

Coastal Works Review

Garvin Park – Repair and Extension of Existing Dock and Replacement of Existing Boat Ramp Block: 9A Parcel: 127 (See addendum and appendix 2 for modification- excavation of dock area)



PREPARED FOR: MINISTRY OF HEALTH, ENVIRONMENT, CULTURE AND HOUSING

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Authored by: Technical Review Committee - Department of Environment, on behalf of the Director,
Department of Environment

Coastal Works Review

GARVIN PARK – REPAIR AND EXTENSION OF EXISTING DOCK AND REPLACEMENT OF EXISTING BOAT RAMP BLOCK: 9A PARCEL: 127 (SEE ADDENDUM AND APPENDIX 2 FOR MODIFICATION- EXCAVATION OF DOCK AREA)

Project Proposal

The applicant- the Public Works Department – is seeking permission for the repair and extension of an existing dock, and to replace an existing boat ramp at the Crown owned Garvin Park on Block 9A Parcel 127 in the Morgan’s Harbour area of West Bay as shown on Figure 1. The dock extension and ramp are intended for the general public, including the launching and mooring of boats with drafts up to 2ft. The proposed works will affect approximately 948 square feet of Crown property (323 sq. ft. for the dock extension and 625 sq. ft. for the ramp removal and replacement) and will include the excavation of 46.2 cubic yards of material from Crown property.



Figure 1: 2013 LIS aerial imagery showing proposed dock renovation area (green) extension (yellow), boat ramp removal and excavation area (red) and new boat ramp area (orange) (LIS 2013, DOE 2019)

The existing shore perpendicular dock shall be repaired by replacing deteriorated wood framing members and adding deck joists to support the existing TREX deck boards. The proposed dock extension shall measure 40ft long by 8ft 1in wide as shown on stamped approved plans and Figure 2. It will be supported by 8in diameter concrete reinforced PVC pilings auger drilled into the seabed and, as with existing dock section, have TREX decking with a minimum of 1/2in spacing between decking boards. The pilings will be embedded by auger drilling the seabed using machinery mounted on a floating platform.

The boat ramp shall consist of a shore perpendicular reinforced concrete slab measuring 47ft long, 15ft 6in wide and 1ft thick (15 cubic yards of concrete) with 1ft 3in thick concrete curbs along the outer side edges (10 cubic yards of concrete) as shown on stamped approved plans and Figure 2. The area of the existing ramp and the proposed ramp,

including a 2ft wide area around the sides and end of the ramp, shall be excavated from the existing grade to a maximum depth of 4ft to embed the end ramp to 3ft below mean sea level. The seaward footing of the ramp shall be excavated to 5ft below mean sea level. This will result in the excavation of a total volume of 46.2 cubic yards of material. The boat ramp area shall be excavated by shore based excavator. A silt screen will be used to contain the entire area of the works whilst they are being carried out. As a part of the works the application also proposes a geotechnical survey to establish the substrate of the seabed to the pile embedment depth of 3ft below seabed level. It is proposed that at 3 locations along the length of the proposed dock, a steel rod shall be hammered into the seabed using a hydraulic hammer. No silt screens are proposed to be used at this stage as there should be very little disturbance.

In the cover letter submitted with the application it is mentioned that the ‘intention is to dredge an appropriate channel at a later date’ in order to allow 3ft of draft in order for larger boats to access the ramp and dock. The DOE would not recommend approval of such a proposal due to the lack of a need for access by larger boats and the significant environmental impacts that such works would likely have on the area. Any area of dredging would result in total seagrass loss in that area and would expose the coastline to greater wave action due to the deeper area of water closer to shore, likely leading to greater coastal erosion, which is already an issue for this area.

