FLOOD RISK MANAGEMENT (SCOTLAND) ACT 2009

THE HIGHLAND COUNCIL

CAOL AND LOCHYSIDE FLOOD PROTECTION SCHEME 2018

DESCRIPTION

Revision History

Revision Ref / Date Issued	Amendments	Issued to
V1.0 / October 2017	-	The Highland Council
V2.0 / November 2017	Amendments following comments from THC	The Highland Council
V2.1 / December 2017	Minor amendments made by THC	
V3.0 / April 2018	Amendments made by THC following comments from THC Legal	

1. General

In exercise of the powers conferred upon them by the Flood Risk Management (Scotland) Act 2009 (hereinafter referred to as “the Act”) The Highland Council, established under the Local Government etc (Scotland) Act 1994 (hereinafter referred to as “the Council”) have prepared the following Flood Protection Scheme (hereinafter referred to as “the Scheme”) the purpose of which is to reduce the risk of flooding of residential and commercial properties within the villages of Caol and Lochyside to the north of Fort William arising from tidal surge and wave action from Loch Linnhe and combined effects of flows within the River Lochy.

The National Flood Risk Management Strategy published by the Scottish Environmental Protection Agency in December 2015 and the Local Flood Risk Management Plan published by the Council in April 2016 both identify the need for the Scheme as a recommended measure to alleviate flooding in the Caol and Inverlochy Potentially Vulnerable Area (PVA) in the first Flood Risk Management Cycle from 2016 – 2022, and the implementation of the Scheme will address that need.

2. Terms of the Scheme

The terms of the Scheme are as detailed in Sections 3 to 5 hereunder.

3. Description of the Operations

The Operations to be carried out in terms of the Scheme are as shown on the drawing(s) marked, annexed and executed as relative hereto, and are as follows:

Drawing Number	Title	Revision
Scheme Plans		
2013s7413-JBAU-00-00-DR-C-1001	Scheme Layout Plan Chainage 0.00 to 2179.36m	2
2013s7413-JBAU-00-00-DR-C-1002	Scheme Layout Plan Chainage 0.00 to 76.80m	2
2013s7413-JBAU-00-00-DR-C-1003	Scheme Layout Plan Chainage 76.80 to 216.60m	2
2013s7413-JBAU-00-00-DR-C-1004	Scheme Layout Plan Chainage 216.60 to 334.41m	2
2013s7413-JBAU-00-00-DR-C-1005	Scheme Layout Plan Chainage 344.41 to 471.90m	2
2013s7413-JBAU-00-00-DR-C-1006	Scheme Layout Plan Chainage 471.90 to 595.52m	2
2013s7413-JBAU-00-00-DR-C-1007	Scheme Layout Plan Chainage 595.52 to 720.51m	2
2013s7413-JBAU-00-00-DR-C-1008	Scheme Layout Plan Chainage 720.51 to 842.19m	2
2013s7413-JBAU-00-00-DR-C-1009	Scheme Layout Plan Chainage 842.19 to 942.70m	2
2013s7413-JBAU-00-00-DR-C-1010	Scheme Layout Plan Chainage 942.70 to 1091.89m	2
2013s7413-JBAU-00-00-DR-C-1011	Scheme Layout Plan Chainage 1091.89 to 1209.17m	2
2013s7413-JBAU-00-00-DR-C-1012	Scheme Layout Plan Chainage 1209.17 to 1335.97m	2
2013s7413-JBAU-00-00-DR-C-1013	Scheme Layout Plan Chainage 1335.97 to 1474.34m	2
2013s7413-JBAU-00-00-DR-C-1014	Scheme Layout Plan Chainage 1474.34 to 1589.43m	2
2013s7413-JBAU-00-00-DR-C-1015	Scheme Layout Plan Chainage 1589.43 to 1697.69m	2
2013s7413-JBAU-00-00-DR-C-1016	Scheme Layout Plan Chainage 1697.69 to 1824.43m	2
2013s7413-JBAU-00-00-DR-C-1017	Scheme Layout Plan Chainage 1824.43 to 1952.82m	2
2013s7413-JBAU-00-00-DR-C-1018	Scheme Layout Plan Chainage 1952.82 to 2080.00m	2
2013s7413-JBAU-00-00-DR-C-1019	Scheme Layout Plan Chainage 2080.00 to 2179.36m	2
Scheme Cross-Sections		
2013s7413-JBAU-00-00-DR-C-2001	Flood Embankment Cross Sections 1 of 10	1
2013s7413-JBAU-00-00-DR-C-2002	Flood Embankment Cross Sections 2 of 10	1
2013s7413-JBAU-00-00-DR-C-2003	Flood Embankment Cross Sections 3 of 10	1

