



**TRANSPORT  
SCOTLAND**  
CÒMHDHAIL ALBA

# **Environmental Impact Assessment Record of Determination**

## **M8 J25-25A Bridge Refurbishments**

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## Project Details

### Description

Works are required to upgrade the M8 Junction 25 and 25A bridge structures located within Glasgow City which are exhibiting signs of extreme wear and tear, including water ingress on parapets, extensive spalling, cracking, leaching and delamination of concrete structures, and rusting of metal structures.

The M8 Junction 25 and 25A repair works have been split up into various phases. The 'Main Works' phase will involve the upgrading of parapets, and waterproofing and repairing of deck. This stage will also include improving the drainage of the carriageway and resurfacing of deck.

In addition, 'Pre-Works' are required to upgrade two nearby crossover points within the central reservation on approach to the main works location at J26 and J25, to allow lanes on the M8 to be diverted onto the opposing carriageway within contraflow situation. As part of pre-works, a high mast light (HML) will be removed at the J25 crossover, followed by installation of four 12m masts in the eastbound verge.

### Pre-Works

Pre-works construction activities will involve the following:

- Removal of the existing centre reserve, barrier system and HML,
- Excavation of the centre reserve to a depth of 580mm,
- Construction of a new pavement foundation and bound layers,
- Installation of new vehicle restraint system (VRS) on socketed posts,
- Trenching for new lighting connections, and
- Installation of three new lighting columns in the eastbound verge.

The pre-works construction activities will be undertaken in March 2022, during nightshift programming. Exact timings and durations are yet to be confirmed.

The proposed traffic management (TM) for the crossover upgrade will involve a dual inside lane closure on the westbound (WB) and eastbound (EB) carriageways, at both crossover locations.

## Main Works

These works will focus on the westbound M8 carriageway (above deck repair and improvement), with an approx. 12,000m<sup>2</sup> (1.2ha) total area of works. All three structures will undergo similar construction works in order to repair deteriorating and unsafe structures. Works will involve the replacement of parapets, improvement of drainage on the carriageway and carriageway resurfacing.

Key construction activities will involve the following:

- Parapet replacements using handheld tools, including cope repairs/upgrades/concrete works.
- Planing of existing surfacing.
- Removal and replacement of deck waterproofing.
- Drainage improvements, involving the installation of sub-surface drainage.
- Removing and replacing the central reservation slabbed area (under consideration).
- Connecting service duct to structures.

Resurfacing activities will include:

- Milling of existing bituminous material by road planer.
- Additional bituminous material removed by jack hammer where not accessible by planer.
- Road sweeper to collect any loose material.
- HGV for removal and replacement of material.
- Tack/bond coat laid.
- New bituminous material laid by a paver.
- Material compacted using a heavy roller.
- Road markings will be applied where necessary.
- Ironwork/kerbing renewed as required.

The main bridge refurbishment works are currently planned to commence in April 2022, with a presumed 12-week construction period, with a latest possible end date for construction set at the 17<sup>th</sup> June 2022. 24-hour continuous working is required for the main bridge refurbishment works.

Traffic management for the main works will involve multiple lane closures, slip road closures and contraflow. Roads passing underneath structures may have single lane or total closures in place during some above-deck construction activities. All road

closures will be facilitated with appropriate diversion routes, which will be agreed with Glasgow City Council.

## Location

All structures within the main works package are located within Glasgow City, North of Cardonald. J26 crossover (pre-works) falls within Renfrewshire.

Figures 1 – 3 below display location and extents of each works location. Each location has the following National Grid References (NGR):

Structure/Location Name	National Grid Reference	
<b>Pre-Works</b>		
J25 Cardonald Crossover	Start: NS 53895 64664	End: NS 54177 64582
J26 Hillington Return Crossover	Start: NS 51636 66273	End: NS 51469 66219

Structure/Location Name	National Grid Reference
<b>Main Works</b>	
30 - Cardonald Underpass	NS 53052 65439
40 - Woyka Viaduct	NS 52908 65641
55 - King George V	NS 52732 65851

