Gravina Access Project
Final Environmental Impact Statement
APPENDICES







Agreement 36893013
DOT&PF Project 67698
Federal Project ACHP-0922(5)

Prepared for:

Federal Highway Administration
P.O. Box 21648
Juneau, AK 99802

Prepared by:

State of Alaska
Department of Transportation
and Public Facilities
6860 Glacier Highway
Juneau, AK 99801

July 30, 2004

Appendices included in the Final EIS

- L Department of the Army, Corps of Engineers *Public Notice of Application for Permit* for the Gravina Access Project
  U.S. Army COE Section 10/404 Permit Application
  404 (b)(1) Evaluation
  DOT&PF and FHWA Wetlands Finding
- N Marine Environment Impact Assessment Technical Memorandum
- O Essential Fish Habitat Assessment
- R Public and Agency Comment
  Notices of Availability of DEIS and Notices of Public Hearing
  Agency Comment on DEIS
  Section 7 Correspondence
  Section 106 Correspondence
  EFH Correspondence
  Public Comment on DEIS
    9-17-03 Public Hearing Transcript
    9-18-03 Public Hearing Transcript
  DOT&PF Responses to Comments
  Other Agency Correspondence
- S Gravina Island Plan
- T Biological Assessment for Informal Consultation Conducted Pursuant to Section 7 of the Endangered Species Act

Appendices from the Draft EIS that have been subsequently revised are appended to this Final EIS. Appendix R includes public and agency comment on the DEIS and other recent correspondence relating to the project. All other appendices (i.e., those that remain unchanged from what was presented in the Draft EIS) have not been reprinted, but all of the appendices can be viewed on the CD version of the EIS and on the project website at www.gravina-access.com.

APPENDIX L

Department of the Army, Corps of Engineers
Public Notice of Application for Permit for the Gravina Access Project
U.S. Army COE Section 10/404 Permit Application
404 (b)(1) Evaluation
DOT&PF and FHWA Wetlands Finding

STATE OF ALASKA

TONY KNOWLES, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

RECEIVED
JUL 21 2004

July 19, 2004

Lloyd Fanter
U.S. Army Corps of Engineers
Regulatory Branch
Alaska District
PO Box 6898
Elmendorf AFB, AK 99506-6898

Re: Gravina Access Project
DOT&PF Project 67698 Federal Project ACHP-0922(5)

Subject: Compensatory Mitigation - Originally transmitted via fax July 16, 2004

Dear Lloyd:

This letter responds to your concerns expressed on the phone and in an email on July 15, 2004. The mitigation proposal submitted for the Gravina Access Project (in a letter dated July 7, 2004) is a compromise between two interpretations of what could be required to compensate for the unavoidable loss of relatively low value wetlands (forested, shrub/scrub and muskegs) in an area with an overwhelming abundance of these types of wetlands.

At one end of the spectrum is Corps guidance (Public Notice 03-07) and draft DOT&PF Compensatory Mitigation Guidance (see below) that would not require any mitigation for wetlands where the overwhelming majority of land cover type is wetlands. Under this scenario, the abundant, relatively low value forested, shrub / scrub, and muskeg wetlands would not be compensated for and the compensatory mitigation value proposed would be $50,000/acre for high value estuaries/water bodies and $20,000/acre for marine waters, resulting in total proposed dollar value of $9,000 for all impacts. This scenario was not recommended for use primarily because the DOT&PF Compensatory Mitigation Policy is not final even though Corps guidance would allow it.

At the other end of the spectrum is the Anchorage Bowl Great Land Trust model. The Department has determined that the use of Great Land Trust's values for wetlands mitigation in Southeast Alaska is inappropriate. The Anchorage Bowl has limited wetland areas where as Southeast Alaska has an overwhelming majority of land cover consisting of forested, shrub/scrub and muskeg wetland types. Under this scenario, forested wetlands, shrub/scrub wetland, and muskegs would be compensated for at $6,900/acre, high value estuaries/water bodies would be at a rate of $50,000/acre, and marine waters at a rate of $20,000/acre, resulting in a total proposed dollar value of $674,850. This scenario was not

recommended for use primarily because the Great Land Trust model for Anchorage has not been calibrated for use in Southeast Alaska.

Your email included six numbered points, each of which is addressed below. I look forward to talking with you further by phone or in person to resolve these quickly so we can move forward with a joint Corps public notice and final environmental impact statement (EIS).

1. Calculation of dollar value for wetland types and wetland/habitat value.
The calculation of dollar value is based most immediately on past history, but the basis for this value is ultimately linked to actual costs to restore and preserve wetlands in Anchorage. These Anchorage costs have been adjusted somewhat to account for the prevalence of wetlands in the Ketchikan area. See the description following #6, below, regarding the historical basis of compensatory mitigation in the area.

2. Deduction of the Lewis Reef Road from the mitigation plan without inclusion of previous agreed upon compensatory mitigation.
This issue may reflect a misunderstanding of intent. The previously agreed upon mitigation stipulated in the Borough's permit has been completed. The confirmation of that fact should be on record with the Corps. There is no intent to diminish in any way the compensatory mitigation for the Lewis Reef Road Project. The portion of the Gravina Access Project that coincides with the Lewis Reef Road will be a joint project of the borough and DOT&PF, with DOT&PF constructing the borough's portion using Gravina Access Project funds. The borough's contribution is the Assembly action to preserve lands elsewhere in the borough that serve as compensatory mitigation. You will find a copy of the borough's recorded action attached.

3. Compensation for impacts resulting from temporary fills – site rehabilitation and recovery time.
The Department's proposed compensatory mitigation is intended to cover all required compensatory mitigation. In addition to this compensation, mitigation for temporary fill and recovery time is included under the long list of minimization measures attached to the July 7 letter, including site rehabilitation, use of geotextiles, use of and removal of temporary fills, and so on. We do not believe there is any need to further compensate for these impacts.

4. Previous dollar value for wetland type previously utilized...not precedent setting.
The original basis for the use of these numbers is what is important, and they are based on the functions and values of the wetlands in question. See #1, above. We can all agree, I think, that use of past numbers in and of themselves is not a sufficient basis and should not, by themselves, set precedent for future projects. That would include the dollar amount proposed for this project not setting precedent for future Ketchikan or Southeast Alaska projects.

5. A multiplier should also be considered in establishing the total dollar value to be utilized in proposing an in-lieu fee proposal...
The multiplier would be most applicable for actual projects where the functions and values of the wetlands lost were higher or lower than the wetlands to be restored. In this case, the monetary value of the aquatic resources affected are compensated for on a 1:1 basis; that is, the compensation for the abundant wetlands with relatively low ecological and social functions and values (e.g. forested, shrub/scrub, and muskeg) is at a relatively low rate ($2,800/acre), the compensatory mitigation for marine waters is at an intermediate rate ($20,000/acre), and the rate for high value ponds is highest ($50,000/acre). Therefore, no use of ratios other than 1:1 appears warranted.

6. FEIS and ROD Schedule

We would like to discuss your schedule for your public notice. In conjunction with the Federal Highway Administration, we hope to have the FEIS and COE public notice out for public and agency review this month. The anticipated *Federal Register* notice date is Friday August 6, which would start the official 30-day clock for both the FEIS and the 404 permit public notice. We would like to complete the process and have the ROD signed by mid-September.

Policies and Past History Considered for Gravina Compensatory Mitigation.

The proposal presented to you is a compromise between the two extreme interpretations of guidance and represents a reasonable compensation for all impacts associated with the unavoidable loss of wetlands for this project. We are confident that upon review of the facts and justification behind DOT&PF's compensatory mitigation proposal presented herein, that you will concur this is a reasonable compromise.

There is no justification for delay in issuing the public notice as there is ample time built into the process to work out any additional specific details necessary prior to issuance of the record of decision (ROD).

U.S. Army Corps, Alaska District Guidelines. Corps guidance is given specific to the unique situation that faces project development in Alaska. Compensatory mitigation is frequently not practicable where wetlands are the overwhelming majority of land cover type, and there is a lack of suitable sites for creation, enhancement, or restoration (Special Public Notice 03-07 Alaska District Compensatory Mitigation Guidelines, Dated December 15, 2004 [*sic*]). Virtually all of the land suitable for road development across Pennock and Gravina Islands are likely jurisdictional wetlands.

Clean Water Act Guidelines. Federal regulations and guidelines associated with Section 404 of the Clean Water Act require that project proponents eliminate or reduce adverse impacts on wetlands and waters by taking certain specific steps during project planning. The first step is to identify and design project alternatives that avoid adverse impacts to these areas. Second, projects must incorporate measures to minimize adverse impacts when they are deemed unavoidable. Third, it is recommended that sites be restored if they must be temporarily adversely affected by the project. Last, projects must compensate for unavoidable adverse impacts through preservation, restoration, or creation of wetlands. Together, these steps mitigate (i.e., lessen) the overall adverse effects of a project. This process was followed for the evaluation and route analysis for Gravina Access road locations.

Draft Southeast Mitigation Policy. DOT&PF is working on a mitigation policy for Southeast Alaska, recognizing the overwhelming abundance of wetlands located in the low angle or developable lands in the region. Currently this policy is available in only in draft form as follows:

> **DOT&PF Wetland Mitigation Policy Guidance**
>
> The department's mission is to improve the quality of life for Alaskans by cost effectively providing, operating, and maintaining safe, environmentally sound, and reliable transportation systems and public facilities. This mission can often be at odds when transportation system improvements have unavoidable adverse environmental impacts on Waters of the U.S., including wetlands. To meet our responsibilities as "Good Environmental Stewards," we will mitigate to the extent practicable for unavoidable adverse impacts to wetlands.

The Department will use the Clean Water Act, Section 404(b)(1) mitigation hierarchy of avoid, minimize, and compensate. We will base any mitigation, including avoidance, on the value of the wetland affected and the cost of the mitigation. Wetlands provide numerous ecological functions (e.g. fish and wildlife habitat, ground water discharge/recharge, flood water storage, open space, passive recreation, etc). Generally the department will not provide compensatory mitigation in areas of wetland abundance (i.e., within a region or watershed) unless the impact affects a Water of the U.S., or wetlands that provide habitat for commercial, sport, or subsistence fish, wildlife, or waterfowl species.

In determining if mitigation is appropriate, the department will follow the guidance memorandum issued by the Environmental Protection Agency and the Department of the Army January 11, 1992 (e.g. "Clarification of the Clean Water Act Section 404 Memorandum of Agreement on Mitigation" from LaJuana S. Wilcher and Nancy P. Dorn).

We will evaluate wetland functions and values using the best available model for the area or project (e.g. HGM, Anchorage Credit/Debit Model, SE Alaska Freshwater Wetland Assessment Methodology, best professional judgment, etc.). We will document the functions and values along with a recommendation for the need for mitigation in a "Wetland Finding".

CE Projects

Avoidance: We will evaluate design options that avoid wetland impacts. We will only consider avoidance practicable when it meets the project purpose and is cost effective.

Minimization: We will evaluate alternatives, alignment modifications, and design options that minimize the impact of the proposed action. We will consider minimization to be practicable when: 1) it meets the project purpose and 2) the avoidance option doesn't create a chronic maintenance problem (e.g. steeper slopes that erode). The evaluation must consider flexible design standards.

Minimization options can include enhancement of material sites and waste areas and reclamation of abandoned fills, timing construction to avoid sensitive life stages of fish, wildlife, and waterfowl, and use of appropriate Best Management Practices (BMPs). For federal aid highway projects, this criterion includes restoration of transportation-related impacts (e.g. replacement of fish barrier culverts or restoration of erosion and sediment problems from slope or trails).

Compensate: We will consider compensatory mitigation only for CE projects when there is a widening or realignment that affects a Water of the U.S. (i.e. intertidal fill, stream realignment, or fills into lakes), emergent wetland, a wetland or riparian area important for waterfowl nesting, wildlife breeding, feeding or migration or stream buffer. Compensatory mitigation can include habitat creation (i.e. fish, mammal, or waterfowl), habitat protection (i.e. purchase or establishment of a conservation easement), purchase of habitat through an in lieu fee (i.e. payment to an established conservation fund or non-profit group), or participation in an established wetland bank.

Environmental Assessments and Environmental Impacts Statements

Avoidance: We will evaluate alternative and design options that avoid wetland impacts. We will only consider avoidance practicable when it meets the project purpose and is cost effective.

Minimization: We will evaluate projects for alternatives and design options that minimize the impact. This includes an analysis of flexible design standards. We will consider minimization practicable when: 1) it meets the project purpose and 2) the avoidance option doesn't create a chronic maintenance problem (e.g. steeper slopes that erode).

Compensate: We will consider compensatory mitigation for all project alternatives that affect Water of the U.S., emergent wetland, a wetland or riparian area important for waterfowl nesting, wildlife breeding, feeding or migration or stream buffer. Compensatory mitigation must be appropriate and practicable. It can include habitat creation (i.e. fish, mammal, or waterfowl), habitat protection (i.e. purchase or establishment of a conservation easement), purchase of habitat through an in lieu fee (i.e. payment to an established conservation fund or non-profit group), or participation in an established wetland bank. Compensatory mitigation should be provided in proximity to the project if practicable, or it should be provided in the same watershed or ecosystem.

For airport projects, wetland restoration and creation may be practicable in order to avoid creating a wildlife hazard within five miles of an airport per FAA Guidance on "Wildlife Hazards". This may require indirect or non-construction types of compensatory mitigation (e.g. fencing, village sanitation, in lieu fees, wetlands banks conservation easements, etc.).

Mitigation Ratios and Determining Wetland Replacement Cost

Compensatory mitigation will generally be provided at a ratio of 2 to 1,and could go as high as 4 to 1 if unique or critical habitat is affected by the project. When compensatory mitigation is provided through wetland creation, it will be based on acreage, while other forms of mitigation (e.g. in lieu fees, wetland banks, conservation easements, culvert, or trail enhancements) will be based on land value lost.

No mitigation credit will be taken for avoidance. But, when "extraordinary" costs are taken to avoid the impact to high value wetlands (e.g. retaining walls, property acquisition or relocations) the minimization measure(s) will be credited at a positive value of 1.5 to 1 (acreage or land value whichever is applicable).

Previous Ketchikan Mitigation Proposals. Ketchikan area wetlands have not been described with respect to their regional importance, nor are they categorized by their ecological value. Most of the wetlands impacted by the project (shrub/scrub, muskeg, forested) would likely fall into a low value category because of their regional overwhelming abundance, lower functional value, and limited social value. Estuarine wetlands and open water bodies (e.g. ponds) likely would be considered high value wetlands because of their sensitivity to impacts, their value as habitat, and their role in supporting a broader ecosystem. Marine waters are given an intermediate value. The wetlands sections of the EIS and wetlands technical report describe all functions and values of project area wetlands in more detail, and these passages should be reviewed.

Recent examples of in-lieu fee compensatory mitigation in the Ketchikan area include:

- In 2000, a payment of $20,000 per acre was donated to the SEAL Trust as compensation for impacts to moderate value intertidal wetlands being filled to facilitate the construction of a ferry terminal used for the Ketchikan Transfer Facility. DOT&PF agreed to $20,000 per acre based on the cumulative loss of habitat on the Ketchikan waterfront. DOT&PF initially offered $10,000 per acre based on the area's degraded, dredged condition and its location within a developed industrial zone. Resource agencies felt the land impacted should be considered moderate value wetlands considering its habitat value prior to the original dredging for the ferry terminal, and therefore recommended that $20,000 per acre was a more acceptable fee.

- In 2002, DOT&PF agreed to pay $2,800 for lower value muskegs, $10,000 per acre for impacts to shallow fens and $20,000 per acre for filling moderate value intertidal habitat. These funds were intended to compensate for impacts to wetlands from the Ketchikan Airport Taxiway Construction Project (Project No. 68035/AIP 3-02-0144-1402).

In the Anchorage Bowl, a complex method is used to calculate the fees for compensating for wetland losses. Wetland ecological values are described in the 1996 Anchorage Wetlands Management Plan (MOA 1996). The AWMP designates wetlands as "A", "B", and "C" wetlands, based on the functions each wetland is thought to provide and their regional importance. "A" wetlands are the highest value, followed by "B" wetlands. "C" wetlands are considered the least valuable wetlands. To determine the appropriate level of monetary compensation for losses of ***"A" and "B" wetlands*** in the Municipality of Anchorage, a complex debit-credit method is used. That method considers ecological values and impact acreages to determine the number of "debits" a project will accrue. The Great Land Trust has defined a monetary amount they must receive to offset that debit with preserved wetlands. The value is based on their estimated cost ***to purchase and preserve wetlands with a comparable ecological value.*** A General Permit that allows filling of ***"C" wetlands*** in Anchorage requires compensation for those wetland losses ***at a rate equivalent to the cost to restore a similar acreage*** of wetlands.

Prior to 2003, the Great Land Trust used a figure of $2,800/acre for restoration of "C" wetlands. By 2003, it raised this rate to $6,939/acre, based on actual costs to restore an acre of wetland within Anchorage. In 2003, using Great Land Trust's value model developed for the Anchorage bowl, DOT&PF agreed to pay $6,939 per acre for low value wetland impacts; $50,000 an acre for impacts to vegetated shallows and mudflats; and $20,000 an acre for marine waters impacts as compensation for road improvements along the North Tongass Highway from Ward Cove to Whipple Creek [Project No. 67600, STP-0920(19)]. These amounts resulted in a sum of $191,280 that would be donated to SEAL Trust, applied to an off-site culvert replacement project at Schoenbar Creek in Ketchikan or another project in the Ketchikan area if the money was not appropriated to help complete the Schoenbar culvert project.

In retrospect, the Department has determined that the use of Great Land Trust's new values for "C" wetlands mitigation is inappropriate in Southeast Alaska. The Anchorage Bowl has quite limited wetland areas whereas Southeast Alaska has an overwhelming majority of land cover consisting of various wetland types. Also, there is very little actual restoration opportunity in the Ketchikan area. Therefore, the Department determined that use of the previous value appeared warranted for lower value "C"-type wetlands in Southeast. As a cross-check, the Department then examined the cost to purchase raw land without access or utilities, in the Ketchikan Gateway Borough, and the $2,800 figure is within the reasonable range of land values.

Current Gravina Access Mitigation Proposal

The various options available to use as proposed mitigation for the Gravina Access Project are tabulated below:

Guidance Source	Abundant Wetland Rec.	Value Forested	Value Shrub/ Scrub	Value Muskeg	Value Ponds & Estuaries	Value Marine Waters
Corps SPN 03-07	Not Practicable	No Mitigation	No Mitigation	No Mitigation	Case by case	Case by case
DOT Draft SE Alaska Policy	No Mitigation	No Mitigation	No Mitigation	No Mitigation	No Value Listed	No Value Listed
Historical Mitigation Ketchikan[1.]	**Mitigation is undertaken**	**$2,800/ac**	**$2,800/ac**	**$2,800/ac**	**$50,000/ac**	**$20,000/ac**
Anchorage Bowl ('03) Great Land	Mitigation is undertaken	$6,939/ac	$6,939/ac	$6,939/ac	$50,000/ac	$50,000/ac

[1.] The values represented in the table for Historical Mitigation in Ketchikan also reflect the current proposed values for the Gravina Access Project Mitigation.

DOT&PF has chosen a reasonable compromise between the extremes presented in this table and forwarded a total compensatory mitigation value for all impacts associated with this project of $248,000. While this is linked to previously accepted project mitigation in the area, the true basis for these values is the functions and values of the abundant aquatic resources affected.

Conclusion

Thank you for your consideration and understanding of the facts and justification behind the Department's position and we look forward to your acceptance of our proposal. If you have questions, please phone Bill Ballard (465-6954) or me (465-1851).

Sincerely,

James A. Evensen, PE
Southeast Region DOT&PF
PD&E Section Chief

Cc: Glen Justis, COE
Steve Myers, COE
Shannon Hanson, COE
Tim Haugh, FHWA
Steve Boch, FHWA
Bill Ballard, DOT&PF
Mark Dalton, HDR

17 Pages

CONSERVATION RESTRICTIVE COVENANTS
for the
MOSER BAY ESTUARY
and the
BLANK INLET ESTUARY AND WETLANDS SYSTEM

November 5, 2003

KETCHIKAN RECORDING DISTRICT

Please return to:
Ketchikan Gateway Borough Planning Department
344 Front Street
Ketchikan, AK 99901

RECORDED-FILED
KTN. RECORD. DIST.
DOC# 2003-006269-0
PLAT# -
DATE 12-2-2003
TIME 3:01 P M
REQUESTED BY:
Ktn. Gtwy. Borough-Plan
ADDRESS: 344 Front
Ketchikan, AK 99901

CONSERVATION RESTRICTIVE COVENANTS
for the
MOSER BAY ESTUARY
and the
BLANK INLET ESTUARY AND WETLANDS SYSTEM

THESE MOSER BAY ESTUARY AND BLANK INLET ESTUARY AND WETLANDS SYSTEM CONSERVATION RESTRICTIVE COVENANTS are made this _____ day of November, 2003, by Ketchikan Gateway Borough, hereinafter "**Borough**", a general law municipality and a Borough of the second class, whose address is 344 Front Street, Ketchikan, Alaska 99901.

WITNESSETH:

WHEREAS, the **Borough** is the sole owner in fee simple of certain real Property located at Moser Bay Estuary, Revillagigedo Island and Blank Inlet Estuary and Wetlands System, Gravina Island, Southeast Alaska, more particularly described in Exhibit A attached hereto and incorporated by this reference, **"Property"**; and

WHEREAS, the **Property** possesses natural, scenic, wetlands and estuarine values, collectively **"conservation values,"** of great importance to the **Borough** and its citizens and visitors; and

WHEREAS, Moser Bay Estuary and the Blank Inlet Estuary and Wetlands System are important parts of the coastal ecosystem and as such provide important habitat for a wide variety of birds, fishes, and both marine and terrestrial mammals and plants; and

WHEREAS, the **Property** has conservation values that the **Borough** desires to conserve and enjoy; and

WHEREAS, the specific conservation values of the Property are documented in a letter provided to the Alaska District of the U.S. Army Corps of Engineers, hereafter **"Corps of Engineers,"** dated March 7, 2003, on file at the offices of the Borough and incorporated by this reference, "**Baseline Documentation,**" and Exhibit B (attached) consists of photographs and other documentation that provide, collectively, an accurate representation of the **Property** at the time of these restrictive covenants and which is intended to serve as an objective information baseline for monitoring compliance with the terms of these restrictive covenants; and

WHEREAS, the **Borough** intends that the conservation values of the **Property** be preserved and maintained in perpetuity by the continuation of currently existing land use or activities, including, without limitation, those relating

to hunting and fishing, hiking, sport fishing, and any other uses that do not significantly impair or interfere with those values; and

WHEREAS, the **Borough** and Pacific Log & Lumber **(Permittees)** have been issued a Department of Army Permit, Nos. M-2000-0307, Tongass Narrows 525 and 4-2000-1288, Tongass Narrows 528, which authorizes the placement of fill on wetlands associated the construction of the Airport Service Road around Ketchikan International Airport on State of Alaska lands to the site of Pacific Log & Lumber, hereafter "**Permit**"; and

WHEREAS, Special Condition 1 of the **Permit** requires the **Permittees** to perform compensatory mitigation; and

WHEREAS, the **Borough**, as owner of the **Property**, agrees that these Covenants shall be placed upon the **Property** for the purpose of satisfying the **Permittees** obligation under Special Condition 1 of the **Permit**;

NOW, THEREFORE, in consideration of the above and the mutual covenants, terms, conditions, and restrictions contained herein, the **Borough** hereby voluntarily imposes, places and restricts the use and occupancy of the **Property** in accordance with the terms and conditions set forth below.

1. **Purpose**. It is the purpose of the Moser Bay Estuary and the Blank Inlet Estuary and Wetlands System Conservation Restrictive Covenants to assure that the **Property**, subject to the existing uses or activities described herein, will be retained in its natural, scenic, forested and riparian condition in perpetuity and for the **Borough** to take reasonable efforts to prevent any use of the **Property** that will significantly impair or interfere with the conservation values of the **Property**. The **Borough** intends that these Covenants will confine the use of the **Property** to such currently existing activities, including, without limitation, those involving sport fishing, protection of historical and/or archaeological sites, recreation, trails, education, or any other currently existing use or activity that is consistent with the purpose of these Covenants. These covenants are imposed for the benefit of the Airport Reserve on Gravina Island in order to satisfy the Corps of Engineers' conditions on issuance of a fill permit on the Airport Reserve.

2. **Prohibited Activities**. Any activity on or use of the **Property** inconsistent with the purpose of these Covenants is prohibited. Without limiting the generality of the foregoing, the following activities and uses are expressly prohibited:

(a) Subdivision for purposes of residential, commercial or industrial development;

(b) Industrial or residential uses;

(c) Parking lots, storage areas or waste dumps of any kind;

(d) Coverage of land by asphalt, concrete, or other material that does not constitute a natural cover for the land;

(e) Buildings, structures, or other improvements that are not necessary for the use and enjoyment of the **Property** for those uses outlined in Part 1. Purpose, above;

(f) Alteration of the land surface through grading or soil dumping or trenching, except as may be necessary for activities related to the purpose of these Covenants;

(g) Mineral development or mining within 200 feet of the surface of the **Property** and/or any underground mineral activity that results in the alteration or disturbance of the surface of the **Property**;

(h) Advertising signs or billboards;

(i) Cutting or removal of trees, shrubs, or other vegetation, except as necessary for emergency response to forest fires and cultural activities as set forth in Section 3(f);

(j) Introduction of non-native plants and animal species;

(k) Any use or activity that would cause, increase or substantially add to the risk of erosion;

(l) Dumping of any kind, including trash, concrete, toxic materials, or hazardous materials; and

(m) Commercial timber harvesting of any kind.

3. **Reserved Rights**. The **Borough** reserves to itself, and to its citizens, as well as successors and assigns, all rights accruing from its ownership of the **Property,** including the right to engage in or permit or invite others to engage in all uses of the **Property** that are not expressly prohibited herein and are not inconsistent with the purpose of these Covenants. Without limiting the generality of the foregoing, the following rights are expressly reserved:

(a) Normal and acceptable silvicultural practices necessary for emergency response to forest fires;

(b) The right to continued use of foot access for ingress and egress;

(c) All water rights within the **Property**;

(d) The right to permit sport fishing, and other non-intrusive uses or activities as they currently exist, consistent with these Covenants;

(e) The right to protect historical and/or archaeological sites, including, without limitation, the right to survey the site, excavate the site and remove artifacts and other items of historical and archaeological interest, subject to obtaining any required Corps of Engineers and/or other applicable permit; and

(f) The cutting and removal of individual trees for construction of on-site recreational uses, if suitable trees do not exist on nearby lands not restricted by these Covenants or on other lands readily accessible to the **Borough.**

4. **Change in Use or Activity**. Before the **Borough** changes any currently existing use or activity on the **Property** from that allowed under these Covenants, the **Borough** shall notify the **Corps of Engineers** of the use or activity and the **Corps of Engineers** shall concur in the use or activity if it finds the use or activity is consistent with the stated purposes of these Covenants. The use or activity proposed by the Borough shall not be implemented without the **Corps of Engineers'** written concurrence.

5. **Acts Beyond the Borough's Control**. Nothing contained in these Covenants shall be construed as a violation of these Covenants for any injury to or change in the **Property** resulting from causes beyond the **Borough's** control, including, without limitation, unforeseeable and unauthorized actions of third parties, fire, flood, storm, and earth movement, or from any prudent action taken by the **Borough** under emergency conditions to prevent, abate, or mitigate significant injury to the **Property** resulting from such causes, as long as such actions are consistent with the stated purposes of these Covenants.

6. **Access**. No right of access by the general public to any portion of the **Property** is conveyed by these Covenants without specific written authority from the **Borough** describing places, trails, and other conditions. Upon 48 hours advance notice to the **Borough**, access shall be granted to representatives of the **Corps of Engineers** and other resource agency personnel as appropriate for the purpose of inspecting and monitoring the **Property** for compliance with the terms and purpose of these Covenants.

7. **Costs and Liabilities**. The **Borough** retains all responsibility and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the **Property**. The **Borough** shall keep the **Property** free of any liens arising out of any work performed for, materials furnished to, or obligations incurred by the **Borough**.

8. **Extinguishment**. While these covenants remain in effect, the Borough shall not sell, give, or otherwise transfer ownership of the property without written approval from the Corps of Engineers. Provided, however, that no prior approval

shall be required before a transfer of the property from the Borough to the State of Alaska. These Covenants shall remain in place until the first to occur of: 1) the fill authorized by Permit Nos. M-2000-0307, Tongass Narrows 525 and 4-2000-1288, Tongass Narrows 528 has been removed by the **Borough**, and, to the **Corps of Engineers'** satisfaction, as evidenced by written acceptance, the affected area has been restored to a condition approximating that existing prior to the placement of the fill; or 2) release of the fill permit condition by the **Corps of Engineers**. The **Borough** reserves unto itself, and with the written approval of the **Corps of Engineers'**, the right to transfer this **Property** into an established mitigation bank, which has been approved by the **Corps of Engineers** and other appropriate resource agencies. Upon transfer of the **Property** to the approved mitigation bank, these Covenants will be superceded by the terms of the mitigation bank instrument.

9. **Recordation and Signage**. The **Borough** shall record, at it's cost, this instrument in timely fashion in the official records of Ketchikan Recording District, First Judicial District, State of Alaska. The **Borough** shall post the boundaries of the **Property** with signs for the purpose of informing all users of the **Property** that the **Property** is subject to these Covenants and that certain uses and activities are prohibited.

10. **General Provisions**.

(a) Controlling Law. The interpretation and performance of these Covenants shall be governed by the laws of the State of Alaska.

(b) Liberal Construction. Any general rule of construction to the contrary notwithstanding, these Covenants shall be liberally construed in favor of the grant to effect the purpose of these Covenants. If any provision in this instrument is found to be ambiguous, an interpretation consistent with the purpose of these Covenants that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) Severability. If any provision of these Covenants, or the application thereof to any person or circumstance, is found to be invalid, the remainder of the provisions of these Covenants, or the application of such provision to persons or circumstances other than those as to which it is found to be invalid, as the case may be, shall not be affected thereby.

(d) No Forfeiture. Nothing contained herein will result in a forfeiture of reversion of the **Borough's** title in any respect.

(e) Successors. The Covenants, terms, conditions, and restrictions of these Covenants shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors, and assigns and shall continue as a servitude running with the **Property**.

(f) Captions. The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon construction or interpretation.

(g) No Precedent. The parties agree that the terms and conditions set forth in these Covenants shall not act as a precedent nor be binding upon either party in regards to any future dealings between the parties.

IN WITNESS WHEREOF the **Borough** has set its hand on the day and year first written above.

Date: 11/26/03

KETCHIKAN GATEWAY BOROUGH

By: _____
Roy Eckert
Borough Manager

BOROUGH ACKNOWLEDGMENTS

STATE OF ALASKA)
) ss.
FIRST JUDICIAL DISTRICT)

THIS IS TO CERTIFY that on this 26th day of November, 2003, before me, the undersigned, a notary public in and for the State of Alaska, duly commissioned and sworn, personally appeared Roy Eckert, to me known to be the Borough Manager of the Ketchikan Gateway Borough, a municipal corporation, the corporation which executed the above and foregoing instrument; who on oath stated that he was duly authorized to execute said instrument on behalf of said corporation; who acknowledged to me that he signed the same freely and voluntarily on behalf of said corporation for the uses and purposes therein mentioned.

WITNESS my hand and official seal the day and year in the certificate first above written.

(Seal) OFFICIAL SEAL CINDY M. MONTGOMERY NOTARY PUBLIC-STATE OF ALASKA My Comm. Expires 5/7/07

Cindy M. Montgomery
NOTARY PUBLIC FOR ALASKA
My Commission Expires: 5/7/07

EXHIBIT A: METES & BOUNDS DESCRIPTIONS

MOSER BAY ESTUARY PARCEL

All and entire of U.S. Survey 296, Ketchikan Recording District, First Judicial District, State of Alaska, according to the plat approved June 7, 1905 by the U.S. Surveyor General, located at the head of Moser Bay approximately 13 miles north of the city of Ketchikan, more fully and particularly described as follows:

Commencing at Corner 1, a point on the mean high water line of Moser Bay according to the official plat of survey, and the true point of beginning for this description; thence along said mean high water line S40°15'W, 198 ft.; thence S5°00'W, 264 ft.; thence S79°00'W, 231 ft.; thence S40°15'W, 462 ft.; thence S31°30'W, 184.8 ft.; thence N41°00'W, 442.2 ft. to Corner 2; thence inland West, 84.14 ft. to Corner 3; thence South, 586.74 ft. to Corner 4; thence East, 1320 ft. to Corner 5; thence North, 1221 ft. to Corner 6; thence West, 132 ft. back to Corner 1, containing 20.89 acres, more or less.

BLANK INLET ESTUARY & WETLANDS SYSTEM PARCEL

An unsurveyed portion of ADL 103770 and ADL 101677 located within protracted Section 2, T76S, R90E; and protracted Section 35, T75S, R90E, CRM, at the head of Blank Inlet, approximately 3 miles south of the city of Ketchikan on Gravina Island in the Ketchikan Recording District, First Judicial District, State of Alaska, more fully and particularly described as follows:

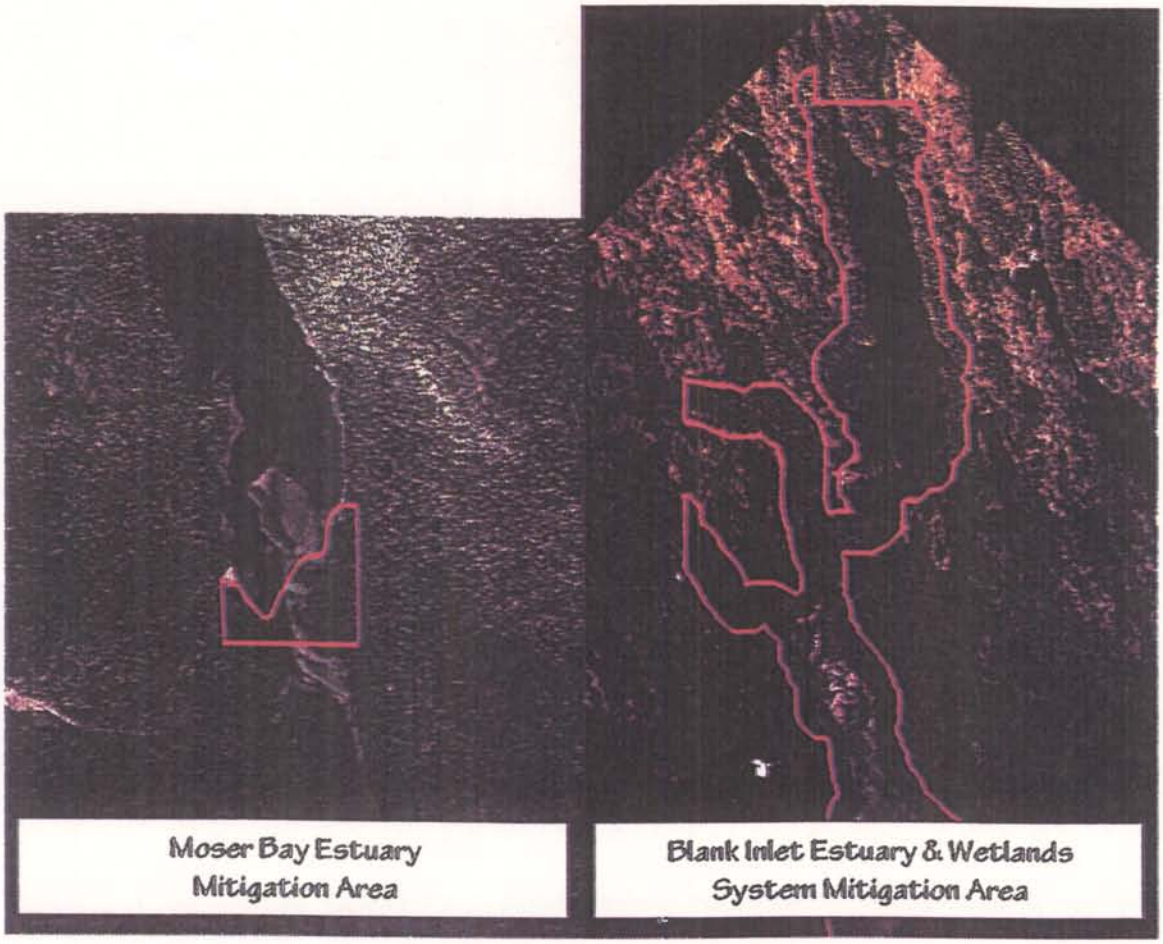
Commencing at the common corner of protracted Sections 2,3,10 and 11, T76S, R90E, CRM; thence N67°15'20"E, 2651.16 ft. to a point on the westerly shoreline near the head of Blank Inlet, and the true point of beginning for this description; thence upland N44°19'33"W, 300.54 ft.; thence N5°42'38"E, 703.49 ft.; thence N10°21'59"W, 416.80 ft.; thence N75°15'23"W, 294.70 ft.; thence N14°16'52"W, 283.77 ft.; thence N2°23'09"W, 600.52 ft.; thence N53°44'46"W, 558.03 ft.; thence ascending approximately parallel to and 100 ft. distant from an unnamed creek N38°39'35"W, 128.06 ft.; thence crossing said creek along the ADL 103770 boundary North, 510 ft.; thence descending approximately parallel to and 100 ft. distant from said unnamed creek S30°45'46"E, 488.77 ft.; thence N86°49'13"E, 180.28 ft.; thence S68°21'20"E, 338.90 ft. to a point 100 ft. distant from a second unnamed creek; thence ascending approximately parallel to and 100 ft. distant from said second unnamed creek N12°31'44"E, 184.39 ft.; thence N9°32'12"W, 633.76 ft.; thence N5°48'24"W, 593.04 ft.; thence N31°19'43"W, 134.63 ft.; thence N68°29'55"W 177.34 ft.; thence West, 385 ft.; thence crossing said second unnamed creek along the ADL 103770 boundary North, 270 ft.; thence descending approximately parallel to and 100 ft. distant from said second unnamed creek S83°21'17"E, 518.48 ft.; thence S54°05'25"E, 358.05 ft.; thence

S5°42'38"E, 904.49 ft.; thence ascending approximately parallel to and 100 ft. distant from a third unnamed creek N78°50'43"E, 361.84 ft.; thence N4°01'42' E, 711.76 ft. to a point approximately 50 ft. distant from the westerly shoreline of an unnamed half mile long lake; thence following said shoreline approximately parallel to and 50 ft. distant from said shoreline N5°11'40"W, 331.36 ft.; thence N55°54'18"W, 392.46 ft.; thence N25°20'46"E, 315.36 ft.; thence N67°50'01"E, 145.77 ft.; thence N4°15'32"W, 471.30 ft.; thence N22°37'12"W, 390 ft.; thence N2°32'41"W, 225.22 ft.; thence N13°12'04"W, 415.99 ft.; thence N1°47'24"W, 320.16 ft.; thence crossing a finger at the northerly end of said half mile long lake, and another small conjoined lake, East, 650 ft.; thence following the easterly shoreline of said small conjoined lake and the easterly shoreline of said unnamed half mile long lake approximately parallel to and 50 ft. distant from said shoreline, S29°21'28E, 183.58 ft.; thence S20°03'22"W, 335.34 ft.; thence S17°31'32"E, 498.12 ft.; thence S11°03'49"E, 911.95 ft.; thence S42°16'25"E, 148.66 ft.; thence S4°49'15"E, 416.47 ft.; thence S7°52'59"W, 328.10 ft.; thence S39°28'21"W, 330.34 ft.; thence S57°59'41"W, 330.19 ft. to a point approximately 100 ft. distant from the said third unnamed creek; thence descending approximately parallel to and 100 ft. distant from said third unnamed creek S6°52'12"W, 418 ft.; thence S76°31'37"W, 493.58 ft. to a point approximately 100 ft. distant from the said second unnamed creek; thence S13°04'26"E, 1083.07 ft.; thence S48°17'21"E, 308.1 ft.; thence S8°02'57"E, 499.93 ft.; thence S31°45'34"E, 617.45 ft.; thence S47°08'51"E, 566.08 ft.; thence S6°42'35"E, 171.17 ft. to a point on the easterly shoreline near the head of Blank Inlet; thence along said easterly shoreline N47°11'09"W, 463.49 ft.; thence N51°32'47"W, 217.08 ft.; thence N42°46'08"W, 272.44 ft.; thence N28°36'38"W, 125.30 ft.; thence N20°41'44"W, 240.52 ft.; thence N 10°54'18"W, 555.02 ft.; thence across the estuarial flats S57°40'49"W, 289.91 ft. to a point on the westerly shoreline at the head of Blank Inlet; thence along said westerly shoreline S10°04'09"E, 543.37 ft.; thence S17°11'55"E, 219.83 ft.; thence S15°56'43"W, 109.20 ft.; thence S38°17'25"W, 121.04 ft.; thence S8°58'21"W, 288.53 ft.; thence S12°54'27"E, 246.22 ft.; thence S2°36'09"E, 220.23 ft. back to the true point of beginning. The enclosed lake water surface (36.7 ac.) having been excluded, the net area of this parcel is 59.1 acres, more or less.

Note: Description scaled from a 1"=500' version of the USGS Ketchikan (B-6) SE Quadrangle

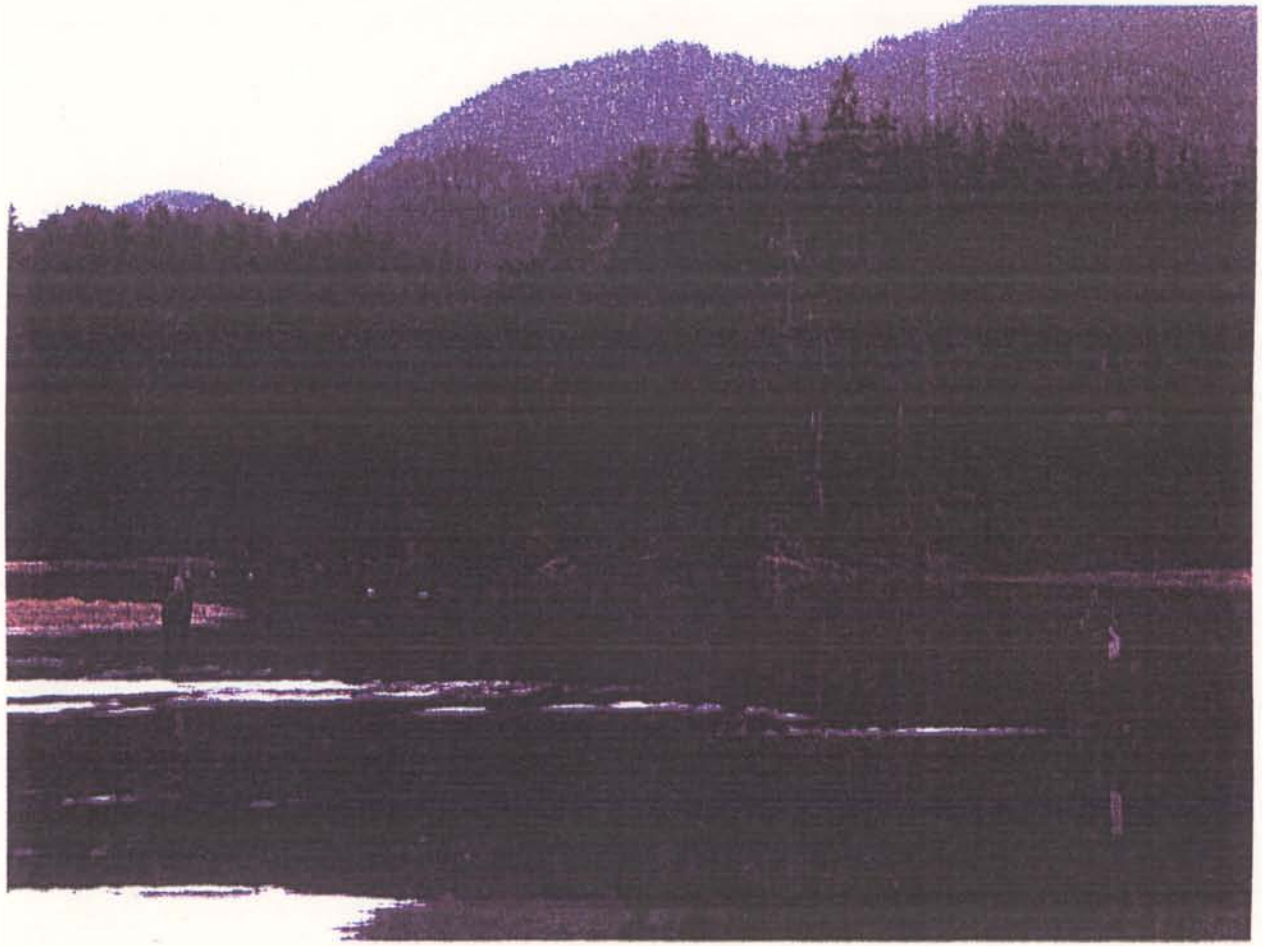
EXHIBIT B: BASELINE DOCUMENTATION

The following photographs provide a representation of the mitigation parcels at the time of these restrictive covenants (October, 2003) and is intended to serve as an initial information baseline for monitoring compliance with the terms of the restrictive covenants. Both mitigation parcels have experienced no permanent physical impact from any activities; there are no roads, powerlines, docks nor built structures of any kind with the exception of remnant piling at Moser Bay.



Moser Bay Estuary
Mitigation Area

Blank Inlet Estuary & Wetlands
System Mitigation Area

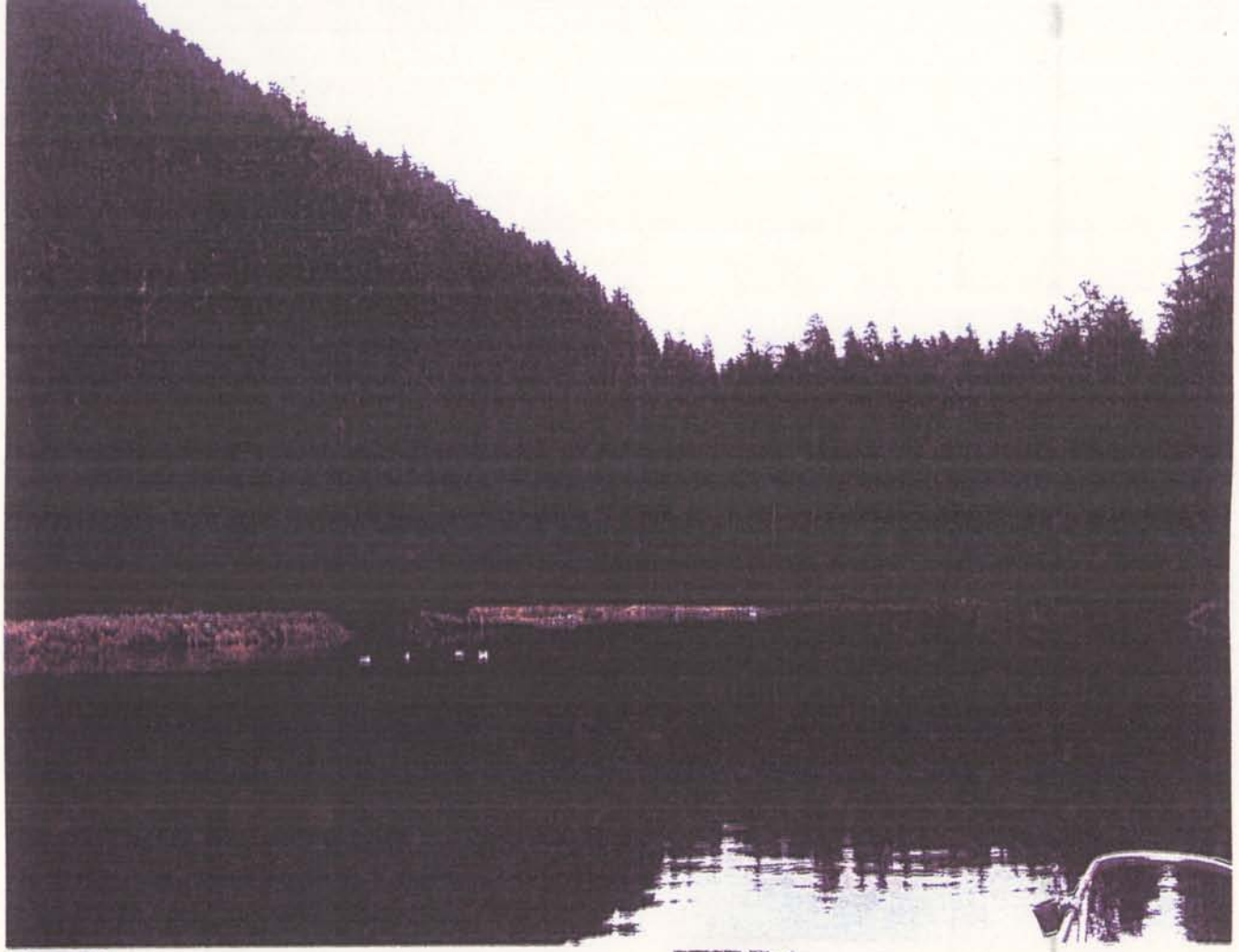


Moser Bay Estuary

All photos document conditions of mitigation parcels in October, 2003

Moser Bay Estuary

This photo is looking south directly into the Moser Bay Estuary mitigation parcel.



Moser Bay Estuary
(left photo below)

This view to the SE is further upstream. Note the piling that would have been used to tie off log booms.

Moser Bay Estuary
(right photo below)

This view is to the SE as we move further upstream.





Moser Bay Estuary

Looking north up Moser Bay from inside the mitigation parcel



Moser Bay Estuary
(left photo below)

Looking to the SE up Moser Creek.

Moser Bay Estuary
(right photo below)

Looking to the SW up an unnamed creek.





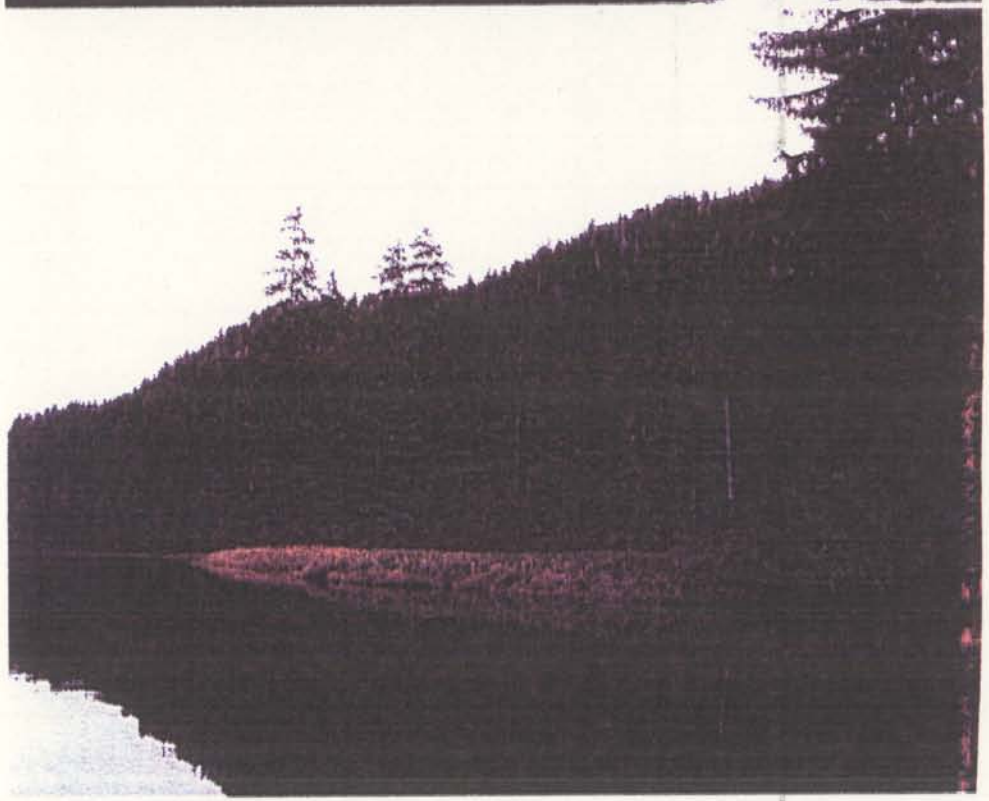
Moser Bay Estuary

Seagulls feasting on salmon near the mouth of Moser Creek. This view is looking east into old growth forest within the subject parcel.



Moser Bay Estuary

View to the NE across meadows at the mouth of Moser Creek.



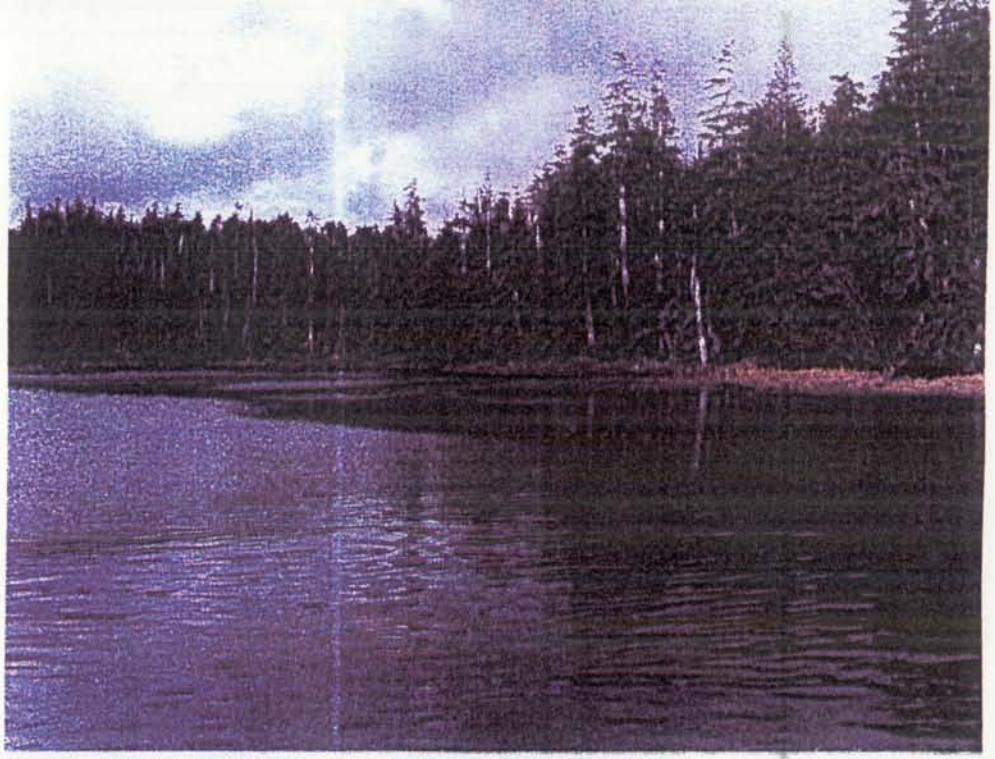


Blank Inlet Estuary & Wetlands

A view north into the estuary from Blank Inlet

Blank Inlet Estuary

Looking to the NE toward Long Lake from within the estuary.



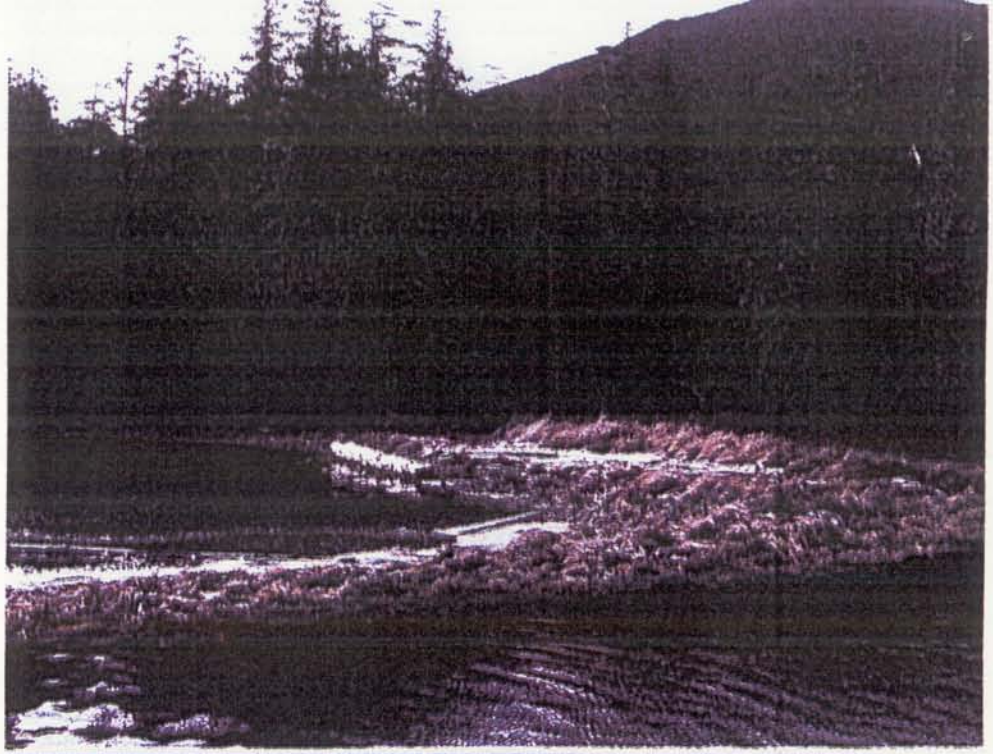
Blank Inlet Estuary

Looking toward the NW from within the estuary. Three anadromous streams enter this estuary.



Blank Inlet Estuary

Looking due west across the estuary toward Nipple Mountain. One of the protected streams within the mitigation parcel is visible in the center of the photo near the edge of the spit.



Blank Inlet Estuary

Looking NW toward Curve Mountain. The forested areas are the west and east slopes of the marine entry to the estuary and are included in the mitigation parcel to protect the hydrologic and aesthetic integrity of the estuary.



STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DESIGN AND ENGINEERING SERVICES – SOUTHEAST REGION
PRELIMINARY DESIGN & ENVIRONMENTAL SERVICES

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999

PHONE: (907) 465-4445
TEXT: (907) 465-4647
FAX: (907) 465-3506

RECEIVED
JUL 09 2004

July 7, 2004

RE: Gravina Access Project
DOT&PF Project 67698
Federal Project ACHP-0922(5)

Lloyd Fanter
US Army Corps of Engineers
Regulatory Branch
Alaska District
PO Box 6898
Elmendorf AFB, AK 99506-6898

Dear Mr. Fanter:

Purpose

The purpose of this letter is to present a proposal to compensate for the unavoidable impacts to wetlands and waters of the U.S. that would result from the construction of the Gravina Access Project Alternative F1 in Ketchikan, Alaska. The Alaska Department of Transportation and Public Facilities (DOT&PF) proposes to use an in lieu fee approach to compensate for adverse impacts to wetlands and waters. We seek your consideration of this proposal.

Project Background

Currently, the preliminary final environmental impact statement (PFEIS) for the project is undergoing final revisions in response to cooperating agency and legal sufficiency review comments that were received during the PFEIS comment period which ended June 7, 2004. Our intent is to issue a final EIS in July. The DOT&PF's and Federal Highway Administration's (FHWA) preferred alternative, presented as Alternative F1 in the DEIS, would cross Tongass Narrows via Pennock Island with two bridges. The East Channel bridge would be approximately 3,610 feet long and have a maximum height of approximately 250 feet. A 1-mile road would be constructed on Revillagigedo Island, linking the East Channel bridge to the Tongass Highway. The West Channel bridge would be approximately 2,960 feet long and have a maximum height of approximately 160 feet. A 0.5-mile road would be constructed across Pennock Island linking the two bridges. On Gravina Island, a road would be constructed starting at the West Channel bridge landing. The road would continue northward approximately 5.4 miles to the northern end of the Airport Reserve zone. A 1.2-mile airport access road would be constructed at the southern end of the airport runway. The airport access roadway would be constructed accommodate the planned future expansion of the runway.

Wetland impacts along the preferred alternative are described in the signed Corps of Engineers Section10/404 permit application, submitted with the PFEIS, in EIS, Appendix L and the Wetlands Evaluation Technical Memorandum Appendix M). As described above, Alternative F1 requires two bridges over Tongass Narrows and approximately 8 miles of new roadway. Approximately 500,000 cubic yards of clean fill would be placed in approximately 96.8 acres of wetlands and 0.1 acre of a ponds and 0.2 acre of marine waters to construct Alternative F1. These acreages include a total of six steel and concrete bridge pier structures placed in Tongass Narrows and seven such piers placed in wetlands on the islands.

We have been working with the Corps to comply with federal regulations and guidelines associated with Section 404 of the Clean Water Act to ensure that project proponents eliminate or reduce adverse impacts on wetlands and waters by taking certain specific steps during project planning. As you know, the first step is to identify and design project alternatives that avoid adverse impacts to these areas. Second, projects must incorporate measures to minimize adverse impacts when they are deemed unavoidable. Third, it is recommended that sites that must be temporarily adversely affected by the project be restored. Last, projects must compensate for unavoidable adverse impacts through preservation, restoration, or creation of wetlands. Together, these steps mitigate (i.e., reduce) the overall adverse effects of a project. Further guidance is given specific to the unique situation that faces project development in Alaska. Compensatory mitigation is generally not practicable where wetlands are the overwhelming majority of land cover type, and there is a lack of suitable sites for creation, enhancement or restoration. This is the situation for the road development across Pennock and Gravina Islands.

Project Area Wetlands Types and Abundance

Southeast Alaska is a wet maritime climate, and wetlands are common even in forested areas. National Wetland Inventory (NWI) mapping completed on a broad scale across the state indicates that the areas that drain directly to Tongass Narrows (excluding the large upper watershed of Ward Creek, which extends well inland) amounts to a total of 39,882 acres. This includes west-facing lands on Revillagigedo Island, all of Pennock Island, and east-facing lands on Gravina Island. According to the NWI, 16,958 acres, or 43% of the total area, is vegetated wetland and another 1,014 acres is either lake or pond. Virtually all low-angle land in the Ketchikan area is wetland under Corps of Engineers jurisdiction. These lower-angle lands accommodate most human developments.

For this project, wetlands in the vicinity of proposed construction were mapped following the NWI classification system based on Cowardin et al. (1979). Project mapping, covering 107 acres, was based on field surveys conducted by the project team in January and June of 2000.[1] The project area has four types of wetlands: forested wetlands, shrub/scrub wetlands, open "muskeg"-type wetlands, and intertidal marshes and meadows. The mapping completed in the project vicinity was done at greater precision than the NWI mapping and indicated some differences—most notably indicating scrub-shrub wetlands where the NWI mapping showed none, and indicating greater forested wetland than the NWI mapping. However, the relative proportions were similar, with muskegs most common, followed by forested wetlands, scrub-shrub wetlands, and intertidal meadows and marshes. Each type is described below.

Forested Wetlands

Forested wetlands, which the NWI indicated cover some 8,200 acres within the Tongass Narrows drainage basins, are prominent northwest of the airport and on the forested slopes of Revillagigedo

[1] DOT&PF, *Gravina Access Project Biology Report* (Draft), prepared by HDR and Pentec Environmental, October 2001.

Island. They are generally drier than other wetlands, either because they are on topographically higher or steeper sites, or because their substrates drain better internally. They are found on moderately sloping lands on Revillagigedo Island, along larger creeks, and as a fringe along the beaches of Gravina and Pennock Islands. They are also interspersed with the muskeg wetlands. A mix of conifer species (including shore pine, red and yellow cedar, western hemlock, and Sitka spruce) characterize forested wetlands. The trees appear stunted relative to those that are found in a better-drained forest. The understory supports a dense growth of blueberry, huckleberry, rusty menziesia, salal, and an herb ground cover. The functions of forested wetlands largely depend on their location. They serve as wildlife habitat along beaches and streams, may help to moderate stream flows, and help sustain the habitat functions of streams. The NWI classifies these as palustrine, open forested wetlands with deciduous shrub understory, saturated (PFO4/SS1B); palustrine, open forested wetlands with evergreen shrub understory, saturated (PFO4/SS4B); and palustrine, needle-leaved evergreen forest, saturated (PFO4B). These are shown on Figure 3.16 (attached from the EIS).

Shrub/Scrub Wetlands

Shrub/scrub wetlands, which the NWI indicated cover some 230 acres within the Tongass Narrows drainage basins (although project specific mapping indicated is more common than NWI mapping indicated), dominate areas adjacent to muskeg wetlands and other areas where tree growth is limited by soil saturation. The tree canopy is sparse enough to allow light to penetrate, promoting a dense shrub and scrub tree understory. Scrub/shrub wetlands often form slightly drier "islands" within the muskegs. They also tend to occur on the slightly better-drained (sloping) ground along the streams that run through muskegs. This wetland type has an open canopy of western or mountain hemlock. Shore pine, small Sitka spruce, and red and yellow cedar may also be present. Tall blueberry and rusty menziesia form a dense shrub layer, with a ground cover of bunchberry, deer cabbage, skunk cabbage, fernleaf goldthread, and sphagnum moss. As with forested wetlands, shrub/scrub wetlands may moderate stream flows, stabilize stream banks, and provide wildlife habitat. The NWI classifies these as palustrine, evergreen needle-leaved shrub/scrub dominated, saturated (PSS4B). These are shown on Figure 3.16 (attached from the EIS).

Muskegs

Open, muskeg-type wetlands, which the NWI indicated cover some 8,400 acres within the Tongass Narrows drainage basins, are the dominant wetland type on Pennock Island and in the areas west and south of the airport on Gravina Island. These open wetlands are intricately interspersed with small patches of forested or shrub wetland. Most of the open wetlands can be loosely described as short sedge fens, which are expected to be moderately nutrient rich and productive. Some richer, tall sedge-dominated wetlands also exist in limited areas, as do more acidic and nutrient-poor bog-type wetlands. The dominant low sedge fens are characterized by low shrub and herb vegetation, such as sweetgale, blueberry, crowberry, and short sedges, and by water pooled on the surface. Many of the wetlands are moderately sloped and have water flowing through them. Flowing water, as well as contact between that water and mineral soil, usually leads to a biological community that is more nutrient-rich and productive. Because they tend to have water flowing through them, muskegs may export organic material that supports downstream ecosystems and help maintain natural chemistry and low flows in the creeks. The muskeg areas nearest creeks maintaining base flows to those creeks. Little is known about wildlife use of these extensive habitats. Deer and black bear feed in them seasonally, and some water birds, including sandhill cranes, passerine species, and blue grouse are known to use these areas. Waterfowl often use intermixed open freshwater ponds as resting and nesting habitat. Humans use these areas for berry harvesting. The NWI classifies these as palustrine, saturated herbaceous meadows (PEM1B) and

palustrine, evergreen needle-leaved shrub/grass-like saturated herbaceous meadows (PSS4/EM1B). These are shown on Figure 3.16 (attached from EIS).

Intertidal Marshes and Meadows

Although relatively scarce in Southeast Alaska, estuarine meadows exist along the shoreline of Gravina Island (see *Gravina Access Project Biology Report Draft*[2]). The NWI indicated that these intertidal meadows cover some 200 acres of shoreline along Tongass Narrows. At elevations near the highest tides, grasses dominate these meadows, and sedges and herbs are prominent near the more average high-tide elevations. These meadows may be supported by seepage of freshwater out of the beach gravels. They are highly productive habitats, and organic matter produced within them washes into the marine ecosystem, where it supports food webs. The beach meadows are important feeding areas for many terrestrial and aquatic species of wildlife, including deer, black bear, river otter, mink, shorebirds, waterfowl, and songbirds. They provide succulent forage in spring, when other habitat types may be snow-covered. They also serve as nurseries for young fish. The NWI classifies these as estuarine intertidal areas vegetated with erect shrubs and regularly flooded by tidal waters (E2EM1N). These are shown on Figure 3.16 (attached from the EIS). Additional details about intertidal marsh areas are provided in Appendix N of the EIS.

Project Impact Avoidance

All alternatives investigated are described in detail in the DEIS. Suitable non-wetland (upland) alternatives could not be defined because of the extremely wet climate of southern southeastern Alaska; Ketchikan, on average, receives approximately 169" of precipitation annually. Nearly all lands in the general vicinity of the Ketchikan International Airport on Gravina Island are wetlands. Similar to Gravina Island, nearly all locations on Pennock Island are wetlands. Few areas with substantial uplands exist within the entire Tongass Narrows vicinity; therefore, substantial impacts on wetlands are unavoidable by any alternative, because all alternatives include a substantial new road. Several upland areas do occur on Revillagigedo Island, but these areas tend to be steep slopes, where sufficient drainage occurs so wetlands have not developed. These areas are not practicable road locations. Total avoidance of wetlands with this project is unachievable.

In Tongass Narrows, bridges were located to avoid direct disturbance of the estuarine beach meadows and adjacent shorelines and river mouths.

Project Impact Minimization

To minimize both direct and indirect impacts to wetlands, the project has included numerous management practices and construction methods. These methods of minimization are included in the EIS and in the Section 10/404 Permit application. The minimization and restoration commitments are copied from the permit application and attached to this letter.

Project Impact Compensatory Mitigation Options

Option 1: On-Site Mitigation

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[2] DOT&PF, *Gravina Access Project Biology Report* (Draft), prepared by HDR and Pentec Environmental, October 2001.

On-site compensatory mitigation is not practical because of the overwhelming abundance of and unaltered state of the wetlands within and surrounding the wetlands that would be impacted by project construction. The concept of on-site mitigation is to replace wetland functions very near the location of the actual loss. In regard to the Gravina Access Project, little to no development exists along the corridor of the Alternative F1; therefore no apparent damaged or impaired wetlands exist near the impacted wetlands that could benefit from restoration or enhancement.

Option 2: Off-Site Mitigation

Recent projects constructed in the Ketchikan area have had challenges identifying on-site, in-kind options for compensatory mitigation. Off-site compensatory mitigation and contribution of in-lieu fees are currently being used for projects in Ketchikan.

***Option 3: Fee In Lieu* (DOT&PF Proposed Mitigation Option)**

DOT&PF proposes to compensate for the unavoidable impacts to wetlands and waters that result from the construction of Alternative F1 through payment of a fee in-lieu of on-site or off-site compensatory mitigation projects. The monetary value has been determined using historical values for DOT&PF Southeast Alaska projects. The per acre costs used are $2,800 for forested, shrub/scrub and muskeg wetlands, $50,000 for waterbodies and $20,000 for marine waters.

Based on these values and the amount of wetlands impacted by Alternative F1, Table 1 presents a summary of what the DOT&PF proposes as an in-lieu fee of $248,400.00. This amount represents the total compensation for all expected wetland impacts for the project. This fee will be provided to a land trust acceptable to the Corps.

It is important to note that the Gravina Access Project and the "Lewis Reef Road," a Ketchikan Gateway Borough (KGB) proposal recently permitted by Corps, serve much the same purpose and follow much the same alignment on airport property. (The Lewis Reef Road would connect the southern end of the Ketchikan Airport to the Industrial Park at the northern end of the Airport. Construction has not begun). The KGB permit (COE #M-2000-0307) includes commitments for compensatory mitigation. DOT&PF is currently working with KGB, the Federal Aviation Administration (FAA), and the Corps of Engineers to modify the alignment of the KGB permitted Lewis Reef Road to coincide with the alignment referred to in the Gravina Access EIS, and to modify the Lewis Reef Road permit to reflect this alignment shift. This would avoid construction of two parallel roads through the same wetlands. The total compensation proposal referenced in Table 1 therefore takes into account the mitigation commitment by KGB for 11 acres of Lewis Reef Road and reduces the total wetlands area that other wise would be impacted by the Gravina Access Project.

Table 1. Calculation of fee in-lieu of compensatory mitigation

Wetland Type	Proposed cost per acre*	Impacted Area (acres) by F1 Alternative	Total cost per wetland/water type
Forested Wetlands	$2,800.00	23.6	$66,080.00
Shrub/Scrub Wetlands	$2,800.00	12.9	$36,120.00
Muskegs	$2,800.00	60.0	$168,000.00
KGB Permitted Commitment for Lewis Reef Road Mitigation		< 11.0 >[3]	- $30,800.00
Waterbodies (ponds)	$50,000.00	0.1	$5,000.00
Marine Waters	$20,000.00	0.2	4,000.00
Total		85.8	$248,400.00

1. Note: No impact to intertidal meadow and marsh wetlands is anticipated.
2. Cost based upon past SE Alaska value of wetlands used for compensatory mitigation.
3. KGB has already permitted eleven acres of impacted area and compensation has already been accepted. A permit modification is proposed for that project to ensure the Lewis Reef Road alignment coincides with the Gravina Access Project alignment. Therefore, the 11 acres has been subtracted from the total.

