

Implementation Guide (IG) for the Restoration And Permitting (RAP) Program for Lake Washington and Lake Sammamish

April 21, 2025

This Implementation Guide (IG) serves as the primary document governing implementation of the RAP program. The National Marine Fisheries Service (NMFS) will adaptively manage the RAP program and make changes to the IG as necessary to promote the conservation of listed species and habitat resources, to increase program efficiency, and to meet our tribal trust responsibilities.

Introduction

The Restoration and Permitting (RAP) program is a voluntary program. It is designed to promote shoreline habitat restoration. It simultaneously provides expedited compliance with Section 7 of the Endangered Species Act (ESA) and with the Magnuson/Stevens Fisheries Management Act (MSA) to streamlined US Army Corps of Engineers (Corps) regulatory permitting for pier and shoreline projects in Lake Washington, Lake Sammamish, and the Sammamish River. The program does not cover projects in the Lake Washington Ship Canal, Portage Bay, Lake Union, or in any tributaries of Lake Washington or Lake Sammamish other than the Sammamish River.

The RAP program promotes shoreline habitat restoration through the inclusion of environmentally friendly programmatic design criteria (PDC) for pier and shoreline projects, and by providing an in-lieu fee program for applicants to offset unavoidable impacts. The in-lieu fee program is administered by King County. The RAP program provides expedited ESA and MSA compliance and regulatory permitting by requiring all covered projects to meet the PDC that were considered in the covering biological opinion (WCR-2016-5278), thereby avoiding the need to complete separate consultations for individual projects.

Program Changes Notice

As of March 27, 2025, the Corps has discontinued approval under the RAP program for any projects that would increase the net over-water coverage and or cause any increase in over-water coverage within 30 feet of the OHWM. The NMFS welcomes this resource-protective change. Therefore, new pier installations and pier expansions have been removed from the list of program-covered activities.

In April 2025, group consensus was reached for the Corps' request to expanded the RAP program boundaries to include the Sammamish River. Therefore, with this IG, the program now covers RAP-compliant projects within the Sammamish river. All RAP-related projects must comply with the Corps' July 16 through 31 and November 16 through February 1 in-water work windows for the Sammamish River, with possible

extensions allowable only into WDFW's August 1 through 31 spawning avoidance window for the river.

Covered Activity Types:

1. Pier and or Float Repair and Replacement;
2. Boat House Repair and Replacement;
3. Boat Canopy Repair, Replacement, and New Installation;
4. Boat and Personal Watercraft (PWC) Lift Repair, Replacement, and New Installation;
5. Mooring buoys and piles;
6. Miscellaneous On- and Over-water Deck and Other Element Repair and Replacement;
7. Bulkhead Repair, Relocation, and Removal; and
8. Gravel Placement and Debris Removal.

Excluded Activities:

1. In-water installation of any treated wood (unless encased with polyvinyl chloride (PVC), or another material that the Corps and the NMFS determine is effective at preventing the leaching of wood preservatives and pesticides. Treated wood may only be used for out of the water substructures that would be protected from wear/abrasion and not be subjected to prolonged submersion (i.e. at least 6 inches above the highest water level for the applicable waterbody);
2. In-water installation of galvanized steel (i.e. piles, pile stubs, swim ladders, etc.);
3. Retention of any creosote-treated timber in any affected structure;
4. Impact pile driving and proofing;
5. Any project that increases the net over-water coverage at a project site and or increases over-water coverage within 30 feet of the OHWM;
6. New boathouse installation;
7. Installation or retention of pier skirting;
8. Installation of on-pier sheds and gazebo-like structures;
9. New bulkhead installation, bulkhead extension or enlargement, or bulkhead repairs that encroach further waterward of the ordinary high-water mark (OHWM);
10. Installation of boulders below the OHWM; and
11. Dredging.

Note that the OHWM elevation in Lake Washington, is defined as the Corps Datum of 21.8 feet. In Lake Sammamish, the OHWM elevation is the NGVD Datum of 27.0 feet.

Also note that the RAP program distinguishes between activities that occur within the nearshore zone and activities that occur waterward of the nearshore zone. Under the RAP program, the nearshore zone is defined as all areas within 30 feet waterward of the OHWM and or areas with water depths less than 15 feet deep relative to the OHW elevation, whichever distance is greater.

General Participation

Overview

To best utilize the RAP program, projects should be designed to fully comply with the covered project types, excluded activities, and the PDC identified below, and the supporting documentation should clearly demonstrate meeting all provisions of the program as described in the IG and its appendices below.

Fully meeting the provisions of the program removes the need for individual consultations under the ESA and the MSA because the project's potential effects on listed species and habitat resources were fully considered in the covering biological opinion. This significantly reduces the time required to complete permitting by the Corps.

Projects that very closely comply but for some reason cannot meet all provisions of the program may still be considered for permitting under the RAP program, but must first complete early technical assistance (ETA) prior to their submission to the Corps.

RAP Process

For fully-RAP-compliant projects, or those that have completed ETA with the NMFS:

1. Applicants shall electronically submit permit application packages to the Corps' Seattle District Regulatory Branch at: **NWS-PermitApp@usace.army.mil**. Do not submit the permit request to the NMFS. The permit application package must include a completed permit application, a completed RAP form, plan sheets (drawings), and a completed RAP Calculator (preferably in the original Excel spreadsheet format). The RAP form and plan drawings must contain sufficient detail about the project to clearly demonstrate that the project is consistent with all applicable provisions of the RAP program (See Appendix A for RAP Form instructions, See Appendix B for Plan Sheet Requirements). The calculator must correctly and completely address all applicable project components (See Appendix C for RAP Calculator instructions). **Copies of the most current RAP IG, Form, and Calculator can be obtained by sending a request email to the NMFS at: rap-eta.wcr@noaa.gov.**

For projects that required ETA, the permit application package must also include a copy of the NMFS email that confirms the completion of the ETA.

2. The Corps will review the materials to determine if it meets the provisions of the RAP program.

If the Corps determines that the project meets the provisions of the RAP program, they will send the NMFS copies of the application materials and request confirmation of RAP compliance.

If the Corps determines that the project is not consistent with all provisions of the RAP program, they will ask the applicant to either revise the proposal to meet the provisions, to complete ETA (if appropriate), or to submit a Biological Assessment (BA) or a Biological Evaluation (BE) for individual ESA consultation. When ETA is appropriate for a project, the Corps PM will direct the applicant to email an ETA request to the NMFS at: rap-eta.wcr.noaa.gov.

If the Corps determines that the project meets the provisions of the RAP program, they will send a RAP compliance confirmation request to the NMFS.

3. Within 30 days of receiving a RAP compliance confirmation request from the Corps, the NMFS will verify, via email to the Corps, whether or not the project meets the provisions of the RAP program. For non-conforming applications, the email will identify the aspects of the project that do not meet the provisions of the RAP program. Applicants of non-conforming projects may then choose to modify their project to meet the provisions of the RAP program, or to withdraw their RAP request from the Corps, and to submit a BA or BE to the Corps for individual ESA/MSA consultation.
4. If the Corps issues a permit under the RAP program, the permit will include RAP-specific special conditions regarding:
 - a. The permittee's requirement to perform the work in compliance with the RAP program, including the payment of any conservation fees to King County within 60 days of the date of permit issuance, and submittal of proof of payment from King County. Under specific limited circumstances, payment may be delayed. Interested applicants can obtain more information from their Corps PM;
 - b. The permittee's requirement to comply with the RAP planting plan requirements and to submit, to the Corps and the NMFS, annual vegetation monitoring reports for five years if the permittee is claiming conservation credits for plantings.
 - c. The permittee's requirement to maintain RAP planting plan vegetation for the life of the permitted structures. This requirement extends to existing vegetation that is granted conservation credit as part of RAP project;
 - d. The permittee's requirement to submit to the Corps and the NMFS an As-Built Report (ABR) that includes the results of any monitoring required under the RAP program, including post-construction photographs of the completed project and on-site restoration activities (see Appendix D); and

- e. The permittee's requirement to visually monitor for turbidity during construction and to insure that observable increased turbidity does not extend beyond a 150-foot radius around the project area and to report the results of the monitoring to the Corps and the NMFS in their ABR.