Figure 1: Scheme Location – All works





Figure 2: Scheme Extents - Main Works

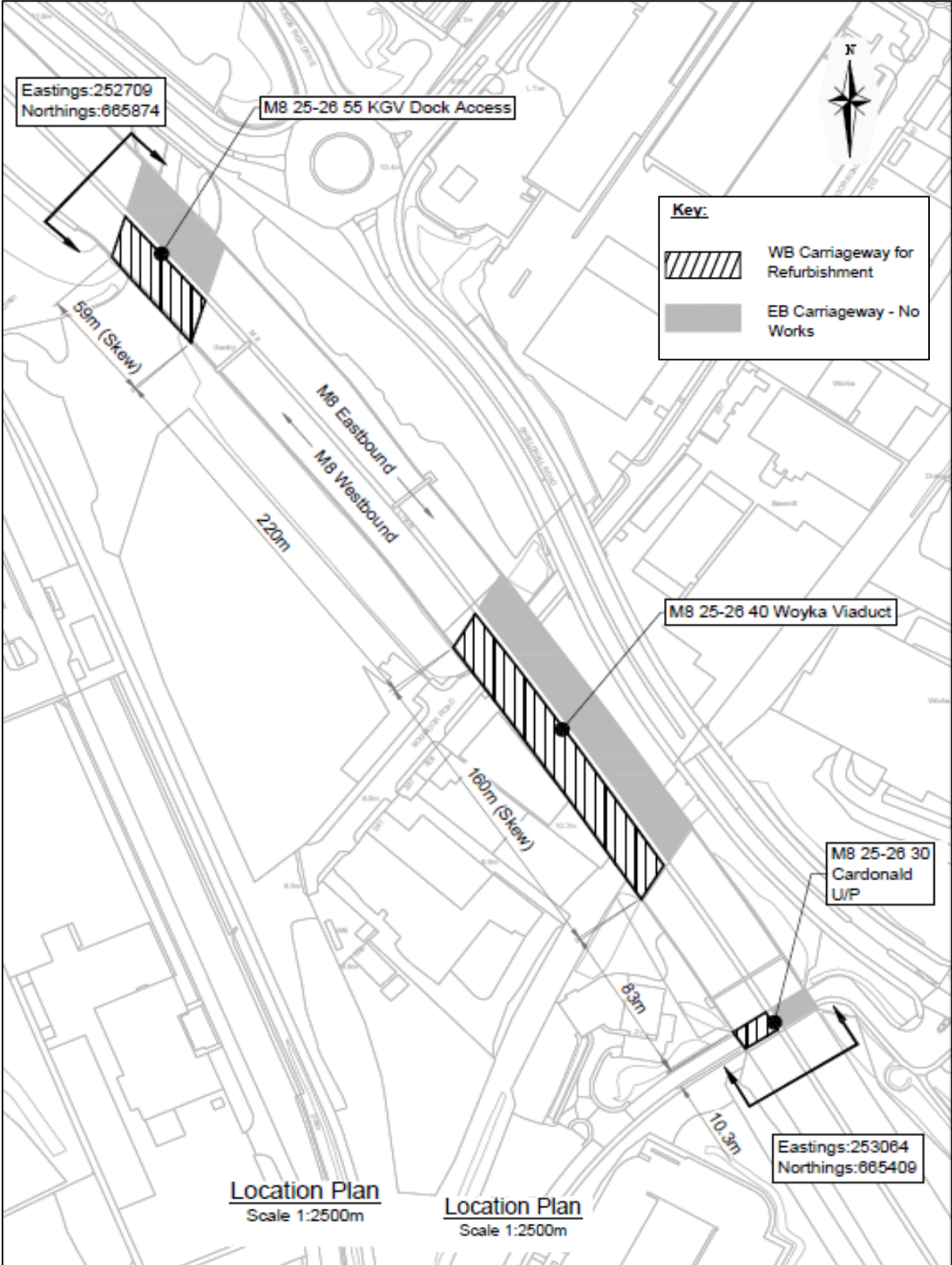
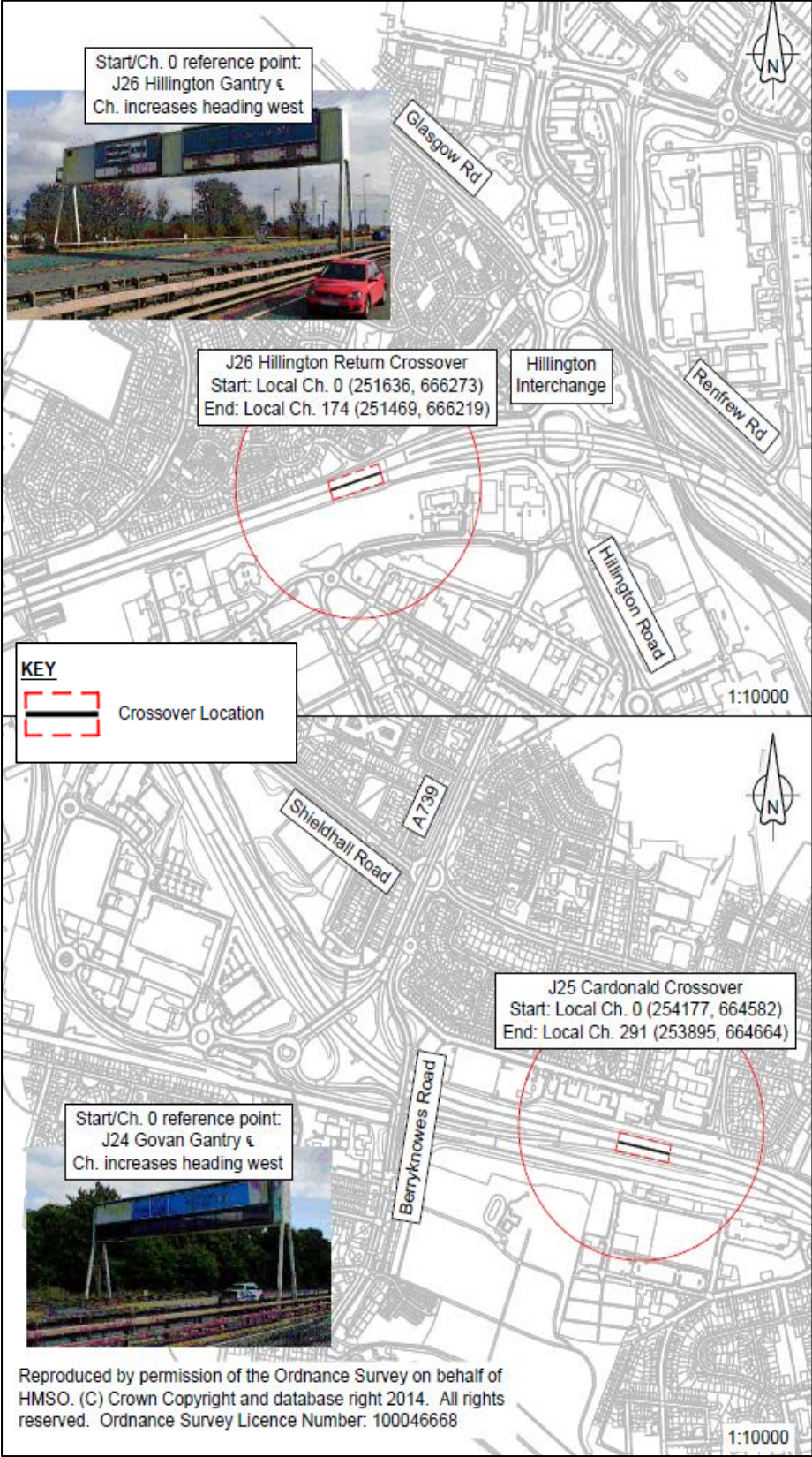


