid grassland, B5 marshy grassland and C1 bracken. In the north-western quarter this includes

[10] https://sitelink.nature.scot/site/163 (Accessed 08/07/2020)

an area of felled conifer plantation, which has been re-stocked with broadleaf trees. Behind the roadside embankment there is marshy grassland intermixed with bracken-dominated areas; however, due to the presence of the felled plantation, bracken is sparser in this area. An area of marshy grassland containing the NVC M25 c sub-community is more diverse than in the species-poor examples present in Bund 2C and supports a wider range of herbaceous species. In general, the vegetation along the drainage lines is the same as that across the survey area except for the burn adjacent to the east side of the felled plantation, which supports a woodland understorey-type vegetation consistent with NVC W7 woodland. The broader drainage line supports a more neutral, secondary grass community dominated by Yorkshire fog (*Holcus lanatus*) with valerian (*Valeriana officinalis*) present, belying the damp nature of the soil. The area of felled plantation showed evidence of previous ploughing with blocked drain lines holding water.

Bund 4D
Phase 1 habitats in Bund 4D follow the same zoning as the previous two bunds with the verge running along the road and a roadside embankment with a grassland vegetation and stock-fenced hill ground further upslope. The hill ground was under current grazing management at the time of survey. The roadside embankment has a prominent line of trees close to the road but a more varied, herby sward which appears to be tending towards shrub dominance with bramble (*Rubus fructicosa*) expanding in areas where bracken is developing. Bracken is the predominant vegetation cover in this area, much of which conforms to NVC U20 a, *Anthoxanthum odoratum* sub-community. However, in one area it tends far more towards NVC W25 *Pteridium aquilinum - Rubus fructicosa* scrub with a more herb-rich understorey including the normally woodland species enchanter's nightshade (*Circea lutetiana*). Marshy grassland is typically a mosaic of NVC M23 and M25 with a small area containing indicator species of a more neutral soil which would also fit into the M25c sub-community. In another smaller pocket further up the slope there is a suggestion of a wet heath community establishing, although at present the area is too small and the plants too sparse to classify. Along the burns there is a woodland which would correspond to the ground flora of NVC W9 *Fraxinus excelsior - Sorbus aucuparia - Mercurialis perennis* woodland which correlates with burns in the other survey areas.

Much of the area of each survey location supports marshy grassland which is inherently dependent on a moist soil. The slopes uphill of the roadside embankments extend from bracken-dominated upper slopes to marshy grassland towards the lower slopes with numerous drainage lines. The presence of bracken suggests the soils are deep but generally aerobic and so not wet peat. Considering the overall location, it is suggested that this vegetation has developed in response to high rainfall rather than groundwater movement. The vegetation is generally species-poor compared to the typical examples of each habitat type, and no species of local or national importance were found. However, within areas of the survey extents for Bunds 2C and 2H, the uncommon plant whorled carraway was found. This species is classified as "Least Concern" in the Vascular Plant Red Data List for Great Britain [11]; however, Averis et al[12] refer to it under a "Conservation" heading as: "..uncommon oceanic species such as *Carum verticillatum*..". It is also worth noting that more specialist woodland ground flora plants were found along some of the burn sides in Bunds 2C and 2H. A Species List is given in Table D1.

Within the area of Bund 2C, a number of *Rhododendron ponticum* shrubs were present, scattered along the trunk road verge. They were not present at any of the other bund locations.

<u>Birds:</u> Areas of scrub surrounding the scheme provide some habitat suitable for nesting birds, but no evidence of bird breeding was identified during the site visit. Works will primarily be completed outside of the key breeding bird season as works will commence in October 2020 and be completed by April 2021.

<u>Fish:</u> During the survey in August 2020, it was noted that the steep nature of the slopes within and below the proposed bunds and presence of existing trunk road culverts will restrict movement of fish upstream into the tributaries of the Kinglas Water. The Kinglas Water was considered to provide significant lengths of juvenile fish habitat and fast flowing riffles, pools and glide sections. No stable/finer substrates with slower-moving water suitable for spawning European eel (*Anguilla anguilla*) and lamprey species were identified. Salmonid fish were observed in the Kinglas Water downstream of Bund 4H.

Consultation with the Argyll Fisheries Trust advised that their fish surveys suggested that patches of the habitat in tributary streams close to the main river were utilised for spawning and nursery habitat for sea trout. Their

[11] Cheffings, C & Farrell, L 2005. The Vascular Plant Red Data Book for Great Britain. JNCC
[12] Averis et al. (2004) British Upland Vegetation, JNCC.

habitat surveys also suggested that the supply of gravel and other substrates via these tributaries into the main river was essential to the supply of suitable materials for spawning in the lower Kinglas Water. They highlighted the importance of culvert design in allowing some substrates to pass downstream in the longer-term to maintain spawning habitat in the lower reaches of the tributaries and in the main river.

LANDSCAPE:

The works lie just outside of the Loch Lomond and the Trossachs National Park (LLTNP)[13].

Land surrounding the scheme location is predominantly composed of steep bracken fields on the north face of the valley and coniferous woodland on the south face of the valley[14]. There are a number of existing bunds which have already been constructed along the A83 corridor at this location.

Recent works to install catch pits further south along the A83 at the Rest and be Thankful have been completed and detailed consultation has been carried out with the LLTNP to ensure that they are satisfied with the measures in place and design adaptations to reduce landscape impacts.

LAND:

Land surrounding the scheme location is predominantly composed of steep bracken fields on the north face of the valley and coniferous woodland on the south face of the valley[15]. According to the Macaulay System, the land is of limited agricultural value, falling within Land Capability for Agriculture Classes 6.1 to 7[16] land capable of supporting only rough grazing. The Kinglas Water is the main ecological feature on the valley floor adjacent to the A83 carriageway, with areas of raised and blanket bog surrounding it to the east of the scheme extent.

The A83 is a key route for commuter, local and tourist traffic in the area and there are a number of laybys along the A83 within the scheme extent.

POPULATION AND HUMAN HEALTH:

The scheme passes through a rural area and there are no residential properties or businesses within the scheme extents. There are a few laybys along the A83 trunk road within the scheme extents. There are a few junctions for access tracks along the scheme extent joining the A83 trunk road. Other sensitive receptors are as detailed in the Air and Climate section.

