

# Caol and Lochyside Flood Protection Scheme Method Statement for Marine Licence



## Revision Details

Version	Details	Prepared by	Prepared date	Checked by	Checked date
0	Original	H Murton	01/11/2017	A Tryon	10/04/2018
1	Para 6.16 updated river bed material disposal	A Tryon	14/11/2018	G Smith	26/11/2018
2	Para 4.6i and programme updated	A Tryon	29/09/2020	G Smith	29/09/2020

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## 1 Introduction

- 1.1 This method statement has been prepared by the Highland Council in support of an application for a Marine Licence for construction of a proposed Flood Protection Scheme at Caol, Fort William.

## 2 Site Location

- 2.1 The site location is as follows:

<b>Site address</b>	Caol, Fort William, PH33 7
<b>OSGB Grid Ref 100m</b>	NN 106 759 (approx. centre of site)
<b>Location Plan</b>	 <p>Scheme outlined by a red line</p> <p>©Crown copyright and database right 2016. All rights reserved. Ordnance Survey 100023369. Highland Council.</p>

## 3 Description of the Proposed Scheme

- 3.1 The flood protection scheme is a 2.1km long defence and consists of two principal sections:
- (i) At the west end; an embankment section, 1.2km long, which is primarily intended to protect against coastal inundation from Loch Linnhe, and;
  - (ii) at the east end; a flood wall section, 0.9km long, which is primarily intended to protect against fluvial inundation from the River Lochy.

## 4 Advanced Works

- 4.1 The following items of work are being dealt with in advance of the main scheme construction:

### Japanese Knotweed Treatment

- 4.2 Japanese Knotweed is known to be present in patches on the shore of Loch Linnhe and along the bank of the River Lochy.
- 4.3 A knotweed treatment programme was started in summer 2015. The treatment comprises annual application of glyphosate herbicide in accordance with regulations.

- 4.4 Any material still contaminated with knotweed at commencement of the works shall be removed either for treatment on site, e.g. by bunding, or taken to tip as a licenced waste.

#### **Utility Diversions**

- 4.5 Several utility diversions are being progressed in advance of the flood protection scheme.

#### **Statutory Requirements**

- 4.6 Construction of the flood protection scheme shall not commence until the following statutory requirements are fulfilled:

- i. The scheme must receive deemed planning permission under the powers of the Flood Risk Management (Scotland) Act 2009. This was granted by the Scottish Government on 4<sup>th</sup> of March 2020.
- ii. A valid Marine Licence issued by Marine Scotland must be in place.
- iii. Notice of construction must be made to the Health and Safety Executive as required by the Construction (Design and Management) Regulations 2015.

## **5 Precautions**

- 5.1 The following precautions shall be taken for protection of the marine environment during the works:

#### **General Precautions**

- 5.2 Prior to work starting, a site compound will be established on land near to the proposed works.
- 5.3 Prior to starting work on the site, all staff shall receive a briefing (toolbox talk) on environmental matters including protection of the marine environment.
- 5.4 All portable plant and equipment shall be stored in the compound when not in use.
- 5.5 Material required for the work will be delivered to the site from land, by road.
- 5.6 The Contractor shall comply with published good practice guidance for protection of the environment, such as the SEPA General Binding Rules.

#### **Precautions for Spill Prevention**

- 5.7 Vehicles shall be parked overnight away from surface water and on plastic sheet to enable any leaking fluids to be detected. Daily inspections shall be undertaken and documented.
- 5.8 Static plant or equipment within 10m of surface water shall be positioned on a suitable drip tray with a capacity of at least 110% of the fuel tank.
- 5.9 Areas for refuelling shall be at least 10m away from any surface water.
- 5.10 Fuel storage shall be double-skinned and/or bunded.
- 5.11 Areas for washing machinery shall be at least 10m away from any surface water and not located on the beach.
- 5.12 Spill kits shall be provided at the site compound and in work areas, and staff trained in their use.

#### **Precautions for Working on the Beach**

- 5.13 All work on the beach shall be undertaken in the dry by working between tides.

- 5.14 No materials for the works shall be stored on the beach below MHWS except for rock armour or material originating from the beach.
- 5.15 No plant or equipment shall be stored on the beach.
- 5.16 Any beach material excavated for construction of the works shall be reinstated to the beach.
- 5.17 Partly constructed works, especially loose materials such as geotextiles, shall be secured against damage from the environment.

#### **Precautions for Working in the River Lochy (tidal reach)**

- 5.18 Machinery shall not be operated in water unless working in the dry is impractical.
- 5.19 Temporary access points to the river shall be formed with protection (e.g. matting, armour, temporary ramps) to prevent damage to the river banks. Following completion of the works, the river bank shall be reinstated. Reinstatement of the river bank shall comply with SEPA General Binding Rule GBR8: Bank Reinforcement.
- 5.20 Machinery shall not be operated in the river when fish are likely to be spawning. These times shall be confirmed in consultation with SEPA, SNH and the local fisheries board.

## **6 Description of Works Required**

### **Summary**

- 6.1 The following items have been identified as requiring work in the marine environment:

- i. Existing surface water outfalls - new headwalls and flap valves
- ii. New surface water outfalls
- iii. Existing deep water sewage outfalls - new flap valves
- iv. Flood Defence to Shore of Loch Linnhe
- v. Flood Defence to Bank of River Lochy

#### **(i) Existing Surface Water Outfalls**

- 6.2 Several existing surface water pipes intersect the proposed scheme and outfall to the beach or tidal reaches of the River Lochy. The locations of surface outfalls are indicated on accompanying drawing ML01.
- 6.3 Any outlets that do not have suitable headwalls, aprons and non-return flap valves shall be provided with new in-situ concrete headwalls, aprons and new flap valves.

