TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

transport.gov.scot

Environmental Impact Assessment Record of Determination

Queensferry Crossing – North Automated Barriers Scheme

Contents

Project Details

Description

The Queensferry Crossing (QFC) is a multi-span bridge crossing the Firth of Forth. When the QFC is subjected to a closure, the bridge is closed to traffic and diversion routes are implemented, one of which is the diversion of traffic to the Forth Road Bridge (FRB). However, the current timeframe required to implement the sequencing of traffic management for a diversion to the FRB is approximately 5 hours, which can cause delays on the trunk road network. This timeframe is required to allow operatives the safe working area to open median and outer carriageway barriers on the M90 northern and southern approaches to the FRB prior to allowing traffic to be diverted.

The proposed scheme will see northbound and southbound traffic on the northern end of the QFC utilising the existing M90 southbound carriageway through Ferrytoll Junction and the existing emergency crossover point onto the A9000 Bus and Taxi Lane. Thereafter, the A9000 will have the road space reallocated to provide traffic connecting to the Forth Road Bridge. Automated barriers will be installed to replace the current removable Open Box Beam (OBB) barriers on the M90. This will minimise the time taken to implement the temporary traffic diversion and therefore reduce delays to the road users on the M90.

Works on the verges will be completed during dayshift as these works only require the hard shoulder to be closed. Due to traffic sensitivity and the requirement for lane closures on either side of the central reserve, works within the central reserve will be completed during night time.

The proposed scheme is designed to provide a ‘free flow’ connection for traffic from the M90 to the A9000 and FRB. This ‘free flow’ connection will only be used when a diversion of the QFC is required.

The proposed scheme comprises the following key activities:

- Approximately 900m of temporary traffic management (traffic signs and road markings) along the M90 to the interface with the A9000.
- Approximately 300m of temporary traffic management (traffic signs and road markings) along the A9000 to the interface with the M90.
- Installation of three rows of automated barriers (approximately 65m; 85m and 50m long) and intelligent light studs to divide the northbound and southbound traffic traversing along the M90/A9000 during the temporary traffic management.

- Central reserves to be permanently upgraded to accommodate the proposed automated barriers.
- Existing road restraints upgraded to tie-in with the proposed automated barriers.
- Construct proposed barrier foundations for foundation module and pivots.
- Hardstanding / maintenance layby for access to the automated barriers cabinets. The layby is aligned along the A9000 (on the western verge, approximately 330m south of the Ferrytoll Roundabout). Buses / taxis lane traverse the A9000 and heads south to FRB, and not along the slip road to the M90.
- Upgrade highways drainage:
    - Replace existing slot drains with realigned slot polymer concrete drains.
    - Replace existing filter drains with realigned filter drains.
    - Removal of a section of combined kerb drains and replace with carrier drains.
    - Realign existing pre-earth drains (PED).
- Upgrade pavement works:
    - Replace existing pavements along the central reserves with new full depth construction.
    - Add new full depth pavement construction along the verges.
    - Milling existing surface course to tie in with existing pavements.
- Highways lighting to be relocated.
- Diversion of IT communication cable ducts.
- Construct new central reserve (approximately 300m of N2W2 double sided flexbeam) along the A9000.

A mirrored project for the installation of automated barriers on the south approach to the QFC is considered in a separate Record of Determination (RoD) and is not considered further in this RoD.

Location

The proposed scheme is located at the interface between the M90 and the A9000 which leads south to the FRB (refer to location plan in Appendix 1). The settlements of North Queensferry and Inverkeithing are located to the east and north of the proposed scheme respectively.

Description of local environment

Air quality

The project is not located within an Air Quality Management Area (AQMA) (Air Quality Scotland). The closest air quality monitoring station, Fife Rosyth, is located approximately 1.7km north of the proposed scheme (Air Quality Scotland).There are two facilities located within 1km of the proposed scheme registered on the Scottish Pollutant Release Inventory (SPRI): the Dunfermline Waste Water Treatment Works which is approximately 100m west of the proposed scheme and Robertson Metals Recycling which is approximately 400m east of the proposed scheme. At the time of writing, this monitoring station recorded an air pollution level of 'Low' for all monitored pollutants (Air Quality Scotland). The closest AQMA is located approximately 6.3km north west of the scheme, in Dunfermline. The Appin Crescent Dunfermline AQMA was declared for NO_2 and PM_{10} (Air Quality Scotland).

The air quality in the vicinity of the scheme is most likely influenced by road traffic on the M90 and A9000.

