

Mitigation Measures to Effect Least Practicable Adverse Impact to Sea Otters

Please indicate whether the following mitigation measures will be implemented during project activities. If any will not, please explain why the measure is not practicable to implement.

- Avoid high-density sea otter habitat.
☐ Yes ☒ Not practicable If not practicable, explain why not: [The project location is dictated by numerous factors and is a result of a two-decade sighting analysis completed by the City and Borough of Sitka. There are no locations along the Sitka road system that are outside of high-density sea otter habitat.](#)
- Avoid biologically significant times or locations for sea otters.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Travel (vehicles, vessels, and aircraft) in a predictable manner and avoid sudden changes in speed and direction when in the vicinity of sea otters.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Employ Protected Species Observers (PSOs) for monitoring, recording, reporting, and implementing mitigation measures. PSOs must meet requirements as listed in the Appendix of this document.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Use alternate detection methods such as infrared sensors, thermal imaging, and/or aerial/vessel/Unmanned Aircraft System (UAS) device surveys. *Please note UAS devices must not cause take by harassment of sea otters.
☐ Yes ☒ Not practicable If not practicable, explain why not: [The project is a grant-funded municipal project without additional funding for these measures.](#)
- Halt or delay activity during times that may hinder sea otter detection, such as during darkness, adverse weather conditions, high sea states, and other times of limited visibility.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Provide trainings for work crews to aid in the detection, identification, and mitigation of potential risks to sea otters as well as to identify responsibilities and communication and operational procedures on the project.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Develop a Service-approved sea otter monitoring plan.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Use silt curtains to prevent sedimentation and turbidity when conducting down-the-hole drilling.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)

Aircraft activity:

Does the proposed project include the use of aircraft? ☐ Yes ☒ No

The IHA application only applies to project construction which does not include use of an aircraft. After the project is completed, seaplanes would be operating in the project area.

If the project does not include aircraft activity, please move to the next section.

- Maintain a minimum altitude of 305 meters (1,000 feet) to avoid unnecessary harassment of sea otters, except during takeoff and landing and when a lower flight altitude is necessary for safety due to weather or restricted visibility.
☐ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Maintain a horizontal distance of no less than 100 meters (328 feet) away from sea otters.
☐ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Avoid operating aircraft in such a way as to separate individual sea otters from a group.
☐ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- If UAS devices are used as a mitigation measure for detection, cease activities in response to sea otter behaviors indicating any reaction to drones.
☐ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)

Vessel activity:

Does the proposed project include the use of marine vessels? ☒ Yes ☐ No

If the project does not include marine vessel activity, please move to the next section.

- Do not approach within and maintain a minimum distance of 100 meters (328 feet) from all sea otters in the water.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Maintain a minimum distance of 500 meters (1,640 feet) from a raft of 10 or more sea otters in the water, unless safety is a factor.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Practice speed reductions during times of limited visibility and in areas with sea otters.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Avoid separating individual members from a group of sea otters, encircling sea otters, and impeding movement of sea otters. Change course heading to avoid an interaction and impact to sea otters in the water.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Travel using established navigation channels or commonly recognized vessel traffic corridors and avoid alongshore travel in shallow water (< 20 meters) whenever practicable.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Provide written guidance to vessel operators for avoiding collisions and minimizing disturbances to sea otters.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)

- Engage in methods to limit vessel noise, such as reducing speed, performing regular vessel maintenance, using fewer vessels, and/or implementing vessel-quieting technologies (e.g., propeller design, wake improvement devices, propulsion enhancement measures, hull treatment solutions).
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)

In-water sound:

Does the proposed project include pile driving, seismic surveys, or other sources of in-water sound?

☒ Yes ☐ No

If the project does not include activity that produces in-water sound, please move to the next section.

- Designate an exclusion/shutdown zone around sound-producing source.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Have shutdown and/or power down procedures in place upon sea otters approaching close to or within a pre-defined exclusion zone.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Perform ramp up or soft start procedures when the sound source has been silent for periods of 30 minutes or longer. *Please note that these procedures and other underwater sound-producing operations should not be initiated during low-visibility conditions that impede sea otter detection.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Implement 30-minute pre-work clearance times following periods of inactivity of more than 30 minutes wherein no marine mammals are observed in the exclusion zone prior to initiating or resuming sound-producing activity.
☒ Yes ☐ Not practicable If not practicable, explain why not: [Click or tap here to enter text.](#)
- Use bubble curtains (includes open, enclosed/screened, full-length, and partial length) to attenuate in-water sound.
☐ Yes ☒ Not practicable If not practicable, explain why not: [The project used small diameter piles located close together so there is not enough space to use a bubble curtain. Additionally, noise from the project does not travel very far because it is located in close proximity to the harbor breakwaters. The project is a grant-funded municipal project without additional funding for these measures.](#)
- Deploy sound mitigation screens, nets, or other sound-dampening systems to enclose piles, including sheet piles, and other work unable to readily be enclosed using a cylindrical bubble curtain.
☐ Yes ☒ Not practicable If not practicable, explain why not: [The project used small diameter piles located close together so there is not enough space to deploy sound mitigation screens, nets, or other sound-dampening systems to enclose piles. Additionally, noise from the project does not travel very far because it is located in close proximity to the harbor breakwaters. The project is a grant-funded municipal project without additional funding for these measures.](#)
- Use cofferdams (noise-deadening sleeve) or steel casings surrounding a pile and filled with noise-dampening material like water, mud, air, or cell foam liner.