ABRs and vegetation monitoring reports must be emailed to the Corps at: **NWS.compliance@usace.army.mil**, and to the NMFS at: **rap-reports.wcr@noaa.gov**. Be sure to include the project-specific NWS and WCRO numbers in the subject line of the reports.

5. To pay conservation fees, the applicant must contact King County (contact information below) and request an invoice after they have received the Corps authorization.

Megan Webb
In-Lieu Fee Mitigation and Transfer of Development Rights
King County Water & Land Resources Division
Department of Natural Resources & Parks
(206) 477-3865
Megan.Webb@Kingcounty.gov

Early Technical Assistance (ETA)

The following types of projects require ETA under the RAP program:

1. Projects without a fully-compliant planting plan, except for stand-alone boat or personal watercraft lift projects, stand-alone mooring pile or mooring buoy projects, or projects that would repair less than 10 percent of an over-water structure or bulkhead. The percentage of an over-water structure is to be based on the square footage of the structure's over-water area, the length of stringers and pile caps, and or the number of piles, depending on the work to be done. For bulkheads, the percentage is based on the linear feet of the bulkhead measured as a line parallel to the OHWM; and
2. Projects that request credit for preserving existing vegetation.

Applicants should send ETA requests via email to **rap-eta.wcr@noaa.gov**. Ensure that the request includes a completed RAP Form, plan drawings, and RAP calculator. The assigned NMFS biologist will assist applicants with complying with the RAP program, including the development of adequate documentation.

Upon successful conclusion of ETA, the NMFS biologist will send an email to the applicant to confirm the completion of ETA. Upon receipt of the NMFS ETA completion email, the applicant can submit their RAP permit request package to the Corps as described above. Note that any changes to any RAP documents that occur after the completion of ETA would invalidate the ETA completion email. **Therefore, it is very**

important that applicants submit exact copies of the documents that were used and agreed to during ETA.

Minimum RAP Program Requirements

The RAP program covers the activity types described below in Lake Washington and Lake Sammamish, but not in the Lake Washington Ship Canal, Portage Bay, Lake Union, or in any tributaries of Lake Washington or Lake Sammamish.

All projects participating in the RAP program must meet the following criteria:

1. Conduct all in-water work within the work windows identified in Appendix E. For the purposes of this program any work that includes the use of any type of water craft or that is likely to transmit noise or discharge any debris or pollutants into the water is considered in-water work; and
2. Implement a planting plan (Not applicable for stand-alone boat or PWC lift projects, mooring pile or mooring buoy projects, or for projects to repair less than 10 percent of an over-water structure or bulkhead). Applicants must allow RAP vegetation to achieve its full natural form and size (no pruning or sculpting), and they must maintain all RAP vegetation for as long as the applicable structure(s) remain on the landscape. The planting plan must meet the following criteria:
 - a. Include at least two trees and three shrubs. Unless specifically exempted by the NMFS, only native vegetation that is identified in the RAP Plant List in Appendix F can be credited toward the RAP program.
 - b. Horticultural cultivars or other variants of the native species identified in the RAP Plant List that differ from the wild natives in their growth habits and/or structure cannot be credited toward the RAP program.
 - c. Only one shore pine per project can be credited toward the RAP program.
 - d. Two willow shrubs from the RAP Plant List may be substituted for each tree.
 - e. All plantings must be within 10 feet of the OHWM (except western red cedar, western hemlock, and Douglas fir trees).
 - f. Western red cedar, western hemlock, and Douglas fir trees may be planted up to 25 feet from the OHWM.
 - g. Plantings should be distributed evenly along the shoreline (see Sample Planting Plan in Appendix F). However, trees may be planted at the corners, with shrubs planted across the middle.

- h. In general, RAP planting plan vegetation must be in addition to the existing vegetation to be credited toward the RAP program. Any native vegetation that is removed during a project must be fully mitigated for, and the mitigation plantings for the removed native vegetation would not count toward the RAP planting plan requirements or for project mitigation credits.
- i. At the discretion of the NMFS, projects that lack fully-compliant planting plans may be cleared under the RAP program if physical limitations such as the existence of beneficial vegetation and or impervious surfaces along the shoreline preclude the reasonable expectation that additional vegetation could be planted at the site to meet a fully-compliant planting plan.
- j. At the discretion of the NMFS, conservation credit may be given for preserving existing native vegetation that has been established for at least 5 years, and that meets the conditions above or has demonstrated value for the aquatic habitat at the site. Receipts plus photographs that demonstrate the location, health, and development of the plants in question would be acceptable proof of plant age. A written attestation that the plants are more than 5 years old can be substituted for receipts if receipts are unavailable. A supportive statement from a qualified WDFW aquatic biologist or an agreement from the consulting NMFS biologist for the RAP project constitutes acceptable documentation of aquatic habitat value. Note that applicants must allow credited existing vegetation to achieve its full natural form and size, and they must maintain that vegetation for as long as the applicable structure(s) remain on the landscape, just as if the existing vegetation was planted as part of the planting plan.
- k. Planting plans for previous projects, including those required for local government permits, must be fully implemented before credit is given for new plantings under the RAP program.
- l. In the case of residential properties with RAP-covered single-user structures, the RAP planting plan vegetation must be planted on the same parcel as the RAP-covered structures. For RAP-covered joint-use structures, some or all of the plantings may occur on the associated parcels without the RAP-covered structures if spreading the plantings across multiple properties would net more aquatic benefit, or if space is inadequate to install RAP planting plan vegetation on the property with the RAP-covered structures.
- m. In the case of municipal properties with RAP-covered structures, RAP planting plan vegetation should be planted on the same parcel as the RAP-covered structures, but may be planted at a different property that is owned by the municipality if doing so would net more aquatic benefit, or if space is inadequate at the project site to install RAP planting plan vegetation.

Ordinary High-Water Mark (OHWM)

The OHWM elevation in Lake Washington, is defined as the Corps Datum of 21.8 feet. In Lake Sammamish, the OHWM elevation is the NGVD Datum of 27.0 feet.

Nearshore Zone

The RAP program defines the nearshore zone as all areas within 30 feet waterward of the OHWM and or area with water depths less than 15 feet deep relative to the OHW level, whichever is greater.

Activity Types Covered Under the RAP Program:

Individual projects may involve one or more the activity types identified below.

1. Pier and or Float Repair and Replacement;
2. Boat House Repair and Replacement;
3. Boat Canopy Repair, Replacement, and New Installation;
4. Boat and PWC Lift Repair, Replacement, and New Installation;
5. Mooring buoys and piles;
6. Miscellaneous On- and Over-water Deck and Other Element Repair and Replacement;
7. Bulkhead Repair, Relocation, and Removal; and
8. Gravel Placement and Debris Removal.

Although not specifically addressed under the description of each covered activity type below, full-depth sediment curtains should be installed to fully enclose sediment-mobilizing activities, especially pile extractions before extractions begin.

