4. Environmental Consequences

The potential impacts, both beneficial and adverse, that may result from implementing any of the alternatives considered in this EA are analyzed in this section. Please refer to Section 2.0 for detailed descriptions of the identified alternatives. General Methodology for Analyzing Impact

4.1.1. Geographic Area Evaluated for Impacts

The geographic study area for this EA is limited to the portion of Rockland Harbor where the Project Action would take place.

4.1.2. Duration of Impacts

The duration of impacts assessed in this EA are either short term or long term. These terms are defined below and are utilized throughout this section.

- Short term – This refers to an impact that would be temporary and associated with the construction process for the Proposed Action. Short-term impacts may end as soon as construction ends or may last up to one year after construction is completed.
- Long term – This refers to an impact that lasts beyond the construction period, and the resources may or may not resume their pre-construction condition.

4.1.3. Type of Impacts

Impacts can be beneficial or adverse and may be direct or indirect. These terms are defined below and are utilized throughout this section.

- Beneficial – This refers to impacts that would improve resource conditions.
- Adverse – This refers to impacts that would deplete or negatively alter resources.
- Direct – This refers to those impacts caused by an action and occurring at the same time and place as the Proposed Action.
- Indirect – This refers to those impacts caused by the Proposed Action but occurring later in time or that occur at a location that is farther from the site of the Proposed Action.

4.1.4. Assessing Impacts Using Council on Environmental Quality Criteria

The impacts of the alternatives are assessed using the Council on Environmental Quality definition of "significantly" (1508.27), which requires consideration of both context and intensity:

- Context – The significance of an action must be analyzed in several contexts such as the affected region, interests, and society. Significance varies with the setting of the project and the types of actions to be performed. In the case of a site-specific action, significance would usually depend upon the local impacts rather than global impacts. Both short- and long-term effects are relevant.
- Intensity – The following should be considered in evaluating intensity:
    1. Impacts that may be both beneficial and adverse. A significant effect may exist even if on balance the effect would be beneficial.
    2. The degree to which the Proposed Action affects public health or safety.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, parklands, prime farmlands, wetland, wild and scenic rivers, or ecologically critical areas.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

7. Whether the action is related to other actions could have cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

10. Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

For each resource analyzed, an assessment of the potential significance of the impacts according to context and intensity is provided in the Conclusion paragraph that follows the discussion of each impact. Intensity of the impacts is presented using the relevant factors from the list above. Intensity factors that do not apply to a given resource topic and/or alternative are not discussed.

4.1.5. Cumulative Impact Analysis Methodology

Cumulative impacts are the impact of the Proposed Action added to the impacts of past, other present, and reasonably foreseeable future action(s). To determine the potential cumulative impacts, the completed, existing, and anticipated future projects within Rockland Harbor and in the surrounding area were identified. In defining the contribution of each alternative to cumulative impacts, the following terminology is used:

- Imperceptible – The incremental effect contributed by the alternative to the overall cumulative impact is such a small increment that it is impossible or extremely difficult to discern.

- Noticeable – The incremental effect contributed by the alternative, while evident and observable, is still relatively small in proportion to the overall cumulative impact.

- Appreciable – The incremental effect contributed by the alternative constitutes a large portion of the overall cumulative impact.

4.1.6. Cumulative Actions Identified

The proposed project will result in increased transient dockage capacity in the Rockland Harbor to the existing Safe Harbor Rockland marina facility to accommodate current and future demand for transient dockage in the area. Please refer to Section 1.3 for details regarding the project Purpose and Need.

The existing site is a full-service marina operated by SHM Rockland, LLC, and is providing approximately 720 lf of dockage for vessels up to 200 ft in length. The additional transient dockage from the expansion of the marina would result in a noticeable increase in traffic through the Harbor.

Improved management of traffic is anticipated to occur through operational controls developed by the marina manager in coordination with the Rockland Harbormaster and the U.S. Coast Guard. A component of this management would potentially be installation of signage and lighting in proximity to the marina. Landside activity associated with the anticipated increase in visitors would consist of an imperceptible increase in pedestrian traffic and vehicular traffic because the existing marina is already in place.