There are no National Cycle Networks (NCN) Routes[17], Core Paths[18] or paths recorded on WalkHighlands[19] within the scheme extents. Nevertheless, long distance cyclists may use the trunk road. Equestrians are unlikely to use the A83 at this location, due to the high-speed nature of the traffic and the availability of more appropriate trails and bridleways in the wider surrounding countryside. There is a single path recorded on WalkHighlands which originates from the Butterbridge carpark east of the scheme[20].

The A83 provides the main link between Tarbet and Campbeltown. It is frequently affected by landslide events, necessitating a diversion route along the Old Military Road through Glen Croe when the A83 is impassable. There is a car park at Butterbridge to the west of the scheme and a larger car park at Rest and Be Thankful which provides a parking area and viewpoint for visitors to the area.

WATER:

[13] https://sitelink.nature.scot/site/8621 (Accessed 08/07/2020)
[14] https://map.environment.gov.scot/sewebmap/ [EUNIS] (Accessed 09/07/2020)
[15] https://map.environment.gov.scot/sewebmap/ [EUNIS] (Accessed 09/07/2020)
[16] http://www.hutton.ac.uk/sites/default/files/files/soils/lca_leaflet_hutton.pdf
[17] https://osmaps.ordnancesurvey.co.uk/ncn/56.23951,-4.91441,12 (Accessed 09/07/2020)
[18] https://www.argyll-bute.gov.uk/where-go-outdoors (Accessed 09/07/2020)
[19] https://www.walkhighlands.co.uk/lochlomond/arrochar.shtml (Accessed 09/07/2020)
[20] https://www.walkhighlands.co.uk/lochlomond/stob-coire-creagach.shtml (Accessed 09/07/2020)

The scheme falls within the Oban and Kintyre groundwater body[21], which was classified by SEPA in 2018 as having 'Good' overall condition. It is also within the Oban and Kintyre Drinking Water Protected Area (Ground)[22].

The Kinglas Water runs alongside the A83 trunk road and lies between 20m and 60m south of the trunk road within the scheme extents. It flows under the A83 trunk road at the eastern scheme extent. SEPA have classified it as having an overall status of 'Bad ecological potential' in 2018[23]. The water body has been designated as a heavily modified water body on account of physical alterations that cannot be addressed without a significant impact on water storage for hydroelectricity generation[24].

There are numerous watercourses that pass under the A83 trunk road from north to south flowing into Kinglas Water. None of these watercourses have been classified by SEPA. Detailed consultation has been carried out with SEPA and a variation to CAR licence CAR/S/1187572 has been made to authorise the proposed culverting works.

GEOLOGY AND SOILS:

Soils within the scheme extent are comprised of primarily peaty podzols with brown earths at the western scheme extent[25]. Superficial deposits within scheme extents are a mix of Alluvium - Clay, Silt, Sand And Gravel, Hummocky (moundy) Glacial Deposits - Diamicton, Sand And Gravel and Till, Devensian - Diamicton[26]. Bedrock within the scheme extent is Beinn Bheula Schist Formation - Pelite, Semipelite And Psammite, which is a metamorphic bedrock[27].

There are no Geological Conservation Review Sites (GCRS) within 300m of the scheme extents[28].

WASTE, MATERIALS AND USE OF NATURAL RESOURCES:

Waste materials will comprise rock and soil which will be excavated to provide suitable footings for bund construction. Where possible, and if material is suitable, any soil and vegetation will be retained and re-used for capping of the bund. It is planned to import suitable rock material from the on-going Phase 1 works to utilise in construction of the bunds. The appropriate SEPA exemptions and consents will be in place to ensure the material is appropriate for its given purpose and that this has gone through the appropriate regulatory process. SEPA has confirmed approval in principle for reuse of stone extracted from Phase 1 in bund formation at Glen Kinglas as part of this landslide mitigation project.

Description of the main environmental impacts of the project and proposed mitigation:

As a result of a desktop study and site visit, issues requiring consideration have been identified and potential effects, their magnitude and overall significance (based on the sensitivity of receptor) have then been considered. Effects have been split into construction and operational effects and the magnitude of effect is based on consideration of mitigation measures noted in Table 1: Environmental Impacts and Proposed Mitigation Summary.

The following headings have been set out to follow DMRB chapters for environmental assessment and do not reflect a ranking of impact severity. 'Disruption due to construction' and impacts on 'policies and plans' are covered within each environmental topic heading, where applicable. Unless otherwise stated, the study area considered for the assessment of potential impacts extends 200m in each direction from the centre of the road.

[21] https://map.environment.gov.scot/sewebmap/ [Groundwater Classification] (Accessed 08/07/2020)
[22] https://map.environment.gov.scot/sewebmap/ [DWPA Ground] (Accessed 08/07/2020)
[23] https://map.environment.gov.scot/sewebmap/ [River Classification] (Accessed 09/07/2020)
[24] https://www.sepa.org.uk/data-visualisation/water-environment-hub/ [10217:Kinglas Water] (Accessed 09/07/2020)
[25] https://map.environment.gov.scot/sewebmap/ [National Soil Map of Scotland] (Accessed 09/07/2020)
[26] http://mapapps.bgs.ac.uk/geologyofbritain/home.html [Superficial] (Accessed 09/07/2020)
[27] http://mapapps.bgs.ac.uk/geologyofbritain/home.html [Bedrock] (Accessed 09/07/2020)
[28] https://map.environment.gov.scot/sewebmap/ [GCRS] (Accessed 09/07/2020)

AIR AND CLIMATE:

There is potential for temporary impacts on air quality during construction as a result of activities such as excavation for the bund footings, construction of the bunds, transporting of materials, the presence of construction traffic and vehicles idling on site.

Provided the following mitigation measures are adhered to during the works, impacts on air quality during construction are not anticipated to be significant.