Cultural heritage

The following designated cultural heritage assets are located within 300m of the proposed scheme (PastMap):

- Listed Building: Forth Road Bridge, including approach ramps and piers (Dataset ID: LB49165) is approximately 300m from the works location.
- Listed Building: St Margaret's Hope, Gatelodge and Gatepiers (Dataset ID: LB6406) is approximately 100m from works location.
- Listed Building: Jamestown, Forth Bridge, North (Dataset ID: LB49652) is approximately 100m from works location.
- Listed Building: Jamestown, Ferryhills Road, Naval Base Mansions (Dataset ID: LB49652) is approximately 160m from works location.
- Listed Building: North Queensferry, St Margaret's Hope, Including Boundary Walls, Walled Garden To South And Archway On Drive To North (Dataset ID: LB6405) is approximately 260m from works location.
- Battle Of Inverkeithing II (Battlefield) (Dataset ID: BTL23) is partially located within the scheme extents.

There are multiple cultural heritage features recorded on Historic Environment Record and Canmore database within 300m of the proposed scheme (PastMap).

Landscape and visual effects

The scheme is located within Ferry Hills Local Landscape Area (Scottish Local Landscape Areas).

The Landscape Character Type (LCT) of the proposed works area is Coastal Hills - Fife (LCT 192) (NatureScot National Landscape Character Assessment), which has the following key characteristics:

- Close association with the coast, either through views of the sea, the Firths or the estuaries or indirect coastal experiences of sounds, smell, etc.
- Predominantly medium to large, open, undulating arable fields, often with no field boundaries or with mainly wire fences, low hedges or some stone dykes and little other vegetation cover.
- Isolated farms and extended or converted farmsteads amongst open, exposed fields.
- Extensive seaward views across the North Sea or the Firths and land beyond, but generally landward views are contained by hills in the near distance.
- Distinctive edges to the character type, created either by distinct breaks of slope or by rivers, roads, built development or the Coastal Cliffs or Coastal Braes.
- General lack of tree cover, with relatively few forests and shelterbelts.
- Some pasture and rough hill grazing on the poorer hill soils. Occasional field corner plantations and small semi-natural woodlands alongside burns.
- Infrequent, small, often exposed and conspicuous settlements of stone or white or pale colour-washed render and grey roofs and single storey or two storey houses with small windows to the sea.
- Designed landscapes, castles, dovecotes historic villages and rural churches.
- Golf courses, primarily in eastern parts.
- Medium to large scale, often open or exposed coastal landscape, where the character is always influenced by the sea and can be particularly affected by the weather conditions and views of the sky and the sea.
- Generally a simple, sloping, organised, tended, farming landscape with regular or geometric patterns.

Biodiversity

Firth of Forth Special Protection Area (SPA) (SiteLink), Firth of Forth Ramsar (SiteLink) and Firth of Forth Site of Special Scientific Interest (SSSI) (SiteLink) are located approximately 200m west of the scheme at its closest point.

Ferry Hills SSSI (SiteLink) is located directly adjacent to the A9000 and M90 carriageway.

St Margaret's Marsh SSSI (SiteLink) is located approximately 130m west of the proposed scheme at its closest point.

There are parcels of woodland located 220m south east of the southern extent of the scheme and recorded on the Ancient Woodland Inventory of Scotland as 'Long-Established (of plantation origin)' (Scotland's Environment).

Parcels of wetlands (saltmarsh, reedbed and swamp) recorded on Scottish Wetland Inventory, are located approximately 130m west of the scheme, within St Margaret's Marsh SSSI. Unnamed swamp recorded on Scottish Wetland Inventory is located approximately 135m east of the A9000 carriageway, within Ferry Hills SSSI (Scotland's Environment).

The NBN Atlas (NBN Atlas) records (within the last 10 years) the presence of the following invasive non-native species (INNS) and injurious weeds within 2km of the scheme extents:

- Rhododendron (*Rhododendron ponticum*)
- Japanese knotweed (*Reynoutria japonica*)
- Himalayan balsam (*Impatiens glandulifera*)
- Giant hogweed (*Heracleum mantegazzianum*)
- Broad-leaved dock (*Rumex obtusifolius*)
- Curled dock (*Rumex crispus*)
- Common ragwort (*Senecio jacobea*)
- Rosebay willowherb (*Chamerion angustifolium*)
- Spear thistle (*Cirsium vulgare*)
- Creeping thistle (*Cirsium arvense*)
- Field horsetail (*Equisetum arvense*)

There are no records of INNS or injurious weeds recorded on Asset Management Performance System (AMPS) (Transport Scotland's record of assets on the trunk road network) within the scheme extents during the past five years.