Figure 3: Crossover Location and Extents – Pre-Works





## Description of local environment

### Air quality

The scheme is located along an urban stretch of the M8 carriageway, north of Cardonald. Areas of industrial, commercial and residential property are located in the surrounding environment.

The M8 carriageway is a main route which connects Bishopton, Glasgow, and Edinburgh, and is subjected to heavy traffic on a daily basis. A [manual vehicle count point](#) on the M8 at the works location records the average annual daily flow (AADF) at 74,208 vehicles per day, with an average of 6% heavy goods vehicles (HGV) in 2020.

Local air quality is likely to be impacted primarily by road traffic, in addition to nearby urban land use activities.

The scheme is not located within any of Renfrewshire or Glasgow's [Air Quality Management Areas](#) (AQMA).

### Cultural heritage

A desktop study using [PastMap](#), identifies six Category B [listed buildings](#) found approximately 135m east from Cardonald Underpass, on Shieldhall Road.

The works will be restricted to the M8 structure and will not impact upon the features of cultural heritage.

It has been determined that the proposed project will not have direct or indirect significant effects to features of undiscovered cultural heritage.

### Landscape and visual effects

The works are located along an urban stretch of the M8 carriageway, north of Cardonald. Areas of industrial, commercial and residential property are located in the surrounding environment.

Historic Environment Scotland's [HLAMap](#) has highlighted the surrounding landscape as a combination of Urban Area, Industrial or Commercial Area, Motorway and Major Roads, Railway Features, and Maritime Installation.

A desktop study using [PastMap](#) and [Nature Scot Sitelink](#) online interactive map has not highlighted any areas designated for landscape quality or special characteristics within the works location.

The M8 carriageway does not fall within any designation for landscape quality or character.

Views of, and from, the road will be temporarily affected during construction due to the presence of works, traffic management and plant.

Pre-construction works will result in permanent change to crossover and lighting layout. Due to location within the motorway corridor, and as similar street furniture will replace existing street furniture, any lasting change is not considered to be of a significant nature. As the main works are operating on a visually like-for-like basis, no permanent changes to landscape features are predicted.

## **Biodiversity**

The works are located in an urban setting north of Cardonald, Glasgow. The scheme is primarily surrounded by commercial/industrial properties and lacks features of green space. Thin vegetated strips flank the M8 carriageway at all works locations.

A desktop study using [Nature Scot's Sitelink online interactive map](#) has not identified any National or European designated sites within proximity of the scheme.

Amey's Animal Roadkill Database (2013 – 2021) did not highlight any protected species roadkill within proximity of the scheme extents.

Amey's Invasive Non-native Species (INNS) Database has highlighted growths of giant hogweed *Heracleum mantegazzianum* located adjacent (approx. 15m) to the eastbound carriageway at KGV structure, along with growths of Japanese knotweed *Fallopia japonica* adjacent to the westbound carriageway.

Amey's Invasive Non-native Species (INNS) Database has not identified any growths of invasive plant species within proximity to the crossover locations.

The programming of the works falls within bird nesting season (March to August).

