AMALGA HARBOR FISH CLEANING FLOAT FEASIBILITY STUDY

-DRAFT-

ACKNOWLEDGEMENTS

AMALGA HARBOR FISH CLEANING FLOAT
COOPERATIVE AGREEMENT
NUMBER 15-049

FUNDED IN PART BY ALASKA DEPARTMENT OF FISH AND GAME

PREPARED BY DOCKS AND HARBORS STAFF

DECEMBER 16, 2015

CONTENTS

EXECUTIVE SUMMARY

This feasibility study examines options to improve the users experience at Amalga Harbor by reducing conflicts with fish cleaning activity at the end of the float. Three nearby remote sites were examined for a remote cleaning float to remove the activity from the immediate float area. Numerous options were examined:

- Do Nothing
- Provide Remote Site
- Add Floats to Existing Boarding Float
- Remove Fish Cleaning Table

Three options are presented to extend the existing float and one option adds a second ramp and float. An upland cleaning station option is discussed along with removal of the cleaning table on the float or just do nothing and wait for new Auke Bay Launch facility to come on line and perhaps reevaluate later. All options presented could include widening the entrance channel to increase the basin size by rock excavation or this could be as standalone project.

All the remote sites create new problems for harbor staff and creel census takers for the two agencies involved and would likely require a new Environmental Assessment, Submerged Land Use Permits from the Department of Natural Resources and new Corps of Engineers Permit. The upland cleaning alternative is the most complex and expensive far exceeding the complexity of the problem to be addressed requiring similar permits to the remote sites. Adding another launch ramp would require land and development of approximately 50 parking spaces and does not appear to be needed or desired by the public or harbor management.

Extending the float by adopting Alternative 4c does appear to be the best option. Improving the existing facility by constructing a 12'x75' float at the end of the existing float, moving the cleaning activity to the end of the new float with not less than two tables significantly addresses the problem. By more than doubling the available length of boarding float available at low tide will significantly enhance the cleaning station availability, improve access to the ramp without significant impact to the environment. An amended or new Corps of Engineers Navigation permit will be required. The proposed float is over submerged tidelands currently under management of CBJ, Docks and Harbors.

Construction estimates for all waterborne alternatives are found in APPENDIX F, it is anticipated that without unusual permitting costs, the existing project agreement for this feasibility study, permits and design is sufficient to provide a bid package for the described project.

INTRODUCTION TO THE PROJECT

The City and Borough of Juneau owns and operates the Amalga Harbor Launch Ramp facility constructed with local match funds and Alaska Department of Fish and Game, Division of Sport Fish, Sport Fish Access funds. The facility is a high use area and users have identified a conflict at the facility between fish cleaning and launch/retrieve activities. To address this issue, an agreement was executed November 21, 2014 between the Alaska Department of Fish and Game, Division of Sport Fish and the City and Borough of Juneau. The goal of the agreement was:

"To determine the most appropriate and feasible floating fish cleaning station that would service boaters at Amalga Harbor, and construct the station, if feasible. Traffic flow and boat/vehicle congestion in the area of the load and lunch ramps may also be reviewed to determine if there are any other feasible solutions that may help. This agreement covers the feasibility study, preliminary design and permitting, if applicable (Phase I) of the Amalga Harbor Fish Cleaning Float project. This agreement will be amended to add funds in order to complete Phase II, construction if a feasible solution is vetted through the Phase I process."

DESCRIPTION OF SITE

FIGURE 1

Adjacent to the Earnest Gruening State Park is the Amalga Harbor Launch Ramp, a popular and heavily used facility to access the waters of north end of Stephens Passage, south end of Lynn Canal and Icy Strait. Use is primarily seasonal, spring through late fall, but winter use occurs for hunting, crabbing and fishing. Chinook and Silver Salmon, Halibut and Dungeness crab are the preferred species readily caught in season. ADF&G conduct creel census activity at the float and at times take samples from landed salmon species. Amalga Harbor Road, connecting the facility to Glacier Highway, was recently reconstructed with new bridges, paving and improved drainage. Upon arrival at the facility there is room for a smooth flow to the lower parking lot and into the two ramp approach lanes. Traffic flows is quite smooth through the facility and the 107 car/trailer and 43 car spaces appear adequate but as predicted in the 2003 Environmental Assessment for the existing layout there is still some overflow on the approach road on Salmon Derby days and a few days when the weather is so magnificent demand is high.

The most common size boats using the facility are under 19' with 40% between 19 and 24 feet[1] and few larger. An adjacent kayak ramp is available for manual launching kayak, canoe and inflatables.

The facility, located at the end of Amalga Harbor Road, consists of several acres of parking with a double lane concrete launch ramp divided by an on grade boarding float. The end of ramp water depth is at approximately -4' MLLW (Mean Lower Low Water) and -7' MLLW at the end float. The entire basin is dredged to -7' MLLW. The extreme tide range is approximately 25' with a mean tide range of approximately 13.7'. Electricity is available and provides area lighting in the ramp area and upland parking. A step down transformer is located at the intersection Amalga Harbor Drive and the driveway to the State Park. There is no developed water source on site and sewer service is a permanent stall vault with scheduled pumping service. The 268' long boarding float lies between two lanes of concrete surfaced ramp beginning at the edge of the staging area and extending out into the basin past the end of the ramp lanes. There is one fish cleaning table at the end of the float. There is no water service available on the float. At times the end of the float gathers fish waste and requires cleaning.

FIGURE 2

Fish waste is disposed directly into the water where it eventually is consumed or decayed into the water column and bottom sediment. Crab shells take considerably longer to break down and are visible at low tide year

[1] CBJ *Launch Ramp User Survey and Demand Forecast, November 2010*

around. Biodegradation of flesh is rapid. Occasionally a fish carcass will appear on the ramp but critters, from birds to enzymes consume entrails and there is little visible evidence of accumulation over time. Also, a few naturally returning chum salmon will accumulate, spawn, die and decay in the basin.

FIGURE 3 - PRIVATE FLOAT

The approach into the basin and float is from the north behind Kishbrock Island and an unnamed islet on the east. The islet is isolated on most high tides but a short isthmus bares at approximately +11' tide connecting it to mainland. Low tide reveal within the sheltered basin exposes considerable tide flats and rock outcroppings around the perimeter that significantly reduce the effective basin area. After entering from the north, a ninety degree left turn leads to the small basin containing the float. Protruding more than halfway into the basin and baring at low tide is a peninsular reef defining the entrance on the port shore on entering and the approach to the float that favors the starboard shore at the ramp end. The inner basin is small relative to the amount of use but most days is adequate. Seasonally sunny days when the ramp is heavily used ramp activity is limited to about 120' (from two sides) of boarding float length with depth at tides below 0.0 MLLW.

There is a private permitted float south of the public float which goes dry at lower tides. There are private parcels with cabins and residences shore side in Amalga Harbor. In addition, Huffman Harbor, immediately adjacent to Amalga Harbor is lined with shore side residences and mooring buoys. Eagle Harbor, a larger bight just north of Amalga Harbor fronted by the State Park offers less natural protection than Amalga and is seasonally occupied by fish rearing pens and frequented seasonally by gillnetters, seiners and packers working or waiting for openings.

FIGURE 4 - ISTHMUS REVEALED AT TIDE LEVEL BELOW 11' MLLW

The islands and rock outcrops surrounding Amalga Harbor offer considerable protection inside the basin proper at lower tides. Exposure to the SE and Westerly direction is blocked, however from the NW, when the tide rises and the isthmus is submerged, a significant gap exposes the float to incident waves. Wind driven wave conditions in Lynn Canal are notorious. The conditions immediately outside the entrance can be extreme in strong northerly gales. Using a sustained wind speed of 65 knots from 336 degree (true) in Lynn Canal with consideration of the reduced exposure from the Eagle Beach delta, the site will likely experience waves of 5-6' at the entrance and the gap to the north at high tide. Summer winds tend to be considerably less intense, but sustained winds of 20 knots would be reasonable threshold for boating activity for small craft using the cleaning facility. Waves inside the basin are negligible except for winds from the NW at high tide, but the lee side of the float makes boarding conditions acceptable in these conditions.

PROBLEM STATEMENT

Amalga Harbor is a busy and congested launch facility. The navigational approach to the float is narrow with a right angle turn and a protruding reef defining the channel into the small basin. The physical constraints imposed by the small basin, reef protrusion, and the fish cleaning activity at the end of the float creates congestion that hinders launch and retrieving activity. This is exacerbated at lower tides as the perceived available maneuvering basin decreases significantly and the floating length of the boarding float is reduced for load/unloading of trailered vessels.

The objectives of this project are to mitigate the impact of fish cleaning on launch and retrieval activity by increasing the available space on the boarding float for launch and retrieve activity, or separating the activity if possible by providing for increased fish cleaning capacity at a location with acceptable wave climate, standby maneuvering area and unobstructed water depths.

LOCATION STUDY SITES AND FINDINGS

For this location study a 16'x28' fish cleaning float was determined to be the optimal functional size, but public comments recommended float size be increased to 20'x28' minimum with some preference for even larger. The increased length of one side to 20' can better accommodate the majority of the under 19' users. Consideration for extending the existing float was incorporated from public comments.

Turning diameter for small boats is approximately one and one half to three boat lengths. The 100' radius around the float is shown on sketches to indicate scale on otherwise hard to discern scale on aerial photos in addition to maneuvering room around the float required to be void of underwater obstructions. This footprint provides sufficient space for clear navigation around the float assuming one maneuvering to leave plus one circling outboard for an approach. Amenities provided can be as simple as tables and user provided buckets for water to a more sophisticated off grid solar/battery powered electric pump wash down capability. Depending on depth of water, bottom conditions and exposure specific design elements are not directly addressed beyond limited discussion. Schematics will show piling as the preferred securing method, but site conditions may dictate anchoring.