- A designated laydown area will be established on level ground away from the excavation and works.
- All materials will be stored in the laydown area and only moved to site when they are required.
- Prolonged storage of debris on site exposed to wind should be avoided. Materials should be wetted down or covered when exposed to wind for lengthy periods of time.
- All delivery vehicles carrying material with dust potential will be covered when traveling to or leaving site, preventing the spread of dust beyond the work area.
- Material stockpiles will be reduced as much as reasonably practicable by using a 'just in time' delivery system. All material will also be stored on made ground (e.g. within the A83 carriageway boundary) and 10m away from potential pollution pathways such as drains and watercourses where feasible.
- Materials should be removed from site as soon as is practical.
- Vehicles removing excavation materials must have their loads effectively covered.
- All plant, machinery and vehicles associated with the scheme must be maintained to the appropriate standards and must switch their engines off when not in use.
- Construction operatives will be encouraged to car-share, use organised company transport or public transport to reduce greenhouse gas emissions.
- Where possible, materials are to be sourced locally to reduce greenhouse gas emissions associated with materials movement.
- Cement bags will remain closed when not in use to prevent cast off to the surrounding environment.
- The movement of dusty material will be minimised by appropriately planning material movements.
- Any stockpiled material on site, such as rock, will be monitored daily to ensure no risks of dust emissions exists. Where a risk of dust emissions exists from stockpiles, these are to be damped down. This is likely to require the use of mobile water bowsers.
- Good housekeeping will be employed throughout the works.

The proposed works are not expected to affect air quality during the operation phase as there will be no significant change in traffic levels or dynamics at this location.

CULTURAL HERITAGE AND MATERIAL ASSETS:

The working area will be confined to the hillside outside the trunk road boundary. The Listed Bridge near Butterbridge car park lies 40m distant from the works and will therefore not be impacted. Provided the following mitigation measures are adhered to, potential impacts on cultural heritage during construction are not anticipated to be significant.

- If there are any unexpected archaeological finds, works will stop temporarily in the vicinity, the area will be cordoned off and a member of the BEAR Environment team will be contacted for advice.
- Laydown area will be sensitively located to avoid areas of cultural heritage interest.
- There will be no storage of plant, materials or equipment against and buildings, bridges, walls or fences.

The works are not anticipated to result in significant impacts on cultural heritage interests during the construction or operational phase.

BIODIVERSITY:

<u>Designated Sites:</u>

Consultation with SNH in August 2020 has confirmed no LSE on the Glen Etive and Glen Fyne SPA. SNH advised that current proposed seasonal timings of works will largely avoid any sensitive periods for breeding birds.

Beinn an Lochain SSSI is 300m distant from the works at the closest point. The site is notified for upland habitats. Due to the nature of the proposed works and their proximity to the trunk road and the non-motile nature of the notified features, no impacts on the SSSI are expected.

Provided that the following mitigation measures are followed during construction, impacts on designated sites are not anticipated to be significant.

- Artificial lighting used during hours of darkness should be restricted to the immediate working area and should be directed away from areas of suitable habitat (e.g. watercourses, woodland, shrubs) as far as is safe and reasonably practicable.
- There will be no blasting or use of cranes for the duration of construction.

During the operation phase, no significant impacts on designated sites are expected.

Terrestrial mammals:

Habitat suitable to provide foraging and resting opportunities for otter was present along the main stem of the Kinglas water with a single otter resting place identified approximately 100m distant from working areas. No natal holts were identified and as the resting place is over 30m distant from the works, a derogation licence for disturbance from Scottish Natural Heritage is not required.

Provided that the following mitigation measures are followed during construction, impacts on terrestrial mammals are not anticipated to be significant.

- Encroachment on land, whether terrestrial or aquatic, will not be tolerated.
- Site personnel are instructed not to approach or touch any animals seen on site.
- Site personnel should remain vigilant for the presence of protected species and nesting birds over the works period.
- Measures to be implemented to protect the aquatic environment are detailed in Section 10: Road Drainage and Water Environment.
- Tracking of machinery through watercourses will not be permitted.
- No discharges into any watercourses or drainage systems are permitted.
- All construction operatives are to be briefed through toolbox talks prior to works commencing using toolbox talks. The talks are to specifically cover ecology, field signs of protected species, and legislation. Briefings are to be clear and unambiguous, with all staff informed to stop works where a concern is raised. Works may not commence until advice from an appropriately qualified ecologist is sought and appropriate mitigation is in place, where required.
- Where protected mammals are encountered or move within 50m of the active works, works will cease until the animal(s) move further away than 50m from the construction site or until the contractor's ECoW can provide advice.
- All material, machinery and equipment will be subject to checks for resting mammals daily prior to any works commencing to prevent entrapment or injury of any mammals.
- A 'soft start' will be implemented on site each day. This will involve switching on vehicles and checking under/around vehicles and the immediate works area for mammals prior to works commencing to ensure none are present and that there is a gradual increase in noise.
- Any excavations, exposed pipes/drains, or areas where an animal could become trapped (e.g. storage containers) will be covered over when not in use, at the end of each shift, and following completion of the works to avoid animals falling in and becoming trapped
- If fencing is utilised at any point during the works, a gap of 200mm from ground level must be provided, allowing free passage for mammals and preventing entrapment.
- Artificial lighting used during hours of darkness should be restricted to the immediate working area and should be directed away from areas of suitable habitat (e.g. watercourses, woodland, shrubs) as far as is safe and reasonably practicable.

- An Environmental Clerk of Works (ECoW), provided by the contractor, will attend site during set up of the site compounds and will attend site fortnightly for the first three months of construction and monthly thereafter, as a minimum. More frequent visits may be required during sensitive site activities (e.g. culvert installation, reinstatement, concrete pouring). The ECoW will advise on the suitability and effectiveness of pollution prevention measures. If required, the ECow will have the power to conduct audits of the site at any time and stop works should any breach of the Construction Environmental Management Plan (CEMP) or CAR licence conditions be identified. The ECoW will carry out pre-construction surveys in advance of works starting on each new Bund. The ECoW will provide advice and recommendations to the contractor and will produce an ECoW report for submission to BEAR Scotland on a monthly basis.
- If any vegetation clearance or tree trimming is necessary during the breeding bird season, a nesting bird check will be carried out by the ECoW prior to vegetation clearance.
- If an active bird nest is found in the vicinity of works, all works within 30m of the nest must stop until the contractor's ECoW can provide advice.