Summary

The DOT&PF has incorporated avoidance and minimization measures into its preferred alternative for the Gravina Access Project (Alternative F1) and proposes to compensate for the unavoidable impacts to wetlands and waters that are regulated under the authority of the Section 10 and Section 404 programs. The proposed in-lieu fee is meant to be directed toward activities relating to wetland creation, restoration, enhancement, and preservation or land acquisition. Other options have been investigated in the Ketchikan area and the in-lieu fee approach is the most viable mitigation option for this project.

---

[3] Ketchikan Gateway Borough has designed, received permits, and committed to mitigation for the Lewis Reef Road, connecting the southern end of the Ketchikan Airport to the Industrial Park at the Northern end of the Airport. This is the same road as referred to in the Gravina Access EIS. ADOT &PF is currently working with KGB, FAA and ACOE to adjust the alignment of the KGB permitted Lewis Reef Road to the alignment referred to in the Gravina Access EIS. The total impacted acreage referenced in Table 1 takes into account the mitigation commitment by KGB for 11 acres of Lewis Reef Road, acknowledging any differences between KGB and EIS alignments are taken into account in this mitigation proposal.

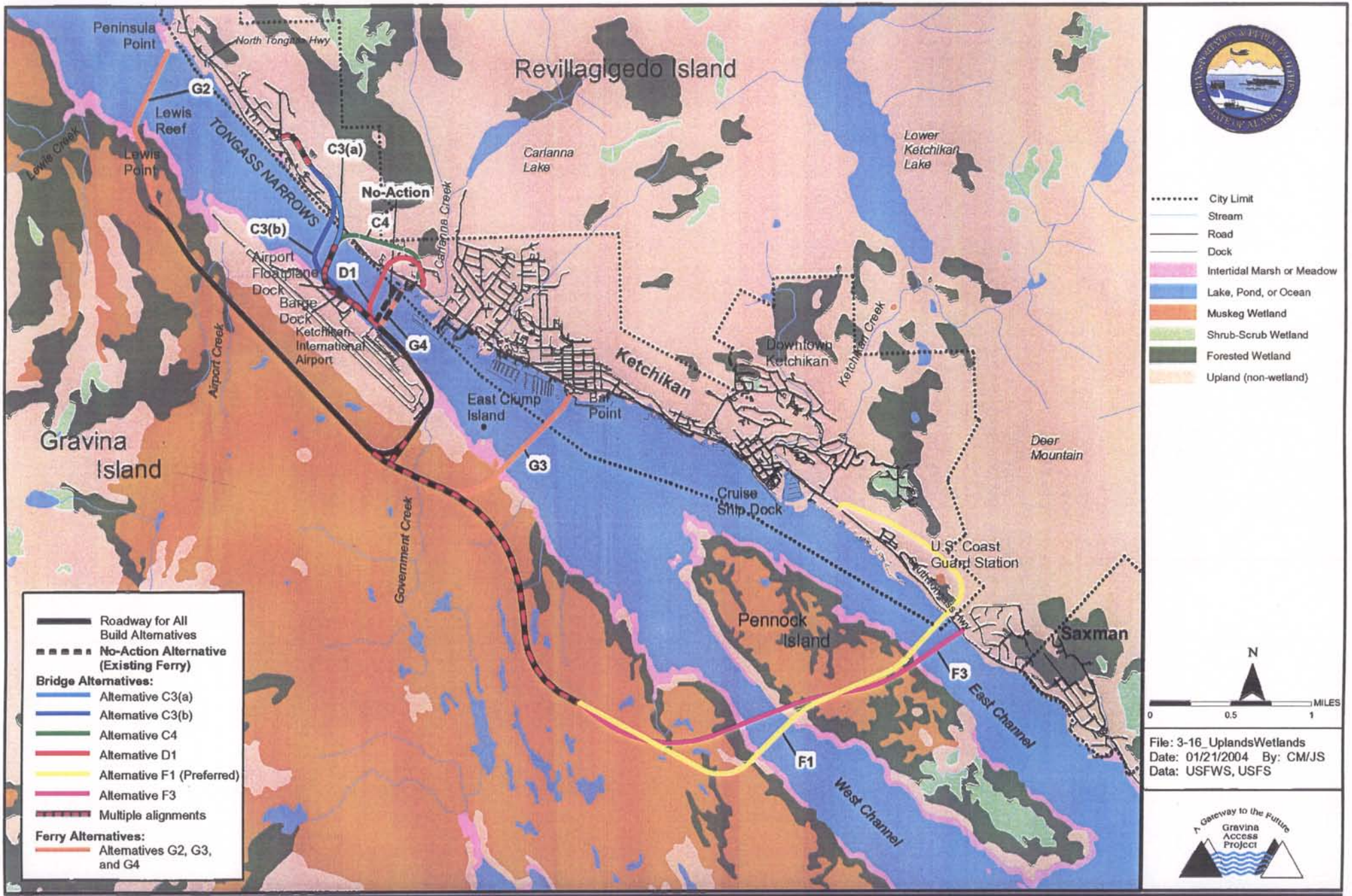
Thank you for your consideration and we look forward to your acceptance of our proposal. If you have questions, please don't hesitate to phone Bill Ballard at ADOT & PF (465-6954) or myself (465-1851).

Sincerely,

James A. Evensen, PE
Southeast Region ADOT& PF
PD&E Section Chief

cc:

Bill Ballard, DOT&PF
Mark Dalton, HDR
Tim Haugh, FHWA
Bruce Halstead, USFWS
Katherine Miller, NMFS
Mark Minillo, ADNR
Steve Myers, COE
Stephen Reeve, KGB
Bill Ryan, EPA



Gravina Access Project
Environmental Impact Statement

Figure 3.16
Biological Resources (Wetlands and Uplands)

Department of the Army, Corps of Engineers
Public Notice of Application for Permit for the Gravina Access Project

**US Army Corps
of Engineers
Alaska District**

Public Notice of Application for Permit

Regulatory Branch (1145b)
Post Office Box 6898
Elmendorf AFB, Alaska 99506-6898

PUBLIC NOTICE DATE: August 6, 2004

EXPIRATION DATE: Review and comment period is open concurrently with the review and comment period for the Gravina Access Project Final Environmental Impact Statement. At a minimum, the comment period will extend to:
September 7, 2004

REFERENCE NUMBER: POA-2000-152-2

WATERWAY NUMBER: Tongass Narrows

Interested parties are hereby notified that an application has been received for a Department of the Army permit for certain work in waters of the United States as described below and shown on the attached plan. A copy of the permit application and associated EIS may be viewed on the project web site at www.gravina-access.com.

APPLICANT: Alaska Department of Transportation and Public Facilities (ADOT&PF). Point of Contact for ADOT&PF is Mr. Jim Evensen P.E., Southeast Region, 6860 Glacier Highway, Juneau, Alaska, 99801-2016. Telephone number: (907) 465-1851, Fax: (907) 465-3506.

LOCATION: The proposed project is located in: sections 16, 22, 23, 26, 27, 35, and 36, Township 75 South, Range 90 East; section 01, Township 76 South, Range 90 East; sections 29,30,31, and 32, Township 75 South, Range 91 East, and; section 06, Township 76 South, Range 91 East, Copper River Meridian. Midpoint West Channel: Longitude 131.6451896, Latitude 55.3173536; East Channel: Longitude 131.6202341, Latitude 55.326448.

WORK: A summary of the proposed Gravina Access Project components is provided as Table 1. The applicant requests authorization for placement of 554,000 cubic yards of crushed rock and gravel fill material in up to 96.8 acres of waters of the United States, including wetlands, to construct 8.2 miles of roadway embankment, including a spine road and a spur road to the Ketchikan Airport. Of this amount 54,700 cubic yards of fill material would be placed on 11.3 acres as temporary fill for staging and pier construction areas. Fill material from the five staging areas (3 at 1.6 acres, and 2 at 1.1 acres); and, from the 1,100-foot by 55-foot temporary construction access road (1.3 acres) would be removed prior to the end of construction and the area rehabilitated. All temporary fill or dredged material would be placed on Geotextile mats or other suitable material to facilitate the removal of the temporary fill. An additional 35.8 acres of

wetlands (approximately 20-feet outside of the placement of fill limits) would be mechanically clear-cut (vegetation removed).

Approximately 46,100 cubic yards of rock would be removed for the placement of six steel and concrete bridge piers in the Tongass Narrows. Pilings for the bridge piers would be placed as drilled shafts into the Tongass Narrows using a reverse rotary drill. Pile driving would be used to penetrate any existing sediment in the area and enable the pile to bear on or within the rock. In these locations, a vibratory hammer would be used to advance of the steel pile casing (up to 12 feet in diameter) through the existing sediment until bedrock is encountered, and then drilled to penetrate the rock.

The reverse rotary drill for bridge pier foundations would advance these large diameter shafts into the rock bottom by grinding or coring through the rock at the bottom of the channel at each pier location. Four to six shafts may be drilled 50 to 100 feet into the rock to support each pier. Once drilled, a reinforced steel cage would be lowered into the shaft hole and filled with concrete to an elevation above the water line. Note that permitting the bridge pier would be under the U.S. Coast Guard's jurisdiction. However the excavation /dredging for the piling/shaft installation is under the U.S. Army, Corps of Engineers' jurisdiction. No channel dredging is required or proposed under the applicants proposed action.

The proposed road would cross fourteen creeks on Gravina Island. Of the five anadromous stream crossings, four would be crossed by clear span bridges and one, located south of Government Creek, by an embedded culvert. Of the nine remaining creek crossings, three are known resident fish streams. These three crossings would also receive embedded culverts. For the remaining six crossings, culverts would be sized to accommodate peak flows.

PURPOSE: The applicant's purpose is to improve surface transportation between Revillagigedo Island (cities of Ketchikan, Saxman, et.al.) and Gravina Island (the location of the Ketchikan International Airport and adjoining undeveloped land that offers recreation and development potential).

ADDITIONAL INFORMATION: The Gravina Access Project is one of 17 high-priority infrastructure projects in the State of Alaska to be Federally funded under the Federal Transportation Equity Act for the 21st Century (TEA-21), enacted in 1998. TEA-21 authorizes approximately $20 million for construction of a bridge across the Tongass Narrows, joining Gravina Island to the community of Ketchikan on Revillagigedo Island. The applicant proposes two bridges to cross Tongass Narrows via Pennock Island. One bridge would cross the East Channel and the other would cross the West Channel. The East Channel Bridge would be approximately 3,610 feet long and have a maximum height of approximately 250 feet. The East Channel bridge would have a vertical navigational clearance of 200 feet above high tide and a horizontal navigational clearance of approximately 550 feet. The West Channel Bridge would be approximately 2,690 feet long and have a maximum height of approximately 160 feet. The West Channel bridge would have a vertical navigational clearance of 120 feet above high tide and a horizontal navigational clearance of approximately 500 feet. The bridges would be evaluated by the U.S. Coast Guard under the authority of section 9 of the Rivers and Harbor Act of 1899, and the General Bridge Act of 1946.

On Revillagigedo Island, the alignment would connect to Tongass Avenue south of Deermount Street and near the southern end of the rock quarry. From this terminus, the alignment would rise to the southeast along the hillside (and east of the tank farm, and the cemetery), turn westward (skirting the southern end of the USCG station property, north of the Forest Park Subdivision) and cross over Tongass Avenue approximately 1.4 miles south of downtown Ketchikan, then cross the East Channel to Pennock Island. The roadway would cross Pennock Island at grade. From Pennock Island, the West Channel Bridge would cross to Gravina Island, touching

down approximately 2.7 miles south of the airport runway. The road would continue northward approximately 5.4 miles to the northern end of the Airport Reserve zone. A 1.2-mile airport access road would be constructed at the southern end of the airport runway.

The Federal Highway Administration (FHWA) is the lead Federal agency in preparation of the Environmental Impact Statement (EIS) for the Gravina Access Project. The Corps of Engineers, Alaska District served as a cooperating agency in the preparation of the EIS. The Draft EIS was distributed to the public for review and comment on August 6, 2003. Additional information on the proposed action, the Final Environmental Impact Statement (FEIS) and supporting documents are available on the project web site at: www.gravina-access.com. and/or at the Corps' Regulatory Branch's web site at: www.poa.usace.army.mil/reg.

MITIGATION: As a result of project planning, preapplication coordination, and agency coordination, the applicant has included various mitigation measures in the proposed action to help reduce impacts to aquatic and marine resources. Some of these measures include:

- Anadromous fish streams in-water work would be restricted to June 15 through August 7.
- In-water work in Tongass Narrows would be restricted to July 1 through February 28. Blasting, dredging, and pile driving could occur only from November 1 through February 28, with the possible exception of mid-channel locations, which would be based on further consultation.
- A vibratory hammer would be used to drive steel piles instead of an impact hammer. Piles would be driven during low tide when in intertidal and subtidal areas.
- If necessary, in-water blasting in the Tongass Narrows would be performed such that ground vibrations (particle velocity) does not exceed 2.0 inches per second and peak water pressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch, following ADF&G guidelines for blasting.
- All fueling and servicing operations would be conducted at least 100 feet away from all streams and water bodies, and fuel storage will be at least 100 feet away from all wetlands and water bodies.
- Perimeter staking would be required on the outside of the disturbance area prior to construction to ensure that there is no additional impact from construction activities.
- Silt fences would be used adjacent to EFH stream channels, just beyond the estimated toe of fill.
- Riprap would be placed along stream banks as necessary to maintain stream bank integrity. Bank stabilization along stream banks would include the placement of riprap and the use of bioengineering techniques to improve habitat value of the riprap, by incorporation of willow stakes or other locally available vegetation.
- Temporary fills would be placed on geotextile mats or other suitable materials of sufficient thickness to facilitate the removal of the fill and the materials to the maximum extent practicable when they are no longer needed for construction. No natural earthen material would be removed from under the geotextile mat when the temporary fill is removed.
- Proposed realignment of the Lewis Reef Road authorized to the Ketchikan Gateway Borough under Permit No. POA-2000-307-M to coincide with the road alignment proposed for the Gravina Access Project. This road realignment would reduce the need for an additional 11-acre road footprint.
- The Federal Highway Administration (FHWA), and the Alaska Department of Transportation and Public Facilities (ADOT&PF) have proposed to provide compensatory mitigation in the form of "in-lieu fee" or fee in lieu of wetland restoration, creation, enhancement or preservation. The fee ($248,400) would be provided to a land trust acceptable to the U. S. Army Corps of Engineers for a designated project, should the proposed action be authorized.

- At all stream crossings (both bridge and culvert crossings) stream banks will be re-contoured to approximate original conditions and seeded with native vegetation to minimize erosion.
- Four bridges and one embedded culvert would be utilized for anadromous fish streams crossings. Embedded culverts would also be used for resident fish bearing streams crossings.

COASTAL ZONE MANAGEMENT ACT CERTIFICATION: Section 307(c)(3) of the Coastal Zone, Management Act of 1972, as amended by 16 U.S.C. 1456(c)(3), requires the applicant to certify that the described activity affecting land or water uses in the Coastal Zone complies with the Alaska Coastal Management Program. A permit will not be issued until the Office of Project Management and Permitting, Department of Natural Resources has concurred with the applicant's certification.

CULTURAL RESOURCES: The latest published version of the Alaska Heritage Resources Survey (AHRS) has been consulted for the presence or absence of historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places. There are two registered or eligible properties in the vicinity of the worksite. They have been designated KET-774 and KET-775. Because it has been determined to be outside of the area of potential affect, no further action is required. The FHWA as lead Federal Agency, and ADOT&PF, the Applicant, has coordinated with the State Historic Preservation Officer (SHPO), HDA-AK file #: ACHP-0922(5)/67698 in which they concurred with a finding that "no historic properties affected." Any additional comments the SHPO may have on the FEIS concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in our final assessment of the described work.

TRIBAL CONSULTATION: The Federal Agencies fully support tribal self-governance and government-to-government relations between the Federal government and Federally recognized Tribes. This notice invites participation by agencies, Tribes, and members of the public in the Federal decision-making process. In addition, Tribes with protected rights or resources that could be significantly affected by a proposed Federal action (e.g., a permit decision) have the right to consult with the Federal Highway Administration (lead Federal Agency) on a government-to-government basis. Views of each Tribe regarding protected rights and resources will be accorded due consideration in this process. This Public Notice serves as an additional notification to the Tribes within the area potentially affected by the proposed work and invites their participation in the Federal decision-making process regarding the protected Tribal right or resource. Consultation may be initiated by the affected Tribe upon written request to the Federal Highway Administration during the public comment period.

ENDANGERED SPECIES: The project area is within the known or historic range of the American Peregrine falcon, the Steller sea lion (*Eumetopias jubatus*), and the humpback whale (*Megaptera novaengliae*). A Biological Assessment (BA) was prepared (updated November 30, 2003, Appendix T of the project EIS) in which the National Oceanic Atmospheric Administration – National Marine Fisheries Service (NMFS) reviewed and concurred with the BA findings: "…as described, the Gravina Access Project is not likely to adversely affect listed species or their designated critical habitat." "No further consultation on the effects of the Gravina Access Project on endangered humpback whales or threatened Steller lions is required" (February 17, 2004). This application and the FEIS are being coordinated with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Any additional comments that they may have concerning endangered or threatened species or their critical habitat will be considered in our final assessment of the described work.

ESSENTIAL FISH HABITAT: The proposed work was evaluated for possible effects to Essential Fish Habitat (EFH) pursuant to the Magnuson Stevens Fishery Conservation and Management Act of 1996 (MSFCMA), 16 U.S.C. et seq and associated federal regulations found at 50 CFR 600 Subpart K. The National Oceanic and Atmospheric

Administration – National Marine Fisheries Service reviewed and commented on the DEIS on October 3, 2003. NMFS identified EFH as all segments of streams where salmon reside during any period of the year as well as the marine waters and substrate of the Tongass Narrows. These areas provide habitat for a number of anadromous and marine species including all five species of Pacific salmon, arrowtooth flounder, dusky rockfish, Pacific Ocean perch, Pacific cod, sablefish, walleye Pollock, yelloweye rockfish, shortraker rockfish, rougheye rockfish, skates, and sculpins. The ADOT&PF replied to the NMFS in a letter dated April 13, 2003, and March 2, 2004, which identified conservation measures to be included in the FEIS. The FHWA determined that the described activity within the proposed area would not adversely affect EFH, including anadromous fish and federally managed fishery resources with the incorporation of proposed mitigation measures. This public notice, application and the FEIS are being coordinated with the NMFS. Any additional comments that they may have concerning EFH including Habitat Areas of Particular Concern will be considered in our final assessment of the described work.

SPECIAL AREA DESIGNATION: None.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts, which the proposed activity may have on the public interest, requires a careful weighing of all the factors that become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of the general balancing process. That decision should reflect the national concern for both protection and utilization of important resources. All factors, which may be relevant to the proposal, must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(l) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria (see Sections 320.2 and 320.3), a permit will be granted unless the District Engineer determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comments on the described work, with the reference number, should reach this office no later than the expiration date of this Public Notice to become part of the record and to be considered in the decision. Please contact Mr. Lloyd H. Fanter at (907) 753-2712, toll free from within Alaska at (800) 478-2712, or by e-mail at lloyd.h.fanter@poa02.usace.army.mil, if further information is desired concerning this notice. All comments received in response to this notice and/or providing

comments on the Final EIS will be provided to Mr. Tim A. Haugh, Program Manager, Environmental / Right-of-Way, Federal Highway Administration, Alaska Division; or you may wish to provide comments directly to FHWA at P.O. Box 21648, Juneau Alaska 99802. Question regarding the overall Gravina Access Project and/or EIS should be directed to the FHWA at the above address or by telephone at (907) 586-7418; and/or to Mr. Jim Evensen P.E., Project Manager, ADOT&PF – Southeast Region, 6860 Glacier Highway, Juneau, Alaska 99801-7999 or by telephone at (907) 465-1851.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, reasons for holding a public hearing.

AUTHORITY: This permit will be issued or denied under the following authority:

(X) Perform work in or affecting navigable waters of the United States – Section 10 Rivers and Harbors Act 1899 (33 U.S.C. 403).

(X) Discharge dredged or fill material into waters of the United States – Section 404 Clean Water Act (33 U.S.C. 1344). Therefore, our public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

A plan and Notice of Application for Certification of Consistency with the Alaska Coastal Management Program are attached to this Public Notice.

District Engineer
U.S. Army, Corps of Engineers

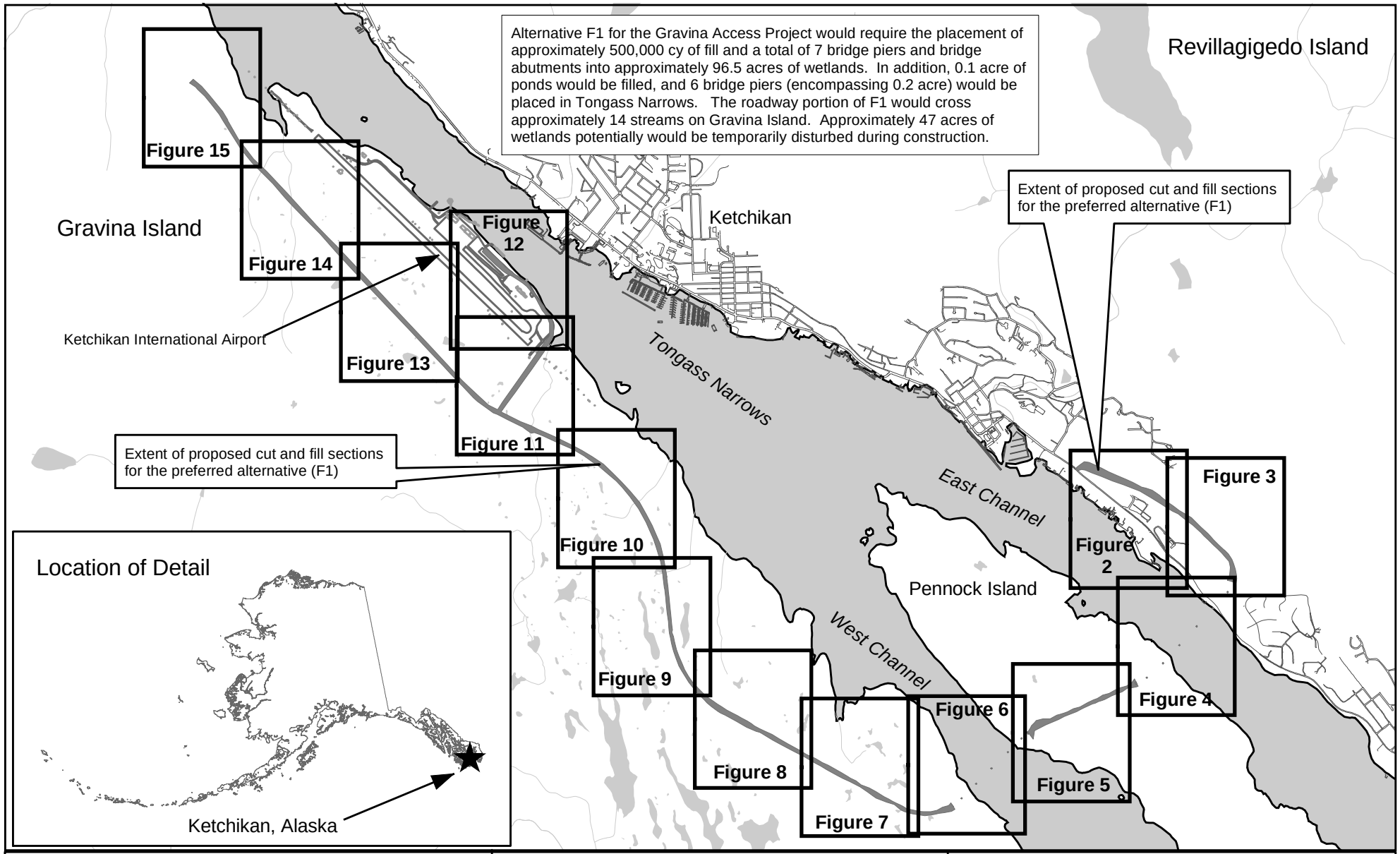
Attachments

Table 1. Proposed Gravina Access Project - Summary Table

	Length (feet) unless otherwise noted)	**Width (feet) or diameter**	**Footprint in wetlands & other waters of the U.S. / Total acres**	**Volume (y^3) in waters-wetlands / total volume** [g]	**Sheet Reference**
Permanent Elements (bold = total from below)	**49,350 9.4 mi**	40 (road top/crown width)	**96.5 / 107.3**	**500,000 / 554,000**	1
Road Embankment	**8.2 mi**	40 (road top)	**96.1 / 106.8**	500,000 / 554,000	1
-Revilla Segment	5,270	Typical disturbance width: 90-180 Max width (E. bridge abutment): 235	12.4 / 17.1	65,000 / 89,000	2-4
-Pennock Segment	3,050	Typical disturbance width: 60-120 Max width (W. bridge abutment): 230	7.9 / 8.0	41,000 / 41,000	4-6
-Gravina Segment	28,400	Typical disturbance width: 60-150 Max width (W. bridge abutment): 195	68.9 / 68.9 (includes 0.08 ac of impact to ponds)	357,000 / 357,000	7-11; 13-15
-Airport Spur	6,330	Typical disturbance width: 60-150	6.9 / 12.8	37,000 / 67,000	11, 12
Bridges & Culverts			**0.4 / 0.5 (piers)**	**Piers (4-6 shafts per pier)**	
East Channel Bridge *3 piers in marine 2 piers on Revilla 2 piers on Pennock* Is.	3,610 - - -	52 [c] - - -	*(0.15 for all marine piers) (0.2 ac for all piers in wetlands) (0.1 ac for all piers in uplands)*	Marine excavation (rock) 50- to 100- foot depth per shaft ~640 y3 per 50-feet shaft depth (11-foot shaft diameter) con't	4
W. Channel Bridge *3 piers in marine 1 piers on Gravina Is.*	2,690 - - -	52 [c] - - -		Total 6 piers (36 shafts) in marine waters. **Up to 38,400 y3** excavation / dredging in marine waters	6
Creek on Gravina Is. (Clear span)	30	43 [c]	0	-	9
Government Cr. (Clear span)	200	43 [c]	0	-	11
Airport Cr.	100	43 [c]	0	-	14

	Length (feet) unless otherwise noted)	**Width (feet) or diameter**	**Footprint in wetlands & other waters of the U.S. / Total acres**	**Volume (y^3) in waters-wetlands / total volume** [g]	**Sheet Reference**
E. Fork (Clear span)					
Airport Cr. W. Fork (Clear span)	55	43 [c]	0	See sheet 18	14
Embedded fish passage culverts	-	43 [c]	See sheet 18		8, 10, 14, 18
Temporary Fills			**11.3 / 11.3** [e]	**54,700 / 54,700** [e]	
Pier staging areas (5)	**-**	**-**	***7.0 / 7.0*** [e]	***33,900 / 33,900*** [e]	
-Revilla (2)	-	150 diameter each	2.2 / 2.2 [e]	10,700 / 10,700 [e]	4
-Pennock (2)	-	150 diameter each	3.2 / 3.2	15,500 / 15,500	4, 5
-Gravina (1)	-	150 diameter	1.6 / 1.6	7,700 / 7,700	6
Other staging areas					
-Pennock (2)	375 [f]	175 [f]	3.0 / 3.0	14,500 / 14,500	4, 5
Construction road	***1,080***		***1.3 / 1.3***	***6,300 / 6,300***	
-Revilla	380	55	0.5	2,100 / 2,100	4
-Pennock	490	55	0.6	3,000 / 3,000	4, 5
-Gravina	210	55	0.2	1,200 / 1,200	6

a. Fill depth is typical but varies widely depending upon topography.
b. Total wetland impact in this table differs slightly from total reported in EIS due to computation by segment and to rounding. Impacts to ponds are included in wetland impacts.
c. Bridge widths estimated based on lane and shoulder width.
d. Includes free-standing piers and bridge abutments.
e. One pier each on Revilla Is. and Pennock Is. would be fully or partially on uplands. Portions of pier staging areas that are not in wetlands would not use fill but would be disturbed.
f. Other staging areas' dimensions broadly estimated to equal 3 ac. total. **Bold numbers** indicate totals from the rows below.
g. Average depth of fill for construction roads and staging areas and road segments is 3 feet.



PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

LOCATION:
T. 75S R. 090E SEC. 16, 22, 23, 26, 27, 35, 36
T. 76S R. 090E SEC. 01
T. 75S R. 091E SEC. 29, 30, 31, 32
T. 76S R. 091E SEC. 06
Copper River Meridian

Adjacent Property Owners:
See attached Table.

PREFERRED ALTERNATIVE
(F1)
SHEET EXTENTS AND VICINITY MAP

APPLICATION BY:
State of Alaska
Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

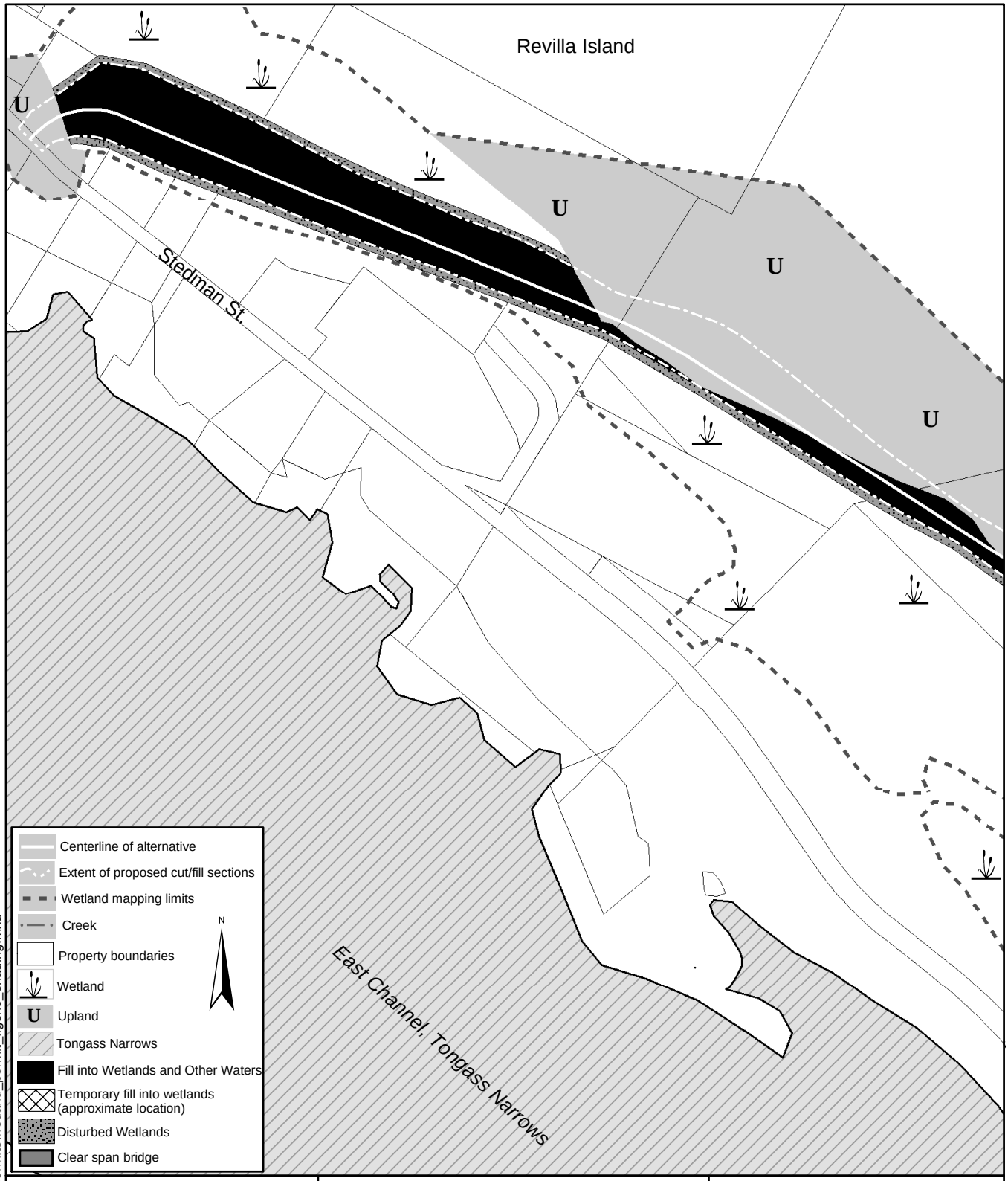
GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS
AT: KETCHIKAN, ALASKA

Date: 6-4-04

SHEET 1 of 19

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PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

ADJACENT PROPERTY OWNERS:
SEE ATTACHED SHEETS

LOCATION:
T. 75S R. 090E SEC. 16, 22, 23, 26, 27, 35, 36
T. 76S R. 090E SEC. 01
T. 75S R. 091E SEC. 29, 30, 31, 32
T. 76S R. 091E SEC. 06
Copper River Meridian

PREFERRED ALTERNATIVE (F1), PLAN VIEW

SCALE 1" = 400'

APPLICATION BY:

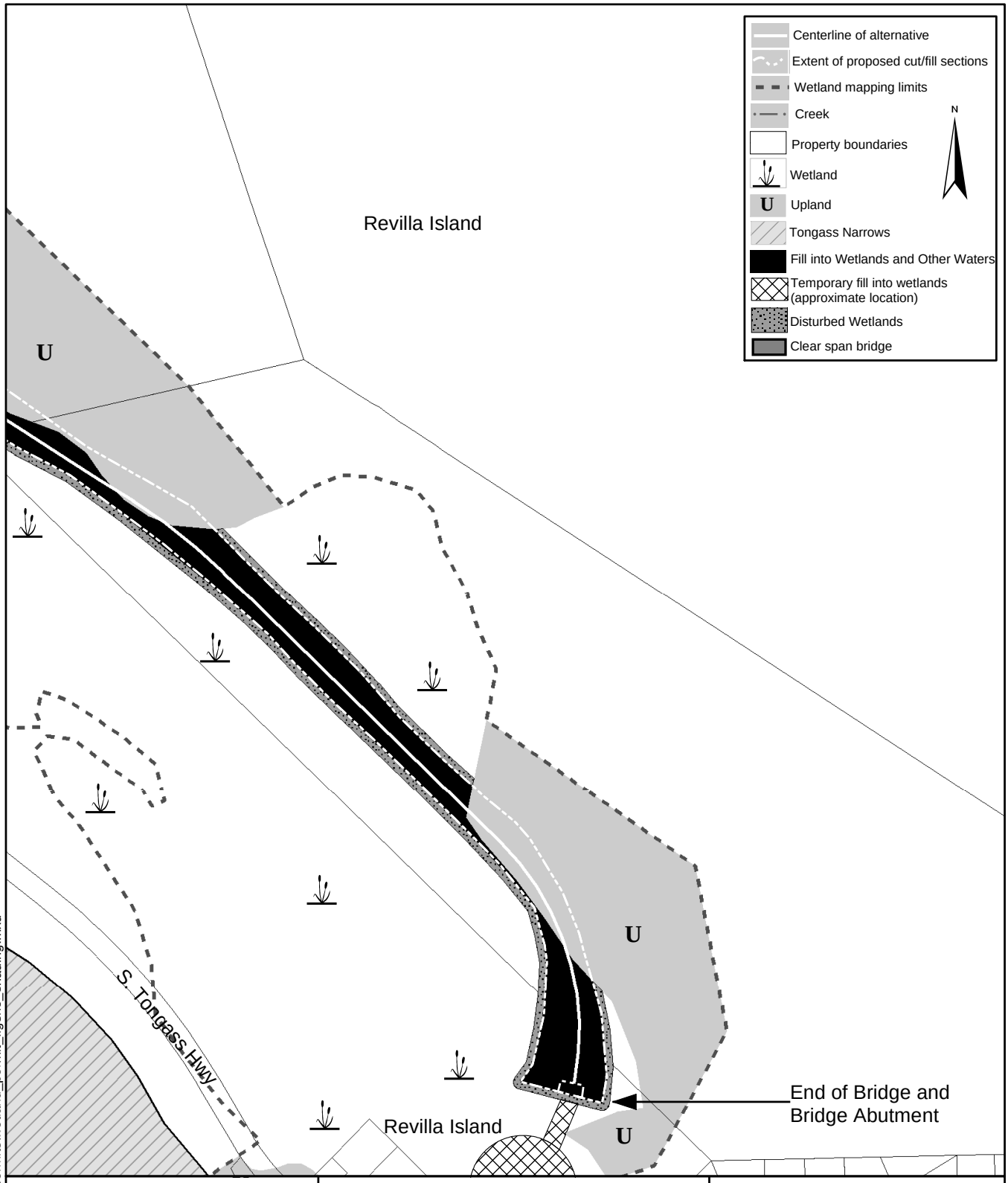
State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS

AT: KETCHIKAN, ALASKA

Date: 6-4-04



PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

ADJACENT PROPERTY OWNERS:
SEE ATTACHED SHEETS

LOCATION:
T. 75S R. 090E SEC. 16, 22, 23, 26, 27, 35, 36
T. 76S R. 090E SEC. 01
T. 75S R. 091E SEC. 29, 30, 31, 32
T. 76S R. 091E SEC. 06
Copper River Meridian

PREFERRED ALTERNATIVE (F1), PLAN VIEW

SCALE 1" = 400'

APPLICATION BY:

State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

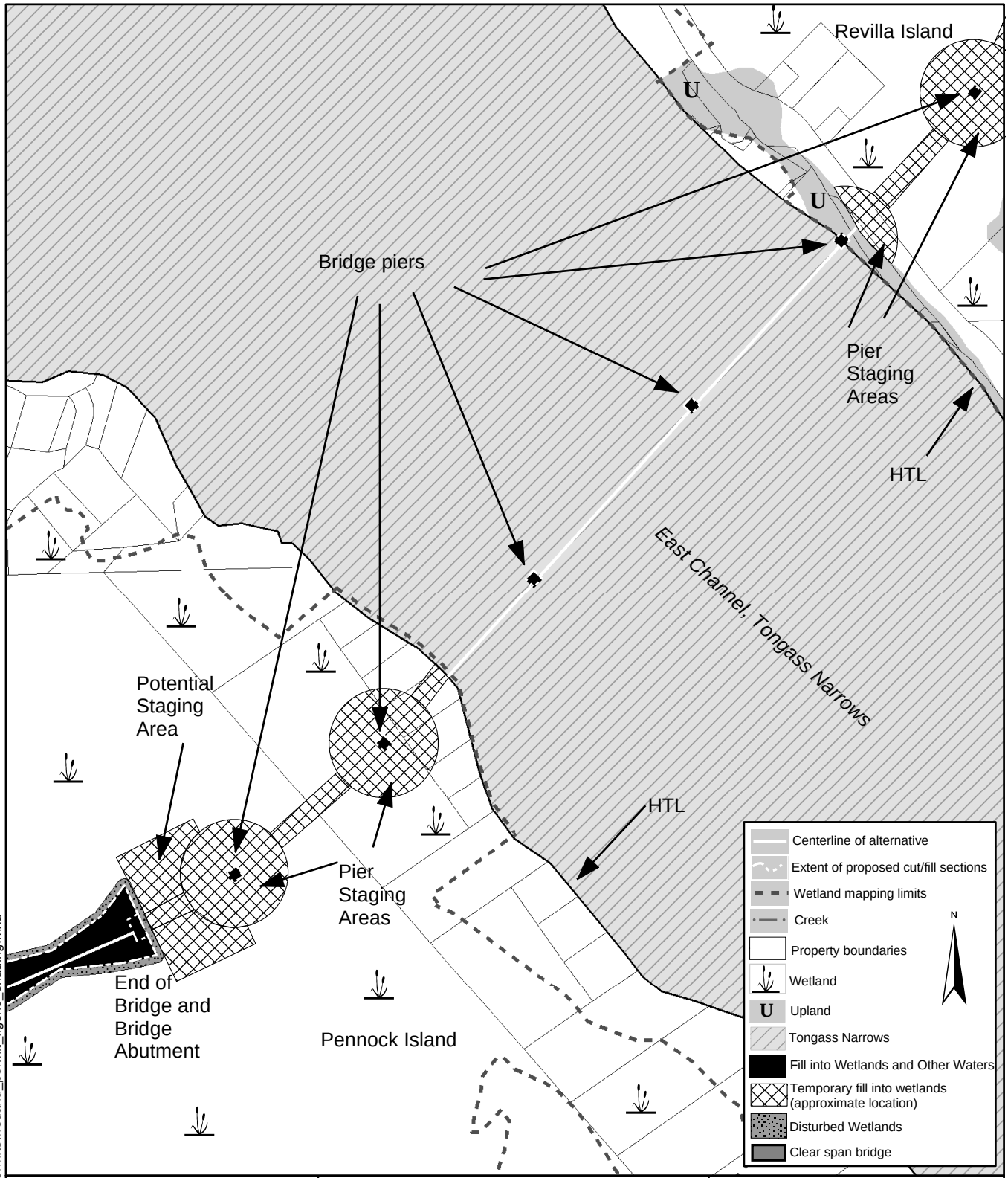
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Tongass Narrows 524

IN: TONGASS NARROWS

AT: KETCHIKAN, ALASKA

Date: 6-4-04

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Copper River Meridian

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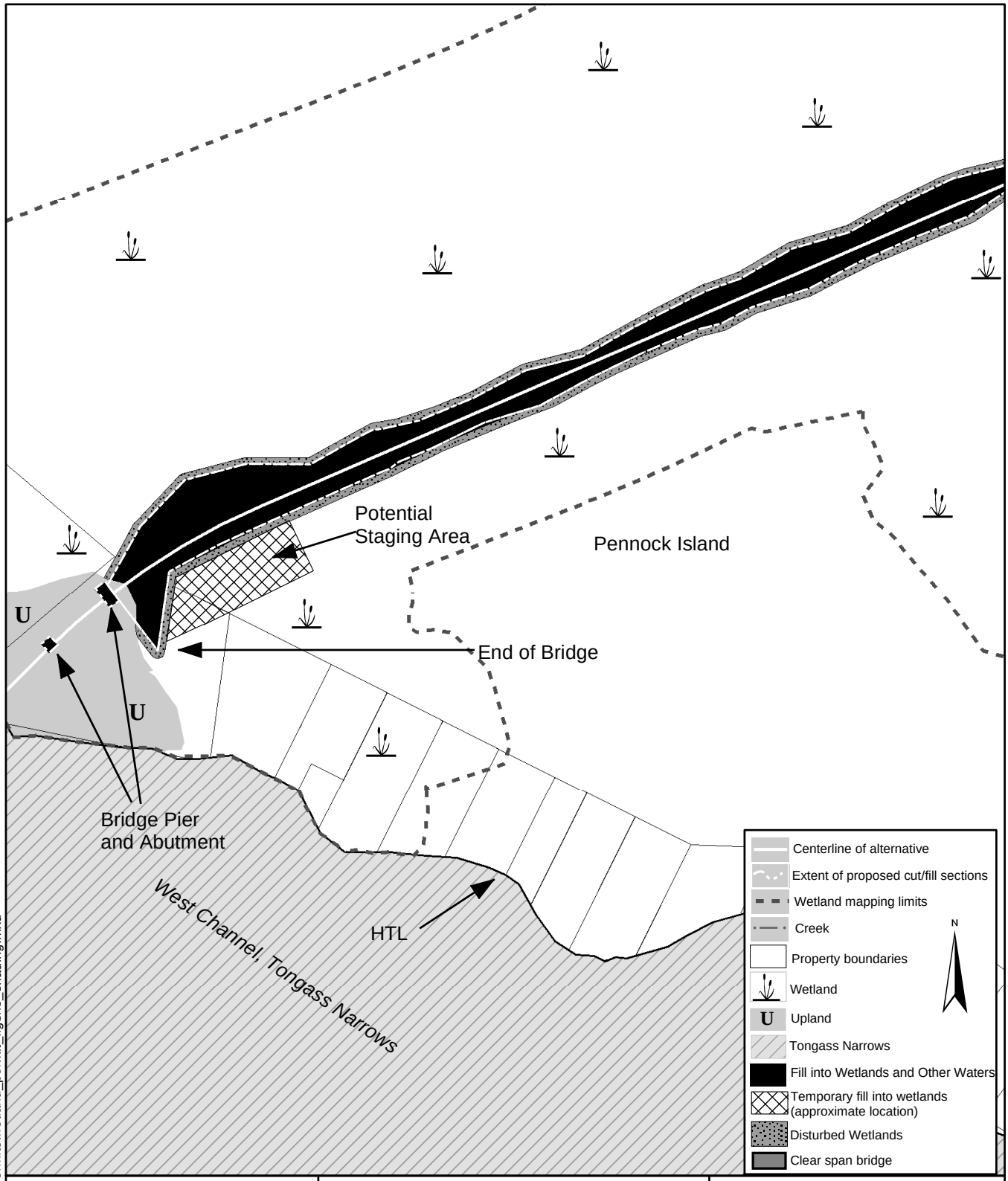
GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS

AT: KETCHIKAN, ALASKA

Date: 6-4-04

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PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

ADJACENT PROPERTY OWNERS:
SEE ATTACHED SHEETS

LOCATION:
T. 75S R. 090E SEC. 16, 22, 23, 26, 27, 35, 36
T. 76S R. 090E SEC. 01
T. 75S R. 091E SEC. 29, 30, 31, 32
T. 76S R. 091E SEC. 06
Copper River Meridian

PREFERRED ALTERNATIVE (F1), PLAN VIEW

SCALE 1" = 400'

APPLICATION BY:

State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

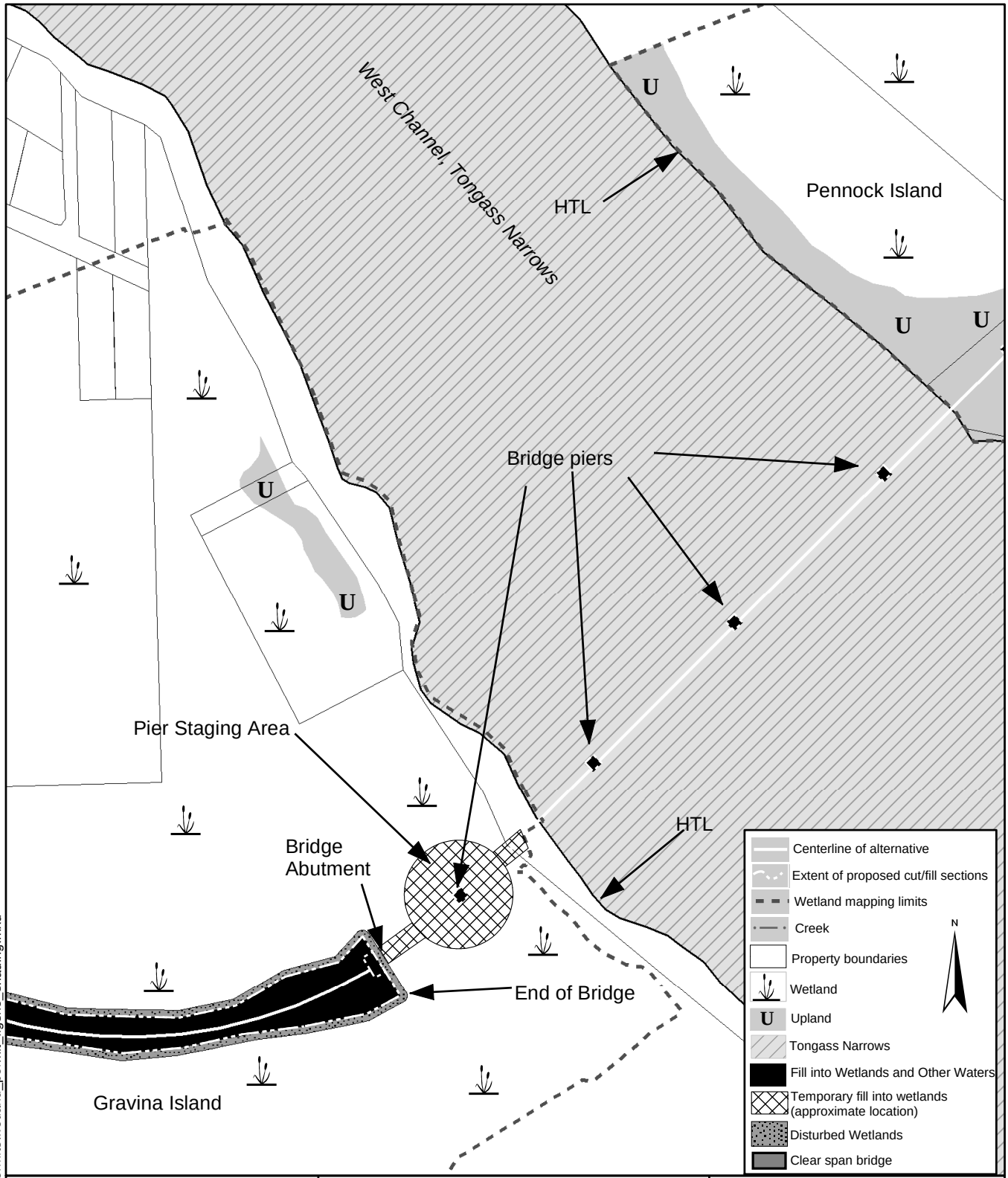
IN: TONGASS NARROWS

AT: KETCHIKAN, ALASKA

Date: 6-4-04

SHEET 5 of 19

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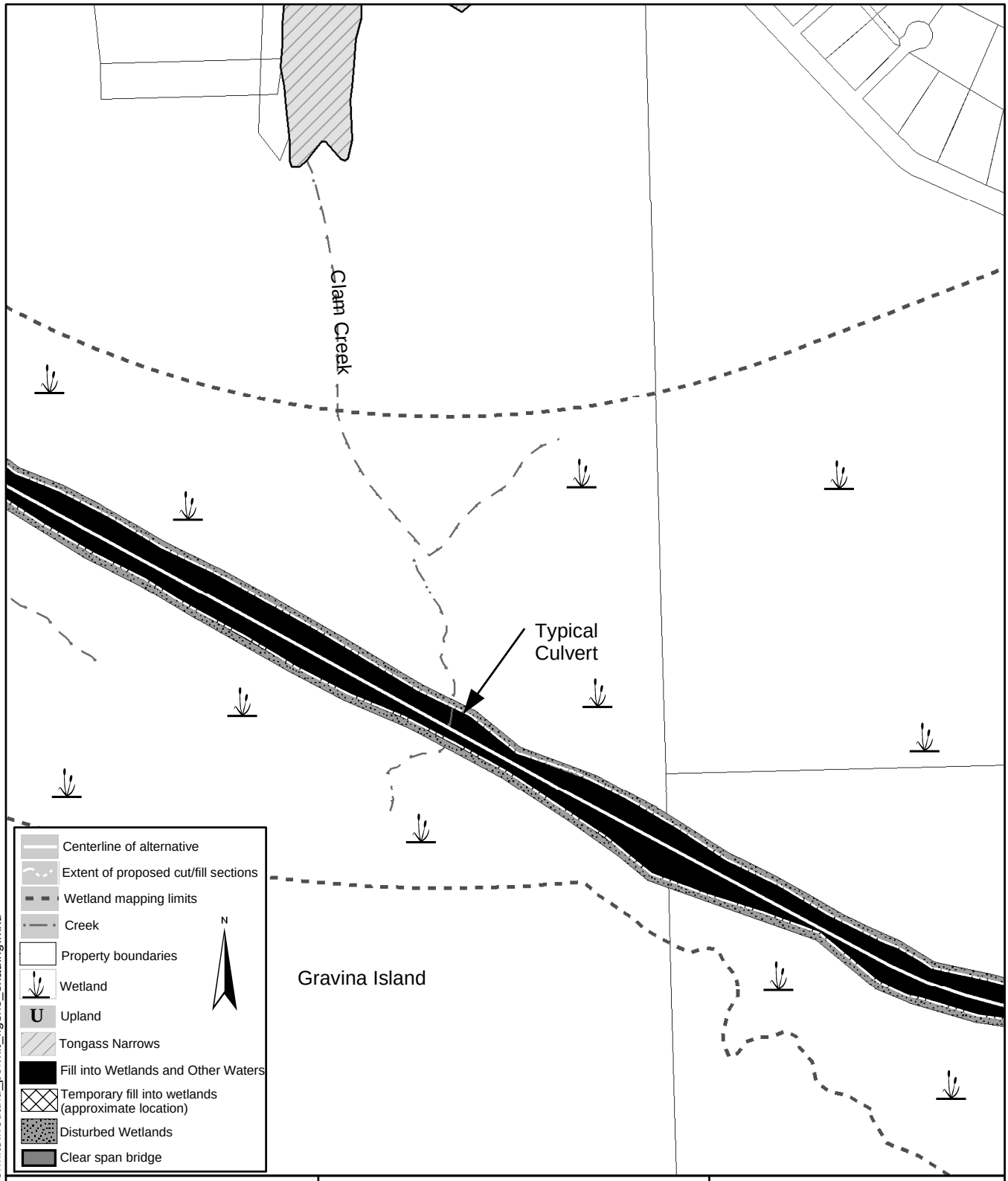
State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS

AT: KETCHIKAN, ALASKA

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Copper River Meridian

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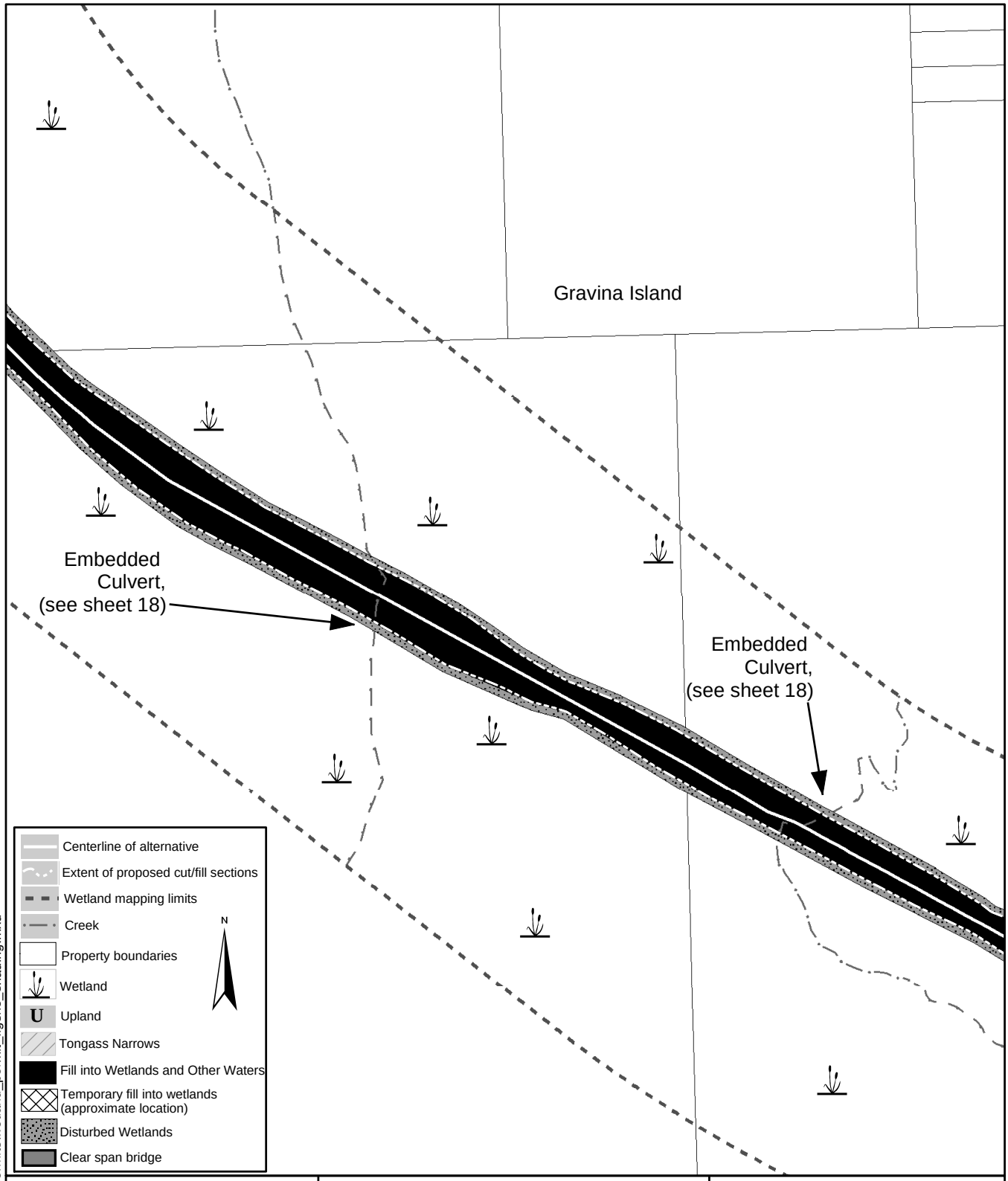
State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

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9-2000-0152
Tongass Narrows 524

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Copper River Meridian

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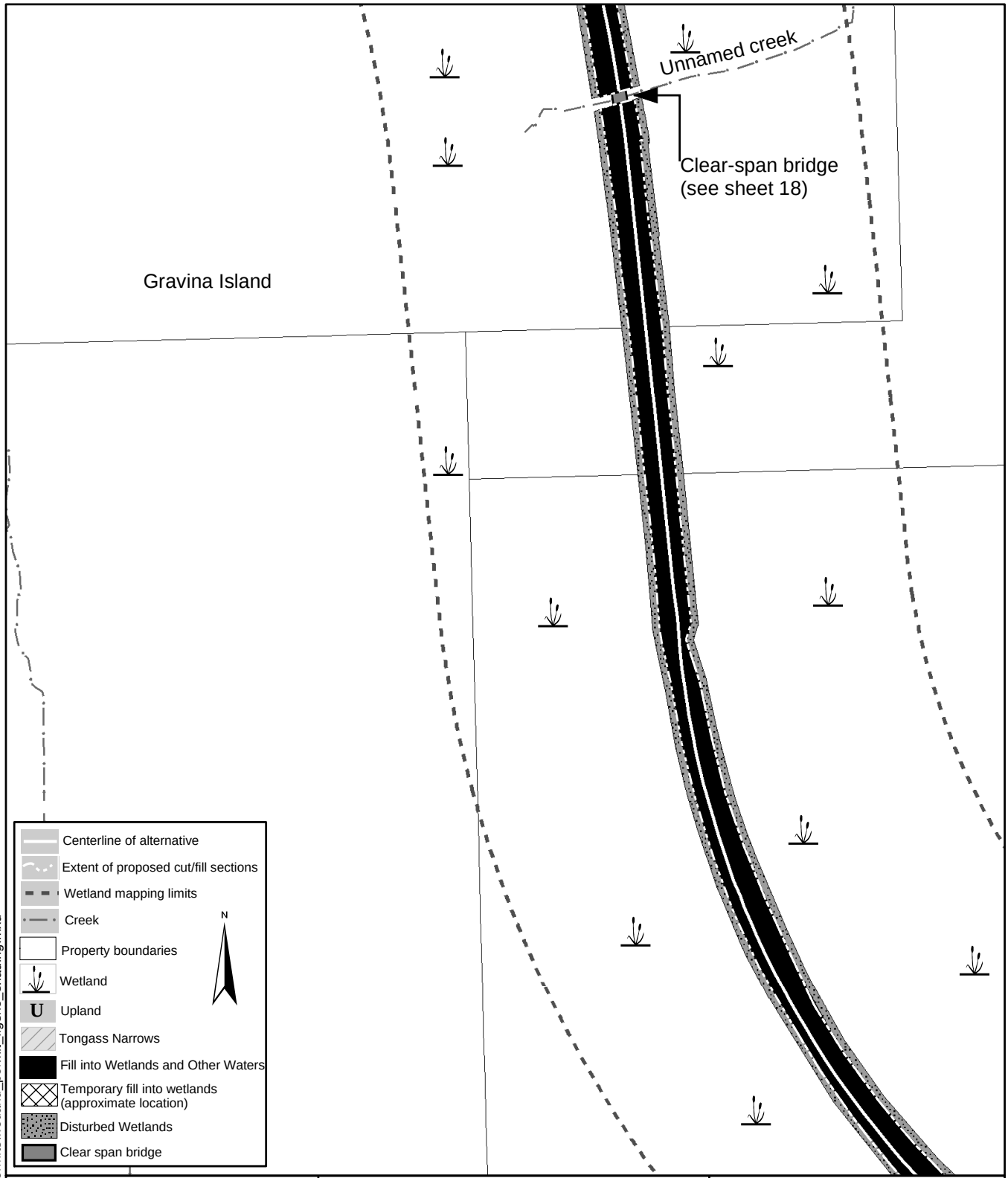
State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

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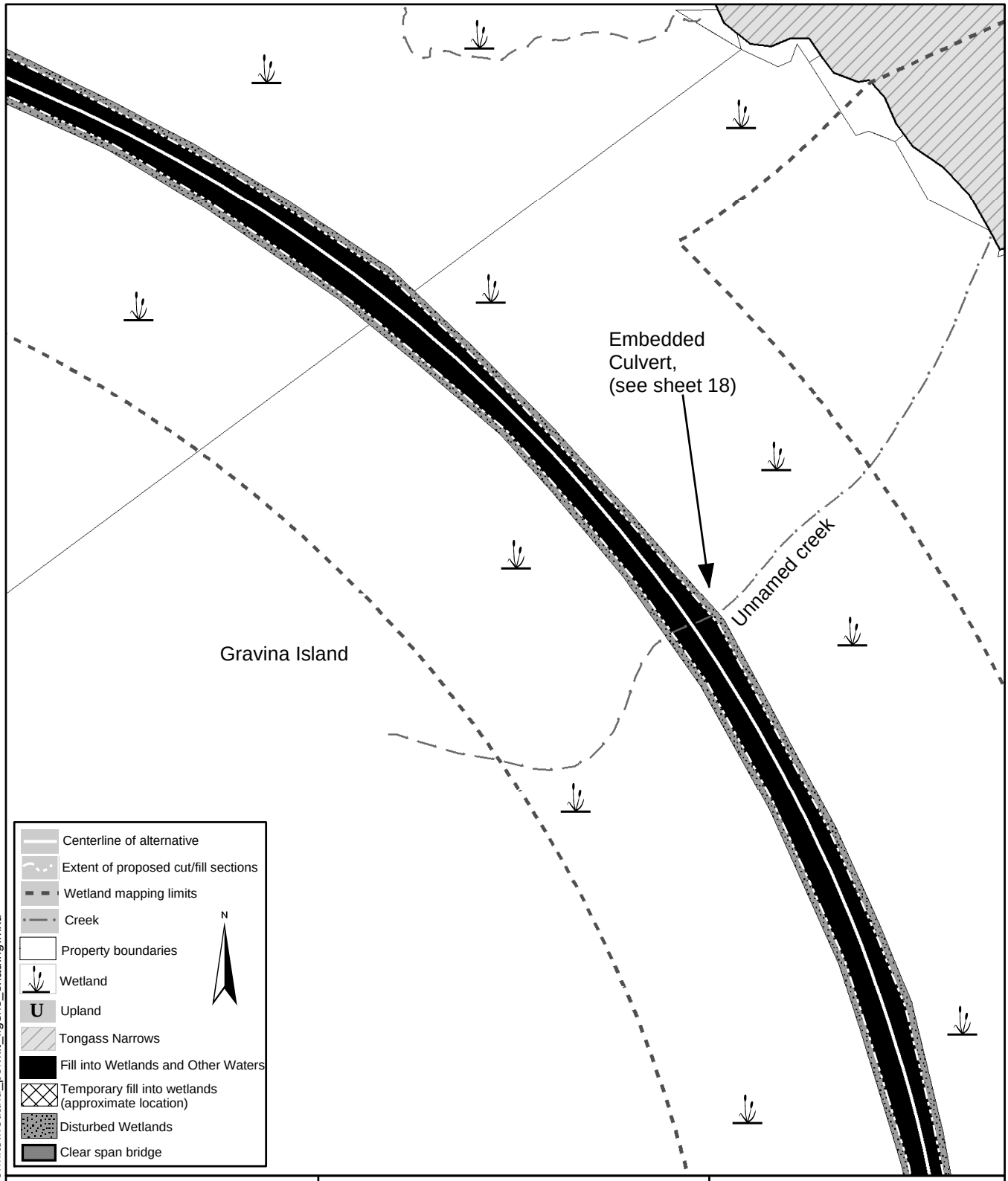
State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

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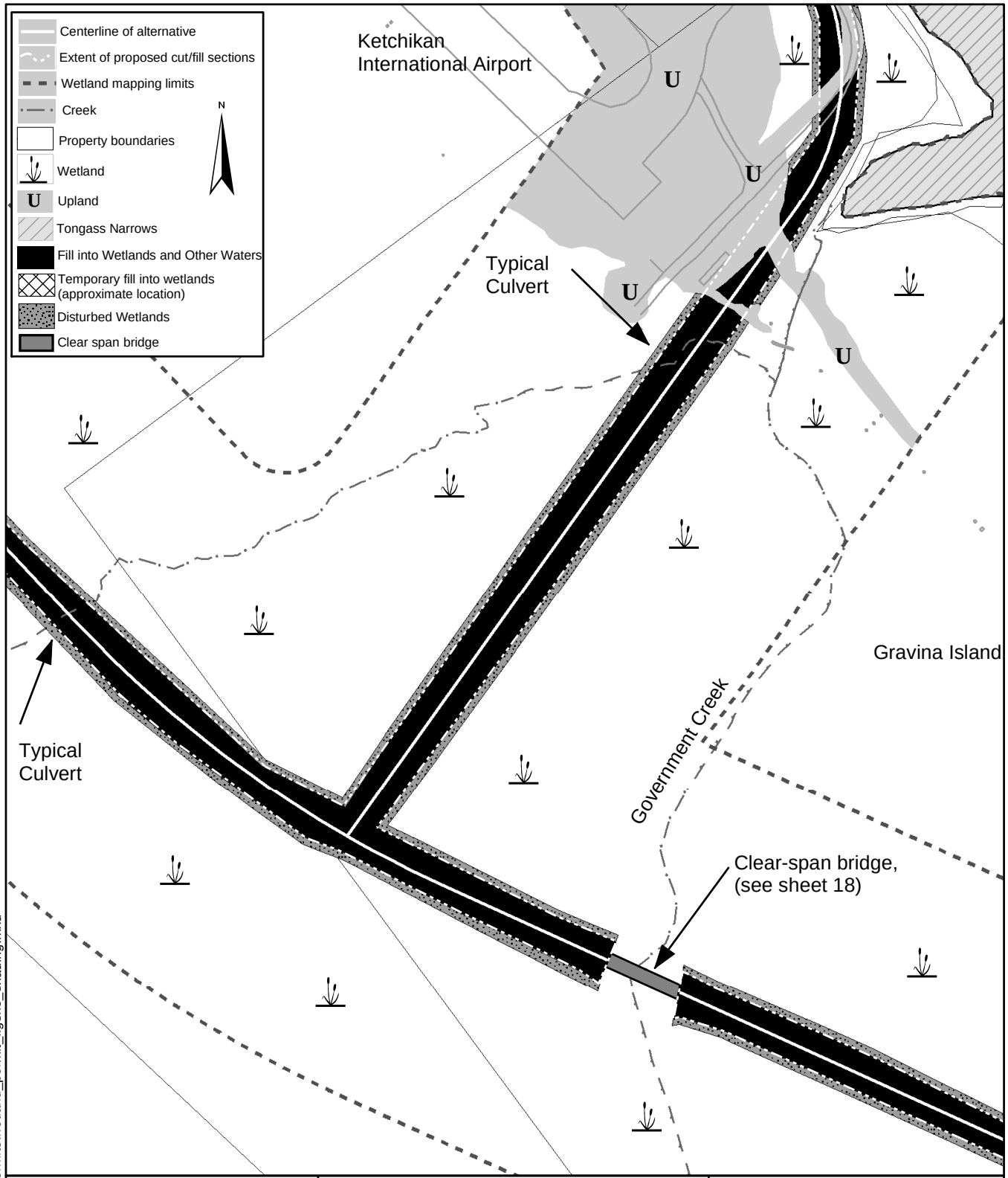
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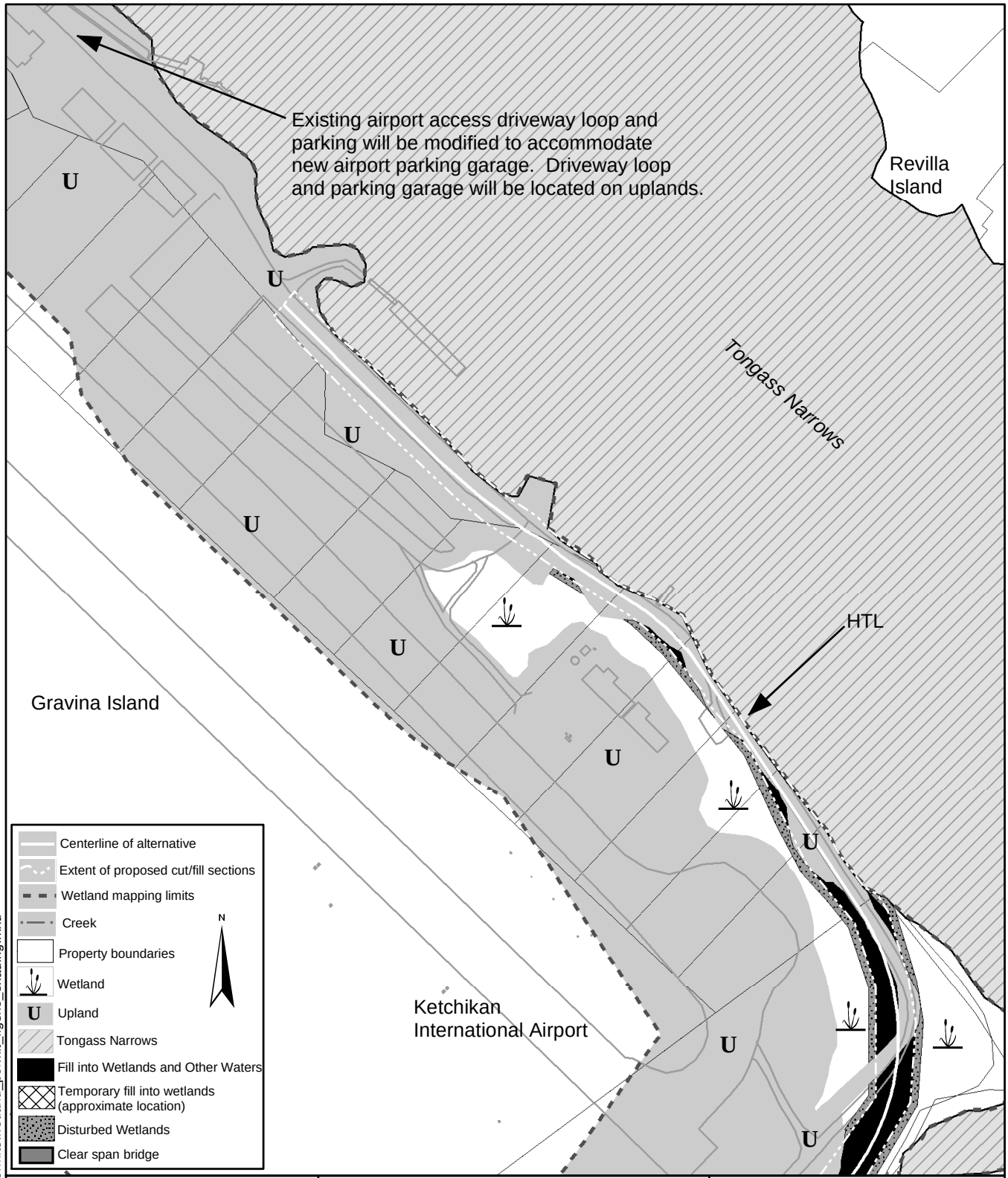
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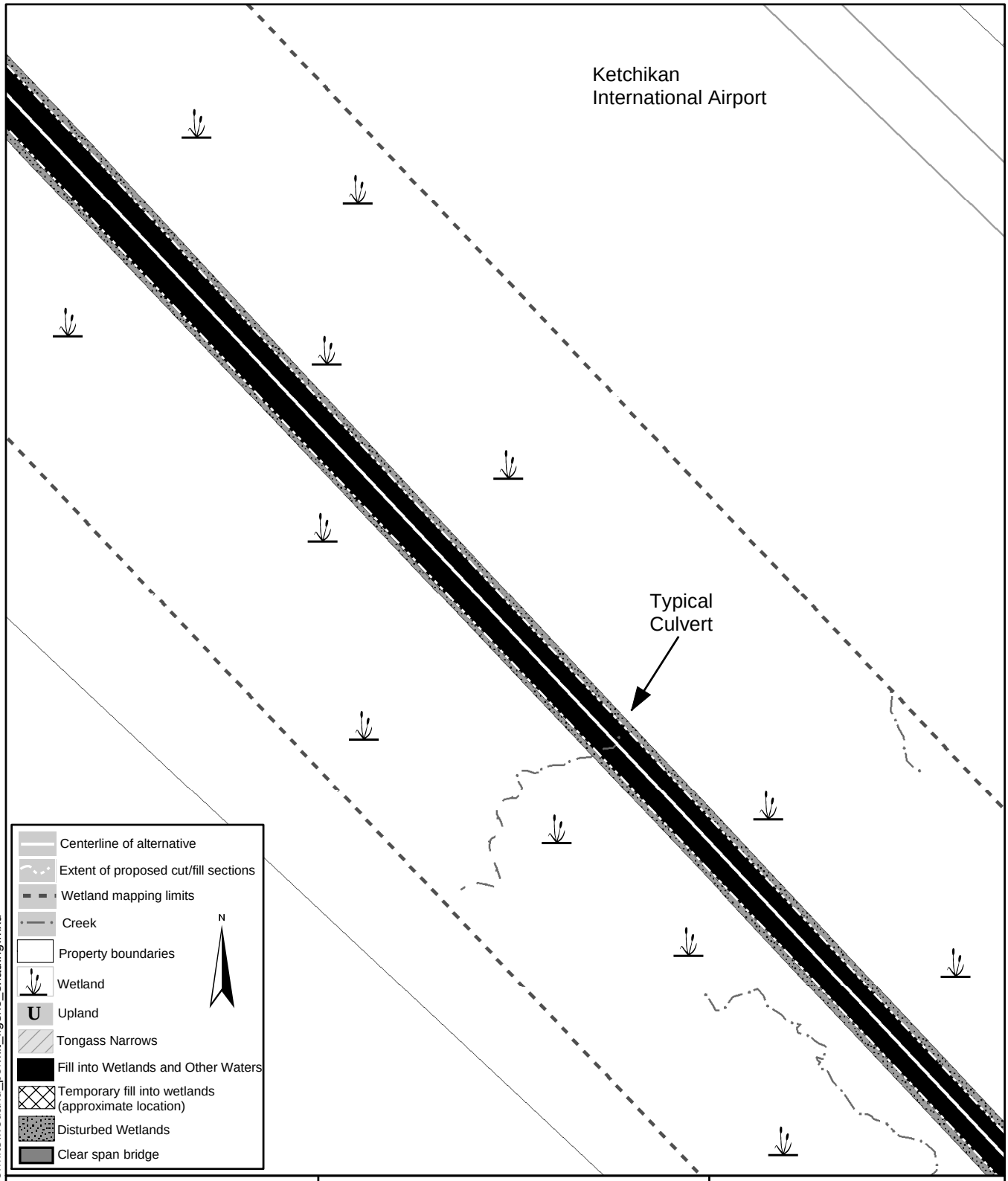
State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS

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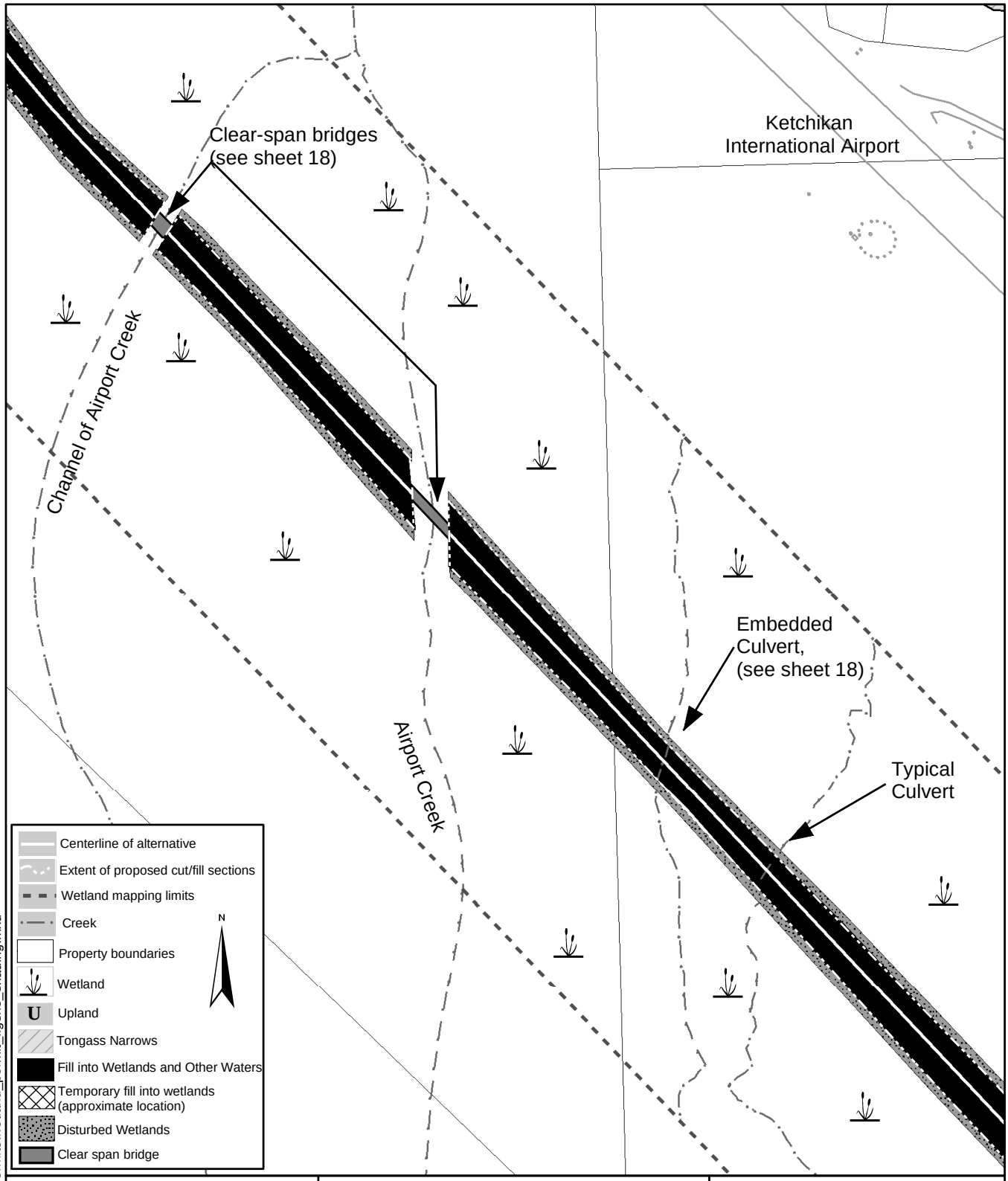
GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS

AT: KETCHIKAN, ALASKA

Date: 6-4-04

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Juneau, AK 99801-7999

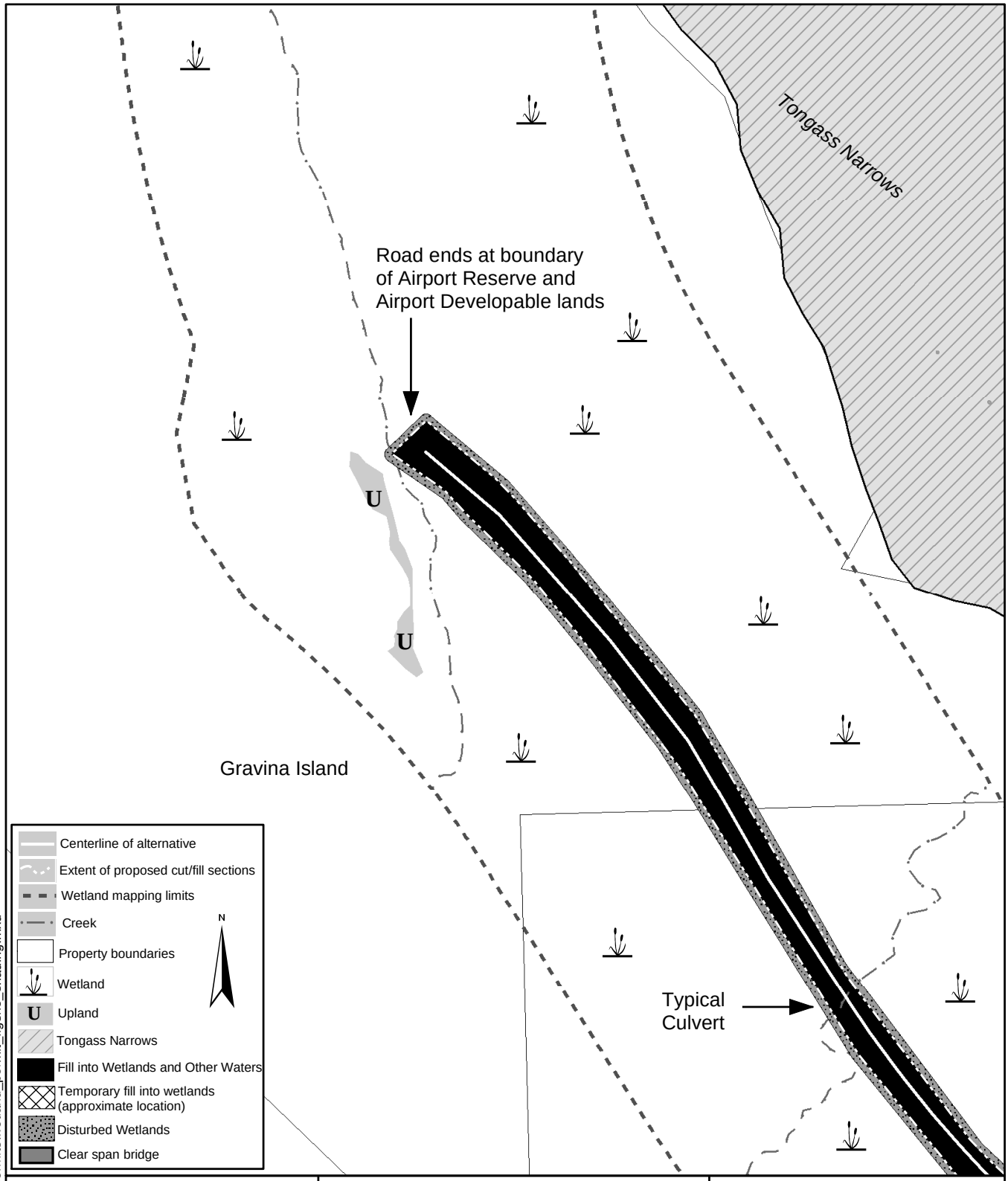
GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS

AT: KETCHIKAN, ALASKA

Date: 6-4-04

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PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

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Copper River Meridian

PREFERRED ALTERNATIVE (F1), PLAN VIEW

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APPLICATION BY:

State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS

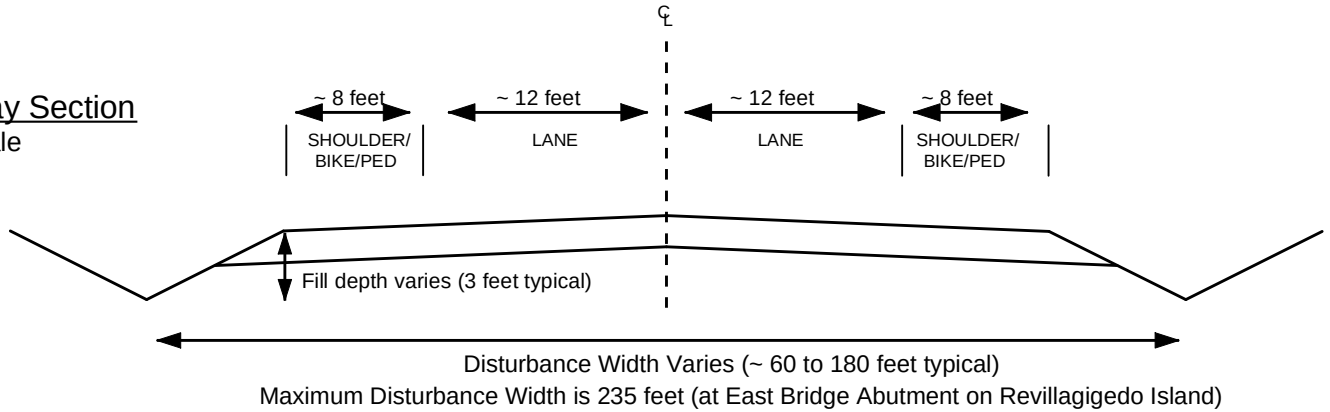
AT: KETCHIKAN, ALASKA

Date: 6-4-04

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Typical Roadway Section

Not to Scale

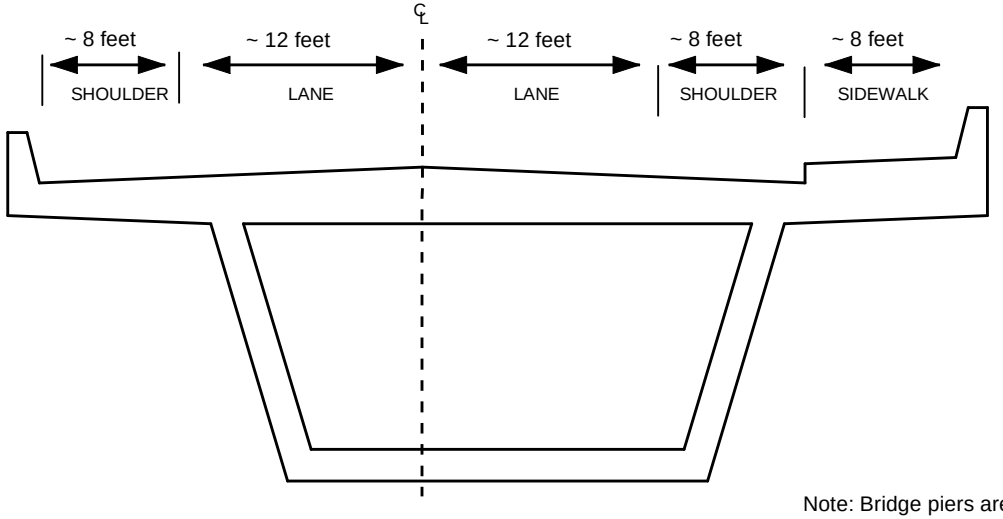


Disturbance Width Varies (~ 60 to 180 feet typical)

Maximum Disturbance Width is 235 feet (at East Bridge Abutment on Revillagigedo Island)

Typical Bridge Section

Not to Scale



Note: Bridge piers are not shown

PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

LOCATION:
T. 75S R. 090E SEC. 16, 22, 23, 26, 27, 35, 36
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T. 76S R. 091E SEC. 06
Copper River Meridian

PREFERRED ALTERNATIVE
(F1)
Typical Roadway and Bridge Sections

APPLICATION BY:
State of Alaska
Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

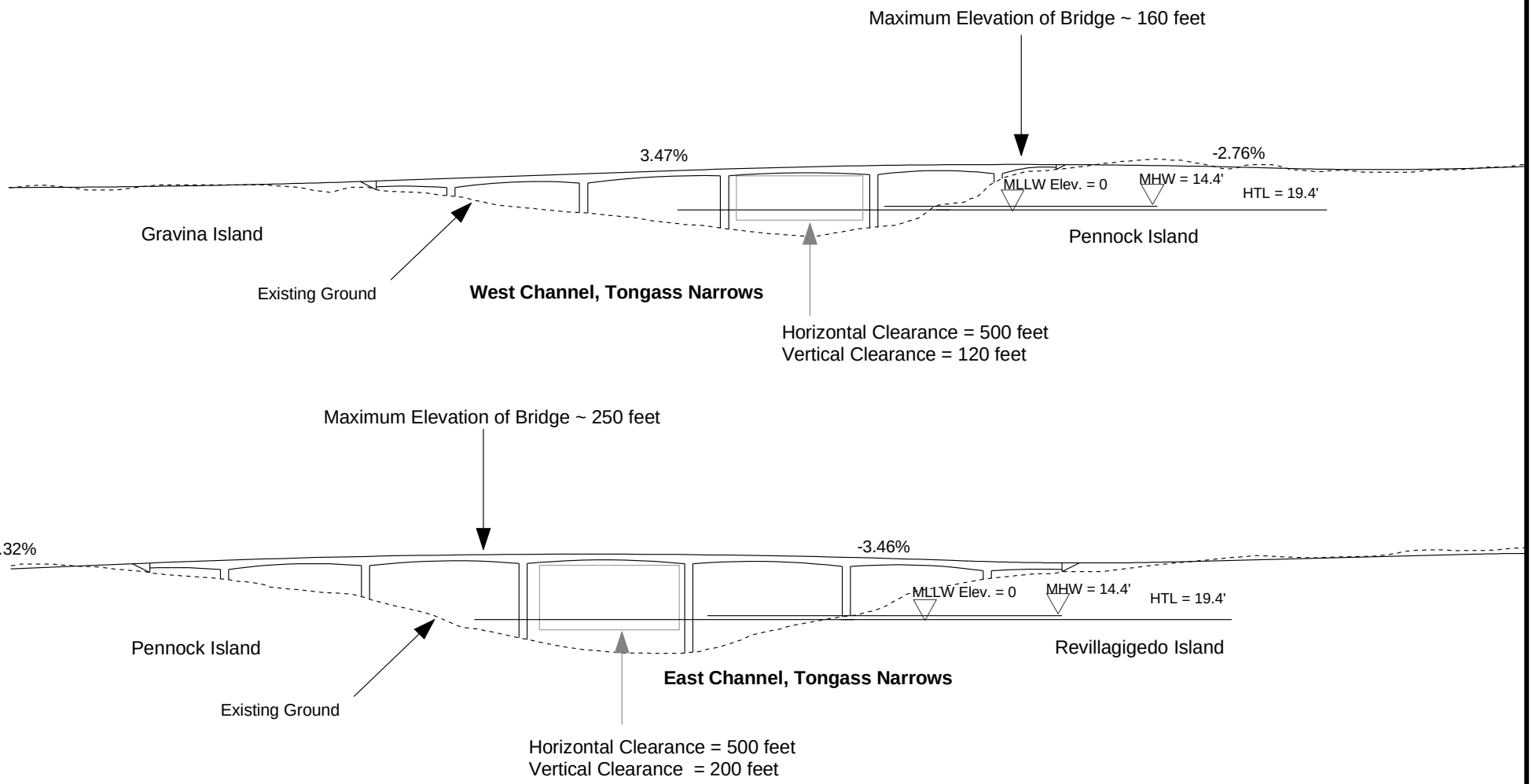
GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS

AT: KETCHIKAN, ALASKA

Date: 6-3-04

File: U:\jsivils\Gravina_EIS\permits\cross_sections_chic.mxd



PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

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Copper River Meridian

PREFERRED ALTERNATIVE
(F1)
Elevation View of Bridges

APPLICATION BY:
State of Alaska
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6860 Glacier Highway
Juneau, AK 99801-7999

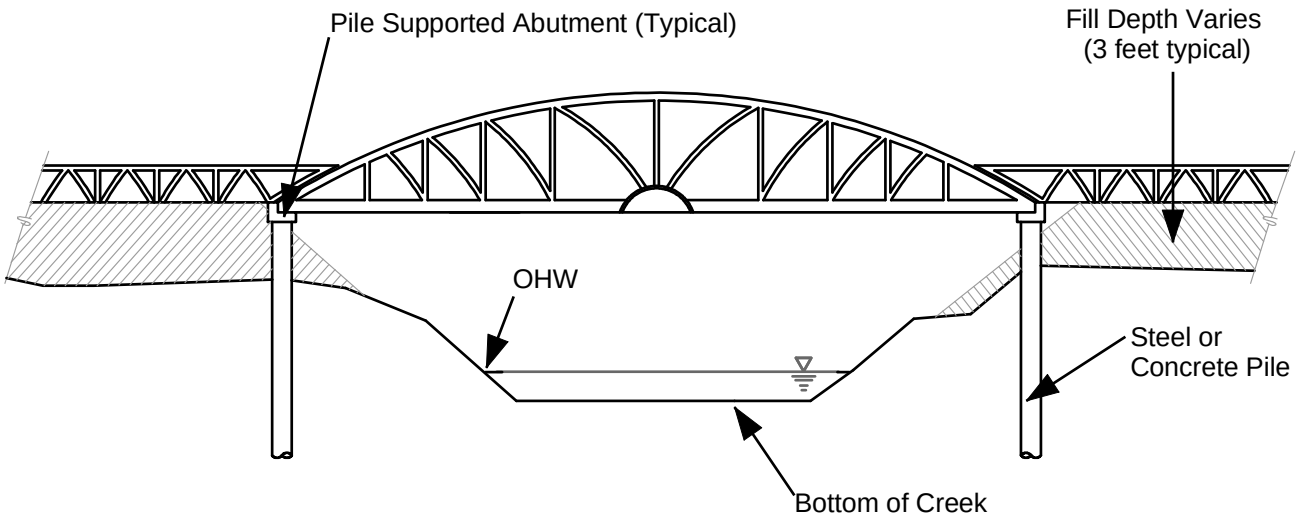
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Tongass Narrows 524

IN: TONGASS NARROWS
AT: KETCHIKAN, ALASKA

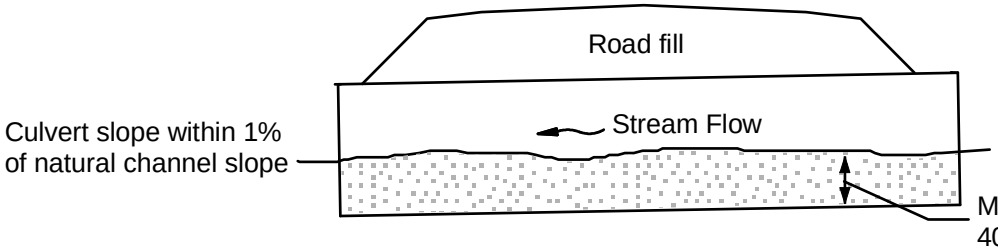
Date: 6-1-04

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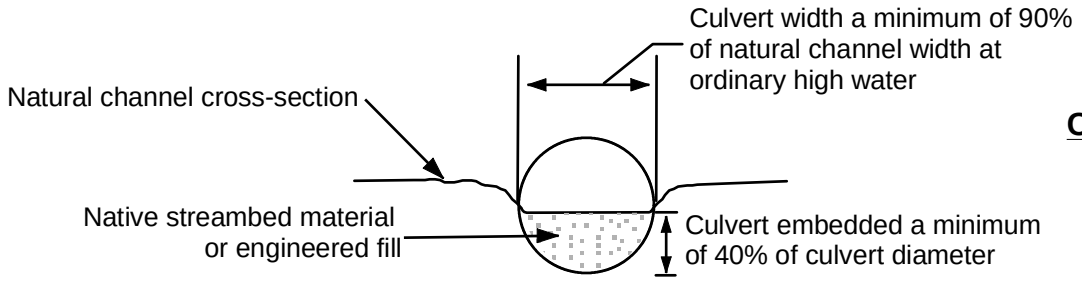
Conceptual Clear Span Bridge
Elevation View



Typical Fish Passage Culvert
Using Tier 1 Stream Simulation Design[1]



Profile



Cross-Section

1. Fish passage culvert will be installed per the August 29, 2001 Memorandum of Agreement between ADF&G and DOT&PF for "Design, Construction, and Permitting of Culverts for Fish Passage".

PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

Adjacent Property Owners:
See attached Sheets

LOCATION:
T. 75S R. 090E SEC. 16, 22, 23, 26, 27, 35, 36
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T. 75S R. 091E SEC. 29, 30, 31, 32
T. 76S R. 091E SEC. 06
Copper River Meridian

Proposed Anadromous
Stream Crossings

NOT TO SCALE

APPLICATION BY:

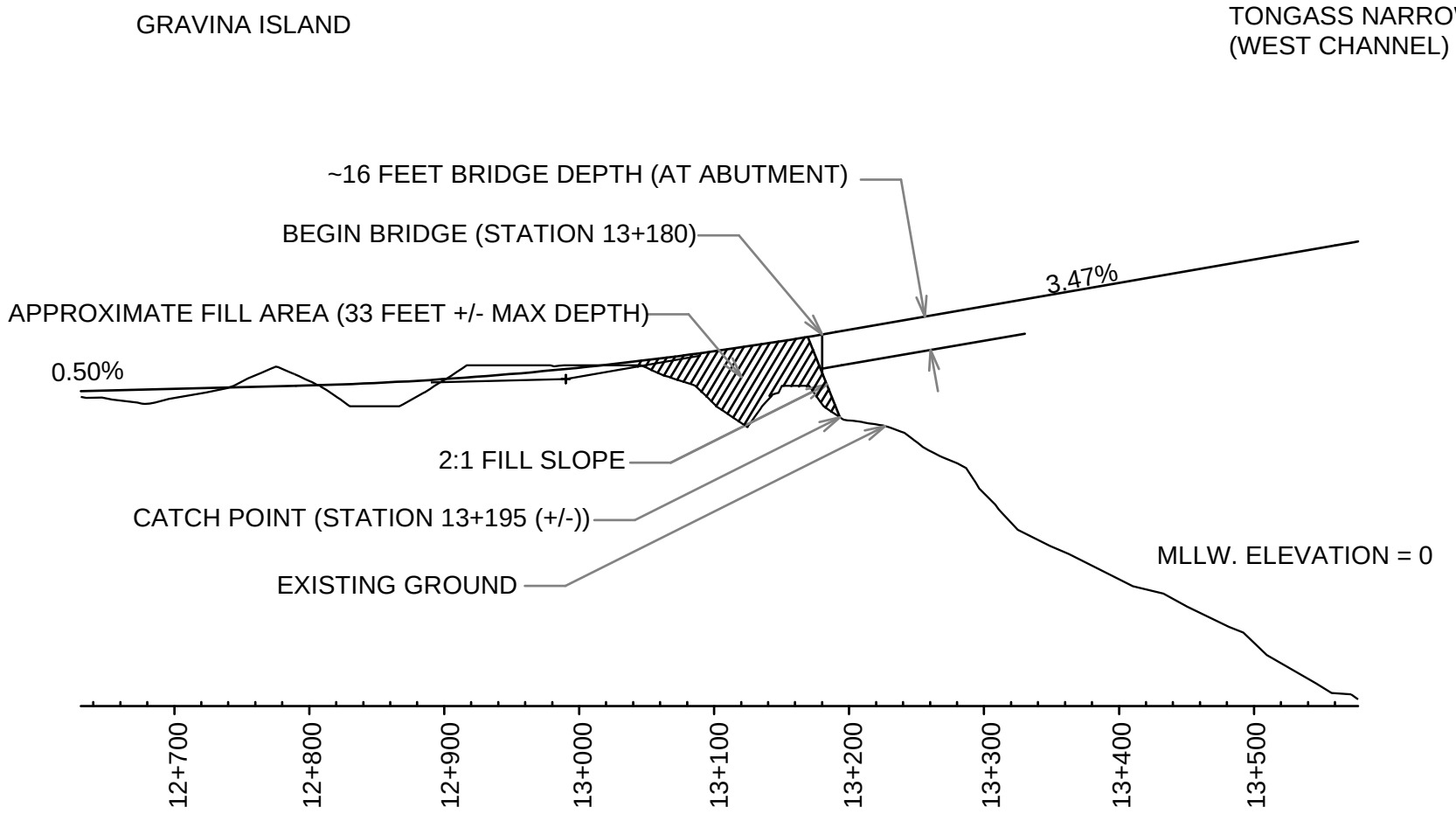
State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

Gravina Access Project
9-2000-0152
Tongass Narrows 524

In: Tongass Narrows
At: Ketchikan, Alaska

Date: 5-19-04

File: U:\jsivils\Gravina_eis\permits\clear span bridge.mxd



Note: This figure depicts a cross section at the west abutment of the F1 bridge over Tongass Narrows, West Channel.
Of the four bridge abutments required under Alternative F1, this abutment would require the largest volume of fill.
Based on the information available at this time, the fill height would be approximately 33 feet at the abutment. Not to scale.

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Copper River Meridian

PREFERRED ALTERNATIVE
(F1)
Abutment Elevation View

APPLICATION BY:
State of Alaska
Department of Transportation and Public Facilities
6860 Glacier Highway
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9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS
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File: U:\jsivls\Gravina\DEIS\permits\abutment.mxd

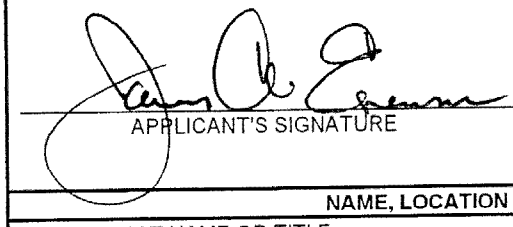
Gravina Access Project
Section 404 / Section 10 Permit Application for the DOT&PF and FHWA Preferred Alternative (F1)

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)			
1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED

(ITEMS BELOW TO BE FILLED BY APPLICANT)	
5. APPLICANT'S NAME Alaska Department of Transportation and Public Facilities; Jim Evensen	8. AUTHORIZED AGENT'S NAME AND TITLE HDR Alaska, Inc.; Mark Dalton
6. APPLICANT'S ADDRESS DOT&PF Southeast Region 6860 Glacier Highway Juneau, Alaska 99801-7999	9. AGENT'S ADDRESS HDR Alaska, Inc. 2525 C Street, Suite 305 Anchorage, Alaska 99503
7. APPLICANT'S PHONE NOS. W/AREA CODE Phone (907) 465-1821 Fax (907) 465-2016	10. AGENT'S PHONE NOS. W/AREA CODE Phone (907) 644-2071 Fax (907) 644-2022

11. STATEMENT OF AUTHORIZATION

I hereby authorize Mark Dalton of HDR Alaska, Inc. 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.



APPLICANT'S SIGNATURE

7-15-04

DATE

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE

Gravina Access Project
9-2000-0152
Tongass Narrow 524

13. NAME OF WATERBODY, IF KNOWN	14. PROJECT STREET ADDRESS
Tongass Narrows	Not Applicable
15. LOCATION OF PROJECT Ketchikan (COUNTY) Alaska (STATE)	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN

Township 75 S., Range 90 E., Sections 16, 22, 23, 26, 27, 35, and 36
Township 76 S., Range 90 E., Section 01
Township 75 S., Range 91 E., Sections 29, 30, 31, and 32
Township 76 S., Range 91 E., Section 06
Copper River Meridian

17. DIRECTIONS TO THE SITE

To access the Preferred Alternative (F1) from downtown Ketchikan: Follow Tongass Avenue to 1/4 mile south of the intersection of Tongass Avenue and Deermount Street. This is the location of the bridge terminus on Revillagigedo Island. See attached project description for more details.

18. Nature of Activity

Construct two bridges and adjoining arterial roadway across Tongass Narrows via Pennock Island to connect Revillagigedo and Gravina Islands. The new connection will require fill and structure placement in Section 10 and 404 waters. The arterial roadway will have two 12-foot paved lanes with two 8-foot-wide paved shoulders. The bridges would have two 12-foot lanes, two 8-foot-wide shoulders, and one 8-foot-wide sidewalk (all paved). See attached project description and Sheet 16 for more details.

19. Project Purpose

The purpose of this project is to improve surface transportation between Revillagigedo Island, home of Ketchikan, Saxman, and other communities, and Gravina Island, the location of Ketchikan International Airport and adjoining land that offers recreational and development potential. Improved transportation access to Gravina Island would provide better service to the airport and allow development of the large tracts of land situated on the island. See attached project description for more details.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

To construct roadway embankment.

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

Note: This application includes volumes of fill material for the entire project. However, the Ketchikan Gateway Borough has previously secured a Dept of the Army Permit (M-2000-0307) for a road parallel to a portion of the road described here and is applying to modify its permit so that the borough road coincides with the road proposed here. See attached project description for more information. This would reduce the effective volume of fill from what is described below.

Approximate Fill Amounts in Wetlands and other Waters of the U.S.: Total Permanent Fill: 500,000 cy. The roadway embankment would be constructed with clean, crushed rock or gravel. Total Temporary Fill: 54,700 cy. Clean, crushed rock or gravel would be used as temporary fill.

The two bridges across Tongass Narrows require the placement of a total of 6 bridge piers within waters under the jurisdiction of Section 10 of the Rivers and Harbors Act. These bridges would also require the placement of a total of 7 bridge piers and bridge abutments in wetlands. In addition, the roadway on Gravina Island will cross approximately 14 streams. The creek crossings will employ clear span bridges, typical culverts, or embedded culverts. See project description and figures for details.

24. Surface Area in Acres of Wetlands or Other Waters Filled

Note: This application includes volumes of fill material for the entire project. However, the Ketchikan Gateway Borough has previously secured a Dept of the Army Permit (M-2000-0307) for a road parallel to a portion of the road proposed here and is applying to modify its permit so that the borough road coincides with the road proposed here. See attached project description for more information. This would reduce the effective area of wetland loss from what is described below by approximately 11 acres.

An approximate total of 96.5 acres of wetlands and 0.1 acre of ponds would be permanently filled (this total includes 0.2 acre of wetlands that would receive bridge piers or abutments). Six bridge piers placed in Tongass Narrows would encompass approximately 0.2 acre. It is anticipated that construction of the Preferred Alternative (F1) would require the placement of temporary fill into approximately 11.3 acres of wetlands. See attached project description and figures for more details.

23. Is Any Portion of the Work Already Complete? Yes_____ No___XX___, IF YES, DESCRIBE THE COMPLETED WORK

24. Addresses of Adjoining Property Owners, Lessees, Etc. Whose Property Adjoins the Waterbody

The attached 2-page table lists property owners within 500 feet of either side of the Preferred Alternative (F1).

25. List of Other Certifications or Approvals/Denials Received from other Federal, State or Local Agencies for Work Described in This Application.

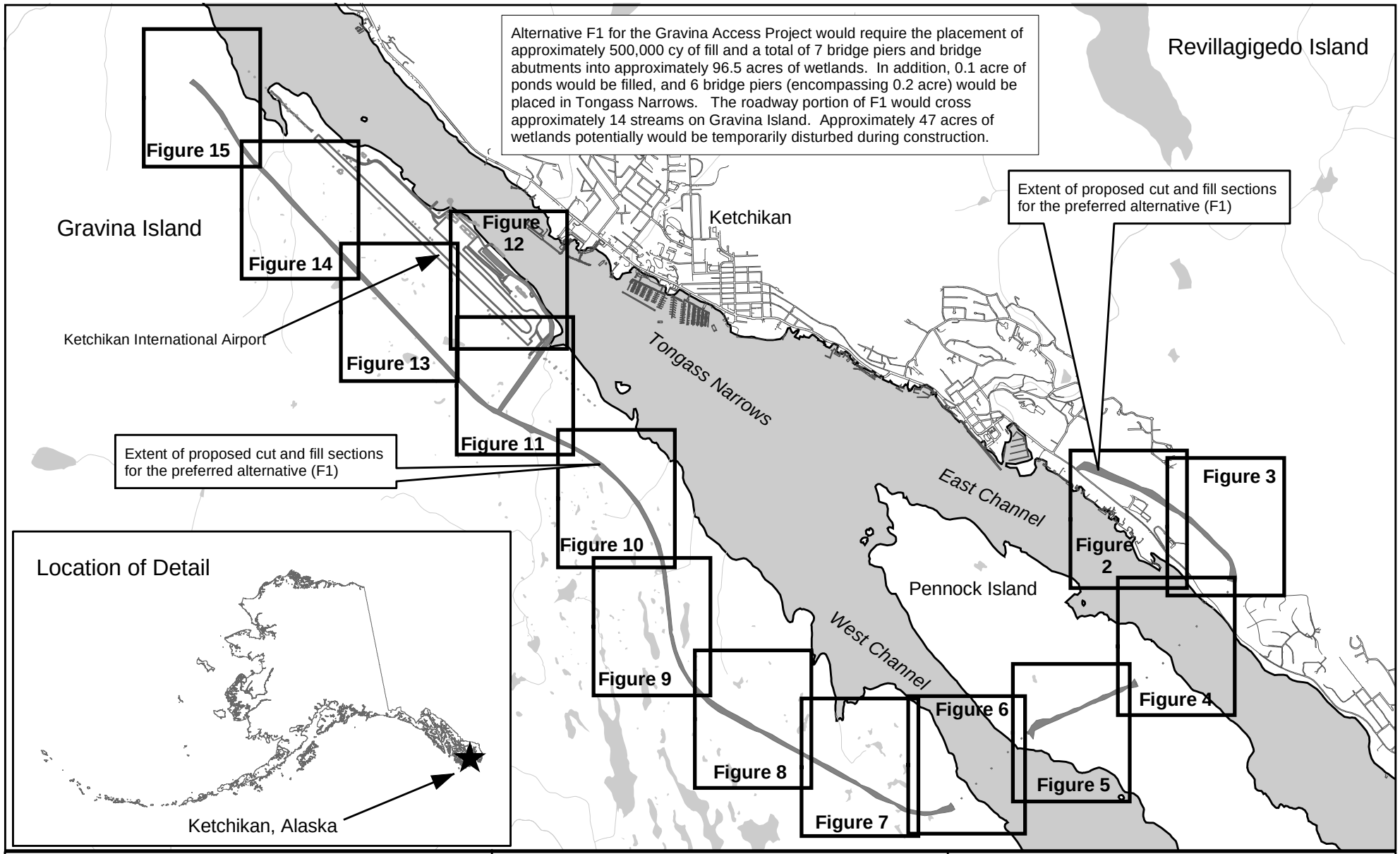
AGENCY	TYPE APPROVAL	ID NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
Alaska Department of Natural Resources (DNR) Office of Project Management and Permitting	ACMP Consistency Determination		Concurrent with this application		
Alaska Department of Environmental Conservation	Section 401 Water Quality Certification		Concurrent with this application		
Alaska DNR Office of Habitat Management and Permitting	Title 41 Fish Habitat Permit		Concurrent with this application		
U.S. Environmental Protection Agency	Construction NPDES General Permit		During design		
U.S. Coast Guard	Section 9 Bridge Permit		During design		

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the 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
	7-15-04		

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.



PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

LOCATION:
T. 75S R. 090E SEC. 16, 22, 23, 26, 27, 35, 36
T. 76S R. 090E SEC. 01
T. 75S R. 091E SEC. 29, 30, 31, 32
T. 76S R. 091E SEC. 06
Copper River Meridian

Adjacent Property Owners:
See attached Table.

PREFERRED ALTERNATIVE
(F1)
SHEET EXTENTS AND VICINITY MAP

APPLICATION BY:
State of Alaska
Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

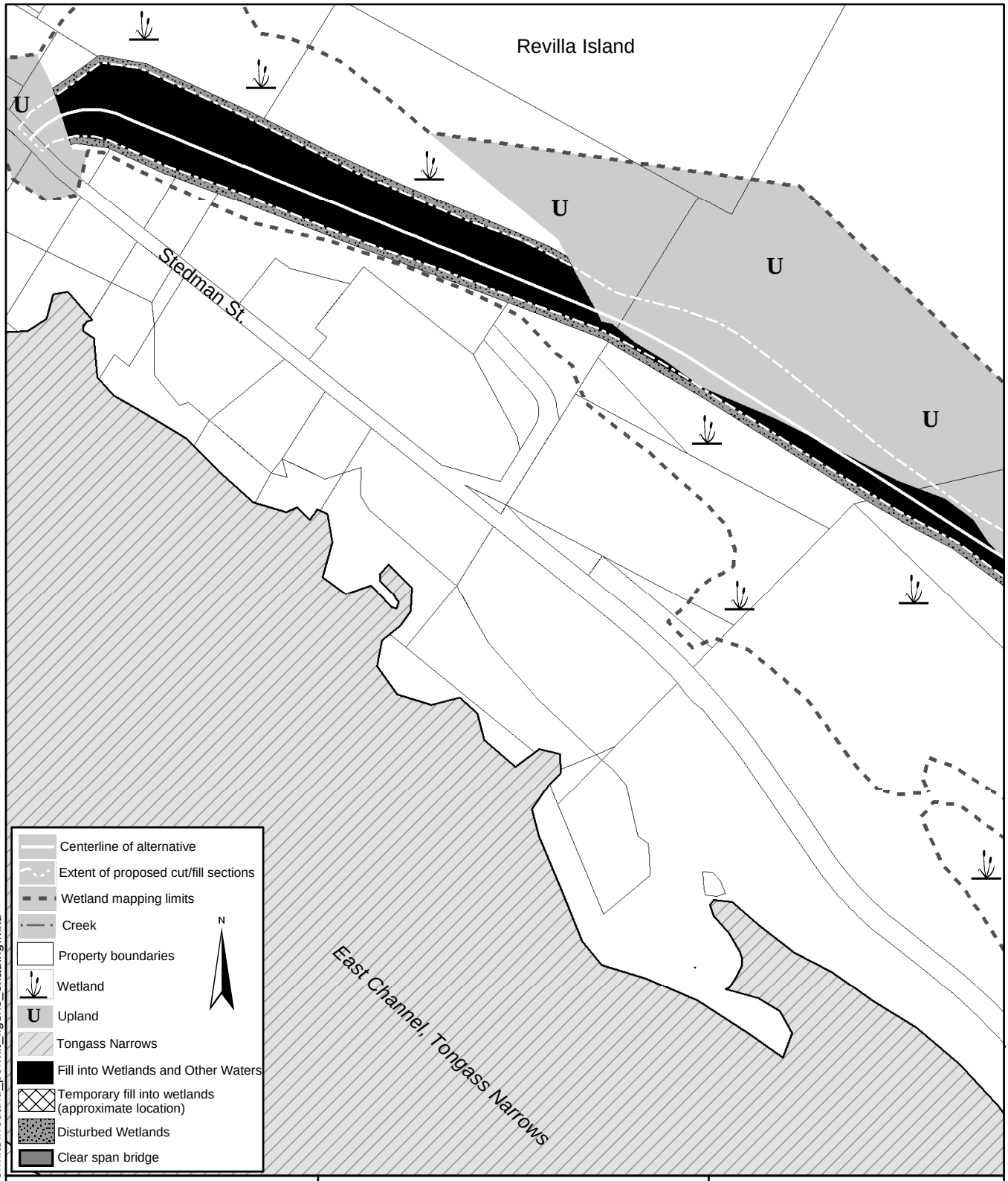
GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS
AT: KETCHIKAN, ALASKA

Date: 6-4-04

SHEET 1 of 19

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Copper River Meridian

PREFERRED ALTERNATIVE (F1), PLAN VIEW

SCALE 1" = 400'

APPLICATION BY:

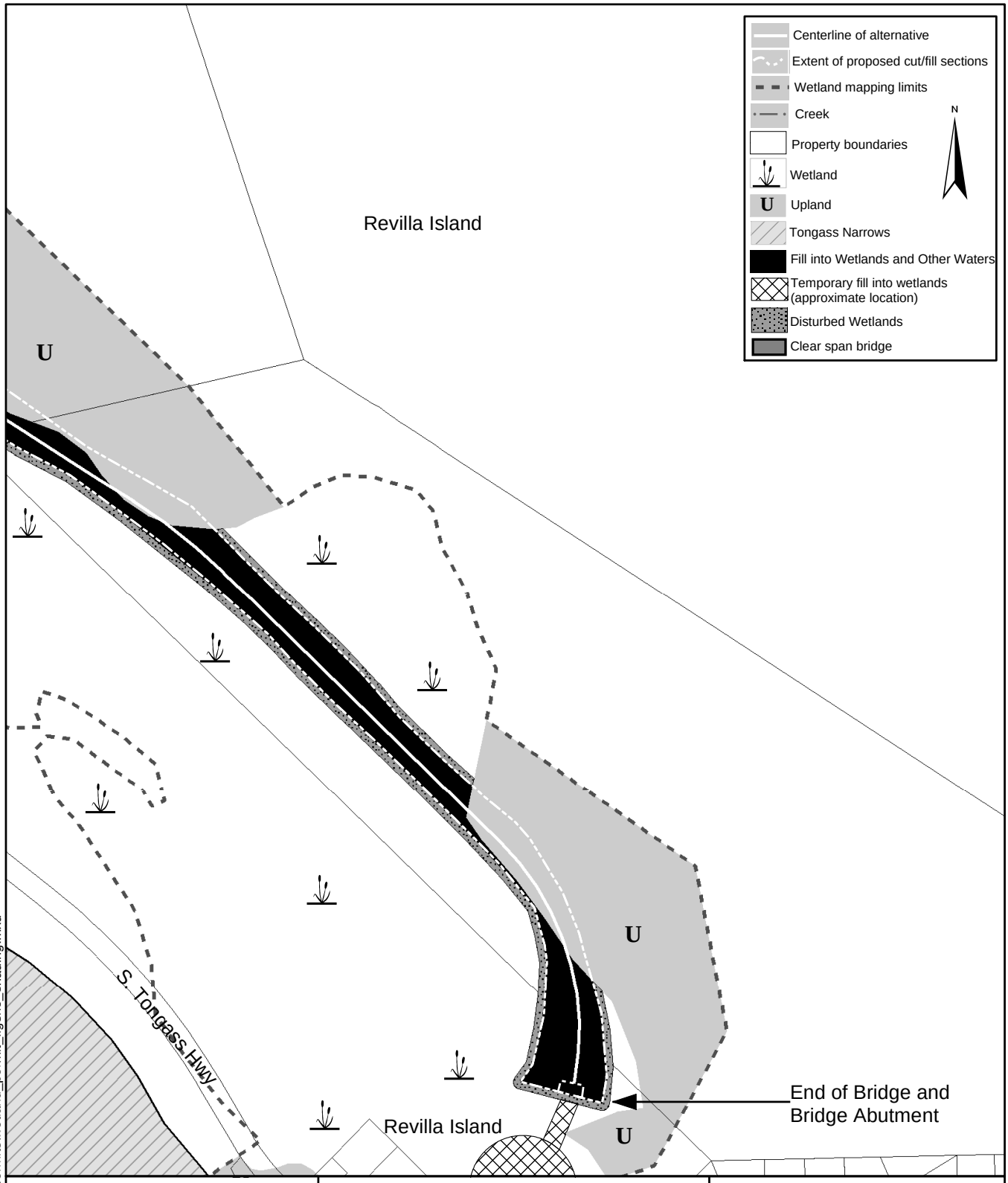
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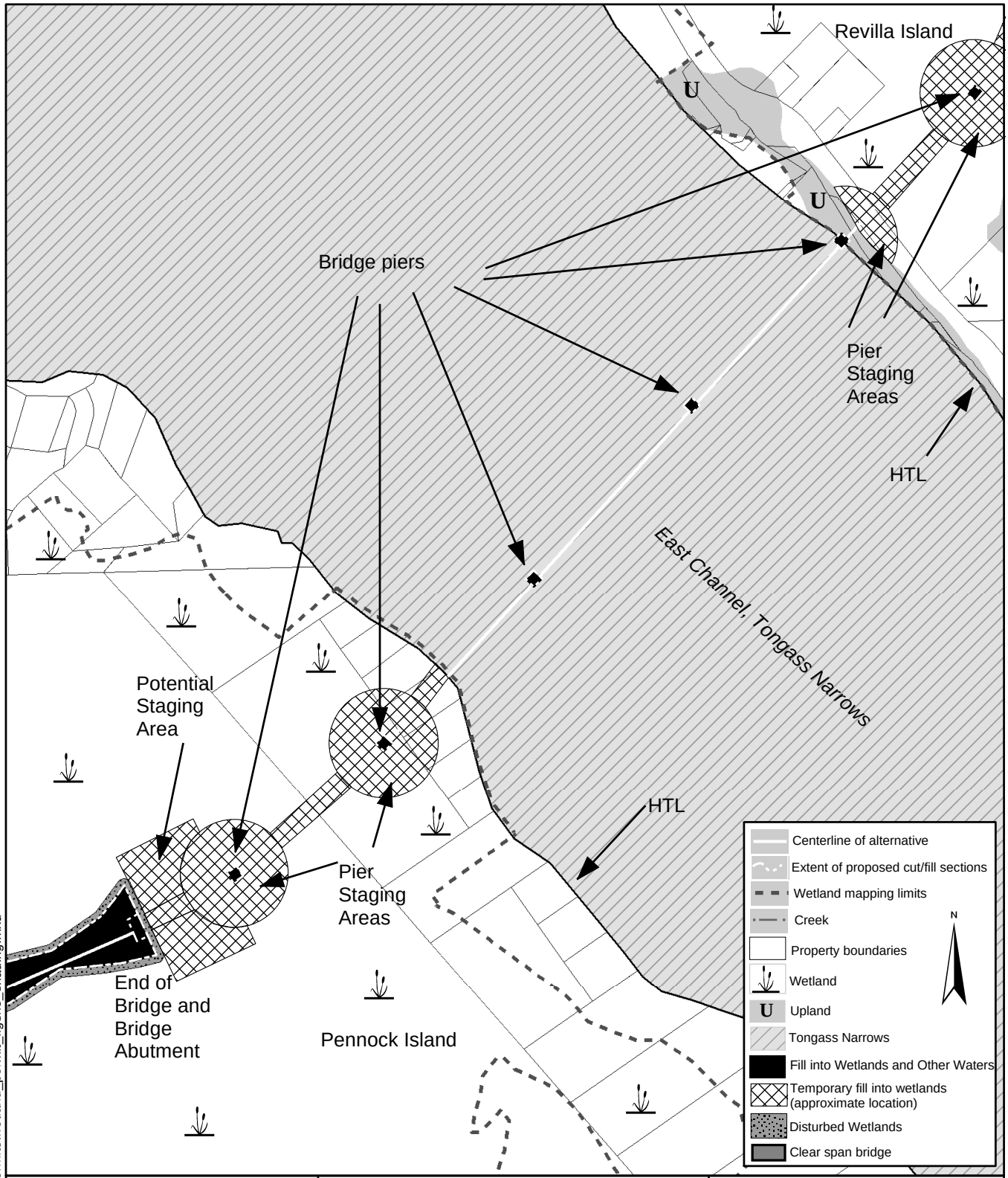
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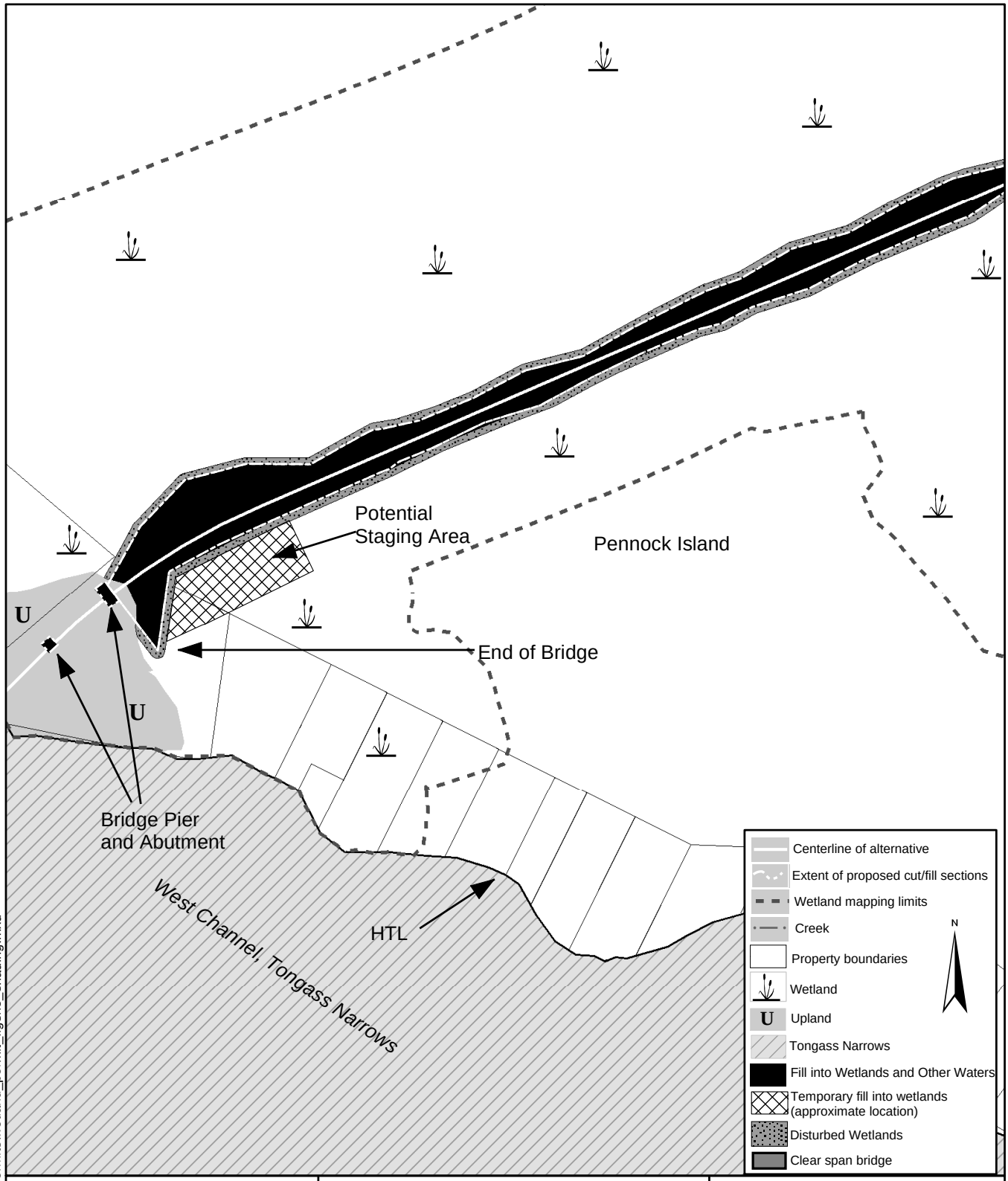
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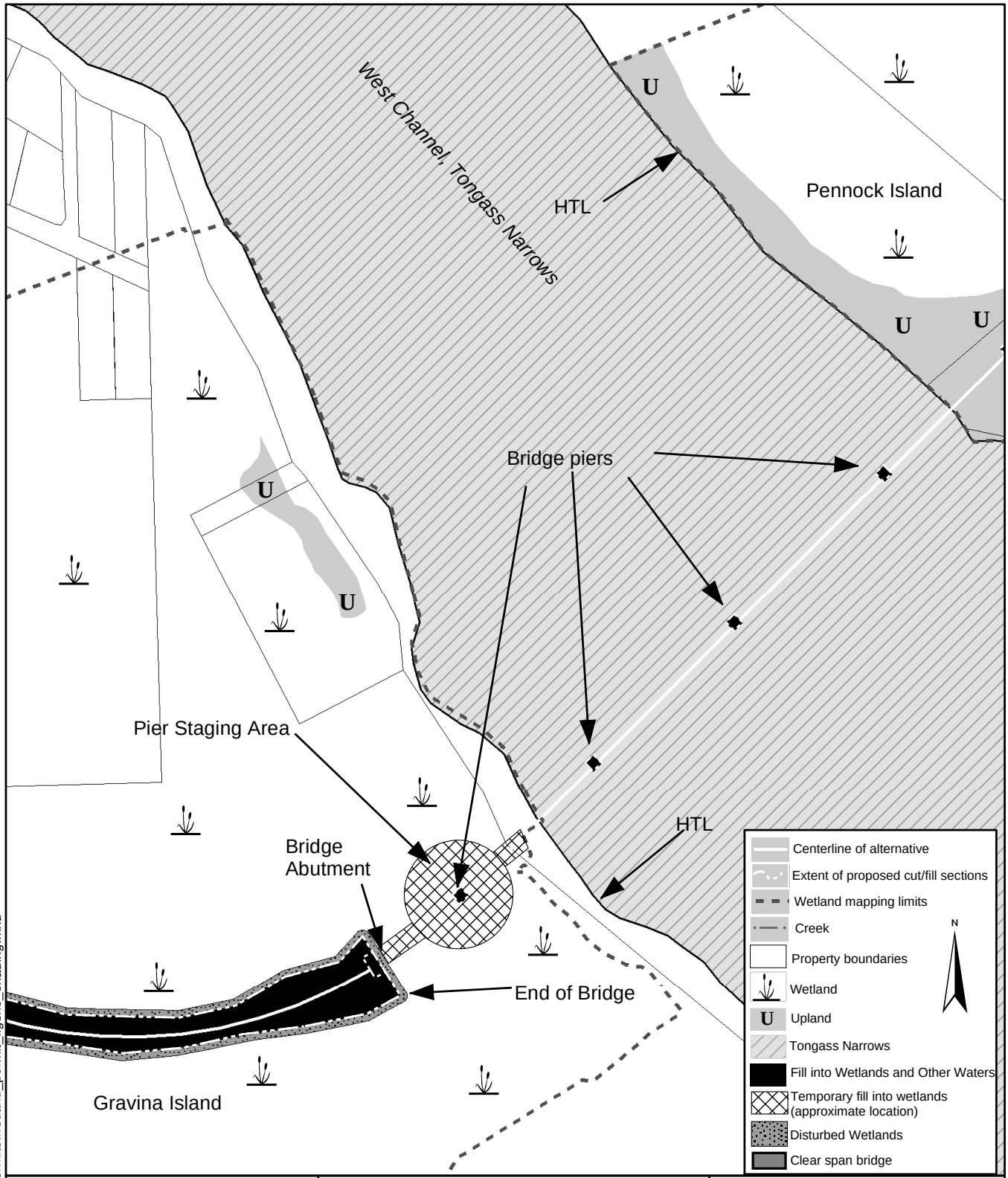
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SHEET 5 of 19