4.2. Effect Assessments for Identified Alternatives

4.2.1. Water Resources

The existing marina is located adjacent to Rockland Harbor, which has a marine water classification zone of SC per Maine's designated use and classification system. Class SC waters are the third highest classification and as defined by §465-B of the Maine Revised Statutes (Title 38: Waters and Navigation) have the following characteristics:

- Class SC waters must be of such quality that they are suitable for recreation in and on the water, fishing, aquaculture, propagation and restricted harvesting of shellfish, industrial process and cooling water supply, hydroelectric power generation, navigation and as a habitat for fish and other estuarine and marine life.
- The dissolved oxygen content of Class SC waters must not be less than 70% of saturation. There are specific levels that enterococcus bacteria of human and domestic animal origin need to be at.
- Discharges to Class SC waters may cause some changes to estuarine and marine life provided that the receiving waters are of sufficient quality to support all species of fish indigenous to receiving waters and maintain the structure and function of the resident biological community.

The discharge associated with the proposed project is limited to clean water and partial dredge dewatering, which are acceptable discharge types for SC zone waters. Additional water and wastewater needs for the proposed marina expansion will be provided by the City of Rockland municipal water.

Additional water considerations that were evaluated are described as follows.

- Aesthetics: The Project Area is located within Rockland Harbor, which consists of developed waterfront, a cruise ship terminal, ferry docks, and existing marinas. The aesthetics of the Proposed Action would be an extension of the existing Safe Harbor Rockland marina facility, which is consistent with the existing environment.
- Swimming and other primary contact recreation: The Proposed Action is not located in an area where swimming or other primary contact recreation typically occurs.

- Boating, fishing, and other recreational uses: Boats currently moor offshore in the proposed project area. The Proposed Action would benefit this existing use by restricting wave action to portions of Rockland Harbor. The Proposed Action is not located in an area where fishing typically occurs.

The anticipated consequences to water resources for the evaluated viable alternatives are as follows:

1. No Action: There would be a continuance of existing conditions.
2. Proposed Action: A minimal, short-term increase in turbidity to surface waters within the immediate work area would occur during the initial installation of the piles and during dredge activities.

Conclusion: Limited adverse impacts from the Proposed Action to water resources are anticipated to be direct and adverse, but imperceptible and short-term during the construction period for the marina expansion. Long-term beneficial impacts are expected for existing recreational boating uses (i.e., boats currently moored in the vicinity of the project will be better protected from waves).

4.2.2. Floodplains

The project area is located within Flood Zone VE, with a 100-year flood elevation of 15 ft, as defined by the July 6, 2016 FEMA FIRM. A copy of the FEMA FIRM is included in Appendix F.

The effects of the project on floodplains and floodways were determined by comparing the limits of FEMA-designated floodplains within the project area over the limits of work for the project area. Where the project limits of work occur in the FEMA-designated floodplain or flood zone, the nature of the proposed work was analyzed to determine if any of the proposed activities would displace or divert floodwaters onto adjacent or downstream properties.

The anticipated consequences to floodplains for the evaluated alternatives are as follows:

1. No action: There would be a continuance of existing conditions.
2. Proposed Action: A negligible reduction in flood storage capacity is anticipated. Short-term, limited drainage changes may take place during construction activities.

Conclusion: Impacts to floodplains from the Proposed Action are anticipated to be direct and adverse, but imperceptible and short term during the construction period for the marina expansion.

4.2.3. Biological Resources

Vegetation

Anticipated effects of the project to vegetation within the project area are negligible. An environmental survey of the area was conducted on June 17, 2021 and is included as Appendix G.

The substrates throughout the proposed project area are fines over till. There are widely scattered cobbles on the south and east sides of the existing granite crib pier. Some debris is also present, including abandoned granite mooring blocks with chain still attached and woody debris over fines and till.

The seabed areas covered in soft mud do not support vegetation. No eelgrass was observed. The scattered boulders and cobbles have sugar kelp (Saccharina latissima), horsetail kelp (Laminaria digitata) and bladderwrack (Fucus vesiculosus) growing on them. Both species of kelp were observed on the

abandoned mooring chains. Bladderwrack is growing on the abandoned mooring blocks and the woody debris. These species are abundant on the granite pier.