2013s7413-JBAU-00-00-DR-C-2004	Flood Embankment Cross Sections 4 of 10	1
2013s7413-JBAU-00-00-DR-C-2005	Flood Embankment Cross Sections 5 of 10	1
2013s7413-JBAU-00-00-DR-C-2006	Flood Embankment Cross Sections 6 of 10	1
2013s7413-JBAU-00-00-DR-C-2007	Flood Embankment Cross Sections 7 of 10	1
2013s7413-JBAU-00-00-DR-C-2008	Flood Embankment Cross Sections 8 of 10	1
2013s7413-JBAU-00-00-DR-C-2009	Flood Embankment Cross Sections 9 of 10	1
2013s7413-JBAU-00-00-DR-C-2010	Flood Embankment Cross Sections 10 of 10	1
Secondary Flooding – Surface Water Pump Stations		
2013s7413-JBAU-00-00-DR-C-3001	Secondary Flooding Pumping station Glenkingie Street (OP23) Plan and Schematic Cross-Section	1
2013s7413-JBAU-00-00-DR-C-3002	Secondary Flooding Pumping station Erracht Terrace (OP24) Plan and Schematic Cross-Section	1
2013s7413-JBAU-00-00-DR-C-3003	Secondary Flooding Pumping station Kilmallie Road (OP25) Plan and Schematic Cross-Section	1

Canal Parks

OP-01 Construction of an earth embankment between the Caledonian Canal embankment and the southern corner of Canal Park adjacent to the Kilmallie Shinty Club. The flood embankment will be 120m long, or thereby, and shall have grassed side slopes with a maximum 1:2.5 side slope and a 4.2m top berm width. A shared 3m wide cycle/footpath will be constructed on top of the embankment, which shall be linked at the north end to the canal towpath by an access ramp. The defence level shall be 5.05m above ordnance datum (AOD) and shall be constructed an average of 0.5m above the existing ground level, or thereby. A 26m long, 2.5m wide unsurfaced ramped vehicle access will be provided adjacent to and parallel with the Canal embankment to tie into the existing unsurfaced track on the northern boundary of Canal Parks. The existing surface water drain along the toe of the Caledonian Canal will be sealed where it passes under the flood defence embankment and shall be diverted to a new outfall to the sea via a new ditch running along the seaward side of the embankment.

OP-02 Construct an earth embankment 10m long, or thereby. The embankment shall have maximum side slopes of 1:2.5, a defence level of 5.26m AOD and shall be constructed with an average height of 0.25m above the existing ground level or thereby. An asphalt ramp, 27m long and 3.5m wide or thereby, will provide vehicle access to the southern corner of Canal Parks and will be crossed by a shared cycleway and footpath constructed on top of the embankment. A concrete box culvert, with internal dimensions of 0.8m high, 1.2m wide and 4m long, or thereby, will convey the diverted surface water drain (OP-01) below the pedestrian and vehicular access ramp to Loch Linnhe.