Extending the existing boarding float and relocating the fish cleaning activity to the end was not immediately considered as informal scoping discussions suggested looking at remote sites as better suited to meeting the project objectives. However, after serious comments from the funding agency, land use issues and possibly environmental assessments required at a more remote location, the extended float alternative was added to the study for further consideration. Though approach maneuvering area is limited and already visibly congested at times as returning craft enter the basin and wait for space to clear on either side of the boarding float, further consideration in later drafts is given to extending the float with the cleaning activity at the end float. The extend float option is discussed as Site 4 and includes four alternatives.

Though the funding agreement provides for feasibility of a floating cleaning station, a shore side station and do nothing alternatives are also discussed. Also, though access, traffic flow and parking could be included in the scope, no significant issues were identified in the public meeting or by harbor management. Other than on a few extremely high use days the parking overflows to the approach road. There are about 105 car/trailer and 47 cars spaces which is in line with standard design criteria for a two lane launch ramp.

FIGURE 5 - REMOTE SITES OUTSIDE BASIN

Each remote study location was examined for wind wave conditions, water depths with bottom profile, and other parameters. Winter or extreme wind/wave conditions are 65 knot winds (one minute sustained) from the Northwest and Southeast for each location. Summer operating limits for the fish cleaning activity is 20 knot winds from Northwest, Southeast and Southwest directions. The 20 knot threshold is examined as a reasonable upper limit on conditions where small skiffs might still be operating. It must be noted that the wind/wave estimations are reasonable for comparison purposes for each site but waves in and around obstructions through refraction and diffraction create their own unique characteristics that are far beyond the scope of this analysis.

LOCATION STUDY SITE 1

a) Relocated fish cleaning activity to a remote 20'x28' float within the protected basin behind Kishbrock Island and near the connecting entrance to Huffman Harbor.
b) Removes cleaning activity from float effectively expanding holding capacity for launch/retrieve-load/unload activity.
c) Remote location may negatively impact creel count activity at ramp.
d) Waste disposal into deeper water, relatively open water way improves dispersal of entrails and carcasses.
e) Secured with anchors or piling bottom depth approx. -12' MLLW.
f) Location most secure and safe for activity and winter survival. Summer wind/wave conditions would be good at less than 6" and winter 1-2'.
g) Bottom is muddy sand overburden of unknown depth and generally flat across the site, rock shoreline is steep.
h) Likely the cost for construction and annual maintenance.
i) DNR Submerged Land Use Permit required.
j) Corps of Engineers Navigation Permit required.

FIGURE 6 - BOTTOM PROFILE SITE 1

LOCATION STUDY SITE 2

a) Relocate fish cleaning to a remote 20'x28' float within Eagle Harbor on the East shoreline.
b) Effectively removes congestion from fish cleaning activity and dedicates 100% of boarding float for intended purpose.
c) Remote location may negatively impact creel count activity at ramp.
d) Remove biomass waste overload from shallow water minimal dispersion to deeper water, higher circulation broader dispersal of entrails and carcasses and reduced bottom biological load directly under float.
e) Float would have to be designed for endurance for Northwest exposure over the winter, and exposed in summer Northwest and Southwest winds offering less than ideal conditions for small skiffs.
f) Exposure is predominantly NW with summer wind/wave conditions of 1.5-3' and winter waves of 5-9'.
g) Frequent summer southwest winds would create waves of 0.7 to 1.3'. Exposure would limit safe use by smaller skiffs.
h) DNR Submerged Land Use Permit required.
i) Corps of Engineers Navigation Permit required.

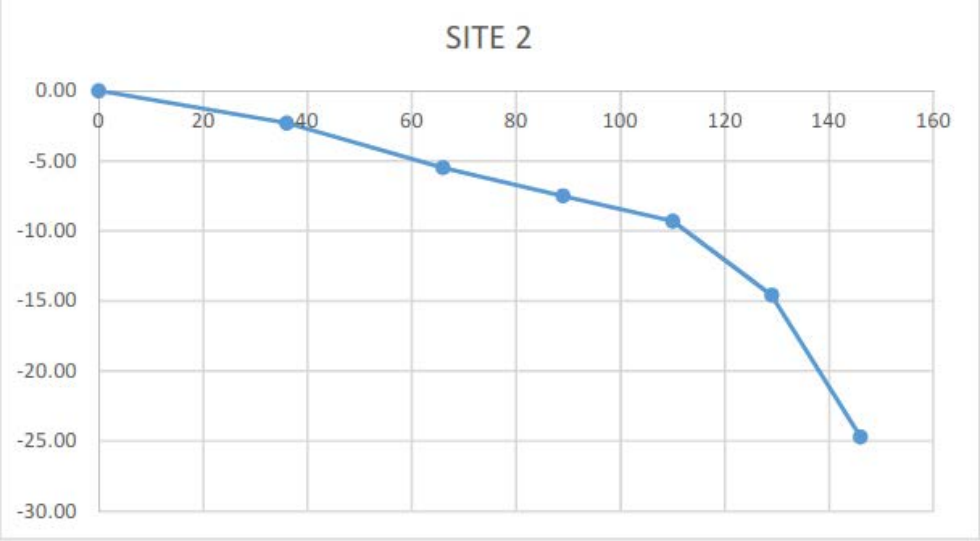


FIGURE 7 - BOTTOM PROFILE SITE 2

LOCATION STUDY SITE 3 from 0.0’ MLLW

a) Relocate fish cleaning to a remote 20’x28’ float within Eagle Harbor in the small bight on the northeast shore.
b) Float would have to be designed for endurance for exposure over the winter, but would also be more exposed in summer winds and less than ideal conditions for small skiffs.
c) Remote location may negatively impact creel count activity at ramp.
d) Effectively removes congestion from fish cleaning activity and dedicates 100% of boarding float for intended purpose.
e) Remove biomass waste overload from shallow water minimal dispersion to deeper water, higher circulation broader dispersal of entrails and carcasses and reduced bottom biological load directly under float.
f) Location is exposed to Southwest and Westerly directions but more protected from Northerlies. Summer wind wave conditions of 2-4’ and winter considerably more.
g) More exposed to Summer SW winds at 20 knots would experience waves of 1.3 to 2.1’.
h) Bottom drops fast at depths below –6’. Shallow waters has a layer sand/gravels with underlying rock at unknown depth, but steep slopes at depth suggest rock slopes making piling difficult to hold in place while driving.
i) Higher cost for construction and more annual maintenance than Study Location 1.
j) DNR Submerged Land Use Permit required.
k) Corps of Engineers Navigation Permit required.

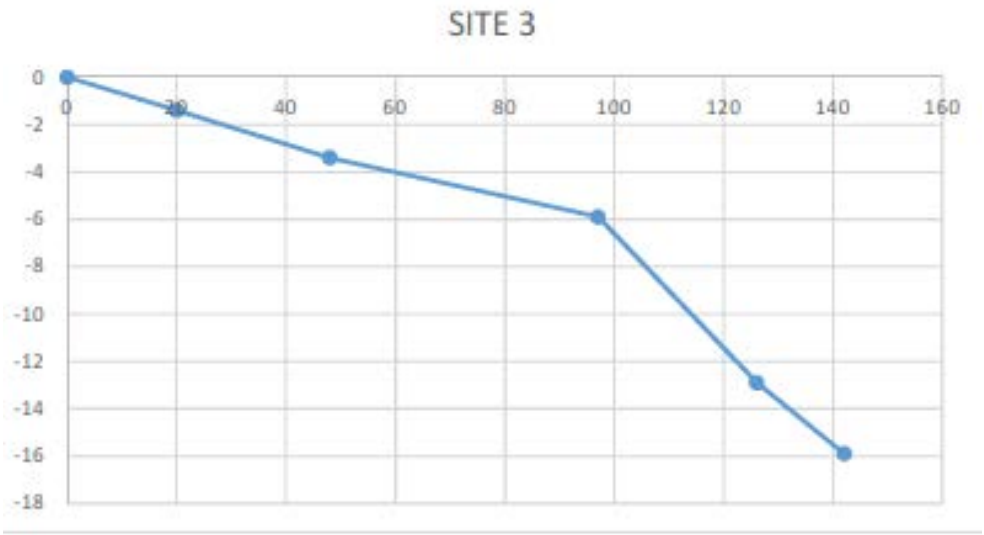


FIGURE 8 - BOTTOM PROFILE SITE 3 BELOW 0.0’ MLLW

LOCATION SITE 4a

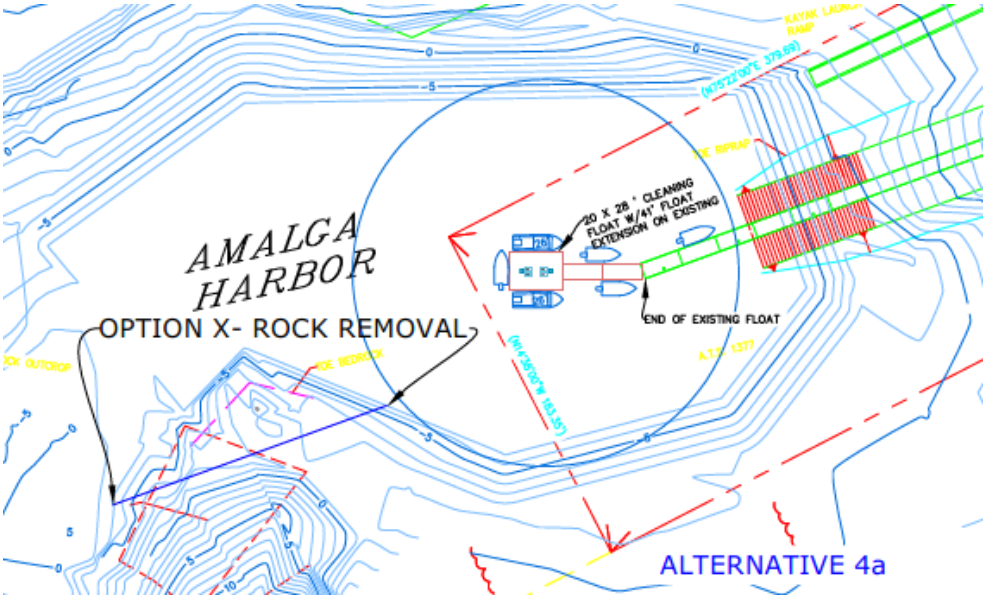


FIGURE 9 – ALTERNATIVE 4a

Extend existing float by two 20.5' sectional floats with 20'x28' fish cleaning float at end, angled to center the cleaning 120' additional boarding moorage at end of existing float.

a) Basin limits encroach within the desired 100' radius clear zone.
b) Wind and wave conditions same as existing.
c) Connected float will not hinder active creel census activity.
d) Angling the float will improve the clearance to the south shore line at lower tides and balance access between the two sides.
e) Same water depth for dispersion of waste as existing but further from ramp.
f) Within existing CBJ management area.
g) Consistent environmental conditions with existing permitted facility.
h) Corps of Engineers Navigation and 404 Permit required.