During the operational phase, impacts on terrestrial mammals are considered to be non-significant due to the lack of suitable habitat within the vicinity of the works.

Habitats:

The most common habitat within the proposed bund footprints is acid grassland which extends along the roadside embankment. Further upslope, areas of marshy grassland (made up of NVC communities M23, M25 and small pockets of M23c) and bracken are present within the bund footprint and extend upwards beyond the survey boundary. Small areas of woodland ground flora and neutral grassland are present along drainage lines, and an area of vegetation suggestive of a wet heath community is establishing upslope of the Bund 4D footprint, although at present the area is too small and the plants too sparse to classify.

SEPA has classified several NVC communities as potentially dependent on groundwater sources[29,30]. Many of the NVC communities on the list are common habitat types across Scotland, and some are otherwise of generally low ecological value. Some of the NVC communities may only be considered GWDTE in certain hydrogeological settings. Both M23 *Juncus effusus/acutiflorus – Galium palustre* rush pasture and M25 *Molinia caerulea – Potentilla erecta* mire are included with M25 being considered Moderately Groundwater Dependent and M23 Highly Groundwater Dependent. Additionally, NVC communities M23 and M25 both fall within the UK Biodiversity Action Plan Priority Habitats purple moor grass and rush pastures[31,32].

Observations of the M23 and M25 habitats during ecology surveys recorded it to be species-poor, partially comprising disturbed ground and there was no evidence of a groundwater input to the area. Based on these considerations, these habitats are therefore considered as unlikely to represent GWDTE at this location. Within this location it is suggested that this vegetation has developed in response to high rainfall in the area rather than groundwater movement.

Micro-siting of bunds to avoid encroachment into areas of M23 and M25 habitats or to avoid vegetation drainage lines is not possible as bunds have been designed in line with modelling of the slope to predict where future landslide events may occur. Therefore, there will be some loss of marshy grassland (NVC communities M23 and M25) and A1 woodland ground flora which was identified during the survey. The watercourses feeding areas of marshy grassland on site will not be realigned by works and areas upslope of the bunds will remain unchanged. Consequently, the flow of water into all retained areas of marshy grassland will remain undisturbed. Therefore, there will be no change in water inputs to the site and habitats upstream of the bunds will be unaffected. Although there will be some loss of A1 woodland ground flora, watercourses and drainage channels within the survey areas, but outside of the bund footprints, are also recorded as having the same vegetation communities present and will be retained. The watercourses located within the bund footprints will be culverted over a short distance and will not be realigned or impacted upstream of the works area.

The invasive non-native species (INNS) *Rhododendron ponticum* was identified in the footprint of Bund 2C. Arrangements will be made to either treat or dispose of any Rhododendron (as per advice from SEPA and SNH)

[29] https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf (Accessed 07/09/2020)
[30] https://www.sepa.org.uk/media/136117/planning-guidance-on-on-shore-windfarms-developments.pdf (Accessed 07/09/2020)
[31] http://data.jncc.gov.uk/data/6fe22f18-fff7-4974-b333-03b0ad819b88/UKBAP-BAPHabitats-43-PurpleMoorGrass.pdf (Accessed 07/09/2020)
[32] https://jncc.gov.uk/our-work/uk-bap-priority-habitats/ (Accessed 07/09/2020)

and appropriate biosecurity measures will be in place to prevent the spread of this INNS outside of the work footprint.

To summarise, the proposed works will result in some loss of habitats which are ubiquitous in the wider area and species-poor compared to typical examples of the same type. Therefore, the loss of small areas of these habitats compared to the wider area is not expected to be significant. Although scattered *Rhododendron ponticum* was identified on site, management measures will be in place to prevent its spread as a result of the proposed works.

Provided that the following mitigation measures are followed during construction, impacts on habitats are not anticipated to be significant.

- Construction methods will take place sensitively to reduce as far as possible encroachment of plant and machinery on habitats outside of the bunds' immediate footprints.
- Where possible, plant will only track downslope (below the bund areas) to avoid damage to sensitive habitats outside of the immediate works area.
- All culvert and drainage construction will be as per the design to avoid altering water flows into or out of surrounding habitats.
- Material storage areas and site compound will be sited sensitively to avoid requirement for further land take.
- Where practical, this will be in existing hardstanding areas on level ground away from bund construction operations.
- Biosecurity measures will be in place during construction activities in proximity to INNS. The contractor's ECoW will be responsible for advising on all biosecurity measures and treatment or disposal of INNS.
- An ECoW, provided by the contractor, will attend site during set up of the site compounds and will attend site fortnightly for the first three months of construction and monthly thereafter, as a minimum. More frequent visits may be required during sensitive site activities (e.g. culvert installation, reinstatement, concrete pouring). The ECoW will advise on the suitability and effectiveness of pollution prevention measures. If required, the ECow will have the power to conduct audits of the site at any time and stop works should any breach of the CEMP or CAR licence conditions be identified. The ECoW will provide advice and recommendations for any measures which they deem necessary to protect sensitive habitats surrounding the working area, including but not limited to exclusion zones. The ECoW will provide advice and recommendations on biosecurity measures to be in place while working around INNS to the contractor and will produce an ECoW report for submission to BEAR Scotland on a monthly basis.
- Mitigation measures described in the Landscape Section will be followed to reinstate habitat.
- Mitigation measures described in the Water Section will be followed to minimise potential impacts on the water environment.
- Mitigation measures described in the Geology and Soils Section will be followed to minimise potential impacts on habitats.

During the operational phase, the works are not predicted to significantly impact surrounding habitats as no on-going activities or maintenance of the bunds is expected beyond construction.

<u>Birds:</u>

There are areas of scrub within the scheme extents which are considered to provide some habitat suitable for nesting birds. Additionally, there is potential for ground-nesting birds to be present within the scheme footprint. Works are due to start in October 2020 and will take six months to complete. As works are starting in winter (i.e. outwith the bird breeding season), it is not expected that any birds will be nesting within the scheme extents when works commence. As works will be ongoing when the bird breeding season begins (typically in March), it is unlikely that any birds moving into the area will begin nesting within the scheme extents due to the existing noise and disturbance. The bird breeding season is generally considered to run from March to August, inclusive.