## **Field Survey**

An ecological site survey was undertaken in March 2021 by the Environmental and Sustainability Team to determine the presence and spread of INNS, and the requirement for protected mammal species licensing, under the Wildlife and Countryside Act 1981, the Nature Conservation (Scotland) Act 2004, the

Conservation (Natural Habitats, &c.) Regulations 1994, Wildlife and Natural Environment (Scotland) Act 2011 and the Protection of Badgers Act 1992.

Survey results showed no evidence of protected species activity within and within close proximity of the scheme extents. The survey locations did not prove to inhabit suitable features for protected species shelter.

Extensive growth of giant hogweed was identified within the wooded land falling below the carriageway at structure KGV. Invasive plants were not found on the structure itself or embankment of the WB carriageway. Giant hogweed was observed on the embankment of the EB carriageway.

Japanese knotweed was not observed during the field survey, however, is likely found within the wooded land found below the carriageway. This area was overly waterlogged therefore access to confirm growth of JK was not possible.

No INNS were found within 100m of structures Woyka Viaduct and Cardonald Underpass

Trees surveyed on adjacent to the westbound carriageway were thin and immature and did not harbour favourable features for bat roosts.

The work proposes to access KGV via the wooded land falling below the carriageway.

## **Geology and soils**

The scheme is not located within, or within proximity to, any [Local Geodiversity Sites](#) (formerly known as RIGS) or [geologically designated Sites of Special Scientific Interest \(SSSIs\)](#).

The [National Soil Map of Scotland](#) holds no record of soil data for the location of the scheme, likely due to the urban setting of the scheme.

A desktop study using the [British Geological Survey Map](#) identifies the local geology type as the following:

- Bedrock:
  - Clackmannan Group - Sedimentary Rock Cycles, Clackmannan Group Type. Sedimentary Bedrock formed approximately 312 to 331 million years ago in the Carboniferous Period. Local environment previously dominated by rivers.
  - Lower Limestone Formation - Sedimentary Rock Cycles, Clackmannan Group Type. Sedimentary Bedrock formed approximately 328 to 331 million years

ago in the Carboniferous Period. Local environment previously dominated by swamps, estuaries and deltas.

- Superficial Deposits:
  - Alluvium - Clay, Silt and Sand. Superficial Deposits formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by rivers.
  - Sediment. Superficial Deposits formed up to 3 million years ago in the Quaternary Period. Local environment previously dominated by no interpretation of the environment of deposition (U).

## Material assets and waste

Table 1 - Key Materials Required for Activities

Key Materials Required for Activities		
Activity	Material Required	Origin/ Content
Site construction	<ul style="list-style-type: none"> <li>• Parapets</li> <li>• Pre-concrete</li> <li>• Concrete</li> <li>• Fixings</li> <li>• Deck waterproofing</li> <li>• TS2010 surfacing</li> <li>• Sub surface drainage (Dri-Deck)</li> <li>• Pavement foundation and bound material:</li> <li>• Type 1 Subbase,</li> <li>• AC32 Base,</li> <li>• AC20 binder, and</li> <li>• TS2010 SMA Surface course).</li> <li>• VRS Sections</li> <li>• Metal components</li> <li>• Concrete (TBC)</li> <li>• Pre-cast kerbing (where required)</li> <li>• Lighting columns and associated components</li> </ul>	<p>Metal components will have a percentage of recycled content. Recycled content is dependent on supplier and design.</p> <p>A proportion of reclaimed asphalt pavement (RAP) is used in asphalt production. Typical RAP values for base and binder are 10% -15% with up to 10% in surface course.</p> <p>TS2010 Surface Course allows a wider array of aggregate sources to be considered when compared to typical SMA. As a result, the use of TS2010 will reduce the usage of imported aggregates and increase the use of a wider range of sustainable aggregate sources.</p>

Table 2 – Key Waste Arising from Activities

Key Waste Arising from Activities		
Activity	Waste Arising	Disposal/ Regulation
Site construction	<ul style="list-style-type: none"> <li>• Parapets</li> <li>• Concrete</li> <li>• Road planings</li> <li>• Waterproofing (contains asbestos – to be investigated)</li> <li>• Treated in line with guidance by approved waste contractor.</li> <li>• Excavated soils                             <ul style="list-style-type: none"> <li>○ Re-used as backfill where appropriate</li> </ul> </li> <li>• Removed pavement foundation and bound material.</li> <li>• Removed centre reserve/VRS sections</li> <li>• Removed kerbing (where required)</li> </ul>	<p>All recyclable waste will be recycled in line with guidance.</p> <p>Road planings generated as a result of the required works, will be fully recycled in accordance with the criteria stipulated within SEPA document 'Guidance on the Production of Fully Recoverable Asphalt Road Planings.'</p> <p>Asbestos is classed as special waste. All waste containing asbestos will require special waste disposal.</p>

## Noise and vibration

The works area is located within an urban stretch of the M8 carriageway within Glasgow, predominantly surrounded by commercial properties, with fragments of residential areas located east of the scheme.

The M8 carriageway is a main route which connects Bishopton, Glasgow, and Edinburgh, and is subjected to heavy traffic on a daily basis. A [manual vehicle count point](#) on the M8 at the works location records the average annual daily flow (AADF) at 74,208 vehicles per day, with an average of 6% heavy goods vehicles (HGV) in 2020.

