

**EC DIRECTIVE 2011/92/EU AS AMENDED
ROADS (SCOTLAND) ACT 1984 AS AMENDED
RECORD OF DETERMINATION**

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Name of Project:

Queensferry crossing – Ice Accretion

Location:

Queensferry Crossing (6 locations)

In March 2019, it was reported that ice was falling onto the M90 carriageway from the Queensferry crossing bridge deck, prompting traffic restrictions on the bridge until further information could conclude the cause and severity. As a result of this incident, Amey have liaised with environmental and weather specialists to propose modelling frequency that shall predict, monitor and measure the conditions observed in the surrounding area of the bridge and on the bridge. The aim is to have specifically selected instruments on the tower's crows' nest and feedback data to allow it to be used concurrently with weather reports.

The work at all six locations will include;

- Ordering materials that have been proposed by Vaisala and agreed with Transport Scotland;
- Design and fabricating the mounting brackets for all locations and associated sensor equipment;
- Installation of mounting brackets as per design specification;
- Electrical engineer to install and route power sources to all sensors;
- Install Vaisala instruments as per specification;
- Compiling and processing the data through Mercury; and
- Displaying and updating an indicator of ice accretion risk within Mercury.

The works are located at:

| Location | National Grid Co-ordinates (NGR) |
|-------------------------|---|
| North Tower | 312253, 680634 |
| Centre Tower | 311996, 679998 |
| Southern tower | 311779, 679392 |
| Central span north | 312157, 680388 |
| Central span south | 311895, 679688 |
| Suspended south span 24 | 311652, 679055 |

The works are anticipated to be undertaken in summer 2020. The works will last for four weeks with works being carried out during weekday day shifts.

Project Procurement:

Term Contract for Management and Maintenance of the Scottish Trunk Road Network – Forth Road Bridge Unit

Description of Local Environment:

Population and human health (air quality, climate, noise and community):

There are no Air Quality Management Areas (AQMA) within 300m of the works locations and no air quality monitoring within 300m of the works locations.

Background concentrations of air pollutants for the extent of the scheme can be modelled using the air pollutant data from DEFRA. The modelled background concentrations for 2020 are as follows:

- Nitrogen dioxide (NO₂): 9.31µg/m³,
- Nitrogen oxide (NOx): 12.31µg/m³,
- Particulate Matter (PM₁₀): 10.29µg/m³.

These values are all within the legal limits set out in the Air Quality Standards (Scotland) Regulations 2010, and the policy objectives outlined in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007.

There are no hospitals, residential properties, schools or nurseries within 300m of the scheme extents. The Firth of Forth Special Protection Area (SPA), Site of Special Scientific Interest (SSSI) and Ramsar lies under the bridge at its northern most extent.

The Annual Average Daily Traffic (AADT) at count location 90006 on the QC in 2018 was 75,596, comprising of:

- 357 Motorbikes,
- 58,956 Cars and taxis.
- 220 Busses and coaches,
- 10,859 Light goods vehicles and
- 5,205 Heavy goods vehicles.

The day and night modelled noise level (Lden) for the carriageway along the route of the scheme ranges from 75dB up to 80dB whereas the night only modelled noise level (Lnigh) ranges between 60dB and 70dB.

There are no bridleways, bus stops or core paths located within or accessed via the scheme extents. No private residencies or businesses are directly accessed from within the scheme extents, nor will access to any of these properties be restricted as a result of the scheme.

Landscape:

The scheme is located at six locations along the Queensferry Crossing in the Edinburgh City Council region. The area surrounding the scheme is the Firth of Forth with the north bank of the Forth estuary approximately 300m north of the scheme. The works are due to take place on an entirely man-made structure in the Queensferry Crossing. The sole use of the Queensferry crossing is as transport infrastructure.

Cultural Heritage and material assets:

Located within 300m of the scheme there are the following historically designated sites:

- Shore Road, Port Edgar, East and West Breakwaters, Grade B Listed Building (LB50855) approximately 220m south east.
- Four Canmore Sites.
- Six Canmore Maritime sites.

Description of Local Environment:

Biodiversity:

The Firth of Forth Special Protection Area (SPA), Site of Special Scientific Interest (SSSI) and Ramsar lies under the bridge at its northern most extent. A selection of Annex I species with high populations highlighted in the Firth of Forth Ramsar, SSSI and SPA citations include the following:

- Pink-footed Goose *Anser brachyrhynchus*
- Common Redshank *Tringa tetanus*
- Red Knot *Calidris canutus*
- Common Goldeneye *Bucephala clangula*
- Bar-tailed Godwit *Limosa lapponica*.