The habitat surrounding the scheme is mostly characterised by buildings and roads. There are parcels of woodland, forest and other wooded land located directly adjacent to the A9000 carriageway and fields of agriculturally improved, re-seeded and heavily fertilised grassland, including sports fields and grass lawns west of the carriageway (Scotland's Environment).

Geology and soils

The scheme is partially located within North Queensferry (A90) Road Cuttings Geological Conservation Review Site (SiteLink).

Ferry Hills Site of Special Scientific Interest (SSSI) (SiteLink) is located directly adjacent to the A9000 and M90 carriageway. Ferry Hills SSSI is designated for the following features:

- Biological: Lowland grassland (calcareous) (last assessed in 2006 as 'Unfavourable declining), and
- Geological: Igneous petrology (Carboniferous-Permian Igneous) (last assessed in 2017 as 'Unfavourable declining').

Bedrock geology within the proposed scheme is recorded as Midland Valley Sill-complex - Quartz-microgabbro, which is igneous bedrock, and Sandy Craig Formation - Sedimentary Rock Cycles, Strathclyde Group Type, which is sedimentary bedrock (BGS Geology Viewer). Superficial deposits within the scheme are recorded mostly as Marine Beach Deposits - Gravel, Sand and Silt (BGS Geology Viewer).

Soils within the A9000 and M90 carriageways area are not recorded (Scotland's Environment Soils).

Material assets and waste

Materials used will consist of:

- Reinforced concrete foundation modules with waterproofing
- Steel base plate for automated barriers
- Bolts, washers, nuts and anchors for concrete foundations
- Safety barriers, terminals and posts
- Galvanised guardrails
- Stormwater drains, chambers, slot drains and headwalls
- Service ducts, chambers and cabinets
- Asphalt road pavements (all layers) and sub-base
- Precast concrete edging kerbs and grasscrete type paving
- Traffic signs, road markings and road studs
- New highways lighting columns, if existing cannot be relocated

Wastes anticipated are:

- Safety barriers, terminals and posts
- Existing slot drains and combined drainage kerbs
- Concrete and asphalt pavements

- Formation materials including Class 5A
- Road markings
- Lighting columns if the existing columns cannot be relocated

Noise and vibration

The scheme is not located within a Candidate Noise Management Area (CNMA) or Candidate Quiet Area (CQA) (Scottish Noise Maps). The scheme is located in an area where the dominant source of noise is anticipated to be road traffic on the A9000 and M90 carriageways.

Population and human health

The scheme lies west of North Queensferry and south of Inverkeithing. There are multiple residential and commercial properties located within 300m of the scheme, with the closest located approximately 80m east of the proposed scheme.

Two core paths cross under A9000 and M90 carriageways within the scheme extents (Scotland's Environment):

- R703 – Road link North Queensferry to Rosyth + Bridge (ID: 135767)
- R662 – St. Margaret's Marsh (ID: 28135).

National Cycle Network Route 1 runs along the A9000 carriageway within the scheme extents (OS Map).

The closest traffic count point (ID: 90005) on the A900 is located north of the Forth Road Bridge, within the scheme extents. In 2020 the number of vehicles recorded at this count point was 455, of which 4 were heavy goods vehicles. It should be noted that the number of vehicles in the past few years was much lower due to most traffic using the Queensferry Crossing Bridge, rather than through Forth Road Bridge (Road Traffic Statistics).

The closest traffic count point (ID: 90006) on the M90 is located on the Queensferry Crossing. In 2020 the number of vehicles recorded at this count point was 83,734, of which 7,387 were heavy goods vehicles (Road Traffic Statistics).

Road drainage and the water environment

The scheme is located within Burntisland (ID: 150555) groundwater waterbody (SEPA), which is a Drinking Water Protected Area (Ground) (Scottish Government).

Burntisland groundwater was classified by SEPA in 2020 as having overall status of 'Good'.

The scheme is located approximately 250m from the Lower Forth Estuary (ID: 200435) at its closest point. The Lower Forth Estuary is a transitional water body, in the Scotland river basin district, and it is 38.6 square kilometres in area. The Lower Forth Estuary was last classified by SEPA in 2020 as having overall status of 'Good' (SEPA).

The Lower Forth Estuary has a high potential of coastal flooding (each year this area has a 10% chance of flooding). There is a high likelihood of coastal and surface flooding in the central part of the scheme, within the A9000 carriageway (SEPA Flood maps).

The existing road drainage arrangements for this section of road discharges into the existing Sustainable Urban Drainage System (SuDS) pond, west of the M90 and adjacent to the B981. From the SuDS pond, the drainage is eventually discharged into the Firth of Forth.