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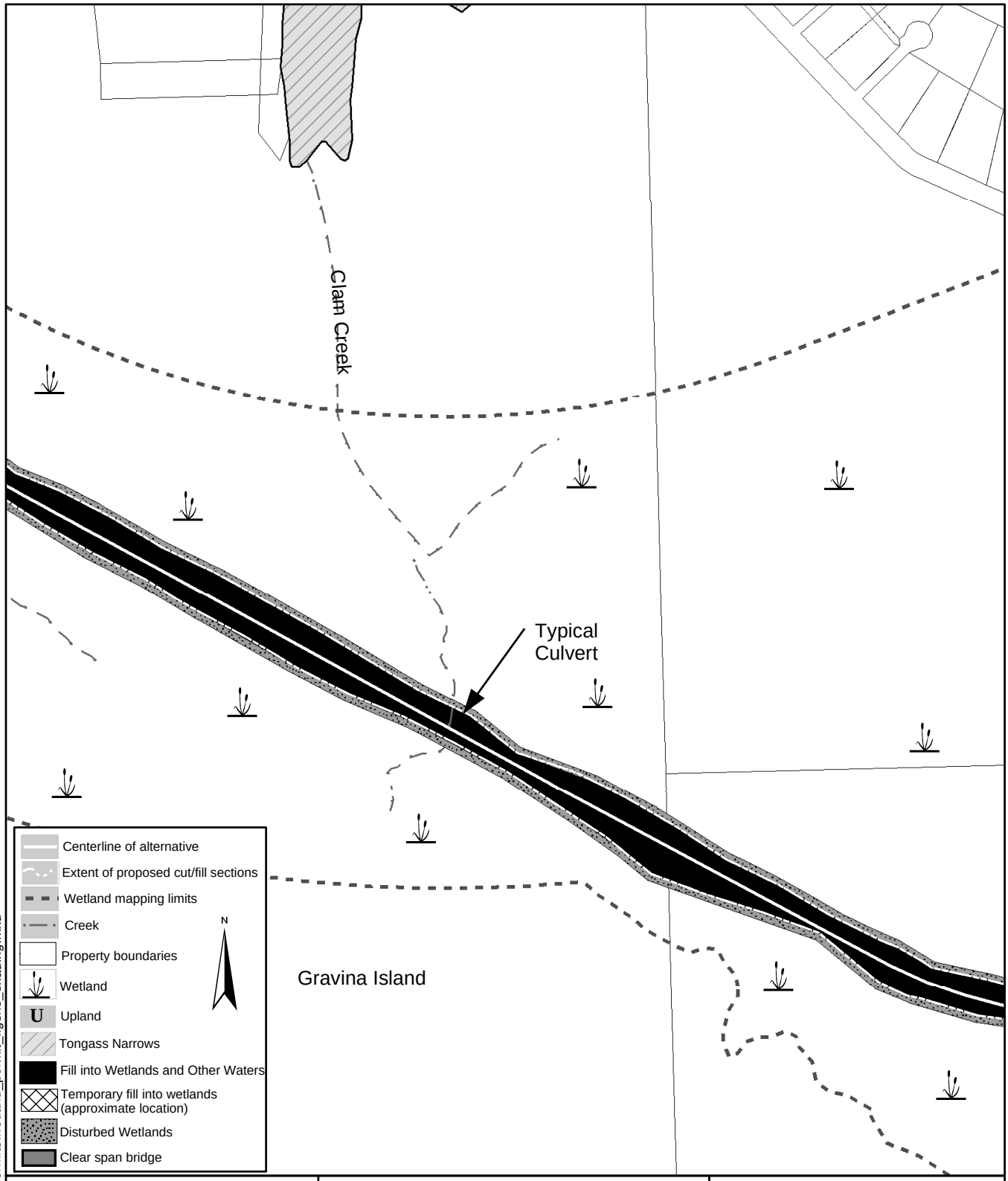
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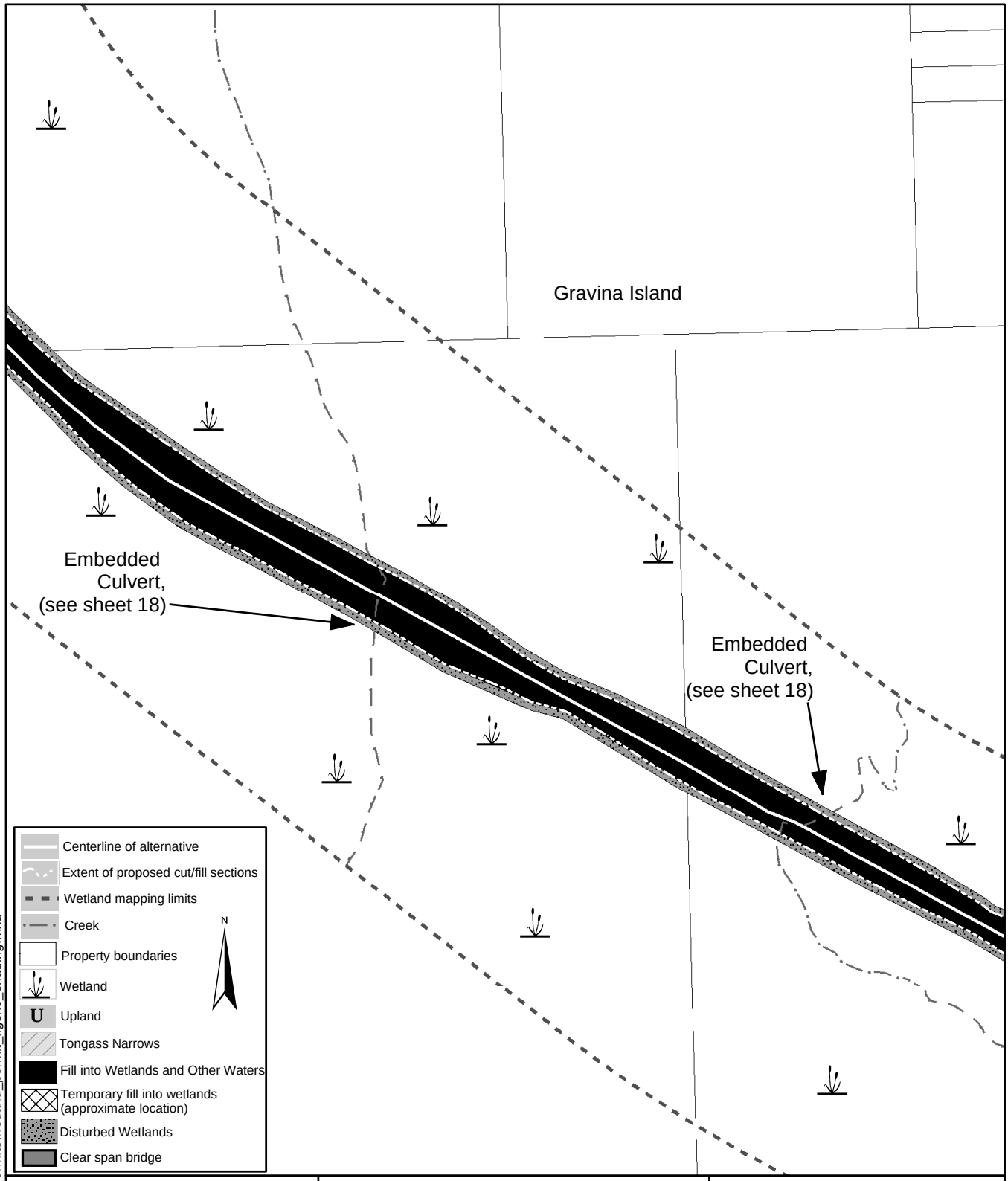
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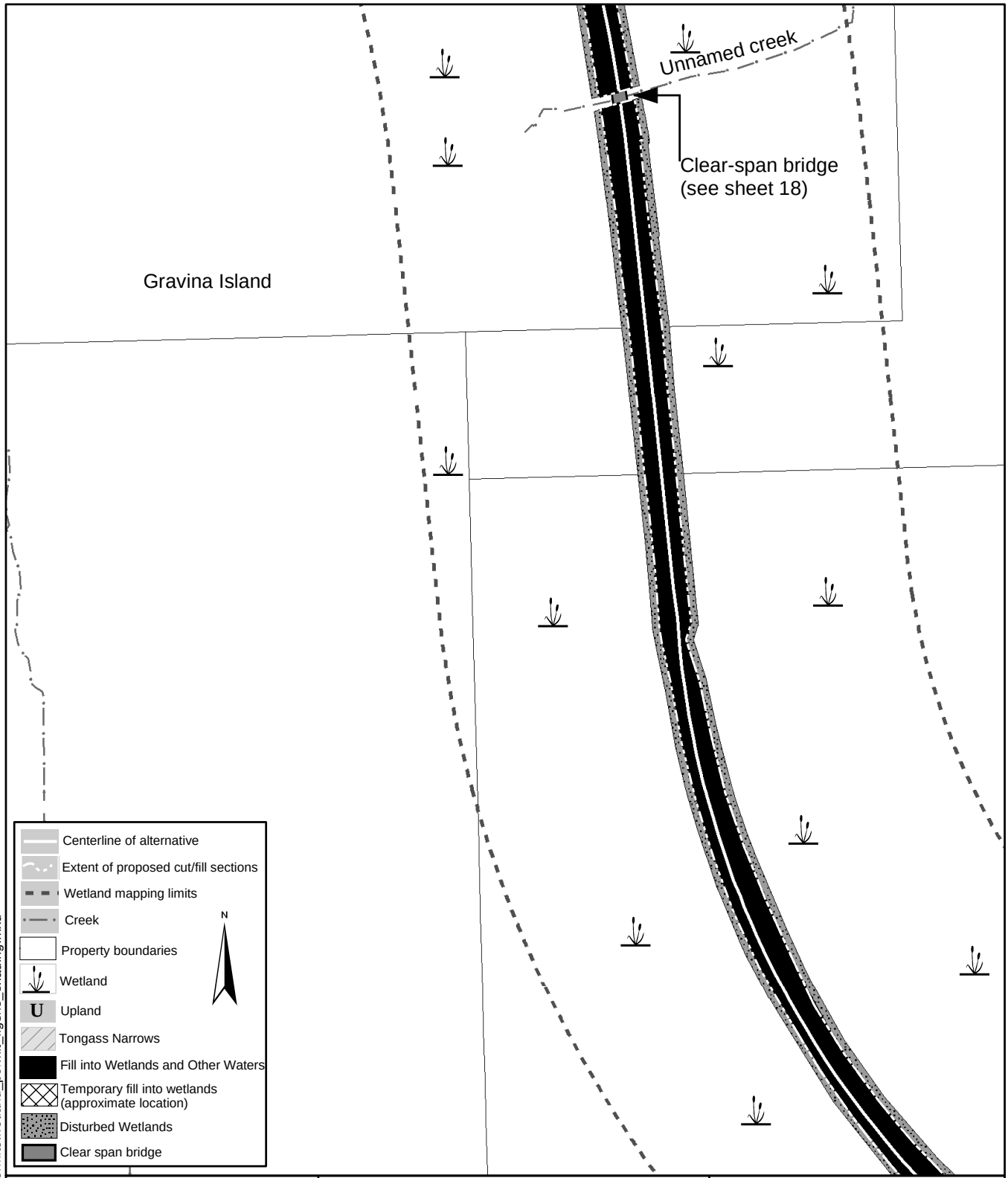
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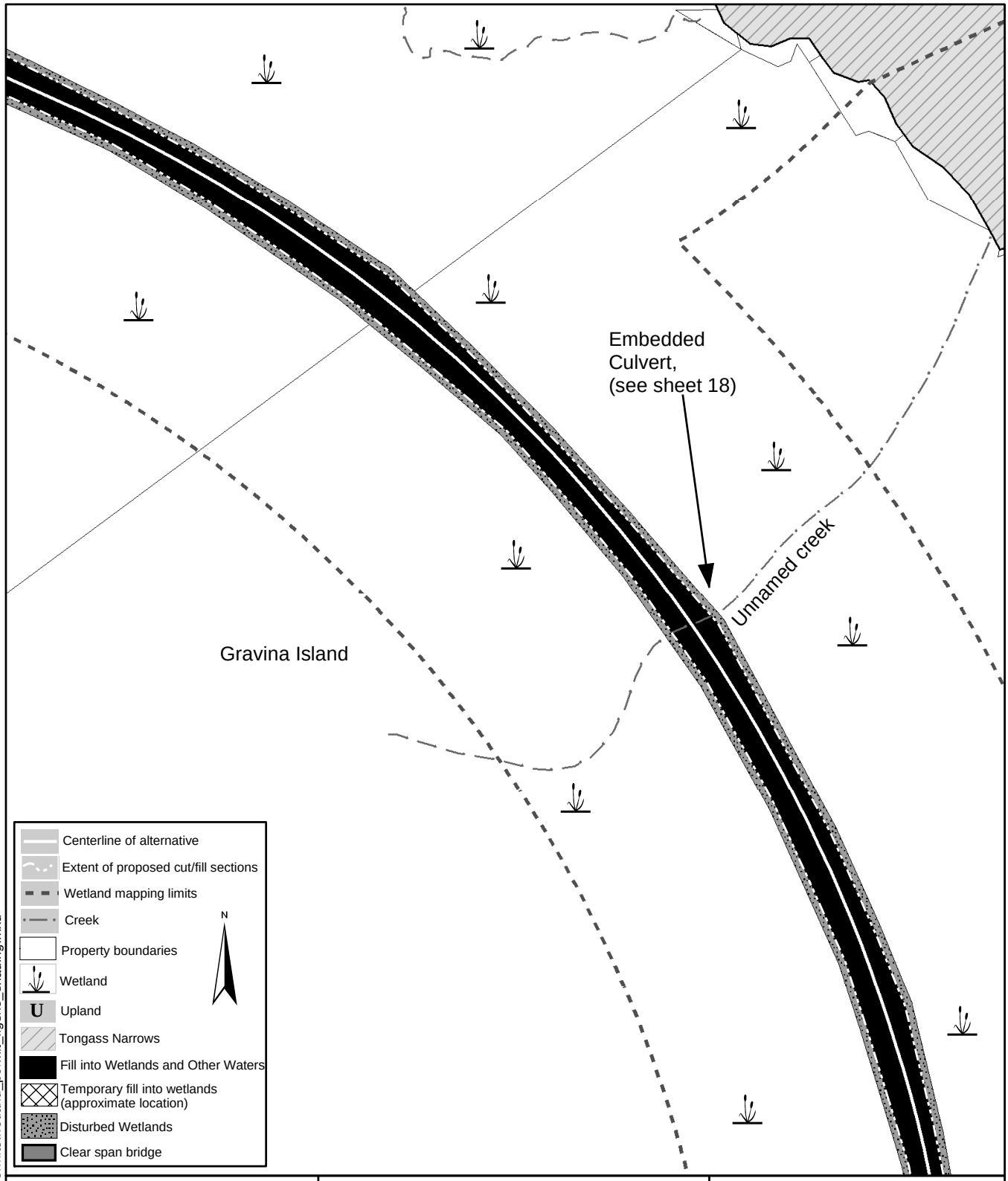
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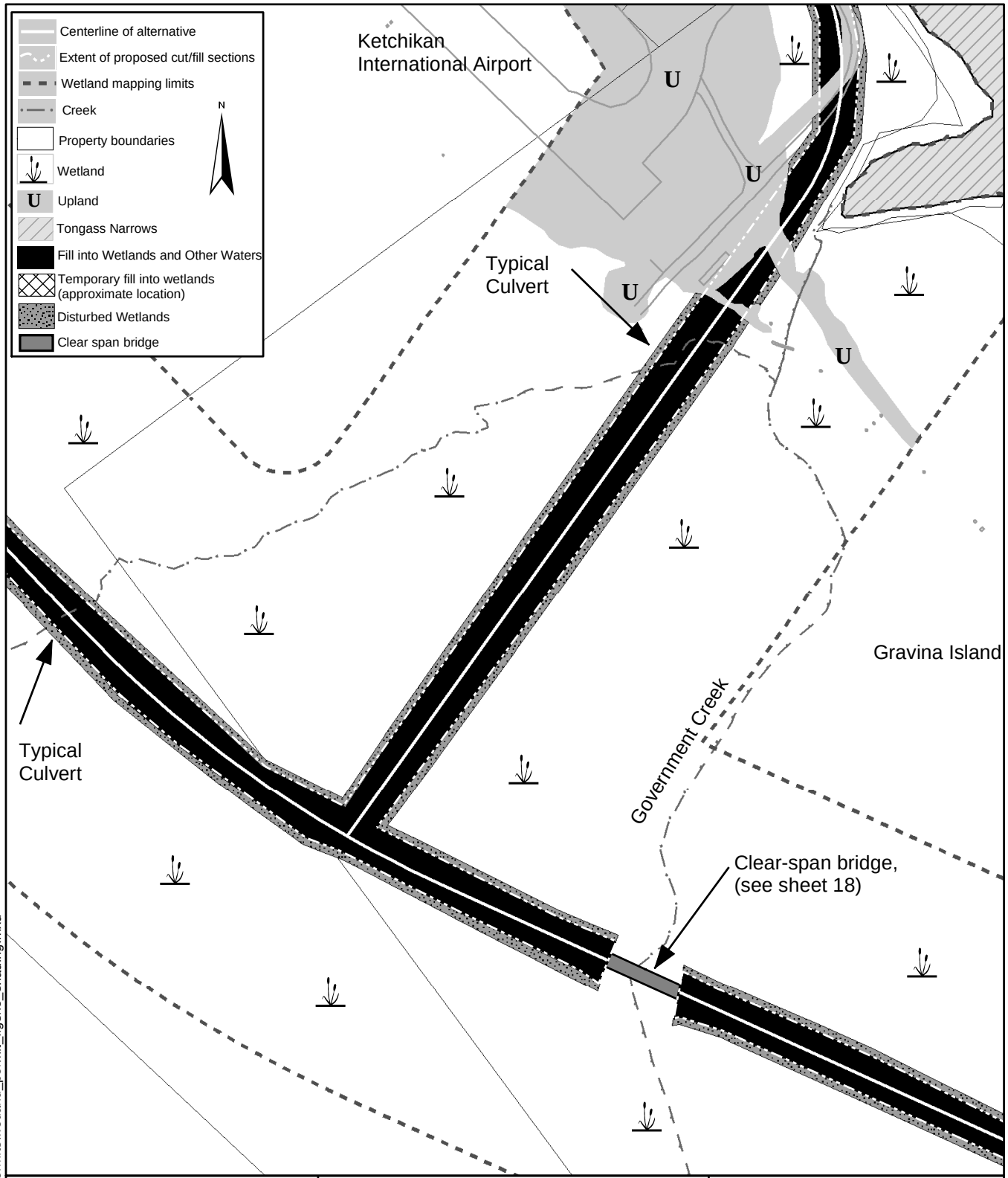
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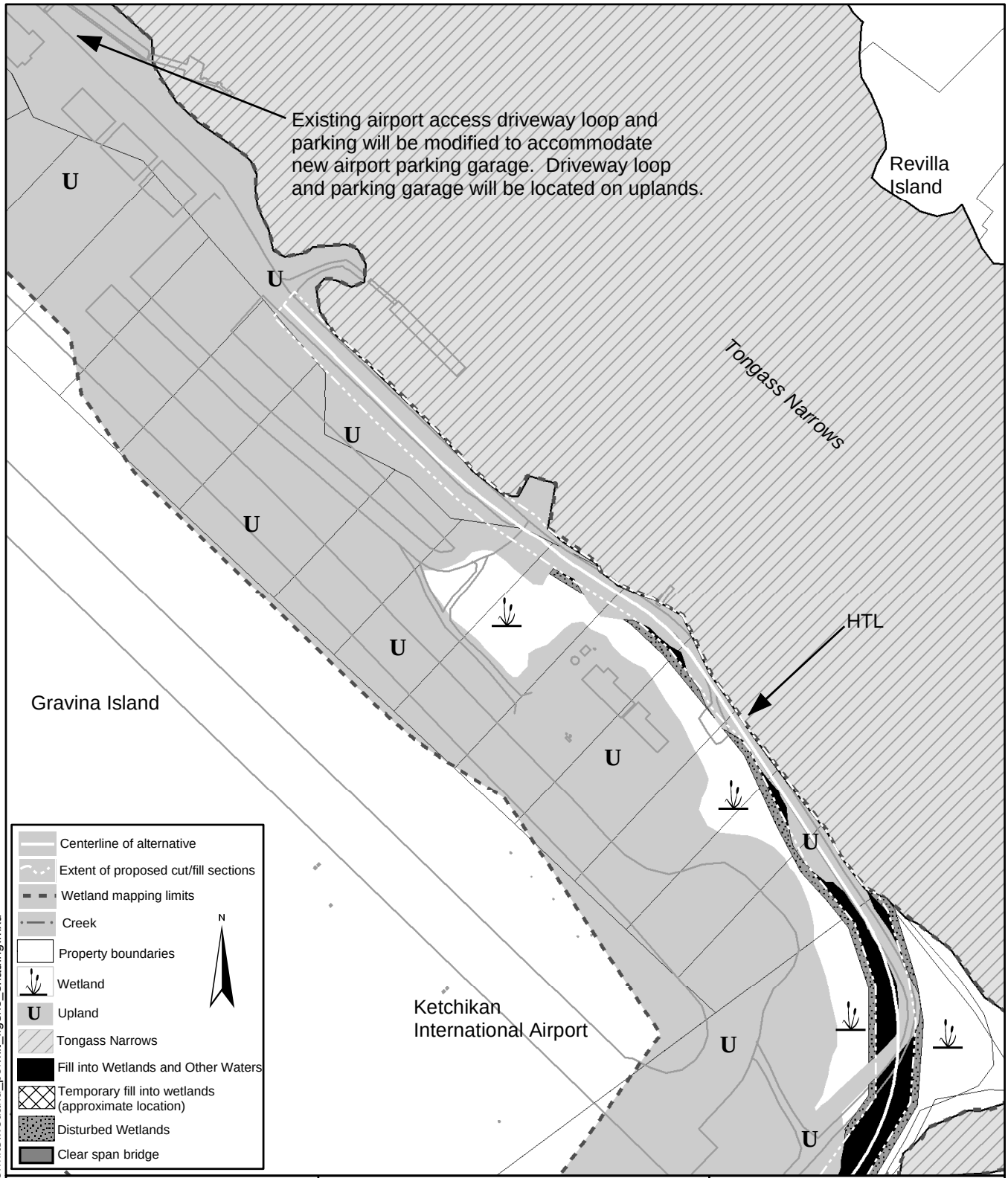
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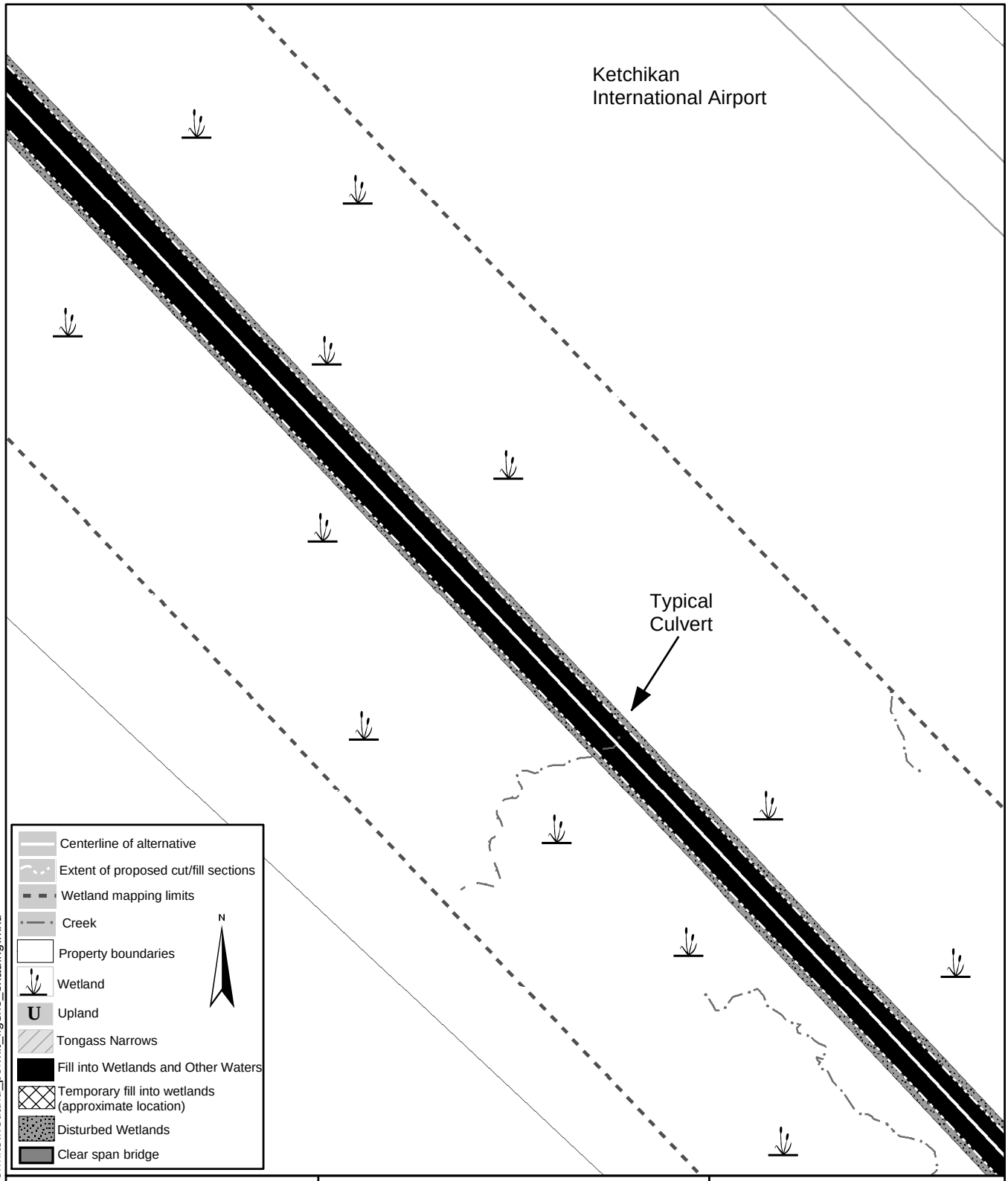
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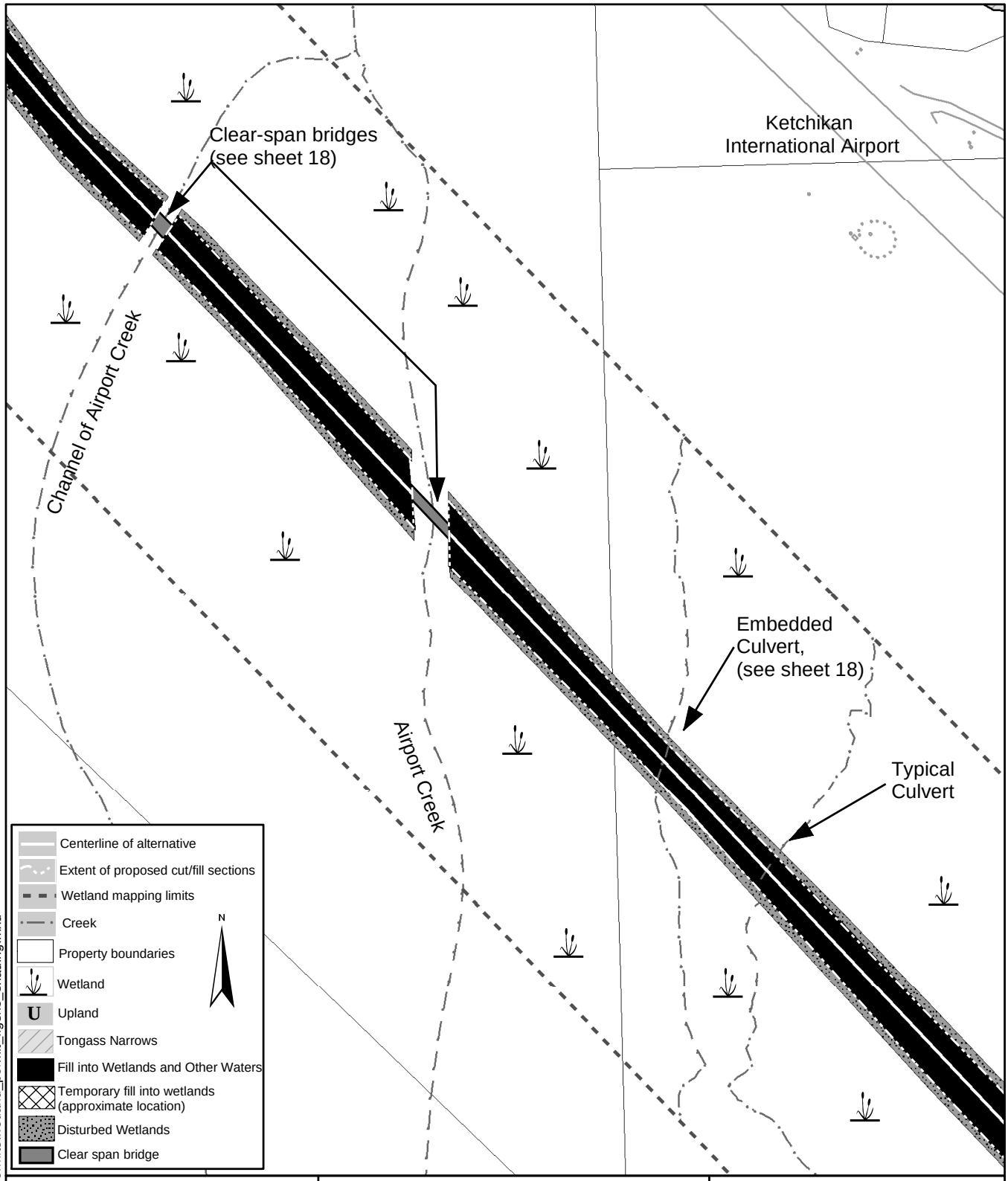
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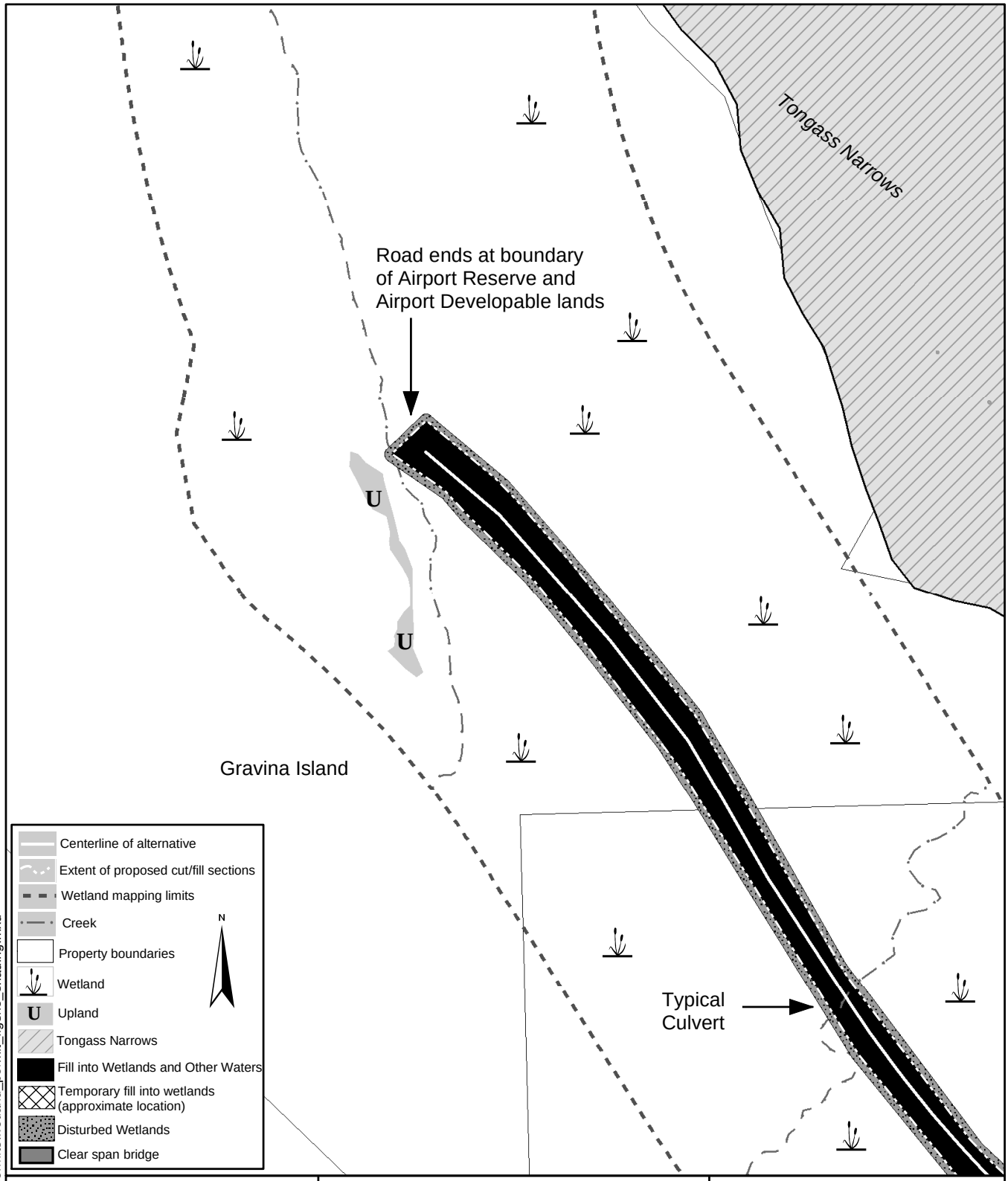
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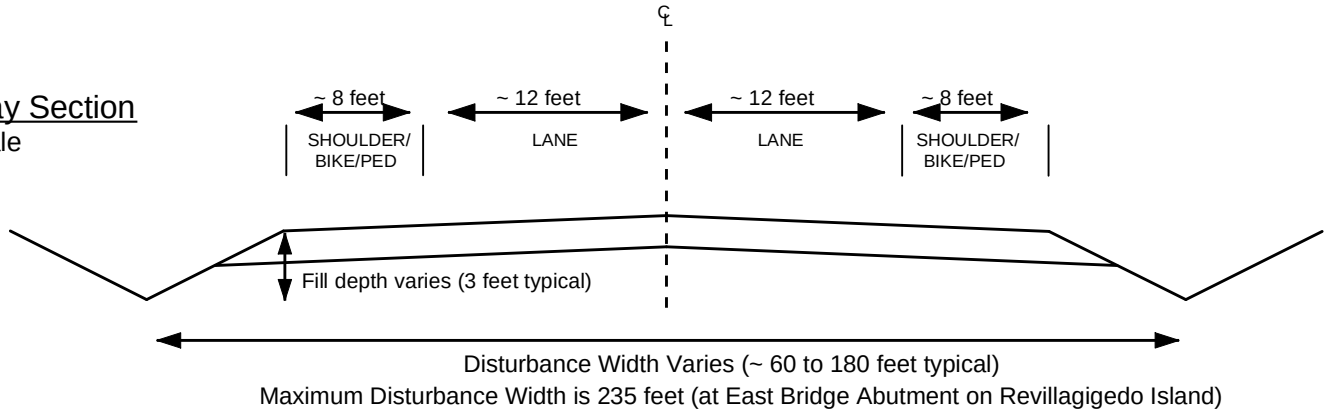
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Typical Roadway Section

Not to Scale

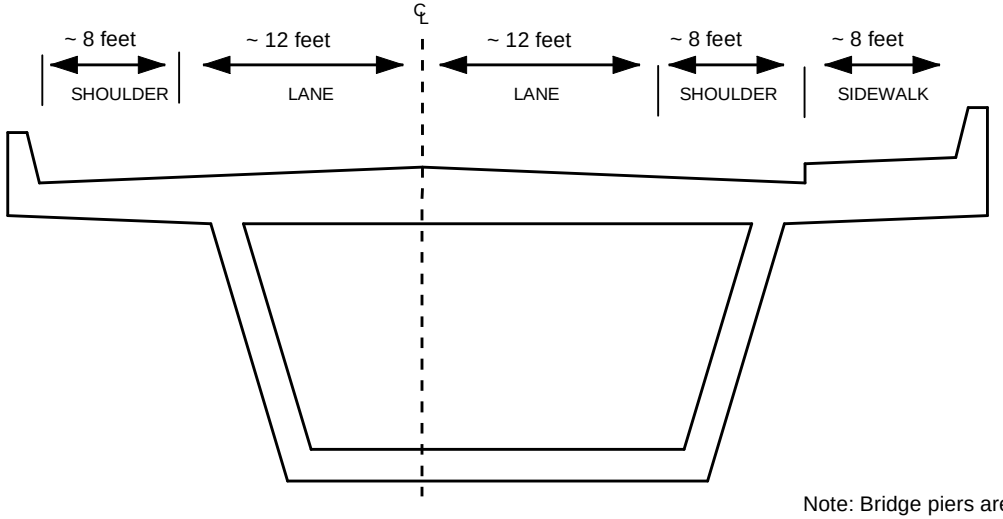


Disturbance Width Varies (~ 60 to 180 feet typical)

Maximum Disturbance Width is 235 feet (at East Bridge Abutment on Revillagigedo Island)

Typical Bridge Section

Not to Scale



Note: Bridge piers are not shown

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Copper River Meridian

PREFERRED ALTERNATIVE
(F1)
Typical Roadway and Bridge Sections

APPLICATION BY:
State of Alaska
Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

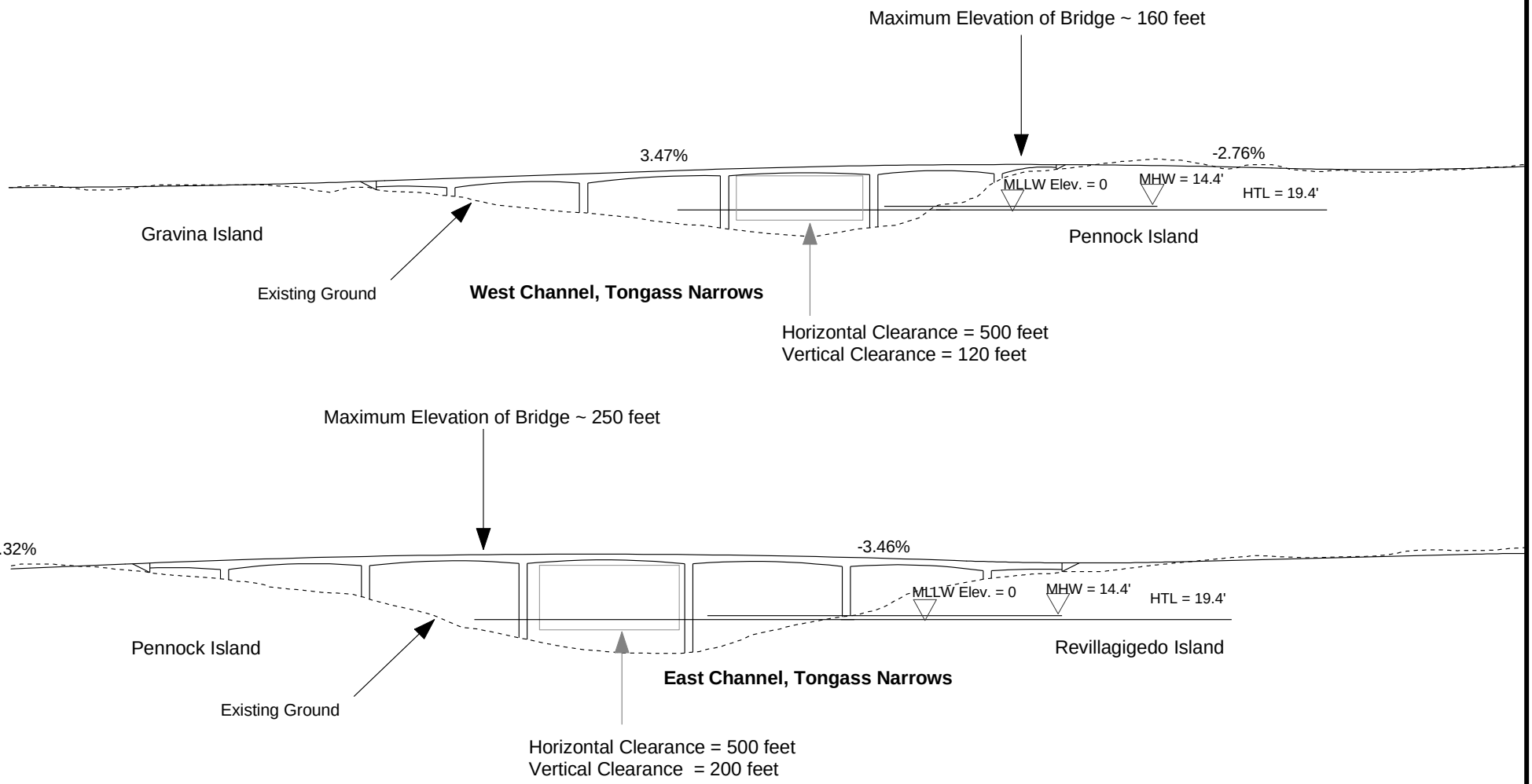
GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS

AT: KETCHIKAN, ALASKA

Date: 6-3-04

File: U:\jsivils\Gravina_EIS\permits\cross_sections_chic.mxd



PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

LOCATION:
T. 75S R. 090E SEC. 16, 22, 23, 26, 27, 35, 36
T. 76S R. 090E SEC. 01
T. 75S R. 091E SEC. 29, 30, 31, 32
T. 76S R. 091E SEC. 06
Copper River Meridian

PREFERRED ALTERNATIVE
(F1)
Elevation View of Bridges

APPLICATION BY:
State of Alaska
Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

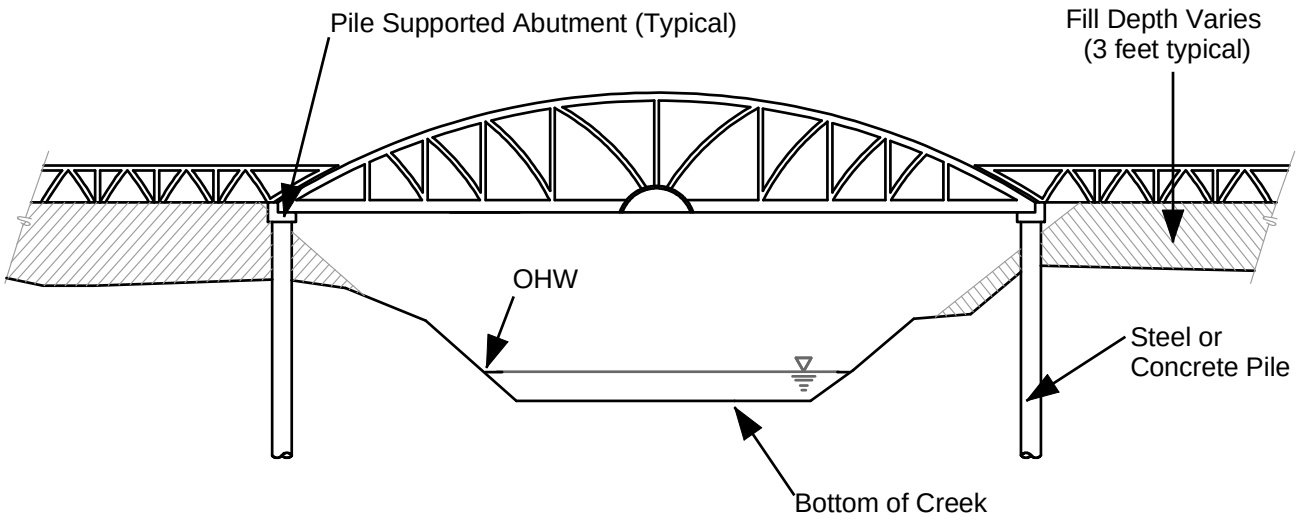
GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS
AT: KETCHIKAN, ALASKA

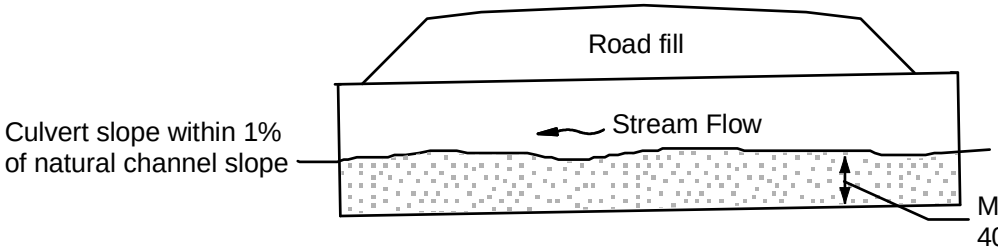
Date: 6-1-04

File: U:\jsivls\Gravina\DEIS\permits\bridge_chicmodmodF1.mxd

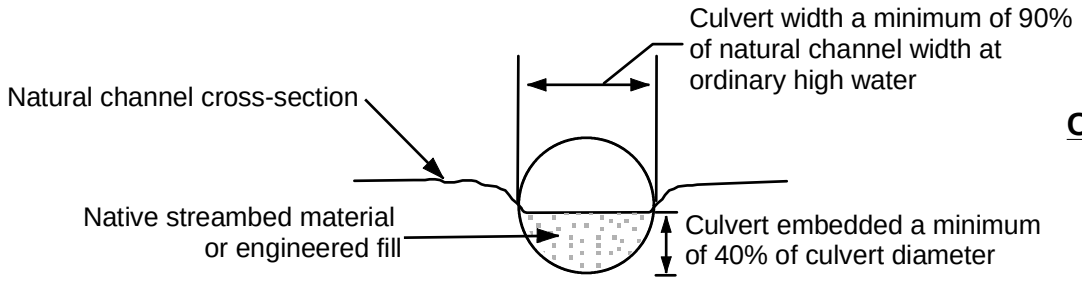
Conceptual Clear Span Bridge
Elevation View



Typical Fish Passage Culvert
Using Tier 1 Stream Simulation Design[1]



Profile



Cross-Section

1. Fish passage culvert will be installed per the August 29, 2001 Memorandum of Agreement between ADF&G and DOT&PF for "Design, Construction, and Permitting of Culverts for Fish Passage".

PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

Adjacent Property Owners:
See attached Sheets

LOCATION:
T. 75S R. 090E SEC. 16, 22, 23, 26, 27, 35, 36
T. 76S R. 090E SEC. 01
T. 75S R. 091E SEC. 29, 30, 31, 32
T. 76S R. 091E SEC. 06
Copper River Meridian

Proposed Anadromous
Stream Crossings

NOT TO SCALE

APPLICATION BY:

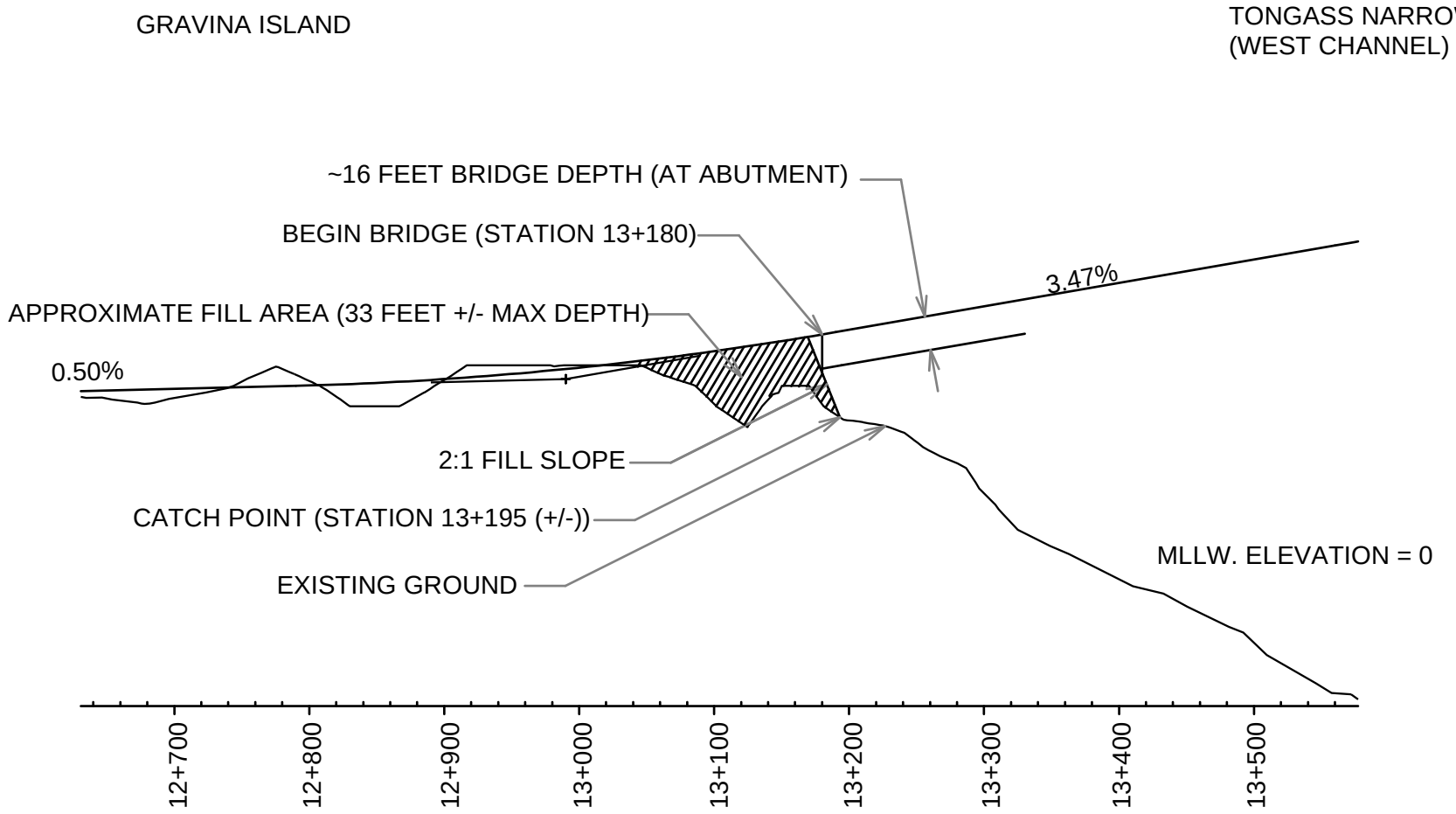
State of Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

Gravina Access Project
9-2000-0152
Tongass Narrows 524

In: Tongass Narrows
At: Ketchikan, Alaska

Date: 5-19-04

File: U:\jsivils\Gravina_eis\permits\clear span bridge.mxd



Note: This figure depicts a cross section at the west abutment of the F1 bridge over Tongass Narrows, West Channel.
Of the four bridge abutments required under Alternative F1, this abutment would require the largest volume of fill.
Based on the information available at this time, the fill height would be approximately 33 feet at the abutment. Not to scale.

PURPOSE: To improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island.

LOCATION:
T. 75S R. 090E SEC. 16, 22, 23, 26, 27, 35, 36
T. 76S R. 090E SEC. 01
T. 75S R. 091E SEC. 29, 30, 31, 32
T. 76S R. 091E SEC. 06
Copper River Meridian

PREFERRED ALTERNATIVE
(F1)
Abutment Elevation View

APPLICATION BY:
State of Alaska
Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

GRAVINA ACCESS PROJECT
9-2000-0152
Tongass Narrows 524

IN: TONGASS NARROWS
AT: KETCHIKAN, ALASKA

Date: 5-19-04

File: U:\jsivls\Gravina\DEIS\permits\abutment.mxd

Gravina Access Project Section 10/404 Permit Application

Effects to Wetlands and Other Waters of the U.S.—Summary Table

	Sec. 10 or 404?	Num-ber	Length (ft unless otherwise noted)	Width or diameter (feet)	Depth of fill [a] (feet)	Acreage of disturbance in wetlands & waters of the U.S. / Total ac.[b]	Volume (cy) in wetland / total[g]	Sheet reference
Permanent Elements (bold = total from below)	10/ 404	-	**49,350 ft 9.4 mi**	40 (road top)	3[a] typical	**96.5 / 107.3**	**500,000 / 554,000**	1
Road Embankment	404	-	**8.2 mi**	40 (road top)	3	**96.1 / 106.8**	500,000 / 554,000	1
-Revilla Segment	404	-	5,270	Typical disturbance width: 90-180 Max width (E. bridge abutment): 235	3	12.4 / 17.1	65,000 / 89,000	2-4
-Pennock Segment	404	-	3,050	Typical disturbance width: 60-120 Max width (W. bridge abutment): 230	3	7.9 / 8.0	41,000 / 41,000	4-6
-Gravina Segment	404	-	28,400	Typical disturbance width: 60-150 Max width (W. bridge abutment): 195	3	68.9 / 68.9 (includes 0.08 ac of impact to ponds)	357,000 / 357,000	7-11; 13-15
-Airport Spur	404	-	6,330	Typical disturbance width: 60-150	3	6.9 / 12.8	37,000 / 67,000	11, 12
Bridges & Culverts						**0.4 / 0.5 (piers)**		
East Channel Bridge *- piers in marine* *- piers on Revilla* *- piers on Pennock*	10 *10* *404* *404*	1 *3* *2*[d] *3*[d]	3,610 - - -	52[c] - - -	NA - - -	*(0.15 for all marine piers)* *(0.2 ac for all piers in wetlands)* *(0.1 ac for all piers in uplands)*	NA - - -	4
W. Channel Bridge *- piers in marine* *- piers on Pennock* *- piers on Gravina*	10 *10* *404* *404*	1 *3* *2*[d] *2*[d]	2,690 - - -	52[c] - - -	NA - - -		NA - - -	6
Creek on Gravina Is. (Clear span)	404	1	30	43[c]	-	0	-	9

	Sec. 10 or 404?	Num-ber	Length (ft unless otherwise noted)	Width or diameter (feet)	Depth of fill [a] (feet)	Acreage of disturbance in wetlands & waters of the U.S. / Total ac.[b]	Volume (cy) in wetland / total[g]	Sheet reference
Government Cr. (Clear span)	404	1	200	43 [c]	-	0	-	11
Airport Cr. E. Fork (Clear span)	404	1	100	43 [c]	-	0	-	14
Airport Cr. W. Fork (Clear span)	404	1	55	43 [c]	-	0	-	14
Embedded fish passage culverts	404	4	-	43 [c]	-	See sheet 18	See sheet 18	8, 10, 14, 18
Temporary Fills						**11.3 / 11.3** [e]	**54,700 / 54,700** [e]	
Pier staging areas	*404*	***5***	**-**	**-**	**-**	***7.0 / 7.0*** [e]	***33,900 / 33,900*** [e]	
-Revilla	404	2	-	150 diameter each	3	2.2 / 2.2 [e]	10,700 / 10,700 [e]	4
-Pennock	404	2	-	150 diameter each	3	3.2 / 3.2	15,500 / 15,500	4, 5
-Gravina	404	1	-	150 diameter	3	1.6 / 1.6	7,700 / 7,700	6
Other staging areas	*404*							
-Pennock	404	2	375 [f]	175 [f]	3	3.0 / 3.0	14,500 / 14,500	4, 5
Construction road	*404*		***1,080***			***1.3 / 1.3***	***6,300 / 6,300***	
-Revilla	404	-	380	55	3	0.5	2,100 / 2,100	4
-Pennock	404	-	490	55	3	0.6	3,000 / 3,000	4, 5
-Gravina	404	-	210	55	3	0.2	1,200 / 1,200	6

a. Fill depth is typical but varies widely depending upon topography.
b. Total wetland impact in this table differs slightly from total reported in EIS due to computation by segment and to rounding. Impacts to ponds are included in wetland impacts.
c. Bridge widths estimated based on lane and shoulder width.
d. Includes free-standing piers and bridge abutments.
e. One pier each on Revilla Is. and Pennock Is. would be fully or partially on uplands. Portions of pier staging areas that are not in wetlands would not use fill but would be disturbed.
f. 'Other staging areas' dimensions broadly estimated to equal 3 ac. total.
Bold numbers indicate totals from the rows below.
g. Average depth of fill for construction roads and staging areas and road segments is 3 feet.

Gravina Access Project
Adjacent Property Owners for Alternative F1

Owner1	Owner2	Address	City	ZipCode
AIRPORT BAR & RESTAURANT	SALAZAR MIKE & BARBARA - LESSEE	PO BOX 6918	KETCHIKAN, AK	99901
ALASKA AIRLINES INC	ATTN PROPERTY TAX ADMIN	PO BOX 68900	SEATTLE, WA	98168
ALASKA CAR RENTAL		2828 TONGASS AVE	KETCHIKAN, AK	99901
ALASKA GENERAL SEAFOOD		PO BOX 5240	KETCHIKAN, AK	99901
ALASKA GENERAL SEAFOODS		6425 NE 175TH ST	KENMORE, WA	98028
ALASKA MENTAL HEALTH TRUST AUTHORIT	C/O TRUST LAND OFFICE	550 W 7TH AVE # 1430	ANCHORAGE, AK	99510
ALMQUIST ALLAN & ANDERSON LORNA		308 DEERMOUNT ST	KETCHIKAN, AK	99901
BARTHOLOMEW ERMA M		313 MADISON	KETCHIKAN, AK	99901
BOLLING WALTER B & CECILIA R		PO BOX 5958	KETCHIKAN, AK	99901
BRANDA CHARLES V		752 FOREST PARK DR	KETCHIKAN, AK	99901
C & E ANDERES OIL COMPANY		PO BOX 5858	KETCHIKAN, AK	99901
CHAMBERS HERBERT E & E BARBARA		4468 S TONGASS HWY	KETCHIKAN, AK	99901
CITY OF KETCHIKAN		334 FRONT STREET	KETCHIKAN, AK	99901
CITY OF SAXMAN		PO BOX 8676	KETCHIKAN, AK	99901
CONLEY WILFORD & BONNIE		771 FOREST PARK DR	KETCHIKAN, AK	99901
CP INC		625 STEDMAN ST	KETCHIKAN, AK	99901
CURRALL GEOFFREY G & KEENE H CLAY	DBA KC INVESTMENTS	540 WATER STREET STE 302	KETCHIKAN, AK	99901
DILLON SHARON		PO BOX 7404	KETCHIKAN, AK	99901
DOYON DAVID P	DBA MISTY FJORDS AIR & OUTFITTING	1716 S TONGASS HWY	KETCHIKAN, AK	99901
DOYON DAVID P/DBA MISTY FJORDS AIR	STATE OF ALASKA - LESSOR	1716 S TONGASS HWY	KETCHIKAN, AK	99901
GERMAIN BETTY JEAN &	GERMAIN JERRY CHARLES	PO BOX 8216	KETCHIKAN, AK	99901
GOODALE WILLIAM C		PO BOX 5503	KETCHIKAN, AK	99901
HALL RONALD & DOROTHY		80312 HWY 99	COTTAGE GROVE, OR	97424
HARVEY VIRGENE & KELLOG HILL RUTH		808 FOREST PARK DR	KETCHIKAN, AK	99901
HILL MARVIN LEE & RUTH KELLOGG-HILL		808 FOREST PARK DR	KETCHIKAN, AK	99901

Gravina Access Project
Adjacent Property Owners for Alternative F1

HUSSMAN WILLIAM P & ANNITA C		PO BOX 927	DONNELLY, ID	83615
JEROME ALASKA LLC	C/O SPEARS MANUFACTURING CO	15853 OLDEN ST	SYLMAR, CA	91392
KAMM CLIFFORD S & LORI B		PO BOX 9172	KETCHIKAN, AK	99901
KEENE HENRY C JR & JEAN B		2051 SEA LEVEL DRIVE #305	KETCHIKAN, AK	99901
KETCHIKAN GATEWAY BOROUGH		344 FRONT STREET	KETCHIKAN, AK	99901
KLEINSCHMIDT KENT		PO BOX 7778	KETCHIKAN, AK	99901
LAWRENCE VALORIE J &	FLETCHER MICHAEL	PO BOX 5904	KETCHIKAN, AK	99901
LEWIS MOTORS	DBA PAYLESS CAR RENTAL	4950 N TONGASS HWY	KETCHIKAN, AK	99901
LOWELL DONALD G & FRANCES J		PO BOX 7524	KETCHIKAN, AK	99901
MADSEN GERALD		16605 32ND SOUTH	SEATTLE, WA	98188
MCCORMICK G R & ALICE J		PO BOX 6394	KETCHIKAN, AK	99901
MICKEL EARL E & E JANENE		PO BOX 1977	BEACH LAKE, PA	18405
MORAN MICHAEL & JUDY	JUDY'S GIFT CACHE	PO BOX 7116	KETCHIKAN, AK	99901
NICKICH DONALD L JR & DOROTHY		784 FOREST PARK DR	KETCHIKAN, AK	99901
NORTHLAND SERVICES INC		PO BOX 24527 SUITE C	SEATTLE, WA	98124
PARKVIEW APARTMENT COMPANY	CAFFREY TOM & DOREEN (OFFICER	PO BOX 6215	KETCHIKAN, AK	99901
PETRO ALASKA INC		PO BOX 5698	KETCHIKAN, AK	99901
PROMECH INC	KETCHIKAN INT'L AIRPORT - LESSOR	1515 TONGASS AVE	KETCHIKAN, AK	99901
R & L LEASING INC		PO BOX 33183	JUNEAU, AK	99803
RAITANEN JOHN A & LINDA		4928 SHORELINE DR	KETCHIKAN, AK	99901
RHODES DANIEL PATRICK		119 AUSTIN #1203	KETCHIKAN, AK	99901
SALAMANCHUK LILLY K		1733 S TONGASS HWY	KETCHIKAN, AK	99901
SAMUELSEN THEODORE A		PO BOX 2546	STANWOOD, WA	98292
SEABOLT JACKSON M ESTATE OF	C/O BLANKENSHIP BURLENE	1200 SE HARVEST DR	PULLMAN, WA	99163
SELEY LOG & LUMBER LTD - SUBLESSEE	STATE OF ALASKA - LESSOR	PO BOX 5183	KETCHIKAN, AK	99901
SHERMAN WILLIAM G		68 3RD STREET	NEWPORT, RI	2840

Gravina Access Project
Adjacent Property Owners for Alternative F1

SMITH CARL R & LILLIAN E		836 FOREST PARK DR	KETCHIKAN, AK	99901
STATE OF ALASKA	DEPT OF NATURAL RESOURCES	400 WILLOUGHBY AVE	JUNEAU, AK	99801
STATE OF ALASKA	DEPT OF NATURAL RESOURCES	PO BOX 107005	ANCHORAGE, AK	99510-7005
STENSLAND GEORGE E TRUSTEE	ALMINA A STENSLAND TESTAMENTARY TRU	817 N W 107	SEATTLE, WA	98177
TAQUAN AIR SERVICE		1007 WATER ST	KETCHIKAN, AK	99901
TATSUDA'S SUPERMARKET INC		PO BOX 8820	KETCHIKAN, AK	99901
TESORO ALASKA PETROLEUM COMPANY	% L B WALKER & ASSOCIATES INC	PO BOX 16290	HOUSTON, TX	77222
TF ACQUISITION INC	TRIDENT SEAFOODS CORP TAX DEPT	5303 SHILSHOLE AVE NW	SEATTLE, WA	98107
TOTEM TAKEOUT	FERGUSON DIANE & LARRI	PO BOX 9121	KETCHIKAN, AK	99901
TRANS ALASKA CONSTRUCTION &	JANSEN JIM	PO BOX 520570	BIG LAKE, AK	99652
U S COAST GUARD	COM 17TH CG	PO BOX 35000	JUNEAU, AK	99802
WEBB OLNEY W JR		PO BOX 23111	KETCHIKAN, AK	99901
ZERBETZ GREGORY & HARRIET		437 MAIN	KETCHIKAN, AK	99901

Alaska Department of Transportation and Public Facilities

Gravina Access Project—Section 404/10 Permit Application

Project Description

1. PROJECT SUMMARY

APPLICANT: Alaska Department of Transportation and Public Facilities, Jim Evensen, 6860 Glacier Highway, Juneau, Alaska 99801-7999.

LOCATION: From Revillagigedo Island (at South Tongass Highway) to the Ketchikan International Airport on Gravina Island across Tongass Narrows and Pennock Island. Sections 16, 22, 23, 26, 27, 35, 36, T.75 S., R. 90 E.; section 1, T. 76 S., R. 90 E.; sections 29, 30, 31, 32, T. 75 S., R. 91 E.; section 6, T. 76 S., R. 91 E., Copper River Meridian, Ketchikan, Alaska.

WORK: Construct two bridges and adjoining arterial roadway across Tongass Narrows via Pennock Island to connect Revillagigedo Island and Gravina Island via a 9.4 mile road and bridge system (a spine road and a spur to the airport terminal). Discharge approximately 500,000 cubic yards (cy), of clean, crushed rock or gravel in 96.5 acres of wetlands and 0.1 acre of ponds (out of 107 acres of fill total) to construct 8.2 miles of roadway embankment. Most of the road embankment would be in wetlands (see breakdown by project segment on the attached Permit Summary Table). Fourteen creeks on Gravina Island would be crossed by the roadway portion of the proposed action. Four of these creeks would be crossed by clear-span bridges, using steel or concrete piers at abutments). Another four creeks would use embedded culverts, and six would use typical culverts. Two bridges (3,610 feet long and 2,690 feet long) would be constructed over the East and West Channels of Tongass Narrows, which are navigable waters. To provide bridge support, six steel and concrete bridge piers would be placed in Tongass Narrows. Nine steel and concrete freestanding piers and abutment piers would be placed on land, including seven in wetlands. No dredging or ocean dumping is proposed.

Construction of the proposed action would require the cutting of vegetation in approximately 35.8 acres of wetlands to allow construction equipment to operate. Temporary fill (coupled with vegetation cutting) would be required in an additional 11.3 acres of wetlands to provide staging areas for construction equipment.

The proposed action is the applicant's Preferred Alternative and is referred to as Alternative F1.

PURPOSE: Improve surface transportation for vehicles, bicyclists, and pedestrians between Revillagigedo Island and Gravina Island. Additional details concerning Purpose and Need are provided in Section 4.

2. INTRODUCTION

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), is pursuing alternatives for improving access between Revillagigedo Island and Gravina Island in Southeast Alaska. This project, called the Gravina Access Project, is one of 16 high priority projects funded in the state under the Federal Transportation Equity Act for the 21st Century (TEA-21). The project involves examining ways to link Revillagigedo Island, where Ketchikan, Saxman, and other communities are located, to Gravina Island, the location of the Ketchikan International Airport and adjoining lands that offer recreational and development potential. Currently, a

small ferry across Tongass Narrows provides the only regular access to Gravina Island, and it is dedicated solely to airport use. Access to the remainder of the island is not available except by watercraft. Improved transportation access to Gravina Island would provide better service to the airport and allow for development of the large tracts of land situated on the island**.**

In the past three decades, studies have analyzed possible crossings between Revillagigedo and Gravina and evaluated several types of bridge and tunnel structures for the crossing**.** Because this project is funded largely by federal dollars, the project must comply with the National Environmental Policy Act (NEPA). NEPA requires the study of a full range of reasonable alternatives and disclosure of environmental impacts associated with each alternative to the public and decision-makers.

The project will be studied, designed, and built over the next five years in three distinct phases; (1) NEPA environmental analysis; (2) design; and (3) construction. The scope of work for the project's first phase has included engineering and environmental services to prepare a NEPA analysis; coordinating with federal, state, borough, city, and other local agencies; and making presentations at public hearings and scoping meetings. Among the topics considered in the process are: Land Use; Economic Impacts; Navigation Impacts; Aviation Impacts; Population, Employment and Community Character; Cultural Resources; Air Quality; Noise; Water Quality; Wetlands; and Fish and Wildlife. Public involvement activities are anticipated to occur throughout the project.

This project has developed concurrently with a Ketchikan Gateway Borough proposal for an airport access road, commonly referred to as “Lewis Reef Road.” The proposed Lewis Reef Road is aligned parallel to a portion of the Gravina Access Project road on airport property. The borough has obtained a Department of the Army Section 404 permit (#M-2000-0307) for Lewis Reef Road but is currently working with DOT&PF to modify the road alignment and the permit to ensure that Lewis Reef Road is built within the impact area of the Gravina Access Project. Note that the Gravina Access Project EIS and permit application, including the project description, detail the full impacts of the Gravina Access Project, because the Lewis Reef Road is not yet built. However, the Lewis Reef Road plans are acknowledged in Section 8 of this project description, particularly under the compensatory mitigation proposal.

3. PROJECT HISTORY

In the past three decades, studies have analyzed possible crossings between Revillagigedo and Gravina and evaluated several types of bridge and tunnel structures and ferries for the crossing. While there is some previous information available, much of it is outdated or incomplete. Improving the connection between these two islands has long been a topic of interest.

In 1973, the Ketchikan International Airport was constructed and shuttle ferry service began.
In 1973, the State of Alaska examined eight proposed bridge crossings.
In 1981, the Ketchikan Gateway Borough examined bridge and underwater tube crossings.
In 1984, Tippetts-Abbett-McCarthy-Stratton provided a cost analysis of proposed bridge, tube, and ferry crossings.
In 1988, the Ketchikan Gateway Borough passed Resolution 794 supporting a "hard link" crossing and the preparation of an environmental impact statement (EIS).
In 1989, the Ketchikan Gateway Borough studied road routes to the airport on Pennock and Gravina Islands.
In 1991, the Alaska Legislature authorized funding for the Ketchikan "Hard Link" EIS.
In 1994, the DOT&PF prepared an in-house draft EIS of ferry, bridge, and tunnel crossing options.
In 1998, the federal Transportation Equity Act for the 21st Century (TEA-21) allocated funds specifically for this project. Additional funding will be required to begin construction of a selected access alternative.

4. PROJECT PURPOSE AND NEED

Purpose
The purpose of the Gravina Access Project is to improve surface transportation between Revillagigedo Island and Gravina Island.

Need
The need for improving access is threefold:

To provide the Ketchikan Gateway Borough and its residents more reliable, efficient, convenient, and cost-effective access for vehicles, bicycles, and pedestrians to Borough lands and other developable or recreation lands on Gravina Island in support of the Borough's adopted land use plans.

To improve the convenience and reliability of access to Ketchikan International Airport for passengers, airport tenants, emergency personnel and equipment, and shipment of freight.

To promote environmentally sound, planned long-term economic development on Gravina Island.

5. ALTERNATIVES CONSIDERED

During the spring of 2000, the DOT&PF developed 18 build concepts for crossing Tongass Narrows. These concepts were based on previous studies, input from agencies and the public, engineering analysis, and the objectives in the purpose and need statement for the project. The build concepts consisted of 11 bridge options, two tunnel options, one tunnel-and-bridge option, four supplemental ferry options, and a No Action option. These initial options were reviewed with input from the Ketchikan community and local, state, and federal agencies, and tribes and other Native organizations to identify reasonable alternatives for the Gravina Access Project. Factors related to cost, environmental impacts, and transportation impacts were examined for each of the initial options, and those options that were not considered practical or feasible from a technical and economic standpoint were eliminated from further consideration. Additional technical studies and public and agency input resulted in the identification of nine reasonable build alternatives (six bridge alternatives, C3[a], C3[b], C4, D1, F1, and F3; and three ferry alternatives, G2, G3, and G4) and the No Action alternative for the Gravina Access Project.

NO ACTION ALTERNATIVE

Under the No Action Alternative, no bridge would be constructed and no additional ferry service would be provided between Revillagigedo Island and Gravina Island. The only public access between the islands would continue to be provided by the existing airport ferry service across Tongass Narrows, private boats, and floatplanes. On Revillagigedo Island, the existing ferry terminal is located 2.8 miles north of downtown Ketchikan; on Gravina Island, the terminal is on the waterfront, just east of the airport terminal.

ALTERNATIVE C3(a)

Alternative C3(a) includes a bridge across Tongass Narrows approximately 1,600 feet north of the airport terminal. The bridge would be 5,690 feet long, and have a maximum height of approximately 250 feet. The main span of the bridge would have a vertical navigational clearance of 200 feet above high tide and a horizontal navigational clearance of approximately



Alternative C3(a) bridge from north of Wolf Point on Tongass Avenue, looking south.

550 feet. The main span of the bridge would be centered on the cruise ship tracklines and would be over water with depths in excess of 40 feet (at low tide) to accommodate deep draft vessels. These clearances would accommodate one-way passage of cruise ships and two-way passage of most other ships (including Alaska Marine Highway System [AMHS] ferries).

On Revillagigedo Island, the alignment would connect to Signal Road at North Tongass Avenue. From this terminus, the alignment would traverse the hillside southward, gain elevation and turn southwestward. The bridge would cross Tongass Avenue and Tongass Narrows, and then turn southward to parallel the airport runway and touch down (reach the ground surface) on Gravina Island south of the terminal. A 0.4-mile-long airport return loop road would connect the airport terminal and the bridge terminus. The main road would continue around the southern end of the airport runway and then arc northward, extending parallel to and west of the airport runway approximately 2.2 miles to the northern end of the Airport Reserve zone. At the southern end of the runway, the road would be constructed at a grade low enough to accommodate the planned future expansion of the runway, with the runway extended as an overpass of the road.

ALTERNATIVE C3(b)

The Alternative C3(b) bridge would be approximately 4,250 feet long, and have a maximum height of approximately 195 feet. The main span of this bridge would have a vertical navigational clearance of 120 feet above high tide and a horizontal navigational clearance of approximately 500 feet. The main span would be located over water with depths in excess of 40 feet at low tide. These clearances would accommodate passage of AMHS ferries, but not larger cruise ships.



Alternative C3(b) bridge from north of Wolf Point on Tongass Avenue, looking south.

Alternative C3(b) would have the same general alignment on Revillagigedo and Gravina Islands as Alternative C3(a); however, with a lower bridge profile, the position of the C3(b) bridge over Tongass Narrows and at its touchdown on Gravina Island (near the airport terminal) would be north of the C3(a) alignment. This alternative would not need an airport return loop road because the bridge would touch down in front of the airport terminal.

ALTERNATIVE C4

The Alternative C4 bridge would be approximately 4,980 feet long and have a maximum height of approximately 250 feet. The main span of this bridge would have a vertical navigational clearance of 200 feet and a horizontal navigational clearance of approximately 550 feet. The main span of the bridge would be centered on the cruise ship tracklines and would be over water with depths in excess of 40 feet (at low tide) to accommodate deep draft vessels. These clearances would accommodate one-way passage of cruise ships and two-way passage of most other ships, including AMHS ferries.



Alternative C4 bridge from north of Wolf Point on Tongass Avenue, looking south.

On Revillagigedo Island, the alignment would connect to Tongass Avenue north of Cambria Drive, across from the access to the existing ferry terminal. From this terminus, it would extend northward and traverse

the hillside around the quarry; the bridge would cross over Tongass Avenue and Tongass Narrows, turn southward to parallel the airport runway, and then touch down on Gravina Island south of the airport terminal. A 0.4-mile-long airport return loop road would connect the airport terminal and the bridge terminus. The main road would continue around the southern end of the airport runway and then arc northward, extending parallel to and west of the airport runway approximately 2.2 miles to the northern end of the Airport Reserve zone. At the southern end of the runway, the road would be constructed at a grade low enough to accommodate the planned future expansion of the runway, with the runway extended as an overpass of the road.

ALTERNATIVE D1

The Alternative D1 bridge would cross Tongass Narrows directly east of the airport terminal. The bridge would be approximately 3,220 feet long and have a maximum height of approximately 160 feet. The main span of this bridge would have a vertical clearance of 120 feet above high tide and a horizontal clearance of 500 feet. The main span would be located over water with depths in excess of 40 feet at low tide. These clearances would accommodate passage of AMHS ferries, but not larger cruise ships.



Alternative D1 bridge from near Wolf Point on Tongass Avenue, looking south.

On Revillagigedo Island, the alignment would connect to Tongass Avenue at Cambria Drive near the existing airport ferry terminal. From this terminus, the alignment would rise along the hillside and turn westward; the bridge would cross over Tongass Avenue and Tongass Narrows, and then turn southward to parallel the shoreline of Gravina Island and touch down south of the airport terminal. A 0.4-mile-long airport return loop road would connect the airport terminal and the bridge terminus. The main road would continue around the southern end of the airport runway and then arc northward, extending parallel to and west of the airport runway approximately 2.2 miles to the northern end of the Airport Reserve zone. At the southern end of the runway, the road would be constructed at a grade low enough to accommodate the planned future expansion of the runway, with the runway extended as an overpass of the road.

ALTERNATIVE F1 (PREFERRED)

Alternative F1 would cross Tongass Narrows via Pennock Island with two bridges. One bridge would cross the East Channel and the other would cross the West Channel. The East Channel bridge would be approximately 3,610 feet long and have a maximum height of approximately 250 feet. The bridge would have a vertical navigational clearance of 200 feet above high tide and a horizontal navigational clearance of approximately 550 feet. The main span of the bridge would be centered on the cruise ship tracklines and would be over water with depths in excess of 40 feet (at low tide) to accommodate deep draft vessels. These clearances would accommodate one-way passage of cruise ships and two-way passage of most other ships, including AMHS ferries. The West Channel bridge would be approximately 2,690 feet long and have a maximum height of approximately 160 feet. The bridge would have a vertical navigational clearance of 120 feet above high tide and a horizontal navigational clearance of approximately 500 feet. The main span would be located over water with depths in excess of 40 feet at low tide. These clearances would accommodate passage of AMHS



Alternative F1 bridges and Pennock Island from mid-Tongass Narrows near the airport, looking south.

ferries, but not larger cruise ships.

On Revillagigedo Island, Alternative F1 would connect to Tongass Avenue just south of Tatsuda's grocery store and near the southern end of the quarry. From this terminus, the alignment would rise to the southeast along the hillside (and east of the tank farm, the cemetery, and the U.S. Coast Guard Station), turn westward (skirting the southern end of the Coast Guard property, north of the Forest Park subdivision) and cross over Tongass Avenue approximately 1.4 miles south of downtown Ketchikan, then cross the East Channel to Pennock Island. The roadway would cross Pennock Island at grade. From Pennock Island, the West Channel bridge would cross to Gravina Island, touching down approximately 2.7 miles south of the airport runway. The road would continue northward approximately 5.4 miles to the northern end of the Airport Reserve zone. A 1.2-mile airport access road would be constructed at the southern end of the airport runway. The airport access roadway would be constructed at a grade low enough to accommodate the planned future expansion of the runway, with the runway extended as an overpass of the road.

ALTERNATIVE F3

Like Alternative F1, Alternative F3 would have two bridges that cross Tongass Narrows via Pennock Island. One bridge would cross East Channel and the other bridge would cross West Channel. The East Channel bridge would be approximately 2,065 feet long and have a maximum height of approximately 140 feet. The bridge would have a vertical navigational clearance of 60 feet above high tide (lower than any of the other bridges) and a horizontal clearance of approximately 500 feet. The main span would be located over water with depths in excess of 40 feet at low tide. These clearances would not accommodate passage of AMHS ferries or taller cruise ships, which currently use the East Channel as their primary navigational route. The West Channel bridge would be approximately 3,270 feet long and have a maximum height of approximately 250 feet. The bridge would have a vertical navigational clearance of 200 feet above high tide and a horizontal navigational clearance of approximately 550 feet. The main span would be located over water with depths in excess of 40 feet at low tide. These clearances would accommodate one-way passage of cruise ships and two-way passage of most other ships, including AMHS ferries.



Alternative F3 bridges and Pennock Island from mid-Tongass Narrows near the airport, looking south.

On Revillagigedo Island, the East Channel bridge would connect to Tongass Avenue, approximately 1.5 miles south of downtown Ketchikan between the USCG Station and the Forest Park subdivision. From this terminus the bridge would cross the East Channel to Pennock Island. The roadway would cross Pennock Island at grade. From Pennock Island, the West Channel bridge would cross to Gravina Island, touching down approximately 2.7 miles south of the airport runway. The road would continue northward approximately 5.1 miles to the northern end of the Airport Reserve zone. A 1.2-mile airport access road would be constructed at the southern end of the airport runway. The airport access roadway would be constructed at a grade low enough to accommodate the planned future expansion of the runway, with the runway extended as an overpass of the road.

In response to concerns expressed by cruise ship pilots, DOT&PF has committed to widening a portion of the West Channel to improve its navigational characteristics and mitigate adverse impacts to cruise ships transiting the West Channel. The channel widening would occur in the narrowest part of the West Channel. Currently, the width of the navigable portion of West Channel (with respect to large cruise

ships) is approximately 400 feet at its narrowest point with a minimum depth of 40 feet below low water. With the proposed channel modifications, this portion of the West Channel would have a channel width of 750 feet: the center 550 feet would have a minimum depth of 40 feet below low water and both sides of the channel would have a minimum depth of 30 feet below low water. The deepest part of the channel would be centered on the navigational opening of the West Channel bridge.

The bridge would be located at the southern end of the widened channel, which would extend approximately 2,000 feet north of the bridge. South of the bridge crossing, and north of the channel improvement area, the existing channel is wider and deeper than the proposed improved channel.

ALTERNATIVE G2

Alternative G2 would augment the existing airport ferry service with a second ferry. The existing ferry service would continue to operate at its current location and under its current schedule. Alternative G2 would be a new ferry service for vehicles and passengers between Peninsula Point on Revillagigedo Island and Lewis Point on Gravina Island, crossing Tongass Narrows approximately 2 miles north of the airport



Alternative G2 ferry from Gravina Island shoreline near the northern end of the airport runway, looking north.

This alternative would require construction of a new ferry terminal on each side of Tongass Narrows and two new ferry vessels. A 4.3-mile road would be constructed on Gravina Island that would extend from the ferry terminal southward approximately 2.6 miles, wrap around the southern end of the airport runway, and then turn northward to the airport terminal. The road at the southern end of the runway would be constructed at a grade low enough to allow for planned future expansion of the runway, with the runway extended as an overpass of the road.



Alternative G3 ferry from the north parking area adjacent to Plaza Port West, looking northwest toward Gravina Island.

ALTERNATIVE G3

Alternative G3 would augment the existing airport ferry service with a second ferry. The existing ferry service would continue to operate at its current location and under its current schedule Alternative G3 would be new ferry service for vehicles and passengers between Ketchikan (near the Plaza Mall at Jefferson Street) on Revillagigedo Island and a location approximately 0.6 miles south of the airport runway on Gravina Island.

This alternative would require construction of a new ferry terminal on each side of Tongass Narrows and two new ferry vessels. Dredging may be required to provide adequate navigational depths for the ferry terminal on Revillagigedo Island. The existing breakwater could also be widened and extended for use as the ferry terminal pier. A road would be constructed on Gravina Island from the ferry terminal northward approximately 3.0 miles to the northern end of the Airport Reserve zone. A 1.2-mile airport access road would be constructed around the southern end of the airport. The road at the southern end of the runway would be constructed at a grade low enough to allow for future planned expansion of the runway, with the runway extended as an overpass of the road.

ALTERNATIVE G4

Alternative G4 would augment the existing airport ferry service with a second ferry. The existing ferry service would continue to operate at its current location and under its current schedule. The new ferry service for vehicles and passengers would be adjacent to the existing airport ferry route, crossing Tongass Narrows 2.8 miles north of downtown.

This alternative would require construction of a new ferry terminal on each side of Tongass Narrows, adjacent to the existing airport ferry terminals, and two new ferry vessels. A 3.2-mile road would be constructed on Gravina Island that extends southward from the airport ferry terminals; the roadway would wrap around the southern end of the airport runway, and then turn northward, extending parallel to and west of the airport runway approximately 2.2 miles to the northern end of the Airport Reserve zone. The road at the southern end of the runway would be constructed at a grade low enough to allow for future planned expansion of the runway, with the runway extended as an overpass of the road.

6. IMPACTS TO WETLANDS AND OTHER JURISDICTIONAL WATERS

Table 1 quantifies the anticipated impacts of each alternative on the different wetland types. The approximate amount of fill (in cubic yards) and the number of bridge piers to be placed in wetlands for each alternative are also included in the table. The roadway portion of each alternative would be constructed using clean fill (either crushed rock or gravel).

TABLE 1
AREA OF WETLANDS FILLED* (ACRES),
APPROXIMATE AMOUNT OF FILL IN WETLANDS (CUBIC YARDS),
AND NUMBER OF BRIDGE PIERS IN WETLANDS

		Bridge Alternatives						*Ferry Alternatives*		
Wetland Type	No Action	C3(a)	C3(b)	C4	D1	F1	F3	G2	G3	G4
Forested Wetlands	0.0	15.6	14.2	10.6	8.0	23.6	13.0	14.2	10.0	7.7
Shrub/Scrub Wetlands	0.0	3.1	3.0	3.1	3.0	12.9	14.4	2.9	6.5	2.9
Muskegs	0.0	25.3	25.1	25.1	25.1	60.0	57.7	25.3	29.4	24.8
Intertidal Marshes and Meadows	0.0	0	0	0	0	0	0	0.1	1.7	0
Total Wetland Impacts	0.0	44.0	42.3	38.9	36.2	96.5	85.1	42.5	47.6	35.4
Ponds	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Approximate Fill* in Wetlands (cy)	0	213,000	205,000	189,000	176,000	500,000	412,000	206,000	230,000	171,000
Number of Piers in Wetlands**	0	2	2	1	0	7	7	0	0	0

*Portions of the ferry alternatives likely would be decks built on pilings, shading the intertidal wetlands and having approximately equal impact to wetlands as if these portions were fill.
** This includes the number of bridge piers and bridge abutments in the wetland types listed above. Table 2 lists the number of piers in Tongass Narrows.

Table 2 presents anticipated impacts of each alternative to Tongass Narrows. Impacts from project alternatives range from the placement of fill and bridge piers to dredging in Tongass Narrows.

TABLE 2
IMPACTS TO TONGASS NARROWS

		Bridge Alternatives						*Ferry Alternatives*		
Impact Type	No Action	C3(a)	C3(b)	C4	D1	F1	F3	G2[1]	G3[1]	G4[1]
Number of bridge piers	0	5	7	5	6	6	6	0	0	0
Acres filled[2]	0	6.3	6.8	6.9	4.3	0.2	0.2	0	0	0
Acres shaded	0	0	0.3	0	0	0	0.1	0.5	0.4	0.3
Acres dredged	0	0	0	0	0	0	16	0.2	2.2	1.3
Volume dredged (cy)	0	0	0	0	0	0	184,000	1,400	15,200	18,600

[1] While bridge alternatives involve massive piers, ferry alternatives will involve multiple small-diameter pilings. The number of pilings for ferry terminals is not known, but their impact is accounted for under 'Acres shaded.'
[2] Includes area of fill material and area of piers.