The following activities are excluded from the RAP program:

1. In-water installation of any treated wood (unless encased with polyvinyl chloride (PVC), or another material that the Corps and the NMFS determine is effective at preventing the leaching of wood preservatives and pesticides. Treated wood may only be used for out of the water substructures that would be protected from wear/abrasion and not be subjected to prolonged submersion (i.e. at least 6 inches above the highest water level for the applicable waterbody);
2. In-water installation of galvanized steel (i.e. piles, pile stubs, swim ladders, etc.);
3. Retention of any creosote-treated timber in any affected structure;
4. Impact pile driving and proofing;
5. Any project that increases the net over-water coverage at a project site and or increases over-water coverage within 30 feet of the OHWM;
6. New boathouse installation;
7. Installation or retention of skirting;
8. Installation of on-pier sheds and gazebo-like structures;

9. New bulkhead installation, bulkhead extension or enlargement, or bulkhead repairs that encroach further waterward of the OHWM;
10. Installation of boulders below the OHWM; and
11. Dredging;

Although these exclusions are not specifically repeated under each activity type, they apply to all covered activities.

Piers and Floats

Repairs and Replacements: The RAP program covers pier and float repairs such as the repair and or replacement of various structural components, including decking and its supporting structures (stringers, pile caps, etc.), pile repairs (splicing, jacketing, replacement, etc.), and floatation tub repair and replacements. The program also covers the full replacement and or reconfiguration of existing piers. Pier and float repair and replacement projects must be completed in compliance with the general design criteria for piers and floats listed below.

General Design Criteria for Piers and Floats

All pier and float projects participating in the RAP program must meet the following:

1. No net increase in over-water coverage can result at a project site, and no increase in over-water coverage can occur within 30 feet of the OHWM;
2. No new float installations within 30 feet waterward of the OHWM or in water less than 15 feet deep relative to the OHWM (nearshore zone), replacement in-kind is covered, but discouraged;
3. No new boathouse installations. Repair and some replacements of existing boathouses is allowable (See Boathouse Repair and Replacement below);
4. No installation of on-pier structures other than small safety- and or utilities-related fixtures and small recreation-related structures such as small slides and diving boards;
5. No lowering, below 18 inches, of the shoreward 30 feet of walkway;
6. Pile size should be minimized to the greatest extent practicable to satisfy safety requirements. Note that the RAP program treats all in-water posts as piles, regardless of whether or not the posts are embedded in the substrate. The size of non-round posts is determined by the longest diagonal distance from corner to corner;
7. No galvanized steel or treated wood piles or pile splices are allowed;

8. Repaired or replaced decking must utilize grating with a minimum of 40 percent open space (based on the physical ratio between the size and number of holes and the outer dimensions of the grating); and
9. If installing lights, minimize nighttime over-water illumination:
 - a. Install the lowest number of lighting fixtures and the lowest intensity bulbs that meet safety needs;
 - b. Install the lowest height lighting fixtures that meet safety needs;
 - c. Install lighting fixtures with shielding or other features that aim the light down and prevent the direct illumination of the water's surface along the sides of the pier or float; and
 - d. Consider the installation of a system that automatically turns off the lighting when no one is on the pier or float, such as motion detectors or other on-demand switch devices.

Boat Houses

Repair and replacement of existing boathouses is allowed under the RAP program. However, replacement is only allowable if the entire boathouse will be at least 30 feet waterward of the OHWM at the end of the project. No new boat house installations are allowed.

All boathouse repair and replacement projects participating in the RAP program must meet the following:

1. No net increase in over-water coverage can result at a project site, and no increase in over-water coverage can occur within 30 feet of the OHWM.
2. Pile size should be minimized to the greatest extent practicable to satisfy safety requirements. Note that the RAP program treats all in-water posts as piles, regardless of whether or not the posts are embedded in the substrate. The size of non-round posts is determined by the longest diagonal distance from corner to corner;
3. No galvanized steel or treated wood piles or pile splices are allowed;
4. If repairing or replacing a boathouse roof, we recommend installing a translucent roof or sky lighting that accounts for at least 40% of the roof's surface's area;
5. If repairing or replacing boathouse walls, we recommend installing windows that account for at least 40% of each wall's surface's area;
6. If replacing a boathouse, the entire boathouse must be at least 30 feet waterward of the OHWM at the end of the project. Relocation of a boathouse from within to beyond 30 feet is allowable under the RAP program;

7. If replacing a boathouse, install walls and a roof that include windows/skylights that account for at least 40% of each surface's area. Windows and skylights are recommended for boathouse repair projects, but are not required; and
8. If installing lights, minimize nighttime over-water illumination:
 - a. Install the lowest number of lighting fixtures and the lowest intensity bulbs that meet safety needs;
 - b. Install the lowest height lighting fixtures that meet safety needs;
 - c. Install lighting fixtures with shielding or other features that aim the light down and prevent the direct illumination of the water's surface along the sides of the pier or float; and
 - d. Consider the installation of a system that automatically turns off the lighting when no one is on the pier or float, such as motion detectors or other on-demand switch devices.

Boat Canopies

The RAP program covers new, repaired, and replaced boat canopies. The Rap program defines boat canopy as any cover over a boat moorage that is open on all four sides (i.e. no walls), regardless of how the canopy is supported (i.e. attached to a lift, a pier, or piles). Note that RAP-compliant canopies are not considered over-water cover.

All boat canopy projects participating in the RAP program must meet the following:

1. Canopies must be made of a translucent material and be open on all sides. Use of opaque roofing with skylights or windows is unacceptable under the RAP program; and
2. New and replacement canopies should be installed at least 30 feet waterward of the OHWM if practicable.

Boat and Personal Watercraft (PWC) Lifts

The RAP program covers the repair and replacement of existing boat lifts, PWC lifts (i.e., Jet Ski lifts and platform lifts), and platform lifts. It also covers the new installation of all of those lift types. Note that the RAP program considers the platform part of a platform lift as over-water cover, but doesn't consider the lifts themselves to be over-water cover. Also, for any platform lift within 30 feet of the OHWM, the platform's area, and its height above the OHWM must be included in the calculations for walkway width and height, just as if it were a part of a pier.

1. No net increase in over-water coverage can result at a project site, and no increase in over-water coverage can occur within 30 feet of the OHWM;
2. New and replacement lifts should be installed at least 30 feet waterward of the OHWM if practicable;

3. All new, repaired, and replaced platform lifts must be fully decked with grating that has at least 40 percent open space; and
4. All new, repaired, and replaced lift-related walkways and catwalks must be fully decked with grating that has at least 40 percent open space.

Miscellaneous On- and Over-water Decks and Other Elements

This section addresses the repair and replacement of existing miscellaneous on- and over-water elements that do not directly support boat or PWC moorage (non-pier decking). To qualify as non-pier decking, the structure can have no moorage-related hardware or other structures that could be reasonably expected to support vessel moorage or storage, such as cleats, bollards, attached PWC lifts, platform lifts, etc. Expansion or installation of new non-pier decking or elements is excluded from the RAP program.

All non-pier decking projects participating in the RAP program must meet the following:

1. No net increase in over-water coverage can result at a project site, and no increase in over-water coverage can occur within 30 feet of the OHWM;
2. No lowering of any structures;
3. No widening of any structures;
4. Pile size should be minimized to the greatest extent practicable to satisfy safety requirements;
5. Repaired or replaced decking must utilize grating with at least 40 percent open space; and
6. If installing lights, minimize nighttime over-water illumination:
 - a. Install the lowest number of lighting fixtures and the lowest intensity bulbs that meet safety needs;
 - b. Install the lowest height lighting fixtures that meet safety needs;
 - c. Install lighting fixtures with shielding or other features that aim the light down and prevent the direct illumination of the water's surface along the sides of the pier or float; and
 - d. Consider the installation of a system that automatically turns off the lighting when no one is on the pier or float, such as motion detectors or other on-demand switch devices.