Glenkingie Street to Erracht Terrace

OP-03 Construct an earth embankment 50m long, or thereby, between Canal Parks and the western end of Glenkingie Street. The outer seaward slope shall be rock armour formed to a maximum 1:3 side slope and shall have a toe constructed into the existing beach and foreshore to protect against scour. The defence level shall be 5.35m AOD and shall be constructed 0.75m above the existing ground level, or thereby. A 3m wide shared cycleway and footpath shall be constructed on top of the embankment. The shared cycleway and footpath will have a 1m verge on the seaward side, a 0.5m verge on the landward side; and shall form part of the Great Glen Way. The landward side slope will be formed in grass at a maximum of 1:2.5 side slope to tie into the existing foreshore level.

OP-04 Construction of a 29m long, 3m wide, or thereby, concrete access ramp to provide vehicular access from Glenkingie Street to the existing beach level. The side slopes of the access ramp shall be protected by rock armour. A 7m long, 3.5m wide, or thereby, asphalt access road will link the ramp to the existing turning head on Glenkingie Street.

OP-05 Construction of an earth embankment for a length of 185m or thereby, inline with Glenkingie Street. The outer seaward slope shall be rock armour formed to a maximum 1:3 side slope and shall have a toe constructed into the existing beach and foreshore to protect against scour. The defence level shall be 5.35m AOD and shall be constructed 0.75m above the existing ground level or thereby. The shared

cycleway and footpath will have a 1m verge on the seaward side, a 0.5m verge on the landward side; and shall form part of the Great Glen Way. The landward side slope will be formed in grass at a maximum 1:2.5 side slope to tie into the existing foreshore level. A 14m long, 2.5m wide, or thereby, asphalt footpath will link Glenkingie Street to the shared cycleway and footpath. A further 71m long, 2.5m wide, or thereby, asphalt footpath will link the shared cycleway and footpath to Erracht Drive.

OP-06 Construction of a viewing platform and seating area at the flood embankment level, opposite Glenloy Street. The surface finish shall be asphalt to match the shared cycleway and footpath.

OP-07 Construction of an earth embankment 35m long or thereby, opposite Glenloy Street. The outer seaward slope shall be rock armour formed to a maximum 1:3 side slope and shall have a toe constructed into the existing beach and foreshore to protect against scour. The defence level shall be 5.35m AOD and shall be constructed 2.3m above the existing ground level or thereby. A 3m wide shared cycleway and footpath shall be constructed on top of the embankment. The shared cycleway and footpath will have a 1m verge on the seaward side, a 0.5m verge on the landward side; and shall form part of the Great Glen Way. The landward side slope will be formed in grass at a maximum 1:2.5 side slope to tie into the existing foreshore level.

OP-08 Construction of a 36m long, 3m wide, or thereby, concrete access ramp to provide vehicular access from Glenkingie Street to the existing beach level. The side slopes of the access ramp shall be protected by rock armour. An 18m long, 3.5m wide, or thereby, asphalt access road will link the ramp to Erracht Drive and provide access to the surface water pumping station (OP-23).

OP-09 Construction of an earth embankment 240m long, or thereby, from the western end of Erracht Drive to its junction with Glenpane Street. The outer seaward slope shall be rock armour formed to a maximum 1:3 side slope and shall have a toe constructed into the existing beach and foreshore to protect against scour. The defence level shall be 5.35m AOD and shall be constructed 1.4m above the existing

ground level, or thereby. A 3m wide shared cycleway and footpath shall be constructed on top of the embankment. The shared cycleway and footpath will have a 1m verge on the seaward side, a 0.5m verge on the landward side; and shall form part of the Great Glen Way. The landward side slope will be formed in grass at a maximum 1:2.5 side slope to tie into the existing foreshore level. Two 2.5m wide, 28m and 18m long, or thereby, asphalt footpaths will link the shared cycleway and footpath to Erracht Drive.

OP-10 Construction of a viewing platform at the flood embankment level, opposite the Kilmallie Free Church. The surface finish shall be asphalt to match the shared cycleway and footpath. A 35m long, 2.5m wide, or thereby, concrete access ramp will be constructed to provide pedestrian access from the top of the flood embankment to the existing beach level. The side slopes of the access ramp shall be protected by rock armour. A 14m long, 2.5m wide, or thereby, asphalt footpath will link Erracht Drive to the shared cycleway and footpath.