In addition to impacts to wetlands and Tongass Narrows, the roadway portion of all project alternatives would require creek crossings on Gravina Island. Table 3 presents the approximate number of creek crossings for each alternative. Small channels contained in wetlands are not included in this assessment. Table 3 includes streams that were identified during field investigations and air photo interpretation. All other small drainages that would be crossed by an alternative would be maintained by the use of typical cross culverts.

TABLE 3
CREEK CROSSINGS

		Bridge Alternatives						*Ferry Alternatives*		
Type of Creek Crossing	No Action	C3(a)	C3(b)	C4	D1	F1	F3	G2	G3	G4
Clear Span Bridge	0	2	2	2	2	4	4	2	3	2
Embedded Culvert	0	1	1	1	1	4	4	1	1	1
Typical Culvert	0	5	5	5	5	6	6	5	6	5
Total Creek Crossings	0	8	8	8	8	14	14	8	10	8

Due to the prevalence of wetlands in the project area, it is anticipated that some wetlands outside the fill prism could be disturbed by construction activities. Construction-related impacts to wetlands could include temporary fill, vegetation removal, and degraded water quality. Such impacts would occur at staging areas (i.e., areas used for temporary construction equipment storage and maneuvering) and in the area approximately 20 feet beyond the cut and fill prism of the new facilities (i.e., areas where construction equipment may need to operate outside of the permanent area of impact). For all bridge alternatives, it is also assumed that temporary impacts would occur within a circular area with a radius of approximately 150 feet around bridge piers or abutments that occur on land. If these areas are located in wetlands, temporary fill would be required. Temporary fill in wetlands is also anticipated for temporary construction roads for Alternatives C3(a), C3(b), F1, and F3. These roads would be necessary to move construction equipment from the shoreline to the interior portions of the islands. Temporary fill could be in place for up to three years. The estimated acreage of wetlands expected to be temporarily affected by construction activities associated with each of the project build alternatives is identified in Table 4. The estimates presented in Table 4 represent the best available design information at this stage of the project.

TABLE 4
ESTIMATED TEMPORARY CONSTRUCTION IMPACTS ON WETLANDS (ACRES)

		Bridge Alternatives						*Ferry Alternatives*		
Disturbance Type	No Action	C3(a)	C3(b)	C4	D1	F1	F3	G2	G3	G4
Volume of temporary fill (cy)	0	16,500	8,300	3,400	0	54,700	56,200	0	0	0
Vegetation removal	0	15.1	14.8	14.0	13.4	35.8	30.1	15.5	18.9	13.2
Vegetation removal and temporary fill	0	3.4	1.7	0.7	0.0	11.3	11.6	0.0	0.0	0.0
Total Temporary Wetland Impacts	0	18.5	16.5	14.7	13.4	47.1	41.7	15.5	18.9	13.2

7. THE FHWA and DOT&PF PREFERRED ALTERNATIVE (F1)

Based on the analyses of alternatives, DOT&PF and FHWA have identified F1 as their Preferred Alternative. The preliminary wetland impacts along the Preferred Alternative are shown on Sheets 2 through 15. As mentioned above, the F1 Alternative requires two bridges over Tongass Narrows and approximately 8.2 miles of new roadway. Typical cross sections of the roadway and bridges are found on Sheet 16. An elevation view of the bridges over Tongass Narrows is shown on Sheet 17. A total of 11 bridge piers and four bridge abutments would be required. Six of the bridge piers would be placed in Tongass Narrows (encompassing approximately 0.2 acre). In addition, four bridge piers and three bridge abutments would be placed in approximately 0.2 acre of wetlands (this 0.2 acre of wetland impact is included in the 96.5 acres of total wetland impact). An elevation view of one of the four bridge abutments required for the Preferred Alternative is found on Sheet 19. Dredging in Tongass Narrows would not be required for the Preferred Alternative.

Approximately 500,000 cubic yards of clean fill (either crushed rock or gravel) and seven bridge piers/abutments would be placed in approximately 96.5 acres of wetlands and 0.1 acre of ponds to construct the Preferred Alternative. Because project engineers are attempting to balance cut and fill volumes, it is anticipated that the primary source of fill material for this project would be suitable material excavated from the right of way. Surficial soils are typically shallow in the project area, so most of the cut material is expected to be usable rock. Rock removed from the right of way would need to be processed before it could be used in the fill embankment. If cuts in the right of way do not yield sufficient fill material, other sources of fill material in Ketchikan are available. A quarry located on Revillagigedo Island just across Tongass Narrows from the existing ferry terminal could be used as a supplemental material source. Fill material could also be obtained from excavation activities expected to occur along the runway at the Ketchikan International Airport.

In addition to the bridge crossings of Tongass Narrows, the Preferred Alternative would cross several named and unnamed creeks on Gravina Island. Clear span bridges are proposed at all anadromous fish streams except for one small anadromous fish stream located south of Government Creek. Due to the small size of this stream, an embedded culvert is proposed at this crossing. The embedded culvert would be designed using standards contained in the Memorandum of Agreement between the Alaska Department of Fish and Game and the Alaska Department of Transportation and Public Facilities for the design, permitting, and construction of culverts for fish passage. Conceptual drawings of a clear span bridge and an embedded culvert can be found on Sheet 18. In addition to anadromous fish streams, the Preferred Alternative would cross approximately nine small creeks on Gravina Island. Of these nine creeks, three are known to contain resident fish. Where streams contained resident fish, the culvert would be embedded, as shown on Sheet 18. Typical culvert crossings, designed to accommodate peak flows

based on hydraulic analysis, are proposed at the six non fish-bearing creeks. Unlike embedded culverts, typical culverts are usually smaller, may have a steeper grade, and do not contain streambed materials in the bottom of the culvert.

Construction of the Preferred Alternative would likely require removing vegetation in approximately 35.8 acres of wetlands and placing temporary fill (coupled with vegetation removal) into approximately 11.3 acres of wetlands. The 35.8 acres is primarily cutting of vegetation 20 feet outside the fill limits to allow construction equipment to operate. The wetland soils in the areas 20 feet beyond the fill prism of new roadway would be protected from disturbance because DOT&PF would require the construction contractor to operate construction equipment on geotextile mats to allow complete removal of the mat without further soil disturbance upon completion of construction. After construction activities, shrubs and herbs are expected to naturally recover from this disturbance. Those areas that are disturbed would be reseeded after construction to prevent erosion.

Temporary fill in wetlands for the Preferred Alternative would be required for wetlands that exist around the proposed bridge piers that occur on land, in staging areas on Pennock Island, and in the temporary construction roads on Revillagigedo, Pennock, and Gravina Islands. Approximately five pier staging areas would occur in wetlands for the Preferred Alternative. Each of these areas would be circular in shape with a radius of approximately 150 feet. In addition to pier staging areas, two 1.5-acre general staging areas would occur in wetlands on Pennock Island under the Preferred Alternative. Lastly, Alternative F1 would require temporary fill for portions of temporary construction roads which occur in wetlands. Alternative F1 would require a total of approximately 1,100 feet of temporary roads in wetlands (these roads would have an average width of 55 feet). The temporary fill locations shown on Sheets 2 through 15 and their acreages are approximate, and are based on the best available information at this stage of preliminary design. In areas where temporary fill is required (e.g. in staging areas), DOT&PF would require the construction contractor to place temporary fill on geotextile mats or other suitable materials of sufficient thickness to facilitate the removal of the fill and the materials to the maximum extent practicable when they are no longer needed for construction. No natural earthen material would be removed from under the geotextile mat when the temporary fill was removed. Wetlands would be stabilized against erosion once construction equipment and protective mats were removed. DOT&PF would restore wetlands that had been temporarily filled by reseeding and revegetating the disturbed areas.

The preferred alternative would require the placement of six steel and concrete bridge piers in Tongass Narrows. Pilings for the bridge piers would be placed as drilled shafts into Tongass Narrows using a reverse rotary drill. The preferred alternative may require pile driving to penetrate any existing sediment in the area and enable the pile to bear on or within rock. Geophysical surveys suggest that this soil sediment may be as much as 20 feet thick. In these locations, a vibratory hammer would be used to advance the steel pile casing (up to 12 feet in diameter) through the existing sediment until it reached bedrock, and then drilling would be employed to penetrate the rock.

The reverse rotary drill for bridge pier foundations would advance these large diameter drilled shafts into the rock bottom by grinding or coring through the rock at the bottom of the channel at each pier location. Four to six shafts may be drilled to support each pier. Each shaft would take approximately one week to complete. It is not known at this time whether the casing would be dewatered or whether the water will be left in the casing (most likely the latter, especially where the deeper water is present). The shaft will then be drilled through the casing to depths of 50 to 100 feet into rock, and then completed by lowering a reinforced steel cage into the shaft hole and filling the hole and casing to an elevation above the water line with concrete. A single pier cap would be cast on top of these four to six pilings to an elevation above the water line for supporting the above-water portion of the pier and bridge.

All shaft construction methods will entail barge-mounted equipment to have the least impact on the marine environment. The barge-mounted reverse rotary drill uses wet construction technology to draw the rock drill cuttings as slurry up through the middle of the drill shaft onto the barge where it enters a settling basin. Once the water has settled, the water would be returned to the ocean. The remaining material (soft/fine mud, sand, or rock cuttings) would be disposed of on land at a suitable, properly-permitted site. Detailed geotechnical surveys have not yet been conducted at the proposed pier locations. Therefore, the volume of material that would be removed from Tongass Narrows cannot be determined at this time. However, each drilled shaft would produce approximately 640 cubic yards of rock cuttings for each 50 feet of depth (assuming 11-foot shaft diameter).

Construction of the Preferred Alternative could produce excess material that would require disposal. While disposal sites would be determined by the construction contractor, the contract would specify that no material is to be disposed of in waters of the U.S. including wetlands and that any disposal site must be approved by the U.S. Army Corps of Engineers. It is anticipated that construction of the Alternative F1 could generate four types of material that would require disposal. The first is woody material that would be cleared from the road embankment and immediately around the piers located on land. This material would be shredded and used as a mulch to cover uplands exposed by construction activities. The second type of material that could require disposal is surficial soils that would be removed by grubbing operations in the right of way. If the soil is usable as topsoil, it would be used to restore upland portions of the construction site. If unusable, the soil would be disposed of at a properly permitted disposal site. The third type of material that could require disposal is rock generated at excavation sites. As already mentioned, this material would be used as fill material wherever possible. If excess rock were generated, it would be stockpiled on uplands for future use on a construction project. The fourth type of disposal material is rock cuttings removed from the in-water pier foundations excavation (see discussion above). These would be disposed of on land at a permitted site.

8. WETLAND IMPACT MITIGATION

Federal regulations and guidelines associated with Section 404 of the Clean Water Act require that project proponents eliminate or reduce adverse impacts on wetlands by taking certain specific steps during project planning. These steps are as follows (emphasis added):

1. Design the project to *avoid adverse impacts*.
2. Incorporate measures to *minimize adverse impacts*.
3. Plan to *restore sites* that must be temporarily adversely affected by the project.
4. *Compensate for unavoidable adverse impacts* through restoration, creation, or preservation of wetlands.

Each of the steps listed above is to be implemented to the extent feasible before moving on to the next step. Together, these steps mitigate (i.e., reduce) the overall adverse effects of a project. Impact avoidance and minimization measures are discussed below.

Impact Avoidance

Suitable non-wetland (upland) alternatives could not be identified because of the extremely wet climate of Southeast Alaska; Ketchikan on average receives approximately 169 inches of precipitation annually. Nearly all lands in the general vicinity of the Ketchikan International Airport on Gravina Island are wetlands. Similar to Gravina Island, all alternative locations on Pennock Island would impact wetlands. Few areas with substantial uplands exist within the entire Tongass Narrows vicinity; therefore, impacts on wetlands are unavoidable by any alternative. Several upland areas do occur on Revillagigedo Island, but these areas tend to be steep slopes, where sufficient drainage occurs so wetlands have not developed. These areas are not practicable road locations. Total avoidance of wetlands with this project is

unachievable. In Tongass Narrows, bridges were located to avoid direct disturbance of the estuarine beach meadows and adjacent shorelines and river mouths.

Impact Minimization, and Wetland Restoration

Effects to wetlands and other waters of the U.S. are minimized through many commitments listed in the environmental impact statement. These are stated below, including mitigation measures for water quality, fish habitat, and marine mammals, as well as freshwater wetlands. In addition, see the discussion below under "Impact Compensation"; DOT&PF is working with the Ketchikan Gateway Borough to ensure that the "Lewis Reef Road" proposed by the borough is built within the impact area of this project and to avoid construction of two parallel roads through the same wetlands

Water Quality

All roads would be designed to maintain existing surface water courses and storm water drainage. Final roadway design would include culverts or bridges along existing drainages and across streams on Revillagigedo and Gravina Islands. The construction contractor is responsible for developing erosion and sediment control and storm water pollution prevention plans to meet Alaska Department of Environmental Conservation (DEC) and U.S. Environmental Protection Agency (EPA) requirements of the Clean Water Act. The roadway and bridge designs would incorporate a storm water treatment system to minimize the effects of runoff during operation of the road. The storm water treatment system would need to be approved by ADEC under their plan review for a non-domestic wastewater treatment system and issuance of a non-domestic wastewater disposal permit. Impacts to water quality would be minimized through the use of Best Management Practices (BMPs), most of which would be part of the SWPPP. The plan will follow DOT&PF's SWPPP Guide. BMPs that would be employed include the following:

- DOT&PF would hold meetings at the beginning of construction with the construction contractor and agencies to ensure implementation of mitigation commitments.
- Where practicable, the angle of fill slopes would be increased to reduce encroachment into adjacent wetlands.
- The roadway would be designed and constructed with a low-profile embankment to minimize the fill footprint.
- Rock would be used to stabilize toes of slopes at pond and stream crossings to limit the erosion of fine-grained material into adjacent waters and wetlands.
- To protect the integrity of the natural plant communities, plant species indigenous to the area would be used for vegetating road slopes, except that nonnative, non-invasive annual grasses may be used to provide rapid, initial soil cover to prevent runoff of fine-grained material into adjacent wetlands. Topsoil would be applied to the surface of road slopes to aid in the reseeding process.
- Roadside swales would be designed to keep surface water within the natural drainage basins to allow sediment-laden water to clear before its discharge to adjacent wetlands and waters.
- At all stream crossings (both culverts and bridge crossings), stream banks would be re-contoured to approximate original conditions and re-seeded with native vegetation to minimize erosion.

Essential Fish Habitat

Construction of this project would require a Title 41 Fish Habitat Permit through the Alaska Department of Natural Resources. The following conservation measures would be incorporated. These are general measures that would be modified to specifically address details of the preferred alternative through further coordination with the agencies during design.

- At all stream crossings (both culverts and bridge crossings), stream banks would be re-contoured to approximate original conditions and re-seeded with native vegetation to minimize erosion.

- BMPs, developed in accordance with EPA's "Storm Water Management for Construction Activities: Developing Pollution and Prevention Plans and Best Management Practices," EPA Document 832 R-92-005 (EPA 1992), and the DOT&PF Storm Water Pollution Prevention Plan Guide, would be employed to minimize the introduction of sediment and siltation of ponds and streams during adjacent fill placement and during culvert placement. Some related BMPs are listed in Sections 4.12; 4.14.1; 4.15.1-4.15.4; 425.10; and 4.25.11.
- All anadromous fish stream crossings would be designed to minimize impacts on stream function and to provide passage to both anadromous and resident fish. All road structures crossing anadromous fish habitat channels would be designed to provide passage for juvenile and adult salmon per Alaska Statute Title 41 standards. Gravels and streambed material would be used in the bottoms of fish passage culverts.
- In-water work in Tongass Narrows would be restricted, as follows. General use of boats and barges could occur year round for general survey and work on bridge structures above water. Except for blasting, dredging, and pile driving, other work in marine waters could occur July 1-February 28. As further described below, blasting, dredging, and pile driving could occur only November 1-February 28, with the possible exception of mid-channel locations, based on further consultation with the following agencies: Alaska Department of Natural Resources (DNR); National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries); U.S. Army Corps of Engineers (COE), and U.S. Fish and Wildlife Service (USFWS).
- The following conservation recommendations would be followed with respect to pile driving in Tongass Narrows: A vibratory hammer would be used to drive steel piles instead of an impact hammer. Piles should be driven during low tide when in intertidal and subtidal areas.
- All construction in and around anadromous fish streams would take place when stream disturbances would have the least impact on anadromous fish species. The recommended time period for in-stream construction work in the Ketchikan area is June 15 through August 7. Fish surveys would be conducted in the summer of 2004 for all streams that will be affected by the project. If additional species are found to be present in the project streams, the existing timeframe for in-stream construction (June 15 to August 7) might be modified to protect additional species. Construction work that occurs above the ordinary high water area of the stream and does not include in-stream construction might be conducted throughout the year. In-stream work areas, except for stream crossings by construction equipment, would be isolated from flowing waters of all anadromous fish streams.
- Any in-water blasting would be performed such that ground vibration (particle velocity) does not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch. The project would employ monitoring devices to ensure adherence to these standards. If blasting amounts are minor, and if agreed by ADF&G and NOAA Fisheries, monitoring may not be undertaken.
- The contractor would be required to prepare a blasting plan prior to any blasting activities. The blasting plan would need to be reviewed by NOAA Fisheries for both EFH and marine mammal impacts. A fish and invertebrate monitoring program would be required for any proposed blasting activities. Any blasting would be conducted during daylight hours only. A pre-blasting survey would be required to ensure that no fish schools are in the vicinity of the blasting area. If fish schools were detected, blasting would be delayed until they leave. A biologist would check the area and record any kills that were within 100 feet up current and 300 feet down current of the blast area after blasting is completed. Monitoring of the dredge materials might be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Measures such as covering the rock to be blasted with sand might be used to dampen blast impact. In-water blasting should avoid the entire months of March through June to avoid juvenile salmonids and the period from June through October 31 to avoid adult salmon. All project-related activities would conform to the pertinent provisions of the Marine Mammal Protection Act and the Endangered Species Act.

- Dredged debris would be placed onto a barge where it would enter a settling basin and be disposed of on land. Monitoring of the dredged materials might be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Dredging activities would avoid the entire months of March through October.
- All fueling and servicing operations would be conducted at least 100 feet away from all streams and water bodies, and fuel storage will be at least 100 feet away from all wetlands and water bodies.
- All necessary permits and agency approvals would be obtained prior to construction, and any permit stipulations would be incorporated into the contract specifications.
- Perimeter staking would be required on the outside of the disturbance area prior to construction to ensure that there is no additional impact from construction activities.
- Silt fences would be used adjacent to EFH stream channels, just beyond the estimated toe of fill.
- Riprap would be placed along stream banks as necessary to maintain stream bank integrity. Placement of riprap along stream banks to maintain stream bank integrity should include the use of bioengineering techniques to improve habitat value of the riprap, by incorporation of willow stakes or other locally available vegetation.

Freshwater and Intertidal Wetlands

Final mitigation would be based on discussions among DNR, FHWA, COE, and other resource management agencies. In addition to BMPs for water quality, the following wetlands-specific measure would be employed: Culvert installation through fill slopes in appropriate locations to maintain natural flow patterns for surface water courses to ensure that the existing timing and amounts of inflow to adjacent wetlands and waters is retained

Use of wetlands for construction activities would be minimized to the extent practicable. Wetland soils in the areas 20 feet beyond the fill prism of new roadway would be protected from disturbance because DOT&PF would require the construction contractor to operate construction equipment on geotextile mats to allow complete removal of the mat without further soil disturbance upon completion of construction. In areas where temporary fill is required, DOT&PF would require the construction contractor to place temporary fill on geotextile mats or other suitable materials of sufficient thickness to facilitate the removal of the fill and the materials to the maximum extent practicable when they are no longer needed for construction. No natural earthen material would be removed from under the geotextile mat when the temporary fill is removed. Wetlands would be stabilized against erosion once construction equipment and protective mats are removed by reseeding and revegetating the disturbed areas. Seeding of the disturbed areas would conform to Section 618 of the Alaska Department of Transportation and Public Facilities Standard Specifications for Seeding. Materials used for seeding would conform to the Alaska Department of Transportation and Public Facilities Standard Specification Section 724 (Seed), Section 725 (Fertilizer), and Subsection 712-2.01 (Water) (DOT&PF 2004). If waste disposal sites were unavoidably placed in wetlands, every effort would be made to use a wetland already affected by construction staging. The wastes would be placed on mats and removed promptly.

Water Body Modification

Temporary diversions would be designed so that the flow of the water body is not impeded. Any creek banks or beds affected by diversion structure placement would be restored to preconstruction conditions to the maximum extent practicable.

Marine Mammals/Threatened and Endangered Species

Many of the EFH measures listed above, including timing windows, also protect Steller sea lions, humpback whales, and other marine mammals. Additional measures specific to marine mammals include the following.

- Should dredging be required, the construction contract would require a dredging plan approved by NOAA Fisheries.
- If blasting and dredging were required, the project would ensure use of trained and NOAA fisheries-approved observers to indicate when marine mammals were within a 164-foot (50-meter) zone around pier work or other in-water work, and activity would wait until the animals moved out of the area, or work would be stopped if marine mammals were to enter the area.
- An in-water warning sound would be issued prior to any blasting to allow any marine mammals to voluntarily move to a comfortable distance.
- If design should change, an incidental harassment authorization might need to be obtained from NOAA fisheries.

Impact Compensation

DOT&PF proposes to compensate for unavoidable adverse impacts to wetlands by paying $248,400.00 as a fee in lieu of wetland restoration, enhancement, or preservation. This compensatory mitigation proposal applies only to Alternative F1, the DOT&PF and FHWA preferred alternative. A physical project that would compensate for wetland losses does not appear to be practical immediately adjacent to impacted wetlands or in the general Ketchikan area, because wetlands are prevalent and there is relatively little damaged or impaired wetland that could benefit from restoration or enhancement.

The monetary value has been determined using historical values for DOT&PF Southeast Alaska projects. The per-acre costs used are $2,800 for forested, shrub/scrub, and muskeg wetlands; $50,000 for bodies of fresh water; and $20,000 for marine waters. Table 5 presents a breakdown of the fee by wetland type. The fee represents the total compensation for all expected wetland impacts for the project. This fee will be provided to a land trust acceptable to the U.S. Army Corps of Engineers (COE). The proposed fee is to be directed toward activities relating to wetland creation, restoration, enhancement, and preservation or land acquisition.

TABLE 5
CALCULATION OF FEE IN LIEU OF COMPENSATORY MITIGATION FOR ALTERNATIVE F1

Wetland Type[1]	Proposed cost per acre[2]	Impacted Area (acres) by F1 Alternative	Total cost per wetland/water type
Wetlands	$2,800.00	96.5	$270,200.00
Forested Wetlands	*$2,800.00*	*23.6*	*$66,080.00*
Shrub/Scrub Wetlands	*$2,800.00*	*12.9*	*$36,120.00*
Muskegs	*$2,800.00*	*60.0*	*$168,000.00*
Water Bodies (ponds)	$50,000.00	0.1	$5,000.00
Marine Waters	$20,000.00	0.2	$4,000.00
Total		96.8	$279,200.00
KGB permitted commitment for Lewis Reef Road mitigation[3]		*11.0[3]*	*- $30,800.00[3]*
Resulting Fee		85.8	$248,400.00[3]

1. No impact to intertidal meadow and marsh wetlands is anticipated for Alternative F1.
2. Cost is based upon past SE Alaska value of wetlands used for compensatory mitigation.
3. KGB has already received a permit for 11 acres of wetland impact, and compensation has been accepted, for a "Lewis Reef Rd." project. A permit modification is proposed for that project to ensure its alignment coincides with the Gravina Access Project alignment. Therefore, the 11 acres has been subtracted from the total.

The proposed fee is reduced by $30,800 because of the relationship between the Gravina Access Project and the "Lewis Reef Road," a Ketchikan Gateway Borough (KGB) proposal recently approved by Corps but not yet built. The two roads serve much the same purpose and follow much the same alignment on airport property. (The Lewis Reef Road would connect the southern end of the Ketchikan Airport to the Industrial Park at the northern end of the Airport.) The KGB permit (COE #M-2000-0307) includes commitments for compensatory mitigation. DOT&PF is currently working with KGB, the Federal Aviation Administration (FAA), and the COE to modify the alignment of the permitted Lewis Reef Road to coincide with the Alternative F1 alignment, and to modify the Lewis Reef Road permit to reflect this alignment shift. This will avoid construction of two parallel roads through the same wetlands on airport property. The total compensation proposal referenced in Table 5 therefore takes into account the mitigation commitment by KGB for 11 acres of impact from the Lewis Reef Road and reduces the total wetlands area that otherwise would be impacted by the Gravina Access Project.

404 (b)(1) Evaluation

Gravina Access Project
Preliminary Draft
Section 404(b)(1) Evaluation

I. Introduction

a. Project Description

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), has requested authorization for the discharge of dredged and/or fill material in waters of the U.S. (including wetlands) under §404 of the Clean Water Act (CWA), and §10 of the Rivers and Harbors Act (RHA) for work in, on, over and under Navigable Waters of the U.S. (excluding bridges which are under the authority of §9 of the RHA and implemented by the U.S. Coast Guard) for the Gravina Access Project. The proposed action (is also known as Alternative F1 or the applicant's preferred alternative in the project's Environmental Impact Statement, (EIS). The purpose of the proposed action is to improve public access between Revillagigedo Island and Gravina Island. This project is one of 17 high-priority infrastructure projects in the State of Alaska to be federally funded under the Federal Transportation Equity Act for the 21st Century (TEA-21), enacted in 1998. TEA-21 authorizes approximately $20 million for construction of a bridge joining Gravina Island to the community of Ketchikan on Revillagigedo Island.

This §404(b)(1) evaluation addresses the impacts of the discharged of dredged and/or fill material in waters of the U.S., including wetlands.

Project Area. The Gravina Access Project area is in the Ketchikan Gateway Borough in Southeast Alaska, about 680 miles north of Seattle, Washington, and 235 miles south of Juneau, Alaska. The Borough contains two major islands, Gravina Island and Revillagigedo Island. The two islands are separated by Tongass Narrows, a 13-mile-long waterway that varies in width from ¼ to 1 mile. Most of the Borough's 14,000 residents live on Revillagigedo Island (on the eastern side of Tongass Narrows). The major communities are Ketchikan and Saxman. Most of the land on Gravina Island is undeveloped except for the Ketchikan International Airport (on its eastern shore, west side of Tongass Narrows) and a timber processing plant to the north of the airport. At the southern end of Tongass Narrows, between Revillagigedo Island and Gravina Island, is a smaller island, Pennock Island. Pennock Island is undeveloped, except for some privately owned parcels with single-family homes along the northern shores of the island.

The principal modes of transportation to islands within the Borough are by airplane (including floatplane) and ship/boat. There is no "hard link" (land) transportation between the islands. The primary public access to Gravina Island from Revillagigedo Island is an airport ferry that transports vehicles, bicyclists, and pedestrians across Tongass Narrows directly to the airport terminal.

Proposed Project. The applicant's proposed action (Alternative F1, in the Gravina Access Project EIS) was identified by DOT&PF and FHWA as their preferred alternative and determined that Alternative F1 to be the "Only Practicable Alternative", in compliance with Executive Order 11990, "Protection of Wetlands." The "Only Practicable Alternative Finding for Wetlands" is included in Appendix L.

A summary of the proposed Gravina Access Project components is provided as Table 1. The Applicant requests authorization for placement of 554,000 cubic yards of crushed rock and gravel fill material in up to 96.8 acres of waters of the United States including wetlands to construct 8.2 miles of roadway embankment, including a spine road and a spur road to the Ketchikan Airport. Of this amount 54,000 cubic yards of fill material would be placed on 11.3 acres (temporary fill for staging and pier construction areas). Fill material from the five to six staging areas (3 at 1.6 acres, and 2 at 1.1 acres); and, from the 1,100-foot by 55-foot temporary road (1.3 acres) would be removed prior to the end of construction and the area rehabilitated. All temporary fill or dredged material would be placed on Geotextile mats or other suitable material to facilitate the removal of the temporary fill. An additional 35.8 acres of wetlands (approximately 20-feet outside of the placement of fill limits) would be mechanically clear-cut (vegetation removed).

Approximately 46,100 cubic yard of rock would be removed for the placement of six steel and concrete bridge piers in the Tongass Narrows. Pilings for the bridge piers would be placed as drilled shafts into the Tongass Narrows using a reverse rotary drill. Pile driving would be used to penetrate any existing sediment in the area and enable the pile to bear on or within the rock. In these locations, a vibratory hammer would be used to advance the steel pile casing (up to 12 feet in diameter) through the existing sediment until it reached bedrock, and then drilled to penetrate the rock.

The reverse rotary drill for bridge pier foundations would advance these large diameter shafts into the rock bottom by grinding or coring through the rock at the bottom of the channel at each pier location. Four to six shafts may be drilled 50 to 100 feet into the rock to support each pier. Once drilled, a reinforced steel cage would be lowered into the shaft hole and filled with concrete to an elevation above the water line. Note that permitting the bridge pier would be under the U.S. Coast Guard's jurisdiction. However the excavation / dredging for the piling/shaft installation is under the U.S. Army, Corps of Engineers' jurisdiction. No channel dredging is required or proposed under the applicants proposed action.

The proposed road would cross fourteen creeks on Gravina Island. Of the five anadromous stream crossings, four would be crossed by clear span bridges and one located south of Government Creek, by an embedded culvert. Of the nine remaining creek crossings, three are known fish streams. These three crossings would also receive embedded culverts. For the remaining six crossings, culverts would be sized to accommodate peak flows.

Table 1. Proposed Gravina Access Project - Summary Table

	Length (ft) unless otherwise noted)	**Width (feet) or diameter**	**Footprint in wetlands & other waters of the U.S. / Total acres**	**Volume (y^3) in waters-wetlands / total volume** [g]	**Sheet Reference**
Permanent Elements (bold = total from below)	**49,350 9.4 mi**	40 (road top)	**96.5 / 107.3**	**500,000 / 554,000**	1
Road Embankment	**8.2 mi**	40 (road top)	**96.1 / 106.8**	500,000 / 554,000	1
-Revilla Segment	5,270	Typical disturbance width: 90-180 Max width (E. bridge abutment): 235	12.4 / 17.1	65,000 / 89,000	2-4
-Pennock Segment	3,050	Typical disturbance width: 60-120 Max width (W. bridge abutment): 230	7.9 / 8.0	41,000 / 41,000	4-6
-Gravina Segment	28,400	Typical disturbance width: 60-150 Max width (W. bridge abutment): 195	68.9 / 68.9 (includes 0.08 ac of impact to ponds)	357,000 / 357,000	7-11; 13-15
-Airport Spur	6,330	Typical disturbance width: 60-150	6.9 / 12.8	37,000 / 67,000	11, 12
Bridges & Culverts			**0.4 / 0.5 (piers)**	**Piers (4-6 shafts per pier)**	
East Channel Bridge *3 piers in marine* *2 piers on Revilla* *2 piers on Pennock* Is.	3,610 - - -	52 [c] - - -	*(0.15 for all marine piers)* *(0.2 ac for all piers in wetlands)* *(0.1 ac for all piers in uplands)*	Marine excavation (rock) 50- to 100-foot depth per shaft ~640 y3 per 50-feet shaft depth (11-foot shaft diameter) con't	4
W. Channel Bridge *3 piers in marine* *1 piers on Gravina Is.*	2,690 - - -	52 [c] - - -		Total 6 piers (36 shafts) in marine waters. **Up to 38,400 y3** excavation / dredging in marine waters	6
Creek on Gravina Is. (Clear span)	30	43 [c]	0	-	9
Government Cr. (Clear span)	200	43 [c]	0	-	11
Airport Cr. E. Fork (Clear span)	100	43 [c]	0	-	14
Airport Cr. W. Fork (Clear span)	55	43 [c]	0		14

	Length (ft) unless otherwise noted)	**Width (feet) or diameter**	**Footprint in wetlands & other waters of the U.S. / Total acres**	**Volume (y^3) in waters-wetlands / total volume** [g]	**Sheet Reference**
Embedded fish passage culverts (4)	-	43 [c]	See sheet 18		8, 10, 14, 18
Temporary Fills			**11.3 / 11.3** [e]	**54,700 / 54,700** [e]	
Pier staging areas (5)	-	-	***7.0 / 7.0*** [e]	***33,900 / 33,900*** [e]	
-Revilla (2)	-	150 diameter each	2.2 / 2.2 [e]	10,700 / 10,700 [e]	4
-Pennock (2)	-	150 diameter each	3.2 / 3.2	15,500 / 15,500	4, 5
-Gravina (1)	-	150 diameter	1.6 / 1.6	7,700 / 7,700	6
Other staging areas					
-Pennock (2)	375 [f]	175 [f]	3.0 / 3.0	14,500 / 14,500	4, 5
Construction road	***1,080***		***1.3 / 1.3***	***6,300 / 6,300***	
-Revilla	380	55	0.5	2,100 / 2,100	4
-Pennock	490	55	0.6	3,000 / 3,000	4, 5
-Gravina	210	55	0.2	1,200 / 1,200	6

a. Fill depth is typical but varies widely depending upon topography.
b. Total wetland impact in this table differs slightly from total reported in EIS due to computation by segment and to rounding. Impacts to ponds are included in wetland impacts.
c. Bridge widths estimated based on lane and shoulder width.
d. Includes free-standing piers and bridge abutments.
e. One pier each on Revilla Is. and Pennock Is. would be fully or partially on uplands. Portions of pier staging areas that are not in wetlands would not use fill but would be disturbed.
f. 'Other staging areas' dimensions broadly estimated to equal 3 ac. total.
Bold numbers indicate totals from the rows below.
g. Average depth of fill for construction roads and staging areas and road segments is 3 feet.

b. Project Purpose

Basic Purpose The basic purpose of the Gravina Access Project is to provide a transportation system between Revillagigedo Island and Gravina Island.

Overall Purpose The overall purpose of the Gravina Access Project is threefold:

- To provide the Ketchikan Gateway Borough and its residents more reliable, efficient, convenient, and cost-effective access for vehicles, bicycles, and pedestrians to Borough lands and other developable or recreation lands on Gravina Island in support of the Borough's adopted land use plans.

- To improve the convenience and reliability of access to Ketchikan International Airport for passengers, airport tenants, emergency personnel and equipment, and shipment of freight.

- To promote environmentally sound, planned long-term economic development on Gravina Island.

c. Agency Involvement

The Corps of Engineers has jurisdiction over the discharge of material into waters of U.S., including wetlands, as established by Section 404 of the Clean Water Act, and for work in or over navigable waters of the U.S. as established Section 10 of the Rivers and Harbors Act. Regulation of dredged material disposal within waters of the U.S. and ocean waters is a shared responsibility of the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE). The primary Federal environmental statute governing the transportation of dredged material for the purpose of ocean disposal is (Section 103) of the Marine Protection, Research and Sanctuaries Act also known as the Ocean Dumping Act. The proposed action would not require dredging or ocean disposal of dredged material. Four of the alternatives studied in the FEIS would, however, require open ocean disposal of dredged material. The substantive evaluation requirements of Section 404 are within the guidelines developed by the Administrator of the EPA in conjunction with the Secretary of the Army, published in 40 CFR, Part 230, and referred to as the 404 (b)(1) Guidelines. In addition, the U.S. Coast Guard has jurisdiction over bridge construction in navigable waters of the U.S. under the authority of Section 9 of the Rivers and Harbors Act of 1899, and the General Bridge Act of 1946.

d. Alternatives

During the spring of 2000, the DOT&PF developed 18 build concepts for crossing Tongass Narrows. These concepts were based on previous studies, input from agencies and the public, engineering analysis, and the objectives in the purpose and need statement for the project. The build concepts consisted of 11 bridge options, two tunnel options, one tunnel-and-bridge option, four supplemental ferry options, and a No Action option. These initial options were reviewed with input from the Ketchikan community and local, state, and federal agencies, and tribes and other Native organizations to identify reasonable alternatives for the Gravina Access Project. Factors related to cost, environmental impacts, and transportation impacts were examined for each of the initial options, and those options that were not considered practical or feasible from a technical and economic standpoint were eliminated from further consideration. Additional technical studies and public and agency input resulted in the identification of nine reasonable build alternatives (six bridge alternatives, C3[a], C3[b], C4, D1, F1, and F3; and three ferry alternatives, G2, G3, and G4) and the No Action alternative for the Gravina Access Project.

No Action. Public access between the islands would continue to be provided by the existing airport ferry service across Tongass Narrows and private boats. No bridge would be constructed and no additional ferry service would be provided between Revillagigedo Island and Gravina Island.

Alternative C3(a). A bridge across Tongass Narrows located approximately 1,600 feet north of the airport terminal. The major components of Alternative C3(a) are:

- A 5,690 foot long bridge would be constructed just north of the airport terminal. A total of five bridge piers would be placed in Tongass Narrows (encompassing 0.1 acre).
- 3.8 new miles of roadway would be constructed on Revillagigedo and Gravina Islands. This would involve the placement of approximately 213,000 cubic yards of clean fill material (either crushed rock or gravel) into approximately 44.0 acres of wetlands. In addition, 280,000 cubic yards of fill would be placed in 6.1 acres of Tongass Narrows.
- Vegetation would be cleared in approximately 15.1 acres of wetlands for construction-related activities.
- In addition, vegetation would be cleared and temporary fill would be placed into approximately 3.4 acres of wetlands to provide staging areas for construction equipment. Approximately 16,500 cubic yards of temporary fill would be required.
- Eight creeks, including two anadromous fish streams, would be crossed by the new road. Anadromous fish streams would be crossed via two clear-span bridges.
- 6.3 acres of essential fish habitat would be lost, including potential losses from shading.

Alternative G2. A new ferry service between Peninsula Point on Revillagigedo Island and Lewis Point on Gravina Island, crossing Tongass Narrows approximately 2 miles north of the airport. The existing ferry would continue to operate at its current location and under its current schedule. The major components of Alternative G2 are:

- Two ferry terminals would be constructed on the shores of Revillagigedo and Gravina Islands. Ferry terminals would shade approximately 0.5 acre of Tongass Narrows.
- 3.6 miles of new roadway would be constructed on Revillagigedo and Gravina Islands, requiring require the placement of approximately 206,000 cubic yards of clean fill material (either crushed rock or gravel) into approximately 42.5 acres of wetlands. No fill would be placed Tongass Narrows.
- Vegetation would be cleared in approximately 15.5 acres of wetlands for construction-related activities.
- Eight creeks, including two anadromous fish streams, would be crossed by the new roadway. Anadromous fish streams would be crossed via two clear-span bridges
- 0.7 acre of essential fish habitat would be lost or modified from shading and scouring caused by ferry propellers.
- Alternative G2 would require dredging approximately 1,400 cubic yards of material from 0.2 acre of Tongass Narrows.

Table 2. Summary Descriptions of Alternatives

Parameter	*No Action Alt.*	*Bridge Alternatives*						*Ferry Alternatives*		
		C3(a)	*C3(b)*	*C4*	*D1*	*F1*	*F3*	*G2*	*G3*	*G4*
Crossing Location	2.8 mi north of down-town	1,600' north of airport terminal	2,600' north of airport terminal	1,600' north of airport terminal	Due east of airport terminal	1.4 mi. south of down-town	1.5 mi. south of down-town	2 mi north of airport terminal	1.3 mi south of airport terminal	2.8 mi north of down-town
Bridge Dimensions:										
Bridge Length (feet)	—	5,690	4,250	4,980	3,220	6,300	5,400	—	—	—
Maximum Height (feet)	—	250	195	250	160	E: 250 W:160	E: 140 W: 250	—	—	—
Vertical Clearance (feet)	—	200	120	200	120	E: 200 W:120	E: 60 W: 200	—	—	—
Horizontal Navigation Clearance (ft)	—	550	500	550	500	E: 550 W: 500	E: 500 W: 550	—	—	—
Aviation Zone Intrusion?	No	Yes	No	Yes	No	No	No	No	No	No
Block Cruise Ships?	—	No	Yes	No	Yes	No	No	No	No	No
Additional Ferry Service:										
New Terminals (Number)	—	—	—	—	—	—	—	2	2	2
New Vessels (Number)	—	—	—	—	—	—	—	2	2	2
New Roadway Length (miles):	—	3.8	4.0	3.7	3.4	8.2	6.7	3.6	3.8	3.2
Travel Time to Airport from Downtown Ketchikan (minutes.)	27	14	12	11	11	13	13	42	35	25
Estimated Costs($ million):										
Construction	0	145	125	145	100	170	155	45	45	40
Program Development[1]	0	55	45	50	35	60	55	15	20	15
Totals	0	200	170	195	135	230	205	60	70[3]	60[2]
Average Annual Operation & Maintenance	2.09	0.15	0.16	0.15	0.13	0.11	0.11	4.98	4.98	4.97
50-year Life-Cycle	10	160	135	160	105	190	170	90	100	90

[1] Includes right-of-way acquisition costs.

[2] Numbers have been rounded; totals are not a direct sum.

Alternative G3. A new ferry service between Ketchikan and Gravina Island. The existing ferry service would continue to operate at its current location. The major components of Alternative G3 are:

- Two ferry terminals would be constructed on the shores of Revillagigedo and Gravina Islands. Ferry terminals would shade approximately 1.6 acres of Tongass Narrows.
- 3.8 miles of new roadway would be constructed on Revillagigedo and Gravina Islands, requiring the placement of approximately 230,000 cubic yards of clean fill material (either crushed rock or gravel) into approximately 47.6 acres of wetlands.
- 18.9 acres of wetlands vegetation would be cleared for construction-related activities.

- Ten creeks, including three anadromous fish streams, would be crossed by the new roadway. Anadromous fish streams would be crossed via three clear-span bridges.
- 3.8 acres of essential fish habitat would be lost or modified from shading and scouring caused by ferry propellers.
- AlternativeG3 would require dredging approximately 15,200 cubic yards of material from 2.2 acres of Tongass Narrows.

Alternative G4. A new ferry service adjacent to the existing airport ferry route, crossing Tongass Narrows 2.8 miles north of downtown. The existing ferry service would continue to operate at its current location and under its same schedule. The major components and associated impacts to the aquatic environment from Alternative G4 are as follows:

- Two ferry terminals would be constructed on Revillagigedo and Gravina Islands. Ferry terminals would shade approximately 0.3 acre of Tongass Narrows.
- 3.2 miles of new roadway would be constructed on Revillagigedo and Gravina Islands, requiring the placement of approximately 171,000 cubic yards of clean fill material (either crushed rock or gravel) into approximately 35.4 acres of wetlands.
- 13.2 acres of wetland vegetation would be mechanically cleared for construction-related activities.

e. Selection of the Proposed Action

Based on the analyses of alternatives presented in the DEIS, and public and agency input, FHWA and DOT&PF determined Alternative F1 to be their preferred alternative and hence, proposed action. The selection of F1 as the proposed action focused on several key elements including meeting the project's purpose and need, marine navigation factors, aviation factors, as well as other environmental and engineering factors. Alternative F1 would:

- Meet the need for improved convenience and reliability of access to Ketchikan International Airport and developable and recreation lands on Gravina Island;
- Promote environmentally sound, planned, long-term development on Gravina Island in conformance with Borough plans;
- Allow the continued safe passage of large cruise ships northbound and southbound through Tongass Narrows and East Channel;
- Allow continued separation of cruise ship traffic (East Channel) from the Alaskan Marine Highway System and other marine traffic (West Channel);
- Avoid impact on floatplane facilities at Ketchikan International Airport and waterways designated for floatplane take-offs and landings in Tongass Narrows;
- Not intrude into Ketchikan International Airport's airspace; and
- Avoid impacts to Ketchikan's tourism economy and local revenues.

FHWA and DOT&PF determined Alternative F1 is the only practicable alternative for the Gravina Access Project. FWHA included a separate Only Practicable Alternative Finding in Appendix L of the FEIS. Based on the information provided in the Only Practicable Alternative Finding, the FEIS itself, and this 404(b)(1) evaluation, and after

taking into consideration cost, existing technology and logistics in light of over all project purposes, and consideration of mitigation measures proposed by the applicant and those that would attached to the DA COE authorization, it is determined that Alternative F1 is the least environmentally damaging practicable alternative.

f. General Description of Dredged/Fill Material for the Proposed Action

No channel dredging is proposed under the proposed action, Alternative F1.

Approximately 500,000 cubic yards of clean fill (either crushed rock or gravel) would be permanently placed in approximately 96.5 acres of wetlands to construct the proposed action. Approximately 48,400 cubic yards of clean fill would be temporarily placed in approximately 10.0 acres of wetlands to provide staging areas for construction equipment. Because project engineers are attempting to balance cut and fill volumes, it is anticipated that the primary source of fill material for this project would be suitable material excavated from the right of way. Surficial soils are typically shallow in the project area, so most of the cut material is expected to be usable rock. Rock removed from the right of way would need to be processed before it could be used in the fill embankment. If cuts in the right of way do not yield sufficient fill material, other sources of fill material in Ketchikan are available. The quarry located on Revillagigedo Island just across Tongass Narrows from the existing ferry terminal could be used as a supplemental material source. Fill material could also be obtained from excavation activities expected to occur along the runway at the Ketchikan International Airport.

g. Description of the Discharge Site for the Proposed Action

Construction of the proposed action would require the placement of clean fill into approximately 96.5 acres of wetlands and 10.7 acres of uplands. The type and amount of wetlands filled by the proposed action is as follows: 23.6 acres of forested wetlands, 12.9 acres of shrub/scrub wetlands, and 60.0 acres of muskeg. Most of the impacted uplands are either forests or alder thickets. No fill material would be placed below mean lower low water.

The proposed action would also require the placement of six bridge piers in Tongass Narrows. Two of the proposed bridge piers would be located in shallow waters that support eelgrass or kelp beds. The remaining four bridge piers would be located in deeper waters and would not impact marine vegetation.

h. Description of Discharge Method for the Proposed Action

The following discussion is a general description of construction activities.

Roadway Portion: The first step involved in constructing the roadway portion of the proposed action would be to install sediment control systems to prevent erosion that could cause stream and wetland degradation. These features would be maintained for the duration of construction. Next would be the removal of vegetation in the areas of earthwork. Unsuitable soils would be removed and disposed of at an approved site, or

stockpiled for reuse (on uplands) if of topsoil quality. Drainage cross culverts would be built, and earthwork cuts and fills would be constructed. The final roadway section would be built with crushed rock or gravel from existing or new pits that are permitted for such material withdrawal. Final paving and roadway appurtenances would follow.

Bridge Portion: As with the roadway portion, sediment control systems would be installed along the bridge alignment over land. Where necessary, a temporary access road would be built to each on-land foundation site. A landing site and access roadway would probably be built on Pennock Island as well. Each on-land pier location would either be excavated to rock, which would be used as the foundation, or would have drilled shafts placed into the rock as the foundation. From the foundation, the pier shafts would be constructed to the height of the bridge superstructure. The in-water foundations would probably be made of a grouping of large diameter pipe piles. Each individual pile would be located and driven into sediment and fractured rock with a vibrating hammer. Once set into the rock, an auger would remove any sediment in the pile, and would then drill into the rock to achieve good bearing. All of the cuttings would be removed with circulating slurry, into tanks on service barges. The slurry and cuttings would be disposed of at an approved upland site. Once cleared of cuttings, each pipe would have reinforcing steel placed in it, and would be filled with concrete using the tremmie method. Each group of pipe piles would be joined with a pile cap, and the pier would then be built on the pile cap to the height of bridge superstructure.

There are two types of superstructure under consideration: steel and concrete. If steel, long girders would be hoisted and placed from pier to pier. After girder placement, a concrete deck would be cast for the bridge-driving surface. If concrete, the bridge would probably be built using the balanced cantilever method. Twenty to 30 foot sections of the concrete superstructure would be built simultaneously out from each pier till they meet at the center of each span. These may either be cast in place, or precast, and lifted into place. Following span completion, final rails would be placed and the bridge completed.

Construction of the proposed action would likely require removing vegetation in approximately 35.8 acres of wetlands and placing temporary fill (coupled with vegetation removal) onto approximately 11.3 acres of wetlands.

It is anticipated that vegetation would be removed 20 feet outside the fill limits to allow construction equipment to operate. Wetland soils in the areas 20 feet beyond the fill prism of new roadway would be protected from disturbance because DOT&PF would require the construction contractor to operate construction equipment on geotextile mats and remove the mats without further soil disturbance upon completion of construction. After construction activities, shrubs and herbs are expected to naturally recover from this disturbance. Those areas that are disturbed would be reseeded after construction to prevent erosion.

Temporary fill in wetlands would be required for wetlands that exist around the proposed bridge piers that occur on land, in the staging area on Pennock Island, and the temporary construction road on Pennock Island. The amount of wetlands that would be temporarily

filled is estimated at 11.3 acres. In areas where temporary fill is required (e.g. in staging areas, construction roads), DOT&PF would require the construction contractor to place temporary fill on geotextile mats or other suitable materials of sufficient thickness to facilitate the removal of the fill and the materials when they are no longer needed for construction. No natural earthen material would be removed from under the geotextile mat when the temporary fill was removed. Wetlands would be stabilized against erosion once construction equipment and protective mats were removed. DOT&PF would restore wetlands that had been temporarily filled by reseeding and revegetating the disturbed areas.

Construction of the proposed action could produce excess material that would require disposal. While disposal sites would be determined by the construction contractor, the contract would specify that no material is to be disposed of in waters of the U.S. including wetlands, and that any disposal site must be approved. It is anticipated that construction of the proposed action could generate four types of material that would require disposal. The first is woody material that would be cleared from the road embankment and immediately around the piers located on land. This material would be shredded and used as mulch to cover uplands exposed by construction activities. The second type of material that could require disposal is surficial soils that would be removed by grubbing operations in the right of way. If the soil were usable as topsoil, it would be used to restore upland portions of the construction site.

Unusable grubbing material and soil would be disposed of at an upland disposal site. The third type of material that could require disposal is rock generated at excavation sites. As already mentioned, this material would be used as fill material wherever possible. If excess rock were generated, it would be stockpiled on uplands for future use on a construction project. The fourth type of disposal material is rock cuttings removed from the in-water pier foundations excavation. As mentioned, these rock cuttings would be disposed of on land.

In the sections that follow, all chapter and section references are made to the Gravina Access Project Final Environmental Impact Statement (FEIS).

II. Evaluation of Compliance With the 404 (b)(1) Guidelines

(restrictions on discharge, 40 CFR § 230.10 (a) – (d))

(An * is marked next to the answer that would indicate noncompliance with the guidelines. No * marked signifies the questions does not relate to compliance or noncompliance with the guidelines. An "X" simply marks the answer the questions posed).

a. Alternatives Test:

i. Based on the discussion in the EIS, are there available, practicable alternatives having less adverse impacts on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the U.S." or at least other locations within these waters? ☐ Yes* ☒ No

ii. Based on the discussion on the EIS, if the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternatives sites available? ☐ Yes ☐ No*

b. Special restrictions on discharge. Will the discharge:

i. violate state water quality standards? ☐ Yes* ☒ No

ii. violate toxic effluent standards (under Section 307 of the Act)? ☐ Yes* ☒ No

iii. jeopardize endangered or threatened species or their critical habitat? ☐ Yes* ☒ No

iv. violate standards set by the Department of Commerce to protect marine sanctuaries? ☐ Yes* ☒ No N/A

v. evaluation of the information in the FEIS indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s):

(**X**) based on the above information, the material is not a carrier of contaminants

(**X**) the levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

( ) acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminations from being transported beyond the boundaries of the disposal site.

c. Other restrictions. Will the discharge contribute to significant degradation of "waters of the United States" through adverse impacts to:

i. human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife, and special aquatic areas? ☐ Yes ☒ No

ii. life stages of aquatic life and other wildlife? ☐ Yes ☒ No

iii. diversity, productivity, and stability of aquatic life and other wildlife or wildlife habitat or loss of the capacity of wetland to assimilate nutrients, purify water, or reduce wave energy? ☐ Yes ☒ No

iv. recreational, aesthetic, and economic values? ☐ Yes ☒ No

Note: The proposed action would place fill into approximately 96.5 acres of palustrine wetlands. Because the impacted wetlands are low value wetlands and due to the prevalence of wetlands in the project area, the proposed action is not expected to contribute to the significant degradation of waters of the U.S.

d. **Actions to minimize potential adverse impacts (mitigation). Will all appropriate and practicable steps (40 CFR 230.70-77, Subpart H) be taken to minimize the potential adverse impacts to the discharge on the aquatic ecosystem?** ☒ Yes ☐ No

III. Factual Determinations (40 CFR § 230.11)

The determinations of potential short-term or long-term effects of the proposed discharges of dredged or fill material on the physical, chemical, and biological components of the aquatic environment including items a – h, below, in making a finding of compliance or non-compliance. There is minimal potential for short-term or long-term significant adverse environmental effects (in light of Subparts C-F) of the proposed discharge as related to:

	YES	NO
a. Physical substrate determinations	☒	☐
b. Water circulation, fluctuation and salinity determinations	☒	☐
c. Suspended particulates/turbidity determinations	☒	☐
d. Contaminant determinations	☒	☐
e. Aquatic ecosystem structure and function determinations	☒	☐
f. Proposed disposal site determination	☒	☐
g. Determination of cumulative effects on the aquatic Ecosystem	☒	☐
h. Determination of secondary effects on the aquatic ecosystem	☒	☐

IV. Technical Evaluation Factors (40 CFR §230 Subparts C-F)

a. Potential Impacts on Physical and Chemical Characteristics of the Aquatic Environment (Subpart C)

	Potential Impacts on Physical and Chemical Characteristics of the Aquatic Environment	EIS Section Reference	Significant	Not Significant	N/A
1.	Substrate	3.9.1, 3.9.2, 3.15.1.1, 4.9.1, 4.9.2, 4.15.1, 4.25.7, 4.25.12.1, 4.27.6, 4.30.2.4, Appendix N, Appendix O	☐	☒	☐
2.	Suspended particulates/turbidity	3.12, 4.12, 4.25.10, 4.25.12.3, 4.26.8, 4.27.7, 4.30.1.3, 4.30.2.7, Appendix N	☐	☒	☐
3.	Water	3.12, 3.15, 4.12, 4.15, 4.25.10, 4.25.12, 4.26.8, 4.27.7, 4.27.9, 4.30.1.4, 4.30.1.3, 4.30.2.7, 4.30.2.9, Appendix N	☐	☒	☐

	Potential Impacts on Physical and Chemical Characteristics of the Aquatic Environment	EIS Section Reference	Significant	Not Significant	N/A
4.	Alteration of current patterns and water circulation	3.15.1, 4.14.1, 4.15, 4.25.12, 4.26.9, 4.26.10, 4.27.9, 4.30.1.4, 4.30.2.9, Appendix N	☐	☒	☐
5.	Alteration of Normal fluctuations/ hydro period	3.15.1, 3.14.1, 4.15, 4.15.1, 4.14.1, 4.25.12, 4.25.11, 4.26.10, 4.26.9, 4.27.9, 4.27.8, 4.30.1.3, 4.30.1.4	☐	☒	☐
6.	Salinity Gradients		☐	☐	☒

Note: References are to sections within the Gravina Access Project Final EIS.

b. Potential Impacts on the Biological Characteristics of the Aquatic Ecosystem (Subpart D)

	Potential Impacts on the Biological Characteristics of the Aquatic Ecosystem	EIS Section Reference	Significant	Not Significant	N/A
1.	Threatened and endangered species	3.15.4.1, 3.20, 4.20, 4.25.15, 4.30.2.10, Appendix T	☐	☒	☐
2.	Aquatic food web	3.15.3, 3.15.4, 4.15.4, 4.25.12.3, 4.26.10.2, 4.30.1.5, 4.30.2.9, Appendix N, Appendix O	☐	☒	☐
3.	Other Wildlife	3.15.4, 3.15.5, 3.15.6, 3.15.7, 4.15.4, 4.15.5, 4.15.6, 4.15.7, 4.25.12.3, 4.25.12.4, 4.25.12.5, 4.25.12.6, 4.26.10.2, 4.27.9.2, 4.30.1.5, 4.30.2.9	☐	☒	☐

c. Potential Impacts on Special Aquatic Sites (Subpart E)

	Potential Impacts on Special Aquatic Sites	EIS Section Reference	Significant	Not Significant	N/A
1.	Sanctuaries and refuges	3.1.3, 4.1.3	☐	☐	☒
2.	Wetlands	3.14.1, 4.14.1, 4.25.11, 4.26.9, 4.27.8, 4.30.1.4, 4.30.2.8, Appendix L, Appendix M	☐	☒	☐
3.	Mud flats		☐	☐	☒

	Potential Impacts on Special Aquatic Sites	EIS Section Reference	Significant	Not Significant	N/A
4.	Vegetated shallows	3.15.4.4, 4.15.4.4, 4.25.12.2, 4.30.1.5, 4.30.2.9, Appendix N, Appendix O	☐	☒	☐
5.	Coral reefs		☐	☐	☒
6.	Riffle and pool complexes		☐	☐	☒

d. Potential Effects on Human Use Characteristics (Subpart F)

	Potential Impacts on Human Use Characteristics	EIS Section Reference	Significant	Not Significant	N/A
1.	Effects on municipal and private water supplies	3.3.8, 4.3.8	☐	☒	☐
2.	Effects on recreational and commercial fisheries	3.3.4,3.3.7, 3.5.2.2, 4.25.2.4	☐	☒	☐
3.	Effects on water-related recreation	3.3.4, 4.3.4, 4.25.2.4	☐	☒	☐
4.	Aesthetics	3.23, 4.23, 4.25.18, 4.26.15, 4.27.11	☐	☒	☐
5.	Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves	3.1.3, 4.1.3	☐	☐	☒
6.	Effects on Archeological and Historic Resources	3.21; 3.21.2, 3.21.2.2	☐	☒	☐

V. Evaluation of Dredged or Fill Material (Subpart G, 40 CFR § 230.60)

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material: (check boxes that apply)

1. ☒ Physical characteristics
2. ☐ Hydrography in relation to known or anticipated sources of contaminants
3. ☐ Results from previous testing of the material or similar material in the vicinity of the project
4. ☒ Known, significant sources of persistent pesticides from land runoff or percolation
5. ☒ Spill records for petroleum products or designated hazardous substances

6. ☒ Other public records of significant introduction of containments from industry, municipalities, or other sources
7. ☒ Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by human-induced discharge activities

Note: Most of the project area is currently undeveloped or not substantially developed. No areas with any known history of contamination are included within the proposed action. A Phase I Initial Site Assessment for contamination was conducted and is included in the EIS.

b. An evaluation of the information above indicates that the proposed dredged or fill material is not a carrier of containments, or that levels of contaminants are substantively similar at extraction and disposal sites. The material meets the testing exclusion criteria. ☒ Yes ☐ No

Note: Fill material is not expected to carry containments. Material compliance with the testing exclusion criteria is not known at this time.

VI. Disposal Site Delineation (40 CFR § 230.11(f))

a. The following factors, as appropriate, will be considered in evaluating the disposal site.

1.	Depth of water at disposal site	☒
2.	Current velocity, direction, direction, and variability at disposal site	☒
3.	Degree of turbulence	☒
4.	Water column stratification	☒
5.	Discharge vessel speed and direction	☒
6.	Rate of discharge	☒
7.	Dredged material characteristics	☒
8.	Other factors affecting rates and patterns of mixing	☒

Note: The proposed action does not include open water dumping (no channel dredging is proposed). Material disposal will only occur in properly permitted upland locations. The only work in marine waters is placement of pilings for bridge piers. Piles will be placed using barge-mounted rock drilling operations that will be substantially confined within large-diameter pipe.

b. **An evaluation of appropriate factors in V. a. above indicates that the disposal site and/or size of mixing zone are acceptable.**
☐ Yes ☐ No

VII. Actions to Minimize Adverse Effects (Subpart H, 40 CFR § 230.70)

All appropriate and practicable steps would be taken, through the application of recommendation of 230.70-230.77 to ensure minimal adverse effects of the proposed discharge. ☒ Yes ☐ No

Note: As a result of the preapplication, agency coordination and implementation of the NEPA process, the Applicant has incorporated mitigation measures to help reduce potential adverse impacts to the marine and aquatic resources. A complete list of mitigation measures can be found in Section 4.30 of the FEIS, and my resource in Sections 4.1 through 4.29. Some of these mitigation measures include:

- Anadromous fish streams in-water work would be restricted to June 15 through August 7.
- In-water work in Tongass Narrows would be restricted to July 1 through February 28. Blasting, dredging, and pile driving could occur only from November 1 through February 28, with the possible exception of mid-channel locations, which would be based on further consultation.
- A vibratory hammer would be used to drive steel piles instead of an impact hammer. Piles would be driven during low tide when in intertidal and subtidal areas.
- If necessary, in-water blasting in the Tongass Narrows would be performed such that ground vibrations (particle velocity) does not exceed 2.0 inches per second and peak water pressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch, following ADF&G guidelines for blasting.
- All fueling and servicing operations would be conducted at least 100 feet away from all streams and water bodies, and fuel storage will be at least 100 feet away from all wetlands and water bodies.
- Perimeter staking would be required on the outside of the disturbance area prior to construction to ensure that there is no additional impact from construction activities.
- Silt fences would be used adjacent to EFH stream channels, just beyond the estimated toe of fill.
- Riprap would be placed along stream banks as necessary to maintain stream bank integrity. Placement of riprap along stream banks would include the use of bioengineering techniques to improve habitat value of the riprap, by incorporation of willow stakes or other locally available vegetation.
- Temporary fills would be placed on geotextile mats or other suitable materials of sufficient thickness to facilitate the removal of the fill and the materials to the maximum extent practicable when they are no longer needed for construction. No natural earthen material would be removed from under the geotextile mat when the temporary fill is removed.
- Proposed realignment of the Lewis Reef Road authorized to the Ketchikan Gateway Borough under POA-2000-307-M to coincide with the road

alignment proposed for the Gravina Access Project. This road realignment would reduce the need for an additional 11-acre road footprint.

- The Federal Highways Administration (FHWA), and the Alaska Department of Transportation and Public Facilities (DOT&PF) have proposed to provide compensatory mitigation in the form of "in-lieu fee" or fee in lieu of wetland restoration, creation, enhancement or preservation. The fee ($248,400) would be provided to a land trust acceptable to the U. S. Army Corps of Engineers for a designated project, should the proposed action be authorized.
- At all stream crossings (both bridge and culvert crossings) stream banks will be re-countered to approximate original conditions and seeded with native vegetation to minimize erosion.
- Four bridges and one embedded culvert would be utilized for anadromous fish streams crossings. Embedded culverts would also be used for resident fish bearing streams crossings.

VIII. Findings of Compliance or Non-compliance (40 CFR§ 230.12)

<<To Be Determined>>

a. ☐ **The proposal disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines.**

b. ☐ **The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines with the inclusion of the following conditions: (to be determined if selected)**

c. ☐ **The proposed disposal site for discharge of dredged or fill material does not comply with the Section 404(b)(1) guidelines for the following reasons:**

i. ☐ There is a less damaging practicable alternative.

ii. ☐ The proposed discharge will result in significant degradation of the aquatic ecosystem.

iii. ☐ The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem.

iv. ☐ There does not exist sufficient information to make a reasonable judgment as to whether the proposed activity will comply with these Guidelines.

DOT&PF and FHWA
Wetlands Finding

Wetlands Finding

A finding of the Alaska Department of Transportation and Public Facilities and the Federal Highway Administration

The Federal Highway Administration (FHWA) and Alaska Department of Transportation and Public Facilities (DOT&PF) are pursuing the Gravina Access Project, a project proposed by the Ketchikan Gateway Borough and partially funded through a special Congressional appropriation. Executive Order (E.O.) 11990, "Protection of Wetlands," mandates that federally funded projects are to avoid construction in wetlands unless (1) there is no practicable alternative and (2) the proposed action includes all practicable measures to minimize harm to wetlands. In compliance with E.O. 11990, the FHWA and DOT&PF have determined that Alternative F1 is the only practicable alternative for the Gravina Access Project. Information about alternatives and their impacts provided in this document summarizes information provided in the Gravina Access Project Environmental Impact Statement.

Need for project. The purpose of the Gravina Access Project is to improve surface transportation between Revillagigedo Island and Gravina Island. The Gravina Access Project will provide the Ketchikan Gateway Borough and its residents more reliable, efficient, convenient, and cost-effective access to Gravina Island; improve the convenience and reliability of access to Ketchikan International Airport for passengers, airport tenants, emergency personnel and equipment, and shipment of freight; and promote environmentally sound, planned long-term economic development on Gravina Island.

Preferred Alternative. The FHWA and DOT&PF Preferred Alternative, Alternative F1, would cross Tongass Narrows via Pennock Island with two bridges. One bridge would cross the East Channel and the other would cross the West Channel. The East Channel bridge would be approximately 3,610 feet long and have a maximum height of approximately 250 feet. The West Channel bridge would be approximately 2,690 feet long and have a maximum height of approximately 160 feet. In addition to these bridges, Alternative F1 would involve constructing two-lane access roads on Revillagigedo, Pennock, and Gravina Islands.

Wetlands Involvement. The majority of lands in the general vicinity of the Ketchikan International Airport and almost all of Pennock Island are wetlands. As such, impacts to wetlands are unavoidable by any build alternative. Alternative F1, the FHWA and DOT&PF Preferred Alternative, would result in 96.5 acres of permanent wetland impact, the highest amount of wetland impact of the project alternatives. Alternative F1 would likely involve temporary impacts to an additional 47.1 acres of wetlands. Approximately 35.8 acres of wetlands would be mechanically cleared exposing soils to erosive forces and/or compaction, limiting their ability to recover from disturbance. Clearing activities will occur in increments as the roadway is being constructed and disturbance to one area would not last longer than two months. Approximately 11.3 acres of wetlands would be mechanically cleared and temporarily filled for temporary construction roads and staging areas. Temporary fill may be in place for up to three years and could have long term effects on wetlands as a result of compaction and/or erosion, depending upon activities undertaken in the staging areas. The amount of wetland impacted is not substantial relative to the vast amount of wetlands in the area. Most of the affected wetlands are forested or muskeg wetlands, which are not among the highest value wetlands.

Alternatives Considered. A total of 10 project alternatives were considered in the EIS, including a no action alternative, three ferry alternatives, and six bridge alternatives. The FHWA and DOT&PF have determined that Alternative F1 is the only practicable alternative based on the Gravina Access Project's purpose and need, marine navigation factors, aviation factors, as well as other environmental factors. Each of these topics is further explained below. Table 1 provides a comparative summary of the project alternatives.

TABLE 1

Impact Categories	GRAVINA ACCESS PROJECT ALTERNATIVES									
	No Action	BRIDGE ALTERNATIVES						FERRY ALTERNATIVES		
		C3(a)	C3(b)	C4	D1	F1	F3	G2	G3	G4
Cost Factors										
Construction and Project Development ($ million)[1]	0	200	170	195	135	230	205[2]	60	70	60
Life-Cycle ($ million)[1]	10	160	135	160	105	190	170	90	100	90
Purpose and Need Factors										
Efficiency & Convenience of Access										
Vehicular travel time (in minutes) to airport from:										
-Downtown Ketch.	27	14	12	11	11	13	13	42[3]	35[3]	25[3]
-Carlanna Creek	19	6	4	3	3	21	21	34[3]	34[3]	17[3]
-Ward Cove	25	8	6	9	7	27	27	34[3]	40[3]	23[3]
Vehicular travel time (in minutes) to developable land from:										
-Downtown Ketch.	NA[4]	17	17	15	14	7	7	34[3]	29[3]	29[3]
-Carlanna Creek	NA[4]	9	9	7	6	15	15	26[3]	28[3]	21[3]
-Ward Cove	NA[4]	11	11	13	10	21	21	26[3]	34[3]	27[3]
Economic Development										
Projected development on Gravina Island (in acres)										
-Residential	15	287	287	287	287	383	383	50	50	50
-Industrial/comm.	5	22	22	22	22	22	22	22	22	22
Projected development on Pennock Island (in acres)										
-Residential	0	0	0	0	0	75	75	0	0	0
-Industrial/comm.	0	0	0	0	0	1	1	0	0	0
Social and Economic Impacts										
Reductions in cruise-related spending ($million)	0	0	2.2	0	2.2	0	3.2[6]/ 1.5[7]/0[8]	0	0	0
User economic benefits ($million)[5]	0	55.2	62.3	64.2	70.0	27.1	22.6	-0.2	-0.2	2.0
Transportation Impacts										
Number of floatplane flights per year potentially eliminated (assuming 2,000 SVFR operations annually)	0	1,800	1,800	1,800	1,800	200[9]	100[9]	0	0	0
Percentage of large ships diverted from	0	0	2	0	2	0	4/2/0[10]	0	0	0

Impact Categories	GRAVINA ACCESS PROJECT ALTERNATIVES									
	No Action	BRIDGE ALTERNATIVES						FERRY ALTERNATIVES		
		C3(a)	C3(b)	C4	D1	F1	F3	G2	G3	G4
Ketchikan										
Natural Resources Impacts										
Wetland vegetation removal for construction (acres)	**0.0**	**15.1**	**14.8**	**14.0**	**13.4**	**35.8**	**30.1**	**15.5**	**18.9**	**13.2**
Temporary fill in wetlands (acres)	**0.0**	**3.4**	**1.7**	**0.7**	**0.0**	**11.3**	**11.6**	**0.0**	**0.0**	**0.0**
Permanent wetland habitat losses (acres)										
Forested	***0.0***	***15.6***	***14.2***	***10.6***	***8.0***	***23.6***	***13.0***	***14.2***	***10.0***	***7.7***
Shrub/Scrub	***0.0***	***3.1***	***3.0***	***3.1***	***3.0***	***12.9***	***14.4***	***2.9***	***6.5***	***2.9***
Muskegs	***0.0***	***25.3***	***25.1***	***25.1***	***25.1***	***60.0***	***57.7***	***25.3***	***29.4***	***24.8***
Intertidal marshes/ meadows	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	***1.7***	***0.0***
Total	**0.0**	**44.0**	**42.3**	**38.8**	**36.1**	**96.5**	**85.1**	**42.5**	**47.6**	**35.4**
Total Wetlands filled (acres, temp. and perm.)	**0.0**	**47.4**	**44.0**	**39.5**	**36.1**	**107.8**	**96.7**	**42.5**	**47.6**	**35.4**
Amount of temporary fill in wetlands (cubic yards)	**0.0**	**16,500**	**8,300**	**3,400**	**0.0**	**54,700**	**56,200**	**0.0**	**0.0**	**0.0**
Amount of permanent fill in wetlands (cubic yards)	**0.0**	**213,00**	**250,000**	**189,900**	**176,000**	**500,000**	**412,000**	**206,000**	**230,000**	**171,000**
Number of piers or abutments in wetlands	**0**	**2**	**2**	**1**	**0**	**7**	**7**	**0**	**0**	**0**
Number of water body crossings	**0**	**8**	**8**	**8**	**8**	**14**	**14**	**8**	**10**	**8**
Number of anadromous fish streams crossed	**0**	**2**	**2**	**2**	**2**	**5**	**5**	**2**	**3**	**2**
Essential Fish Habitat losses (acres)	**0.0**	**6.3**	**7.1**	**6.9**	**4.3**	**0.2**	**16.2[2]**	**0.7**	**3.8**	**1.6**
Uplands impacts (acres)	**0.0**	**5.1**	**9.1**	**10.4**	**8.6**	**10.7**	**4.8**	**7.6**	**7.0**	**4.7**
Number of piers in Tongass Narrows	**0**	**5**	**7**	**5**	**6**	**6**	**6**	**0**	**0**	**0**
Amount of material to be dredged from Tongass Narrows (cubic yards)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**184,000[2]**	**1,400**	**15,200**	**18,600**
Amount of fill in Tongass Narrows (cubic yards)	**0.0**	**280,000**	**140,000**	**280,000**	**295,000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Relationship to Select Federal Laws										
Section 10/404 of the Clean Water Act – permit required (y/n)?	**n**	**y**	**y**	**y**	**y**	**y**	**y**	**y**	**y**	**y**
Section 9 of the Rivers and Harbors Act - USCG bridge permit required (y/n)?	**n**	**y**	**y**	**y**	**y**	**y**	**y**	**n**	**n**	**n**
Section 103 of the Marine Protection, Research and Sanctuaries Act – permit required (y/n)?	**n**	**n**	**n**	**n**	**n**	**n**	**y[2]**	**y**	**y**	**y**

Impact Categories	GRAVINA ACCESS PROJECT ALTERNATIVES									
	No Action	BRIDGE ALTERNATIVES						FERRY ALTERNATIVES		
		C3(a)	C3(b)	C4	D1	F1	F3	G2	G3	G4

[1] Rounded to nearest $5 million due to the variable and preliminary nature of engineering. Project development costs include mobilization costs, contingency costs, mitigation costs, engineering/administration costs, construction management costs, and right of way acquisition costs.