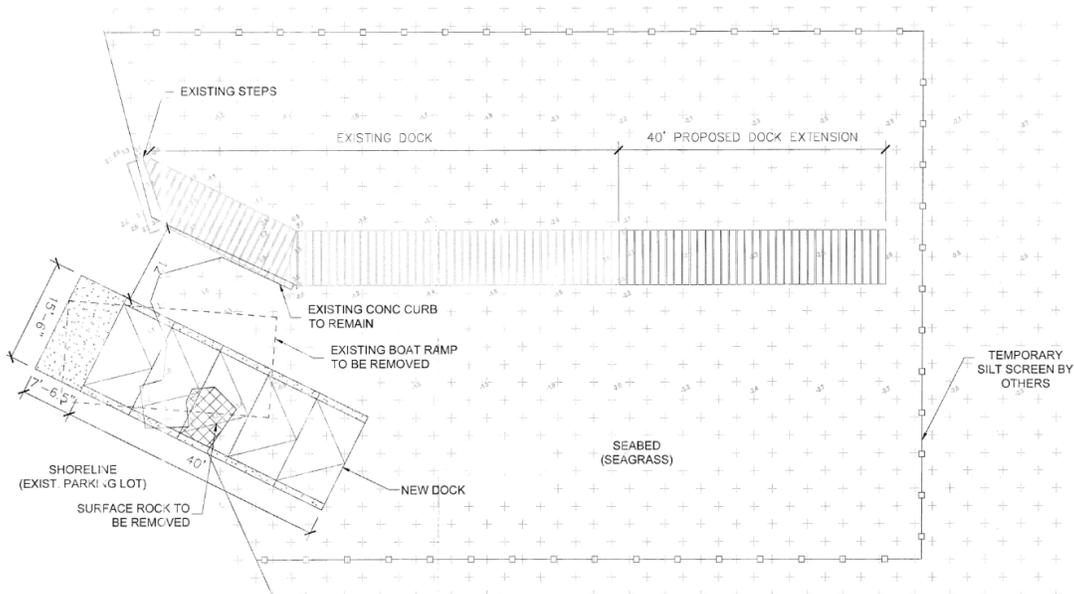


Figure 2: Plan extracts showing the proposed docks and boat slips (Reed Consulting Engineers 2019)

Environmental Impacts

The application site is not within an existing or proposed Marine Protected Area; however there are dense seagrass beds offshore, therefore the environmental impacts are as follow:

Loss of Marine Habitats

The characteristics of the seabed in the immediate footprint of the proposed excavation, dock extension and boat ramp consist of some areas of previously impacted and disturbed loose substrate with algae and dense seagrass beds. The application proposes inclusion of a minimum ½in gap between decking boards of the dock to allow sunlight to penetrate to the seabed below and militate against shading of the seagrass. It will also be important to retain the existing mangroves on the parcel coastline in order to protect it from erosion; no mangroves should be removed or trimmed without guidance from the DOE.

Construction Impacts

Direct environmental impacts will result from the proposed works mainly due to the excavation of the seabed and the embedding of the dock pilings. Excavation of the seabed in locations such as this typically results in the disturbance and suspension of fine silts which form detrimental sediment plumes which can impact surrounding seagrass communities and marine organisms that depend on good water quality; this may also be a potential issue in the future use of the boat ramp due to boat propeller wash re-suspending sediment. It will be very important to limit the impacts of sediment plumes generated during construction of the dock through the use of silt screens, which the applicant is proposing as part of this application. Excavated material should also be placed as far from the mean high water mark as is practical in order to reduce the impact of runoff into the marine environment. Additionally, the pouring of the ramp and filling of the PVC pilings with cement should be done with shuttering and PVC sleeves properly embedded into the seabed in order to avoid leaking of cement into the marine environment. As indicated in the application form, the dock works are to be carried out from a floating platform, in order to avoid any additional impacts this should only operate in water deep enough to accommodate the draft of the platform so it does not directly impact the seagrass beds. It should not be left in place during inclement weather or any longer than required for the works to ensure that shading and other impacts are minimised. The shore based excavator used to excavate the area of the existing and replacement boat ramp shall only operate from shore and shall not enter the water or move seaward of the MHW. It should also not impact any area outside of the proposed excavation footprint of 625 sq. ft.