Providing the following mitigation is adhered to during the works, significant impacts are not anticipated during the construction phase.

- If works are postponed and begin between March to August inclusive, these will be preceded by a nesting bird check to be carried out by the ECoW.

- Artificial lighting used during hours of darkness should be restricted to the immediate working area and should be directed away from areas of suitable habitat (e.g. watercourses, woodland, shrubs) as far as is safe and reasonably practicable.
- There will be no blasting or use of cranes for the duration of construction.

During the operation phase, no significant impacts are anticipated on birds.

Fish:

The watercourses within the immediate working area do not provide any habitat for spawning salmonids; however, there is suitable habitat for spawning salmonids in the main stem of the Kinglas Water downstream of the working area.

Consultation with the Argyll Fisheries Trust highlighted the importance of culvert design in allowing some substrates to pass downstream in the longer-term to maintain spawning habitat in the lower reaches of the tributaries and in the main river. All of the culverts being installed will tie into existing trunk road culverts downstream and have been designed so that they exceed the capacity of trunk road culverts to provide future proofing. Therefore, installation of the new culverts is not expected to impede the movement of gravels and substrates downstream.

There is potential for temporary, indirect impacts on fish during construction due to mobilisation of sediment as a result of construction works, particularly as the works are being carried out during the most sensitive period for Salmonids. With the following mitigation in place, impacts are not anticipated to be significant.

- Mitigation measures described in the Water Section will be followed to minimise potential impacts on the water environment.
- Pollution prevention measures will be in place for the duration of construction.
- An ECoW, provided by the contractor, will attend site during set up of the site compound and will attend site fortnightly for the first three months of construction and monthly thereafter, as a minimum. More frequent visits may be required during sensitive site activities (e.g. culvert re-sectioning, concrete pouring). The ECoW will advise on the suitability and effectiveness of pollution prevention measures. If required, the ECoW will have the power to conduct audits of the site at any time and stop works should any breach of the CEMP or CAR licence conditions be identified. The ECoW will provide advice and recommendations to the contractor and will produce an ECoW report for submission to BEAR Scotland on a monthly basis.

No significant impacts are anticipated on fisheries during operation as there will be no loss of spawning or feeding habitat for diadromous fish species.

LANDSCAPE:

Although the works lie outside of the LLTNP, the park has been consulted due to the proximity of works. The LLTNP have recommended storing and re-use of turves to tie bunds into the existing landscape. This will be done where turf material is suitable for purpose and of a sufficient quality; however, topsoil material may need to be imported and seeded to ensure slope stability and to meet design standards.

During the construction phase, there will be a temporary visual impact due to the presence of vehicles and plant in the vicinity of the works. During the operational phase, the new bunds will blend into the existing landscape. The finished bunds will be similar to those already in place at this location.

There will be no significant impacts on landscape effects during operation, provided that the following mitigation measures are implemented:

- Throughout all stages of the works, the site must be kept clean and tidy, with materials, equipment, plant and wastes appropriately stored, minimising the landscape and visual effects.
- Works are to avoid encroaching on land and areas where work is not required or does not have permission to do so. This includes general works, storage of equipment/containers and parking.
- Where possible during soil stripping activities, turves which are of a sufficient quality and suitability, will be retained on site and stored appropriately for re-use during bund capping.

- Mitigation measures described in the Biodiversity: Habitats Section will be followed to reduce potential impacts on the landscape.

LAND:

The works will entail construction of three approximately 100m long bunds along the A83 in Glen Kinglas. The bunds will be between 2m and 3m high. The slopes above the pits currently provide rough grazing for livestock. No properties or communities in the immediate area will be affected by the development.

The excavation of the bunds will result in a permanent loss of a narrow strip of land with limited agricultural value adjacent to the A83 east-bound carriageway. No significant impacts on land use are anticipated during the construction or operational phases.

POPULATION AND HUMAN HEALTH:

During construction, there is the potential for a temporary impact on non-motorised road users, but impacts are unlikely to be significant as their numbers are likely to be low. Pedestrians at the Rest and Be Thankful viewpoint will be unaffected due to the distance of the viewpoint from the works. The Butterbridge carpark may be used as a site compound and as temporary storage of materials. Construction activities are being timed to avoid the key tourist period to avoid significant impacts on visitors and the travelling public.

Similarly, impacts during construction on equestrians are unlikely to be significant as the road is not likely to be heavily used by equestrians.

- An appropriate traffic management plan taking into account the needs of non-motorised travellers will be designed in accordance with Volume 8, Chapter 4 of the DMRB.

During operation, there will be a slight to moderate beneficial impact on safety for non-motorised users of the trunk road at this location with infrastructure in place to reduce the risk of impact from landslide events.

There will be a temporary impact during construction on vehicle travellers and local communities that rely on this key infrastructure route. This will be managed with appropriate traffic management, which is anticipated to be a single lane closure with traffic signal control. With the following mitigation in place during the works, impacts on vehicle users is not anticipated to be significant.

- An appropriate traffic management plan will be designed in accordance with Volume 8, Chapter 4 of the DMRB.

During operation, there will be a slight to moderate beneficial impact on safety for motorised road users of the trunk road at this location with infrastructure in place to reduce the risk of impact from landslide events.

During construction, there will be a temporary impact from noise and vibration. There are no nearby residential receptors. Due to the general openness and lack of natural screening in the area, the noise is likely to be audible to visitors in the nearby area. To some extent, it may also be audible to hillwalkers and cyclists in the wider area; however, works are programmed to take place outwith the main tourist season (i.e. summer months) and at a time when visitors to the area are likely to be reduced.

With the implementation of the following mitigation, noise and vibration impacts during the construction phase are not predicted to be significant.

- The best practice means, as defined in Section 72 of the Control of Pollution Act 1974 and BS5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites, will always be employed to reduce noise to a minimum.
- All construction operatives will be briefed through toolbox talks prior to works commencing using the Being a Good Neighbour toolbox talk template.
- Where possible, inherently quiet plant should be selected for construction works.
- All plant, machinery and tools will be well maintained, including parts relating to noise minimisation.
- All plant, machinery, and vehicles will be switched off when not in use.