The M8 eastbound and westbound carriageway consists of four lanes of motorway and a hard shoulder. Slip roads exist which connect to the wider network of Glasgow. The ambient noise levels are likely to be influenced by vehicle traffic and the various urban amenities found within Glasgow City.

The closest property to the main works location is estimated at a distance of 110m east of Cardonald Underpass. Residential areas are also located in proximity to the western J26 crossover location, with the closest residential properties located on Tanar Avenue, approximately 40m north of J26 crossover. Larger areas of residential properties exist within the wider setting of the scheme.



Premier Inn is present approximately 105m north of King George V (KGV) and the Queen Elizabeth University Hospital is located approximately 300m east of Cardonald Underpass.

The scheme does not fall within a [Candidate Noise Management Area](#) (CNMA) as defined by the Transportation Noise Action Plan, Road Maps. CNMA ID 11 (Berryknowes Road at Queensland Drive, Glasgow) is located approx. 300m west of J25 Cardonald Crossover, encompassing a section of the A739 on/off-slip at Berryknowes Road, which connects to the J25 WB off-slip via the Fifty Pitches Road/A739 roundabout.

## Population and human health

There are no provisions of pedestrian footways within close proximity of the scheme, however, Core Path [number C30](#) runs below Cardonald Underpass.

Queen Elizabeth University Hospital is located north of the works, approx. 320m from Cardonald Underpass.

Various off/on-slips are located at both crossover works locations; including J25 westbound off-slip to A739, a J26 off/on-slips to Hillington Road.

## Road drainage and the water environment

A desktop study using the Scottish Environment Protection Agency (SEPA) [River Basin Management Plan Interactive Map](#) has identified Clyde Estuary (ID: 200510) situated approximately 250m north of the carriageway at KGV (its closest point). SEPA has classified Clyde Estuary with an overall status of 'Moderate ecological', an ecology status of 'Poor' and specific pollutant status of 'Poor'.

The [Indicative River & Coastal Flood Map](#) by SEPA highlights the scheme to be in a location at risk of surface water flooding.

Road drainage is provided by a combination of side and top entry gullies throughout the scheme.

## Climate

The Climate Change (Scotland) Act sets out the target and vision set by the Scottish Government for tackling and responding to climate change. The Act includes a target of reducing CO2 emissions by 80% before 2050 (from the baseline year 1990).

The Scottish Government has since published its indicative Nationally Determined Contribution (NDC) to set out how it will instead reach Net Zero by 2045, working to reduce emissions of all major greenhouse gases by at least 75% by 2030. By 2040, the Scottish Government is committed to reduce emissions by 90%, with the aim of reaching net zero by 2045 at the latest.

Amey, working on behalf of Transport Scotland, undertake carbon monitoring. Emissions from our activities are recorded using Transport Scotland's Carbon Management System.

To support the journey towards carbon neutral and zero waste, Amey include potential opportunities for enhancement utilising circular economy principals within assessment of material assets.

## **Description of main environmental impacts and proposed mitigation**

### **Air quality**

#### **Impacts**

- Traffic management restrictions will increase road congestion on the M8 motorway and may impact local roads. This may result in a slight increase in associated vehicle emissions within the local areas.
- The use of vehicles, plant and generators emitting carbon emissions may temporarily affect air quality and will require the use of finite resources.
- On site construction activities carry a potential to produce airborne particulate matter that may have a slight impact on local air quality levels.

#### **Mitigation**

- All works shall operate in accordance with current best practice 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:
  - When not in use plant and vehicles will be switched off; there will be no idling vehicles.
  - All plant and fuel-requiring equipment utilised during construction shall be well maintained in order to minimise emissions, as per manufacturing and legal requirements.

- Green driving techniques will be adopted, and effective route preparation and planning shall be undertaken prior to works.
- Planing operations will be wetted to reduce dust arising.
- Drop heights to haulage vehicles and onto conveyors will be minimised.
- Lorries will be sheeted when carrying dry materials.
- Surfaces will be swept where loose material remains following planing.

Providing all works operate in accordance with current best practice, the residual impact for air is considered neutral.

It has been determined that the proposed project will not have direct or indirect significant effects to local air quality.

## **Biodiversity**

### **Impacts**

- There is potential for INNS to spread if works are not effectively controlled and/or potential for INNS to be removed to accommodate an access route:
  - A safety barrier and the verge of the carriageway separates Japanese knotweed growth from the M8 carriageway at KGV; however, the upgrading of parapets will require operators to work within close proximity of the INNS.
  - It is unlikely that these works would disturb INNS if undertaken from above the carriageway and restricting plant/machinery within the sloped embankment of the WB carriageway.
- Underpass works may require access to vegetated verges of the below roads. Thus, vegetation management may be required in order to achieve the planned works.
  - There is potential for nesting birds to be present within areas of required vegetation clearance.