☐ Yes ☒ Not practicable If not practicable, explain why not: The project used small diameter piles located close together so there is not enough space to use cofferdams or steel casings surrounding a pile and filled with noise-dampening material like water, mud, air, or cell foam liner. Additionally, noise from the project does not travel very far because it is located in close proximity to the harbor breakwaters. The project is a grant-funded municipal project without additional funding for these measures.

- Deploy noise-dampening materials, such as wood, plastic, nylon, and polyurethane, placed between the pile and the hammer (e.g., pile caps or cushions).
☒ Yes ☐ Not practicable If not practicable, explain why not: Click or tap here to enter text.
- Optimize project design such that objectives are met while practicing sound reduction techniques (e.g., for pile driving: adjusting the size, number, location, and material of piles or implementing quieter pile driving methods; for seismic: reducing the number of transect lines surveyed).
☒ Yes ☐ Not practicable If not practicable, explain why not: Click or tap here to enter text.
- Use a mitigation gun, operate airguns at half canon, and/or completely power down seismic equipment when not in use.
☐ Yes ☒ Not practicable If not practicable, explain why not: Not applicable
- Share data among operators, agencies, and groups to avoid performing seismic surveys in the same area.
☐ Yes ☒ Not practicable If not practicable, explain why not: Not applicable

Subsistence use:

- Limit timing of activities and avoid locations important to subsistence harvest of sea otters.
☒ Yes ☐ Not practicable If not practicable, explain why not: Click or tap here to enter text.
- Plan vessel and aircraft routes to minimize potential conflict with active or anticipated areas of subsistence harvest as well as with communities.
☒ Yes ☐ Not practicable If not practicable, explain why not: Click or tap here to enter text.
- Consult with communities, subsistence users, and stakeholders on potential impacts to subsistence harvest of sea otters and develop a Service-approved Plan of Cooperation.
☒ Yes ☐ Not practicable If not practicable, explain why not: In September 2018, the Alaska Harbor Seal Commission, the Alaska Sea Otter and Steller Sea Lion Commission, and the Sitka Tribe of Alaska were contacted about marine projects in Sitka Channel. There were no concerns about the impact on subsistence marine mammals or their harvest by hunters within the area of this project. The Tribe requested that no pile driving occur between March 15 and May 31 to protect herring.

Appendix

Protected Species Observer (PSO) Requirements:

- PSOs have or will complete a Service-approved marine mammal observer training course.

- Resumes of PSOs will be provided to USFWS personnel for review.
- A sufficient number of dedicated PSOs will be available to meet the following:
 - Complete monitoring of exclusion zones during hours of operation
 - PSOs will have no other assigned tasks during monitoring
 - PSO shifts will not last longer than 4 consecutive hours
 - Each PSO will not exceed 12 hours on watch per day
- PSOs will be stationed at appropriate locations, such as on the site of activity, on board operational/support vessels, drill rigs, aircraft, icebreakers, and/or vehicles to monitor for animals.
- A field crew leader with prior experience as a sea otter observer will supervise the PSO team.
- New or inexperienced PSOs will be paired with experienced PSOs.
- PSOs will be provided with the necessary equipment (binoculars, spotting scopes, inclinometers, and range finders) to facilitate sea otter detection. Field guides, instructional handbooks, maps, and a contact list will also be made available to PSOs.
- PSOs will have vision correctable to 20/20.
- PSOs will record data onto a field form or database/dashboard, including:
 - Dates and times of monitoring and project activity
 - Location (including global positioning system data in in decimal degrees, degree decimal minutes, or degrees, minutes, and seconds) of sea otter activity as related to the monitoring activity
 - Results of the monitoring activities, including an estimated level of take
 - Monitoring requirements which include, but are not limited to:
 - Date, time, and location of sea otter observation
 - Number of individual sea otters by sex and age, if possible
 - Observer name and contact information
 - Weather, visibility, and ice conditions at the time of sea otter observation
 - Estimated closes point of approach for sea otters from personnel and vessel/facilities/infrastructure
 - Industry activity at time of sighting, possible attractants if present
 - Sea otter behavior
 - Description and duration of the interaction with the sea otter(s)
 - Actions taken to mitigate take of the sea otter(s)