SITE 4(b)

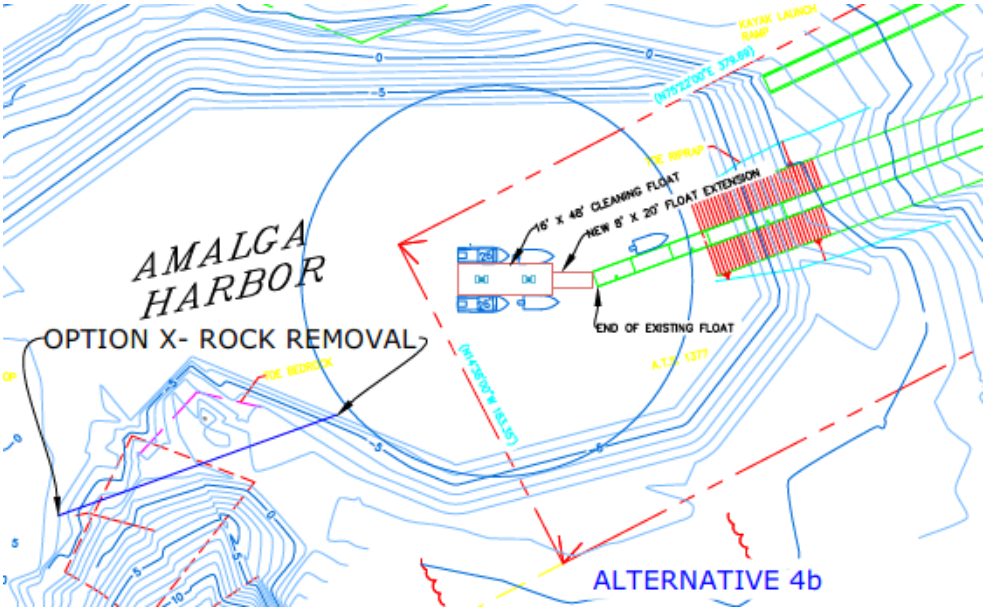


FIGURE 10 – ALTERNATIVE 4b

a) Extend existing float by one 20.5’ sectional float with 16’x48’ fish cleaning float at end, angled to center the cleaning float in basin.
b) Relocating cleaning from existing float provides 80’ of boarding moorage at end of existing float.
c) The basin width is less than the desired 100’ clear zone around the float.
d) Good sheltering from wind and wave conditions.
e) Creel census activity unaffected with connected float.
f) Angling the float will improve the clearance to the south shore line at lower tides and perhaps balance the ease of access to both sides.
g) Rock excavation at entrance would improve access.
h) Same water depth for dispersion of waste as existing, but further from ramp.
i) Within CBJ management area.
j) Minimal impact to environmental conditions with existing permitted facility.
k) Corps of Engineers Navigation Permit required.

SITE 4c

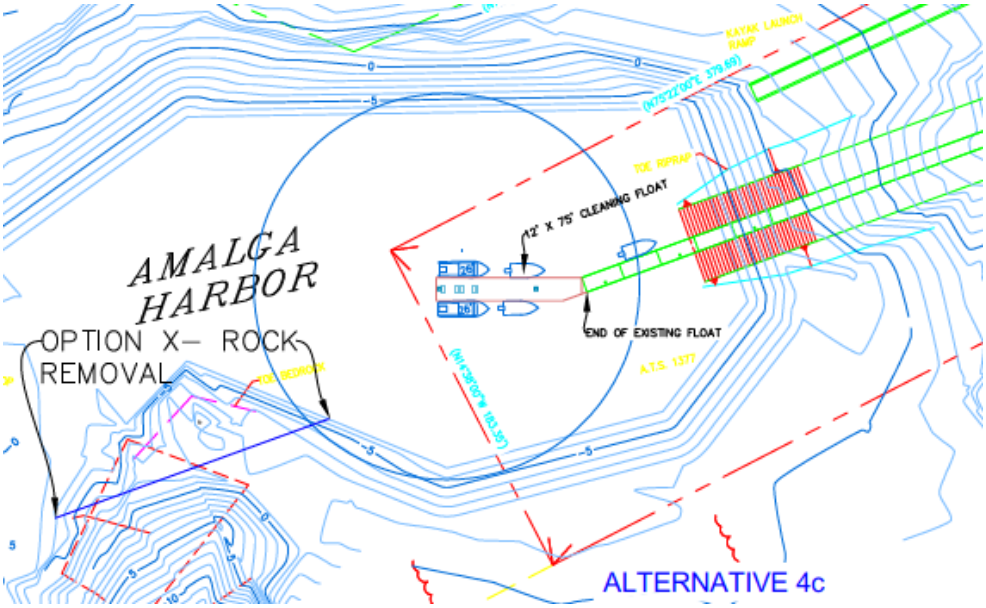


FIGURE 11

a) Provides Extend existing float with a 12'x75' fish cleaning float at end, angled to center the cleaning float in basin.
b) 40' of boarding moorage included on new float extension.
c) The basin width is less than the optimum lapping into the desired 100' clear zone around the float.
d) Wind and wave conditions at this site are similar to current condition.
e) Connected float will maintain routine creel census activity.
f) Angling the float will improve the clearance to the south shore line at lower tides and balance a preferred float side bias to the south.
g) Same water depth for dispersal of waste as existing, but further from ramp.
h) Within CBJ management area.
i) Minimal impact to environmental conditions within existing permitted activity.
j) Corps of Engineers Navigation Permit required.

ALTERNATIVE 4d

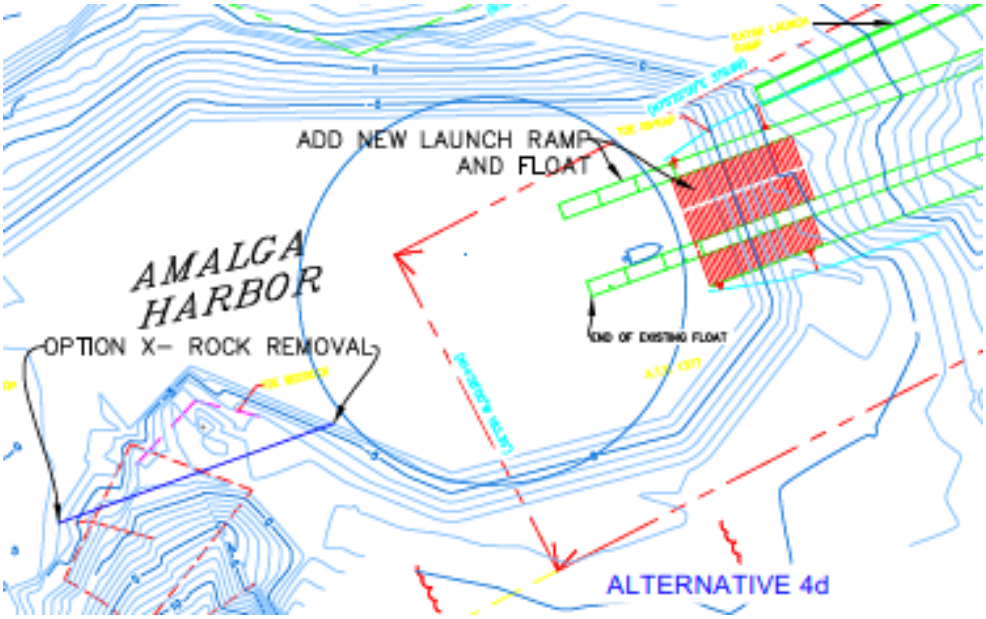


FIGURE 12

a) Add a third launch ramp and a second boarding float.
b) Significantly adds throughput capacity.
c) Would require significant modifications to traffic flow in uplands and require approximately 50 more parking spaces which would require new land acquisition or lease.
d) Added capacity of this magnitude is not identified as an important need.
e) Provides more options for launching and retrieving.
f) Some impact to existing kayak ramp.
g) Only one side of the float would be usable for launch and retrieval activity.
h) Minimal impact to environmental conditions with existing permitted facility.
i) Within CBJ management area.
j) Corps of Engineers Navigation and 404 Permit required.

LOCATION STUDY SITE 5

a) Relocate fish cleaning activity to an upland shore side facility in the adjacent parking lot.
b) Removes cleaning activity from the float effectively expanding holding capacity for launch/retrieve-load/unload activity.
c) Requires substantial upland facility development. Develop water source by drilling well or salt water intake, pumping and pipeline. Disposal system would require considerable grinding, pumping, pipeline and outfall construction to get waste to acceptable deep water disposal location. The distance and predominance of rock between the upland area and deep water of the site are not ideal for such a construction in addition to the increase operating cost to maintain it.
d) Traffic flow through the Amalga Facility would be modified to accommodate several car-boat trailer combinations to stop, unload fish to cleaning tables then reload fish and out Amalga Harbor Road.
e) Introducing this activity upland would reduce the car/trailer and car parking spaces unless additional upland area was incorporated into the facility.
f) Uplands under Docks and Harbors management.
g) NPDES Storm water Permit.
h) Corps of Engineers Navigation and 404 Permit required for intake and outfall construction.
i) DNR water use permit for potable water if provided by a well.