### **Mitigation**

- A full bird nesting survey will be undertaken prior to any works during bird nesting season (March to August). This will be undertaken no more than seven days prior to the works start date. The bird nesting survey will be carried out by competent personnel, landscaper or the E&S Team.

### **INNS**

- All site operatives will be briefed on the location of the giant hogweed and Japanese knotweed growth.

- Operatives will be briefed with the Amey Japanese knotweed and Giant hogweed Briefing Notes.
- Where working within proximity of invasive plants is required, the below measures will be enacted to prevent INNS spread:
  - Works will not disturb locations of INNS to prevent spread. Operatives shall keep a 7 metre distance from the INNS and where appropriate visual barriers will be placed to indicate distance.
  - No vehicles or plant are permitted to enter the area of INNS, unless absolutely necessary. If this is required, the following apply:
    - When a piece of plant or bucket from a vehicle has been operating within the area of INNS growth, it will be sufficiently cleared of soil prior to operating over any other area i.e. washed down while still overhanging the contaminated area.
    - Any tools or equipment that are used within this area shall be sufficiently cleared of any soils prior to being removed. All cleared material shall be suitably collected and deposited back into the contaminated area.
    - Any soils or wash water that inadvertently exit the verge will be collected and deposited back within the confines of the contaminated section of growth.
    - Movements of operatives within areas near INNS will be kept to a minimum. Before leaving one of these areas, operatives will ensure that all Personal Protective Equipment (PPE), tools and plant are sufficiently cleaned and free of soil. This will ensure that no soils contaminated with an invasive non-native species are inadvertently taken off site, causing their spread.
    - Care will be taken to ensure that wash water and cleared materials from PPE/equipment is appropriately contained and placed back within the contaminated area.
    - Care will be taken not to tread or track soils onto the carriageway surface, as this will increase the risk of invasive non-native species spread.
- Where removal of INNS or undertaking of construction activities within areas of INNS is deemed a requirement, appropriate management and/or removal will be in place prior to commencement of the works to prevent spread. This will be managed effectively in line with regulatory requirements, and to ensure spread/contamination is negated. Where removal of INNS growth is required, the following measures will be enacted:
  - Vehicles transferring any invasive plants/soils will be covered or sheeted.
  - Waste will be taken to a waste plant or contaminated soil to a site that has a pollution prevention and control permit or waste management licence, for which the conditions of the permit or licence allow the disposal of invasive plants at the site.
  - The waste site will be given notice so that an area can be prepared (if required).

- Invasive plants (when sprayed with persistent herbicides) are classed as special waste.
  - A consignment note is required will be obtained from SEPA for any special waste removal off-site (if required).
  - SEPA will be informed at least three days prior to the movement of special waste.
  - Invasive plants not sprayed with persistent herbicide (also sprayed with non-persistent herbicides) are classed as controlled waste and will be transferred via Waste Transfer Note (WTN). Waste will be identified as INNS to alert the landfill site of type of waste being transferred.
  - Any requirement for removal will be established in advance of the works, and the E&S Team will be advised.

## **Nesting Birds**

- The Nesting Birds briefing note will be briefed to operatives prior to any vegetation removal (if required).
- A bird nesting survey will be carried out before any cut back. In the event an active nest is identified, this will not be removed and a buffer zone (5m) shall be placed around the active nest to reduce/negate impact. No vegetation works will be undertaken within this zone until the nest is fledged.
- Upon discovering an active nest, the E&S Team shall be contacted for any further guidance.

On the condition that best practice and good site bio-security is adhered to, residual impact to local biodiversity is considered neutral as a result of the works.

It has been determined that the proposed project will not have direct or indirect significant effects to biodiversity.

## **Geology and soils**

### **Impacts**

- Construction activities will involve the excavation of existing soils/gravel found on the verge of the carriageway, to enable parapet upgrading. Potential for soil disturbance due to repeat impact of excavator.
- The works will involve excavation of the central reservation. Excavation will result in soil disturbance, which can create adverse conditions, including erosion and polluted soils.
- The generation of concrete dust can raise the pH of soil resulting in erosion and soil infertility.



- If the working area is contaminated with rhizomes, then there is the potential for INNS to spread.
- The replacement of parapets will be located in the same locations as existing parapets, therefore will have minimal impact on soils.
- Works will not impact on local geology.

## **Mitigation**

- Refer to Biodiversity section for INNS soil control measures.
- Refer to Road Drainage and the Water Environment for soil pollution control measures.
- Dust suppression systems, such as dampening down or use of collection vacuums, will be used when cutting concrete.
- Any areas of excavation shall be backfilled with site claimed or like-for-like materials.
- Soils shall be redistributed on site where possible.
- Weather reports shall be monitored prior to the works, with all construction activities temporarily halting in the event of predicted high rainfall or wind.
- Excavation of soils will be kept to a minimum and only where necessary, with any excavated soils being re-used on site as far as reasonably practicable.
- Excavated soils, when stored on site, will be appropriately contained/covered, and protected from the elements.

With mitigation measures in place, residual impact to soil is considered neutral.