On passage the area regularly supports Sandwich Tern *Sterna sandvicensis*. The following species are all identified as priority species for the surrounding habitats in the Fife Local Biodiversity Action Plan (LBAP):

- Great Crested Newt *Triturus cristatus*
- Water Vole *Arvicola amphibius*
- Corn Bunting *Emberiza calandra*
- Brown Long-eared Bat *Plecotus auritus*
- Common Pipistrelle *Pipistrellus pipistrellus*
- Daubenton's Bat *Myotis daubentonii*
- Nathusius Pipistrelle *Pipistrellus nathusii*
- Natterer's Bat *Myotis nattereri*
- Soprano Pipistrelle *Pipistrellus pygmaeus*
- Aspen *Populus tremula*
- Bluebell *Hyacinthoides non-scripta*
- Red Squirrel *Sciurus vulgaris*

As the works will take place on an entirely man-made structure it is not expected that any non-native invasive species will be present.

Water Environment & Drainage:

There is no likelihood of flooding on the man-made structure due to its height. However, the area around the Firth of Forth is subject to varying likelihoods of coastal flooding risks.

Waste:

The scheme will not generate any waste as it is installing new equipment only.

Sustainability:

Recycling options have not been considered for this scheme.

Climate Change:

Fuel will be required for transport to and from the scheme which will lead to greenhouse gas emissions. Any release of greenhouse gas emissions can contribute to climate change. The project is unlikely to be affected by the impacts of climate change, other than increasing likelihood of extreme weather events leading to issues with work taking place on site.

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

Population and human health (air quality, climate, noise and community):

Increases in dust and emissions from plant and machinery are likely to cause deterioration in air quality within the local area. These impacts will last for the duration of the works only. No temporary carriageway closures are planned, therefore no temporary effects on the volume of carriageway traffic is predicted.

There will be temporary increases in noise levels in the area resulting from the works. This may cause disturbance to local wildlife and residents. However, any increases in noise levels will be intermittent and will last only for the duration of the works.

Mitigation:

- Best Practicable Means and Best Practice Guidelines of reducing dust and emissions should be followed as outlined in the Guidance on the assessment of dust from demolition and construction (2014) published by the IAQM, which includes the following mitigation relevant to this scheme:
 - Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods; and
 - Ensure all vehicles switch off engines when stationary; there should be no idling vehicles.
 - All plant and fuel-requiring equipment utilised during construction should be well maintained in order to minimise emissions.
- Best practicable means of noise control, as described within BS 5228-1 and -2:2009+A1:2014 'Code of Practice for Noise and Vibration Control on Construction and Open Site', should be implemented in order to minimise the risk of disturbance. The following measures are relevant to the scheme:
 - Avoid unnecessary revving of engines and switch off equipment when not in use;
 - Use rubber linings in, for example, chutes and dumpers to reduce impact noise;
 - Minimise drop height of materials.

Cultural Heritage:

None anticipated as works will remain within the scheme boundaries at all times.

Biodiversity:

It is likely that machinery as part of the work processes will lead to a slight increase in noise and vibration in the area surrounding the work. This could potentially disturb local wildlife.

Mitigation:

- Amey's Environmental Team must be contacted to allow consideration of potential environmental effects if:
 - Unplanned works are undertaken out with the scheme position boundaries.
 - There is a change to the programme and/or method of working.
 - If contractors become aware of any protected species during the works, the works must stop and the environment team notified immediately.
- Effects from noise should be kept to a minimum through the use of appropriate mufflers and silencers fitted to machinery. All exhaust silencers should be checked at regular intervals to ensure efficiency.

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

Risk of Disasters:

There are no areas along the Queensferry Crossing which have a high risk of surface water flooding. The scheme will contribute to Greenhouse Gas emissions due to the production and transportation of construction materials, and the use of fuel to power plant and machinery.

Extent of EIA work undertaken and details of consultation:

A scoping assessment has been undertaken, supplemented by:

- Amey Environmental Scoping Assessment
- Amey Habitats Regulations (Assessment of Implications on European Sites) Screening.
This determined that no adverse effects on the Firth of Forth SPA or the Forth Islands SPA as a result of the maintenance works are predicted with the proposed mitigation in place.

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:

- Is located on the Queensferry Crossing with the extent of works within 180m of the Firth of Forth Ramsar site, SPA and SSSI.

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. Screening using Annex III criteria, reference to consultations undertaken, and review of available information has identified that a statutory EIA is not required.

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

Characteristics of the scheme:

- Works are contained within/on an exclusively man-made structure.

Location of the scheme:

- The works are located on the Queensferry Crossing, which passes directly over the Firth of Forth RAMSAR Site, SPA, and SSSI.

Characteristics of potential impacts of the scheme:

- With proposed mitigation in place and as the works will be carried out in a place with already elevated noise levels there will be no significant adverse impacts to any ecologically designated sites.