LOCATION STUDY SITE 6

a) Remove the fish cleaning table from the existing boarding float and provide no alternate nearby.
b) Simplest solution to resolve congestion but removes convenient high demand function from site.
c) May eliminate some congestion but users may still hold up retrieval activity to clean fish on the float leaving a bigger mess.
d) Some may take fish to Auke Bay to use cleaning tables.
e) There may be some continued requests to replace table.
f) Facility management option, No permits required.

LOCATION STUDY OPTION DO NOTHING

a) No action is taken on the problem statement with this alternative.
b) No further costs will be incurred by Docks and Harbors or Alaska Department of Fish and Game.
c) Higher use of Amalga by users avoiding Statter Harbor is mentioned but not quantified in 2010 CBJ User Study[2]. Congestion and conflicts may be reduced by completion of Auke Bay Launching Ramp Project in 2016/17 as users make higher use of that expansion and improvement.

EVALUATION OF ALTERNATIVES

In addition to addressing the functional aspects of fish cleaning and boarding float congestion and efficiency, the proposed project must provide a reasonably tranquil shelter for the small water craft stopping to clean fish before approaching the Amalga Basin. This means alternatives must provide a wind wave climate similar to those experienced within the existing basin and suitable for the smaller skiffs. Standard inner harbor criteria for wave height expected is less than 1' for marinas and less than 6" for small skiffs. A recommended design wave criteria for reasonably safe operating experience at the proposed facility is less than 6" in summer conditions.

The effectiveness and suitability of alternative sites are measured against the following criteria formulated as project objectives:

- Relieve congestion in the basin and at the end of the existing boarding float in Amalga Harbor.
- Eliminated or substantially reduce conflict between fish cleaning activity and boarding float activity.
- Locate so disposal of entails and carcasses have a chance of greater dispersion with water depth and tidal exchange rates under and around the float site.
- Location must provide wave conditions less than 6" in summer wind conditions in any direction up to 20 knots, an upper bound on most small craft for venturing out in higher wave conditions.

Site 1, located within the naturally occurring protective barriers yields very favorable water born solution to the problem statement and project objectives. The wave climate will always be better here than Site 2 or 3. The proximity to the basin and limited exposure in all directions with adequate water depth offer improved circulation to reasonably satisfy all the project objectives. Water depth is almost twice the existing location and tidal currents should be significantly stronger providing enhance flushing as the tide changes twice each day. The initial cost of the float will be lower than Site 2 or 3 and debris collection on the deck over winter will significantly less than other more exposed sites.

Sites 2 and 3 are located outside the relatively tranquil and natural enclave provided by sheltering island and rock outcroppings inside of Kishbrock and other islands near the entrance to the Amalga Basin. Each has exposure either from the SE, SW or NW that in particular winds, conditions would not be satisfactory for tie up, transferring fish and coolers before returning to the dock. Each generally satisfy other project objectives. Cost differences would result from longer piling or anchor gear and robust float construction to survive the exposure. Preparation for summer use will likely include removing debris collected on the deck over the

[2] *CBJ Launch Ramp User Survey and Demand Forecast, November 2010*

winter and potential damage repair. However, the exposure factor eliminates Site 2 and 3 from further serious consideration for the intended purpose.

The major challenges for Site 1 are Submerged Land Use Permit from the Department of Natural Resources and overcoming issues associated with the Department of Fish and Game creel census. Also, a new Environmental Assessment associated with a new remote location and the expanded scope of responsibility for harbor staff to access, inspect, operate and maintain the facility. Nevertheless, Site 1 is the only remote location examined offering a protected location with adequate area in close proximity to the launch ramp.

Site 4, generally described as extending the existing float system, is presented with four alternative layouts for consideration. The extended float would be angled to more evenly divide traffic each side of the float. Each alternative includes cleaning stations and additional length for boarding activity. Alternative 4d, the addition of a new ramp and boarding float was briefly investigate but there is no indication from public comments or harbor management that this option is need or desirable. It would require approximately 50 new car trailer parking places and land acquisitions and likely have wetland impacts.

The Table below, Figure 13 provides a comparison Alternatives 4a, 4b and 4c. The somewhat arbitrary allocation of space to cleaning is for comparative consideration only. If no cleaning activity is taking place all dock sides are available for boarding activity. If allocated space is used for cleaning the net new moorage remains available. On any given day, demand for cleaning tables may reduce the available boarding float by like amount. In every case the added length is substantial which should allow most new arrivals to find a space in the line waiting retrieval.

There may be some risk that the added length will become a nuisance if long term and overnight moorage is tolerated. Signage and consistent enforcement will be required to manage that risk.

SITE 4 Alternative		TOTAL LENGTH/ NEW	COMMENT
4a		196	
New cleaning	76		two sides and end
New moorage	80	120	two sectional floats plus converted float
converted to moorage	40		last float unit with table removed become moorage
4b		176	
New cleaning	96		two sides without end use
New moorage	40	80	one sectional float plus converted float
converted to moorage	40		last float unit with table removed become moorage
4c		190	
New cleaning	96		allocate 48' on two sides
New moorage	54	94	allocate 27' on two sides plus converted float
converted to moorage	40		last float unit with table removed become moorage

FIGURE 13

To some degree, the introduction of additional boarding float into the basin area reduces maneuvering area in the basin, but the added float would provide more available dock space requiring less wait time manuevering. The distance to the basin dredge limits is less than the desired 100 feet but represents approximately 80-85% of the desired value. On high volume days, the shortened clear basin after passing narrow entrance at low tide may cause some to hold outside the basin before proceeding.

Observing activity at Amalga during low tide during the 2015 Golden North Salmon Derby, the tide at 7:30 am was about -1.3' and there were 5 boats on one side, two deep with one one more launching without sufficient water to float before derby validation began. With this level of use, an additional holding float would have been a welcome addition. It's difficult to quantify the value and impacts of adding float to the existing but it would likely improve the overall utility of the facility, and relieve some wait time for moorage during launch and retrieval. It can be argued that adding more float will only shift the congestion outboard to toward the new end. This is true to some degree, however, having additional float length will mitigate low tide congestion by adding lineal feet of the boarding float. Adding as much as 75 feet on two sides would significantly improve the que line situation arriving and departing. However, since launching ramps are generally managed by the users themseves, at times, the process is not always efficient and orderly. Signage on ramp etiquet was highly suggested at the public meeting and is being implemented along with management outreach to customers regarding ramp etiquet.

It would not be unreasonable to assume some users currently cleaning fish offshore would bring the catch dockside with some increase in waste volume. Tables separated along the float will distribute debris zones under the float in the same water depth of 7' but no real improvement in waste dispersion is expected.

All options could include removing the rock outcroping at the entrance to the basin. The rock excavation volume is approximately 300 cubic yards, a very small volume relative to the expense and time of permiting and mobilizing men and equipment to accomplish the task of drilling, underwater blasting, dredging and disposal. While removal of the rock would open the basin approach, the channel width currently at approximately 100' is sufficient for two way traffic for small craft using the ramps when directional separation is observed. A channel marker on the rock would enhance channel definition at the narrowest section but signage at the information board at the top of the ramp make users aware of the hazaard and basin limits.

Appendix F contains cost estimates for the floating Alternatives 4a, 4b, 4c and Option X ("X" for excavation)

Site 5, is the alternative that would move the cleaning activity to the upland area. The launch and retrieval preparation areas provide space to prepare the boat for launch or the boat trailer and vehicle for the highway and occurs near the top of the ramp. Introducing a cleaning station to the uplands requires separation further along the exit corridor after the retrieval lane and before the exit point. Assumed are two cleaning stations before the final exit lane and a bypass lane. This alternative inserts the fish cleaning activity into the exit flow after retrieval and trailering preparations but would displace the current congestion to the upland area, requiring the loss of car/trailer parking to provide room for structures, lanes and bypasses and offering no significant improvement to the experience at the Amalga site. The necessary water supply and disposal system is achievable, subject to obtaining appropriate permits; however it is clear the permitting and expense of the upland solution is multiple times higher than any waterborne solution.

FLOAT DESIGN

Multifunction floats require rational allocation of space and are a balancing exercise. No hard date exists on the optimum number of cleaning tables for this facility. One seems two few and general consensus suggests not more than four. Not less than two tables are recommended initially but more tables are easy additions. Too few tables will create a collection of boats waiting near the tables while other arrivals will migrate toward the ramps; too many stations will go underutilized but the lineal feet of moorage available will be put to use by arriving boats getting in line for retrieval. On departure, assuming no demand for cleaning, the entire float is available for boarding and clearing the ramp area for active launches.

Minimum float width is rationalized by assigning areas to activities expected at a fish cleaning float. The minimum float width was determined to be 16' for a remote, dedicated cleaning float. Appendix B contains the allocated space parameters for this float. At the center of the float are piling and cleaning tables including 30" clear space on three sides of the tables. On the perimeter of the tables and clear area are a 30" circulation width and a 12" cleat/tie down area at the float edge. Tables aligned either perpendicular or parallel with the floats long axis doesn't significantly change the overall float requirements. Tables can be paired sets of cleaning tables facing in opposite directions with fish waste deposited at the back of the table or standalone stations with the prescribed clearances. The table tops can be sloped toward the back splash to contain and control water and waste to be carried to the chute through the deck. Again, because no water source exists at the facility, no new water sources are proposed for this facility.