It has been determined that the proposed project will not have direct or indirect significant effects to soils and geology.

## **Material assets and waste**

### **Impacts**

- Contribution to resource depletion through use of virgin materials.
- Greenhouse gas (GHG) emissions will be generated by material production and transporting to and from site.
- Transportation and recovery of materials/waste will require energy deriving from fossil fuel, a non-renewable source.

## Mitigation

- Materials will be derived from recycled, secondary or re-used origin as far as practicable within the design specifications to reduce natural resource depletion.
- Waste will be treated at a licenced facility to separate useful materials such as metal as far as reasonably practicable, recovering this waste and diverting it from landfill.
- Where possible, materials will be obtained locally, and operatives deployed from the local depot where possible to reduce haulage and scheme associated journeys, reducing impact of associated GHG emissions on climate change.

It has been determined that the proposed project will not have direct or indirect significant effects to the consumption of material assets or disposal of waste.

## Noise and vibration

### Impacts

- There is potential for disturbance to nearby residential and sensitive properties due to an increase in baseline noise levels from construction works.
  - In the event of night-time programming, residential properties in proximity may experience a level of disturbance, including potential for disturbance to sleep.
  - Premier Inn may experience levels of disruptions due to the timings and duration of the main works package. No impact is predicted to this property during pre-works due to sufficient distancing.
- As the main works package will take place over a period of three months, this may result in a cumulated disturbance effect.
- TM for the pre-works is not likely to result in increased traffic and associated noise within the nearby CNMA, as the M8 carriageway will remain open during these works.

### Mitigation

- Glasgow City Council and Renfrewshire Council's Environmental Health Team will be notified of night-time working required during both pre-works and main works packages.
- Due to requirement for 24-hour continuous working during the main works package, both local authorities will be consulted, and any mitigations/advisory measures will enacted following agreement to do so.
- The Queen Elizabeth Hospital and properties as highlighted in the pre-notification map shall be notified prior to the works starting; detailing the nature, timings and duration of works along with traffic management arrangements.

- Temporary acoustic screening is to be installed where possible. This shall be installed between the site and residential/public areas to reduce noise emitted from construction activities (plant and machinery).
- Plant and machinery will be switched off when not in use to reduce noise disruptions to the surrounding environment.
- Engine exhaust and vent silencers shall be used where possible.

Provided that best practice measures are followed, it is predicted that residual impact to population and human health will be neutral, with temporary slight adverse impact predicted during construction.

It has been determined that the proposed project will not have direct or indirect significant effects to local noise and vibration.

## **Population and human health**

### **Impacts**

- Traffic management for the main works will involve multiple lane closures and potential slip road closures. Roads passing underneath structures will be completely closed. All road closures will be facilitated with appropriate diversion routes or contraflow.
  - TM may result in increased journey times or driver frustration for vehicle users of the M8 carriageway at this location.
- Traffic management for pre-works will involve multiple lane closures on both the EB and WB carriageway, however the M8 carriageway will remain open throughout the crossover upgrade works.
  - No impact is predicted to road users during pre-works
- TS2010 road surfacing will be utilised. TS2010 can reduce noise levels and improve the skid resistance of the road.
- The use of TS2010 is shown to have superior durability to standard road mixes as such this will extend the life span of the carriageway preventing the need for reoccurring routine maintenance and associated levels of disruption.
- Drainage improvements may contribute to reducing the likelihood of surface water flooding, thus, possibly resulting in reduced rates of accidents due to water build-up, especially in harsh weather.
- The repair of concrete copes can generate dust which can affect human health, as they can be carried over long distances by wind.
- Parapets will reinforce the safety of the road network for road users.

## Mitigation

- Advance traffic warning signs will be placed prior to works in an effort to minimise disturbance to vehicular travellers, and will inform road users of expected duration, timings, and any temporary traffic management arrangements.
- Advance diversion routes, where required, will be clearly signed.
- Any required road closure/diversion design will consider the close proximity of the works to the Queen Elizabeth Hospital, and any emergency access/egress.
- Operatives shall ensure the works do not adversely impact emergency services access, with priority access given to emergency vehicles where feasible and safe to do so.
- Appropriate dust suppression systems will be used in order to effectively control construction dust. This shall include dampening down of cutting/breaking out activities where appropriate.

Provided that best practice measures are followed, it is predicted that residual impact to population and human health will be neutral, with temporary slight adverse impact predicted during construction.

It has been determined that the proposed project will not have direct or indirect significant effects to local population and human health.

## Road drainage and the water environment

### Impacts

- The works propose the improvement of drainage on the M8 carriageway within the scheme extents.
  - Drainage improvements may contribute to reducing the likelihood of surface water flooding, thus, possibly resulting in reduced rates of accidents caused by water build-up, especially in harsh weather conditions such as rain and ice.
- In the event of a flooding incident, the works will carry an increased risk of allowing fine sediments/debris to become mobilised in surface water.
- Potential for spills, leaks or seepage of fuels and oils associated with plant to escape and reach drainage systems and watercourses if not controlled, which may affect the water environment if not effectively controlled.
- If not appropriately controlled, debris, sediment and run off from the works has the potential to enter nearby drains and watercourses and could detrimentally impact water quality.
- There is potential for flooding to occur within the works area. This may delay the works, and give potential for pollution via flooding.