Bulkheads

The RAP program covers the repair, replacement, relocation landward of the OHWM (i.e. to create a beach), and removal of existing bulkheads. The program excludes the

new bulkhead installations, bulkhead extensions or enlargements, or bulkhead repairs that encroach further waterward of the OHWM. All bulkhead repairs and removals must meet the following:

1. Bulkhead repair and replacement projects cannot increase the length of bulkhead that is adjacent to or waterward of the OHWM at a project site. Increased overall length that results from a bulkhead curving landward of the OHWM is covered as long as the portions in contact with the water don't increase;
2. Bulkhead repairs and replacements cannot extend farther waterward of the OHWM than the existing bulkhead's current footprint;
3. When removing a bulkhead or moving a bulkhead landward of the OHWM, applicants must create a gently sloping beach along the entire length of the removal or setback using gravel that meets the specifications below in the "Gravel Placement and Debris Removal" section; and
4. Stand-alone boulders cannot be placed along or waterward of the OHWM.

Gravel Placement and Debris Removal

The RAP program covers in-water gravel placement and debris removal.

The goal of gravel placement is to create a gently sloping gravel substrate, preferably, one that extends above and below the range of water heights for the project site, and with a slope that mimics an unaltered natural lake shoreline. For projects that have or would create new beach areas, the gravel must be installed in a manner that creates gently sloping gravel substrate that extends above and below the waterline zone of the site.

All gravel placement and debris removals must meet the following:

1. The gravel must be clean (minimal fine sediments) and well-rounded;
2. Gravel size must be 2-inch minus, unless in an area within 100 yards of documented sockeye salmon spawning (confirm with WDFW);
3. Gravel size must be 1-inch minus when in or within 100 yards of documented sockeye salmon spawning areas;
4. No larger sized gravel, rocks, or boulders can be placed with the gravel;
5. All debris removal done at or below the OHWM must be done in a manner that is the least substrate-disruptive practicable method for the debris type. For example, the use of a barge-mounted or land-based crane to remove derelict piles, and diver assisted hoisting of sunken concrete, wood, and metal debris

with a crane would be acceptable. The careful use of a clamshell type bucket to grab and lift debris may be acceptable if it would not dig into the substrate or break up the debris. However, land-based machinery cannot be operated from positions at or below the existing water line at the time of the work;

6. Full-depth sediment curtains should be installed to fully enclose in-water gravel placement and removal of embedded debris and derelict piles before work begins;
7. All debris must be staged and transported to appropriate disposal facilities in a manner that prevents fine sediments and other deleterious materials from reentering the lake;
8. All derelict creosote-treated wood at or below the OHWM (derelict piles and other creosote-treated wood debris) must be removed from the site if present. This applies to all projects that would be covered under the RAP program, not just Gravel-Placement and or Debris-Removal projects; and
9. The amount of debris to be removed (excluding derelict piles) should be quantified in cubic yards for credit in the RAP Calculator. Derelict piles should be accounted for as removed piles in the RAP Calculator.

Appendices

Appendix A – RAP Form Instructions

The applicant should ensure that the RAP form, particularly Parts C & D, provides a clear and comprehensive description of the existing conditions and the proposed project in a way that demonstrates the project's compliance with the RAP program.

Typically, the more obviously that a project meets the programmatic, the faster that project will be cleared. Conversely, clearance of projects with descriptions that are less obvious about meeting the programmatic requirements will require more time and effort from the applicant, the Corps, and the NMFS to complete.

Part A. Project Identification

1. **Date Received:** Disregard the word "Received", and enter the date the form was completed.
2. **Tracking - Unique Project Name:** Enter a unique project name; preferably the same name that would be used by the Corps of Engineers (i.e. the applicant's last name and a short project identifier). For example: Smith Pier Repair.
3. **Tracking - Corp Tracking Number:** Enter the Corps' NWS # if assigned, otherwise leave the block blank.

4. **Tracking - NMFS ECO Number:** Enter the NMFS' WCRO # if assigned, otherwise leave the block blank.
5. **Tracking - WDFW HPA Application ID:** Enter the WDFW HPA Application ID # if assigned, otherwise leave the block blank.
6. **Tracking - Local Agency Permit Number:** Enter the applicable local agency permit # if assigned, otherwise leave the block blank.
7. **Location – Address:** Enter the street address of the project site.
8. **Location – Parcel Number:** Enter the parcel number(s) of the project site.
9. **Location – Lake:** Enter the name of the water body where the project would take place (i.e. Lake Washington or Lake Sammamish).
10. **Location – Work Window:** Enter the approved in-water work window for the project area, and include the preferred construction year (i.e. July 16, 2022 to April 30, 2023).

Part B. Applicant/Agent

11. **Name:** Enter the name of the primary contact for permitting.
12. **Organization:** Enter the name of the primary contact's company or government agency.
13. **Email Address:** Enter the primary contact's email address.
14. **Phone:** Enter the primary contact's phone #.

Part C. Existing Conditions

Part C should give a clear and concise synopsis of the existing conditions and structures at the project site. This is needed to provide a good baseline against which the proposed project can be compared. Minimally, it must confirm exactly, all information about the existing structures that is used in the RAP calculator, and agree with the information presented in the drawings. It should also summarize the existing vegetation within the RAP planting zones, especially any existing plants for which conservation credit would be sought, and identify plants and or structures that hinder the installation of a fully-complaint planting plan. It should also confirm whether or not creosote-treated wood is included in any of the project-related structures.

In general, a good Part C would have short narrative followed by bullets to provide the values that are used in the calculator. For example:

The project site is a single-family residence with a rock bulkhead along the OHWM, and a pier with multiple lifts. There is no creosote-treated wood in any of the project-related structures. The predominate existing vegetation within 10 feet of the OHWM are (1) Western Red Cedar, (1) Pacific Willow, and assorted shrubs, groundcover, and grass.

Existing Structures:

Pier

Over Water Area: 1,785 sf (includes platform lift)

Walkway Height: 10"

Walkway Width: 82"

Piles (50, all untreated wood)

(7) 10" pier piles

(33) 12" pier piles

(6) 12" dolphin piles

(2) 12" mooring piles

Lifts

(2) boat lift

(1) PWC lift

(1) 392-sf platform lift

Shoreline

90-lf Rock bulkhead

Part. D Project Description and Need

Part D should give a clear and concise synopsis of the project, and the planned post-construction condition of the structures at the project site. Minimally, it must confirm exactly, all information about the proposed structures that is used in the RAP calculator, and agree with the information presented in the drawings. It should confirm that the project includes no excluded activities, particularly the retention of creosote-treated wood, and in-water installation of treated wood and galvanized steel.

In general, a good Part D would have a short narrative followed by bullets to provide the values that are used in the calculator. For example:

The project would fully replace the existing pier's framing and decking, using ACZA-treated timber and grated decking material with a minimum of 40% open area. It would repair all 40 pier piles by splicing with epoxy-coated steel, and would remove the 2 mooring piles, and the 392-sf platform lift. It would also install a fully-compliant RAP planting plan consisting of 1 Pacific Willow, 1 shore pine, and 3 Scouler willow shrubs. The applicant also requests additional conservation credit for the existing Western Red Cedar and Pacific Willow trees.

There is no existing creosote-treated wood on-site, and the project would include no in-water installation of treated wood or galvanized steel.

