MEMORANDUM

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CLIENT:	Galway County Council		
PROJECT:	Droim, Leitir Moir, Co. Galway		
DOCUMENT TITLE:	Proposed Works Description	PROJECT NO.:	20197
DATE:	29/07/2024	FILE REF.:	20197-MO-2401-FL01
CIRCULATION:	Project team	AUTHOR.:	LB

1 WORKS DESCRIPTION

Galway County Council are proposing an upgrade to the existing pier located at Droim, Leitir Moir, Co. Galway. The project works description is as follows:

> The proposed works shall consist of a 15m extension to the existing pier, construction of a slipway and parking area, widening of the existing bridge, provision of new lighting, boundary walls, and stormwater drainage, refurbishment of the existing access road within the site boundary, and all associated ancillary site development works.

All works are to be in accordance with drawings:

20197-DG-1011-PL02	Site location map
20197-DG-1051-PL02	Site layout map
20197-DG-1081-PL02	Cross sections through slipway and pier extension

2 CONSTRUCTION METHODOLOGY

2.1 OVERVIEW

The construction of a slipway and pier extension in Droim, Co Galway, involves several stages, from site mobilisation to handover at completion. Care must be taken to minimise environmental impact, particularly during rock breaking and intertidal construction operations.

2.2 STAGE 1 – SITE MOBILISATION

- The appointed contractor will typically decide the location of the site compound that facilitates their requirements in terms of construction equipment and material storage.
- No land outside the works boundary will be provided to the contractor for the provision of a site compound.
- The contractors work proposal should include provisions for locating a site compound. It is expected that the site compound will be located southeast of the car park area subject to landowner agreement.
- It is not envisioned that the site compound will require a road surface.
- For the extent of the works to be carried out, a site compound will typically consist of a 2Nr shipping containers and a storage area for equipment contained within a heras fenced area.
- Blackwater will typically be contained onsite in portable toilets which are typically serviced on a weekly basis.
- Greywater arising from site activities such as cleaning will be collected and stored prior to transport to a suitable facility offsite for recovery/disposal. Run-off containing pollutants into surrounding soils, watercourses and open excavations will not be permitted.
- All fuel must be stored more than 50m from a watercourse and should be bunded to 110% capacity.
- A daily record of machinery inspections should take place to check for leaks and spills and a record kept for inspection.
- A spill kit and drip tray should be onsite at all times and available for refuelling operations.
- The plant refuelling procedures should be detailed in the contractors' methods statements.

2.3 STAGE 2 – ROCK BREAKING AND EXCAVATION

- Prior to commencement of construction works, a detailed method statement will be required from the contractor that details that they adhere to safe methods of best practice in terms of both environmental safety and construction works safety.
- Typically localised excavation of sediment/cobbles/stones to bedrock in some areas below the footprint of the slipway and pier development will be required (area/volume to be confirmed at construction stage).
- It is envisioned that the material will typically be reused to create the hardstanding area onsite. If, at the time of construction, the material is unable to be used, the material will be removed from site typically in 8-wheel tipper trucks to a waste disposal facility by a licensed contractor.

2.4 STAGE 3 - SHUTTERING AND FORMWORK

- Shuttering pans to be fixed to bedrock and tied at corners using diawag bars which have been chemical anchored into existing bedrock.
- Shuttering pans supported using steel Acrow props fixed to Lego blocks and by double bagged tonne bags of sand (which should be retrieved on completion of the pour).

2.5 STAGE 4 - CONCRETE WORKS

- Precast concrete elements will be used, whenever possible, to negate the requirement for in-situ concrete.
- All in situ concrete works must be done during dry weather conditions and isolated from any water that may enter the drainage network/sea until the concrete has cured.

- Concrete delivery vehicles will be precluded from washing out at locations which would result in discharge to surface waters and will be required to wash into a concrete absorption sack or similar.
- No concrete should enter the sea. This is typically achieved by diverting the water away from the working area through the use of double bagged bags of sand.
- Shutters will typically be made watertight through a combination of Hessian and sandbags to retain the concrete during the pour and pours are typically timed to begin on the going/falling tide to allow for sufficient time for the concrete to set prior to the rising tie.
- An underwater concrete mix will be specified at detailed design stage for all in-situ works that will be intertidal.
- Removal of shutters will take place typically 24-48 hours upon completion of the pour and process repeated to completion of slipway/pier extension.