The proposed float construction for remote locations is a 20 x 28 Timber float with 18" freeboard. The 20' dimension would offer end space tie up for craft 19' and under, a majority of users according to previous studies. This would provide moorage for 4 or more boats and up to four cleaning tables if warranted. Flotation pontoons would be coated polystyrene billets, polyethylene tub pontoons or pipe sections depending on final design decisions. Recent study by PND indicates that there is a premium on poly tub pontoons. The major benefit of poly tubs that floats can be constructed with no wood members in the water; however, other designs can provide that feature. The most economical pontoon still appears to be coated polystyrene billets, customizable to provide almost any freeboard and reserve buoyancy required by the application.

Alternative floats sizes are suggested for extending the existing float system with the cleaning float at the end. Three sizes are considered, 20'x28' with two sectional floats, 16'x48' with one sectional float, or a single 12'x75'. Two or more sectional floats could be added to 4a and 4b and the single 12' wide float could be longer or shorter, if desired. The narrower float would provide more clearance to the basin limits and a smoother transition to the existing 8' wide boarding float. A 42" wide table centered on the 12' wide float offers 3'-3" common use space (cleaning and circulation) on each side of the tables plus 12" for tie up zone for cleats at the edge of the dock. Unless the cleaning activity has a big audience, the shared space is generally accepted on each end of the tables for cleaning and normal circulation.

Wood, steel and concrete are the principle base materials with wood often preferred for smaller floats. Though steel and concrete are sometimes used in larger structures and large scale marina developments, wood is often more competitive than concrete and smaller one off kinds of floats tend to be less expensive in wood. Concrete requires a high standard of quality control, is heavier and more costly to ship and the building blocks of assembly are equipment intensive but wood ships on a flat with timbers precut and predrilled and generally handled by hand labor with much smaller equipment requirements except for the launch and pile driving. Floats of 12'x48' or less can be sub-assembled and shipped as wide loads over the highway on flatbed trailers and barged to Juneau saving man-hours of onsite labor costs.

Wood is often preferred for its satisfactory performance, maintainability, and predictable life in most locations and generally less costly to construct. Wood floats in Southeast Alaska have a long history of satisfactory performance. The wood floats removed from Aurora Harbor this season were mid-1960's vintage construction with at least one re-deck in the 80's. A wood float is recommended as the most cost effective, simplest to maintain and consistent with other facilities in the Juneau Harbor System. The float would be fixed in place with two steel piling driven and or, if necessary placed in drilled pile sockets in sound rock.

Construction estimates for all waterborne alternatives are found in APPENDIX F, it is anticipated that without unusual permitting costs, the existing project agreement for this feasibility study, permits and design is sufficient to provide a bid package for the described project. .

Harold Moeser P.E.

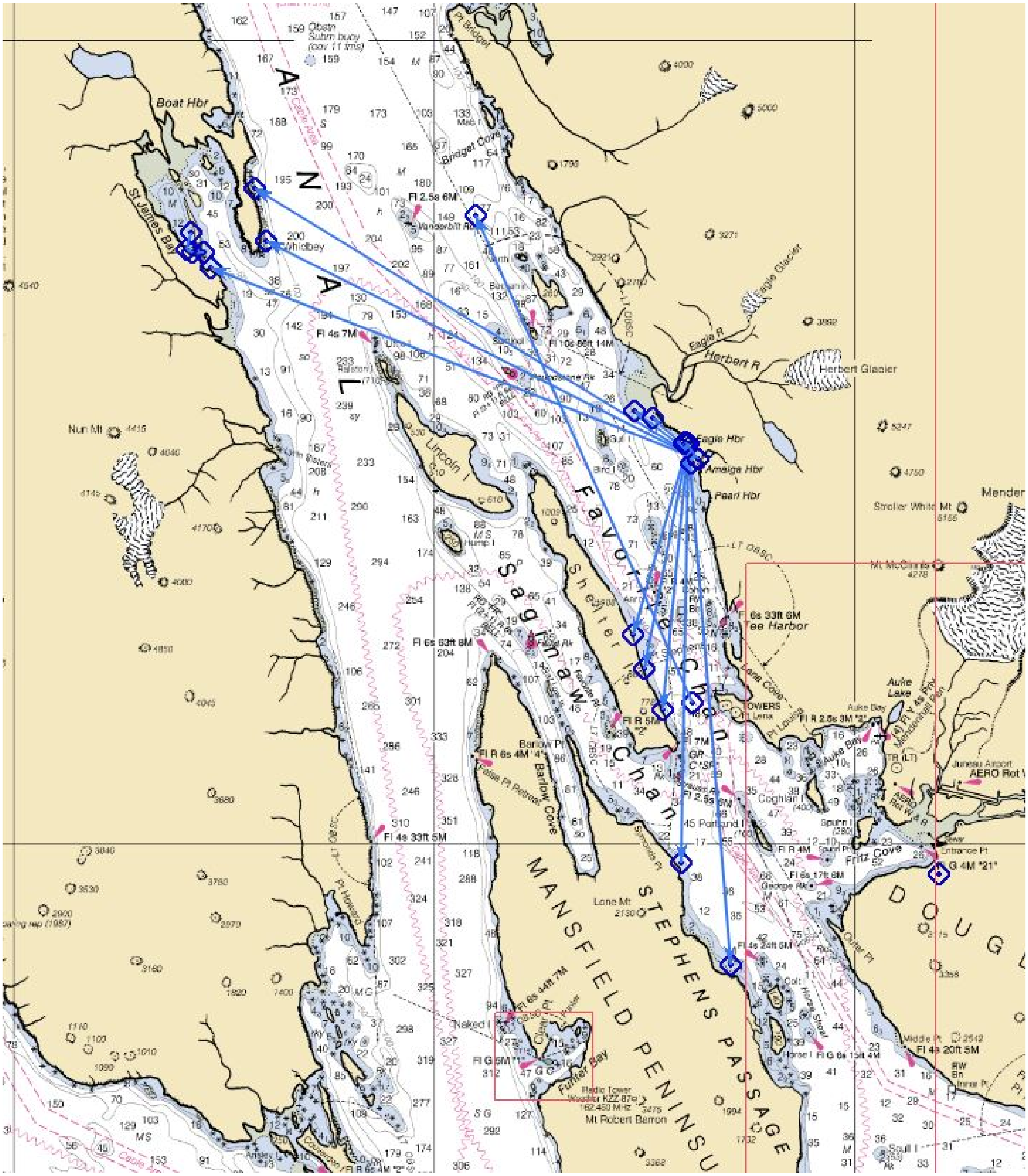
NOTES

FROM: *CBJ Launch Ramp User Survey and Demand Forecast, November 2010*

- Survey responses represented a good cross-section of launch ramp users. The majority were recreational power boaters, many owned second vessels such as skiffs, canoes, kayaks and jet skis. About half were owners of vessels under 19 feet, and 40 percent owned vessels 19 to 24 feet. Most respondents launch their vessel each time they go out (rather than keep it moored). With an average of 30 annual launches per respondent, these CBJ launch facility users were very familiar with CBJ launch ramps.
- It is likely that some portion of launches at other facilities (especially at Amalga Harbor) would have taken place at Statter Harbor if not for issues such as crowding and low tides. Nearly half of all Amalga Harbor launch ramp users reported that the primary reason they used that harbor was that it was less crowded.

APPENDIX A- WIND WAVE ANALYSIS

STEPHENS PASSAGE AND LYNN CANAL WIND VECTORS SITE 2 AND 3



STUDY LOCATION 1, 2, 3 EXTREME

BEGIN INPUT:		LOCATION 2	3	1
Recurrance Interval	years	50.0	50.0	50.0
Fetch	naut. miles	2.8	5.7	0.1
Wind Speed (1-min average)	kn	65.0	65.0	65.0
Wind Direction (true north)	deg.	336.0	150.0	0
Height of Anemometer	ft	33.0	33.0	33.0
Location of Anemometer:				
Ship				
Land (windward shore)		X	X	X
Land (inland)				
Temp. of air - Temp. of Water	Deg C	0.0	0.0	0.0
END INPUT:				
Min. duration for fetch limited wave	min.	47.0	76.3	4.9
wind Speed (1-hr. average)	kn	52.3	52.3	52.3
Adjusted fetch limited wind speed	kn	52.4	51.4	57.0
Adjusted fetch limited wind stress	kn	76.8	75.0	85.1
ADJUSTMENTS				
Fetch	kn	1.00	1.00	1.00
Height of Anemometer	ft	1.00	1.00	1.00
Location of Anemometer:		1.00	1.00	1.00
Temp. of air - Temp. of Water	Deg C	1.00	1.00	1.00
Min. duration for fetch limited wave	min.	1.003	0.984	1.091

This program is intended as a guide for Coastal Engineering design and planning, and is not intended to replace the knowledge of a qualified Coastal Engineer on a particular project. The State of Alaska and Department of Transportation and Public Facilities assume no Liability for interpretations or implementations made by users of this program.