Climate

The Climate Change (Scotland) Act 2009 sets out the target and vision set by the Scottish Government for tackling and responding to climate change (The Climate Change (Scotland) Act 2009). The Act includes a target of reducing CO2 emissions by 80% before 2050 (from the baseline year 1990). The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 amended the Climate Change (Scotland) Act 2009 to bring the target of reaching net-zero emissions in Scotland forward to 2045 (Climate Change (Emissions Reduction Targets) (Scotland) Act 2019).

The Scottish Government has since published its indicative Nationally Determined Contribution (iNDC) to set out how it will reach net-zero emissions by 2045, working to reduce emissions of all major greenhouse gases by at least 75% by 2030 (Scotland's contribution to the Paris Agreement: indicative Nationally Determined Contribution - gov.scot (www.gov.scot)). By 2040, the Scottish Government is committed to reducing emissions by 90%, with the aim of reaching net-zero by 2045 at the latest.

Transport Scotland is committed to reducing carbon across Scotland's transport network and this commitment is being enacted through the Mission Zero for Transport (Mission Zero for transport | Transport Scotland). Transport is the largest contributor to harmful climate emissions in Scotland. In response to the climate emergency, Transport Scotland are committed to reducing their emissions by 75% by 2030 and to a legally binding target of net-zero by 2045.

Policies and plans

This Record of Determination has been undertaken in accordance with all relevant regulations, guidance, policies and plans, notably including the Environment and Sustainability Discipline of the Design Manual for Roads and Bridges (Design Manual for Roads and Bridges (DMRB)) and Transport Scotland's Environmental Impact Assessment Guidance (Guidance - Environmental Impact Assessments for road projects (transport.gov.scot)).

Description of main environmental impacts and proposed mitigation

Air quality

Construction activities associated with the proposed works have the potential to cause temporary local air quality impacts. Activities undertaken on site may cause dust and particulate matters to be emitted to the atmosphere. However, given the scale and nature of the works, and the following mitigation measures, the likelihood of significant impacts on air quality is considered to be low.

Mitigation includes:

- All plant, machinery and vehicles associated with the scheme must be maintained to the appropriate standards. All plant, machinery and vehicles must be switched off when not in use.
- 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.
- Any stockpiled material on site will be monitored daily to ensure no risks of dust emissions exists.
- Materials should be removed from site as soon as is practicable.
- Good housekeeping will be employed throughout the work.

With the above mitigation measures in place, it is anticipated that any air quality effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this Record of Determination (RoD)

Cultural heritage

Although the proposed scheme is partially located within a designated battlefield and there are Listed Buildings located within 300m of the scheme, the proposed works are not anticipated to have negative impacts on cultural heritage as they will be restricted to made ground within the existing carriageway and verge. The following good practice measures will be in place to reduce the risk of impacts to known and unknown features of cultural heritage interest:

- There will be no encroachment on the designated battlefield, outside the works area. Unnecessary encroachment onto designated cultural heritage areas will not be tolerated.

- All site personnel are to be briefed on the importance of archaeological finds and are instructed, as part of the site induction, to inform the site supervisor where potential finds are made.
- People, plant, and materials should, as much as is reasonably practicable, only be present on areas of made / engineered ground. Where access out with these areas is required for the safe and effective completion of the scheme, it should be reduced as much as is reasonably practicable and ideally be limited to access on foot.
- There should be no storage of vehicles, plant, or materials against any buildings, walls or fences.
- Should any unexpected archaeological evidence be discovered, works will stop temporarily in the vicinity and the BEAR Scotland Environment Team will be contacted for advice.

With the above mitigation measures in place, it is anticipated that any cultural heritage effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Landscape and visual effects

There is potential for minor, temporary visual impacts to Ferry Hills Special Landscape Area during the construction phase as a result of obstructed views due to vehicles and machinery. However, proposed works will be restricted to the carriageway and verge and land use will not change as a result of the works. The following mitigation measures will be put in place:

- Throughout all stages of the works, the site must be kept clean and tidy, with materials, equipment, plant and wastes appropriately stored, reducing the landscape and visual effects as much as possible.
- The working area and site compound location will be appropriately reinstated following works.
- 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 applicable, upon completion of the works, any damage to the local landscape should be reinstated as much as is practicable.
- The site will be left clean and tidy following construction.

With the above mitigation measures in place, it is anticipated that any landscape and visual effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Biodiversity

Construction activities will be required to be undertaken within close proximity to a number of features of potential ecological value, such as:

- Firth of Forth SPA, Firth of Forth Ramsar, Firth of Forth SSSI located approximately 200m west of the scheme at its closest point.
- Ferry Hills SSSI located directly adjacent to the A9000 and M90 carriageway
- St Margaret's Marsh SSSI located approximately 130m west of the scheme, and
- Forth Islands SPA (Long Craig Island) and Long Craig Island SSSI located approximately 600m south of the proposed scheme.