2.6 STAGE 5 -HARDSTAND/PARKING AREA

- Area to be surveyed by contractor
- Area to be levelled using excavator and surfaced with dredged material and locally sourced hardcore infill stone.
- Foundations for boundary wall to be excavated and poured using in-situ concrete.
- Boundary wall to be shuttered and poured in a similar manner to pier and slipway construction.
- Installation of stormwater gullies to drain to the pier face
- Completion of pavement construction (material to be defined at detailed design stage)

2.7 STAGE 6 – WIDENING OF BRIDGE

- Excavate and construct foundations at bedrock.
- Extend bridge approx. 3m to the Northeastern side.
- Bridge construction is anticipated to be undertaken using a precast culvert.

2.8 STAGE 7 – DEMOBILISATION AND HANDOVER

- Removal of site compound.
- Inspection of works and handover

3 PREVIOUS RFI'S AND ANSWERS

To complete the AA Screening and NIS report, we would require the following data;

- Final site layout (in pdf); See attached.
- Description of development and construction type (i.e. material used) See attached. In terms of materials, the pier extension and slipway will be constructed of reinforced concrete. It will be constructed as a combination of precast concrete elements below the waterline and in-situ concrete above the water line. Landside works will be a combination of concrete and pavement construction using hardcore and pavement construction.
- Surface water layout, and points of connection See attached. There will be negligible increase in stormwater run-off given the exposed rock and pavement surfaces already existing. There are no points of connection.
- Treatment of any waste/bi-product arising during construction or operation None
- Location of any outfalls There will be an outfall headwall equivalent to the existing storm scenario. The outfall location will be determined in detailed design. For planning it can be assumed it will be adjacent to the slipway (lowest point)
- Length of construction phase 12 months
- Expected duration of works; as above
- Depth of excavation at any point across the site Minimal – approximately 0.3m max average. Some rock breaking required to enable slipway construction.
- Access routes As per existing roads
- site compound locations Assumed in a small, localised area on land to the southeast of the planning boundary/car park area (subject to landowner agreement)

Construction phase:

If shuttering is to be used for concrete pours, where will they be located and when will they be installed? Shuttering for concrete pours will be located at the external face of all concrete structures as shown on the proposed site layout drawing. They will be installed immediately prior to the pouring of concrete and removed approximately 24-48 hours later. Shutters will start off the bedrock.

Is any piling expected? No piling is expected.

What machinery will be used on site? This will be dictated by the contractor at construction stage. Typical construction machinery would include 360-degree excavators, rollers, dumpers, telehandlers, and concrete mixing trucks.

<u>Extension area and design:</u>
What area (m^2) of intertidal rock habitat below high water mark area is expected to be lost due to:
1. The extension of the existing pier on the west side of the bridge, , approx. 27.1m^2
2. The construction of the slipway, and approx. 141.5m^2
3. The proposed hardstand/parking area? approx. 14.3m^2
4. Widening of bridge approx. 13.7m^2

We will need to include these figures in the NIS, as we need to show the % loss of Annex I habitat Reefs within the SAC.

How do you plan to construct the slipway with regard to the existing rock outcrops within the high-water mark area? Rock will have to be removed only in areas where it conflicts with the proposed development.

What is the area (m^2) and location of rock that will broken up, as this will mean loss of intertidal Annex 1 reef habitat. Rock is expected to be removed only in the vicinity of the proposed slipway. The area of rock to be removed will be determined at construction stage.

What tools/machinery will be used Assumed 360 excavators with rock breaking attachment.