- Where ancillary plant such as generators are required, they will be positioned so to cause minimum noise disturbance. Where deemed necessary, acoustic screens will be utilised.
- Movement of plant onto and around the site will have regard to minimising noise and will not be left running if not required for immediate use.
- All plant must be operated in a mode that minimises noise emissions and must have been maintained regularly to comply with relevant national and international standards.

Traffic dynamics will remain unchanged during the operational phase and will not result in significant impacts caused by noise and vibration.

WATER:

There is potential for an impact on water quality during construction as a result of potential spillage of fuels, oils and mobilisation of silt. An application for a variation to the existing CAR Simple Licence has been applied for to authorise the culverting on watercourses through the bunds. It is expected that this will be received prior to works commencing in October 2020.

Provided the following mitigation measures are adhered to throughout the works, impacts during the construction phase are not predicted to be significant.

- All conditions of the CAR Simple Licence are to be complied with, a copy of which will be supplied to the successful contractor.
- A copy of the CAR Simple Licence must also be kept on-site at all times.
- No discharges into any watercourses or drainage systems are permitted.
- All plant and equipment must be regularly inspected for any signs of damage and leaks. A checklist will be present to make sure that the checks have been carried out.
- All on-site activities should operate in accordance with relevant SEPA Pollution Prevention Guidelines (PPGs) and Guidance for Pollution Prevention (GPPs).
- All hazardous material will be stored in accordance with Control of Substance hazardous to Health (COSHH) data in a designated storage area at least 10m away from any watercourses, drains and / or waterbodies.
- The designated storage area must be on impermeable ground and fully bunded.
- All hazardous material utilised on site is required to undergo assessment under the COSHH Regulations 2002. These assessment(s) will contain a section on environment which highlights any precautions and mitigation requirements.
- All hazardous material will be stored in line with COSHH data within a designated COSHH storage area. Oils and chemicals will be stored in appropriately bunded storage cabinets. The COSHH store will be locked with only appropriate personal having access and an inventory register being maintained.
- Where applicable and practicable, bio-degradable hydraulic fluids and oils should be utilised in machinery.
- Where fuel is stored on site and refuelling actives are undertaken, the following will apply:
    - Only suitably double-skinned fuel bowser(s) or tank(s) in line with General Binding Rules the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) will be utilised on site.
    - The fuel bowser(s) and/or tank(s) must be stored at least 10m away from any watercourses, waterbodies or drains and away from being struck by plant and machinery.
    - All distribution and fuelling nozzles will be fitted with a shut-off valve.
    - All refuelling activities are to be undertaken in a designated site with a drip tray positioned underneath the nozzles when not in use.
    - All fuel containers and nozzles are to be secured, for example with a lock when not in use.
    - All staff undertaking refuelling actives are to be appropriately trained and undertake these activities in line with site refuelling procedures.
- During refuelling of smaller mobile plant, a funnel and drip trays must be used.
- Spill kits must be quickly accessible to capture any spills should they occur.
- The ground / stone around the site of a spill must be removed, double-bagged and taken off site as special contaminated waste.
- Generators and static plant may have the potential to leak fuel and/or other hydrocarbons and must have bunding with a capacity of 110%. If these are not available, then drip trays with a capacity of 110% should be placed beneath the equipment.
- A spillage control procedure will be in place in which all staff are to be trained.

- Suitable spill kits are to be available on site with all staff to be trained in their use.
- All spills must be logged and reported. In the event of any spills into the water environment, all works must stop, and the incident reported to the project manager and the BEAR Scotland Environment Team. SEPA must be informed of any such incident as soon as possible using the SEPA Pollution Hotline.
- Mitigation detailed in Biodiversity Section will be strictly adhered to.
- The Water Pollution – Silt toolbox talk will be delivered to all site personal as part of the site induction prior to works commencing.
- Pollution prevention measures will be installed to prevent sediments from reaching the Kinglas Water.
- Pollution prevention measures will be checked daily and more regularly during period of heavy rainfall.
- An ECoW, provided by the contractor, will attend site during set up of the site compound and will attend site fortnightly for the first three months of construction and monthly thereafter, as a minimum. More frequent visits may be required during sensitive site activities (e.g. culvert installation, concrete pouring). The ECoW will advise on the suitability and effectiveness of pollution prevention measures. If required, the ECow will have the power to conduct audits of the site at any time and stop works should any breach of the CEMP or CAR licence conditions be identified. The ECoW will provide advice and recommendations to the contractor and will produce an ECoW report for submission to BEAR Scotland on a monthly basis.

During operation, there will be a slight beneficial impact on the water environment during a landslide event, as bunds will reduce the likelihood of sediments entering watercourses.

GEOLOGY AND SOILS:

There is the potential to disturb surrounding ground during construction of the bunds. Measures that are in place to protect sensitive habitats will also offer protection to soils in the surrounding area.

Provided the following mitigation measures are followed during works, impacts during construction are not anticipated to be significant.

- Excavated soil and rock will be stored in a designated area on level ground where practicable.
- If the soil is to be re-used on site, then it will be wetted (if necessary) during periods of dry weather to prevent drying out.
- Upon completion of the works, any damage to the local landscape (i.e. damage to grass verges) should be reinstated as much as is practicable.
- Mitigation measures to prevent contamination of soils through loss of containment are discussed in the Water Section.
- Mitigation measures described in the Biodiversity: Habitats Section will be followed to reduce potential impacts on soils.

The works will not result in significant impacts to geology and soils during the operation phase as the works do not lie within any site designated for geology and soils.

WASTE, MATERIALS AND USE OF NATURAL RESOURCES:

During construction, there will be a temporary impact as a result of materials and waste. Topsoil will be re-used as far as possible on site and SEPA is amenable to the reuse of stone extracted from Phase 1 as part of this landslide mitigation project.

Provided the following mitigation measures are followed during works, impacts during construction are not anticipated to be significant.