In relation to the Firth of Forth SPA, the Firth of Forth Ramsar and the Forth Islands SPA, and as part of the Habitat Regulations Appraisal (HRA) process, an Appropriate Assessment has been undertaken in consultation with NatureScot and concluded that the proposed works would not lead to an adverse effect on site integrity. On a precautionary basis, to avoid disturbance of birds which currently use the area adjacent to St Margaret's Marsh in small numbers, or might be displaced there, the following mitigation measures will be in place:

- The contractor will employ a soft-start to all noisy activities. The noise levels will be gradually increased over a period of 30 minutes to allow birds to relocate.
- Lighting arrangements for night-time working will ensure minimum light-spill, and not beyond the spill zone of the existing road lighting.

In addition, the intention to use the FRB only for limited movements of cars and vans will be strictly followed to avoid an increase in the amount of noise adjacent to North Queensferry. Furthermore, the ECoW presence and bird monitoring underway for the FRB maintenance works, taken together with the noise monitoring and management plan, will monitor the impacts of qualifying interests in the Long Craig and North Queensferry areas. Any impacts that the proposed scheme may have on birds in these areas will be recognised and recorded by the ECoW. Further mitigation measures will be identified at that point.

The proposed scheme has the potential to have a temporary adverse impact on biodiversity in the area as a result of increased vehicle presence and construction noise disturbance. Any protected species in the area are likely to be accustomed to road noise on the M90/A9000. The following mitigation measures will be put in place:

- Site personnel will remain vigilant for the presence of any protected species throughout the works period. Should a protected species be noted during construction, works will temporarily halt until the species has sufficiently moved

on. Any sightings of protected species should be reported to the BEAR Scotland Environmental Team.

- All construction operatives will be briefed through toolbox talks prior to works commencing. The toolbox talks provide information of the legislation, general ecology, and best practice measures for relevant protected / invasive non-native species.
- Works are to be strictly limited to areas required for the proposed works. Unnecessary encroachment onto terrestrial or aquatic areas will not be tolerated.
- 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.
- 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.
- No INNS are recorded within the footprint of the proposed works and therefore are not anticipated to be encountered onsite. If any previously unrecorded instances of INNS are identified onsite, the proposed works are not permitted to disturb or operate within the immediate proximity (i.e. within 7m) of them. If INNS are identified on site that are required to be disturbed by the proposed works, then contact should first be made with BEAR Scotland's Environmental Team for advice on proceeding.

With the above mitigation measures in place, it is anticipated that any biodiversity effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Geology and soils

The scheme is partially located within North Queensferry (A90) Road Cuttings GCRS and Ferry Hills SSSI is located directly adjacent to the A9000 and M90 carriageway. However, construction activities are associated with the replacement of current OBB barriers with automatic barriers. The works will be restricted to existing made ground and are not anticipated to have an adverse impact on geology and soils. The following mitigation measures will be put in place:

- The parking of machinery/personnel and storage of equipment on road verges will be minimised as far as is reasonably practicable.
- 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 will be strictly adhered to.

With the above mitigation measures in place, it is anticipated that any geology and soils effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Material assets and waste

There is potential for impacts as a result of resource depletion through use and transportation of new materials. However, materials will be sourced locally where possible and the following mitigation measures will be put in place:

- Materials will be sourced from recycled origins as far as reasonably practicable within design specifications.
- Care will be taken to order the correct quantity of required materials to prevent the disposal of unused materials.
- Where possible, minimal packaging should be requested on required deliveries to reduce unnecessary waste and production of packaging materials.

There is potential for impacts during works as a result of the improper storage or disposal of waste. The following mitigation measures will be put in place:

- The waste hierarchy (Reduce, Reuse, Recycle and Dispose) will be employed throughout the construction works.
- The Contractor will adhere to waste management legislation and ensure they comply with their Duty of Care.
- Containment measures will be in place to prevent debris or pollutants from entering the surrounding environment.
- All wastes and unused materials must be removed from site in a safe and legal manner by a licensed waste carrier upon completion of the works. The appointed waste carrier must have a valid SEPA waste carrier registration, a copy of which will be provided to and retained by BEAR Scotland as early as possible.
- All appropriate waste documentation must be present on site and be available for inspection. 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).
- Re-use and recycling of waste will be encouraged and the subcontractor will be required to fully outline their plans and provide documentary evidence for waste arising from the works (e.g. waste carrier's licence, transfer notes, and waste exemption certificates).
- Staff will be informed that littering will not be tolerated. Staff will be encouraged to collect any litter seen on site.