How will the proposed 1200mm high wall be constructed? Reinforced concrete
How wide will it be? 600mm or less
What are the excavation depths/foundations? Need detailed description. The wall will be constructed on top of the new pier, the pier acts as the foundation for the wall. All foundations will be on bedrock.
By how much will the bridge be widened, how will this be constructed, and what side(s) of the bridge will be widened? Approx. 3m widening to the northeastern side. Will be constructed from reinforced concrete.
Where will the outfall headwall be in relation to the slipway, i.e. can you add it to the plan? Stormwater gullies are expected to drain straight out from the pier face. As there is no risk of scour of the rock, there will be no headwall anticipated.

Operational phase:
What % increase in usage of the development is expected post construction? What is the expected increase in traffic to the site/ boat usage from the pier? There is no increase of usage anticipated post construction.

GCC may need to liaise with NPWS on this project. You may have been in touch previously? GCC have not liaised with NPWS in regards Droim Pier, we will in the coming days.

Slipway and wall construction preparation: as well as breaking rock, will there be excavations to bedrock level, i.e. are you removing all sediment/cobbles/stones to bedrock level in footprint of slipway and foundations of walls prior to construction? If so how is this material been moved and where is it going after removal? –

- There will typically by localised excavation of sediment/cobbles/stones to bedrock in some areas below the footprint of the slipway and pier development.
- It is envisioned that the material will typically be reused to create the hardstanding area onsite. If at the time of construction, the material is unable to be used, the material will be removed from site typically in 8 wheel tipper trucks to a waste disposal facility by a licensed contractor.

Location of site compound: this needs to be ascertained and possibly surveyed as part of assessment, as there is potential risk of runoff from the site compound to local watercourse and the marine environment. Will a new road surface/ infilling be required to create site compound if the site compound is to the SE as previously stated in email.

- The appointed contractor will typically decide the location of the site compound that facilities their requirements in terms of construction equipment and storage requirements.
- No land outside the extent of the works boundary will be provided to the contractor for the provision of a site compound. The contractors works proposal should include provisions for locating a site compound. As previously mentioned, it will be expected that the site compound will be located SE of the car park area subject to landowner agreement.
- It is not envisioned that the site compound will require a road surface. For the extent of the works to be carried out, a site compound will typically consist of a 2Nr shipping containers and a storage area for equipment contained within a heras fenced area.
- Blackwater will typically be contained onsite in portable toilets which are typically serviced on a weekly basis.
- Greywater arising from site activities such as cleaning will be collected and stored prior to transport to a suitable facility offsite for recovery/disposal. Run-off containing pollutants into surrounding soils, watercourses and open excavations will not be permitted.

Can refuelling of machinery be done away from site/site compound?

- All fuel must be stored more than 50m from a watercourse and should be bunded to 110% capacity. A daily record of machinery inspections should take place to check for leaks and spills and a record kept for inspection.
- A spill kit and drip tray should be onsite at all times and available for refuelling operations.
- The plant refuelling procedures should be detailed in contractors methods statements.

Is ready mix concrete being used? Previous project description from 2021 described batch loads of ready mixed concrete delivered on an as needed basis. Is this still the case?

- Yes

Regarding the following statement 'Temporary shutters will be installed immediately prior to the pouring of concrete and will be located at the external face of all concrete structures'- is this the case for the slipway/pier elements that are below high water mark, as methodology also stated that the pier and slipway will be constructed as a combination of precast concrete elements below the waterline and in-situ concrete above the water line?

- Precast concrete elements should be used, whenever possible, to eliminate the risk to aquatic life. All in situ concrete works must be done during dry weather conditions and isolated from any water that may enter the drainage network/sea until the concrete has cured. Concrete delivery vehicles will be precluded from washing out at locations which would result in discharge to surface waters and will be required to wash into a concrete absorption sack or similar. No concrete should enter the sea. This is typically achieved by diverting the water away from the working area through the use of double bagged tonne bags of sand. Shutters will typically be made watertight through a combination of Hessian and sandbags to retain the concrete during the pour and pours are typically timed to begin on the going/falling tide to allow for sufficient time for the concrete to set prior to the rising tie.
- An underwater concrete mix will be specified at detailed design stage for all in-situ works that will be intertidal.