Proposed Structures:

Pier

Over Water Area: 1,393 sf

Walkway Height: 10"

Walkway Width: 82"

Piles (50, all untreated wood)

(7) 10" pier piles: All to be repaired

(33) 12" pier piles: All to be repaired

(6) 12" dolphin piles: No work

(2) 12" mooring piles: To be removed

Lifts

(2) boat lift: No work

(1) PWC lift: No work

(1) platform 392-sf lift: To be removed

Shoreline

90-lf Rock bulkhead: No work

Appendix B – Plan Sheet Requirements

Project plan sheets (drawings) should show both the existing and proposed conditions in a manner that provides a good comparison of the proposed project against the existing conditions. Drawing should also clarify and agrees with (exactly) all of the important information presented in the RAP Form and Calculator.

Both overhead and profile drawings should be included.

Drawings should show the entire (RAP-related) project site from slightly beyond the waterward end of the in- and over-water structures to slightly inland of 25 feet landward of the ordinary high-water mark (OHWM). Note that the OHWM elevation in Lake Washington, is the Corps Datum of 21.8 feet. In Lake Sammamish, the OHWM elevation is the NGVD Datum of 27.0 feet.

The drawings of the existing conditions should include all existing in- and over-water structures, making clear which structures are part of the project, and showing the location of existing vegetation and impervious surfaces within 25 feet of the OHWM.

The drawings of the proposed conditions should include all end of project in- and over-water structures, making clear which structures are part of the project. The drawings should show the location of RAP vegetation relative to any impervious surfaces, existing

vegetation, and any previously required plantings that may still be pending within 25 feet of the OHWM.

Drawings should include lines that clearly demark the location of 30 feet waterward of the OHWM, as well as 10 and 25 feet landward of the OHWM, as those distances would relate to RAP-related structures and plants.

Drawings should include bathymetric information to make sure that the 15-foot depth is made clear as it pertains to RAP-related structures.

Appendix C – RAP Calculator Instructions

Calculator Options for Multi-Pier Projects

1. Single Calculator with a single RAP planting plan requirement. Under this option, submit a single RAP calculator, following the instructions below except that all pier-related values would account for all of the covered structures. The walkway width would be the combined total for all considered piers, and the walkway height would be the lowest value for the considered piers. All other items, piles, fenders, lifts, etc. would also be combined.

OR

2. Multiple Calculators with a RAP planting plan requirement for each. Under this option, submit a separate calculator for each pier, following the instructions below, and with expectation that a fully-compliant RAP Planting Plan is required for each calculator. If fully complaint planting plans for each pier is not possible, applicants must make every effort to install as much vegetation as practicable to meet the requirements, and the project must be submitted the NMFS for ETA prior to submission the USACE for permitting. See the ETA instructions at the beginning of this IG.

Fill in All Applicable Yellow Cells in the Calculator

Line 4: Enter the Corps NWS# (if assigned) and Project Name

Line 12 – Deck – Percent Deck: Enter the percent of the pier deck being installed, repaired, or replaced. Enter 100 for full pier replacements, full deck replacements, and all projects where the deck will be repaired or replaced “as needed”. Otherwise, enter the percent of the pier’s total post-construction surface area that would be repaired or replaced. For example, for the repair or replacement of 240 square feet (sf) of a post-construction 480-sf pier: $(240 / 480) \times 100 = 50\%$.

Line 13 – Deck – Percent Pile Caps and Stringers: Enter the percent of the pile caps and stringers to be installed, replaced, or repaired. Enter 100 for full pier replacements, full deck repairs that include full pile cap and stringer replacement, and all projects

where the caps and stringers will be replaced “as needed”. Otherwise, enter the percent of the pier’s total linear feet (lf) of pile caps and stringers that would be repaired or replaced. For example, for the repair or replacement of 150 lf (combined length) of pile caps and stringers for a post-construction pier with a combined total length of 300 lf of pile caps and stringers; $(150 / 300) \times 100 = 50\%$.

Line 14 – Deck – Average Percent: This cell is self-populating.

Line 15 – Deck – Current Area of Over-water Cover: Enter the total sf of over-water area for the existing pier and any platform lifts. This value is based on the physical outer dimensions of the pier (waterward of the Ordinary High-Water Mark (OHWM)). Do not include the area of non-platform boat and personal watercraft (PWC) lifts. Non-platform boat and PWC lifts are considered on lines 40 - 44. Do not include the area of miscellaneous on- or over-water decks and other elements that do not directly support boat or PWC moorage. Those structures are considered on lines 47 - 49.

Atypical: For projects that include repair or replacement of a boathouse (assuming a boathouse with 3 walls; 2 sides and the shoreward end), the area of the roof, plus one side wall, plus half of the end wall are to be included as part of the associated pier’s over-water area. For roofs with clear skylights or windows (not translucent), subtract the area of the skylights/windows. For walls with clear windows, subtract half of the combined window area for both side walls and all of the window area for the end wall. Also, subtract any pier area that is within the footprint of the boat house.

Line 16 – Deck – Proposed Area of Over-water Cover: Enter the total sf of over-water area for the proposed pier and any platform lifts (waterward of the OHWM). Do not include the area of non-platform boat and PWC lifts. Non-platform boat and PWC lifts are considered on lines 40 - 44. Do not include the area of miscellaneous on- or over-water decks and other elements that do not directly support boat or PWC moorage. Those structures are considered on lines 47 - 49.

Line 17 – Deck – Net Area of Over-water Cover: This cell is self-populating.

Line 18 – Deck – Percent new grated decking: Enter the percent of the proposed pier’s over-water area that will have grated decking installed as part of the proposed action. Subtract any pier area that is within the footprint of a boathouse.

Line 19 – Walkway – Existing Walkway Height above OHWM: Enter the number of inches between the underside of the existing pier and the OHWM. This is based on the bottom of the lowest longitudinal pier element that extends perpendicular to the shore, typically the stringers, fascia, or skirting.

Note that the RAP program considers the “walkway” to consist of all pier-related over-water structure that is within 30 feet of the OHWM. This includes associated steps and platforms, as well as finger piers and catwalks that are within that distance. Also note

that the 30-foot distance is determined by a line that extends perpendicularly to the general line of the shore at the property, not down the length of the pier.

For projects where no work would be done within 30 feet of the OHWM, enter 18" on lines 19 & 20 to prevent inappropriate assessment of walkway-related conservation impacts.

Line 20 – Walkway – Proposed Walkway Height above OHWM: Enter the number of inches between the underside of the proposed pier and the OHWM, as described above. Note that the installation or retention of skirting for pier projects is excluded under the RAP program.

Line 21 – Walkway – Net Walkway Height: This cell is self-populating.

Line 22 – Walkway – Existing Walkway Width: Enter the width (in inches) of the existing pier's walkway that is within 30 feet of the OHWM. For non-perpendicular piers (i.e. angled or parallel to shore) and piers with multiple widths and or attached structures within 30 feet of the OHWM (i.e. finger piers, catwalks, platforms, steps, etc.), enter the average width of the walkway. Calculate the average width by summing the total over-water area of the pier that is within 30 feet of the OHWM; divide the over-water area by 30 feet, then convert to inches. For example, a multi-width walkway with 180 sf of over-water area / 30 feet = 6 feet; X 12 = an average width of 72 inches.

For projects where no work would be done within 30 feet of the OHWM, enter 48" on lines 22 & 23 to prevent inappropriate assessment of walkway-related conservation impacts.

For piers that extend less than 30 feet, divide the over-water area by the perpendicular distance that the pier extends from shore, not 30 feet.

For inlet style moorages (moorages that extend inland past the rest of the shoreline) with decking, calculate the total over-water area of all moorage-related decking (include any adjacent decking that supports moorage), divide the area by the average distance from the landward most point of the inlet to a line between the nearest waterward edges of the decking. For inlet style moorages with no decking but with vertical walls that would be repaired, treat those repairs as bulkhead work on line 51.