Any redistribution of this program must be approved by Harvey Smith, Department of Transportation and Public Facilities (907) 269-6230

Fetch is averaged by 90 degree Fcos(i) calculation for island and peninsula intrusion into open fetch wind path.

radial 5

DEGREE	336 FETCH	336 COS(i)	336 FCOS(i)	150 FETCH	150 FCOS(i)	INSIDE FETCH	INSIDE FCOS(i)
45		0.70711		5	3.5		
40		0.76604		5.7	4.4		
35		0.81915		6.7	5.5		
30		0.86602		10.0	8.7		
25		0.90631		13.1	11.9		
20		0.93969		0.5	0.4		
15		0.96593					
10		0.98481					
5		0.99619					
0		1					
0		1					
0		1					
0		1					
0		1					
		1					
		1.00000				0.1	0.1
331		0.87463					
326		0.82905					
321	0.5	0.77715	0.4				
316	0.53	0.71935	0.4				
311	1.5	0.65607	1.0				
306	2.0	0.5878	1.2				
301	12.9	0.51505	6.6				
296	12.0	0.43838	5.3				
291	13.0	0.35838	4.7				
286	0.0	0.27565					
281	0.0	0.19082					
276	0.0	0.10454					
	0.0	1					
	0.0	1					
	0.0	1					
	EFF. FETCH=	2.8			5.7		0.1

Use sustained winds

SUMMARY

STUDY LOCATION 1, 2, 3 EXTREME

MAXIMUM FETCH LIMITED CONDITION	UNITS			
Return Interval	years	50.0	50.0	50.0
Adjusted Wind Stress	kn	76.8	75.0	85.1
Fetch	naut. miles	2.0	2.0	2.0
Deepwater Wave Height (Hmo)	ft	4.8	6.6	1.0
Wave Period	sec.	3.7	4.6	1.3
Deepwater Wave Length	ft	69.0	109.5	8.0
Min. duration for fetch limited wave	min.	47.0	76.3	4.9
Min. duration for fetch limited wave	hrs.	0.8	1.3	0.1
Design Wave Heights				
H 1/3	ft	4.8	6.6	1.0
H10	ft	6.0	8.4	1.3
H1	ft	8.9	12.4	1.9

STUDY LOCATION 1, 2, 3 SUMMER ONLY

BEGIN INPUT:		LOCATION 2	3	1
Recurrance Interval	years	50.0	50.0	50.0
Fetch	naut. miles	2.8	5.7	0.5
Wind Speed (1-min average)	kn	25.0	25.0	25.0
Wind Direction (true north)	deg.	336.0	150.0	360
Height of Anemometer	ft	33.0	33.0	33.0
Location of Anemometer:				
Ship				
Land (windward shore)		X	X	X
Land (inland)				
Temp. of air - Temp. of Water	Deg C	0.0	0.0	0.0
END INPUT:				
Min. duration for fetch limited wave	min.	69.8	114.6	22.0
wind Speed (1-hr. average)	kn	20.1	20.1	20.1
Adjusted fetch limited wind speed	kn	19.9	19.2	20.5
Adjusted fetch limited wind stress	kn	23.3	22.4	24.2
ADJUSTMENTS				
Fetch	kn	1.00	1.00	1.00
Height of Anemometer	ft	1.00	1.00	1.00
Location of Anemometer:		1.00	1.00	1.00
Temp. of air - Temp. of Water	Deg C	1.00	1.00	1.00
Min. duration for fetch limited wave	min.	0.990	0.958	1.020

This program is intended as a guide for Coastal Engineering design and planning, and is not intended to replace the knowledge of a qualified Coastal Engineer on a particular project. The State of Alaska and Department of Transportation and Public Facilities assume no Liability for interpretations or implementations made by users of this program.

Any redistribution of this program must be approved by Harvey Smith, [illegible]

Fetch is averaged by 90 degree Fcos(i) calculation for island and peninsula intrusion into open fetch wind path.

radial 5

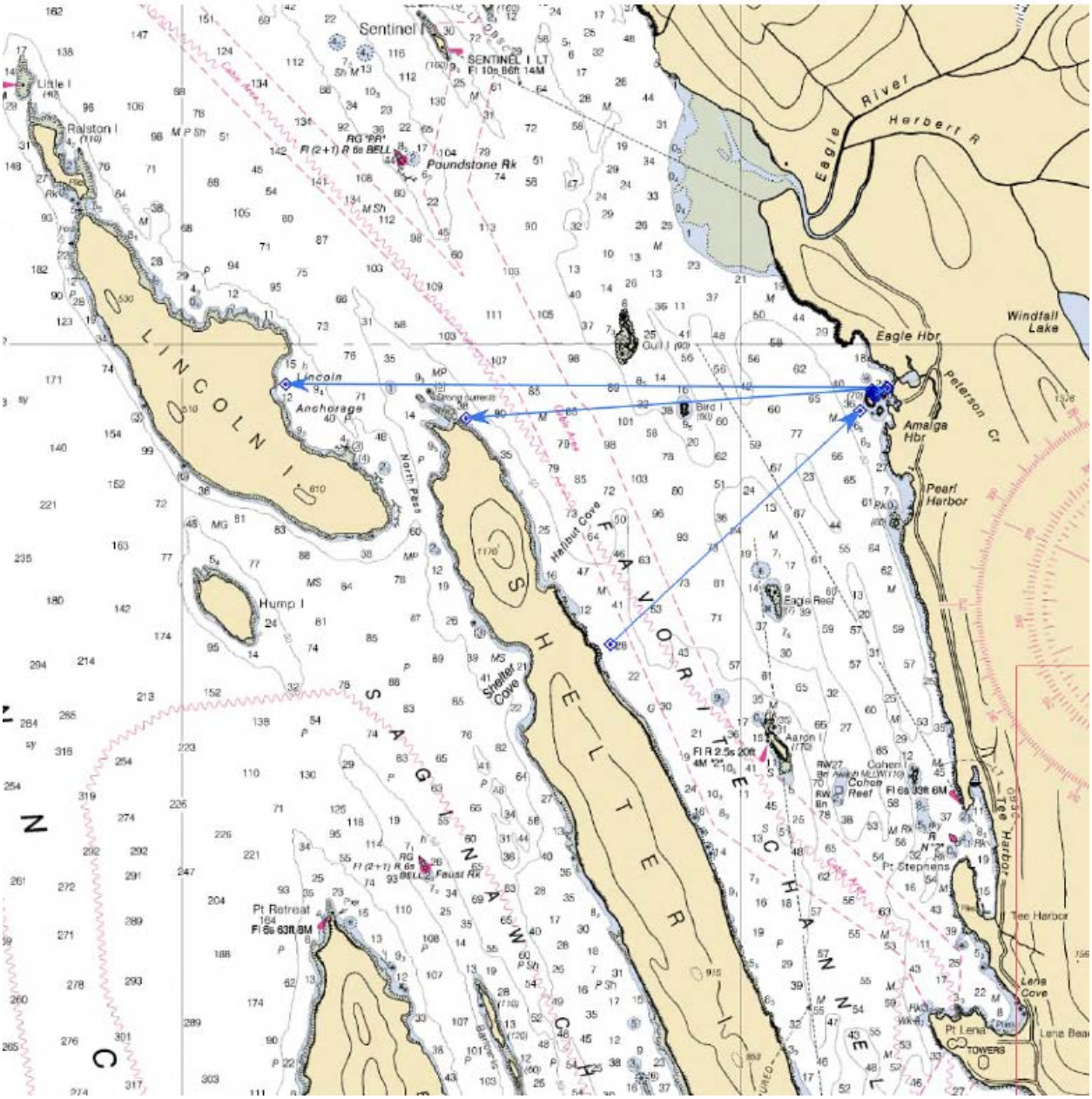
DEGREE	336 FETCH	336 COS(i)	336 FCOS(i)	150 FETCH	150 FCOS(i)	INSIDE FETCH	INSIDE FCOS(i)
45		0.70711		5	3.5		
40		0.76604		5.7	4.4		
35		0.81915		6.7	5.5		
30		0.86602		10.0	8.7		
25		0.90631		13.1	11.9		
20		0.93969		0.5	0.5		
15		0.96593					
10		0.98481					
5		0.99619					
0		1					
15		0.96593					
12		0.97815					
9		0.98769					
6		0.99452					
3		0.99863					
0		1.00000				0.5	0.5
331		0.87463					
326		0.82905					
321	0.5	0.77715	0.4				
316	0.5	0.71935	0.4				
311	1.5	0.65607	1.0				
306	2.0	0.5878	1.2				
301	12.9	0.51505	6.6				
296	12.0	0.43838	5.3				
291	13.0	0.35838	4.7				
286	0.0	0.27565					
281	0.0	0.19082					
276	0.0	0.10454					
	0.0	1					
	0.0	1					
	0.0	1					
	EFF. FETCH=		2.8		5.7		0.5

Use sustained winds

SUMMARY

STUDY LOCATION 1, 2, 3 SUMMER ONLY

MAXIMUM FETCH LIMITED CONDITION	UNITS			
Return Interval	years	50.0	50.0	50.0
Adjusted Wind Stress	kn	23.3	22.4	24.2
Fetch	naut. miles	2.0	2.0	2.0
Deepwater Wave Height (Hmo)	ft	1.4	2.0	0.6
Wave Period	sec.	2.5	3.1	1.4
Deepwater Wave Length	ft	31.2	49.1	10.2
Min. duration for fetch limited wave	min.	69.8	114.6	22.0
Min. duration for fetch limited wave	hrs.	1.2	1.9	0.4
Design Wave Heights				
H 1/3	ft	1.4	2.0	0.6
H10	ft	1.8	2.5	0.8
H1	ft	2.7	3.7	1.2



WIND VECTORS SOUTHWEST 225 FOR SITE 2

WAVAUTO

STUDY LOCATION 2 & 3 SUMMER SW ONLY ONLY

BEGIN INPUT:		LOCATION 3	2	1
Recurrance Interval	years	50.0	50.0	50.0
Fetch	naut. miles	3.9	1.3	0.1
Wind Speed (1-min average)	kn	20.0	20.0	20.0
Wind Direction (true north)	deg.	225.0	225.0	225
Height of Anemometer	ft	33.0	33.0	33.0
Location of Anemometer:				
Ship				
Land (windward shore)		X	X	X
Land (inland)				
Temp. of air - Temp. of Water	Deg C	0.0	0.0	0.0
END INPUT:				
Min. duration for fetch limited wave	min.	96.5	44.8	8.1
wind Speed (1-hr. average)	kn	16.1	16.1	16.1
Adjusted fetch limited wind speed	kn	15.6	16.1	17.1
Adjusted fetch limited wind stress	kn	17.3	18.0	19.3
ADJUSTMENTS				
Fetch	kn	1.00	1.00	1.00
Height of Anemometer	ft	1.00	1.00	1.00
Location of Anemometer:		1.00	1.00	1.00
Temp. of air - Temp. of Water	Deg C	1.00	1.00	1.00
Min. duration for fetch limited wave	min.	0.969	1.004	1.061

This program is intended as a guide for Coastal Engineering design and planning, and is not intended to replace the knowledge of a qualified Coastal Engineer on a particular project. The State of Alaska and Department of Transportation and Public Facilities assume no Liability for interpretations or implementations made by users of this program.