[2] Assumes modification of West Channel would be required.

[3] Values provided represent travel times using new ferry facility only. Travel time for the existing airport ferry would be the same as for the No Action alternative.

[4] Not applicable – the No Action Alternative does not include access to developable land.

[5] See Section 4.26.3.8, Table 4-33, for more details. Benefits are calculated for access costs only, based on the traffic projections discussed in Section 4.26.4.3, and compared to the No Action Alternative.

[6] Represents reduction in spending in the first 2 to 3 years following closure of East Channel to large cruise ships: a 4 percent reduction in large cruise ship calls to Ketchikan is anticipated during that time.

[7] Represents reduction in spending over the long-term following closure of the East Channel to large cruise ships: after a 2 to 3-year "adjustment period," the long-term reduction of large cruise ship calls to Ketchikan is estimated to be 2 percent.

[8] If West Channel were modified to improve navigation safety, there would be no reduction in cruise-related spending with Alternative F3.

[9] The FAA's preliminary analysis of Alternative F3 indicated that although the alternative appears to be outside the Exemption No. 4760 boundaries, some modification of the boundaries may be required. The analysis also indicated that a Pennock Island crossing would be "less disruptive" to floatplane operations than the other bridge alternatives. For purposes of this analysis, HDR assumed 10 percent and 5 percent reductions in SVFR operations for Alternatives F1 and F3, respectively.

[10] A 4 percent reduction in large cruise ship calls to Ketchikan is estimated to last 2 to 3 years. It is estimated that following this "adjustment period" some ships will return to Ketchikan. The long-term reduction of large cruise ship calls is estimated to be 2 percent. If West Channel were modified to improve navigation safety for Alternative F3, there would be no reduction in cruise ship calls to Ketchikan. No similar reduction is expected for Alternative F1, because East Channel, the preferred cruise ship channel, would not be closed as under Alternative F3.

Purpose and Need Factors

The ferry alternatives (G2, G3, and G4) each would add a second ferry to the existing airport ferry service, and would provide road access on Gravina Island beyond the airport to public lands. These were developed, in part, to minimize impacts to the natural environment and provide lower cost alternatives to bridging Tongass Narrows. After thorough analysis, the FHWA and DOT&PF determined that these alternatives do not satisfy the project's purpose and need as well as the bridge alternatives. This is the case because the convenience and reliability of travel between Revillagigedo Island and Gravina Island would be substantially lower, while user costs would be higher, and, therefore, projections for economic development on Gravina Island under the ferry alternatives would be substantially lower than the bridge alternatives. All of the bridge alternatives improve convenience and reliability of access to Ketchikan International Airport and developable and recreation lands on Gravina Island. In addition, the bridge alternatives would be consistent with Ketchikan Gateway Borough's plans for long-term development on Gravina Island thereby enhancing economic development potential in the Borough.

Marine Navigation Factors

All bridge alternatives would have short-term effects on marine navigation during construction because the main navigation channel under the bridge(s) would have to be closed while sections of the bridge were secured in place. All bridge alternatives would have long-term effects on navigation by introducing a new structure and increasing the risks of ships groundings or running into a bridge pier). However, some alternatives would have substantially greater impact. Alternatives C3(b) and D1 would result in construction of a 120-foot high bridge over Tongass Narrows, which would permanently preclude passage of large cruise ships through Tongass Narrows, constraining the direction of their approach into Ketchikan. Alternative F3 would result in construction of a 60-foot high bridge over East Channel, which would permanently preclude passage of large cruise ships through the East Channel, also constraining the direction of cruise ship traffic into Ketchikan, and possibly reducing tourist spending and adversely impacting economic activity for Ketchikan. These alternatives would have direct and indirect adverse impacts to cruise ship lines, Ketchikan businesses, and local government. In contrast, Alternatives C3(a), C4, and F1 would involve construction of a 200-foot high bridge over either the main channel of Tongass Narrows (Alternatives C3[a] and C4) or East Channel (Alternative F1). This height would allow the continued safe passage of large cruise ships northbound and southbound through Tongass Narrows and East Channel on their preferred route, and would allow continued separation of cruise ship traffic from other marine traffic around Pennock Island.

Aviation Factors

The project area experiences high levels of aviation activity in an area with steep topography and frequent inclement weather conditions that confine and restrict aviation operations. Alternatives C3(a), C3(b), C4, and D1 would have direct impacts on aircraft operations by introducing the upper part of each high bridge structure as a new obstruction into the airspace around Ketchikan International Airport. The obstruction would also reduce the number of floatplane operations that could occur under special

visual flight rules (SVFR) by 90 percent. In contrast, Alternatives F1 and F3 are located farther away from the airport and would not penetrate the Ketchikan International Airport airspace at all. Alternatives F1 and F3 would reduce SVFR operations by less than 10 percent.

Other Environmental Factors
All the build alternatives for this project would result in the loss or alteration of essential fish habitat (EFH). Alternative F1, the FHWA and DOT&PF preferred alternative, would have the least impact to EFH, with a total reduction of 0.2 acres. These EFH impacts are associated with placement of piers in Tongass Narrows; no permanent impacts are expected at anadromous stream crossings along the roadways. Alternative F3 would have the greatest impact on EFH, requiring removal of 16.2 acres of EFH during dredging of the West Channel to improve navigation for large cruise ships through that channel. This action would eliminate 3.0 acres of eelgrass and kelp beds.

The above discussion documents that, to satisfy the project purpose and need, any alternative will have adverse effects on wetlands. Purpose and need factors, marine navigation, aviation, and other environmental factors support the determination that there is no practicable alternative to the proposed action (Alternative F1). Alternative F1 most fully satisfies the project purpose and need, with the greatest projected potential for economic development, and has the least impact to marine navigation, aviation, and EFH habitat. While the wetland acreage lost is higher than other alternatives, all involve loss of wetlands. Alternative F1's other impacts are similar to or less than those of other alternatives. .

Measures to Minimize Harm. Impacts to waters of the U.S, including wetlands, were avoided wherever practicable in the preliminary design phase. Alternative F1 avoidance measures include designing the roadway with a minimum-width fill footprint, increasing the angle of fill slopes, maintaining natural flow patterns by installing culverts through the fill, ensuring no encroachment into the Government Creek estuary, minimizing the use of wetlands for staging and storage areas, limiting the area of allowable disturbance during construction, removing temporary fill once construction is complete, and restoring wetlands that are temporarily disturbed. Using appropriate erosion control practices (including the installation of silt fences and sedimentation basins, and seeding and stabilizing road slopes) and implementing a storm water pollution prevention plan would minimize water quality impacts associated with construction of Alternative F1 to waters of the U.S., including wetlands,. Specific water quality measures listed in the EIS that would be implemented are described below.

- DOT&PF would hold meetings at the beginning of construction with the construction contractor and agencies to ensure implementation of mitigation commitments.
- Where practicable, the angle of fill slopes would be increased to reduce encroachment into adjacent wetlands.
- The roadway would be designed and constructed with a low-profile embankment to minimize the fill footprint.

- Rock would be used to stabilize toes of slopes at pond and stream crossings to limit the erosion of fine-grained material into adjacent waters and wetlands.
- To protect the integrity of the natural plant communities, plant species indigenous to the area would be used for vegetating road slopes, except that non-native, non-invasive annual grasses may be used to provide rapid, initial soil cover to prevent runoff of fine-grained material into adjacent wetlands and waters. Topsoil would be applied to the surface of road slopes to aid in the revegetation process.
- Roadside swales would be designed to retain surface water to allow sediment-laden water to clear before its discharge to adjacent wetlands and waters.
- At all stream crossings (both culverts and bridge crossings), stream banks would be re-contoured to approximate original conditions and re-seeded with native vegetation to minimize erosion.

Clear-span bridges and fish passage culverts sized for expected flood flows would avoid and minimize impact to fresh waterbodies and the fish within them. For essential fish habitat, including marine habitat and anadromous fish habitat, the following conservation measures would be implemented:

- At all stream crossings (both culverts and bridge crossings), stream banks would be re-contoured to approximate original conditions and seeded with native vegetation to minimize erosion.
- BMPs, developed in accordance with EPA's "Storm Water Management for Construction Activities: Developing Pollution and Prevention Plans and Best Management Practices," EPA Document 832 R-92-005 (EPA 1992), will be employed to minimize the introduction of sediment and minimize siltation of ponds and streams during adjacent fill placement.
- All anadromous fish stream crossings (bridges and culvert) would be designed to minimize impacts on stream function and to provide passage to both anadromous and resident fish. All road structures crossing anadromous fish habitat channels would be designed to provide passage for juvenile and adult salmon per Alaska Statute Title 41 standards. A culvert crossing of an anadromous fish stream will be designed to a Tier 1 stream simulation design level and will maintain natural stream conditions such as stream width, flow, substrate, and existing fish passage efficiency.
- In-water work in Tongass Narrows would be restricted, as follows. General use of boats and barges could occur year round for general survey and work on bridge structures above water. Except for blasting, dredging, and pile driving, other work in marine waters could occur July 1-February 28. As further described below, blasting, dredging, and pile driving could occur only November 1 - February 28, with the possible exception of mid-channel locations, based on further consultation with the Alaska Department of Natural Resources (DNR), NOAA Fisheries, U.S. Army Corps of Engineers (COE), and U.S. Fish and Wildlife Service (USFWS).
- The following conservation recommendations will be followed with respect to pile driving in Tongass Narrows: A vibratory hammer would be used to drive steel piles instead of an impact hammer. Piles should be driven during low tide when in intertidal and subtidal areas.

- All construction in and around anadromous fish streams will take place when stream disturbances would have the least impact on anadromous fish species. The recommended time period for in-stream construction work in the Ketchikan area is June 15 through August 7. In-stream construction activities should completely avoid the period from August 8 through June 14. For the Ketchikan area, salmon fry generally emerge in the spring from April 15 to May 15, and the adults move into the streams by August 1 and remain through October 31. However, timing of fry emergence and adult spawning depend on the species of fish present in each stream. For example, steelhead spawn in the spring and eggs are generally present in the stream until the middle of July. Fish surveys will be conducted in the summer of 2004 for all streams that will be affected by the project. If additional species are found to be present in the project streams, the existing timing window for in-stream construction (June 15 to August 7) may be modified to protect additional species. Construction work that occurs above the ordinary high water area of the stream and does not include in-stream construction may be conducted throughout the year. In-water work areas, except for stream crossings by construction equipment, will be isolated from flowing waters of all anadromous fish streams
- Any necessary in-water blasting in Tongass Narrows will be performed such that ground vibration (particle velocity) does not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch, following ADF&G guidelines for blasting. The project will employ monitoring devices to ensure adherence to these standards. If blasting amounts are minor, and if agreed by the agencies, monitoring may not be undertaken.
- The contractor will be required to prepare a blasting plan at least 30 days prior to any blasting activities. The blasting plan will be submitted for review by NOAA Fisheries for both EFH and marine mammal impacts. A fish and invertebrate monitoring program will be required for any proposed blasting activities. A pre-blasting survey will be required to ensure that no fish schools are in the vicinity of the blasting area. If fish schools are detected, blasting will be delayed until they leave. A biologist will check the area and record any kills that are within 100 feet up current and 300 feet down current of the blast area after blasting is completed. Monitoring of the dredge materials may be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Measures such as covering the rock to be blasted with sand may be used to dampen blast impact. In-water blasting shall avoid the entire months of March through June to avoid juvenile salmonids and the period from June through October 31 to avoid adult salmon. All project-related activities would conform to the pertinent provisions of the Marine Mammal Protection Act and the Endangered Species Act.
- Dredged debris would be placed onto a barge where it would enter a settling basin and be disposed of on land. Only under Alternative F3, which could require substantial removal of sediment and rock, would ocean disposal be necessary. These operations for Alternative F3 would be consistent with the regulations of Clean Water Act, Section 404(b)(1) (disposal of dredged materials into waters of the U.S.) and Marine Protection, Research, and Sanctuaries Act, Sections 102 and 103. Monitoring of the dredged materials may be incorporated into the blasting monitoring plan as a method

for documenting organisms injured or killed in the blasting. Dredging activities will avoid the entire months of March through October.

- All fueling and servicing operations will be conducted at least 100 feet away from all streams and water bodies, and fuel storage will be at least 100 feet away from all wetlands and water bodies.
- All necessary permits and agency approvals will be obtained prior to construction, and any permit stipulations will be incorporated into the contract specifications.
- Perimeter staking will be required on the outside of the disturbance area prior to construction to ensure that there is no additional impact from construction activities.
- Silt fences will be used adjacent to EFH stream channels, just beyond the estimated toe of fill.
- Gravels and streambed material will be used in the bottoms of fish-passage culverts.
- Riprap will be placed along stream banks as necessary to maintain stream bank integrity. Placement of riprap along stream banks to maintain stream bank integrity should include the use of bioengineering techniques to improve habitat value of the riprap, by incorporation of willow stakes or other locally available vegetation.

The DOT&PF proposes to compensate for unavoidable adverse impacts to wetlands through one or more of the following means. The final determination of specific wetlands compensatory mitigation will be made, in consultation with the Corps and other resource agencies, during the Corps permit process.

- DOT&PF will make a contribution of funds to a nonprofit land trust for the expressed purpose of securing/preserving lands, either via conservation easement or fee simple acquisition, of similar or greater functional value within the Ketchikan Gateway Borough.
- DOT&PF will secure a conservation easement for lands of similar or greater functional value within the Ketchikan Gateway Borough, thus ensuring their protection from future development.
- DOT&PF will provide financial support to continue the efforts of the Ketchikan Gateway Borough to prepare a comprehensive wetlands management plan for lands subject to development within the Borough. The Borough is in the process of preparing baseline information for the planning effort.

Only Practicable Alternatives Finding. The FHWA and DOT&PF have determined there is no practicable alternative to the proposed construction in wetlands. No substantial impacts from the proposed action are likely to occur due to the inclusion of avoidance and minimization measures, and the remaining wetland impacts will be offset by compensatory mitigation. Based on these considerations, the proposed action (Alternative F1) is determined to be in compliance with E.O. 11990.

APPENDIX N
Marine Environment Impact Assessment Technical Memorandum

GRAVINA ACCESS PROJECT

Marine Environment Impact Assessment

Technical Memorandum

Agreement 36893013
DOT&PF Project 67698
Federal Project ACHP-0922(5)

Prepared for
STATE OF ALASKA
Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, Alaska 99801

Prepared by
HDR ALASKA, INC.
712 West 12th Street
Juneau, AK 99801

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3-1 Approximate area (acres) of direct marine habitat impacts for each alternative.

1—Introduction

This technical memorandum describes general impacts that could result from the Gravina Access Project alternatives based on a set of assumptions concerning the alternative designs and engineering requirements, as described in Section 2; the nature of habitats in the vicinity of project landfalls, as described in the *Phase II Marine Reconnaissance Technical Memorandum* (Pentec, 2001); and the considerable literature on the effects of various perturbations on freshwater and marine resources.

Along the Revillagigedo (Revilla) Island shoreline, resource values in general are limited by previous alterations in the form of riprap—as at the shoreline affected by four bridge alternatives located at the airport (C3[a], C3[b], C4, and D1) and by two ferry alternatives (G2, from Peninsula Point, and G3, from downtown Ketchikan)—or by previous use of the site as a dump (Alternatives F1 and F3, Bridges Across Pennock Island). The Gravina Island shoreline in the vicinity of the Ketchikan International Airport—as at the locations of Alternatives C3(a), C3(b), C4, and D1—is currently riprapped, but some subtidal areas support eelgrass. The most natural littoral habitats potentially affected by the alternatives are at Lewis Point near the location of Alternative G2, southeast of East Clump Island near the location of Alternative G3, and on Pennock and Gravina islands near the landfalls of Alternatives F1 and F3.

Section 3 describes both the effects on the marine environment that could result during project construction (short-term), and those that could be expected during project operation (long-term), i.e., continuing as long as the project remains in place. Section 4 briefly indicates the types and approximate magnitude of habitat impacts associated with each alternative.

2—Project Assumptions

For the purposes of conducting a preliminary assessment of the potential environmental impacts resulting from construction and operation of improved access across Tongass Narrows to Gravina Island, the following assumptions have been made about the alternatives under consideration:

- All bridge alternatives would require placement of piers in shallower waters (e.g., shallower than -50 feet mean lower low water [MLLW]) near the shoreline.
- All build alternatives would increase access to and development on Gravina Island.
- Bridge alternatives with bridge abutments at the airport would require filling of nearshore areas.
- Where the conceptual ferry terminal design overlaps the shoreline, the structure would be built on pilings and not fill. Therefore, there would be a shading effect rather than a filling effect.
- Alternative F3 would require expansion of the channel west of Pennock Island (West Channel) for safer navigation by large ships.
- Regardless of the alternative selected, final design will seek to avoid or minimize effects on sensitive resources and habitats.

3—Nature of Potential Impacts

3.1 Construction Effects

3.1.1 Erosion and Turbidity

Construction of alternatives that involve movement of substantial amounts of soil and rock would have a high potential for generating sediment-laden runoff in the vicinity of Ketchikan. Dredging the harbor, in order to provide necessary navigation depths for the ferry alternatives, (G2, G3, and G4) and filling along the shoreline of the airport for the bridge alternatives, (C3[a], C3[b], C4, and D1) would generate plumes of turbid water. Activities associated with installation of inwater piers also have the potential to release turbid water.

Juvenile salmon have been shown to avoid areas with high turbid waters (e.g., Servizi, 1988), but seek out areas of moderate turbidity (10 to 80 nephelometric turbidity units [NTU]), presumably as cover against predation (Cyrus and Blaber, 1987a,b). Feeding efficiency of juveniles is also impaired by turbid water in excess of 70 NTU, well below sublethal stress levels (Bisson and Bilby, 1982). Reduced preference by adult salmon homing to spawning areas has been demonstrated where turbidities exceed 30 NTU (20 milligrams [mg] of suspended sediments per liter [L]). However, Chinook salmon exposed to 650 mg/L of suspended volcanic ash were still able to find their natal water (Whitman et al., 1982). Any adult salmon present near the project area during inwater work might avoid areas of increased turbidity or reduced oxygen, but are not expected to interrupt their upstream migrations (e.g., Whitman et al., 1982). Based on these data, it is unlikely that the locally elevated turbid waters, generated by constructing these proposed alternatives, would substantially affect juvenile or adult salmonids that are present.

Excessive sedimentation rates in marine areas with benthic communities adapted to relatively clean water conditions can alter community composition and productivity in unexpected ways. Turbid water runoff was measured by stormwater outfall at one of the marine reconnaissance survey sites, Station REV-5A (all station designations referenced in this technical memorandum refer to stations depicted in Figure 3-1, of the *Phase II Marine Reconnaissance Survey*, Pentec, 2001). Over the past 5 years, this outfall has frequently delivered turbid (sometimes highly turbid) water from a rock quarry to Tongass Narrows.

The intertidal biota in the immediate vicinity of the outfall is very different in nature from that on adjacent riprap, but this condition is attributed to the exclusion of predators from the area by the freshwater, rather than to the effects of turbidity. Bull kelp beds immediately offshore of the outfall did not appear to differ from those up and down the shoreline. Because of the strong currents in the area, intermittent discharges of waterborne sediments, especially when released in deeper waters offshore, are likely quickly dissipated with minimal effect on biota.

3.1.2 Upland Noise

Blasting in upland areas near Tongass Narrows might be required to construct bridge approaches. Upland blasting could affect marine resources such as bald eagles and marine mammals, but would not affect inwater resources.

Increased noise levels might temporarily disrupt the foraging behavior of bald eagles in the vicinity of the project.. The Washington State Department of Transportation (WSDOT) conducted monitoring to determine the potential impacts on wintering eagles associated with pile-driving activities at Orcas and Shaw islands in

San Juan County, Washington, from December 15, 1986, through March 15, 1987 (Bottorff et al., 1987). Each of the monitoring areas was associated with a Washington State ferry terminal. Background noise sources included ferry whistles, boat motors, chain saws, aircraft, front-end loaders, cranes, generators, diesel trucks, hammers, and other general noise sources associated with construction. Noise readings were taken at the construction sites and various intermediate points out to about 6,000 feet from the construction sites.

The placement of woodpiles did not visibly disturb the eagles observed during the course of the study. A steel pile, which produces some of the loudest noises during pile driving, might have disturbed a bald eagle pair at a distance of 4,000 feet. However, this same pair of eagles had been in the same location during the driving of two steel piles earlier in the day and exhibited no visible disturbance reaction. The eagles returned to their preferred perch and no further adverse reactions were observed, even after over 100 wood piles were driven into the ground (Bottorff et al., 1987).

Environmental factors such as wind and wave action, movement of tree branches and forest litter, barking dogs, bird noises, automobiles, airplanes, human voices, woodcutting, light construction activities, boats, and other unidentified noise sources create ambient noise levels that are similar to those produced by pile driving at distances of 0.25 to 0.5 mile away from the point source (Bottorff et al., 1987).

WSDOT also monitored noise levels during pile-driving activities at its Anacortes, Washington facility (Visconty, S., Washington State Ferries, pers. comm., March 9, 2000). For comparison purposes, background noise levels were monitored at the Friday Harbor, Washington, terminal. At Friday Harbor, ambient noise levels around the closest bald eagle nest (located near the terminal) ranged between 45 and 72 decibels (dB); 40 to 51 dB were recorded for local harbor traffic background noise, and 69 to 74 dB were recorded from use of a 100-ton crane at the terminal. Pile-driving noise at the Anacortes facility ranged from 105 to 115 dB at 50 feet from the noise source. Noise levels were highest when a pile was first driven and decreased near completion because of a reduction of the exposed surface area and increased stiffness as the pile became more embedded (Visconty, S., Washington State Ferries, pers. comm., March 9, 2000). Simultaneous readings taken at several distances to determine propagation loss at Anacortes indicated a 6-dB decrease in sound pressure for every doubling of distance. Given this information, at 1,850 feet from the noise source at Anacortes, the sound was 70 dB, well within measured background ambient noise levels recorded at the Friday Harbor terminal (Visconty, S., Washington State Ferries, pers. comm., March 3, 2000).

Based on this information, and the fact that bald eagles in the Ketchikan area are well acclimated to high levels of human activity (e.g., operation of large vessels and heavy equipment, and floatplane noise), short-term direct effects on eagles and other marine wildlife due to construction disturbances are anticipated to be minimal and localized.

3.1.3 Inwater Noise

In-water noise from construction can result from dredging, blasting, fill placement, pile driving, and waterborne vessel movements. Construction noise generated in assembly of bridge or ferry landing structures above the water can be transmitted into the water through steel or concrete structures. Inwater blasting might be necessary to prepare the foundations for inwater piers and would be needed under Alternative F3 to improve the navigation conditions in the channel west of Pennock Island. Noise levels associated with pile removal, driving, and pre-drilling, as well as with other aspects of the proposed action, might temporarily be elevated above existing background noise levels.

Feist et al. (1996) investigated the impacts of driving large concrete piles on juvenile pink and chum salmon behavior and distribution in Everett Harbor, Washington. The authors reported that there might be changes in general behavior and school size, and that fish appeared to be driven toward the acoustically isolated side of the site during pile driving. However, the prevalence of fish schools did not change substantially with or

without pile driving, and schools were often observed about the pile-driving rigs themselves. No impacts on feeding were reported. The study concluded that any effects of concrete pile-driving noise on juvenile salmonid fitness would be very difficult to measure quantitatively. More recent experience in Puget Sound and elsewhere, however, has documented more severe effects from use of an impact hammer to drive large diameter, hollow steel piles such as those that will be required for this project (although any pile driving for this project is anticipated to use a vibratory hammer, instead of an impact hammer). Effects are believed to be exacerbated when driving piles into hard substrates (e.g., gravel, cobble) when compared with effects while driving into softer sands or mud. Impact driving of 24-inch steel piles in late 2002 at a ferry terminal in Puget Sound resulted in mortality of a number of marine perch (Embiotocidae), and similar or larger piles, driven by impact hammer at the Port of Seattle, resulted in mortality of Pacific herring (P. Erstad, WDFW, personal communications). However, impact driving of 24-inch piles at the Mukilteo, Washington, ferry dock in early 2003 did not result in documented fish kills; a bubble curtain was deployed at Mukilteo and shown to substantially reduce measured water-borne sound pressures (J. Houghton, Pentec, personal observation). Most diving sea birds left the vicinity when pile driving started but a California sea lion remained in the area (e.g., within roughly 300 and 600 ft [100 -200 m]) and continued to submerge during driving. Noise generated by dredging, rock drilling with a reverse rotary drill, or pile driving using a vibratory hammer are expected to be of lower peak intensity than that resulting from pile driving using an impact hammer.

Underwater blasting is known to cause severe effects on fish and invertebrates in the immediate vicinity (e.g., Goertner 1978, Falk and Lawrence 1973). Mortality in fish is primarily due to major trauma to internal organs, especially swim bladders and kidneys. Houghton and Munday (1987) investigated the lethal ranges for caged juvenile chum and coho salmon and sub-adult Pacific herring exposed to various quantities of linear explosives in Resurrection Bay, Alaska. They found that 50-percent lethal ranges of up to 300 ft (100 m) were not uncommon for test species. Exposed fish were held for several days after the tests and then autopsied, revealing a high potential for delayed mortality. Massive kills of unconfined native fish, that happened to be in the vicinity of the tests, were also observed with over 100,000 fish estimated killed by one test. Gadids, a group with closed swim bladders, were especially vulnerable, although many other fish species including herring, rockfish and salmonids, were also killed, along with invertebrates in the immediate vicinity of the blasts.

Based on this information, the effects of project construction on marine and anadromous fish are expected to be minimal and localized, except for those effects associated with underwater blasting. Minor fish kills could result from driving large diameter steel piles into hard sediments with an impact hammer, but this method is not anticipated. Marine mammals (e.g., seals) might also be affected by routine project construction noise, including pile driving, although the level of effect is expected to be limited to movement of mammals away from areas of noise in excess of their tolerances.

Underwater blasting can be expected to cause heavy mortalities of fish within 300 ft (100 m), with lesser numbers of fish killed with greater distances (e.g., Houghton and Munday 1987). Damaging sound pressures can propagate for greater distances along hard bottom than soft bottom areas. Preblasting visual and acoustic surveys should be required to document the presence of fish schools in the vicinity of the blasting area. If large fish schools are detected, blasting should be delayed until they leave. A biologist should check the area within 300 ft (100 m) up current and 900 ft (300 m) down current of the blast area for fish kills after blasting is completed. Underwater video surveys should be included in the post-blast monitoring to document dead fish that sink, rather than float. All project-related activities would conform to the pertinent provisions of the Marine Mammal Protection Act and the Endangered Species Act. Measures such as covering the rock to be blasted with sand, or deployment of a bubble curtain, may be used to dampen blast impact, if excessive fish mortalities are observed. Blasting should not be conducted during April/June to avoid juvenile salmonids or during August through October to avoid adult salmon. The contractor would be required to prepare a blasting plan prior to any blasting activities.

3.1.4 Direct Displacement

Construction would require placement of concrete, rock, and other fill materials in habitats that currently support important resources. Bridge piers or fill placed in the littoral zone (the area between mean higher high water [MHHW] and about -20 ft MLLW) would cover and destroy existing sedentary biota that includes commercially or recreationally harvestable clams and mussels. The relative significance of this impact would depend on the nature of the substrata and habitats present, and the depth of the affected substratum. Approximate areas of direct marine habitat impacts of each alternative are provided in Table3-1.

The most substantial resource loss would occur where areas of eelgrass or saltmarsh and associated riparian vegetation are lost. Eelgrass beds have been located at or near several of the proposed landfall areas. Eelgrass beds are important areas of feeding and refuge for several species of fish, especially juvenile salmonids (e.g., Simenstad et al., 1997) and shellfish (e.g., Dungeness crab). Eelgrass also provides a substratum (along with kelp beds and other intertidal species of algae) for spawning by Pacific herring. Herring are known to migrate and spawn in Tongass Narrows from late March through April (House, D., Alaska Department of Fish and Game [ADF&G], pers. comm., July 31, 2001). Along the western shoreline of Tongass Narrows, herring spawn from Rosa Reef west to Vallenar Point. Along the eastern banks, herring spawn from Refuge Cove west to Point Hagen and south of Pennock Island. Additionally, intermittent and sporadic spawning has occurred over the past 5 years on the eastern banks from near the U.S. Coast Guard station east to the town of Saxman (House, D., ADF&G, pers. comm., July 31, 2001).

Direct impacts to the saltmarsh in the estuary of Government Creek would be avoided under all alternatives This habitat is particularly productive; pink and chum salmon are known to spawn in Government Creek (House, D., ADF&G, pers. comm., July 31, 2001). In the project area, Government Creek enters Tongass Narrows through a shallow gravel-cobble-bottomed stream channel in a small V-shaped embayment. The stream channel bottom is covered with a dense growth of filamentous brown alga (*Pilayella littoralis).* Lower streambanks support dense rockweed (*Fucus gardneri*); in muddy pockets adjacent to the stream, soft-shell clams (*Mya arenaria*) are abundant. Finer sediments at higher elevations (e.g., > +13 ft MLLW) have a well-developed saltmarsh assemblage. Dominant plants in the lower saltmarsh are *Carex* sp.*, Glaux* sp., and *Plantago* sp.; higher elevations have *Potentilla* sp.*, Deschampsia* sp.*,* and *Juncus* sp. Higher areas with coarse sand and gravel, especially to the south toward East Clump Island, support patches of *Salicornia virginica* and a backshore assemblage mixed with salt-tolerant grasses and herbs (HDR 2001).

The upper intertidal area around the Airport Creek mouth consists of a relatively flat bench dominated at lower elevations by *Salicornia* and *Puccinellia.* At somewhat higher elevations, taller species such as the sedge *Carex,* velvet grass *Holcus lanata*, and tufted hairgrass *Deschampsia* dominated. Gravelly areas adjacent to the stream channel supported patches of *Honkenya peploides*, and higher-elevation sand and gravel had a dense growth of dune grass.

The least-substantial impacts on resources would result from pier placement on dynamic sand or gravel beaches, which tend to have minimal resource values except in areas that support spawning by forage fish. Surf smelt and sand lance spawn in upper intertidal sand or mixtures of sand, small gravel, and shell. The locations of forage fish spawning areas in Tongass Narrows have not been documented (House, D., ADF&G, pers. comm., July 31, 2001).

Although rocky littoral habitats are highly productive, they support few resources currently harvested in the Ketchikan area. Activities such as placement of bridge or ferry structures, and expansion of the channel west of Pennock Island, would destroy rocky habitat but would themselves provide new substrata for development of a biota that could be expected, over time, to resemble the lost biota.

Table 3-1 shows the acreage loss of marine habitats for each alternative, based on preliminary engineering design.

TABLE 3-1: POTENTIAL IMPACTS ON MARINE HABITATS (APPROXIMATE ACREAGE)

		Bridge Alternatives[1]						*Ferry Alternatives*[2]		
Impact Type	*No-Action*	*C3(a)*	*C3(b)*	*C4*	*D1*	*F1*	*F3*[3]	*G2*	*G3*	*G4*
Dredging[3]	0	0	0	0	0	0	16.0	0.20	2.14	1.22
Shading[4]	0	0	0.3	0	0	0	0.1	0.5	1.6	0.3
Filling	0	6.1	6.5	6.7	4.1	0	0	0	0	0
Pier Area[5]	0	0.13	0.21	0.13	0.18	0.16	0.16	0*	0*	0*
Marine Total[6]	**0**	**6.3**	**7.1**	**6.9**	**4.3**	**0.2**	**16.2**	**0.7**	**3.8**	**1.6**
the following three lines indicate subsets of the marine total shown above										
Eelgrass	0	0.02	0.00	0.04	0.00	0.02	0.03	0.08	0.29	0.00
Kelp	0	2.79	2.99	2.75	1.64	0.02	3.01	0.29	1.36	1.01
Saltmarsh	0	0	0	0	0	0	0	0.1	1.70	0

[1] **Bridge Alternatives:**
Alternative C3(a) = 200' Bridge between Signal Road and South of Airport Terminal
Alternative C3(b) = 120' Bridge between Signal Road and Airport Terminal
Alternative C4 = 200' Bridge Between Tongass Avenue (North of Cambria Drive) and South of Airport Terminal
Alternative D1 =120' Bridge Between Tongass Avenue (near Existing Ferry) and Airport Terminal
Alternative F1= Bridges (200' East and 120' West) Between Tongass Avenue and Airport, via Pennock Island
Alternative F3 = Bridges (60' East and 200' West) Between Tongass Avenue and Airport, via Pennock Island

[2] **Ferry Alternatives:**
Alternative G2 = Ferry Between Peninsula Point and Lewis Point
Alternative G3 = Ferry Between Downtown and South of Airport
Alternative G4 =Ferry Between New Terminals Adjacent to Existing Ferry Terminals

[3] Assumes channel modification would be required for F3. Areas shown as dredged would not permanently be lost as marine habitat.

[4] Area that is covered by over-water structures fewer than 30 feet above MHHW, both for ferry docks and the low portions of bridge alternatives. Ferry loading transfer bridge assumed to be 24'x140'; floating barge 24'x60'; apron 24'x24'.

[5] Bridge alternatives include piers 30'x30'. Ferry alternatives include small-diameter pilings, but these are not calculated. The impact of ferry pilings is included under the shaded area (two lines above).

[6] Marine Total is the total of the first four lines of the table. Impacts include loss of habitat and change in habitat function. Eelgrass, kelp, and saltmarsh impacts are a subset of this total. Total is rounded up to the next tenth acre.

3.1.5 Spills

Moderate spills (e.g., more than a few gallons) of diesel oil could occur during construction from an accidental release from a work vessel or tank truck near the water.

Spilled diesel oil that grounded in the small saltmarshes at the mouths of Lewis Cove Creek or Government Creek, or in the marsh fringes along substantial portions of the Gravina shoreline, would have substantial and lasting impacts on saltmarsh plants and animals contacted. Because both marshes are relatively close to (within 1 to 2 miles of) construction areas where spills would be initiated, oil contacting them would be relatively fresh and there would be little opportunity for weathering of toxic lighter fractions.

Diesel and hydraulic oils grounding in a soft bottom marsh are more likely to penetrate into the marsh substratum than are heavier bunker or crude oils (Baker, 1970). On the other hand, subsequent weathering of the lighter oils would proceed more rapidly than for heavier oils. Oiling of saltmarsh plants can be expected, at a minimum, and may cause some reduction of primary production in the plants for at least a year. Time of year and type of oil are extremely important in the degree of impact experienced; oiling of a marsh during the winter months can often be cleaned up mechanically or by natural processes with little residual reduction in productivity (e.g., Hoff et al., 1993). Several species of saltmarsh plants in Prince William Sound were routinely seen pushing new shoots up through several millimeters of weathered crude oil from the *Exxon Valdez* (Houghton, J., Pentec Environmental, pers. obs., July, 1991).

Diesel oil contacting aboveground saltmarsh vegetation during the active growing period (spring and summer) can be expected to cause "burning," browning, reduced growth, and even death. Perennial plants with extensive belowground root/rhizome systems appear to be more resistant than annuals and regenerate readily following even severe damage to aboveground parts (e.g., Baker, 1970). The greatest damage in saltmarshes often results from inappropriately applied cleanup approaches that can severely damage root/rhizome systems and alter the physical structure and stability of the marsh.

A worst-case scenario in Tongass Narrows would result from a spill occurring late in a flooding peak spring tide with a strong wind, during the springtime. These circumstances could push relatively fresh oil high into the marshes and channels of one or both of the estuaries. This circumstance during a peak spring tide would result in a maximum amount of oil deposition well into the marsh, and timing relative to the tidal cycle would ensure a maximum interval before the next inundation. Contact with actively growing shoots of saltmarsh plants would maximize the damage. A high sun angle would also dry out the stranded oil and greatly reduce the rate at which the residues would be washed from the marsh.

Recovery of above-ground vegetation could be expected in 1 to 2 years for most species. Hoff et al. (1993) documented nearly full recovery of above-ground biomass of *Salicornia* and *Distichlis* (species present in both Gravina marshes) within 1 year following a crude oil spill in a marsh at Fidalgo Bay, Washington.. They noted, however, a possible trend of reduced below-ground biomass in the second year following the spill.

Heavy initial mortalities of invertebrates would be expected on intertidal shorelines oiled with fresh diesel oil, and sublethal effects on plants and invertebrates might affect physiology, growth, reproduction and development, and behavior of invertebrates. Sublethal effects might actually become lethal if there were a loss in ability to avoid predators resulting from the response to oils. For instance, No. 2 diesel fuel has a narcotic effect on invertebrates; large percentages of the limpet *Tectura scutum* exposed to diesel fuel became detached from aquarium walls (Ehrsam et al., 1972). Many bivalves exposed to *Exxon Valdez* crude oil were either killed *in situ* or found on the beach surface where they were vulnerable to predators (Houghton, J., Pentec Environmental, pers. obs., 1989; Shigenaka et al., 1997). Cardwell (1973) found that low levels of No. 2 diesel oil also inhibit the byssal attachment of the young mussels *Mytilus edulis*. However, Cardwell also found complete recovery (reattachment) within 24 hours after the mussels were placed in clean running seawater.

In general, fish are less vulnerable to effects of oil spills than are most other types of marine organisms. They are mobile, can usually avoid adverse conditions, and rapidly metabolize hydrocarbons (e.g., Craddock, 1977; Patton, 1977). However, more recent work has shown high sensitivities of fish to levels of sediment hydrocarbon concentrations in the parts per million or even parts per billion range (Horness et al., 1998). Other work has shown a very high sensitivity of salmon eggs to residual hydrocarbons from the *Exxon Valdez* spill (e.g., Bue et al, 1998). Salmon use of Government Creek is noted previously, and pink, coho, and chum salmon are known to spawn in the small creek (Airport Creek) entering Lewis Cove (House, D., ADF&G, pers. comm., July 31, 2001). If a portion of this spawning occurs in tidal areas, a spill could affect egg survival in either of these estuaries. Smolt outmigration from these and other streams in the area occurs from early April

through late June. Fry would probably not be vulnerable to acute effects unless a few fish became isolated in a small embayment that received heavy oiling (Brannon et al., 1995).

Birds associated with the water or sediment surface (dabbling ducks, shorebirds) would potentially become oiled and suffer from hypothermia or might bring oil back to their nests, injuring or killing eggs or young. Many authors, including the National Research Council (NRC) (1985) and Leighton (1991), have reviewed the effects of oil on birds. These effects include:

- Effects on plumage, buoyancy, and thermoregulation
- Effects from ingestion of oil
- Effects on the alimentary tract
- Effects on blood
- Effects on salt glands and osmoregulation
- Effects on adrenal glands and corticosteroid hormones
- Effects on kidneys and liver
- Effects on reproductive system
- Suppressed immunity
- Mutagenic effects

High mortalities of bird species are often seen in the vicinity of a spill. Estimates of bird mortalities following major spills of heavy fuel oil or bunker C fuel oil from 1937 to 1991 have ranged from about 6,000 birds following the *Seagate Washington* spill (Vermeer and Vermeer, 1975) and the *Hamilton Trader* spill of 1969 (Hope Jones et al., 1970), to greater than 50,000 birds following the January 1970 spill of fuel oil off northeast Britain (Greenwood et al., 1971) and the *Nestucca* barge spill of bunker oil off Grays Harbor Washington in 1988 (Ford et al., 1991).

Water-associated mammals (e.g., harbor seals, mink, river otter) could suffer a similar fate. Geraci and Smith (1977) showed that harbor seals are relatively tolerant of ingested oil, but suffer considerably from surface contact, especially to the eyes. Because harbor seals depend on fat layers rather than fur or hair for insulation, they are less vulnerable to surface contact than are sea otters or river otters. Several hundred harbor seals were killed in the *Exxon Valdez* spill (Loughlin, 1996). Deaths occurred over a period of several months following the spill; autopsied animals displayed liver damage, skin lesions, and elevated tissue concentrations that were attributed to oil exposure.

In summary, the probability of an oil spill resulting from the project is low and the volume of oil that might be spilled in any given event associated with the proposed project is relatively limited (a few thousands of gallons). Local impacts could be severe, however, especially if large quantities of this oil were to be stranded in marshes or stream mouths. Recovery of most species of vegetation and invertebrates would be expected within 1 to 2 years, but recovery of birds and mammals could take longer.

Several measures are available that could be employed to reduce the impacts of a spill if a stream mouth or saltmarsh were impacted. Booms could be deployed to limit oil movement into tidal channels; sorbent booms could be deployed to pick up oil in those channels, and low-pressure ambient water could be used to flush oil from the marsh into areas where it could be absorbed or vacuumed from the water surface. This latter approach appears to have been successful at enhancing recovery of the *Salicornia* marsh oiled in Fidalgo Bay (Hoff et al., 1993). In all cases, care must be taken to avoid techniques that physically damage the marsh (e.g., high-pressure washes, manual cutting of vegetation, or anything that requires much foot traffic in the marsh).

3.2 Operation Effects

3.2.1 Shading

Bridges or ferry ramps would partially shade littoral areas, reducing primary productivity and possibly limiting the distribution of some algae, while extending the distribution of other taxa. Examples of the effects of partial shading on steeply sloped rocky intertidal areas were reported at Stations PEN-4 and PEN-4A (see *Phase II Marine Reconnaissance Survey*; Pentec, 2001), where the middle and upper intertidal elevations were relatively devoid of macroalgae. However, below MLLW (and out from under the influence of overhanging trees), a typically lush kelp-dominated flora was found.

The presence of over-water structures (bridges, causeways, and ferry docks) might partially shade portions of the adjacent beach and subtidal bottom areas. The area under a dock or causeway would likely receive full-time shade, whereas the area under an elevated bridge section would not, because the shadow cast by structures high above the water would move across the water as the sun traversed the sky. Because the upper limits of many intertidal species, including eelgrass, are set by the degree of desiccation experienced (shading would reduce desiccation) shading by project structures would allow some species to extend their ranges upslope.

However, since lower limits of vegetative growth are set by light level, net loss of eelgrass or kelp productivity would result from the project if deeper portions of beds were shaded. If this occurred, eelgrass or kelp bed habitat area would be incrementally reduced, reducing the area of refuge and rearing for juvenile salmonids during their migrations as well as for other aquatic organisms such as Dungeness crabs. Reduced eelgrass productivity would also decrease the eelgrass blade area available to support epiphytic crustaceans, which are an important food source for juvenile salmon.

3.2.2 Inwater Structures

Pilings and piers necessary to support bridges or nearshore components of the alternatives could alter the nearshore migration pathways of smaller juvenile salmonids (e.g., pink and chum salmon) or other marine species in Tongass Narrows. Impacts have been reduced to the extent possible by locating nearshore components in a manner that leaves a nearshore migration corridor (e.g., down to at least -5 feet MLLW) near the extreme low-water line, clear of obstruction. Deeper piers or pilings allow free passage of marine species migrating along shorelines and would develop an epifauna typical of natural deeper hard-bottom areas.

3.2.3 Overwater Structures

In addition to shading, over-water structures that create areas of darkened water can impede or delay long-shore migrations of juvenile salmonids. Studies in Washington State have shown that schools of juvenile chinook and chum salmon pause in their migration when encountering an over-water structure that creates a darkened area of water, such as a marginal wharf or wide pier. Piers that are constructed close to water or are made of dark materials, such as treated wood, are especially daunting to migrating fish (e.g., Pentec, 1997). In the Gravina Access Project, there is little expectation that an elevated bridge, constructed of concrete, would create light conditions that would impede salmon migrations, although the low elevation causeways along the northeast edge of the airport under the northern bridge alternatives (C3a, C3b, C4) could cause fish to alter their migration corridors.

3.2.4 Runoff

The increase in impervious surface area would increase the current volume of runoff from the area. Runoff from new roads, if not collected and treated, would create temporary, localized increases in water turbidity of drainage pathways and in the Tongass Narrows (see the discussion of turbidity effects in Section 3.1.1). In addition, some contaminants such as oil and metals from vehicle brake dust are also likely to reach the drainage pathways and Tongass Narrows. In the climate of Ketchikan, frequent rainfall would limit accumulation of these materials on roadways. Thus, it is unlikely that these materials would run off the bridge or roadways in concentrations that would create conditions harmful to biota; again, the high circulation rates in Tongass Narrows would quickly dilute and dissipate any releases.

3.2.5 Noise

Existing sources of noise in the project area include commercial jets, floatplanes, vehicular traffic, construction machinery, industrial plants, and watercraft. Eagles, waterfowl, and mammals in the vicinity of Ketchikan are exposed daily to noises associated with the City and the airport, and have long been adapted to the increased noise levels. The primary sources of noise associated with the proposed project would be vehicular traffic. The degree of noise impact from the project would relate to the level of traffic increase. Studies conducted near Aberdeen, Washington, a town similar in size to Ketchikan, concluded that a doubling of roadway traffic would result in a noise increase of approximately 3 dB (DOC, 1994). An increase of 0 to 5 dB is classified as insignificant by the U.S. Environmental Protection Agency (EPA) (DOC, 1994). Based on the EPA criteria, the additional noise generated by traffic would not have a substantial impact.

3.2.6 Spills

The most probable oil spill that could occur during project operation would result from a tank truck accident that spills gasoline or diesel from the bridge into the marine environment. Possible effects of marine oil spills are described in Section 3.1.5.

3.2.7 Increased Access

Increased access to Gravina Island is expected to lead to increased settlement and development along the western slope of the island. The effects of watershed development or suburbanization on streams are well documented (Leopold, 1968; Hammer, 1972; Hollis, 1975; Booth, 1991) and would be of concern for crossing alternatives and road systems that would increase development in the Government Creek and Lewis Creek drainages. Suburbanization is often measured by the proportion of basin area covered by impervious surfaces. Although impervious surfaces themselves do not generate pollution, they are the major contributor to changes in the hydrologic regime that drive many of the physical changes affecting urban streams (May, 1998). In addition to increasing area of impervious surface in the basin and the resulting stormwater runoff, development of watershed areas can also affect watershed drainage density (mile of stream length per square mile of basin area) when grading, landscaping, and associated infrastructure development result in straightening of stream channels. Chemical water quality of urban streams is generally not substantially degraded at low impervious levels, but might become a more important factor in streams draining highly urbanized watersheds (May, 1998; Pitt et al., 1995; Bannerman et al., 1993).

Streambed quality can be degraded by the deposition of fine sediment and by the streambed instability due to high flows. Basin development has the potential to cause both of these (May, 1998). Increases in fine

sediments decrease the intragravel dissolved oxygen (IGDO) levels. Low IGDO is disastrous to salmonid incubation habitat (Koski, 1972, 1975).

In addition, suburbanization contributes to the degradation of the riparian zone. Degraded riparian conditions influence streambank stability and large woody debris recruitment. Without riparian-zone protection, urbanization degrades the condition of riparian zones, and therefore contributes to streambank instability and loss of large woody debris in the stream (May, 1998). In-stream habitat conditions have a substantial influence on in-stream biota. Changes of riparian-zone condition and streambed quality, including fine-sediment content and streambed stability, affect the benthic macroinvertebrate community (May, 1998). As urbanization increases and riparian-zone integrity decreases, the biotic integrity of the stream decreases as well (May, 1998). Additionally, the construction of roads, bridges, and ferry docks would increase public access to nearby streams and estuaries that had not been as accessible before construction. Increased public access might also increase risk of harassment of spawning salmon.

4—Potential Impacts of Each Alternative

This section describes the potential impacts that each of the Gravina Access Project alternatives currently under consideration would have on marine resources. The potentially affected resources were identified during the investigation for the *Phase II Marine Reconnaissance Technical Memorandum* (Pentec, 2001) and are characterized in this report by the survey station number used in the Phase II marine reconnaissance. Table 3-1, above, summarizes impacts by alternative.

4.1 Alternative C3(a)

This bridge alternative would require a pier in nearshore waters on the eastern side of Tongass Narrows that could impact bull kelp beds near intertidal Station REV-4. These beds would be expected to reestablish on the lower intertidal rock or concrete structures of the pier. Deep-water piers in mid-channel would develop a rich epifauna.

On the western side of Tongass Narrows off the Barge Dock (Station GRV-5), the required piers might be located in an area that currently supports part of the near-continuous eelgrass bed that is interspersed with beds of *Laminaria* and an area of bull kelp. The offshore causeway that leads south parallel to the airport runway would also shade or require fill in an area with near-continuous eelgrass or kelp beds. Care should be taken, where the route curves around the southern end of the runway, to ensure there is no encroachment into upper intertidal salt marshes and adjacent riparian vegetation, especially along the Government Creek Estuary (GRV-7A). Total marine impact from piers and filling would be approximately 6.3 acres (Table 3-1). Impact on areas of kelp would be substantial (2.79 acres).

4.2 Alternative C3(b)

This bridge alternative would have impacts similar to those of Alternative C3 (a), except that it would avoid some impacts on eelgrass and shallow-water biota off the Barge Dock and Barge Dock Beach (Station GRV-5A), north of the floatplane dock, by crossing over deeper water. Total marine impact from piers and filling would be approximately 7.1 acres (Table 3-1). Impact on areas of kelp would be substantial (2.99 acres).

4.3 Alternative C4

This bridge alternative would have impacts similar to those of Alternative C3(a), except that the pier in nearshore waters on the eastern side of the narrows would be in a slightly different location. Resources affected would be similar to the previous two alternatives with 0.04 acres of eelgrass impacts and 6.9 total acres of marine impacts (Table 3-1). Impact on areas of kelp would be substantial (2.75 acres).

4.4 Alternative D1

This bridge alternative would affect fewer marine resources than the other bridge alternatives in the vicinity of the airport (i.e., C3[a], C3[b], and C4) because no pier would be required in nearshore waters on the eastern

side of Tongass Narrows, and because the length of shoreline affected by the pile- and fill-supported causeway along the southern half of the airport shoreline would be shorter. Total marine impact from piers and filling would be approximately 4.12 acres (Table 3-1). Impact on areas of kelp would be substantial (1.64 acres).

4.5 Alternative F1

Alternative F1 would cross Pennock Island and require bridges across both East and West Channels of Tongass Narrows. The eastern landfall leaving Revillagigedo Island would require a pier, probably in eelgrass, along the shoreline just south of the South Dump (Station REV-8). This shoreline is relatively rich, given the extent of debris remaining on the beach from the former dump. The East Channel bridge would cross kelp beds on both the eastern and western shores at an elevation of approximately 60 or more feet above the water, rising to a height of 200 feet in mid channel. This bridge elevation would likely result in minor shading impacts in the form of reduced productivity of those kelp beds. Piers on the west side of the east channel would avoid productive shallower nearshore waters.

The span of the West Channel would leave Pennock Island from a high rock bluff, but would require three piers. Two of these would be placed in deeper waters, likely avoiding direct impacts on marine vegetation. The western pier would be in shallower waters that support kelp and/or eelgrass beds. The West Channel bridge would be relatively high (120 feet) above the water surface, over the kelp and eelgrass beds as well as the mid- and upper intertidal vegetation (a diversity of algae) seen at Station GRV-9. Because of the height of the bridge, it appears unlikely that a substantial reduction of bed productivity would result. Shading would have minimal effect on the Pennock Island shore intertidal community (Station PEN-4), which is already shaded by overhanging trees. Total marine impact from piers and filling would be approximately 0.2 acre (Table 3-1). Impact on areas of kelp would be relatively small (0.02 acre).

4.6 Alternative F3

Like Alternative F1, F3 would cross Pennock Island and require bridges across both East and West Channels of Tongass Narrows. The eastern landfall leaving Revillagigedo Island would require an abutment pier along the shoreline in the vicinity of the South Dump (Station REV-8). As noted, this shoreline is relatively rich, given the extent of debris remaining on the beach from the former dump. The East Channel bridge would cross kelp beds on both the eastern and western shores at an elevation of approximately 60 feet above the water. This bridge elevation would likely result in some shading impacts in the form of reduced productivity of the kelp beds. Piers on both sides of the channel would avoid productive shallower nearshore waters.

The bridge over West Channel would leave Pennock Island from a high rock bluff and require three piers. Two of the piers would be placed in deeper waters, likely avoiding direct impacts on marine vegetation. The western pier might be in shallower waters that support kelp beds. The West Channel bridge would be relatively high (200 feet) above the water surface over the kelp beds and over the mid- and upper intertidal vegetation zones, which support a diversity of algae seen at Station GRV-9. Because of this elevation, it appears unlikely that a substantial reduction in productivity would result. Shading would have minimal effect on the Pennock Island shore intertidal community (Station PEN-4), which is already shaded by overhanging trees.

Alternative F3 would require modification to West Channel to improve navigation. Widening of the channel would modify slightly the localized nearshore flow regime but would not affect overall flow though West Channel. Channel modification would require the removal of approximately 59,000 cubic yards of surficial sediment, which would not have to be blasted out, and 125,000 cubic yards of bedrock, which would require

blasting to be removed. The channel widening would require removal of material between –5 to –40 MLLW. The channel widening would consist of a combination of drilling, blasting, and dredging activities. The duration of these activities would be one to three months. Channel modification work would occur up to seven days a week with almost continuous disturbance from dredging and intermittent disturbance from blasting.

Blasting and dredging in West Channel would remove approximately 16 surface acres of subtidal habitat from areas adjacent to Gravina and Pennock Islands (Table 3-1). This action would eliminate interspersed eelgrass and kelp beds located in this area. Newly exposed soil and rock surfaces would be recolonized over a period of several years. Ultimate benthic assemblages are expected to resemble those now found in similar substrates and depths. Because of the loss of some shallow water habitats, especially on the southwest side of the channel, overall productivity in the area would be less than that currently provided in the existing shallower areas. Construction disturbance (blasting and dredging) would reduce the primary and secondary productivity of West Channel during construction and for one to two years following channel expansion. This will reduce the flux of plant matter, smaller organisms, and the prey available for larger organisms on either end of the channel, where those animals were dependent for prey on plants or algae produced in the impacted area. This effect will be short term and likely would be immeasurable since few organisms would be dependent solely on prey produced in the impacted area. The increase in channel cross sectional area will not be substantial, and little effect is expected on net flow through West Channel; hence no measurable impact is anticipated on marine communities adjacent to the channel entrances on either side.

As noted above, underwater blasting could be expected to cause heavy mortality of fish within 100 meters, with lesser numbers of fish killed with greater distances. The confined nature and rocky shorelines of West Channel may focus, rather than dissipate, acoustic energy, extending the area of impact up and down the channel. The increase in channel cross sectional area would not be substantial, and little effect is expected on net tidal flows through West Channel. Therefore, no measurable impact is anticipated on marine communities adjacent to the channel entrances.

This alternative would have a total marine impacted area of 16.2 acres (Table 3-1), primarily from dredging West Channel. Impacts on kelp beds would be substantial (3 acres).

4.7 Alternative G2

Under this alternative, a ferry would run between Peninsula Point (Station REV-3A) and Lewis Point (Station GRV-3A). It is assumed that construction of a ferry terminal at Peninsula Point would disrupt a portion of the rich rocky intertidal face of the point. However, because of the steepness of this face, the net area affected would be relatively minor. Displaced organisms would be replaced with similar species on the new hard structures placed for the terminal. No eelgrass was found in the sandy area west of the point that would require dredging for the ferry berth, but kelp (*Laminaria*) and other algae were abundant.

Construction of the ferry terminal at Lewis Point on the western side of Tongass Narrows would likely affect areas of kelp and eelgrass that lie offshore of the rocky point and in silty-sand pocketed beaches at the base of the rocky intertidal outcrops. These same pocket beaches have very high densities of butter and littleneck clams. The highest intertidal areas around the several rocky outcrops of Lewis Point support a fringe of typical saltmarsh vegetation that may be eliminated, in part, by ferry access construction. The access road from this ferry landing would cross two tributaries of Airport Creek; construction of these crossings could increase sedimentation rates in the estuary, adversely affecting the vegetation (described above).

Alternative G2 would likely have total marine impacts of 07 acre (Table 3-1). Impact on areas of kelp would be moderate (0.29 acre).

4.8 Alternative G3

Under this alternative, a ferry would run between Bar Point (Station REV-6) and an area south of East Clump Island (Station GRV-7). It is assumed that construction of a ferry terminal at Bar Point could disrupt a portion of the rich rocky intertidal bench at this site, although it might be possible to avoid this feature completely. Dredging would disrupt beds of eelgrass, kelp, and other algae offshore of Bar Point.

A band of kelp and other algae is also present and would likely be disrupted by dredging at the western ferry terminal near East Clump Island. Ferry access would also cross a relatively broad intertidal bench that has a mix of habitat types; bedrock outcrops in a mixed-soft (cobble/ gravel/ silt) lower beach and a mixed gravel/ cobble upper beach. This mix of habitat types supports a diverse biota, and hard-shell clams are abundant in the lower beach. The highest intertidal areas around the several rocky outcrops and along the shore of Gravina Island itself support a fringe of typical saltmarsh vegetation that may be eliminated, in part, by ferry access construction.

This alternative would have moderate impacts on eelgrass (0.29 acres) and substantial impacts on kelp beds (1.36 acres; Table 3-1). Total marine habitat impacted would be approximately 3.8 acres.

4.9 Alternative G4

This alternative would require construction of new ferry terminals (near the existing terminals) on each side of Tongass Narrows. Both terminals would be close to deep water and would require little, if any, dredging. Also, both would be constructed in areas that are already riprapped and thus would avoid impacts on natural intertidal areas. Narrow bands of bull kelp lie offshore of the eastern landfall and would be affected by construction. Impact on areas of kelp would be substantial (1 acre), but the total area of marine impact would be relatively low (1.6 acres; Table 3-1).

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APPENDIX O
Essential Fish Habitat Assessment

Gravina Access Project
Essential Fish Habitat Assessment

Agreement No: 36893013
DOT&PF Project No: 67698
Federal Project No: ACHP-0922(5)

Prepared for:

State of Alaska
Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801

Prepared by:

HDR Alaska, Inc.
712 West 12th St.
Juneau, AK 99801

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1.0 Project Description

1.1 Location

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), is preparing an Environmental Impact Statement to assess alternatives to improve transportation access between Revillagigedo Island and Gravina Island. The two islands are separated by Tongass Narrows, a 13-mile-long waterway that varies in width from ¼ mile to 1 mile. Pennock Island lies within the Narrows and divides the southern portion into East Channel and West Channel. Access between the two islands is currently provided via ferry service. The Gravina Access Project area is located in the Ketchikan Gateway Borough (Borough) in southeast Alaska, about 680 miles north of Seattle, Washington, and 235 miles south of Juneau, Alaska. Most of the Borough's 14,000 residents live on Revillagigedo Island (on the eastern side of Tongass Narrows), whose major cities are Ketchikan and Saxman.

1.2 Proposed Action and Impact Summary

This project is one of 17 high-priority infrastructure projects in the State of Alaska to be federally funded under the Federal Transportation Equity Act for the 21st Century (TEA-21), enacted in 1998. The Act authorizes approximately $20 million for construction of a bridge joining Gravina Island to the community of Ketchikan on Revillagigedo Island.

The proposed project would consist of constructing a bridge (or two bridges, one each over East and West Channels) or ferry terminals, along with associated roadways. The project would require fill or bridge piers or dock pilings in Tongass Narrows regardless of whether a ferry or bridge alternative is selected. The roads associated with the bridges or ferry terminal would require bridge crossings over anadromous fish streams. Figure 1 shows the anadromous fish streams in the project area and the project alternatives being evaluated. In addition to any crossing of Tongass Narrows, all build alternatives would require a bridge crossing at two channels of Airport Creek, and Alternatives G3, F1, and F3 would require a bridge crossing at Government Creek. Alternatives F1 and F3 also would require a bridge crossing at an unnamed creek south of Government Creek, and a culvert crossing in a second unnamed anadromous fish stream (Figure 2). These crossings would avoid permanent loss of EFH by use of clear-span bridges or use of culverts designed per DOT&PF agreement with the Alaska Department of Fish and Game (ADF&G) specifically for fish passage

Alternative F3 also includes widening to improve navigational clearances in West Channel. This modification of West Channel would require blasting and dredging along a 2,000-foot-long segment of the channel. Approximately 59,000 cubic yards of surficial sediment would be removed without blasting. Below that material, approximately 125,000 cubic yards of fractured rock and bedrock would require blasting before removal by dredge. All material removed would be disposed of at a pre-approved marine location. Channel widening would impact intertidal and subtidal habitat in areas adjacent to Gravina and Pennock Islands (Table 1). The associated cross-sections are shown in Figure 3, and the areas of the West Channel to be widened are shown on Figure 4. To remove the rock by blasting, holes would be drilled into the rock at 10-foot intervals as deep as needed to pack the explosives to direct the force of the blast into the rock.

The ferry alternatives (G2, G3, and G4) would also require dredging in Tongass Narrows to produce adequate water depths for ferry docking (Figure 5). Alternative G2 would require the removal of approximately 1,400 cubic yards of material near the proposed south terminal. Alternative G3 would require the removal of approximately 15,200 cubic yards of material near both the proposed north and south terminals. Alternative G4 would require the removal of approximately 18,600 cubic yards of

material near the north and south terminals. All bridge and ferry alternatives would likely require pile driving using a vibratory hammer to advance the steel pile through the existing sediment to rock.

Essential Fish Habitat (EFH) is defined in Section 2. Table 1 shows the acreage of EFH affected for each alternative, based on preliminary engineering design. This report assesses potential impacts to EFH by project alternatives and recommends conservation measures to avoid, minimize, or offset impacts to EFH.

TABLE 1: POTENTIAL IMPACTS ON ESSENTIAL FISH HABITAT

		Bridge Alternatives[1]						*Ferry Alternatives*[2]		
Type of EFH	*No-Action*	*C3(a)*	*C3(b)*	*C4*	*D1*	*F1*	*F3*[3]	*G2*	*G3*	*G4*
Marine EFH (approximate acreage)										
Dredging[3]	0	0	0	0	0	0	16.0	0.20	2.14	1.22
Shading[4]	0	0	0.3	0	0	0	0.1	0.5	1.6	0.3
Filling	0	6.1	6.5	6.7	4.1	0	0	0	0	0
Pier Area[5]	0	0.13	0.21	0.13	0.18	0.16	0.16	0*	0*	0*
Marine Total[6]	**0**	**6.3**	**7.1**	**6.9**	**4.3**	**0.2**	**16.2**	**0.7**	**3.8**	**1.6**
the following three lines indicate subsets of the marine total shown above										
Eelgrass	0	0.02	0.00	0.04	0.00	0.02	0.03	0.08	0.29	0.00
Kelp	0	2.79	2.99	2.75	1.64	0.02	3.01	0.29	1.36	1.01
Saltmarsh	0	0	0	0	0	0	0	0.1	1.70	0
Freshwater EFH (number of crossings)										
Stream Crossings[7]	**0**	**2**	**2**	**2**	**2**	**5**	**5**	**2**	**3**	**2**

[1] **Bridge Alternatives**:

Alternative C3(a) = 200' Bridge between Signal Road and South of Airport Terminal
Alternative C3(b) = 120' Bridge between Signal Road and Airport Terminal
Alternative C4 = 200' Bridge Between Tongass Avenue (North of Cambria Drive) and South of Airport Terminal
Alternative D1 =120' Bridge Between Tongass Avenue (near Existing Ferry) and Airport Terminal
Alternative F1= Bridges (200' East and 120' West) Between Tongass Avenue and Airport, via Pennock Island
Alternative F3 = Bridges (60' East and 200' West) Between Tongass Avenue and Airport, via Pennock Island

[2] **Ferry Alternatives**:

Alternative G2 = Ferry Between Peninsula Point and Lewis Point
Alternative G3 = Ferry Between Downtown and South of Airport
Alternative G4 =Ferry Between New Terminals Adjacent to Existing Ferry Terminals

[3] Assumes channel modification would be required for F3. Areas shown as dredged would not permanently be lost as EFH.

[4] Area that is covered by over-water structures fewer than 30 feet above MHHW, both for ferry docks and the low portions of bridge alternatives. Ferry loading transfer bridge assumed to be 24'x140'; floating barge 24'x60'; apron 24'x24'.

[5] Bridge alternatives include piers 30'x30'. Ferry alternatives include small-diameter pilings, but these are not calculated. The impact of ferry pilings is included under the shaded area (two lines above).

[6] Marine Total is the total of the first four lines of the table. Impacts include loss of habitat and change in habitat function. Eelgrass, kelp, and saltmarsh impacts are a subset of this total. Total is rounded up to the next tenth acre.

[7] Number of anadromous fish streams shaded by bridge or covered with culvert. No permanent loss of EFH is anticipated at these locations.

2.0 Background Information

2.1 Magnuson-Stevens Fishery and Conservation Management Act

The Magnuson-Stevens Fishery and Conservation and Management Act (MSFCMA) defines EFH as:

> *"…waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity…. For the purpose of interpreting the definition of essential fish habitat, 'waters' include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; 'substrate' includes sediment, hard bottom, structures underlying the waters, and associated biological communities; 'necessary' means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and 'spawning, breeding, feeding, or growth to maturity' covers a species' full life cycle."*
>
> *-50 CFR 600.10*

The MSFCMA directs federal agencies to consult with the National Marine Fisheries Service (NMFS aka NOAA Fisheries) when any of their activities may have an adverse effect on EFH. According to Section 600.810 of Subpart J of the MSFCMA, an adverse effect is "any impact which reduces quality and/or quantity of EFH." This section also notes that "adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, or reduction in species' fecundity), site-specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions."

2.2 DOT&PF and NMFS Agreement of EFH Consultations

In accordance with a November 3, 1999 DOT&PF and NMFS (now referred to as NOAA Fisheries) agreement on EFH consultations (Appendix A) for projects involving an EIS, DOT&PF, on behalf of the FHWA, has determined that this project may cause permanent and temporary adverse effects on EFH. Placement of bridges for stream crossings may cause temporary adverse effects on EFH. Dredging, blasting, and pile driving would also cause permanent loss or alteration of EFH.

3.0 Affected Essential Fish Habitat

Tongass Narrows is designated as EFH under the MSFCMA for 11 species of ground fish and 5 species of Pacific salmon. Most are primarily late juveniles and adults, and may use the Narrows as a migratory corridor to other rearing areas in nearby bays and intertidal areas. In addition to the marine habitat of Tongass Narrows, anadromous fish streams documented by the Alaska Department of Fish and Game (ADF&G) in the Anadromous Waters Catalog (ADF&G 1998) are designated as EFH in the project area. These include Government Creek, Airport Creek (main stem and its tributary), and two unnamed streams (Figure 2). These waterways are defined as anadromous fish streams, which are those streams necessary for salmon spawning, breeding, feeding, or growth to maturity (NMFS 1998).

3.1 Species

The following paragraph and Table 2 present EFH data obtained from NOAA Fisheries through telephone conversations, response letters, and the NOAA Fisheries EFH web site. A response letter received in October 1999 (and confirmed in 2003) indicated these 16 species as having EFH within Tongass Narrows (see Appendix B for copy of letter). All 16 species may be found within the current project area that includes Tongass Narrows and several anadromous streams. Table 2 shows the life stages of each species as they are found within the project area.

Consultation with the NOAA Fisheries established that there is EFH for the following fish species in the project area: arrowtooth flounder (*Atheresthes stomias*), dusky rockfish (*Sebastes ciliatus*), Pacific cod (*Gadus macrocephalus*), Pacific ocean perch (*Sebastes alutus*), shortraker rockfish (*Sebastes borealis*), rougheye rockfish (*Sebastes aleutianus*), sablefish (*Anoplopoma fimbria*), sculpins (*Cottidae* spp.), skates *(Raja* spp.), walleye pollock (*Theragra calcogramma*), yelloweye rockfish (*Sebastes ruberrimus*), and all five Alaskan salmon species (*Oncorhynchus* spp.). Tongass Narrows supports habitat for all five Alaskan salmon species, which are likely to occupy the Narrows at various times of the year for feeding and migration. The anadromous fish streams in the project footprint contain three species of salmon: pink, coho and chum salmon (NMFS 1999).

Many of the species with EFH in the project area are of high commercial value and support the local and state economy through commercial and sport fisheries. Ketchikan's commercial fishing industry generates more than $90 million annually and provides more than 1,500 full-time jobs (USKH 2000).

TABLE 2: ESSENTIAL FISH HABITAT SPECIES IN PROJECT AREA

Ground Fish Species	**Egg**	**Larvae**	**Late Juvenile**	**Adult**	**Spawning**
Pacific Ocean Perch			X	X	
Yelloweye Rockfish			X	X	
Shortraker			X	X	
Rougheye Rockfish			X	X	
Dusky Rockfish			X	X	
Walleye Pollock	X			X	
Sablefish			X	X	
Pacific Cod			X	X	
Arrowtooth Flounder			X	X	
Sculpin spp.			X	X	
Skates spp.			X	X	

Salmon Species	Egg and larvae – fresh water	Juvenile – fresh water	Juvenile – estuarine	Juvenile – marine	Adult – marine waters	Spawning – fresh water only
Coho salmon	x	x	x	x	x	x
Chum salmon	x	x	x	x	x	x
Pink salmon	x	x	x	x	x	x
Chinook salmon*				x	x	
Sockeye salmon*				x	x	

* Both species are found only in Tongass Narrows within the project area; however, they do occur as freshwater eggs, larvae and juveniles in other freshwater streams in the Ketchikan area.

3.2 General Habitat Description of Tongass Narrows

Tongass Narrows is generally characterized by strong tidal currents and by steep bedrock or coarse gravel-cobble-boulder shoreline. Lower intertidal and shallow subtidal areas are often sandy or mixed gravel, sand, and shell, with varied amounts of silt. At other areas, however, such as at rocky points and along the northwestern shore of Pennock Island, bedrock slopes steeply to subtidal depths. Subtidal habitats, like those in the intertidal zone, are a mix of bedrock outcrops or ledges, boulder-cobble slopes

and, where lower slopes permit, sandy gravel bottoms, often mixed with significant amounts of shell debris.

Several small natural coves and areas protected by constructed breakwaters provide wave and current protection for marine habitats with sand or gravel bottoms. Extensive areas of riprap bank protection and filling occur along the northeastern shoreline of the City of Ketchikan. Construction of numerous buildings on pilings over the intertidal and shallow subtidal zone has significantly modified the shorelines in these areas. Human-induced shoreline protection activities have similarly modified about a mile of the shoreline of Gravina Island in the vicinity of the airport and airport ferry terminal.

Prey Species. In areas where natural coarse gravel-cobble-boulder, sand, mud, or mixed-fine shorelines occur, lower beaches contain diverse microhabitats providing prey for ground fish and salmonid species. Fieldwork completed in the intertidal zone in January and July 2000 (HDR 2001) identified 136 plant and 151 animal taxa. Ground fish prey includes a variety of epibenthic crustaceans, especially amphipods and several crab and shrimp species, as well as infaunal clams, gastropods, and polychaete worms. Diets of young salmonids include a variety of smaller crustaceans (harpacticoids, mysids, cumaceans), larval fish, and terrestrial insects. Diets of subadult and adult salmon vary among species, but generally, are dominated by forage fish (herring, smelt, sand lance) and larger pelagic and planktonic invertebrates. Huge schools of herring, smelt, capelin, and Pacific sand lance collectively provide the food base for salmon. Pacific herring spawn during the spring in eelgrass or rockweed beds at the north end of Gravina Island (Walker, 2000). The shorelines of Tongass Narrows provide rearing habitat for juvenile salmonids migrating out of area streams during the spring. Low gradient gravel and sand beaches produce an abundance of epibenthic zooplankton that provide a key prey base for juvenile pink, chum, and chinook salmon (Groot and Margolis, 1991) At low tides, extensive eelgrass beds along the narrows also produce large numbers of prey items and provide refuge for juvenile salmonids against predation by birds and larger fish.