Line 23 – Walkway – Proposed Walkway Width: Enter the width (in inches) of the proposed pier's walkway that is within 30 feet of the OHWM. For non-perpendicular piers (i.e. angled or parallel to shore) and piers with multiple widths and or attached structures within 30 feet of the OHWM, enter the average width as described above.

Line 24 – Walkway – Net Walkway Width: This cell is self-populating.

Line 26 – Piles – 8 inches or less in diameter – Number of Piles Installed, Replaced, and/or Repaired within the Nearshore Zone: Enter the number of 8-inch

diameter (or smaller) piles that would be installed, replaced, or repaired within the nearshore zone. The RAP program treats all in-water posts as piles, regardless of whether or not the posts are embedded in the substrate. The size of non-round posts is determined by the longest diagonal distance from corner to corner. Do not include any existing piles that will not be repaired or replaced as part of the project, and do not include larger piles or piles waterward of the nearshore zone, which are addressed elsewhere under piles.

Line 27 – Piles – 8 inches or less in diameter – Net Reduction within the

Nearshore Zone: Enter the change in the number of 8-inch diameter (or smaller) piles that would remain within the nearshore zone at the end of project. Do not consider larger piles or piles waterward of the nearshore zone. Enter a positive number for a decrease, and a negative number for an increase. For example, enter 2 (not -2) if there would be a 2 pile decrease in this size class within the nearshore zone at the end of project. Conversely, enter -2 if there would be a 2 pile increase.

Line 29 – Piles – 8 inches or less in diameter – Number of Piles Installed,

Replaced, and/or Repaired Waterward of the Nearshore Zone: Enter the number of 8-inch diameter (or smaller) piles that would be installed, replaced, or repaired waterward of the nearshore zone. Do not include any existing piles that will not be repaired or replaced as part of the project, and do not include larger piles or piles within the nearshore zone, which are addressed elsewhere under piles.

Line 30 – Piles – 8 inches or less in diameter – Net Reduction Waterward of the

Nearshore Zone: Enter the change in the number of 8-inch diameter (or smaller) piles that would remain waterward of the nearshore zone at the end of project. Do not consider larger piles or piles within the nearshore zone. Enter a positive number for a decrease, and a negative number for an increase.

Line 32 – Piles – Greater than 8 inches in diameter – Number of Piles Installed,

Replaced, and/or Repaired within the Nearshore Zone: Enter the number of piles greater than 8-inch diameter that would be installed, replaced, or repaired within the nearshore zone. The RAP program treats all in-water posts as piles, regardless of whether or not the posts are embedded in the substrate. The size of non-round posts is determined by the longest diagonal distance from corner to corner. Do not include any existing piles that will not be repaired or replaced as part of the project, and do not include smaller piles or piles waterward of the nearshore zone, which are addressed elsewhere under piles.

Line 33 – Piles - Greater than 8 inches in diameter – Net Reduction within the

Nearshore Zone: Enter the change in the number of piles greater than 8-inch diameter that would remain within the nearshore zone at the end of project. Do not include smaller piles or piles waterward of the nearshore zone. Enter a positive number for a decrease, and a negative number for an increase.

Line 35 – Piles - Greater than 8 inches in diameter – Number of Piles Installed, Replaced, and/or Repaired Waterward of the Nearshore Zone: Enter the number of piles greater than 8-inch diameter that would be installed, replaced, or repaired waterward of the nearshore zone. Do not include any existing piles that will not be repaired or replaced as part of the project, and do not include smaller piles or piles within the nearshore zone, which are addressed elsewhere under piles.

Line 36 – Piles - Greater than 8 inches in diameter – Net Reduction Waterward of the Nearshore Zone: Enter the change in the number of piles greater than 8-inch diameter that would remain waterward of the nearshore zone at the end of project. Do not include smaller piles or piles within the nearshore zone. Enter a positive number for a decrease, and a negative number for an increase.

Line 37 – Fenders – Number of Fenders Installed, Replaced, and/or Repaired: Enter the number of fenders that would be installed, replaced, and or repaired as part of the project. Do not include existing fenders that will not be repaired or replaced as part of the project. The RAP program defines fenders as elements that are attached to a pier to absorb the kinetic energy of a boat, and that extend below the pier's lowest longitudinal members (i.e. lower than the height of the pier as defined above). Continuous skirting is not considered a fender and is not eligible for coverage under the RAP program.

Line 38 – Fenders – Net Reduction of Fenders: Enter the change in the number of fenders that would remain at the end of project. Enter a positive number for a decrease, and a negative number for an increase. For example, enter 2 (not -2) if there would be a 2 fender decrease at the end of project. Conversely, enter -2 if there would be a 2 fender increase.

Line 40 – Lifts and Canopies – Number of Boatlifts within the Nearshore Zone: Enter the number of boatlifts that would be installed, replaced, and or repaired within the nearshore zone as part of the project. Do not include boatlifts waterward of the nearshore zone, and do not include existing lifts that will not be repaired or replaced as part of the project.

Enter positive numbers for installations, replacements, and repairs. Enter negative numbers for removals. Do not include existing lifts that would not be repaired or replaced as part of the project. Also, do not include lifts that would only be relocated. Note that lift removal credit is only available when no lift installation, replacement, or repair is included in the project. For example, if the project includes the replacement of 1 lift and the removal of a second lift, no credit can be given for the removal. Enter 1 for the replacement and disregard the removal in the calculator. However, if only lift removal would occur, enter a negative number equal to the number of removed lifts.

Line 42 – Lifts and Canopies – Number of Boatlifts Waterward of the Nearshore Zone: Same as above, but for boatlifts that would be installed, replaced, and or repaired waterward of the nearshore zone as part of the project.

Line 44 – Lifts and Canopies – Number of PWC lifts: Enter the number of PWC lifts that would be installed, replaced, repaired, or removed as part of the project. Dual PWC lifts count as two. Platform lifts count as PWC lifts. The number of platform lifts must be entered here, and their over-water area (sf) must be added the total area of over-water cover for the pier on Lines 15 & 16 above as applicable.

Line 45 – Lifts and Canopies – Area of Canopy: Enter the area in square feet for any new, repaired, or replaced boat canopies.

Line 46 – Lifts and Canopies – Area of Canopy Removed: Enter the area in square feet for any boat canopy reduction or removal.

Line 47 – Decks and Misc. In- and Over-water Elements – Current area of over-water cover for non-pier deck, etc.: Enter the total sf of over-water area for any existing miscellaneous on- or over-water decks and other elements that do not directly support boat or PWC moorage. To qualify as non-pier decking, the structure can have no moorage-related hardware or other structures that could be reasonably expected to support vessel moorage or storage, such as cleats, bollards, attached PWC lifts, platform lifts, etc.

Line 48 – Decks and Misc. In- and Over-water Elements – Proposed area of over-water cover for non-pier deck, etc.: Enter the total over-water area (sf) for the proposed repair or replacement of miscellaneous on- or over-water decks and other elements that do not directly support boat or PWC moorage.

Line 50 – Decks and Misc. In- and Over-water Elements – Mooring Buoys: Enter the number of mooring buoys that would be installed, replaced, repaired, or removed as part of the project. Enter positive numbers for installations, replacements, and repairs. Enter negative numbers for removals. Do not include existing mooring buoys that would not be repaired or replaced as part of the project. Note that mooring buoy removal credit is only available when no mooring buoy installation, replacement, or repair is included in the project. For example, if the project includes the replacement of 1 mooring buoy and the removal of a second mooring buoy, no credit can be given for the removal. Enter 1 for the replacement and disregard the removal in the calculator. However, if only mooring buoy removal would occur, enter a negative number equal to the number of removed mooring buoys.