- Where applicable, all temporary signage will be removed from site on completion of the works.
- If any hazardous or special waste is produced, this will be subject to the Special Waste Regulations 1996 should be removed from site by a specialised waste carrier. Special waste should not be mixed with general waste and/or other recyclables.

With the above mitigation measures in place, it is anticipated that any material assets and waste effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Noise and vibration

Construction activities associated with the proposed scheme works have the potential to cause noise and vibration impacts through the use of equipment and construction vehicles for the proposed activities, mostly related to drilling work during installation of the automatic barriers. The following mitigation measures will be put in place:

- The Best Practice Means, as defined in Section 72 of the Control of Pollution Act 1974, will be employed at all times 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, included in the SEMP.
- On-site construction tasks should be programmed to be as efficient as possible, with a view to limiting noise disruption to local sensitive receptors.
- All site personnel will be fully briefed in advance of works regarding the need to minimise noise of the night-time works and of the site-specific sensitivities.
- BEAR will notify the local authority and the relevant stakeholders about the works.
- The noisiest work operations (e.g. using breakers, chipping hammers, etc.) should be completed before 11pm where possible.
- All plant, machinery and vehicles will be switched off when not in use.
- All plant will be operated in such a way that minimises noise emissions and will have been maintained regularly to the appropriate standards.
- Where fitted, and where permitted under Health and Safety requirements, white noise reversing alarms should be utilised during construction.

With the above mitigation measures in place, it is anticipated that any noise and vibration effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Population and human health

During construction, activities undertaken on site may have temporary negligible adverse impacts on local residents and road users as a result of vehicle noise and delays due to traffic management measures. Road users will be notified of the works through a media release, which will provide information on the works including details of construction dates and times. The following mitigation measures will be put in place:

- Traffic management will be in place.
- Mitigation measures for night time works will be implemented to minimise noise disturbance (mentioned under 'Noise and vibration' heading above).
- BEAR will notify the local authority and the relevant stakeholders about the proposed works.
- Road users and local residents will be notified of the proposed works through a media release approved by Transport Scotland into the local paper and overhead gantries/variable message signs will display messages about the works.
- Appropriate provisions/measures should be implemented within the traffic management to allow the safe passage of pedestrian, cyclist, equestrian and community (PCEC) road users, of all abilities, through the site (as required and appropriate).

With the above mitigation measures in place, it is anticipated that any population and human health effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Road drainage and the water environment

There are no watercourses within an immediate proximity to the scheme extents, with the closest being the Lower Forth Estuary which is located approximately 250m from the scheme. Potential changes in water quality from pollution events (either by accidental spillage, sediments, particulate matter, chemicals, fuels or by mobilisation of these in surface water caused by rain) during works have the potential to have direct or indirect effect on the surrounding waterbodies. The following mitigation measures will be put in place to reduce the risk of pollution incidents as a result of works:

- The scheme will not entail any in-stream works.
- No discharges into any watercourses or drainage systems are permitted. Appropriate containment measures must be in place to prevent any loss of construction materials into the water environment.
- An incident response (contingency) plan will be put in place to reduce the risk from pollution incidents or accidental spillages. All necessary containment

equipment, including suitable spill kits (for oil and chemicals) will be available on site, quickly accessible if needed, and staff trained in their use.

- A spillage control procedure will be in place and all staff should be trained in how to deal with spillages.
- Suitable spill kits will be present on site and staff should know how and when use them.
- Storage of hazardous material, oil and fuel containers will be distanced more 10m away from any watercourses.
- If required, a designated refuelling area will be identified. Fuel bowsers will be stored on an impermeable area and be fully bunded. This should be distanced more than 10m from any watercourses.
- All plant and equipment will be regularly inspected for any signs of damage leaks. A checklist will be present to make sure that the checks have been carried out.
- Standard working practices to comply with The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) for works in or near water will be detailed in the SEMP and adhered to on site.

With the above mitigation measures in place, it is anticipated that any road drainage and the water environment effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Climate

Construction activities associated with the proposed scheme works have the potential to cause local air quality impacts as a result of the emission of greenhouse gases through the use of vehicles and machinery, material use and production, and transportation of materials to and from site. The following mitigation measures will be put in place:

- BEAR Scotland will adhere to their Carbon Management Policy.
- Local contractors and suppliers will be used as far as practicable to reduce fuel use and greenhouse gas emitted as part of the works.
- Where possible, materials will be sourced locally to reduce greenhouse gas emissions associated with materials movement, and waste will be disposed at local landfill.

With the above mitigation measures in place, it is anticipated that any climate effects associated with the proposed works are unlikely to be significant. This receptor is not considered further in this RoD.