- Potential for concrete to be used in VRS post installation. Concrete is highly alkaline and can be toxic to fish, plants and any animal dependant on the watercourse.

## Mitigation

- Best practice, as detailed by SEPA Guidance for Pollution Prevention (GPPs), will always be followed onsite. This will ensure that any potential sediments/spills are not allowed to enter road drainage unchecked.
- Appropriate measures shall be implemented onsite to prevent any potential pollution to the natural water environment (e.g. debris, dust and hazardous substances). This will include, but will not be limited to, spill kits being present onsite at all times, and the use of funnels and drip trays when transferring fuel, and utilisation of drain covers.
- Any pollution incidences will be reported to the Amey control room.
- Concrete transported on site will be sited at least 10m away from a surface water drain and placed on an impermeable designated area.
- Operatives will conduct regular checks of the surrounding ground/drains for any spillages/leakage regularly, especially in periods of heavy wind and rainfall.
- All debris which has the potential to be suspended in surface water and wash into the local water environment shall be cleaned from the site following the works.
- Weather reports shall be monitored prior to and during all construction activities. In the event of adverse weather/flooding events, all activities will temporarily stop, and only reconvene when deemed safe to do so, and when run-off/drainage can be adequately controlled to prevent pollution.

Providing all works operate in accordance with site control measures and SEPA Guidance for Pollution Prevention (GPP) the residual impact for water is considered neutral.

It has been determined that the proposed project will not have direct or indirect significant effects to the water environment.

## Climate

### Impacts

- Greenhouse gas (GHG) emissions will be emitted through the use of machinery, vehicles and materials used (containing recycled and virgin materials), and transporting to and from site.



## Mitigation

- Local suppliers will be used as far as reasonably practicable to reduce travel time and greenhouse gas emitted as part of the works.
- Vehicles/plant shall not be left on when not in use to minimise and prevent unnecessary emissions being emitted.
- Further actions and considerations for this scheme are detailed in the above Material assets and waste section.

It has been determined that the proposed project will not have direct or indirect significant effects to climate.

## Vulnerability of the project to risks

As the works will be limited to the almost like-for-like replacement of the structural features, there will be no change in vulnerability of the road to risk, or in severity of major accidents/disasters that would impact on the environment.

It has been determined that the proposed project is not expected to alter the vulnerability of the existing trunk road infrastructure to risk of major accidents or disasters.

## Assessment of cumulative effects

Amey's current programme of works does not feature any nearby schemes which may result in a combined effect on nearby receptors, such as vehicular travellers and residential/sensitive properties.

Any future schemes will be programmed to take into account already programmed works, and as such any effect (such as from TM arrangements and potential construction noise) will be limited.

## Assessments of the environmental effects

The following environmental surveys / reviews have been undertaken:

- A design Initial Environmental Review of the scheme, undertaken by the Environmental and Sustainability Team at Amey in December 2021.

## 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, and are not situated in whole or in part in a sensitive area within the meaning of regulation 2(1) of the Environmental Impact Assessment (Scotland) Regulations 1999.

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, reference to consultations undertaken 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:

- Construction activities are restricted to the approximate 12,000m<sup>2</sup> (1.2ha) area of existing carriageway and verge.
- At end of life, components can be recycled, reducing waste to landfill.
- Materials will be derived from recycled, secondary or re-used origin as far as practicable within the design specifications.
- Metal components will contain a percentage of recycled material, with exact percentages dependent on supplier.
- The chosen material TS2010 Surface Course allows a wider array of aggregate sources to be considered when compared to typical SMA.
- Road planings will be fully recycled in accordance with Guidance on the Production for Fully Recovered Asphalt Road Planings.

- The design option (replacing the defective structural components) conveys sustainability benefits by significantly reducing the quantity of maintenance interventions required at the location over approximately 20 years.

**Location of the scheme:**

- The scheme will be confined within the existing carriageway boundaries and as a result will not require any land take and will not alter any local land uses.
- The scheme is not situated in whole or in part in a “sensitive area” as listed under regulation 2 (1) of the Environmental Impact Assessment (Scotland) Regulations 1999 (as amended).

**Characteristics of potential impacts of the scheme:**

- As the works will be limited to the relatively like-for-like replacement of the structural components, there is no change to the vulnerability of the road to the risk or severity of major accidents/disasters that would impact on the environment.
- No significant residual impacts are predicted. Disruption due to construction activities are not expected to be significant and will be mitigated as far as is reasonably practicable.
- The successful completion of the scheme will afford benefits to residential properties in proximity, due to improved condition and ride quality of the carriageway surface, and improved carriageway drainage.
- The use of TS2010 road surfacing affords the benefits of a reduction in mid to high frequencies of traffic noise and a reduction in ground vibrations. As a result, ambient noise levels should decrease post construction.

## **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.



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