- The waste hierarchy (Reduce, Reuse, Recycle and Dispose) will be employed throughout the construction works.
- Where possible, waste production will be minimised. For example, the provision of reusable cutlery, crockery and water bottles to all on-site staff is strongly encouraged.
- Bulk material will be delivered to site without packaging where possible.
- Supplies are to be requested to minimise all packaging where possible.
- Care is to be taken to only order the correct quantity of required materials, preventing disposal of unused materials.

- Materials should be reutilised where possible.
- Facilities on site will be provided in a designated area to enable the correct segregation of waste, maximising recycling on site. These are to be clearly marked and labelled.
- Wastes not suitable for recycling will be sent to landfill or special waste treatment facilities, depending on the nature of the waste.
- All waste stored on site will be adequately protected against the elements and vermin.
- All appropriate waste documentation must be present on-site and be available for inspection.
- All wastes and unused materials will be removed from site in a safe manner by a licensed waste carrier upon completion of the works. The appointed waste carrier will have a valid SEPA waste carrier registration, a copy of which will be retained by BEAR Scotland. A copy of the waste transfer is also to be provided to BEAR Scotland as early as practicably feasible and retained.
- If required, an exemption from SEPA will be secured to allow for the reuse of materials.
- During the site induction all staff are to be informed that littering will not be tolerated. Staff are also encouraged to collect any litter seen on site.
- Where applicable, all temporary signage will be removed from site on completion of the works.
- All hazardous material will be stored in line with Section 10.0: Road Drainage & Water Environment.
- A copy of the duty of care paperwork should be provided and filed appropriately in accordance with the Code of Practice (as made under Section 34 of Environmental Protection Act 1990 as amended).
- Any contaminated ground as a result of the works should be removed and transferred off site as special waste.
- Any COSHH waste and special waste should be removed from site by a specialised waste carrier. COSHH waste should NOT be mixed with general waste and/or other recyclables.

The main materials associated with the works along with approximate values are provided below:

- Excavated soil material 2,500m^3 (Phase 1)
- Excavated rock material 12,500m^3 (10,000m^3 bulked to 12,500m^3) (Phase 1)
- Excavated soil material 9,700m^3 (Glen Kinglas)

All waste will be disposed of safely and legally with regard to Duty of Care. No significant impacts are anticipated during the operation phase.

RISK OF MAJOR ACCIDENTS OR DISASTERS:

A CEMP has been produced by BEAR Scotland which sets out a framework to reduce the risk of adverse impacts from construction activities on sensitive environmental receptors. It describes a basis for recording environmental risks, commitments, and other environmental constraints and identifies the processes and measures that will be used to manage and control these aspects. In addition, it seeks to ensure compliance with relevant environmental legislation, government policy objectives, and scheme-specific environmental objectives. It also provides a mechanism for monitoring, reviewing, and auditing environmental performance and compliance. The subcontractor will comply with all conditions of the CEMP during works and may be subject to audit throughout the contract.

A Designer's Risk Register will be prepared by BEAR Scotland which addresses potential environmental risks. Activity-specific Method Statements will be produced by the subcontractor and will recognise and highlight the environmental risks and detail how these will be addressed, as well as the contingency plans to be in place to deal with environmental incidents. These must be approved by BEAR Scotland prior to works commencing.

With the above measures in place, the risk of major accidents or disasters as a result of the works is considered to be low.

CUMULATIVE EFFECTS:

Works are currently underway at Rest and Be Thankful Phase 1. Works were recently completed at Rest and Be Thankful Phase 7 and works are planned at Phases 5&6 and 3B. However, standard good practice measures will be in place during these works to avoid environmental impacts. Aside from these two forthcoming schemes, there are no known projects currently planned or recently completed that have the potential to contribute to in-

combination or cumulative effects on the nearby designated sites or protected species in the vicinity of Glen Kinglas

The proposed works will improve the condition of the road and protect against future landslides. Consequently, carrying out these works now will reduce the risk that additional major works will be required in the future. This in turn will reduce the amount of work required at this location. Therefore, it is not expected that the works will contribute to long-term significant cumulative effects on the environment in the vicinity of Glen Kinglas.

Extent of EIA work undertaken and details of consultation:

The following environmental parameters have been considered within this Record of Determination:

- Air and Climate
- Cultural Heritage and Material Assets
- Biodiversity
- Landscape
- Land
- Population and Human Health
- Water
- Geology and Soils
- Waste Material and use of Natural Resources

Consultation with statutory consultees was deemed necessary because there are potential nature conservation parameters which could be affected during the works. Below is a list of consultees:

- Loch Lomond and the Trossachs National Park
- Scottish Environment Protection Agency
- Scottish Natural Heritage
- Argyll Fisheries Trust and Board
- Argyll and Bute Council

Statement of case in support of a Determination that a formal EIA and Environmental Statement is not required:

This is a relevant project falling within Annex II that:

- Lies in close proximity to the Loch Lomond and the Trossachs National Park.
- Lies with the Glen Etive and Glen Fyne SPA.
- Lies 300m distant from the Beinn an Lochain SSSI.

The project has been subject to screening using the Annex III criteria to determine whether a formal EIA is required under the Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017.

Screening using Annex III criteria, reference to consultations undertaken and review of available information has not identified the need for a full EIA.

The project will not have significant effects on the environment by virtue of factors such as:

Characteristics of the scheme:

- The development is approximately 0.95 ha including all traffic management.
- Previous phases of works have been carried out and further phases of works have been proposed. This programme of works is being carried out to reduce the risk of landslide events in the area.

- Works are scheduled to take 6 months in an area where there are few sensitive receptors.
- The installation of bunds will help to reduce the effects of landslides on the water environment and human population including the travelling public.