Vulnerability of the project to risks

Lower Forth Estuary has a high potential of coastal flooding (each year this area has a 10% chance of flooding). There is a high likelihood of coastal and surface flooding in the central part of the scheme, within the A9000 carriageway.

The works will be restricted to the existing carriageway and verge and any traffic management will be designed in line with existing guidance. These measures, along with mitigation measures and standard working practices, will be detailed in the SEMP and adhered to on site. The vulnerability of the project to risks of major accidents and disasters is considered to be low.

Assessment of cumulative effects

The north automated barriers scheme is currently programmed to be completed first, therefore there would be no cumulative effects from north and south schemes being constructed at the same time.

The proposed works are not anticipated to result in significant environmental effects. A search of the Fife Council Planning Portal (Map Search) highlighted that there are two other schemes planned in the vicinity of the scheme, however these are both related to the display or installation of signs and restricted to the road verges within the Forth Road Bridge. These are not anticipated to have any impact on the works.

A search of the Scottish Roads Works Commissioner's website (Map Search) has identified that no other roadworks are currently ongoing, or noted as being planned on the trunk road at the same time as the scheme. Some smaller scale traffic restrictions / roadworks are found on the local authority road network in proximity to the proposed works, however given their scale and lack of connectivity to the trunk road network, no cumulative effect is assessed. Due to the nature of the proposed works, no cumulative effects are anticipated with any other developments in the vicinity.

BEAR Scotland programme all of their proposed works in line with appropriate guidance and contractual requirements. All schemes are programmed to take into account existing and future planned works, with a view of limiting any cumulative effects relating to traffic management. As a result of this exercise, where a potential for cumulative impacts is identified, BEAR will reprogramme schemes to avoid / limit any cumulative effects or will utilise existing traffic management to complete multiple schemes at once. This approach allows BEAR Scotland to effectively manage the potential cumulative effects as a result of traffic management, resulting in minimal disruption to users of the Scottish trunk road network.

Assessments of the environmental effects

As detailed in the Description of Main Environmental Impacts and Proposed Mitigation section, there are no significant effects anticipated on any environmental receptors as a result of the proposed works.

Statement of case in support of a Determination that a statutory EIA is not required

This is a relevant project in terms of section 55A(16) of the Roads (Scotland) Act 1984 as it is a project for the improvement of a road and the completed works (together with any area occupied by apparatus, equipment, machinery, materials, plant, spoil heaps, or other such facilities or stores required during the period of construction) exceed 1 hectare in area.

The project has been subject to screening using the Annex III criteria to determine whether a formal Environmental Impact Assessment is required under the Roads (Scotland) Act 1984 (as amended by The Roads (Scotland) Act 1984 (Environmental Impact Assessment) Regulations 2017). Screening using Annex III criteria and review of available information has not identified the need for a statutory EIA.

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

Characteristics of the scheme:

- The works are confined to the existing carriageway and verge.
- Containment measures of the working area will be in place to prevent pollutants from entering the surrounding environment.

Location of the scheme:

- The proposed scheme is located within immediate vicinity of Ferry Hills SSSI and St Margaret's Marsh SSSI and is in close proximity (<300m) to Firth of Forth SPA, Ramsar and SSSI sites. Forth Islands SPA (Long Craig Island) and Long Craig Island SSSI are located approximately 600m south of the proposed scheme. However, considering the nature of works, no impacts to the qualifying features of these sites are anticipated as a result of works.
- The proposed scheme is located within Battle of Inverkeithing battlefield, however, no impacts on this asset are anticipated as the works will be restricted to made ground within the existing carriageway and verge.
- Land use will not change as a result of works.

Characteristics of potential impacts of the scheme:

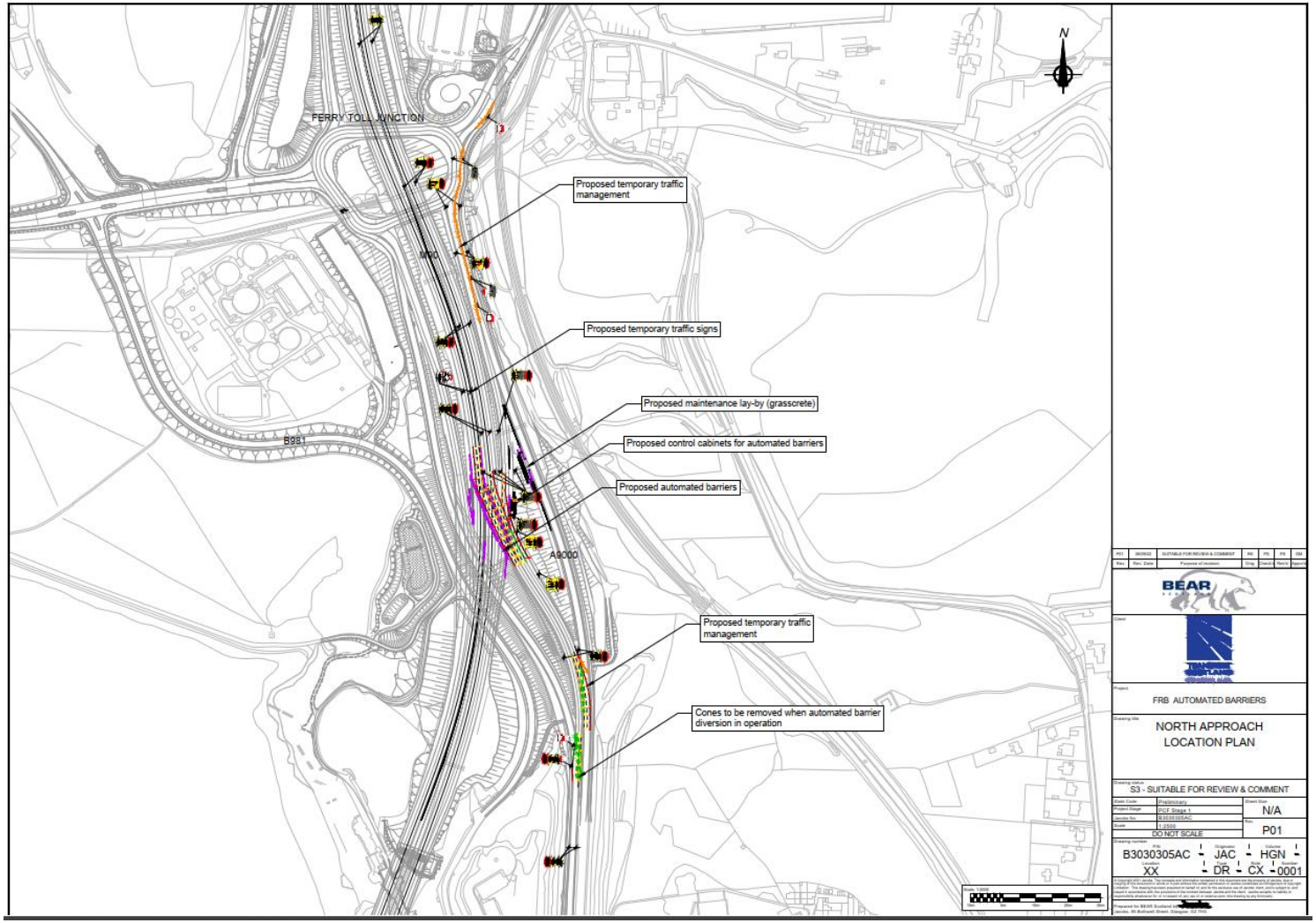
- Any potential impacts of the works are expected to be temporary and short term.
- Measures will be in place to ensure appropriate removal and disposal of waste.
- The SEMP will include plans to address environmental incidents.
- No impacts on the environment are expected during the operational phase as a result of works.
- As part of the HRA process an Appropriate Assessment has been undertaken in consultation with NatureScot and concluded that the proposed works would not lead to an adverse effect on site integrity.

Annex A

"sensitive area" means any of the following:

- land notified under sections 3(1) or 5(1) (sites of special scientific interest) of the Nature Conservation (Scotland) Act 2004
- land in respect of which an order has been made under section 23 (nature conservation orders) of the Nature Conservation (Scotland) Act 2004
- a European site within the meaning of regulation 10 of the Conservation (Natural Habitats, &c.) Regulations 1994
- a property appearing in the World Heritage List kept under article 11(2) of the 1972 UNESCO Convention for the Protection of the World Cultural and Natural Heritage
- a scheduled monument within the meaning of the Ancient Monuments and Archaeological Areas Act 1979
- a National Scenic Area as designated by a direction made by the Scottish Ministers under section 263A of the Town and Country Planning (Scotland) Act 1997
- an area designated as a National Park by a designation order made by the Scottish Ministers under section 6(1) of the National Parks (Scotland) Act 2000.

Appendix 1 – Location Plan



TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

Further copies of this document are available, on request, in audio and visual formats and in community languages. Any enquiries regarding this document / publication should be sent to us at info@transport.gov.scot

This document is also available on the Transport Scotland website: www.transport.gov.scot

Published by Transport Scotland, June 2023

Follow us:

transcotland

@transcotland

transport.gov.scot