OP-11 Construction of an earth embankment 270m long, or thereby, from the junction of Erracht Drive and Glenpane Street to the eastern end of Erracht Terrace. The outer seaward slope shall be rock armour formed to a maximum 1:3 side slope and shall have a toe constructed into the existing beach and foreshore to protect against scour. The defence level shall be 5.35m AOD and shall be constructed 1.4m above the existing ground level or thereby. A 3m wide shared cycleway and footpath shall be constructed on top of the embankment. The shared cycleway and footpath will have a 1m verge on the seaward side, a 0.5m verge on the landward side; and shall form part of the Great Glen Way. The landward side slope will be formed in grass at a maximum 1:2.5 side slope to tie into the existing foreshore level. Two 2.5m wide, 17m and 20m long or thereby, asphalt footpaths will link the shared cycleway and footpath to Erracht Drive. At its south end the shared cycleway and footpath will connect to the corner of Erracht Drive and Glenmallie Road.

OP-12 Construction of an earth embankment 90m long or thereby, around the Scottish Water pumping station and redundant sewage treatment works. The outer seaward slope shall be rock armour formed to a maximum 1:3 side slope and shall have a toe constructed into the existing beach and foreshore to protect against

scour. The defence level shall be 5.35m AOD and shall be constructed 1.4m above the existing ground level or thereby. A 3m wide shared cycleway and footpath shall be constructed on top of the embankment. The shared cycleway and footpath will have a 1m verge on the seaward side, a 0.5m verge on the landward side; and shall form part of the Great Glen Way. A 40m long, 3m wide, or thereby, concrete access ramp to provide vehicular access from Erracht Terrace to the existing beach level will be constructed. The landward embankment side slope will be formed in grass at a maximum 1:2.5 side slope to tie into the existing foreshore level. A 115m long, 3.5m wide, or thereby, asphalt access track will be included to the Scottish Water Waste Water Treatment Works and Tigh a Chladaich House. A 42m long, 3m wide, or thereby, unsurfaced ramp will link the access track to the redundant Waste Water Treatment Works.

Erracht Terrace to B8006 Kilmallie Road

OP-13 Construction of an earth embankment 210m long, or thereby, between the crofting land and the River Lochy. The outer and inner slopes shall be grassed and formed to a maximum 1:2.5 side slope. The defence level shall be 5.06m AOD and shall be constructed 1.0m above the existing ground level or thereby. A 61m long, 3m wide, or thereby, unsurfaced ramp will provide access to the crofting land on the riverside of the flood embankment.

OP-14 Construction of a flood wall 220m long or thereby. The wall will be on average 1.0m above the existing ground and will have a defence level of 5.08m AOD at its eastern extent running to 5.13m AOD at its western extent. The riverside slopes shall be grassed and formed to a maximum 1:2 side slope.

OP-15 Construction of a flood gate. The flood gate will have a clear opening width of 2.5m and shall be 0.7m high to provide a defence level of 5.17m AOD and shall be constructed 1.2m above the existing ground level, or thereby.

OP-16 Construction of a flood wall 21m long, or thereby, between the two proposed flood gates opposite Mossfield Drive. The wall will be 1.2m above the existing ground, or thereby, and will have a defence level of 5.17m AOD. The road side of the

wall will have a 2.5m wide shared cycleway and footway. The river side of the wall shall be a grassed slope formed to a maximum 1:2 side slope, with rock armour on the lower slope and a rock armour falling apron to protect against scour.

OP-17 Construction of a flood gate. The flood gate will have a clear opening width of 2.5m and shall be 0.7m high to provide a defence level of 5.17m AOD and shall be constructed 1.2m above the existing ground level or thereby.