Line 51 – Bulkheads – Bulkhead Repaired or Replaced: Enter the linear feet of bulkhead to be repaired or replaced. The bulkhead length is to be measured as a line parallel to the OHWM. Do not include existing bulkhead that will not be repaired or replaced as part of the project. Do not include existing bulkhead that will be removed or set back. That is covered on Lines 52 and 53.

Line 52 – Bulkheads – Bulkhead Removed or Setback: Enter the linear feet of bulkhead to be removed or moved landward of the OHWM, but without RAP-qualifying vegetation planted adjacent to the bulkhead.

In order for a bulkhead project to automatically qualify for conservation credit as setback, the project must result in some portion of an existing bulkhead being relocated from a position that is on or waterward of the OHWM to a location that is landward of the OHWM (as the OHWM would exist in the absence of the bulkhead). The project must also include the installation of an adequate volume of RAP-compliant gravel in the setback area to create a gently sloping gravel substrate that extends above and below the new OHWM.

At the discretion of the NMFS, based on the consulting biologist's best judgement and or a supportive statement from a qualified WDFW aquatic biologist, conservation credit may be granted for a setback that remains waterward of the OHWM if the setback is likely to result meaningful value for the aquatic habitat at the site. Projects that seek conservation credit for a setback that remains waterward of the OHWM, must do so through ETA prior to seeking permitting from the Corps.

In cases where a section of bulkhead pull-back would not qualify for conservation credit as "setback", conservation credit would be awarded on Line 64 as debris removal, based on the volume of existing material that is below the OHWM and within the area of the existing bulkhead that would be pulled-back.

Set-back Example

On line 51, quantify the length of replaced or repaired bulkhead that would remain at or waterward of the new OHWM ("new OHWM" = where the OHWM would lay within the cove at the end of the project).

On Line 52, quantify the length of existing bulkhead that would be within distance between the points where the post-project bulkhead's left and right sides would transition to above the new OHWM.

Line 53 – Bulkheads – Bulkhead Removed or Setback with Plantings: Enter the linear feet of bulkhead to be removed or moved landward of the OHWM with RAP-qualifying vegetation planted adjacent to the bulkhead.

Same as above, but with at least two (2) RAP-compliant plants to be installed within the boundary of the setback area.

Line 60 – Vegetation – Trees from RAP List: Enter the number of RAP-qualifying trees to be planted for the project. Do not include trees planted to mitigate for native vegetation removed for this project or for trees planted to implement a planting plan from a previous project.

Line 61 – Vegetation – Shrubs from RAP List: Enter the number of RAP-qualifying shrubs to be planted for the project. Do not include shrubs planted to mitigate for native vegetation removed for this project or for shrubs planted to implement a planting plan from a previous project.

Line 62 – Vegetation – Total Number of RAP Plant Species: Enter the total number of RAP-qualifying tree and shrub species to be planted for the project. Do not include vegetation planted to mitigate for native vegetation removed for this project or for vegetation planted to implement a planting plan from a previous project.

Line 63 – Vegetation – Total Number of Willows: Enter the total number of trees and shrubs from lines 59 and 60 that are willow species.

Line 64 – Vegetation – Remove In-water Debris: Enter the volume in cubic yards of in-water debris (i.e. concrete, wood, and metal at or below the OHWM) to be removed for this project. The removal of derelict piles should be accounted for on the appropriate lines above for piles based on the size and location.

Line 65 – Vegetation – Gravel Placement: Enter the volume in cubic yards of gravel to be installed at or below the OHWM for this project.

Appendix D – As-Built Report (ABR)

Within 60 days of completing all work for projects participating in RAP, email an As-Built Report (ABR) to the Corps at: **NWS.compliance@usace.army.mil**, and to the NMFS at: **rap-reports.wcr@noaa.gov**.

Ensure that the ABR includes the following:

Corps Permit #: _____

NMFS WCRO #: _____

Corps Project Manager: _____

Project Name: _____

Dates for in-water work: **Start:** _____ **End:** _____

Include the following with the ABR:

1. Dated photographs that clearly show:
 - a. The shoreline habitat conditions before, during, and after project completion;
 - b. The final height of the pier above the Ordinary High-Water Mark (OHWM);
 - c. The width of the deck;
 - d. All riparian vegetation, both pre-existing and new plantings; and
 - e. Pre- and post-gravel placement and debris removal.
2. As-Built drawings, including the final planting plan;
3. Confirmation that visible turbidity did not extend beyond 150 feet from the project site. If visible turbidity did extend beyond 150 feet, submit a report that describes

the extent of the visible turbidity, any best management practices (BMPs) that were implemented to limit the turbidity, and any communication with the Department of Ecology, including Notices of Violation;

4. If claiming credits for plantings and vegetation, the date each of the five annual planting plan monitoring reports will be submitted.

Appendix E – In-Water Work Windows for the Lake Washington System

Specific Area	Work Window* (when work is allowed)
Lake Washington	
• South of I-90	
----within one mile of Mercer Slough or Cedar River	July 16 - 31 <i>and</i> November 16- December 31
----further than one mile from Mercer Slough or Cedar	July 16 - December 31
• Between I-90 & SR 520	July 16 - April 30
• North of SR 520	
----Between SR 520 & a line drawn due west from Arrowhead Point	July 16 - March 15
----North of a line drawn due west from Arrowhead Point	July 16 - 31 <i>and</i> November 16 - February 1
Lake Sammamish	
--further than 1/2 mile from Issaquah Creek	July 16 - December 31
--within 1/2 mile of Issaquah Creek	July 16 - July 31 <i>and</i> November 16 - December 31
Sammamish River	
	July 16 - 31 <i>and</i> November 16 - February 1

Appendix F – Planting Plan Requirements

All plantings for which mitigation credits would be claimed, including standard planting plans required for compliance with the RAP program, additional mitigation plantings, and preservation of existing riparian vegetation for which mitigation credits would be claimed must meet the following:

1. The standard planting plan required by the RAP program must include at least two trees and three shrubs. Unless specifically exempted by the NMFS, only native vegetation identified in the RAP Plant List below in this appendix can be credited toward the RAP program. Horticultural cultivars or other variants of the

native species identified in the RAP Plant List that differ from the wild natives in their growth habits and or structure do not qualify.

2. Only one shore pine per project can be credited toward the RAP program.
3. Two willow shrubs from the RAP Plant List may be substituted for each tree.
4. All plantings must be within 10 feet of the Ordinary High-Water Mark (OHWM) (except western red cedar, western hemlock, and Douglas fir trees).
5. Western red cedar, western hemlock, and Douglas fir trees may be planted up to 25 feet from the OHWM.
6. Plantings should be distributed evenly along the shoreline (see Sample Planting Plan below). However, trees may be planted at the corners, with shrubs planted across the middle.
7. In general, RAP planting plan vegetation must be in addition to the existing vegetation to be credited toward the RAP program. Any native vegetation that is removed during a project must be fully mitigated for, and the mitigation plantings for the removed native vegetation would not count toward the RAP planting plan requirements or for project mitigation credits.
8. At the discretion of the NMFS, credit may be given for preserving existing native vegetation that has been established for at least 5 years, and that meets the conditions above or existing non-native vegetation that provides documented value for the aquatic habitat at the site. Receipts plus photographs that demonstrate the location, health, and development of the plants in question would be acceptable proof of plant age. A written attestation that the plants are more than 5 years old can be substituted for receipts if receipts are unavailable. A supportive statement from a qualified WDFW aquatic biologist or an agreement from the consulting NMFS biologist for the RAP project would constitute acceptable documentation of aquatic habitat value.
9. All plantings that receive mitigation credit under the RAP program are to be in addition to any plantings required to replace native vegetation that would be removed or damaged as part of the project under consideration, and any planting plans required for previous projects at the site (including required plantings for local government permits). Previous planting plans must be fully implemented before credit can be given for a RAP planting plan.
10. Plantings under the RAP program must consist of viable 1 to 5 gallon size container plants, bare root plants, or cuttings of native shrubs and trees.
11. The permittee is required to preserve in good health all RAP planting plan vegetation for as long as the structures that have been permitted under the RAP

program remain in place. Required Performance Standards and maintenance activities include:

- a. 100 percent survival of all planted trees and shrubs is required;
 - b. Maintenance of RAP planting plan vegetation includes the removal and replacement of dead or dying plants and the removal of invasive species. Maintenance does **not** include trimming or mowing of the planting plan vegetation. Planting plan vegetation must be allowed to develop naturally, so that they grow large enough to overhang the water; and
 - c. Plants that die must be replaced with an appropriate replacement plant type (i.e. tree for tree, shrub for shrub, or two shrubs for a tree) from the RAP Plant List.
12. Planting should be completed October through March for best plant survival. Fall and winter planting gives the plants time to get established in their new location before facing their first summer drought. This will lower establishment costs and reduce the chances that replanting will be necessary.
13. Monitoring of RAP planting plan vegetation should begin in the first September after plant installation. Monitoring reports are due annually by November 30 for 5 years. Applicants must send a copies of the report to the NMFS and to the Corps. The NMFS copy should be emailed to rap-reports.wcr@noaa.gov. The Corps copy should be emailed to NWS.compliance@usace.army.mil. Monitoring reports must include:
- a. A completed one page monitoring report form;
 - b. The as-built site plan updated to show any changes that have occurred to the mitigation planting area since the last report, such as plants that have died and been replaced; and
 - c. Photographs taken in consecutive Septembers from established photo points that are reused each year. The photos must be dated and labeled with the photo point and direction of the photo.
14. The entire permit, including approved drawings, must be recorded with the King County's Recorder Office.

RAP Plant List

The native species below were selected for inclusion in the RAP program because of their appropriateness in the Lake Washington and Lake Sammamish shoreline ecoregion. Species that are not native to the Pacific Northwest or that only occur naturally in Pacific Northwest ecoregions that are substantially different and or distant

from Lakes Washington and Sammamish are considered inappropriate RAP program. For example, native groundcover species such as salal, kinnickinnick, sword fern, and wild strawberry, etc. are considered inappropriate for lake shoreline vegetation under the RAP program. Horticultural cultivars or other variants that differ in growth habits and or structure from the wild native species identified below are also inappropriate.

Common Name	Scientific Name	Wetland Indicator Status ³
Trees		
grand fir	<i>Abies grandis</i>	FACU
big-leaf maple	<i>Acer macrophyllum</i>	FACU
red alder	<i>Alnus rubra</i>	FAC
Oregon ash	<i>Fraxinus latifolia</i>	FACW
Sitka spruce	<i>Picea sitchensis</i>	FAC
shore pine	<i>Pinus contorta</i> v. <i>contorta</i>	FAC
black cottonwood	<i>Populus balsamifera</i> (<i>trichocarpa</i>)	FAC
Douglas-fir	<i>Pseudotsuga menzeisii</i>	FACU
Pacific willow ¹	<i>Salix lasiandra</i> (<i>lucida</i>)	FACW
western red cedar ²	<i>Thuja plicata</i>	FAC
western hemlock ²	<i>Tsuga heterophylla</i>	FACU
Shrubs		
vine maple ²	<i>Acer circinatum</i>	FAC
western serviceberry	<i>Amelanchier alnifolia</i>	FACU
buckbrush	<i>Ceanothus sanguineus</i>	Assumed UPL
snowbrush	<i>Ceanothus velutinus</i>	Assumed UPL
red osier dogwood	<i>Cornus sericea</i> (<i>alba</i> , <i>stolonifera</i>)	FACW
beaked hazelnut	<i>Corylus cornuta</i>	FACU
black hawthorn	<i>Crataegus douglasii</i>	FAC
cascara	<i>Frangula</i> (<i>Rhamnus</i>) <i>purshiana</i>	FAC
oceanspray	<i>Holodiscus discolor</i>	FACU
black twinberry	<i>Lonicera involucrata</i>	FAC
western crabapple	<i>Malus</i> (<i>Pyrus</i>) <i>fusca</i>	FACW
Indian plum (osoberry) ²	<i>Oemleria cerasiformis</i>	FACU
mock orange	<i>Philadelphus lewisii</i>	Assumed UPL
Pacific ninebark	<i>Physocarpus capitatus</i>	FACW
bitter cherry	<i>Prunus emarginata</i>	FACU
red-flowering currant	<i>Ribes sanguineum</i>	FACU
Nootka rose	<i>Rosa nutkana</i>	FAC
thimbleberry	<i>Rubus parviflorus</i>	FACU
Hooker willow ¹	<i>Salix hookeriana</i>	FACW
Sitka willow ¹	<i>Salix sitchensis</i>	FACW
Scouler willow ¹	<i>Salix scouleriana</i>	FAC
red elderberry	<i>Sambucus racemosa</i>	FACU

spirea	<i>Spiraea douglasii</i>	FACW
snowberry	<i>Symphoricarpos albus</i>	FACU
highbush cranberry	<i>Viburnum edule</i>	FACW

¹ Willow species should be planted as close as possible to the OHWM.

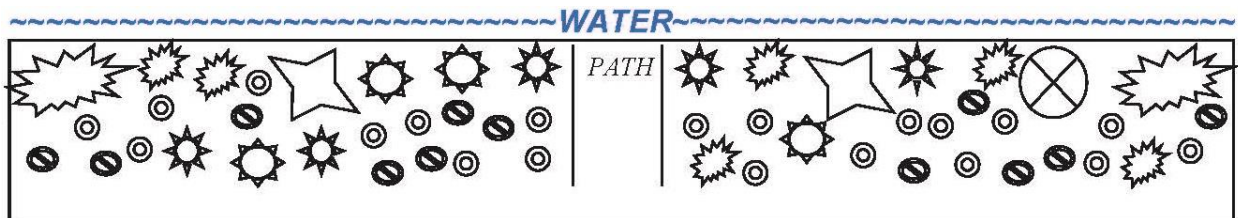
² Seedlings of these species may establish better in the shade.

³ Wetland Indicator Status denotes the probability of individual species of vascular plants occurring in wetlands in the United States. Indicator categories include:

- Obligate wetland (OBL). Almost always occurs in wetlands (estimated probability > 99%) under natural conditions.
- Facultative wetland (FACW). Usually occurs in wetlands (estimated probability 67% – 99%), but occasionally found in non-wetlands.
- Facultative (FAC). Equally likely to occur in wetlands (estimated probability 34% – 66%) or non-wetlands.
- Facultative upland (FACU). Usually occur in non-wetlands (estimated probability 67% – 99%), but occasionally found in wetlands (estimated probability 1% – 33%).
- Obligate upland (UPL). Occur almost always (estimated probability > 99%) in non-wetlands under natural conditions.

SAMPLE PLANTING PLAN PLAN VIEW

Scale: 1 inch = 10 feet, 10 feet wide by 65 feet long



LEGEND

	willow, 5 to 10 feet on center		shrub, 4-5 feet on center
	conifer, 10 feet on center		shrub, 4-5 feet on center
	broadleaf tree, 10 feet on center		shrub, 4-5 feet on center
	shrub, 4-5 feet on center		shrub, 4-5 feet on center