3.3 Ground Fish Species Descriptions

Specific descriptions of the non-salmonid species, some of which may be found within Tongass Narrows, and their life stages are included below. References to habitat locations indicate the following depth associations: inner (1-50 meters), middle (50-100 meters), and outer (100-200 meters) shelf regions, and upper (200-1,000 meters) and lower (>1,000 meters) slopes and basin (>3,000 meters) (NMFS 1999). No specific surveys have been identified that document the use of project area waters by these species. However, unconsolidated bottom areas of silt, sand, and gravelly sand along the slopes of Tongass Narrows are expected to support a variety of ground fish. Rockfish are more likely to use boulder, ledge, and bedrock outcrops within the Narrows.

- Arrowtooth Flounder
  Arrowtooth flounder spawn during December-February at depths of 100-360 meters (DiCosimo 2001). Pelagic (open seas) eggs and larvae inhabit all areas of the continental shelf, though predominantly inhabiting only the inner and middle shelf regions. Juveniles and adults are demersal (bottom dwelling) in gravel and muddy sand. Juveniles typically inhabit shallow areas until they are about 10 centimeters long. During winter, the flounder migrate to shelf margins and upper continental slopes to avoid cold temperatures (NPFMC 1998b). This species is a likely inhabitant of Tongass Narrows.

- Dusky Rockfish
  Dusky rockfish adults are found along the outer shelf, upper slope, and nearshore waters of southeast Alaska, typically in areas with rocky shores at depths less than 50 meters. Juveniles inhabit inner and middle slopes. This species may be found in Tongass Narrows. Preferred

substrate for both adults and juveniles is gravel, cobble, or boulder. Juvenile dusky rockfish have been captured in nearshore eelgrass and kelp beds. Adults are semi-demersal/semi-pelagic (NPFMC 1998b).

- Pacific Cod
  Pacific cod are demersal and concentrate on the shelf edge and upper slope (100-200 meters) in the winter and spring where they overwinter and spawn from January through April and move to shallower waters (<100 meters) in the summer (DiCosimo 2001). This species is a likely inhabitant of Tongass Narrows. They prefer mud, sandy mud, muddy sand, or sand in deep waters (Morrow 1980). Pacific cod eggs are found on the inner and middle continental shelf. Pacific cod larvae are epipelagic (zone where photosynthesis can occur) in the upper 45 meters of the ocean. Juveniles can be found in water 60-150 meters deep (NPFMC 1998b). Juvenile Pacific cod have been captured in nearshore eelgrass and kelp beds (NOAA Fisheries 2003).

- Pacific Ocean Perch
  Adult Pacific Ocean perch (POP) are found along outer shelf and upper slope. They migrate into deeper water during fall and winter to spawn, and then move to shallower depths to feed during spring and summer. Juveniles are found in the inner, middle, and outer shelves, and upper slope. Larval stages are found in the same areas as juveniles plus in the lower slope and basin. As a result of this life history pattern, it is unlikely that significant numbers of POP occur in Tongass Narrows. Preferred habitat for adults includes gravel, pebble, and cobble. Juveniles generally prefer the same habitats as adults, but will also use areas with boulders (DiCosimo 2001).

- Shortraker and Rougheye Rockfish
  Adults inhabit waters of the outer continental shelf and continental slope (DiCosimo 2001). Juveniles are found in the middle and outer shelves. As a result of this life history pattern, it is unlikely that significant numbers of these species occur in Tongass Narrows. Adults use habitats where mud, clay, silt, sand, gravel, pebble, cobble, boulder, and bedrock are present. The softer substrates (sand or mud) generally have the highest adult densities; hard substrates (bedrock, cobble or pebble) usually have the lowest densities. Habitats with steep slopes and frequent boulders are used more than habitats with gradual slopes and few boulders. Juveniles may occupy shallower habitats than adults (NPFMC 1998b).

- Sablefish
  Adults and late juveniles inhabit the deeper waters of the continental shelf, the slope, and the deep-water coastal fjords. Most adults are typically found in depths of 366–914 meters. As a result of this life history pattern, it is probable that sablefish occur in Tongass Narrows. Adult and late juvenile sablefish are pelagic and may be found in waters over any substrate (NPFMC 1998b). Spawning occurs in pelagic waters at a depth of 300–500 meters in the spring (McFarlane 1997).

- Sculpin spp
  Sculpins are bottom-dwelling fish that live in tide pools or in shallow or deep marine waters, and occasionally can be found in freshwater. Adults and late juveniles can be found in the middle shelf regions. Sculpins are known to use a wide range of habitats, including intertidal pools and all shelf habitats, e.g., mud, sand, gravel, etc. (NPFMC 1998b). Several species of sculpin have been seen in intertidal and subtidal surveys in Tongass Narrows.

- Skates spp
  Juvenile and adult skates can be found in the middle shelf regions. Skates are known to use a broad range of substrate types (mud, sand, gravel, and rock) and can typically be found in the lower portion of the water column (NPFMC 1998b). It is probable that skates occasionally inhabit the deeper waters of Tongass Narrows.

- Walleye Pollock
  Both adults and eggs are found in the outer shelf regions. Walleye pollock and their eggs are pelagic; therefore, they may be sighted in waters over any substrate. All life stages of walleye pollock are known to use the Tongass Narrows as habitat. Pollock larvae are pelagic and inhabit the middle and outer continental shelf. Juvenile pollock inhabit the inner, middle, and outer continental shelf and oceanographic features like basins, fronts, and upwellings. Adults are semi-demersal (near the ocean surface to 200 meters). Adults congregate where food is concentrated in middle and outer continental shelf areas (NPFMC 1998b).

- Yelloweye Rockfish
  Adults and juveniles are both found in the middle and outer shelves and upper slope. Habitat for both consists of bays, estuaries, and island passes. This species is a likely inhabitant of Tongass Narrows. Both life stages are demersal, and are often found in areas with rock, coral, and cobble. High concentrations of rockfish are found in areas with high relief containing refuge spaces such as overhangs, crevices, and caves (NPFMC 1998b).

3.4 Anadromous Fish Waterways Habitat Descriptions

3.4.1 Government Creek

Species
According to the ADF&G Anadromous Waters Catalog (ADF&G 1998), Government Creek (ADF&G No. 101-47-10400) provides habitat considered to be EFH for coho, chum, and pink salmon. The mouth of Government Creek provides spawning habitat for all three salmon species, and the headwaters provide rearing habitat for juveniles.

Habitat
In the project area, Government Creek enters Tongass Narrows through a shallow gravel-cobble-bottomed stream channel in a small V-shaped embayment. The stream channel bottom is covered with a dense growth of filamentous brown alga (*Pilayella littoralis)*. Lower stream banks support dense rockweed; in muddy pockets adjacent to the stream, softshell clams (*Mya arenaria*) are abundant. Finer sediments at higher elevations (e.g., > +13 ft MLLW) have a well-developed saltmarsh grouping. Dominant plants in the lower saltmarsh are *Carex* sp., *Glaux* sp., and *Plantago* sp.; higher elevations have *Potentilla* sp., *Deschampsia* sp., and *Juncus* sp. Higher areas with coarse sand and gravel, especially to the south toward East Clump Island, support patches of *Salicornia virginica* and a backshore grouping mixed with salt-tolerant grasses and herbs (HDR 2001).

3.4.2 Airport Creek

Species
According to the ADF&G Anadromous Waters Catalog (ADF&G 1998), Airport Creek (ADF&G No. 101-47-10450-2002 and No. 101-47-10450) provides spawning habitat for coho and pink salmon.

Habitat
In the project area, Airport Creek flows directly into a productive estuary of Tongass Narrows. Airport Creek consists of two channels that merge into one near the estuary. The upper intertidal area around the creek mouth consists of a relatively flat bench dominated at lower elevations by *Salicornia* and *Puccinellia*. At somewhat higher elevations, taller species such as the sedge *Carex*, velvet grass (*Holcus lanata)*, and tufted hairgrass (*Deschampsia dominate)*. Gravelly areas adjacent to the stream channel support patches of *Honkenya peploides*, and higher-elevation sand and gravel have a dense growth of dune grass.

The outer reaches of this estuary support eelgrass beds that provide habitat and food for juvenile salmon. Airport Creek consists of a shallow gravel-cobble-bottomed stream channel with small cascades. Areas farther upslope are characterized with a boulder-cobble bottom and steep banks. The riparian vegetation surrounding the creek consists of Sitka spruce (*Picea sitchensis)* and cedar-hemlock (*Chamaecyparis* sp. and *Tsuga* sp.) forest with an open shrubby understory (HDR 2001).

3.4.3 Other Anadromous Fish Waterways

Species
According to the ADF&G Anadromous Waters Catalog (ADF&G 1998), two unnamed creeks (ADF&G No. 101-47-10380 and No. 101-47-10350) provide spawning habitat for coho salmon in the project area.

Habitat
The two unnamed creeks are known spawning habitat for coho salmon (*Oncorhynchus kisutch*). Both creeks are confined to a low flow, low gradient, narrow channel that flows directly into Tongass Narrows. The creeks are very narrow, ranging from 3 to 5 feet wide or less in most locations. The depths of the creeks vary from shallow (1 foot) to 2 to 3 feet in some locations. Both can be ephemeral in some locations, depending on rainfall. The creeks have overhanging riparian vegetation consisting of Sitka spruce and cedar-hemlock forest with a shrubby understudy, which likely provide rearing habitat for juvenile salmon (HDR 2001).

Marine Nearshore
The shorelines of Tongass Narrows provide rearing habitat for juvenile salmonids migrating out of area streams during the spring. Low gradient gravel sand beaches produce an abundance of epibenthic zooplankton that provide a key prey base for juvenile pink, chum, and chinook salmon (Groot and Margolis 1991). At low tides, extensive eelgrass beds along the narrows also produce large numbers of prey items and provide refuge for juvenile salmonids against predation by birds and larger fish. As they grow, young salmon tend to move offshore into deeper waters while remaining in the upper portion of the water column. These fish feed on larger planktonic and pelagic prey including larval fish and smaller forage fish.

3.5 Salmonid Species Descriptions

- Coho Salmon
  The NOAA Fisheries EFH web site (NMFS 2002) shows that coho salmon (*O. kisutch*) have EFH in all ADF&G anadromous streams that are crossed by the project and in Tongass Narrows. Coho salmon enter spawning streams from July to November, usually during periods of high runoff. The eggs hatch early in the spring, where the embryos remain in the gravel using the egg yolk until they emerge in May or June. Juvenile coho spend one to three winters in streams and may spend up to five winters in lakes before migrating to the sea as smolt (ADF&G 2002). Coastal streams, lakes, estuaries, and tributaries to large rivers all provide coho rearing habitat.

Coho juveniles may also use brackish-water estuarine areas in summer and migrate upstream to fresh water to overwinter. They spend about 16 months at sea before returning to coastal areas and entering fresh water to spawn (NPFMC 1998).

- Chum Salmon
  The NOAA Fisheries EFH web site (NMFS 2002) shows that chum salmon (*O. keta*) have EFH in Government Creek and Tongass Narrows. Chum salmon return to spawn as 2- to 7-year olds. Chum salmon fry, like pink salmon, do not overwinter in the streams but migrate out of the streams directly to the sea shortly after emergence (ADF&G 2002). This outmigration occurs between February and June, but most fry leave the streams during April and May. Chum salmon tend to linger and forage in the intertidal areas at the head of bays. Estuaries are important for chum salmon rearing during spring and summer. Chum salmon spawn between June and November in gravel in streams, side-channel sloughs, and intertidal portions of streams when the tide is below the spawning grounds (NPFMC 1998).

- Pink Salmon
  The NOAA Fisheries EFH web site (NMFS 2002) shows that pink salmon (*O. gorbuscha*) have EFH in Government Creek, Airport Creek, and Tongass Narrows. Pink salmon are distinguished from other Pacific salmon by having a fixed two-year life span. Because of the life span, pink salmon spawning in a particular river system in odd and even years are reproductively isolated from each other and have developed into genetically different lines (NPFMC 1998). Adult pink salmon enter spawning streams between late June and mid-October. They spawn within a few miles of the coast, and spawning within the intertidal zone or the mouth of streams is very common. Shallow riffles where flowing water breaks over coarse gravel or cobble-size rock and the downstream ends of pools are favored spawning areas. The eggs hatch in early to mid-winter and the fry swim up out of the gravel and migrate downstream into salt water by late winter or spring (ADF&G 2002).

- Chinook Salmon
  The NOAA Fisheries EFH web site (NMFS 2002) shows that chinook salmon (*O. tshawytscha*) have EFH in Tongass Narrows, but not in any of the creeks or streams in the project area. Adult chinook salmon are found over a broad geographic range, encompassing different ecotypes and very diverse habitats in Southeast Alaska. Chinook salmon generally spawn from mid-June to mid-August in waters ranging from a few centimeters deep to several meters deep. Eggs hatch in the late winter or early spring and juveniles typically remain in fresh water for at least one year before migrating to the ocean in the springtime (ADF&G 2002). Chinook salmon spend one to six years at sea before they return to freshwater streams to spawn (NPFMC 1998). Adults return to spawning streams from July through September (Morrow 1980).

- Sockeye Salmon
  The NOAA Fisheries EFH web site (NMFS 2002) shows that sockeye salmon (*O. nerka)* have EFH in Tongass Narrows, but not in any of the creeks or streams in the project area. Sockeye salmon exhibit a greater variety of life history patterns than other Pacific salmon, and are known to use lake-rearing habitats in the juvenile stages (NPFMC 1998). Sockeye salmon generally spawn in late summer and autumn. They use a wide variety of spawning habitats such as rivers, streams, and upwelling areas along lake beaches. Eggs hatch during the winter and the young salmon move into the rearing areas. In systems with lakes, juveniles usually spend one to three years in fresh water before migrating to the ocean in the spring as smolts. However, in systems without lakes, many juveniles migrate to the ocean soon after emerging from the gravel (ADF&G 2002).

4.0 Project Impacts and Conclusions

4.1 Project Impacts

Construction activities within coastal watersheds and in coastal marine areas will impact EFH. These activities may adversely impact marine resources directly and indirectly through habitat loss and/or modification. Other impacts that may occur as a result of the proposed project include the following: runoff from roadways, increased human access (e.g., for fishing), and cumulative development of shoreline property. Locations and descriptions of the anadromous fish stream crossings, by alternative, are shown in Figure 1. Individual waterway impacts by the proposed project alternatives are described below.

4.1.1 Tongass Narrows

General Impacts

All project alternatives would require placement of either bridge pier footings or pilings for ferry facilities in shallower waters (e.g., shallower than -50 feet MLLW) near the shoreline of Tongass Narrows. Table 3 shows the required number of piers, water body crossings, amount of roadway fill for Tongass Narrows, and dredging quantity for each alternative. Given the small area that would be required for bridge piers and ferry terminal pilings, the permanent effects on EFH are minor. Pilings for bridge piers and ferry terminal will be placed as drilled shafts into Tongass Narrows using a reverse rotary drill.

All alternatives may require pile driving to penetrate any existing sediment in the area and enable the pile to bear on or within rock. Geophysical surveys suggests that this soil sediment may be as much as 20 feet thick. In these locations, a vibratory hammer would be used to advance the steel pile (probably 18 to 30-inches in diameter) through the existing sediment until it reached bedrock and then drilling would be employed to penetrate the rock and/or install the piling or rock anchors in the rock formation.

The reverse rotary drill for bridge pier foundations will advance large diameter drilled shafts into the rock bottom by grinding or coring about 10 or 12 feet diameter holes through the rock at the bottom of the channel at each pier location. Four to six shafts may be drilled to support each pier. Each shaft takes approximately one week to complete. Shaft drilling will be conducted by first installing a large diameter steel casing through the water and seating it into the bottom material. It is not known at this point whether the casing will be dewatered or whether the water will be left in the casing (most likely the latter, especially where the deeper water is present). The shaft will then be drilled through the casing to depths on the order of 50 to 100 feet into soil and rock, and then completed by lowering a reinforced steel cage into the shaft hole and filling the hole and casing to above the water line with concrete. These 4 to 6 shafts will then be cast into a single pier cap for supporting the above water portion of the pier and bridge structure.

All shaft and pile construction methods will entail barge-mounted equipment to have the least impact on marine epifauna. The barge-mounted reverse rotary drill uses wet construction technology to draw the rock drill cuttings as slurry up through the middle of the drill shaft onto the barge where it enters a settling basin and is disposed of according to normal dredge disposal regulations. Refer to Table 3 for impacts to EFH by alternative for bridge or pier construction.

No site-specific surveys of fish likely to be present in the vicinity of drilling or pile driving are available. However, fish types that will likely be present include demersal (e.g., flatfish, cottids, rockfish, gadids) and pelagic (salmonids, clupeids, embiotocids, greenling) species. Of these, fish with closed swim

bladders (physoclistous species – e.g., rockfish, gadids) are known to be most vulnerable to sharp changes in acoustic energy (e.g., from blasting), while those with open swim bladders (physostomous species – e.g., salmonids) are less affected; fish lacking a swim bladder (e.g., cottids, flatfish) are the least susceptible.

Using reverse rotary drilling and a vibratory hammer will have less impact on fish than use of an impact hammer to drive piles, which is known to have significant adverse effects on fish. The small amount of pile driving that may be necessary would be in sediment, and conservation measures would reduce the harmful vibratory impacts of pile driving by using a vibratory hammer instead of an impact hammer, and by driving near-shore piles at low tide only. Peak sound pressures generated by rotary drilling would be comparable to or less than that generated by clamshell dredging, and well below levels known to be harmful to fish and marine life. Sound frequencies associated with drilling would be generally higher pitched and sound pressure levels would be steadier than would clamshell dredging. As a result, there likely would be less disruption of fish and mammal movement and feeding patterns than would occur during dredging.

There would be some permanent loss of eelgrass beds from placement of fill in Tongass Narrows in Alternatives C3a, C3b, C4, and D1. Placement of fill would result in a direct loss of EFH in Tongass Narrows and could modify current patterns and water circulation slightly by changing the direction or velocity of water flow, or changing the dimensions of a water body. These changes to the water dynamics could result in increased deposition of suspended particulates, or increased bed scour, either of which could reduce the area of habitats available for spawning, breeding, feeding, or growth to maturity of fish for which EFH has been designated (NMFS 1998). Piers and the bridge structures could eliminate or slow the growth of eelgrass beds by shading, which indirectly would negatively impact EFH.

Ferry alternatives could result in substantial scour of the bottom of the channel in areas under and near the loading ramps. Propeller scour caused by power reversal during docking would eliminate existing unconsolidated surficial sediments and associated biota over a small area (assumed 0.1 acres for each ferry docking area) shoreward of the berth.

Table 3 shows water body crossings, piers, and roadway fill impacts to Tongass Narrows from bridge or pier construction, and dredging quantities.

TABLE 3: QUANTITIES OF FILL, DREDGING, AND OTHER EFH IMPACTS

	C3(a)	*C3(b)*	*C4*	*D1*	*F1*	*F3*	*G2*	*G3*	*G4*
EFH/Total Number of Water Body Crossings[1]	2/8	2/8	2/8	2/8	5/14	5/14	2/8	3/10	2/8
Piers in Tongass Narrows (Number)	5	7	5	6	6	6	0	0	0
Fill in Tongass Narrows (Cubic Yards, Thousands)[2]	280	140	280	295	0	0	0	0	0
Dredging Quantities (Cubic Yards)	0	0	0	0	0	184,000[3]	1,400	15,200	18,600

[1] *Indicates the total number of stream crossings (not including Tongass Narrows) and the number of these crossing that are of anadromous fish streams (such streams are EFH). No permanent loss of EFH would occur because bridge and culvert design would preserve EFH.*

[2] *For bridge alternatives, fill quantities shown do not include the bridge piers themselves.*

[3] *Of this total, approx. 125,000 cy of solid and fractured rock would be loosened by blasting and removed by clamshell dredge. For the balance, surficial sediments would be removed by dredge without blasting.*

Impacts of Pier Construction and Channel Modification

In-water blasting might be necessary for all alternatives to prepare the foundations for in-water piers or pilings for bridge and ferry alternatives. If blasting were required to prepare the foundations for piers or pilings, the conservation measures for blasting in Chapter 5.0 would be implemented. In addition, if blasting is required, it will be performed such that ground vibration (particle velocity) does not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch. The project will employ monitoring devices to ensure adherence to these standards. Currently only Alternative F3 has the potential to require substantial blasting. However, dredging for the ferry alternatives may require a small amount of blasting. If blasting is necessary for the ferry alternatives, it would last 2-3 days and would have localized impacts that would be of minimal significance in relation to the large areas of similar habitats available in Tongass Narrows. The types of charges that would be used for blasting would be common explosives used in underwater blasting. The amount of explosives needed to generate 1 ton of rock would be approximately 1 pound of explosive. The amount of in-water blasting that may be required has not been determined for any of the alternatives. The depth of detonation, weight of the charge, and detonation velocity are not known at this time. This information will be determined during the final design phase and will be addressed in project permitting. Shock waves from blasting can be expected to travel, and to be sensed by marine organisms up to a few miles, depending on the topography of the area. In addition, underwater blasting can be expected to cause heavy mortalities of fish within 100 meters, with lesser numbers of fish killed with greater distance. The confined nature and rocky shorelines of the West Channel may focus, rather than dissipate acoustic energy, extending the area of impact up and down the channel (Houghton and Munday 1987).

Research conducted by the U.S. Army Corps of Engineers indicates that the lethality of an explosive is directly related to its detonation velocity. Detonation velocity is the speed with which a blasting agent ignites. The more rapid the detonation velocity is, the more abrupt the resultant hydraulic pressure gradient will be, and the more difficulty fish have adjusting to the pressure changes. Investigations have demonstrated that the swim bladder is the most frequently damaged organ. Laboratory tests have demonstrated that small negative pressures can injure fish swim bladders, and negative pressures of only one atmosphere (101.4 kPa) can kill marine fish. This is well below the pressure of most underwater explosions (Keevin et al.1997).

The distance from the blast at which lethal effects occur depends upon several variables including: the typical size (weight) of the fish species likely to be in the area, the depth of the fish, the depth of detonation of the charge, and the weight of the charge. Lethal ranges will be increased if the water is shallow (less than fives times either the detonation depth or target depth, whichever is greater) or where the bottom is rocky (Keevin et al. 1997).

No site-specific studies have been conducted to describe fish populations potentially at risk at locations that would require blasting to provide necessary navigational depths. Nonetheless, the general nature of fish that may be present at each site can be deduced from the nature of the habitats present. Rocky habitats in Tongass Narrows likely support rockfish, which, because of their large swim bladders, would be expected to be highly susceptible to sound pressures generated by blasting, while cottids would be less susceptible. Adjacent soft bottom areas likely support flatfish species and skates that would be somewhat less vulnerable to blast effects because they lack swim bladders, and gadids that are known to be very susceptible. A number of other species may be present in the water column, depending on the time of year. These could include salmonids, forage fish, and some gadids, all of which would be very susceptible to blast effects (Houghton and Munday 1987).

Alternative F3 would require modification to West Channel to improve navigation clearances (see Figure 3). This alternative would widen the channel and modify the localized nearshore tidal flow regime slightly, but would not affect overall flow though West Channel. Altered hydrology in the channel would not significantly impact benthic assemblages or productivity outside of the area directly modified. Channel modification would require the removal of approximately 59,000 cubic yards of surficial sediment, which would be removed by dredging (not blasting), and 125,000 cubic yards of fractured rock and bedrock, which would require blasting to be removed (See Figure 3). The channel widening would consist of a combination of drilling, blasting, and dredging activities. The duration of these activities would be 1 to 3 months. Channel modification work would occur up to seven days a week with almost continuous disturbance from dredging and intermittent disturbance from blasting. Blasting, and dredging in the West Channel would remove approximately 16 acres of subtidal habitat from areas adjacent to Gravina and Pennock Islands (Table 1). This action would eliminate approximately 3 acres of existing kelp beds including *Nereocystis* and *Laminaria*, 0.03 acres of eelgrass beds, and would affect 0.75 acres of sea cucumber (*Parastichopus californica*) habitat in the immediate area (Figure 6 and Table 1).

Construction disturbance (blasting and dredging) will reduce the primary and secondary productivity of the West Channel during construction and for 1 to 2 years following channel expansion. During this time, forage resources for benthic feeders may be substantially reduced. This will reduce the flux of plant matter, smaller organisms, and the prey available for larger organisms on either end of the channel, where those animals were dependent for prey on plants or algae produced in the impacted area. This effect will be short term and likely would be immeasurable since few organisms would be dependent solely on prey produced in the impacted area.

The ferry alternatives would also require minor dredging in Tongass Narrows to produce adequate water depths for ferry docking (Figure 5). Use of a clamshell dredge is the most likely method of dredging for the ferry alternatives and F3 (See Temporary Impacts Section for discussion of clamshell dredges and possibility of entrainment). Alternative G2 would require the removal of approximately 1,400 cubic yards of material near the proposed south terminal (approximately 0.2 acres; Table 1). Alternative G3 would require the removal of approximately 15,200 cubic yards of material near both the proposed north and south terminals (approximately 2.14 acres total; Table 1). Alternative G4 would require the removal of approximately 15,200 cubic yards of material near the north and south terminals (1.22 acres; Table 1).

Where blasting is required for Alternative F3, and possibly for other alternatives, a barge mounted percussion drill would be used to drill holes for the explosive. The explosive would be set into the holes and detonated, and a clam bucket would be used to remove the debris. The debris would be placed onto the barge where it would enter a settling basin and be disposed of according to normal dredge disposal regulations. Disposal of dredged and blasted material would follow the Environmental Protection Agency's (EPA) Guidelines for disposing of dredged and blasted material (40 CFR Parts 220-238) (Ocean Dumping) and would be consistent with the regulations of Clean Water Act (CWA) Section 404(b)(1) [disposal of dredged materials into waters of the U.S.] and Marine Protection, Research, and Sanctuaries Act (MPRSA) Section 103. The disposal would be an "open water" ocean disposal and would require the use of locations be pre-approved by the EPA (MPRSA Section 102). Deepwater disposal of sediment removed from the West Channel would eliminate existing benthos in the disposal area. However, recolonization of disposal areas is expected to be rapid. The recurring use of a common disposal area by this and other projects would focus the impacts of this and the other projects in a localized area. Use of a deepwater disposal site would avoid impacting more productive shallow water areas.

Eelgrass is typically found to –20 feet MLLW in Southeast Alaska, and kelp to –60 feet MLLW (NOAA Fisheries 2003). It is unlikely that these communities would fully reestablish in the deeper depths that would result from the channel widening. Newly exposed soil and rock surfaces would be recolonized over a period of several years. Newly exposed rock at depths from the lower intertidal zone to about –20 feet MLLW would be recolonized by epibenthic biota similar to that seen at low tide levels on the existing west shore including red algae, kelp, and a variety of other small species. Subtidal rock will be colonized by a wide variety of invertebrates such as coral (*Balanophyllia elegans*), erect bryozoans (*Dendrobenia lichenoides*), scallop (*Chalmys hasata*), gastropods (*Scabrotrophon maltzani* and *Trichotropus cancellata*), white limpet (*Acmaea mitra*), sea peach (*Halocynthia auranthium*), and several other hydroids and bryozoans. A variety of red algae are expected to form an understory and large *Laminaria* species are expected to form an overstory. Bull kelp will recolonize at depths down to about –20 to –25 feet MLLW (HDR 2001). Red algae will form the deepest zone and may extend to –50 feet MLLW. Pockets of newly exposed sediment, and sediment that accumulates in rock crevices will be colonized by an infauna composed of a variety of polychaetes, crustaceans, bivalves, echinoderms, and other taxa (Jon Houghton, Pentec, pers. communication to Sirena Brownlee, HDR 2003). Because of the loss of some shallow water habitats, especially on the southwest side of the channel, overall productivity in the area would be less than current productivity in the existing shallower areas. The West Channel dredging accounts for the relatively higher area of impact shown for Alternative F3 in Table 1..

Temporary Impacts

Underwater drilling, pile driving for ferry terminals, and blasting activities would generate noise and vibration in the area. In addition, fine silts would be suspended in the water column by these activities. Turbidity plumes would be quickly carried downstream by the strong tidal current. The distance the turbidity plume moves from the point of origin would be dependent upon tides, currents, nature of the substrate, and other factors. Because of the strong tidal currents in the channel, intermittent generation of waterborne sediments, especially when released into deeper waters offshore, will be quickly dissipated with minimal effect on biota. While specific sampling of sediments that would require dredging has not been conducted, underwater video and side scan sonar surveys in the areas of proposed dredging indicate that sediments to be dredged would range from silts and silty sand to coarse gravel and sand. The dredging activities for F3 would occur at depths of water such that no intertidal or estuarine areas would be directly affected. Any adult or juvenile fish using the West Channel during this stage of construction could be adversely affected by the blasting and dredging, by direct mortality, damage from sound pressures released into the water, or entrainment in dredging equipment.

Vibration and noise from dredging operations may displace or otherwise harass both salmon and ground fish species in the Narrows. However, the areas being dredged are small relative to the cross section of the Narrows. Other construction impacts would be temporary, minimized, and mitigated by measures specified in Section 5.0. It is expected that construction activities in Tongass Narrows would last for approximately two to three years. During this time, work barges would be moving about, and anchoring in Tongass Narrows.

Placement of culverts in fish-bearing streams could temporarily impact anadromous fish by directly eliminating eggs incubating in the streambed, or by creating highly turbid water. Deposition of material downstream on incubating eggs could destroy them, and turbid water could interfere particularly with juvenile salmon. Therefore, any kind of in-stream work would be undertaken during work windows determined by permit to avoid critical times in the salmon life cycle.

Entrainment

It is generally accepted that clamshell dredges do not have the potential to entrain pelagic fish such as salmonids. Clamshell dredges have a lower incidence of entrainment than hopper and pipeline dredges, and if the dredging were conducted immediately following the blasting, it is likely that there would not be any live organisms in the debris (Miller 2003). Specifically, the clamshell bucket descends to the substrate in an open position. The force generated by the descent drives the jaws of the bucket into the substrate, which "bites" the sediment upon retrieval. During the descent, the bucket cannot trap or contain a mobile organism because it is totally open. Based on the operation of the clamshell dredge bucket, it is concluded that, if used for the proposed project, it would not entrain juvenile, subadult, or adult salmonids, or forage fish, although some entrainment of demersal fish and epibenthic invertebrates (e.g., crab) may occur.

Operational Impacts

Propeller scour during docking of ferries under the three ferry alternatives would eliminate existing unconsolidated surficial sediments down to about – 20 feet MLLW over an area of approximately 0.2 acres for each ferry alternative (assumes 0.1 acre per terminal).

Bridges or ferry ramps would partially shade littoral areas, reducing primary productivity and possibly limiting the distribution of some algae, while extending the distribution of other taxa. In addition, the presence of over-water structures (bridges, causeways, and ferry docks) might partially shade portions of the adjacent beach and subtidal bottom areas. The area under a dock or causeway would likely receive full-time shade, whereas the area under elevated bridge sections would not, because the shadow cast by structures high above the water would move across the water as the sun traverses the sky. Because the upper limits of many intertidal species, including eelgrass, are set by the degree of desiccation experienced, and because shading would reduce desiccation, shading by project structures may allow some species to extend their range upslope.

However, since lower limits of vegetative growth are set by light level, net loss of eelgrass or kelp productivity could result from the project if deeper portions of beds are shaded. If this occurs, eelgrass habitat area would be incrementally reduced reducing the area of refuge for migrating juvenile salmon, other small fish, and Dungeness crab. Reduced eelgrass productivity would decrease the eelgrass blade area available to support epiphytic crustaceans, which are an important food source for juvenile salmon.

Pilings and piers necessary to support bridges or nearshore components of the alternatives could alter the nearshore migration pathways of smaller juvenile salmonids (e.g., pink and chum salmon) or other marine

species in Tongass Narrows. Impacts could be reduced by locating nearshore components in a manner that leaves a nearshore migration corridor (e.g., down to at least -5 feet MLLW, near the extreme low-water line) clear of obstruction. Deeper piers or pilings would allow free passage of marine species migrating along shorelines and would develop an epifauna typical of natural deeper hard-bottom areas.

In addition to shading, over-water structures that create areas of darkened water can impede or delay long-shore migrations of juvenile salmonids. Studies in Washington State have shown that schools of juvenile chinook and chum salmon pause in their migration when encountering an over-water structure that creates a darkened area of water, such as a marginal wharf or wide pier (Pentec 1997). There is little expectation that an elevated bridge would create light conditions that would impede salmon migrations in the Tongass Narrows, although the low elevation causeways along the northeast edge of the airport under the northern bridge alternatives (C3a, C3b, C4) could cause fish to alter their migration corridors.

Runoff from new roads, if not collected and treated, would create temporary, localized increases in water turbidity of drainage pathways and in the Tongass Narrows. In addition, some contaminants such as oil and metals from vehicle brake dust are also likely to reach the drainage pathways and Tongass Narrows. In the climate of Ketchikan, frequent rainfall would limit accumulation of these materials on roadways. Thus, it is unlikely that these materials would run off the bridge or roadways in concentrations that would create conditions harmful to biota; again, the high circulation rates in Tongass Narrows would quickly dilute and dissipate any releases. In addition, road design is expected to include vegetated swales and other means of intercepting and filtering road runoff before discharge to streams.

A hydrocarbon/fuel/petrochemical spill could occur during project operation from a tank truck accident that spills gasoline or diesel from the bridge into the marine environment. In general, fish are less vulnerable to effects of oil spills than are most other types of marine organisms. They are mobile, can usually avoid adverse conditions, and rapidly metabolize hydrocarbons (Craddock 1977; Patton 1977). However, if hydrocarbons persisted in sediment, recent work has shown high sensitivities of fish to levels of sediment hydrocarbon concentrations in the parts per million or even parts per billion range (Horness et al. 1998). Other work has shown a very high sensitivity of salmon eggs to residual hydrocarbons from the *Exxon Valdez* spill (Bue et al 1998). Salmon use of Government Creek is noted previously, and pink, coho, and chum salmon are known to spawn in the small creek (Airport Creek) entering Lewis Cove. If a portion of this spawning occurs in tidal areas, a spill could affect egg survival in either of these estuaries. Smolt outmigration from these and other streams in the area occurs from early April through late June. Fry would probably not be vulnerable to acute effects unless a few fish became isolated in a small embayment that received heavy oiling (Brannon et al. 1995).

4.2 Government Creek

All project alternatives include features near Government Creek. Alternatives F1, F3, and G3 would use a clear-span bridge crossing at Government Creek (Figure 8). No loss of EFH would occur by the placement of a bridge over the creek. The steep side would have an abutment at the top. The gradual side may have a pier located on the slope; however, this would be above the high water area of the creek itself. A temporary impact to EFH from in-water construction activities would result in an increase in turbidity. Impacts to EFH would be minimized through implementation of Best Management Practices (BMPs), such as use of silt curtains, booms, or bales to intercept and filter runoff. Disturbed areas would be revegetated to stabilize soils quickly and minimize further runoff.

4.3 Airport Creek

All project alternatives would cross Airport Creek. All alternatives would require two clear span bridge crossings, one over each channel of Airport Creek (Figure 8). No loss of EFH would occur by the placement of bridges over the creek. No fill would be required in Airport Creek because a clear span

bridge would be used and bridge abutments would be above stream floodplains. A temporary impact to EFH from in-water construction activities would be an increase in turbidity, which may reduce water quality, displace fish, or possibly inhibit the food production of plants and other food sources for fish. Impacts to EFH would be minimized through implementation of BMPs to intercept turbid runoff, as described above, and by timing construction outside of critical periods for anadromous fish.

4.4 Other Anadromous Waterways

Alternatives F1 and F3 would require a bridge crossing at an unnamed anadromous fish stream and a culvert crossing at another unnamed anadromous fish streams southeast of Government Creek. In accordance with the memorandum of agreement between DOT&PF and ADF&G, the culvert crossing would be designed to a Tier 1 stream simulation design level and would maintain natural stream conditions such as flow, substrate, and existing fish passage efficiency (see Figure 8). Any impacts to EFH would be temporary and be related to the installation of the culvert(s). This could include such things as a temporary increase in turbidity levels or a temporary diversion of the creeks to allow installation of the culverts. There would be no permanent loss of EFH resulting from the culvert crossing, because the required culvert design features noted above would preserve EFH. The bridge crossing would not require fill because a clear span bridge would be used and bridge abutments would be placed above the stream floodplains. The bridge crossing would not create a loss of EFH. Impacts to EFH would be minimized through implementation of BMPs.

4.5 Cumulative Effects

Cumulative effects are defined as "those effects of future State or private activities, not involving Federal activities, which are reasonably certain to occur within the area of the Federal action subject to consultation" (50 CFR 402.02).

The Gravina Access Project alternatives, when considered with past, present, and other future actions, would have a cumulative effect on EFH. Existing development, coupled with future actions (improvements to the airport, the Gravina Island timber sale, the road north of the airport, and widely dispersed residential and commercial development) would further impact fish species and habitat in Tongass Narrows as a result of direct disturbance during construction, long-term use of the lands, and the improved access to and increased human activity in the Tongass Narrows. Roadways, and clearing and filling for residential, commercial, and resource (timber) development, would lead to the diversion of small streams into culverts, channelization of flows, and increased runoff intensity that could alter natural stream dynamics. This would potentially affect EFH associated with tributaries to Vallenar Bay and Bostwick Inlet, and important marine habitat at Vallenar Bay and Bostwick Inlet.

Pollutant sources associated with foreseeable development include untreated runoff from bridges, ferry emissions, roadway runoff, runoff and pollutant spills associated with industrial (including timber) and commercial development, runoff and pollutants produced by residential development, erosion resulting from land clearing and altered stream hydrology, and increased human activity on currently inaccessible lands.

5.0 Conservation Measures

Construction of this project will require a Title 16 Permit through the Alaska Department of Natural Resources, a determination of consistency with the Coastal Management Plan, and a U.S. Army Corps of Engineers Permit for fill in wetlands and waters of the United States. Coordination with NOAA Fisheries has been ongoing during the planning of this project. The following conservation measures will be incorporated to avoid, minimize, and mitigate impacts to EFH. Based on informal consultation with NMFS, it was determined that timing windows will be subject to modification when we can provide

specific design details of the selected alternative (Miller 2004). These are general measures that will be modified to specifically address details of the preferred alternative through further coordination with the agencies during design.

- At all stream crossings (both culverts and bridge crossings), stream banks would be re-contoured to approximate original conditions and re-seeded with native vegetation to minimize erosion.

- BMPs, developed in accordance with EPA's "Storm Water Management for Construction Activities: Developing Pollution and Prevention Plans and Best Management Practices," EPA Document 832 R-92-005 (EPA 1992), will be employed to minimize the introduction of sediment and siltation of ponds and streams during adjacent fill placement and during culvert placement.

- All anadromous fish stream crossings would be designed to minimize impacts on stream function and to provide passage to both anadromous and resident fish. All road structures crossing anadromous fish habitat channels would be designed to provide passage for juvenile and adult salmon per Alaska Statutes Title 41 (DNR cataloged anadromous streams) standards.

- In-water work in Tongass Narrows would be restricted, as follows. General use of boats and barges could occur year round for general survey and work on bridge structures above water. Except for blasting, dredging, and pile driving, other work in marine waters could occur July 1-February 28. As further described below, blasting, dredging, and pile driving could occur only November 1-February 28, with the possible exception of mid-channel locations, based on further consultation with the Alaska Department of Natural Resources (DNR), NOAA Fisheries, U.S. Army Corps of Engineers (COE), and U.S. Fish and Wildlife Service (USFWS).

- The following conservation recommendations will be followed with respect to pile driving in Tongass Narrows: A vibratory hammer would be used to drive steel piles instead of an impact hammer. Piles should be driven during low tide when in intertidal and subtidal areas.

- All construction in and around anadromous fish streams will take place when stream disturbances would have the least impact on anadromous fish species. The recommended time period for in-stream construction work in the Ketchikan area is June 15 through August 7 (Minnillo 2004). In-stream construction activities should completely avoid the period from August 8 through June 14. For the Ketchikan area, salmon fry generally emerge in the spring from April 15 to May 15, and the adults move into the streams by August 1 and remain through October 31 (Doherty 2003). However, timing of fry emergence and adult spawning depend on the species of fish present in each stream. For example, steelhead spawn in the spring and eggs are generally present in the stream until the middle of July. Fish surveys will be conducted in the summer of 2004 for all streams that will be affected by the project. If additional species are found to be present in the project streams, the existing timing window for in-stream construction (June 15 to August 7) may be modified to protect additional species. Construction work that occurs above the ordinary high water area of the stream and does not include in-stream construction may be conducted throughout the year (Minnillo 2004). In-water work areas, except for stream crossings by construction equipment, will be isolated from flowing waters of all anadromous fish streams.

- Any necessary in-water blasting will be performed such that ground vibration (particle velocity) does not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch. The project will employ monitoring devices to ensure adherence to these standards. If blasting amounts are minor, and if agreed by the agencies, monitoring may not be undertaken.

- The contractor will be required to prepare a blasting plan prior to any blasting activities. The blasting plan will need be submitted for review by NOAA Fisheries for both EFH and marine mammal impacts. A fish and invertebrate monitoring program will be required for any proposed blasting activities. A pre-blasting survey will be required to ensure that no fish schools are in the vicinity of the blasting area. If fish schools are detected, blasting will be delayed until they leave. A biologist will check the area and record any kills that are within 100 feet up current and 300 feet down current of the blast area after blasting is completed. Monitoring of the dredge materials may be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Measures such as covering the rock to be blasted with sand may be used to dampen blast impact. In-water blasting shall avoid the entire months of March through June to avoid juvenile salmonids and the period from June through October 31 to avoid adult salmon. All project-related activities would conform to the pertinent provisions of the Marine Mammal Protection Act and the Endangered Species Act.

- Dredged debris would be placed onto a barge where it would enter a settling basin and be disposed of on land. Only under Alternative F3, which could require substantial removal of sediment and rock, would ocean disposal be necessary. These operations for Alternative F3 would be consistent with the regulations of Clean Water Act, Section 404(b)(1) (disposal of dredged materials into waters of the U.S.) and Marine Protection, Research, and Sanctuaries Act, Sections 102 and 103. Monitoring of the dredged materials may be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Dredging activities will avoid the entire months of March through October.

- All fueling and servicing operations will be conducted at least 100 feet away from all streams and water bodies, and fuel storage will be at least 100 feet away from all wetlands and water bodies.

- All necessary permits and agency approvals will be obtained prior to construction, and any permit stipulations will be incorporated into the contract specifications.

- Perimeter staking will be required on the outside of the disturbance area prior to construction to ensure that there is no additional impact from construction activities.

- Silt fences will be used adjacent to EFH stream channels, just beyond the estimated toe of fill.

- Gravel and streambed material will be used in the bottoms of fish-passage culverts.

- Riprap will be placed at specific locations along the stream bank as necessary to maintain stream bank integrity. Placement of riprap at anadromous fish streams should include the use of bioengineering techniques to improve habitat value of the riprap, by incorporation of willow stakes or other locally available vegetation.

In addition to the conservation measures listed above, more specific requirements may result from the permit process for the preferred alternative, should a build alternative be selected. By design, the permit stipulations will protect the known fish resources in the project area and will protect EFH areas.

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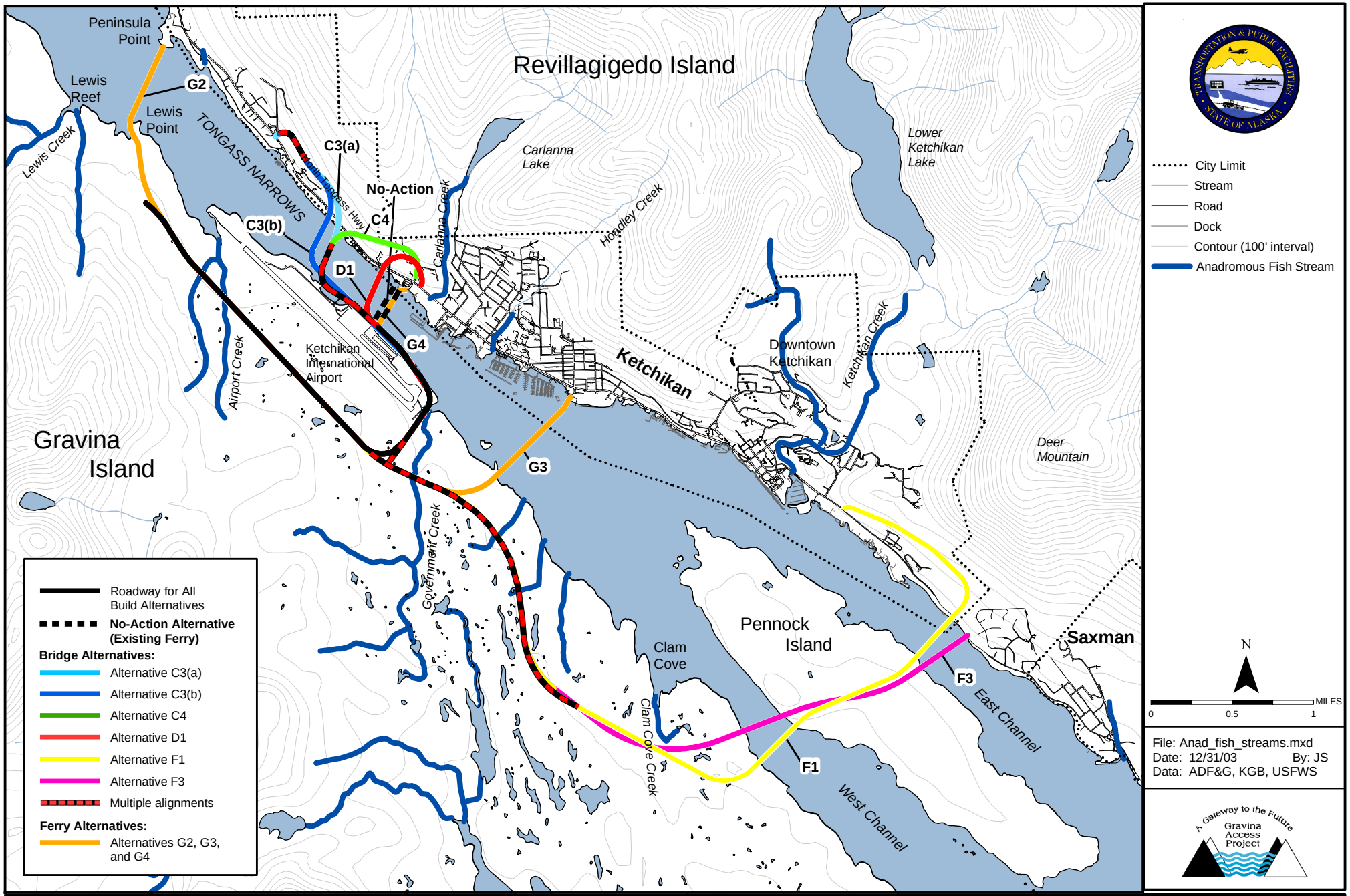
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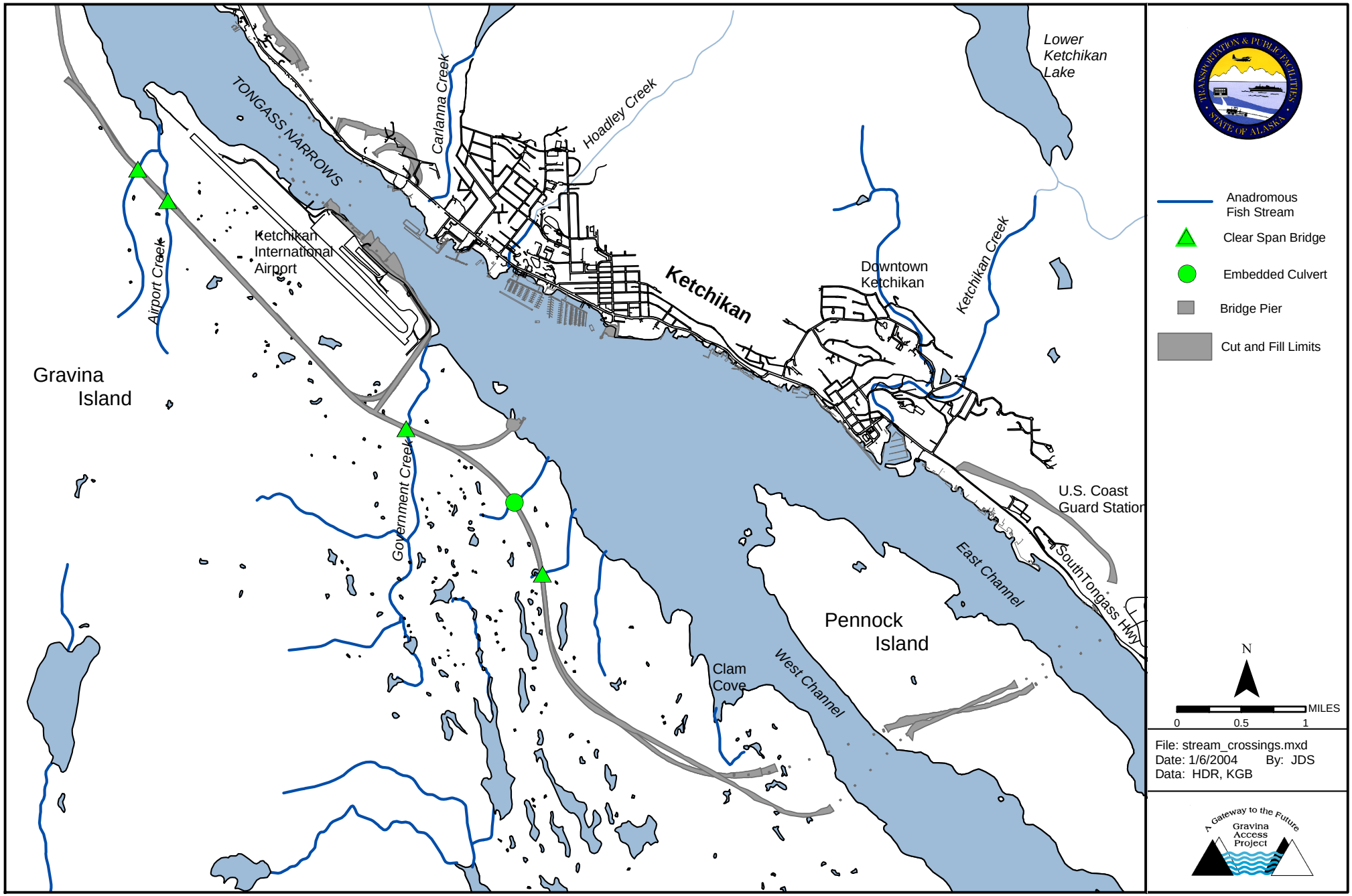
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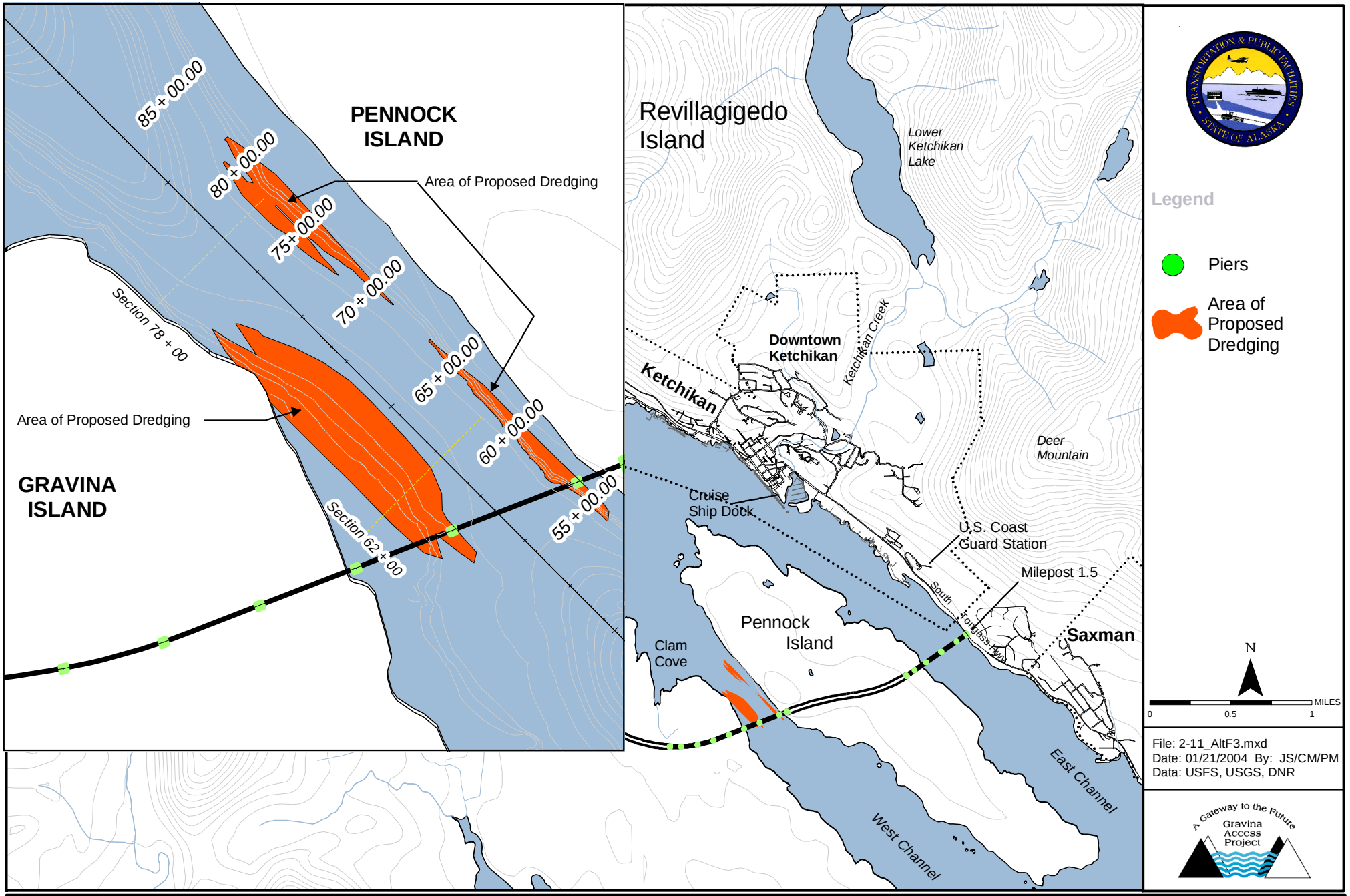
December 2003
Gravina Access Project

Figure 1
Potential EFH Impacts



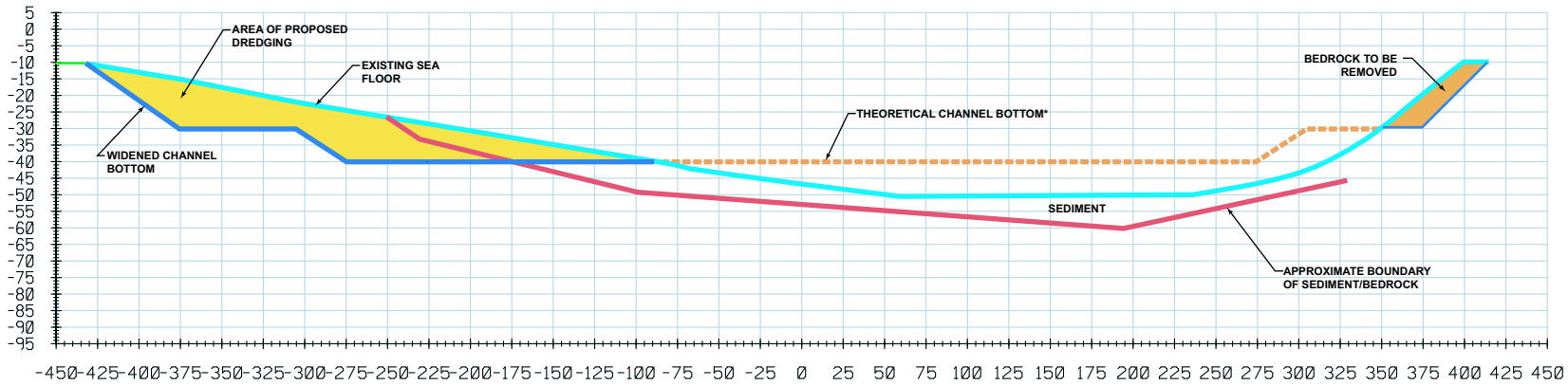
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Gravina Access Project

Figure 2
Types of Crossings at Anadromous Fish Streams

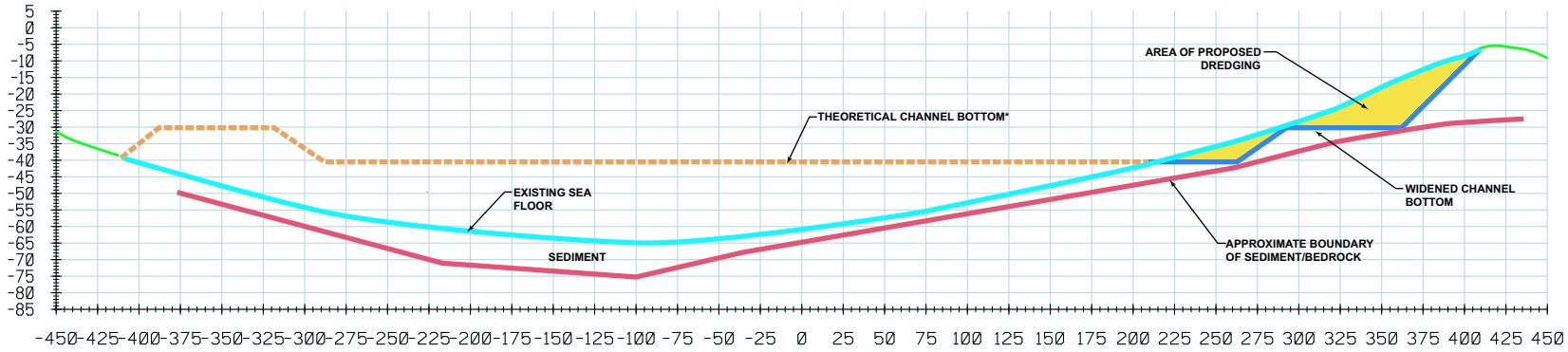


Gravina Access Project
Environmental Impact Statement

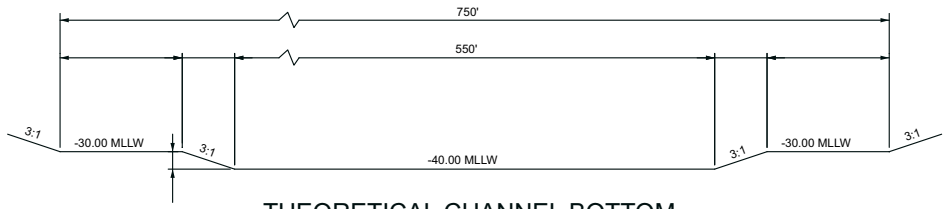
Figure 3
Alternative F3, West Channel Widening



62+00



78+00



THEORETICAL CHANNEL BOTTOM

NOT TO SCALE

*Theoretical channel bottom configuration is based on a modeled, minimum section which provides adequate draft for 2-way cruise ship traffic.

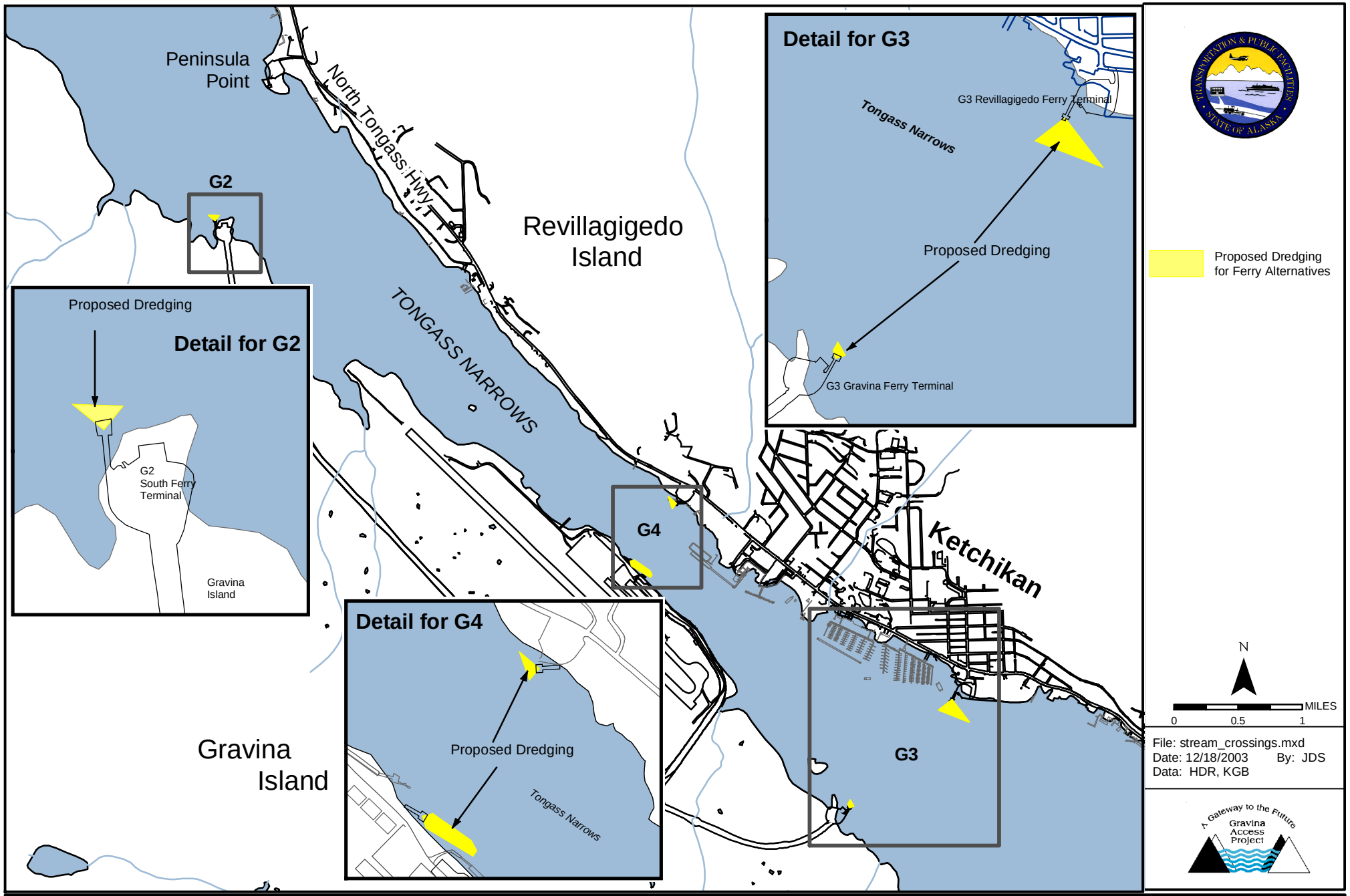
- Theoretical Channel Bottom
- Existing Sea Floor
- Approximate Boundary of Sediment/Bedrock
- Widened Channel Bottom
- Bedrock To Be Removed
- Area of Proposed Dredging

File: Figure 2.16 F3 Widening Cross Sections 1 20 04.ai
Date: 1/20/04 By: SEA/SD
Data: HDR

A Gateway to the Future
Gravina Access Project

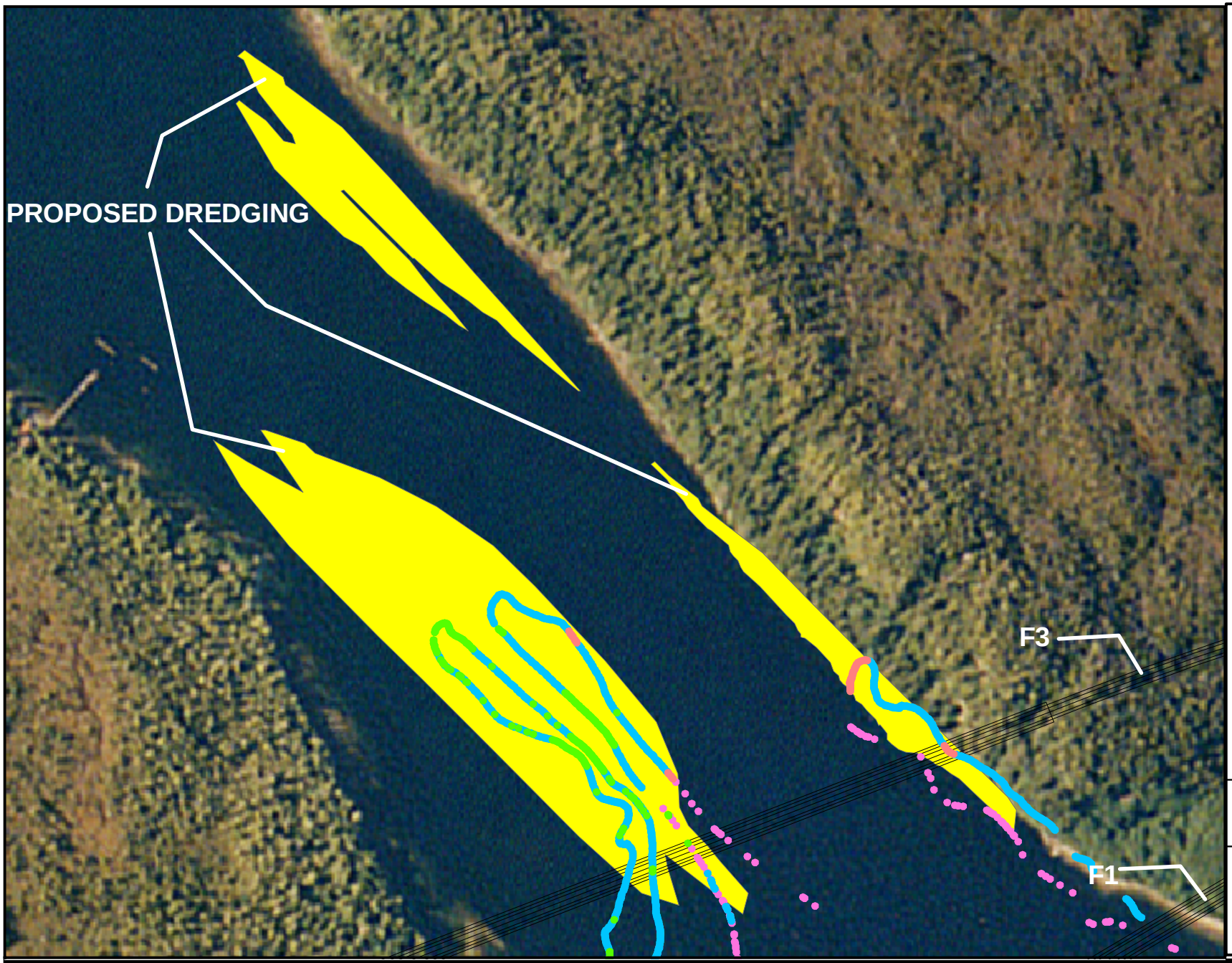
Gravina Access Project
Environmental Impact Statement

Figure 4
Alternative F3, West Channel Widening Cross Sections



December 2003
Gravina Access Project

Figure 5
Proposed Dredging for Ferry Alternatives



LEGEND

- Proposed Dredging
- Algae
- Bullkelp
- Sea Cucumber
- Eelgrass Bed
- Laminaria

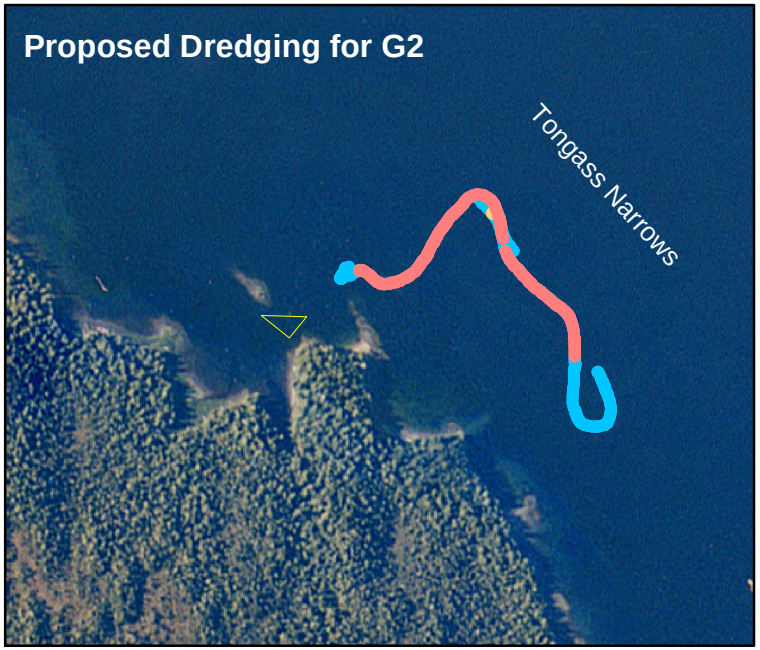
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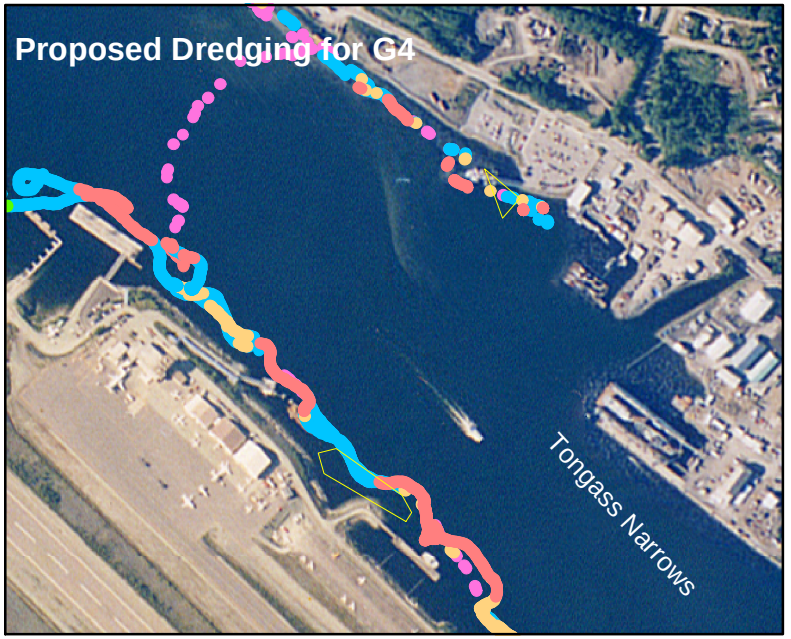
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Date: 1/2004 By: JS
Data: HDR, KGB

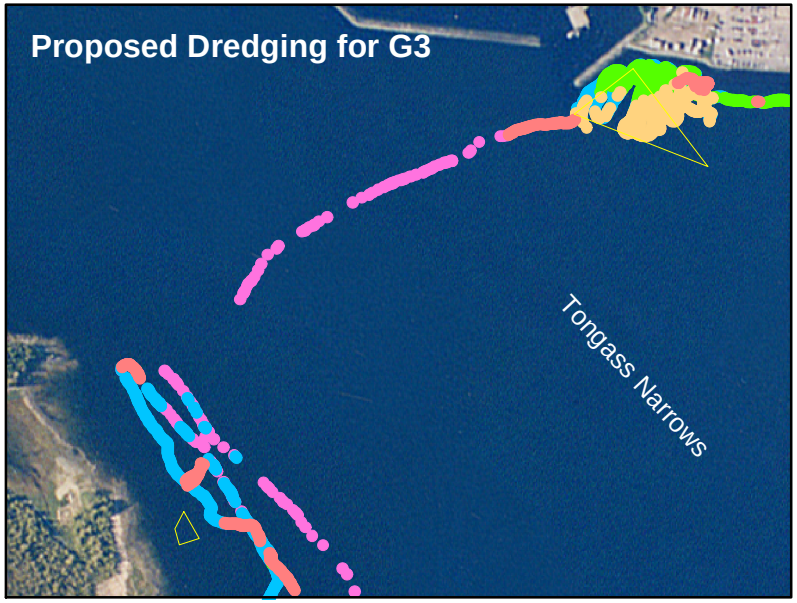
A Gateway to the Future
Gravina Access Project

Gravina Access Project

Figure 6
Proposed Dredging locations for F3 and Marine Resources







Algae
Bullkelp
Sea Cucumber
Eelgrass Bed
Laminaria
Proposed Dredging

N

500 250 0 Feet

File: sirena-impacts.mxd
Date: 12/18/2003 By: JDS
Data: HDR, KGB

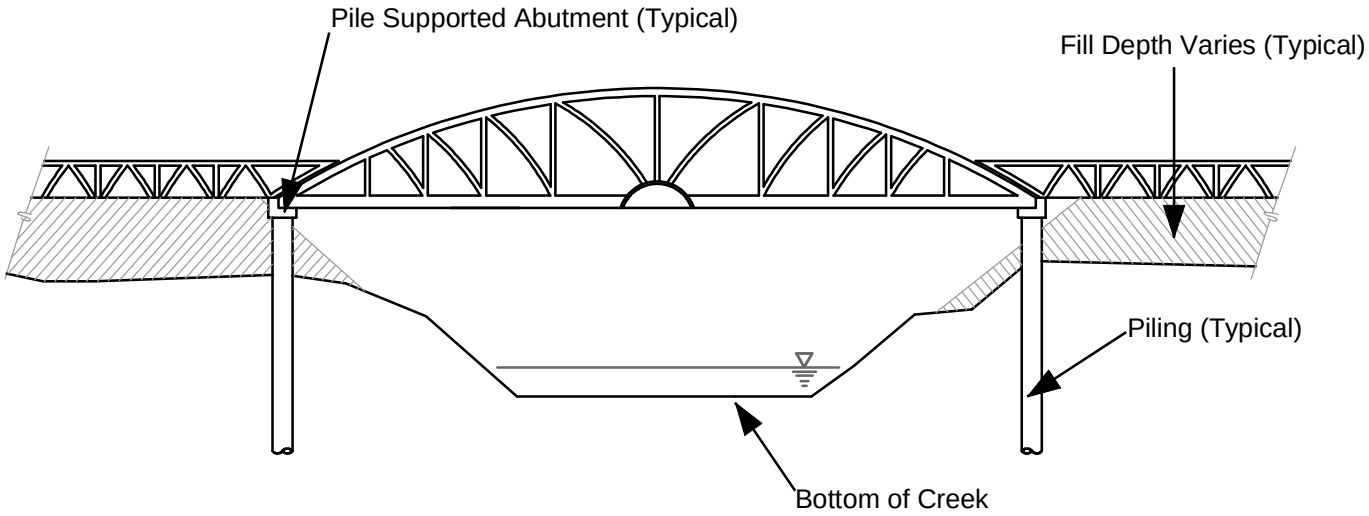
A Gateway to the Future
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Figure 7
Proposed Dredging for Ferry Alternatives and Marine Resources

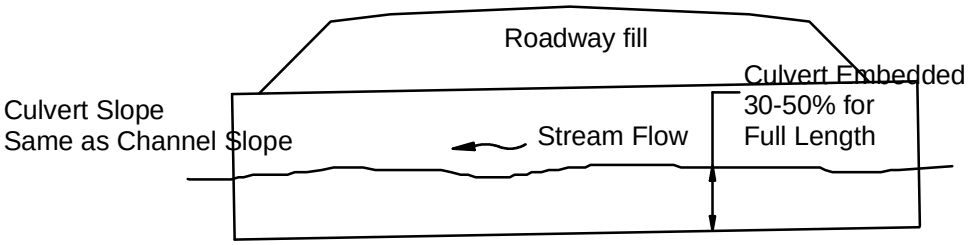
Conceptual Clear Span Bridge

Elevation View

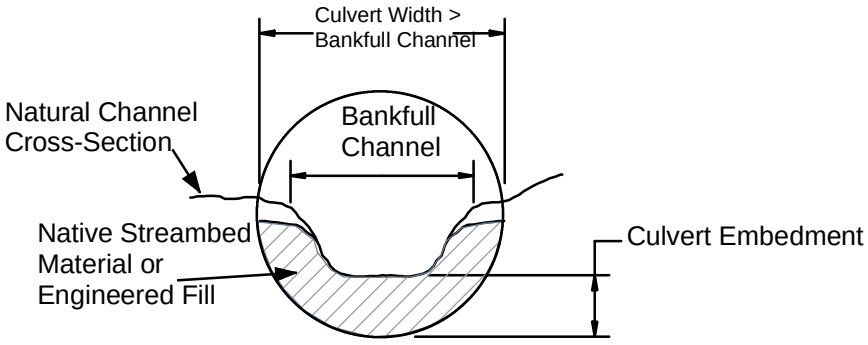


Conceptual Embedded Culvert

Profile View



Section View



December 2003
Gravina Access Project

Figure 8
Proposed Anadromous Stream Crossings

APPENDIX A

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES AND NATIONAL MARINE FISHERIES SERVICE ESSENTIAL FISH HABITAT: ALASKA AGREEMENT FOR EAs AND EISs

Consultation with National Marine Fisheries Service (NMFS) on Essential Fish Habitat (EFH).