OP-18 Construction of a flood wall 425m long, or thereby, between the eastern most flood gate at Mossfield Drive and the B8006 Kilmallie Road bus stop. The wall will be on average 1.1m above the existing ground and will have a defence level of 5.14m AOD at its eastern extent running to 5.37mAOD at its western extent. The river side of the wall will have a 2.5m wide shared cycleway and footway, the river bank shall be a grassed slope formed to a maximum 1:2 side slope, with rock armour on the lower slope and a rock armour falling apron to protect against scour.

OP-19 Construction of a flood gate. The flood gate will have a clear opening width of 2.5m and shall be 0.5m high to provide a defence level of 5.37m AOD and shall be constructed 0.8m above the existing ground level or thereby.

OP-20 Construction of a flood wall 126m long, or thereby, between the B8006 Kilmallie Road bus stop and Castle Drive. The wall will be on average 0.5m above the existing ground and will have a defence level of 5.37m AOD. The landward side of the wall will have a 2.5m wide shared cycleway and footway adjacent to the B8006 Kilmallie Road. The riverside slopes shall be grassed and formed to a maximum 1:2 side slope.

OP-21 A drainage network will be completed along; Glenkingie Street, Erracht Drive, Erracht Terrace, Glenmallie Road and the B8006 Kilmallie Road. Existing surface water outfalls where feasible connect into the new drainage network. Existing surface water outfalls shall have non-return valves fitted. The piped network shall mitigate secondary flooding associated with the flood defences and shall discharge to the three new pump stations (OP-23, OP-24, OP-25).

OP-22 A 2.5m wide 120m long, or thereby, shared cycleway and footway shall be extended from the eastern end of the flood protection scheme along B8006 Kilmallie Road to tie in with the access ramp to soldier's bridge.

OP-23 An underground pump station with above ground kiosk will be installed at Glenkingie Street, in front of the community centre and adjacent to the pre-existing North Play Area. The drainage network (OP-21) from the western end of Glenkingie Street, at the turning head; to the western end of Erracht Drive at approximately Patience Way will drain to the pump station constructed on the grassed foreshore. The flows will normally drain by gravity to Loch Linnhe; when tide-locked the pumps shall discharge the surface water to the loch.

OP-24 An underground pump station with above ground kiosk will be installed at Erracht Terrace, near the corner of Glenmallie Street. The piped network (OP-21) running along Erracht Drive from approximately Patience Way and Erracht Terrace will drain to the pump station; along with the drainage run along Glenmallie Road. The pump station will be constructed on the grassed foreshore and flows will normally drain by gravity to Loch Linnhe; when tide-locked the pumps shall discharge the surface water to the loch.

OP-25 An underground pump station with above ground kiosk will be installed at the B8006 Kilmallie Road adjacent to the 'Caol in Bloom' welcome sign. The piped network (OP-21) running along the B8006 Kilmallie Road from approximately Broom Drive in the west to Castle Drive in the east will drain to the new pump station. The pump station will be constructed on the grassed area between the B8006 Kilmallie Road and the River Lochy. A lay-by will also be constructed for maintenance access to the pump station. Flows will normally drain by gravity to the River Lochy; when tide-locked the pumps shall discharge the surface water to the river. Compensatory landscaping and planting will be provided around the pump station to mitigate its impact. The 'Caol in Bloom' welcome sign will be reinstated on completion of the works.

4. Land

The operations are to be carried out on land situated at Caol and Lochyside. The land which the Council considers may be affected by the operations and the land on which the Council would require to enter (whether temporarily or otherwise) for the purposes of carrying out the operations are shown on the plans marked 2013s7413-JBAU-00-00-DR-C-1001 to 2013s7413-JBAU-00-00-DR-C-1019 attached and executed as relative hereto.

5. Cost

The estimated cost for the Operations is £9.695M (Nov 2017), nine million six hundred and ninety five thousand pounds sterling.

Made by The Highland Council on the ……. day of…….2018.

……Proper Officer of the Council