Any redistribution of this program must be approved by Harvey Smith,

Fetch is averaged by 90 degree Fcos(i) calculation for island and peninsula intrusion into open fetch wind path.

radial 5

DEGREE	FETCH	225 COS(i)	FCOS(i)	225 FETCH	FCOS(i)	INSIDE FETCH	FCOS(i)
		1					
		1					
		1					
		1					
		1					
		1					
45	5.3	0.70711	3.7	5.7	4.0		
40	5.4	0.76604	4.1	3.9	3.0		
35	3.8	0.81915	3.1	0.2	0.1		
30	3.5	0.86602	3.0	0.2	0.1		
25	3.4	0.90631	3.1	0.2	0.1		
20	3.5	0.93969	3.3	0.1	0.1		
15	3.5	0.96593	3.4				
10	3.6	0.98481	3.5				
5	3.6	0.99619	3.6				
0	3.7	1	3.7				0.1
5	3.7	0.99619	3.7				
10	3.9	0.98481	3.8				
15	4.0	0.96593	3.9				
20	4.2	0.93969	3.9				
25	4.5	0.90631	4.1				
30	5.0	0.86602	4.3				
35	3.8	0.81915	3.1				
40	6.6	0.76604	5.1				
45	10.5	0.70711	7.4				
		1					
		1					
		1					
		1					
		1					
		1					
		EFF. FETCH=	3.9		1.3		0.1

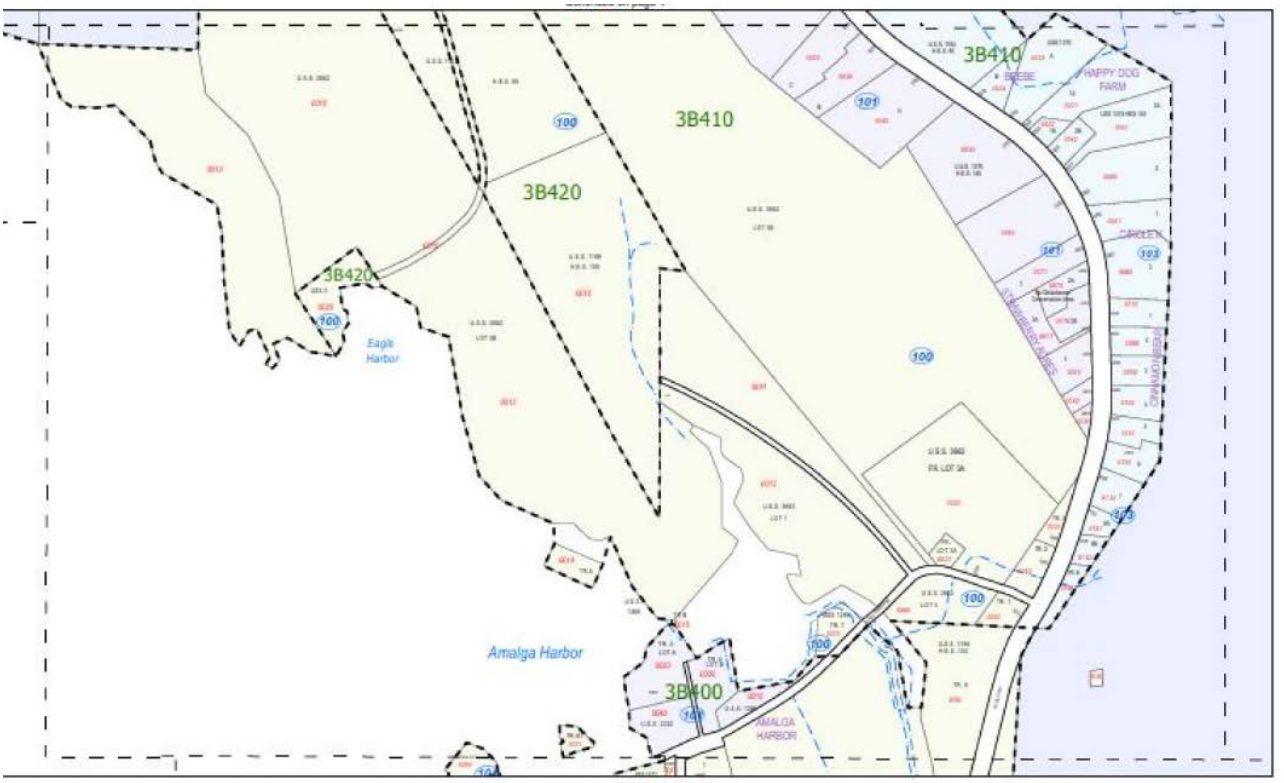
Use sustained winds

SUMMARY

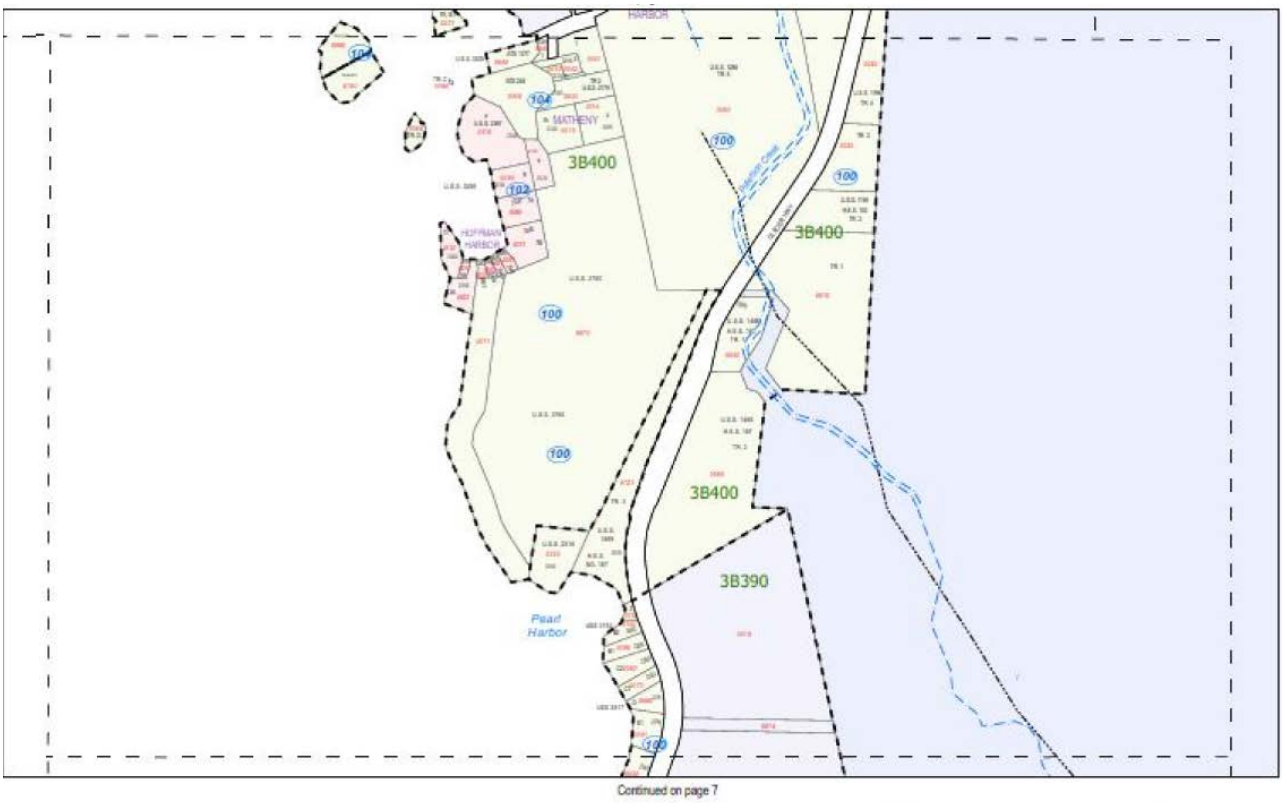
STUDY LOCATION 2 & 3 SUMMER SW ONLY ONLY

MAXIMUM FETCH LIMITED CONDITION	UNITS			
Return Interval	years	50.0	50.0	50.0
Adjusted Wind Stress	kn	17.3	18.0	19.3
Fetch	naut. miles	3.9	1.3	0.1
Deepwater Wave Height (Hmo)	ft	1.3	0.7	0.2
Wave Period	sec.	2.5	1.7	0.8
Deepwater Wave Length	ft	31.9	15.5	3.0
Min. duration for fetch limited wave	min.	96.5	44.8	8.1
Min. duration for fetch limited wave	hrs.	1.6	0.7	0.1
Design Wave Heights				
H 1/3	ft	1.3	0.7	0.2
H10	ft	1.6	1.0	0.3
H1	ft	2.1	1.3	0.4

APPENDIX B - ADJACENT PROPERTY OWNERS



Continued on page 6



Continued on page 7

© 2012 - Copyright City & Borough of Juneau, Alaska - all rights reserved

0 500 1,000 2,000 Feet

Property Information: 155 (Address Number) 7 (Lot) B (Block) EAST VALLEY (Subdivision)

Assessor Tax Code: 6D090 (Parcel Code Prefix) 102 (Block Number) 0030 (Lot Number)

N

Parcel	Legal Description	Street and House Number	Current Owner
3B4201000010	USS 1163	24600 AMALGA HARBOR RD	CITY AND BOROUGH OF JUNEAU & LANDS AND RESOURCES
3B4201000020	USS 0	0	CITY AND BOROUGH OF JUNEAU & LANDS AND RESOURCES