Figure 3: 2013 LIS aerial imagery showing proposed excavation area (red) and new boat ramp area (orange), and the alignment with the MHW and parcel boundary (blue) (LIS 2013, DOE 2019)

Comments & Recommendations

The DOE would recommend that the boat ramp alignment be revised in order to avoid encroaching onto the neighbouring parcel to the south. Notwithstanding this and the above mentioned environmental impacts associated with the proposed excavation, ramp and dock extension, on balance the Department **recommends this application for approval** subject to the standard Permit conditions and recommended Permit fees (Royalty, Environmental Mitigation and Administration & Monitoring) outlined in Appendix 1.

**Technical Review Committee – Department of Environment
On behalf of the Director, Department of Environment**

Addendum: Modification to Excavate Area of Dock and Ramp

Modification Proposal

In the carrying out of the previously approved works it has been found that some of the area next to the public dock and launching ramp is particularly shallow, 1-2ft deep in places, and of insufficient depth for the access of intended boat traffic. The applicant proposes to excavate to a maximum 4 foot depth (below mean sea level) to remove any high areas of seabed that would cause damage to outboard engines and boats using the ramp and dock. The proposed excavation area (shown in figure 1 below) will measure 15ft 6in wide and 80ft long (1,240 sq. ft. in area) removing a maximum 91.8 cubic yards of material; it will extend from the launching ramp to the end of the dock. Once the concrete launching ramp is poured, the dewatering area berm material that is currently in place will be repositioned to form a fill-pad within the excavation area for the excavator to be able to reach the furthest extent of the excavation area. Silt screens will be maintained throughout the works to enclose the entire area to reduce the impact of turbidity on the surrounding marine environment. All fill-pad material and excavated material will be removed from the water and will be stored at the NRA material compound at Poindexter Road.



Figure 1: Aerial imagery showing the proposed excavation area (orange) next to the previously approved dock extension (yellow) and the launching ramp (red) (Source: LIS 2018).

Environmental Impacts

As previously, the application site is not within an existing or proposed Marine Protected Area; however there are dense seagrass beds in close proximity to the proposed works, therefore the environmental impacts are as follow:

Loss of Marine Habitats

As with the previous part of this review, the characteristics of the seabed in the immediate footprint of the proposed excavation consist of some areas of previously impacted and disturbed loose substrate with algae and dense seagrass beds. Whilst there will be direct impact to these areas they are generally considered to be already impacted due to the frequent use of the area by boats. Once again, it will also be important to retain the existing mangroves on the parcel coastline in order to protect it from erosion; no mangroves should be removed or trimmed without guidance from the DOE.

Construction Impacts

Direct environmental impacts will result from the proposed works mainly due to the excavation of the seabed and the placement of the fill-pad. Excavation of the seabed in locations such as this typically results in the disturbance and suspension of fine silts which form detrimental sediment plumes which can impact surrounding seagrass communities and marine organisms that depend on good water quality; this may also be a potential issue in the future use of the boat ramp due to boat propeller wash re-suspending sediment. This may in part be mitigated by the deepening of this area by excavation. However, it remains important to limit the impacts of sediment plumes generated during construction of the dock through the use of silt screens, which the applicant is proposing as part of this application. Excavated material should also be placed as far from the mean high water mark as is practical in order to reduce the impact of runoff into the marine environment. The excavator shall only operate from shore or the fill-pad placed within the area of the proposed excavation works and shall not move outside of the fill-pad area nor impact any area outside of the proposed excavation footprint of 1,240 sq. ft. All fill-pad material must be removed from the marine environment following the completion of the works.

Comments & Recommendations

Due to the need for these works to be carried out to ensure adequate depth for the safe and effective use of the existing public dock and launching ramp the Department **recommends this application for approval** subject to the standard Permit conditions and recommended Permit fees (Royalty, Environmental Mitigation and Administration & Monitoring) outlined in Appendix 2.

**Technical Review Committee – Department of Environment
On behalf of the Director, Department of Environment**