The anticipated consequences to vegetation for the evaluated alternatives are as follows:

1. No Action: There would be a continuance of existing conditions.
2. Proposed Action: It is anticipated that approximately 3.2 acres of seabed would be impacted due to construction and dredging. Temporary impacts include increases in turbidity from dredging and impacts of noise from impact hammering of pilings. Permanent impacts from the addition of pilings to the area include an increase in the number of structures attached to the bay floor. There will be little shading of the area because the fixed and floating docks and piers are a minimum of 6 ft above final elevation of the bottom.

Conclusion: Impacts to vegetation from the Proposed Action are anticipated to be direct and indirect and adverse, but imperceptible and short term during the construction period for the marina expansion. Direct impacts will be minor due to the lack of submerged aquatic vegetation in the project area.

Wildlife and Wildlife Habitat

Anticipated effects of the Proposed Action to wildlife and wildlife habitat. The marina expansion is a small expansion and proposed improvement to existing conditions and use. As the existing conditions are currently highly modified, there is limited wildlife habitat to be considered. The ocean wildlife habitat conditions would be temporarily disturbed during construction as the new piles are installed and dredging is conducted. However, any mobile aquatic wildlife such as fish and other species would be able to swim away during those times of temporary disturbance and would not be harmed.

Some waterfowl and seabirds alight on the surface waters in the project area. These incidental species could be disbursed during construction but given the overall available water surface in the area and the existing commercial and recreational uses already present in the Rockland Harbor, the effects on these species would be negligible. There are no inland waterfowl and wading bird, or shorebird habitats located in the project area, based on available MDEP data.

The environmental survey of the area (Appendix G) found a few blue mussels (*Mytilus edulis*) attached to the scattered boulders and cobbles. Rock barnacles (*Semibalanus balanoides*), and periwinkles (*Littorina littorea*) are abundant on the granite pier. Sandworms (*Nereis virens*) were found in sediment sample cores collected for bulk chemistry analyses, indicating that they are common throughout. No listed species or critical habitat were observed in the project area.

The project has been reviewed and received regulatory authorizations from MDEP and USACE as summarized in Section 1.4. The approved permits for the project are included herein as Appendix B. Through communication with the consulting agencies, there are no anticipated long-term adverse impacts to any critical habitat.

Further, the Proposed Action would be conducted in accordance with the special conditions of the USACE permit No. NAE-2021-01934 (Appendix B.2) and in keeping with the Essential Fish Habitat (EFH) conditions delineated in the EFH Determination Sheet (Appendix D), as follows:

- All in-water work shall be conducted between November 8- March 15th work window in any given year. No in-water work (dredging or pile driving) is authorized to be conducted between March

16th to November 7th in order to minimize impacts to federally listed species and Essential Fish Habitat.

- Pile driving shall use a soft start technique in order to minimize potential effects to federally listed species. The soft start technique shall occur as follows: an initial set of three strikes for 15 sec. at reduced energy followed by a 1-minute waiting period between subsequent three-strike sets, followed immediately by pile driving at full rate and energy. The soft-start procedure shall be reinstated any time pile driving ceases for more than 30 minutes.

The anticipated consequences to wildlife and wildlife habitat for the evaluated alternatives are as follows:

1. No Action: There would be a continuance of existing conditions.
2. Proposed Action: The Proposed Action would result in temporary direct impacts to approximately 3.0 acres due to dredging and construction activities. Experience at numerous similar projects has shown that seaweeds and kelps colonize pilings post dredging, which, in this project, will provide more habitat than will be removed on boulders and cobbles. The same will be true for blue mussels. Sandworms are mobile and are pelagic spawners and will quickly recolonize the dredged area. No long-term adverse impacts to habitats and communities are expected.

Conclusion: Impacts to wildlife and wildlife habitat from the Proposed Action are anticipated to be direct and indirect and adverse, but imperceptible and short term during the construction period for the marina expansion. These temporary impacts are considered *de minimis* and there are no anticipated long-term direct or indirect adverse impacts to wildlife or wildlife habitat.