#### **(ii) New Surface Water Outfalls**

- 6.4 As part of the proposed scheme, a secondary drainage network is to be constructed behind the flood defence. The secondary drainage network will intercept any water that cannot be carried by the existing outfalls, for example when existing outfalls are tide locked, and carry the water to one of three new pumping stations. New surface water outfalls shall be constructed for each of the new pumping stations. The locations of the new surface water outfalls are indicated on the accompanying drawing ML01.

- 6.5 The new surface water outfalls shall be located at the top of the beach and shall have headwalls, aprons to prevent scour and non-return flap valves. The new outfalls will be constructed by excavating beach material, constructing the new outfall, and then reinstating the beach.

**(iii) Existing Deep Water Sewage Outfalls**

- 6.6 Two combined sewage overflow pipes intersect the scheme with outfalls in deep water below MHWS. The locations of the deep water outfalls are indicated on the accompanying drawing ML01.
- 6.7 Flap valves shall be provided to the sewer pipes to prevent return of sea water in a flood scenario. Subject to detailed design, new chambers will be required on the pipe line near the top of the beach in order to accommodate and allow servicing of new flap valves.

**(iv) Flood Defence to Shore of Loch Linnhe**

- 6.8 The flood defence to the shore of Loch Linnhe comprises an earth embankment above the top of the beach, faced with rock armour on the seaward side. The toe of the rock armour is typically located just above MHWS. The flood defence features several ramps to allow crossing. The ramps are earth embankment with rock armoured slopes on the seaward side. The proposed layout is shown on accompanying drawing ML01.
- 6.9 To construct the defence, the existing ground will be stripped of topsoil and excavated. Beach material shall be kept separate from other excavated material. The bank shall be made up of earth fill and compacted. The depth of excavation required on the beach is subject to detailed design but is expected to be less than 1.5m. No material shall be stored on the beach except for rock armour or material originating from the beach.
- 6.10 Rock armour on the seaward slope will be constructed over a basal geotextile membrane and the rock fill will be placed in layers to build a strong interlocking structure.
- 6.11 Access ramps will be constructed over the defence, and hard surfacing provided. The access ramps will be of similar construction to the main flood bank.

**(v) Flood Defence to Bank of River Lochy**

- 6.12 The flood defence to the bank of the River Lochy comprises building out of the existing riverside bank into the river a distance of approximately 3m. The depth of material to be added to the riverside bank is typically 1 to 2m. The lower part of the new bank will comprise rock armour. The upper part of the bank will comprise earth fill with grass seed. At the top of the new bank, a new 2.5m wide footpath and flood wall typically 1.5m high will be provided. The layout is shown on accompanying drawing ML01.
- 6.13 Work will be undertaken by machines operating in the river bed, or from the road above.
- 6.14 Suitable access points shall be established and defined to allow machines to access the river bed and minimise damage to the river bank.
- 6.15 The river bank will be cleared of existing vegetation and top soil. No material will be dumped in the river. Any material contaminated with knotweed will be removed for treatment on site or to a licenced waste facility off site. Advance treatment of knotweed has already been undertaken.
- 6.16 The existing river bed will be excavated to a depth of approximately 2m to allow a rock armour toe to be constructed. If any de-watering of the excavation is required, the details of de-watering

will be determined by the contractor and shall be undertaken in such a way as to prevent pollution of the water environment by sediment. Excavated river bed material may, subject to suitability, be returned to the river by redistributing across the river bed within the area indicated on accompanying drawing ML03. Only clean granular material (e.g. gravel, cobbles) shall be considered suitable for returning to the river, and the material shall be only deposited in the dry (e.g. at low tide). If the excavated bed material contains silt or fines, it will not be considered suitable for returning to the river due to the risk of water pollution. Material not returned to the river will be either reused within the works on site above MHWS, or taken offsite for re-use or disposal.

- 6.17 The upper part of the new bank will comprise an earth embankment. This will be placed and compacted in layers, where possible working from the land and not the river.
- 6.18 The top of the new bank will comprise a new footpath and flood wall.

## **7 Scheme Drawing**

- 7.1 This Method Statement should be read in conjunction with accompanying Highland Council scheme drawing ML01, which has also been prepared in support of the Marine Licence application.

## **8 Programme for Works**

- 8.1 An outline programme for the works has been prepared in support of the Marine Licence application and is appended to this method statement.

## Outline Programme River Lochy - Caol Flood Protection Scheme

ID	Task Name	2018				2019				2020				2021				2022				2023	
		Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr
1	Advanced Japanese Knotweed Treatment	█																					
5	Advanced Utility Diversions	█																					
2	Flood Protection Scheme Legal Process			█																			
3	Marine Licence Pre-application Consultation			█																			
4	Detailed Design and Contract Perparation			█																			
6	Tender and Award											█											
7	Construction - Mobilisation and Setup													█									
8	Construction - Flood Defence to Shore of Loch Linnhe													█									
9	Construction - Flood Defence to Bank of River Lochy													█									
10	Construction - Secondary Drainage Network													█									