Parcel	Legal Description	Street and House Number	Current Owner
3B4001020011	HUFFMAN HARBOR LT 1A	25390 AMALGA HARBOR RD	FARIS TAYLOR LIVING TRUST & GORDON TAYLOR; TAMRA FARIS TRUSTEES
3B4001020021	HUFFMAN HARBOR LT 2A	25380 AMALGA HARBOR RD	JOHN R TABER & SHARON A TABER
3B4001020031	HUFFMAN HARBOR LT 3A	25342 AMALGA HARBOR RD	GEORGE HAROLD HOUSTON & HEATHER LOUISE DRAPEAUX; JAY STUART HOUSTON
3B4001020041	HUFFMAN HARBOR LT 4A	25356 AMALGA HARBOR RD	FRANK M HOMAN & DONNA JANE HOMAN
3B4001020051	HUFFMAN HARBOR LT 5A	25360 AMALGA HARBOR RD	FRANK M HOMAN & DONNA JANE HOMAN
3B4001020061	HUFFMAN HARBOR LT 6A	25344 AMALGA HARBOR RD	NICHOLE ANN TERWILLIGER
3B4001020071	HUFFMAN HARBOR LT 7B	25280 AMALGA HARBOR RD	HUIZER BYPASS TRUST & EDGAR J HUIZER TRUSTEE
3B4001020080	USS 3288 LT 7A	25240 AMALGA HARBOR RD	LYNN SCHOOLER
3B4001020090	USS 3288 LT 8	25200 AMALGA HARBOR RD	JAMES A REHFELDT & KATHY A STEPIEN
3B4001020100	USS 3288 LT 9	25120 AMALGA HARBOR RD	DEBBIE F DRISCOLL & EDMUND R. DRISCOLL
3B4001020110	USS 2387 LT F TR B	25148 AMALGA HARBOR RD	KRISTINE RITTER & DOUG LARSEN; ELIZABETH M HIXSON
3B4001020120	USS 3288 LT 11	25400 AMALGA HARBOR RD	ROBERT W FRAMPTON & DENISE J CHASE

Parcel	Legal Description	Street and House Number	Current Owner
3B4001040014	MATHENY LT 4	25095 AMALGA HARBOR RD	ROBERT B MURPHY & CATHERINE M SULLIVAN
3B4001040015	MATHENY LT 1A	25100 AMALGA HARBOR RD	ROBERT B MURPHY & CATHERINE M SULLIVAN
3B4001040020	USS 2179 TR 2	25025 AMALGA HARBOR RD	RUSSELL L KEGLER & TANA K KEGLER
3B4001040041	AMALGA HARBOR LT 1	24899 AMALGA HARBOR RD	CITY AND BOROUGH OF JUNEAU & LANDS AND RESOURCES
3B4001040042	AMALGA HARBOR LT 2	24995 AMALGA HARBOR RD	PAMELA J KEGLER
3B4001040043	AMALGA HARBOR LT 3	25005 AMALGA HARBOR RD	RUSSELL L KEGLER & TANA K KEGLER
3B4001040044	ATS 1377	0 AMALGA HARBOR RD	CITY AND BOROUGH OF JUNEAU & LANDS AND RESOURCES
3B4001040050	ATS 248	0 AMALGA HARBOR RD	STATE OF ALASKA & DEPARTMENT OF NATURAL RESOURCES
3B4001040060	USS 3325 TR C	0 AMALGA HARBOR RD	CITY AND BOROUGH OF JUNEAU & LANDS AND RESOURCES
3B4001040071	ASLS 2008-44 TR B1	0	RALPH KIMLINGER & ROSEMARY KIMLINGER
3B4001040080	USS 3325 TR D	0	CHERIE B SHELLEY & MORRIS LIVING TRUST
3B4001040090	USS 3325 TR E LT 1	0	WALLEN RICHARD THOR REVOCABLE TRUST & RICHARD THOR WALLEN TRUSTEE
3B4001040100	USS 3325 TR E LT 2	0	WALLEN RICHARD THOR REVOCABLE TRUST & RICHARD THOR WALLEN TRUSTEE

APPENDIX C - FLOAT SIZE ESTIMATE

AREA DESCRIPTION	W	L	AREA (SF)
FLOAT AND TABLE LONG AXIS TABLES ALIGNED	1.75	4	
TABLE USE AREA	2.5	2.5	
INSIDE END USE AREA		2.5	
CIRCULATION PERIMETER	2.5	2.5	
CLEAT PERIMETER	1	1	
PILE HOOP		2	
min half W or L	7.75	14.5	
	15.5	29	449.5
FLOAT LONG AXIS TABLES PERPENDICULAR	2	3.5	
TABLE USE AREA	2.5	2.5	
INSIDE USE AREA		2.5	
CIRCULATION PERIMETER	2.5	2.5	
CLEAT PERIMETER	1	1	
PILE HOOP		2	
min half W or L	8	14	
MIN WIDTH	16	28	448
MIN WIDTH WITH SHARED CIRCULATION SPACE	11		

APPENDIX D - CORPS OF ENGINEER'S PERMIT FORM

U.S. ARMY CORPS OF ENGINEERS **APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT** 33 CFR 325. The proponent agency is CECW-CO-R.	*Form Approved -* *OMB No. 0710-0003* *Expires: 31-AUGUST-2013*

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Middle - Last - Company - E-mail Address -	First - Middle - Last - Company - E-mail Address -
6. APPLICANT'S ADDRESS: Address- City - State - Zip - Country -	9. AGENT'S ADDRESS: Address- City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax	10. AGENTS PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____
SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)	
13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable) Address City - State- Zip-
15. LOCATION OF PROJECT Latitude: -N Longitude: -W	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID Municipality Section - Township - Range -	

ENG FORM 4345, JUL 2013 PREVIOUS EDITIONS ARE OBSOLETE. Page 1 of 3

17. DIRECTIONS TO THE SITE:

18. Nature of Activity (Description of project, include all features)

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards:	Amount in Cubic Yards:	Amount in Cubic Yards:

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres:

or

Linear Feet:

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? ☐ Yes ☐ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address-

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

APPENDIX E – EMAIL COMMENTS RECEIVED

- Extending float may mean more congestion not less
- Make remote float as large as practicable within budget
- Changes to uplands are highly improbable with past experiences in the construction of the current facility

---

- Add angled float section
- Make remote float large enough for 4 20' vessels. 20'x28' is a minimum size.
- Site 1 is best for remote float

- ADF&G staff concerned about loss of sample data from sport catch with a remote float
- Extend float, angle it or remove rock outcropping
- May need an Environmental Assessment for new work. Float extension will likely require further environmental documentation depending on scope of work

COMMENTS FROM 6/22/2015 PUBLIC MEETING

- F&G wants a lager float: 20'x28'.
- Float to be pile secured.
- Smith Island resident has mooring buoy that might be too close to location #1.
- Concerns about cleaning your fish off shore and breaking state laws.
- Concerns about creel survey data if people are cleaning away from the ramp.
- Need hard data on the laws about cleaning fish away off shore.
- A suggestion to change rules about use of table at end of boarding float. Add a sign that explains how to not be a nuisance so people can self-police. "Drop off cooler and come back after you've pulled out your boat to clean your fish".
- A suggestion to include a code of conduct pamphlet with yearly launch ramp permit to increase user's awareness of proper ramp etiquette.
- F&G said we'd need to do an EA study if we build a new facility.
- Adding section to boarding float may be easier permit wise.
- F&G would really like to make the basin larger and remove rock knob.
- There may be delicate sea cucumbers living around location #1.

APPENDIX F - COST ESTIMATES

DESCRIPTION SITE 1	UNIT	QUANTITY	UNIT PRICE	EXTENSION
MOBILIZATION	LS	1	$ 30,000	$ 30,000
FLOAT 20X28	SF	560	$ 100	$ 56,000
FLOAT 8X41	SF	0	$ 110	$ -
PILING 2@62'	LF	124	$ 60	$ 7,440
DRILLING	EA	2	$ 25,000	$ 50,000
CONSTINGENCY	LS	25%		$ 35,860
				$ 179,300
ALTERNATVIE 4a				
MOBILIZATION	LS	1	$ 30,000	$ 30,000
FLOAT 20X28	SF	560	$ 100	$ 56,000
FLOAT 8X41	SF	328	$ 110	$ 36,080
PILING 3@62'	LF	186	$ 60.00	$ 11,160
DRILLING	EA	3	$ 25,000.00	$ 75,000
CONSTINGENCY	LS	15%		$ 31,236
				$ 239,476
ALTERNATIVE 4b				
MOBILIZATION	LS	1	$ 30,000	$ 30,000
FLOAT 12X48	SF	576	$ 100	$ 57,600
FLOAT 8X20.5	SF	164	$ 110	$ 18,040
PILING 2@62'	LF	124	$ 60.00	$ 7,440
DRILLING	EA	2	$ 25,000.00	$ 50,000
CONSTINGENCY	LS	15%		$ 24,462
				$ 187,542
ALTERNATIVE 4c				
MOBILIZATION	LS	1	$ 30,000	$ 30,000
FLOAT 12X75	SF	816	$ 100	$ 81,600
FLOAT 8X20.5	SF	0	$ 110	$ -
PILING 2@65'	LF	130	$ 60.00	$ 7,800
DRILLING	EA	2	$ 25,000.00	$ 50,000
CONSTINGENCY	LS	15%		$ 25,410
				$ 194,810
ALTERNATIVE 4d				
MOBILIZATION	LS	1	30000	$ 30,000
CONSTRUCT LAUNCH RAMP	LS	1	350000	$ 350,000
FLOAT 8X266	SF	2128	100	$ 212,800
PILING	LF	280	60	$ 16,800
DRILLING/DRIVING	EA	6	25000	$ 150,000
CONTINGENCY	LS	35%		$ 132,860
				$ 892,460
OPTIONS - X				
MOBILIZATION	LS	1	45000	$ 45,000.00
EXCAVATION	CY	300	500	$ 150,000.00
DISPOSAL	CY	300	100	$ 30,000.00
CONTINGENCY	LS	35%		$ 78,750.00
				$ 303,750.00