Threatened or Endangered Species

The project site was surveyed to determine if species listed as threatened or endangered under the federal Endangered Species Act or the Maine Endangered Species Act, or federally designated critical habitats would be potentially impacted by the project. Based on consultation with the relevant federal regulatory authorities, no significant impacts to ESA listed species are anticipated from this project (reference USACE permit, Appendix B.3).

Further, the Proposed Action would be conducted in accordance with the special conditions of the USACE permit No. NAE-2021-01934 (Appendix B.2) and in keeping with the Essential Fish Habitat (EFH) conditions delineated in the EFH Determination Sheet (Appendix D) as described in the previous section.

Please also see Section 1.4.4 of this Environmental Assessment report for further detail regarding the specific listed species that may be affected and the anticipated effects that the Proposed Action may have on each identified species.

The anticipated consequences to threatened or endangered Species for the evaluated alternatives are as follows:

1. No Action: There would be a continuance of existing conditions.
3. Proposed Action: The Proposed Action could result in temporary direct adverse impacts to threatened or endangered species during dredging and construction activities. Temporary impacts include increases in turbidity from dredging and impacts of noise from impact hammering

of pilings. The negative effects of these activities will be mitigated via implementation of appropriate BMPs and adherence to regulatory special conditions.

Conclusion: Impacts to threatened or endangered species from the Proposed Action are anticipated to be direct and adverse, but imperceptible and short term during the construction period for the marina expansion. These temporary impacts are considered *de minimis* and there are no anticipated long-term direct or indirect adverse impacts to threatened or endangered species.

4.2.4. Cultural Resources

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. The Section 106 process seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency official and other parties with an interested in the effects of the undertakings on historic properties. A request to conduct a project review in accordance with Section 106 of the NHPA was submitted to the SHPO, resulting in a finding of no impacts for this project (Appendix E).

The Tribal Historic Preservations Officers of the five indigenous groups in the region (Aroostook Band of Micmacs, Houlton Band of Maliseet Indians, Passamaquoddy Tribe of Indians, Penobscot Indian Nation) were notified of the proposed marina expansion project as part of MDEP's NRPA permit review process. Documentation to this effect is provided as Appendix I.

The anticipated consequences to cultural resources for the evaluated alternatives are provided as follows.

1. No Action: There are no consequences to historic or archaeological resources.
2. Proposed Action: There are no anticipated consequences to historic or archaeological resources. This has been confirmed via review and approval by MHPC (Appendix E) and issuance of the NRPA permit by MDEP (Appendix B.2).

Conclusion: No impacts to historic or archaeological resources from the Proposed Action are anticipated.

4.2.5. Hazardous Materials

The project includes a dredging component to allow safe navigation for the larger boats that the marina expansion will now accommodate. Samples of the dredge area were analyzed for total metals, volatiles and semi-volatiles, PCBs, hexavalent chromium, and dioxins. With the exception of arsenic, all the constituent levels were below the levels necessary to beneficially use the dredge material in accordance with the reduced procedures provisions of 06-096 CMR Chapter 418, § 7(A)(3). The arsenic levels ranged from 17 to 28 mg/kg. The allowable limit under 06-096 CMR Chapter 418, § 7(A) is 16 mg/kg, and the screening level in 06-096 CMR Chapter 418, is 7.9 mg/kg. As the levels of arsenic are above the allowable limit for clean fill, a license (No. S-022546-W3-A-N) was obtained from MDEP for the one-time beneficial use of dredge material as part of a gravel pit reclamation project in Cushing, Maine (Appendix B.1).

There are no other known areas of contamination in the area of the project and there are no actions proposed that constitute the need to manage or transport hazardous waste during or after construction.

The impact of hazardous materials from the project for the evaluated alternatives is provided as follows.

1. No Action: There would be a continuance of existing conditions.

2. Proposed Action: Dredge fill from an approximately 3.2-acre area would need to be disposed of in a beneficial use area in keeping with approved Beneficial Use of Dredged Material Permit (S-022546-W3-A-N)

Conclusion: Hazardous materials associated with dredge fill from the Proposed Action will need to be transferred to an offsite beneficial use area. No other hazardous materials are anticipated to be disturbed as a result of the Proposed Action.