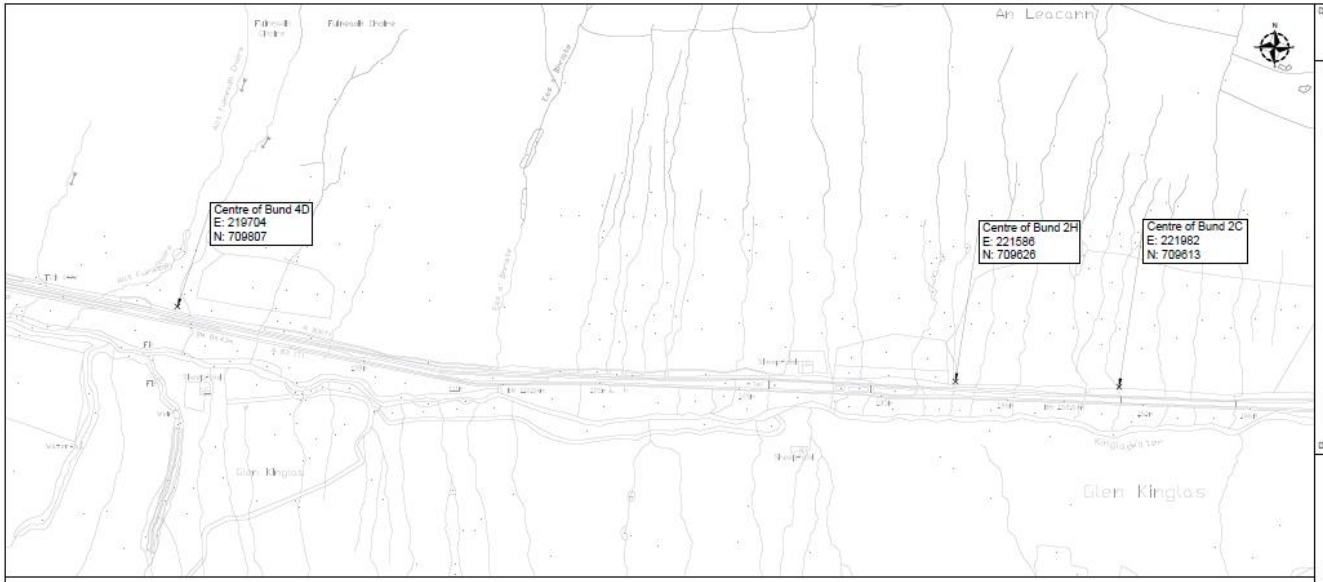
Location of the scheme:

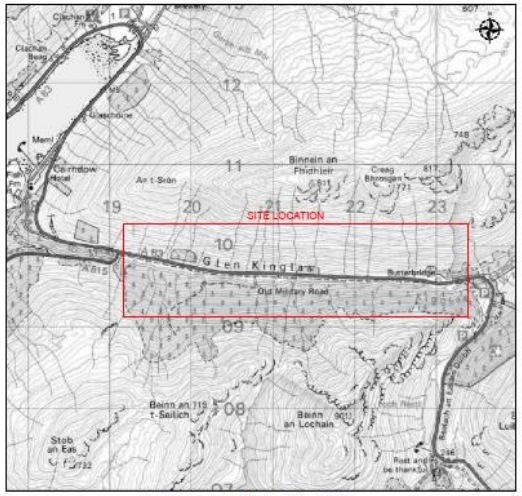
- Current land use in the area is primarily that of rough grazing for livestock and immature forestry plantation.
- The scheme does not lie within a densely populated area.
- The scheme does not lie within any sites of historical, cultural or archaeological significance.
- The scheme does not lie within any sites designated for their geology or soils.
- The scheme lies in close proximity to the LLTNP, renowned for its famous landscape.

Characteristics of potential impacts of the scheme:

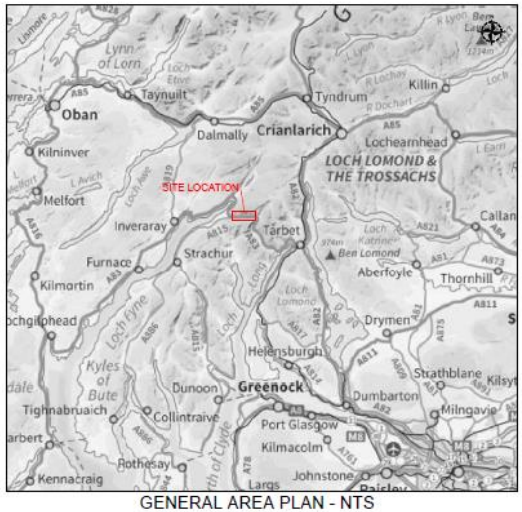
- No impacts on any features of cultural heritage interest are anticipated.
- Any impacts on air quality or noise levels are temporary during the construction period. Due to the distance of the works from sensitive receptors and with mitigation measures in place, impacts are minor and not significant.
- Minor short-term impacts are anticipated for vehicle travellers, pedestrians, cyclists, and equestrians. however, these are reduced due to works being completed outside of the key tourist period.
- There will be a minor loss of some habitats which are ubiquitous in the wider area. Additionally, the areas that will be lost have been disturbed by grazing and are species-poor compared to typical examples of these habitats.
- There is potential for an impact on water quality during construction as a result of potential spillage of fuels, oils and mobilisation of silt. However, with pollution prevention measures in place, this risk is considered to be negligible.
- Liaison has been carried out with the LLTNP to ensure that the final design is one that does not compromise the surrounding landscape or visitors' experience of it.
- No impacts on biodiversity are expected due to lack of resting sites for European Protected Species on site and the proximity of the works to the trunk road corridor.
- No impacts on breeding birds are anticipated due to works commencing prior to the bird breeding season (March to August inclusive).
- With pollution prevention measures in place, there are no risks to human health from water contamination or air pollution.
- No change in land use is anticipated, but a minor loss of habitats of low agricultural quality, ubiquitous to the wider area, is expected.
- No impacts on geology and soils are anticipated.
- During construction, there will be a temporary impact as a result of materials and waste. Topsoil will be re-used as far as possible on site.

APPENDIX A: SCHEME LOCATION AND EXTENTS





LOCAL AREA PLAN - NTS



GENERAL AREA PLAN - NTS

Drawing Number
19/NW/0901/009/001

Do not scale this drawing

Rev	Date		Checked

Status: FOR INFORMATION

Rev.: 0

Client: TRANSPORT SCOTLAND

BEAR SCOTLAND

Project: A83 GLEN KINGLAS BUNDS

Title: PROPOSED BUND LOCATIONS

Drawing No.	19/NW/0901/009/001		
Scale	1:10000 @ A3 Unless Stated Otherwise	Date	14/09/2020
Designed JM	Drawn CS	Checked JM	Approved