1. Alaska Department of Transportation & Public Facilities (DOT&PF), in accord with 50 CFR 600.920(c) will be the designated representative of the Federal Highway Administration (FHWA) in the consultation process. The FHWA remains ultimately responsible for compliance.

2. The consultation process for projects requiring an environmental assessment or an environmental impact statement will be accomplished under the existing NEPA/404 merger Agreement process.

3. As part of the initial scoping letter to NOAA Fisheries, DOT&PF will identify possible EFH resources and will request additional information as appropriate.

4. DOT&PF, in concert with FHWA, will determine if the project may adversely effect EFH.

5. DOT&PF will notify NOAA Fisheries that a project may adversely effect EFH and will initiate discussion on possible conservation measures.

6. An EFH assessment will be incorporated in the NEPA document as part of the fish and wildlife section of the environmental consequences, and will be titled or co-titled as such.

7. DOT&PF will provide NOAA Fisheries the draft EA or pre-DEIS including the draft EFH assessment for their review and comment. NOAA Fisheries will respond as appropriate including, preliminary EFH conservation recommendations. If NOAA Fisheries believes that the proposed action may result in substantial adverse effects on EFH, or that additional analysis is needed to accurately assess the effects of the proposed action, NOAA Fisheries will request that FHWA initiate expanded consultation.

8. DOT&PF will revise, amend the EFH assessment as appropriate based on comments and necessary additional coordination with NOAA Fisheries.

9. Transmittal of the approved EA or DEIS to NOAA Fisheries will be considered "Submittal of the EFH Assessment" under 50 CFR 600.920(h)(3).

   The EFH assessment, as outlined in 600.920(g), must contain the following: 1) a description of the proposed action; 2) an analysis of individual and cumulative effects of the action on EFH, the managed species, and associated species such as major prey species, including affected life history stages; 3) the agency's views regarding effects on EFH; and 4) a discussion of proposed mitigation, if applicable. Additional information which may be appropriate to include in the EFH assessment is listed in 50 CFR 600.920(g)(3).

10. NOAA Fisheries will respond, in writing, as to whether it concurs with the findings of the EFH assessment as part of their formal comments on the document. If applicable, final EFH conservation recommendations may be included.

11. If necessary, additional coordination to resolve concurrence issues will be initiated. As applicable, DOT&PF will respond, in writing, within 30 days with respect to conservation recommendations.

    The response must include a description of measures proposed for avoiding, mitigating, or offsetting the impacts of the project on EFH, as required by 50 CFR 600.920(j). If the response is inconsistent with NOAA Fisheries Conservation Recommendations the reasons for not following the recommendations must be explained, including the scientific justification for any disagreements with NOAA Fisheries over the anticipated effects of the project or measures needed to avoid, minimize, mitigate or offset such effects.

12. The FONSI or FEIS will address NOAA Fisheries response to the transmittal.

The steps outlined above address the abbreviated consultation procedures described in 50 CFR 600.920(h). If at any point in the process it is determined that the project would result in substantial adverse effects to EFH or that additional information/analysis is needed, expanded consultation procedures will be implemented. A party may request expanded consultation at any point in the process. The parties will determine how best to implement expanded consultation based on the specifics of the project. It is recognized that additional information may be required, that a site visit will be necessary and that conservation recommendations will need to be addressed. However, to the extent practical, existing NEPA/404 Agreement procedures will be utilized to fulfill the requirements of expanded consultation.

In order to provide a reference to the sequence of activities outlined in this document to the NEPA/404 Agreement, the concurrence points are identified. Concurrence on purpose & need would be requested concurrent with or just after item 3. Concurrence on range of alternatives (preferred alternative for EAs) would be requested before or concurrent with item 5. Request for concurrence in the preferred alternative would occur before or concurrent with item 11.

Dispute Resolution

If an FHWA decision is inconsistent with NOAA Fisheries EFH Conservation Recommendations, 50 CFR 600.920(j)(2) allows the NOAA Assistant Administrator for Fisheries to request a meeting with the head of the FHWA to discuss the proposed action and opportunities for resolving any disagreements. NOAA Fisheries will endeavor to resolve any such issues at the field level wherever possible, typically in a meeting between the NOAA Fisheries Regional Administrator and The FHWA Division Administrator.

APPENDIX B

LETTERS FROM NATIONAL MARINE FISHERIES SERVICE REGARDING ESSENTIAL FISH HABITAT

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

October 13, 1999

ALASKA DOT & PF
SOUTHEAST REGION
OCT 8 1999
PRECONSTRUCTION/DESIGN

Al Steininger, P.E.
Project Manager
State of Alaska
Department of Transportation
and Public Facilities
Design and Engineering Services Division
Southeast Region - Design
6860 Glacier Highway
Juneau, Alaska 99801-7999

RE: Gravina Access Project - Agency Scoping Comments

Dear Mr. Steininger:

Thank you for soliciting scoping comments on the referenced project. The purpose of the project is to provide better access between the Ketchikan airport and the city of Ketchikan. Alternatives were discussed at the September 27 scoping meeting held in Juneau and include enhanced ferry service, an underground tunnel, and a bridge, the location of which will be considered at a number of locations. The National Marine Fisheries Service (NMFS) has the responsibility to comment on impacts to living marine resources under our jurisdiction including anadromous fish, marine fish and invertebrates and marine mammals. Accordingly, we would favor those project alternatives and designs that minimize direct, indirect and cumulative impacts to anadromous fish streams, wetlands, intertidal areas, submerged aquatic vegetation, marine habitats, and the relevant species using them.

Mark Dalton of HDR consulting has met separately with Steve Brockmann of the U.S. Fish and Wildlife Service and Jack Gustafson of the Alaska Department of Fish and Game, and provided us with a summary of resource issues provided at that meeting. Of the issues listed, the NMFS is also concerned with numbers 1, 3, 4, 5, 6, 9, 10, 11, 12, 13, 16, 17, 19, 20, and 24. Rather than re-state these issues, we are providing additional comment as follows.

Of the issues listed above, numbers 4,5 and 6 address the presence of marine mammals in Tongass Narrows and suggest that additional studies may be necessary. We concur with this recommendation, as any in-water work that generates underwater noise will need to be evaluated for its potential to disturb marine mammals that may be present (as well as migrating juvenile salmonids and spawning herring). Enclosed is a draft copy of a report for the marine mammal observation program implemented aboard some of the ferries of the Alaska Marine Highway System. Sightings collected through this program show humpback whale, killer whale and Pacific white-sided dolphin sightings in the northern area of Tongass Narrows, and/or the confluence of Tongass Narrows, Clarence Strait and Behm Canal. The humpback whale and Steller sea lion are listed as endangered and threatened species, respectively. Depending on the magnitude of impact to these species, it may be necessary to satisfy consultation requirements of the Endangered Species Act with the responsible Federal agency, the Federal Highway Administration.

The environmental impact statement (EIS) for the project will need to address the essential fish habitat (EFH) requirements of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The EIS should include an assessment of the impacts of the proposed action on EFH in a chapter or section titled "Essential Fish Habitat". The EFH assessment should include 1) a description of the proposed action; 2) an analysis of individual and cumulative effects of the action on EFH, the managed species, and associated species such as major prey species, including affected life history stages; 3) the responsible Federal agency's views regarding the effects of the action on EFH; and 4) a discussion of any proposed mitigation, if applicable.

Upon receipt of the EFH assessment, NMFS will provide back to the Federal agency or their representative, any EFH conservation recommendations, as appropriate, if we believe the project would adversely affect EFH. In order to develop these conservation recommendations, whenever possible, at least 60 days notice prior to a final decision on an action, or 90 days if the action would result in a substantial adverse impact to EFH. Upon receipt of NMFS conservation recommendations, the Federal agency is required to respond in writing to NMFS within 30 days.

EFH Assessment Information:

To assist you in developing an EFH assessment, we have identified EFH in the general vicinity of the current ferry between the airport and the city of Ketchikan. This list would need to be verified for specific project sites, but is likely to be similar, if not identical. Specific information on habitat for salmon should be obtained from the Alaska Department of Fish and Game

and U.S. Fish and Wildlife Service in Ketchikan. EFH for all five species of Pacific salmon (chinook, coho, chum sockeye, pink) is present in the project area.

Following are habitat characteristics for the non-salmonid species of EFH. References to habitat locations indicate the following depth associations; inner (1-50 meters) and middle (50-100 meters)and outer (100-200 meters) shelf regions and upper (200-1000m) and lower (>1000m) slopes and basin (>3000m).

Pacific Ocean Perch Adults and Late Juveniles:

Adults found in outer shelf and upper slope. Juveniles found in inner, middle, and outer shelves, and upper slope. Larval stages found in same as juveniles plus lower slope and basin. Adult substrates are gravel, pebble, and cobble, juvenile substrates are the same as adults plus boulders.

Yelloweye Rockfish Adults and Late Juveniles:

Adults and juveniles are both found in the middle and outer shelves and upper slope. Habitat for both is bays, estuaries, and island passes. Both life stages are demersal. Found in substrate areas of rock, coral and cobble. High concentrations are found associated with high relief containing refuge spaces such as overhangs, crevices and caves. Feeding areas are those containing fish, shrimp and crab.

Shortraker and Rougheye Rockfish Adults and late Juveniles:

Adults occur in outer shelf and upper slope, in depths from 25 to 875 m and are semi-demersal. Juveniles are found in the middle and outer shelves. Adults found over all substrates including mud, clay, silt, sand, gravel, pebble, cobble, boulder and bedrock. However, from submersible observations, soft substrates of sand or mud usually had the highest densities; whereas hard substrates of bedrock, cobble or pebble usually had the lowest adult densities. Habitats with steep slopes and frequent boulders were used at a higher rate than habitats with gradual slopes and few boulders. It is suspected that juveniles occupy shallower habitats than adults.

Dusky Rockfish Adults and Late Juveniles:

Adults found in outer shelf, upper slope and nearshore waters of Southeast Alaska along rocky shores at depths less than 50m. Juveniles found in inner (1-50m) and middle (50-100m) slopes. Substrates for adults and juveniles is gravel, cobble, boulder. Juvenile dusky rockfish have also been captured in nearshore eelgrass and kelp beds. Adults are semi-demersal/semi-pelagic.

Walleye Pollock Adults and Eggs:

Both adults and eggs occur in outer shelf. Walleye pollock and their eggs are pelagic, therefore they may occur in waters over any substrate.

Sablefish Adults and Late Juveniles:

Adults and late juveniles occur in the upper and lower slopes. Adult and late juvenile sablefish are pelagic and may occur in waters over any substrate.

Pacific Cod Adults and Late Juveniles:

Occur in both inner and middle shelf regions. Both life stages are demersal. Adults occur from the shoreline to 500m, juveniles from 60-150m. Preferred substrate is soft sediment, from mud and clay to sand.

Arrowtooth Flounder Adults and Late Juveniles:

Occur in both inner and middle shelf regions. Both life stages are demersal. Juveniles inhabit shallow areas until about 10 cm in length. Widespread distribution mainly on middle and out portions of shelf. Wintertime migration to shelf margin and upper continental slope to avoid cold temperatures.

Sculpin spp. Adults and Late Juveniles:

Occur in both inner and middle shelf regions. Both life stages are demersal. Broad range of habitats from intertidal pools, and all shelf substrates (mud, sand, gravel, etc.).

Skates spp. Adults and Late Juveniles:

Occur in middle shelf regions. Both life stages are demersal. Broad range of substrate types (mud, sand, gravel, and rock) and the lower portion of the water column.

Thank you for the opportunity to comment. We look forward to continued coordination for this project. If you have any further concerns or questions please contact Linda Shaw at (907) 586-7510.

Sincerely,

P. Michael Payne
Assistant Regional
Administrator
for Habitat Conservation

cc: EPA Anchorage (Mark Jen)
ADEC, AADGC, ADNR, Juneau
ADF&G, USFWS, Ketchikan

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-4428
TEXT: (907) 465-4647
FAX: (907) 466-4414

DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DESIGN & ENGINEERING SERVICES DIVISION
SOUTHEAST REGION - DESIGN

February 21, 2003

Linda Shaw
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

Re: Draft Essential Fish Habitat Assessment
Gravina Access Project #67698 / ACHP-0922(5)

Dear Ms. Shaw:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration, is preparing a Draft Environmental Impact Statement (DEIS) to assess impacts of the proposed Gravina Access Project located in Ketchikan. DOT&PF has hired HDR Alaska, Inc., to complete the EIS studies. Planning has been underway since 1999 with preliminary engineering and public and agency scoping. A draft EIS is anticipated in Spring 2003.

The proposed project corridor is located between Gravina Island and Revillagigedo Island in the Ketchikan Gateway Borough. The two islands are separated by Tongass Narrows, a 13-mile-long waterway that varies in width from approximately ¼ to 1 mile. As shown on Figure 1 of the attached draft Essential Fish Habitat (EFH) assessment, six bridge alternatives and three ferry alternatives are reasonable alternatives evaluated in the DEIS.

In accordance with the EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act, we present an EFH assessment with the following information: (1) a description of the proposed action, (2) an analysis of the effects on EFH, (3) the effects of the action on EFH, and (4) proposed mitigation.

We have determined that all of the project alternatives may adversely affect EFH, as established by the 1996 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act and the Department of Commerce's EFH consultation regulations. We request your review of the enclosed draft EFH Assessment. I would appreciate your comments on the draft assessment and any recommendations and/or proposed conservation measures you may have at this time.

Based on your comments and recommendations, we will revise the draft assessment and include it in the Draft EIS for your official review per the January 7, 2000 agreement between FHWA and NMFS.

If you have any questions regarding this request, please do not hesitate to contact me at 907/465-4498 or our Consultant Project Manager, Mark Dalton, at 907/274-2000.

Sincerely,

Reuben Yost
Regional Environmental Coordinator

Copies:

Roger Healy, ADOT&PF
Mark Dalton, HDR
Tim Haugh, FHWA

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

March 14, 2003

ALASKA DOT & PF
SOUTHEAST REGION
MAR 2 0 2003
PRELIMINARY DESIGN & ENVIRONMENTAL

Mr. Reuben Yost
Regional Environmental Coordinator
Alaska Department of Transportation
and Public Facilities
6860 Glacier Highway
Juneau, Alaska 99801-7999

RE: Draft Essential Fish Habitat (EFH) Assessment,
Gravina Access Project, #67698/ACHP-0922(5)

Dear Mr. Yost:

The National Marine Fisheries Service (NMFS) has reviewed the referenced Draft EFH assessment. NMFS offers both general and specific revisions for your consideration.

General Comments:

Page 1, Section 1.0, B., second paragraph, last sentence, and Page 13, Section D.:

This sentence states that "Alternatives F1 and F3 would require placing culverts in an unnamed anadromous fish stream that would cause loss of EFH." Section D. reiterates this point. The EFH assessment and DEIS should include, as an alternative for analysis, the use of bridges for these alternatives. Bridges usually eliminate or significantly minimize adverse effects to EFH.

Page 10, Section 4.0, A., first paragraph, fourth and fifth sentences:

These sentences state that "There would be some permanent loss of eelgrass beds from placement of fill in Tongass Narrows. Pier footings and the bridge structures could slow the growth of eelgrass beds by shading, which indirectly would negatively impact EFH."

The EFH assessment should document how much eelgrass would be impacted and where it is located. Figure 1 should map the location of the eelgrass beds, as well as other sensitive habitats, including kelp beds and wetlands. A sentence should

be added to this section that mentions the loss of interspersed eelgrass and kelp in the next section "Impacts of Pier Construction and Modification." Acreage of impacts by habitat type of eelgrass, kelp and wetlands should be included in Table 1-1, which currently provides only "freshwater" and "marine" impacts.

Page 11, Section 4.0, A., third paragraph:

This paragraph outlines plans for channel widening that would deepen a 2,000 foot long by 550-750 foot wide area from -10 to -40 mean lower low water (MLLW). According to this section "This action would eliminate interspersed eelgrass and kelp beds located in this area. Newly exposed soil and rock surfaces would be re-colonized over a period of years. Ultimate benthic assemblages are expected to resemble those now found in similar substrates and depths. Because of the loss of some shallow water habitats, especially on the southwest side of the channel, overall productivity in the area would be less than current productivity in the existing shallower areas."

This discussion should indicate how much eelgrass and kelp would be eliminated, and where it is located (preferably on a map). It is unlikely that these communities would re-establish in the deeper depths that would result. Eelgrass is typically found to -20 feet MLLW in southeast Alaska, and kelp to -60 feet MLLW. This should be clearly stated, and the document should provide a more specific description of the benthic communities referred to as replacing those eelgrass and kelp communities. NMFS may be able to assist with a dive survey to document the benthic habitat in this area. United States Fish and Wildlife Service staff have also expressed interest in a possible dive survey for this project (Mr. Ed Grossman, personal communication, March 11, 2003).

Page 14, fifth bullet:

The blasting plan will need to be reviewed by NMFS for both EFH and marine mammal impacts.

Page 15, fourth bullet:

Placement of riprap along stream banks to maintain stream bank integrity should include the use of bioengineering techniques to improve habitat value of the riprap, by incorporation of willow stakes, or other locally available vegetation.

Specific Comments:

Page 3, section 3.0, penultimate sentence:

Add boldface type to sentence as follows.

"These include Government Creek, Airport Creek **and its tributary**, and two unnamed streams (Figure 1)."

Page 4, section 3.0, A., third sentence:

Replace "dusty rockfish" with "dusky rockfish".

Page 4, section 3.0, A., fourth sentence:

Replace "shore tracker" with "shortraker rockfish".

Page 4, section 3.0, A., eight sentence:

Replace "species; they", with " species, which".

Page 5, section 3.0, C., fifth sentence:

Remove the word "and" from "lower (>1000 meters) and slopes and basen (>3000 meters) (NMFS 1999)."

Page 5, section 3.0, C., "Arrowtooth Flounder" paragraph, fourth sentence:

Remove "s" from word "desmersal" to spell as "demersal".

Page 5, section 3.0, C. "Dusty (sic) Rockfish" paragraph, title and first sentence:

Replace "Dusty rockfish" with "Dusky Rockfish".

Page 6, section 3.0, C. "Pacfic Cod":

Add the sentence "Juvenile Pacific cod have been captured in nearshore eelgrass and kelp beds."

Page 6, section 3.0, C. "Shore tracker (sic) and Rougheye Rockfish":

Replace "Shore tracker" with "Shortraker"

Thank you for the opportunity to review the draft EFH assessment. Please direct any questions you may have regarding these comments to Linda Shaw at (907) 586-7510.

Sincerely,

Jonathan M. Kurland
Assistant Regional Administrator
for Habitat Conservation

cc: EPA, Juneau
ADEC, AADGC, ADNR, ADF&G, USFWS, Juneau
ADF&G, Ketchikan

APPENDIX R
Public and Agency Comment

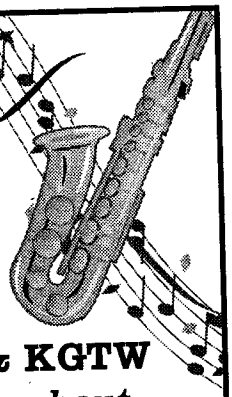
Notices of Availability of DEIS and
    Notices of Public Hearing
Agency Comment on DEIS
Section 7 Correspondence
Section 106 Correspondence
EFH Correspondence
Public Comment on DEIS
    9-17-03 Public Hearing Transcript
    9-18-03 Public Hearing Transcript
DOT&PF Responses to Comments
Other Agency Correspondence

Notices of Availability of DEIS and Notices of Public Hearing

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Notice of Public Hearing

A Gateway to the Future
Gravina Access Project

Draft Environmental Impact Statement
Gravina Access Project

The Alaska Department of Transportation and Public Facilities (DOT&PF) has completed, and the Federal Highway Administration (FHWA) has approved for public distribution, a Draft Environmental Impact Statement (EIS) for the Gravina Access Project, in compliance with the National Environmental Policy Act. The Draft EIS examines ways to link Revillagigedo Island, the location of Ketchikan, Saxman, and other communities, to Gravina Island, the location of the Ketchikan International Airport and adjoining lands that offer recreational and development potential. Testimony at public hearings and in writing will be used to prepare a Final EIS.

Public Open House and Hearing. Public open house sessions will provide an opportunity for the public to review the Draft EIS, maps, and model of project alternatives. All open house and hearing sessions will occur at the Cape Fox Hotel, 800 Venetia Way, Ketchikan. The public hearings will allow individuals 3 minutes to testify and organizations will be allowed 5 minutes to testify. Sign up for each hearing session will begin at 6:00 p.m. prior to each hearing.

Public Open House	**Sept. 16, 2003**	**3:00 p.m.- 8:00 p.m.**
Public Hearing*	**Sept. 17, 2003**	**7:00 p.m.- 10:00 p.m.**
Public Hearing*	**Sept. 18, 2003**	**7:00 p.m.- 10:00 p.m.**

*An open house will occur from 5:00-7:00 p.m. before each hearing. The DOT&PF, the FHWA, and the U.S. Coast Guard are conducting the hearings jointly. Note: Persons who principally have marine navigation comments are encouraged to testify at the Sept. 17 hearing, although any EIS topic may be addressed at either hearing.

Written comments on the Draft EIS must be received by October 6, 2003.
Send to:
Reuben Yost, Special Projects Manager
DOT&PF—Southeast Region
6860 Glacier Highway
Juneau, AK 99801-7999
or via e-mail: reuben_yost@dot.state.ak.us
or via fax: (907) 465-2016

The Draft EIS is available for public review at: Ketchikan Public Library (629 Dock Street), Ketchikan Gateway Borough Planning Department (344 Front Street), Gravina Access Project Office (430 Dock Street, Ketchikan—limited hours), DOT&PF (6860 Glacier Highway, Juneau), and online at www.gravina-access.com.

To obtain a copy of the Draft EIS, or for additional information about this announcement, please contact Reuben Yost, DOT&PF Special Projects Manager, at (907) 465-1828, or read the Draft EIS online at www.gravina-access.com.

Individuals with a hearing impairment may contact DOT&PF at the Telephone Device for the Deaf (TDD) number, (907) 465-4647. DOT&PF is able to offer, upon request, reasonable accommodation for special needs related to disabilities.

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

Gravina Access Project, Tongass Narrows, Ketchikan Gateway Borough, AK

AGENCY: Federal Highway Administration. U.S. Coast Guard.

ACTION: Notice of public hearing; Request for comments. Notice of availability of draft environmental impact statement (EIS).

SUMMARY: the Federal Highway Administration (FHWA), together with U.S. Coast Guard and the Alaska Department of Transportation and Public Facilities, has issued a Gravina Access Project Draft Environmental Impact Statement (EIS) on August 6, 2003. The agencies will jointly hold two public hearings to receive information concerning the environmental impacts on the project, including marine navigation impacts.

The project would construct a bridge or new ferry across Tongass Narrows in southern Southeast Alaska. The cities of Ketchikan and Saxman, along with surrounding developed areas within the Ketchikan Gateway Borough on Revillagigedo Island, are separated by Tongass Narrows from Ketchikan International Airport and developable land within the borough on Gravina Island. Ferry service currently connects Ketchikan to the airport terminal, but there is no connection to other lands on Gravina Island. The project proposes to improve transportation across Tongass Narrows by enhanced ferry or by bridge. Nine alternatives, plus No Action Alternative, are under consideration. All share in common a spine road around the airport to provide access to the airport and to other developable lands around the airport. Other developable lands include airport reserve lands, State of Alaska Mental Health Trust lands, University of Alaska lands, and private lands. The Ketchikan Gateway Borough is within Tongass National Forest.

DATES: The public hearings will start at 7 p.m. on Wednesday, September 17, and Thursday, September 18, 2003. On Tuesday September 16, from 3 p.m. to 8 p.m., a public information open house will be held to enable interested parties to learn more about the project and ask questions. Display materials will be available during the open house and beginning at 5 p.m., September 17 and 18, prior to the public hearings. Comments must be received by October 6, 2003.

ADDRESSES: The public hearings and associated open house will be held at the West Coast Cape Fox Lodge, 800 Venetia Way, Ketchikan, AK 99901. Comments on the Draft Environmental Impact Statement should be sent to Mr. Reuben Yost, Special Projects Manager, Alaska Department of Transportation and Public Facilities—Southeast Region, 6860 Glacier Highway, Juneau, AK 99801–7999. Please submit all comments in an unbound format no larger than 8½ x 11 inches and suitable for copying.

FOR FURTHER INFORMATION CONTACT: Mr. Tim A. Haugh, Environment and Right-of-Way Programs Manager, Alaska Division FHWA, P.O. Box 21648, Juneau, Alaska 99802, Telephone (907) 586–7418; Mr. James Helfinstine, Chief, Bridge Administration Program, Commander (OAN), Seventeenth Coast Guard District, P.O. Box 25517, Juneau, AK 99802–5517, Telephone (907) 463–2268; Mr. Reuben Yost, P.E., Special Projects Manager, DOT&PF Southeast Region, 6860 Glacier Highway, Juneau, Alaska 99801–7999, Telephone (907) 465–1828

SUPPLEMENTARY INFORMATION:

Background

The Gravina Access Project is one of 17 high-priority infrastructure projects in the State of Alaska to be funded under the Federal Transportation Equity Act for the 21st Century (TEA–21), enacted in 1998. The Draft EIS examines a range of alternatives: Four bridge alternatives that cross Tongass Narrows near the airport, two bridge alternatives that cross Pennock Island southeast of the airport, and three ferry alternatives that would supplement the existing airport ferry service with a second ferry at different locations. All nine build alternatives tie into Tongass Avenue, which parallels the coast of Revillagigedo Island. All nine include a spine road around the western side and southern end of the airport, providing access to the airport terminal and other developable lands.

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The FHWA is the lead Federal agency for the environmental documentation. The Alaska Department of Transportation and Public Facilities has written the environmental documentation on behalf of FHWA. The U.S. Army Corps of Engineers, U.S. Coast Guard, Ketchikan Gateway Borough, City of Ketchikan, and City of Saxman are cooperating agencies for the project.

The public hearings will provide a public forum that affords a full opportunity for presenting views on the social, economic, and environmental effects of the alternatives including impacts on navigation and marine transportation. Comments are invited from all interested parties and should be directed by October 6, 2003 to Mr. Reuben Yost at the address provided above. Information on the project and the Draft EIS are available electronically at *http://www.gravina-access.com.*

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Dated: July 31, 2003.

J. A. Schott,

Captain, U.S. Coast Guard, Commander, 17th Coast Guard District, Acting.

David C. Miller,

Division Administrator, Federal Highway Administration.

[FR Doc. 03–20822 Filed 8–14–03; 8:45 am]

BILLING CODE 4910–22–M; 4910–15–M

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[FEMA–1481–DR]

Florida; Major Disaster and Related Determinations

AGENCY: Federal Emergency Management Agency, Emergency Preparedness and Response Directorate, Department of Homeland Security.

ACTION: Notice.

SUMMARY: This is a notice of the Presidential declaration of a major disaster for the State of Florida (FEMA–1481–DR), dated July 29, 2003, and related determinations.

EFFECTIVE DATE: July 29, 2003.

FOR FURTHER INFORMATION CONTACT: Magda Ruiz, Recovery Division, Federal Emergency Management Agency, Washington, DC 20472, (202) 646–2705.

SUPPLEMENTARY INFORMATION: Notice is hereby given that, in a letter dated July 29, 2003, the President declared a major disaster under the authority of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121–5206 (the Stafford Act), as follows:

I have determined that the damage in certain areas of the State of Florida, resulting from severe storms and flooding on June 13, 2003, and continuing is of sufficient severity and magnitude to warrant a major disaster declaration under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121–5206 (the Stafford Act). I, therefore, declare that such a major disaster exists in the State of Florida.

In order to provide Federal assistance, you are hereby authorized to allocate from funds available for these purposes, such amounts as you find necessary for Federal disaster assistance and administrative expenses.

You are authorized to provide Public Assistance in the designated areas, Hazard Mitigation throughout the State, and any other forms of assistance under the Stafford Act you may deem appropriate. Consistent with the requirement that Federal assistance be supplemental, any Federal funds provided under the Stafford Act for Public Assistance and Hazard Mitigation will be limited to 75 percent of the total eligible costs. If Other Needs Assistance under Section 408 of the Stafford Act is later requested and warranted, Federal funding under that program will also be limited to 75 percent of the total eligible costs.

Further, you are authorized to make changes to this declaration to the extent allowable under the Stafford Act.

The Federal Emergency Management Agency (FEMA) hereby gives notice that pursuant to the authority vested in the Under Secretary for Emergency Preparedness and Response, Department of Homeland Security, under Executive Order 12148, as amended, Peter Martinasco, of FEMA is appointed to act as the Federal Coordinating Officer for this declared disaster.

I do hereby determine the following areas of the State of Florida to have been affected adversely by this declared major disaster:

Charlotte, Citrus, DeSota, Hardee, Levy, Manatee, and Sarasota Counties for Public Assistance.

All counties within the State of Florida are eligible to apply for assistance under the Hazard Mitigation Grant Program.

(The following Catalog of Federal Domestic Assistance Numbers (CFDA) are to be used for reporting and drawing funds: 83.537, Community Disaster Loans; 83.538, Cora Brown Fund Program; 83.539, Crisis Counseling; 83.540, Disaster Legal Services Program; 83.541, Disaster Unemployment Assistance (DUA); 83.556, Fire Management Assistance; 83.558, Individual and Household Housing; 83.559, Individual and Household Disaster Housing Operations; 83.560, Individual and Household Program-Other Needs; 83.544, Public Assistance Grants; 83.548, Hazard Mitigation Grant Program.)

Michael D. Brown,

Under Secretary, Emergency Preparedness and Response.

[FR Doc. 03–20846 Filed 8–14–03; 8:45 am]

BILLING CODE 6718–02–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[FEMA–1476–DR]

Indiana; Amendment No. 4 to Notice of a Major Disaster Declaration

AGENCY: Federal Emergency Management Agency, Emergency Preparedness and Response Directorate, Department of Homeland Security.

ACTION: Notice.

SUMMARY: This notice amends the notice of a major disaster declaration for the State of Indiana (FEMA–1476–DR), dated July 11, 2003, and related determinations.

EFFECTIVE DATE: July 30, 2003.

FOR FURTHER INFORMATION CONTACT: Magda Ruiz, Recovery Division, Federal Emergency Management Agency, Washington, DC 20472, (202) 646–2705.

SUPPLEMENTARY INFORMATION: The notice of a major disaster declaration for the State of Indiana is hereby amended to include the following areas among those areas determined to have been adversely affected by the catastrophe declared a major disaster by the President in his declaration of July 11, 2003:

Union County for Public Assistance.

Cass, Clay, Jay, and Tipton Counties for Public Assistance (already designated for Individual Assistance.)

(The following Catalog of Federal Domestic Assistance Numbers (CFDA) are to be used for reporting and drawing funds: 83.537, Community Disaster Loans; 83.538, Cora Brown Fund Program; 83.539, Crisis Counseling; 83.540, Disaster Legal Services Program; 83.541, Disaster Unemployment Assistance (DUA); 83.556, Fire Management Assistance; 83.558, Individual and Household Housing; 83.559, Individual and Household Disaster Housing Operations; 83.560 Individual and Household Program—Other Needs, 83.544, Public Assistance Grants; 83.548, Hazard Mitigation Grant Program.)

Michael D. Brown,

Under Secretary, Emergency Preparedness and Response.

[FR Doc. 03–20840 Filed 8–14–03; 8:45 am]

BILLING CODE 6718–02–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[FEMA–1480–DR]

Nebraska; Amendment No. 1 to Notice of a Major Disaster Declaration

AGENCY: Federal Emergency Management Agency, Emergency Preparedness and Response Directorate, Department of Homeland Security.

ACTION: Notice.

SUMMARY: This notice amends the notice of a major disaster declaration for the State of Nebraska (FEMA–1480–DR), dated July 21, 2003, and related determinations.

EFFECTIVE DATE: August 4, 2003.

FOR FURTHER INFORMATION CONTACT: Magda Ruiz, Recovery Division, Federal Emergency Management Agency, Washington, DC 20472, (202) 646–2705.

SUPPLEMENTARY INFORMATION: The notice of a major disaster declaration for the

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Gravina Access Project, Tongass Narrows, Ketchikan Gateway Borough, AK

[Federal Register: August 15, 2003 (Volume 68, Number 158)]
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From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr15au03-69]

DEPARTMENT OF TRANSPORTATION
Federal Highway Administration
DEPARTMENT OF HOMELAND SECURITY
Coast Guard

Gravina Access Project, Tongass Narrows, Ketchikan Gateway Borough, AK

AGENCY: Federal Highway Administration. U.S. Coast Guard.
ACTION: Notice of public hearing; Request for comments. Notice of availability of draft environmental impact statement (EIS).

SUMMARY: the Federal Highway Administration (FHWA), together with U.S. Coast Guard and the Alaska Department of Transportation and Public Facilities, has issued a Gravina Access Project Draft Environmental Impact Statement (EIS) on August 6, 2003. The agencies will jointly hold two public hearings to receive information concerning the environmental impacts on the project, including marine navigation impacts.

The project would construct a bridge or new ferry across Tongass Narrows in southern Southeast Alaska. The cities of Ketchikan and Saxman, along with surrounding developed areas within the Ketchikan Gateway Borough on Revillagigedo Island, are separated by Tongass Narrows from Ketchikan International Airport and developable land within the borough on Gravina Island. Ferry service currently connects Ketchikan to the airport terminal, but there is no connection to other lands on Gravina Island. The project proposes to improve transportation across Tongass Narrows by enhanced ferry or by bridge. Nine alternatives, plus No Action Alternative, are under consideration. All share in common a spine road around the airport to provide access to the airport and to other developable lands around the airport. Other developable lands include airport reserve lands, State of Alaska Mental Health Trust lands, University of Alaska lands, and private lands. The Ketchikan Gateway Borough is within Tongass National Forest.

DATES: The public hearings will start at 7 p.m. on Wednesday, September 17, and Thursday, September 18, 2003. On Tuesday September 16, from 3 p.m. to 8 p.m., a public information open house will be held to enable

interested parties to learn more about the project and ask questions. Display materials will be available during the open house and beginning at 5 p.m., September 17 and 18, prior to the public hearings. Comments must be received by October 6, 2003.

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SUPPLEMENTARY INFORMATION:

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[[Page 48925]]

Dated: July 31, 2003.
J. A. Schott,
Captain, U.S. Coast Guard, Commander, 17th Coast Guard District,
Acting.
David C. Miller,
Division Administrator, Federal Highway Administration.
[FR Doc. 03-20822 Filed 8-14-03; 8:45 am]
BILLING CODE 4910-22-M

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Summary: EPA has no objections to the selection of the preferred alternative as described.

ERP No. D–NPS–J65384–MT Rating EC2, Glacier National Park Commercial Services Plan, and General Management Plan, Implementation, Glacier National Park, a Portion of Waterton-Glacier International Peace Park, Flathead and Glacier Counties, MT.

Summary: EPA expressed environmental concerns with potential impacts to outstanding resource waters within Glacier National Park from stream channel maintenance activities and construction. EPA believes additional information should be presented to fully assess and mitigate all potential impacts of the management actions.

Final EISs

ERP No. F–AFS–K65249–CA, Stream Fire Restoration Project, Implementation, Plumas National Forest, Mt. Hough Ranger District, Plumas County, CA.

Summary: No formal comment letter was sent to the preparing agency.

ERP No. F–BLM–K61155–CA, Imperial Sand Dunes Recreation Area Management Plan Revision and Update and Amendment to the California Desert Conservation Area Plan, Implementation, Imperial County, CA.

Summary: No formal comment letter was sent to the preparing agency.

ERP No. F–COE–G39036–TX, North Padre Island Storm Damage Reduction and Environmental Restoration Project, Construction of a Channel between the Laquna Madre and the Gulf of Mexico across North Padre Island referred to as Packery Channel Project, Nueces County, TX.

Summary: EPA had no objections to the proposed action.

ERP No. F–DOE–L08055–WA, Kangley—Echo Lake Transmission Line Project, New 500-kilovolt (kV) Transmission Line Construction, U.S. Army COE Section 10 and 404 Permits Issuance, King County, WA.

Summary: No formal comment letter was sent to the preparing agency.

ERP No. F–DOE–L08063–WA, Plymouth Generating Facility, Construction and Operation of a 307-megawatt (MW) Natural Gas-Fired Combined Cycle Power Generation Facility on a 44.5 Acre Site, Conditional Use/Special Use Permit Issuance, Benton County, WA.

Summary: EPA continues to have environmental concerns with the lack of a comprehensive air quality cumulative effects analysis.

ERP No. F–FHW–K40253–CA, Riverside County Integrated Project, Winchester to Temecula Corridor, Construction of a New Multi-Modal Transportation Facility, Route Location and Right-of-Way Preservation, Riverside County, CA.

Summary: EPA has environmental concerns regarding the preferred alternative's contribution to habitat fragmentation, and impacts to endangered species, waters of the United States, water quality and air quality. EPA requests clarifications in the Record of Decision, and commitments that these key issues be addressed in the Tier 2 project level evaluation.

ERP No. F–USN–K11107–CA, Naval Station Treasure Island Disposal and Reuse Property, Implementation, Local Redevelopment Authority (LRA), City of San Francisco, San Francisco County, CA.

Summary: No formal comment letter was sent to the preparing agency.

ERP No. FS–COE–G39002–00, Red River Chloride Control Project, Authorization to Reduce the Natural Occurring Levels of Chloride in the Wichita River Portion Only, North, Middle and South Forks, Wichita River and Red River, Implementation, Tulsa District, Wichita County, TX.

Summary: EPA had no objections to the preferred alternative.

ERP No. FS–UAF–K11076–00, Airborne Laser (ABL) Program, Conducting Test Activities at Kirtland Air Force Base (AFB) and White Sands Missile Range/Holloman AFB, New Mexico; and Edwards AFB and Vandenberg AFB, California, NM and CA.

Summary: No formal comment letter was sent to the preparing agency.

Dated: August 19, 2003.

Joseph C. Montgomery,

Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 03–21601 Filed 8–21–03; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[ER–FRL–6643–1]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564–7167 or *http://www.epa.gov/compliance/nepa/.*

Weekly receipt of Environmental Impact Statements

Filed August 11, 2003 Through August 15, 2003

Pursuant to 40 CFR 1506.9.

EIS No. 030376, DRAFT EIS, FHW, AK, Gravina Access Project, Improve Surface Transportation between Revillagigedo Island and Gravina Island, Ketchikan Gateway Borough, Funding by (TEA–21), Endangered Species Act Section 7, NPDES, U.S. Army COE Section 404 Permit, AK, Comment Period Ends: October 6, 2003, Contact: Tim A. Haugh (907) 586–7418. This document is available on the Internet at: *http://www.gravina-access.com.*

EIS No. 030377, DRAFT EIS, AFS, MT, North Belts Travel Plan and the Dry Range Project, Provide Motorized and Non-motorized Recreation, Helena National Forest, Broadwater, Lewis & Clark and Meagher Counties, MT, Comment Period Ends: October 6, 2003, Contact: Beth Ihle (406) 266–3425. This document is available on the Internet at: *http://www.fs.fed.us/r1/helena/projects.*

EIS No. 030378, FINAL EIS, FRC, LA, Hackberry Liquified Natural Gas (LNG) Terminal and Natural Gas Pipeline Facilities, Construction and Operation, Cameron, Calcasieu, and Beauregard Parishes, LA, Wait Period Ends: September 22, 2003, Contact: Thomas Russo (800) 208–3372.

EIS No. 030379, FINAL EIS, BLM, WY, Pittsburg and Midway Coal Mining Proposal (WYW148816), Exchange of Private Owned Land P&M for Federally-Owned Coal, Lincoln, Carbon and Sheridan Counties, WY, Wait Period Ends: September 22, 2003, Contact: Nancy Doelger (307) 261–7627. This document is available on the Internet at: *http://www.wy.blm.gov.*

EIS No. 030380, REVISED DRAFT EIS, COE, CA, Port of Long Beach Pier J South Terminal Expansion Project, Additional Cargo Requirements Associated with Growing Export and Import Volumes, Port Master Plan (PMP) Amendment, COE Section 404, 401 and 10 Permits, City of Long Beach, CA, Comment Period Ends: October 6, 2003, Contact: Dr. Aaron O. Allen (805) 585–2148.

EIS No. 030381, FINAL EIS, NRC, NB, GENERIC EIS—Fort Calhoun Station, Unit 1, Renewal of the Operating Licenses (OLs) for an Additional 20 Years, Supplement 12 (NUREG–1437) Omaha Public Power District, Washington County, NB, Wait Period Ends: September 22, 2003, Contact: Jack Cushing (301) 415–1424.

EIS No. 030382, FINAL EIS, AFS, OR, ID, OR, ID, Hells Canyon National Recreation Area (HCNRA), Comprehensive Management Plan, Implementation, Wallowa-Whitman National Forest, Nez Perce and

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DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

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Dated: July 31, 2003.
J. A. Schott,
Captain, U.S. Coast Guard, Commander, 17th Coast Guard District, Acting.
David C. Miller,
Division Administrator, Federal Highway Administration.
[FR Doc. 03-20822 Filed 8-14-03; 8:45 am]
BILLING CODE 4910-22-M; 4910-15-M

[Federal Register: August 22, 2003 (Volume 68, Number 163)]
[Notices]
[Page 50768-50769]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr22au03-67]

ENVIRONMENTAL PROTECTION AGENCY

[ER-FRL-6643-1]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564-7167 or http://www.epa.gov/compliance/nepa/.

Weekly receipt of Environmental Impact Statements
Filed August 11, 2003 Through August 15, 2003
Pursuant to 40 CFR 1506.9.
EIS No. 030376, DRAFT EIS, FHW, AK, **Gravina** Access Project, Improve Surface Transportation between Revillagigedo Island and **Gravina** Island, Ketchikan Gateway Borough, Funding by (TEA-21), Endangered Species Act Section 7, NPDES, U.S. Army COE Section 404 Permit, AK, Comment Period Ends: October 6, 2003, Contact: Tim A. Haugh (907) 586-7418. This document is available on the Internet at: http://www.**gravina**-access.com
.
EIS No. 030377, DRAFT EIS, AFS, MT, North Belts Travel Plan and the Dry Range Project, Provide Motorized and Non-motorized Recreation, Helena National Forest, Broadwater, Lewis & Clark and Meagher Counties, MT, Comment Period Ends: October 6, 2003, Contact: Beth Ihle (406) 266-3425. This document is available on the Internet at: http://www.fs.fed.us/r1/helena/
.
EIS No. 030378, FINAL EIS, FRC, LA, Hackberry Liquified Natural Gas (LNG) Terminal and Natural Gas Pipeline Facilities, Construction and Operation, Cameron, Calcasieu, and Beauregard Parishes, LA, Wait Period Ends: September 22, 2003, Contact: Thomas Russo (800) 208-3372.
EIS No. 030379, FINAL EIS, BLM, WY, Pittsburg and Midway Coal Mining Proposal (WYW148816), Exchange of Private Owned Land P&M for Federally-Owned Coal, Lincoln, Carbon and Sheridan Counties, WY, Wait Period Ends: September 22, 2003, Contact: Nancy Doelger (307) 261-7627. This document is available on the Internet at: http://www.wy.blm.gov.
EIS No. 030380, REVISED DRAFT EIS, COE, CA, Port of Long Beach Pier J South Terminal Expansion Project, Additional Cargo Requirements Associated with Growing Export and Import Volumes, Port Master Plan (PMP) Amendment, COE Section 404, 401 and 10 Permits, City of Long Beach, CA, Comment Period Ends: October 6, 2003, Contact: Dr. Aaron O. Allen (805) 585-2148.
EIS No. 030381, FINAL EIS, NRC, NB, GENERIC EIS--Fort Calhoun Station, Unit 1, Renewal of the Operating Licenses (OLs) for an Additional 20 Years, Supplement 12 (NUREG-1437) Omaha Public Power District, Washington County, NB, Wait Period Ends: September 22, 2003, Contact: Jack Cushing (301) 415-1424.
EIS No. 030382, FINAL EIS, AFS, OR, ID, OR, ID, Hells Canyon National Recreation Area (HCNRA), Comprehensive Management Plan, Implementation, Wallowa-Whitman National Forest, Nez Perce and

[Federal Register: November 21, 2003 (Volume 68, Number 225)]
[Notices]
[Page 65704-65705]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr21no03-66]

ENVIRONMENTAL PROTECTION AGENCY
(ER-FRL-6645-7)

Environmental Impact Statements and Regulations; Availability of EPA Comments

Availability of EPA comments prepared pursuant to the Environmental Review Process (ERP), under Section 309 of the Clean Air Act and Section 102(2)(c) of the National Environmental Policy Act as amended. Requests for copies of EPA comments can be directed to the Office of Federal Activities at (202) 564-7167. An explanation of the ratings assigned to draft environmental impact statements (EISs) was published in FR dated April 04, 2003 (68 FR 16511).

Draft EISs

[[Page 65705]]

.... ERP No. D-FHW-L40219-AK Rating EC2, Gravina Access Project, Transportation Improvements between Revillagigedo Island and Gravina Island, Funding, Endangered Species Act 7, NPDES and U.S. Army COE Section 404 Permits Issuance, Ketchikan Gateway Borough, AK.

Summary: EPA has environmental concerns with the proposed project regarding the potential direct and indirect impacts to water quality, wetlands, marine habitat and subsistence resources associated with project construction and subsequent development on Gravina and Pennock Islands. EPA recommends that additional analyses of the No Action and ferry alternative be included in the EIS along with information and maps related to expected future development that reflect the comprehensive planning efforts of the Ketchikan Gateway Borough.

Agency Comment on DEIS

(Circled numbers correspond to the numbered comments in Table 7-2 in Chapter 7.)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
ALASKA DIVISION
709 West Ninth Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802
907-586-7418 | 907-586-7420 FAX

April 15, 2004

REFER TO
HDA-AK
File #: ACHP-0922(5)/67698

Ms. Judith Bittner, State Historic Preservation Officer
Alaska Department of Natural Resources
550 W. 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565

SUBJECT: Gravina Access Project, Finding of No Historic Properties Affected pursuant to 36 CFR 800.4(d)(1)

Dear Ms. Bittner:

Thank you for your response on March 4, 2004, concurring with our finding of No Historic Properties Affected for the Gravina Access Project Draft Environmental Impact Statement. However, as you and Stefanie Ludwig, of your staff, discussed with Bill Ballard and Laurie Mulcahy, of the Alaska Department of Transportation and Public Facilities (AKDOT&PF), at issue is a condition placed on your concurrence: "We concur therefore, that no historic properties will be affected by this project provided that the project footprint is intensively surveyed by an archaeologist once the final alignment is surveyed and staked."

This condition causes concern because project engineering will not be further detailed or refined until a Record of Decision is signed on the project and final design is begun. Bill and Laurie explained that Mike Yarborough of Cultural Resource Consultants performed a reconnaissance level survey in the area of potential effect during August 2002. The survey coverage also included the area of the proposed alignment adjustment of the refined F1 Alternative described in our letter of February 3, 2004. Two sites KET-774 and KET-775 identified in the vicinity are being avoided. As an assurance however, once the alignment is surveyed and staked during design, we will commit to sending a qualified archaeologist into the field for an additional reconnaissance survey effort, including any subsurface testing if deemed necessary to verify that no sites were overlooked. A field report will be submitted to your office upon completion of the survey.

Based on the above considerations, FHWA has determined that the F1 Alternative, with the reconnaissance survey effort condition, would affect no historic properties and requests your concurrence. Please contact me at the letterhead phone number should you have any questions.

Sincerely,

Tim A. Haugh
Environment and Right of Way Programs Manager

cc: Bill Ballard, AKDOT&PF Statewide Environmental Coordinator
Jim Evensen, P.E., AKDOT&PF Southeast Region PD&E Supervisor
Van Sundberg, AKDOT&PF Southeast Region, Regional Environmental Coordinator

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
ALASKA DIVISION
709 West Ninth Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802
907-586-7418 | 907-586-7420 FAX

February 3, 2004

REFER TO
HDA-AK
File #: ACHP-0922(5)/67698

Ms. Judith Bittner, SHPO
Alaska Office of History and Archaeology
550 W. 7th Ave., Suite 1310
Anchorage, Alaska 99501-3565

SUBJECT: Gravina Access Project Finding of No Historic Properties Affected / KET-774, KET-775

Dear Ms. Bittner:

We have received your letter of August 22, 2003, commenting on the Gravina Access Project Draft Environmental Impact Statement (DEIS) and concurring with our determinations of eligibility related to historic and archaeological properties. I am writing to clarify the project status and to seek your concurrence with a finding of "no historic properties affected" for the preferred alternative.

Your August 22 letter stated:

> It appears that KET-774 and KET-775 will not be affected by any of the alternatives.... We will defer our concurrence on DOT's determination of effect, however, until the preferred alternative has been selected and we can review the finalized project plans.

We have reviewed all agency and public comments on the DEIS and are responding to them now as part of preparing the Final Environmental Impact Statement (FEIS). The preferred alternative was identified in the DEIS as Alternative F1, and it will go forward as the FEIS preferred alternative, with the refinements described below.

Section 4.7 of the DEIS indicated that cruise ship navigation issues could result in a minor alignment shift of the Alternative F1 bridge crossings to place them perpendicular to the shipping lanes. The attachments show the alignment shift as the refined F1 Alternative. This is the alignment proposed in the FEIS, and it results in somewhat different landfall locations on Pennock and Gravina Islands. The refined F1 Alternative is placed farther from known historic sites. Preliminary engineering for this alternative has determined the likely placement of pier supports for the bridge (see orange alignment on the enclosed close-up figures).

KET-775. This site consists of a collapsing cabin about 200 feet from an old barge, both of which are features of this site. As noted in the "Summary and Compilation of Data" (July 2003) and the Determination of Eligibility for KET-775, the cabin lies on a narrow strip of upland adjacent to the beach. Mike Yarborough of Cultural Resource Consultants indicates that the cabin is backed by a rock escarpment approximately 20 feet high and that the site appears to be contained to the beach level below this rock face. While the original Alternative F1 alignment was directly overhead in this location, the refined F1 Alternative reaches Gravina Island approximately 300 feet southeast from the cabin site and 500 feet from the barge. The August 2002 reconnaissance survey covered the stretch of beach and forest edge for more than 1,000 feet southeastward from the barge. The only cultural evidence found was cut stumps in the woods southeast of the cabin.

KET-774. On the western side of the East Channel, KET-774 consists of two collapsed or collapsing cabins located right on the beach, adjacent to the forest edge. The original location of the Alternative F1 bridge was overhead in this location. The refined F1 Alternative reaches Pennock Island about 290 feet southeast of the original landfall location. As indicated in the August 2002 reconnaissance survey, the only cultural evidence in this stretch of the East Channel beach and forest edge are numerous large cut stumps.

The project engineering will not be further detailed or refined until a Record of Decision is signed on the project and final design is begun. We do not propose further intensive archeological investigation at this time, because the site locations appear to be adequately known and can be avoided. However, we will commit to sending a qualified archaeologist into the field, once the alignment is surveyed and staked during design, to ensure that no sites were overlooked. Your office will be notified of the results of the survey and if any historic properties are identified, Section 106 consultation will be reinstated.

In consideration of Alaska Department of Transportation and Public Facilities' identification and consultation efforts with your office, tribal parties, and the public, the Federal Highway Administration has determined that no historic properties would be affected by the refined F1 Alternative and asks for your concurrence. We intend to finish preparation of the FEIS text this month and therefore request your concurrence by February 15, 2004, if at all possible. Please contact me at the letterhead phone number should you have any questions. Thank you.

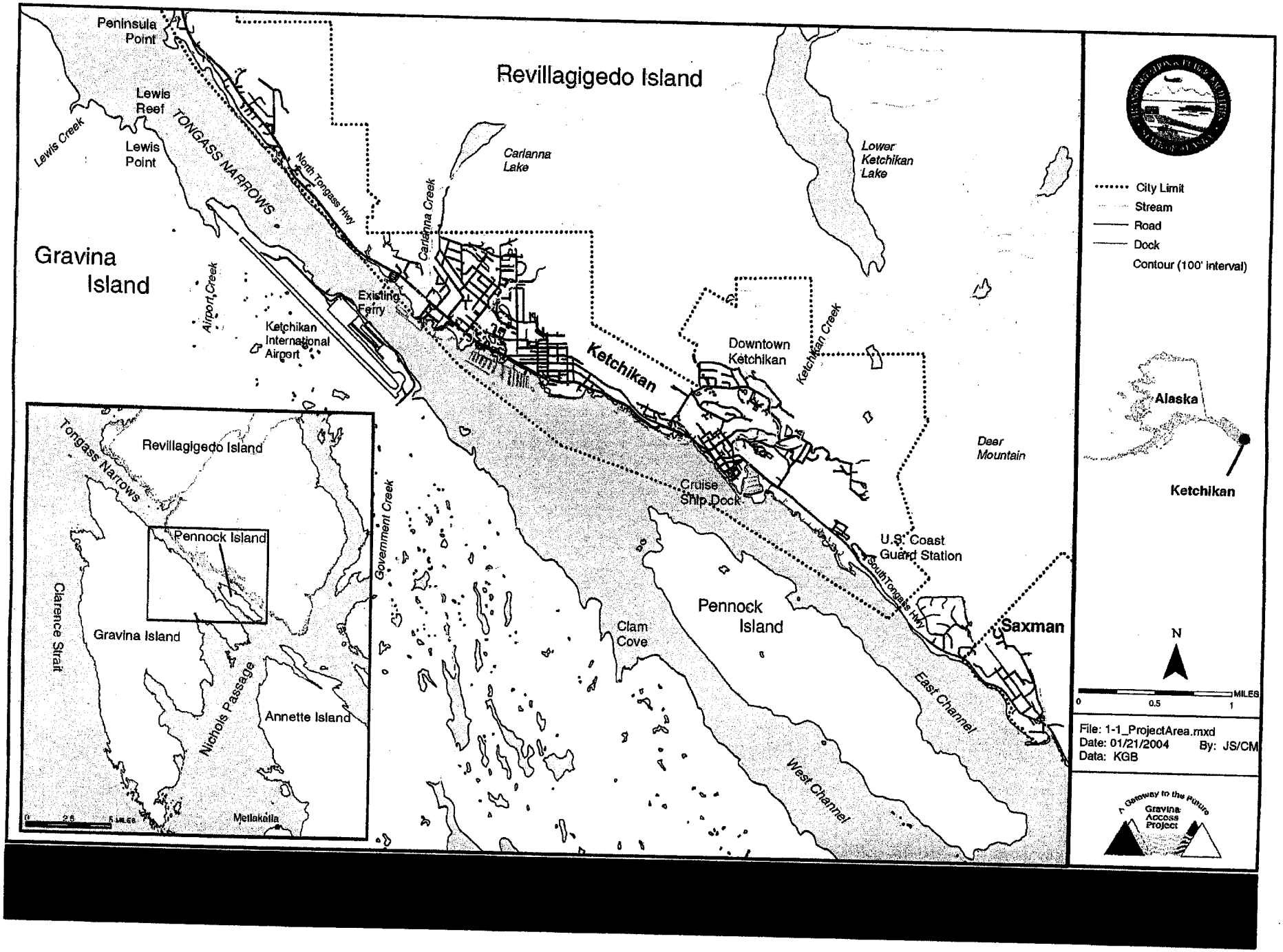
Sincerely,

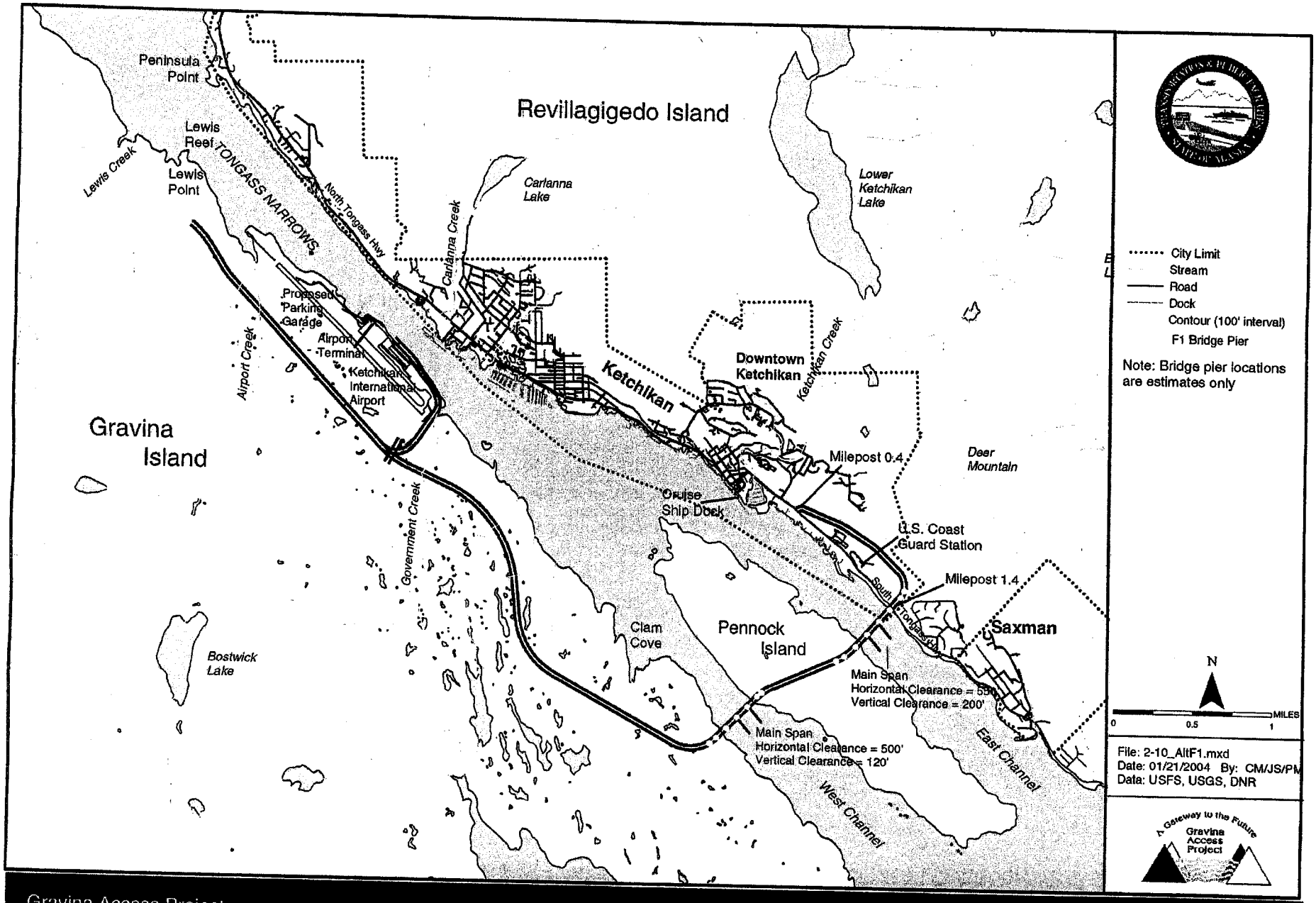
Edrie Vinson

Edrie Vinson
Environmental Project Manager

Enclosures

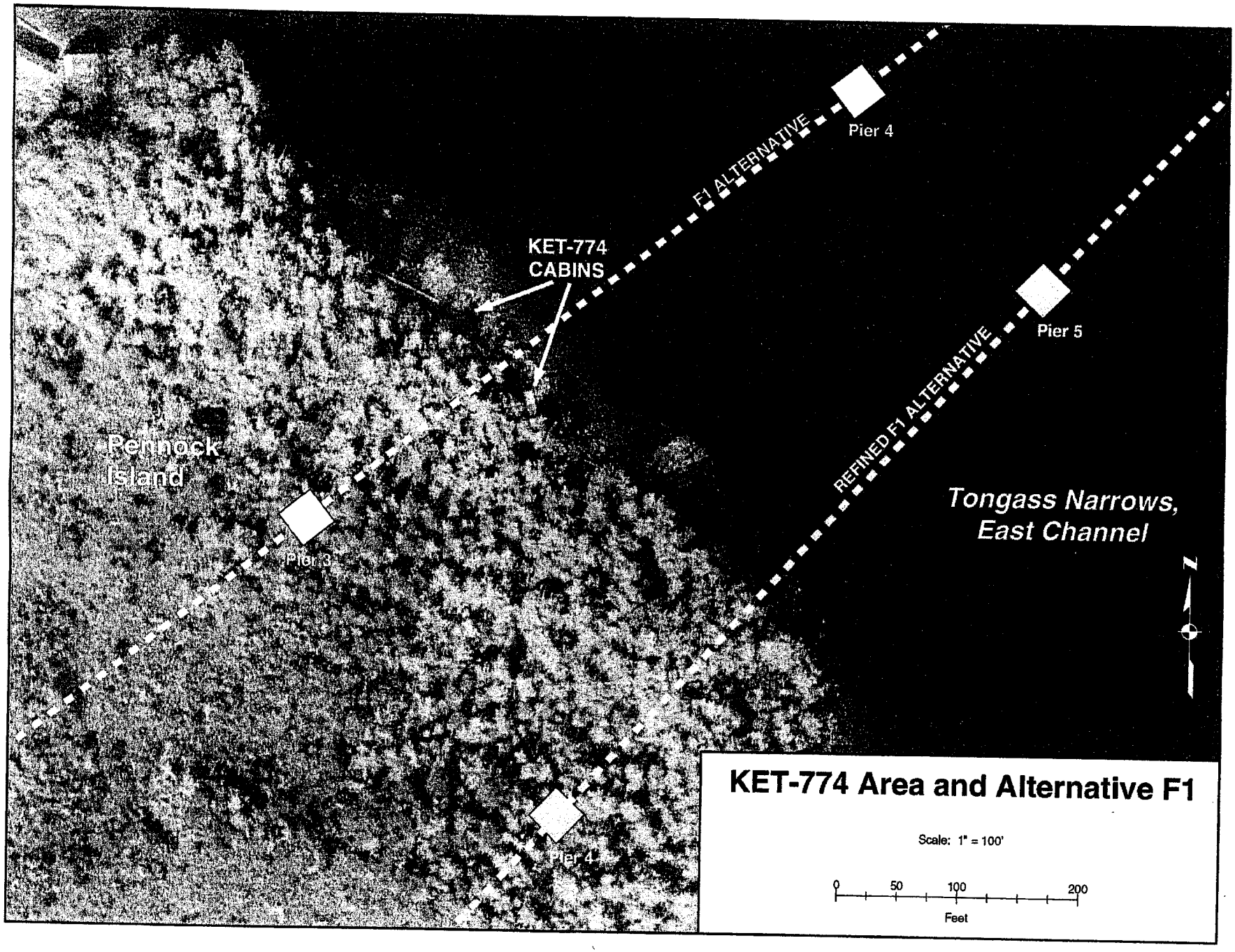
cc: Bill Ballard, AKDOT&PF
Jim Evensen, AKDOT&PF
Van Sundberg, AKDOT&PF

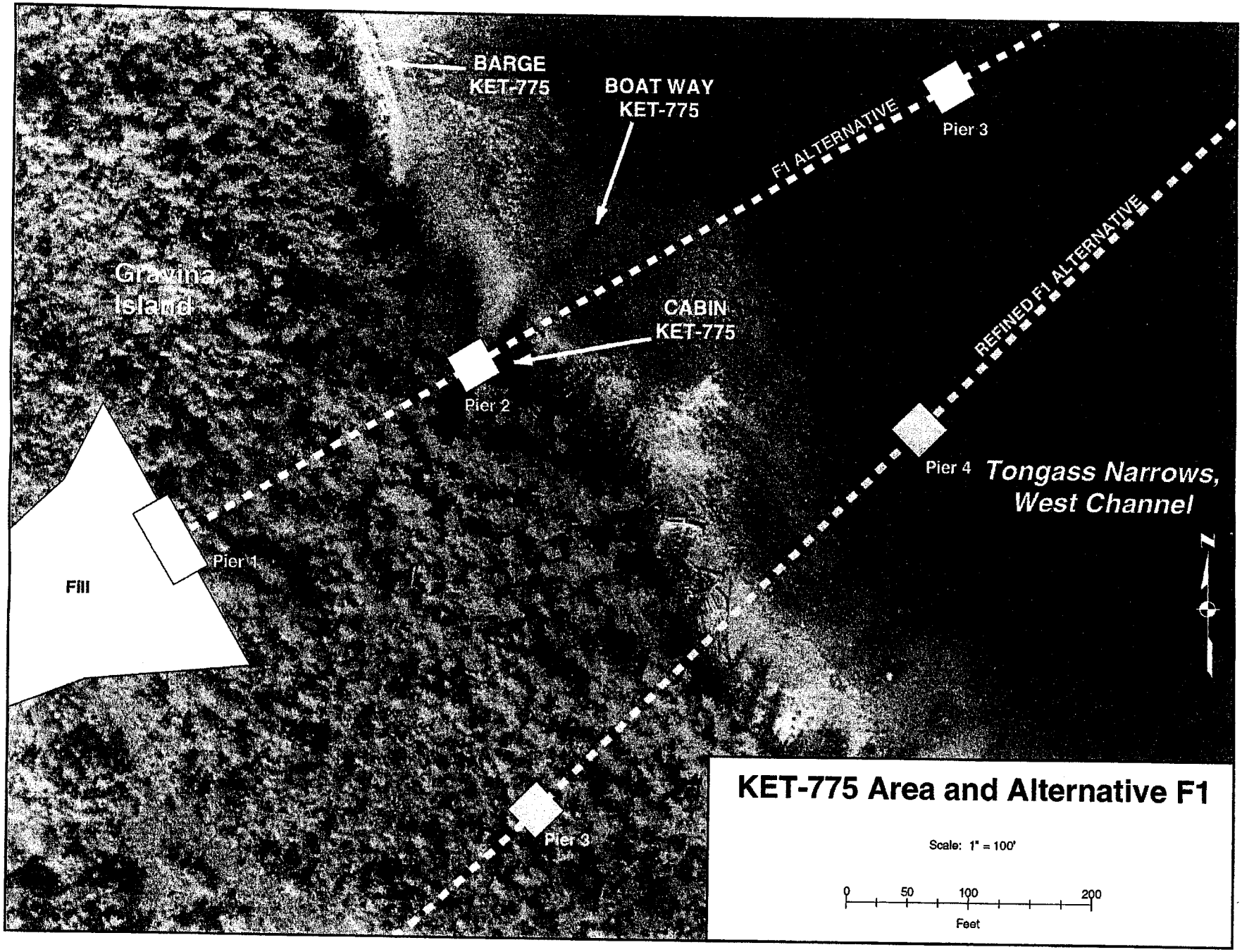

Peninsula Point
Lewis Reef
Lewis Point
Lewis Creek
TONGASS NARROWS
North Tongass Hwy
Revillagigedo Island
Carlanna Creek
Carlanna Lake
Lower Ketchikan Lake
Gravina Island
Airport Creek
Existing Ferry
Ketchikan International Airport
Ketchikan
Downtown Ketchikan
Ketchikan Creek
Deer Mountain
Cruise Ship Dock
U.S. Coast Guard Station
South Tongass Hwy
Saxman
Pennock Island
Clam Cove
East Channel
West Channel
Government Creek
Tongass Narrows
Revillagigedo Island
Pennock Island
Gravina Island
Clarence Strait
Nichols Passage
Annette Island
Metlakatla
City Limit
Stream
Road
Dock
Contour (100' interval)
Alaska
Ketchikan
N
MILES
0
0.5
1
File: 1-1_ProjectArea.mxd
Date: 01/21/2004 By: JS/CM
Data: KGB
A Gateway to the Future
Gravina Access Project



Gravina Access Project
Environmental Impact Statement

Figure 2.10
Alternative F1, Bridges (200' East and 120' West)
Between Tongass Avenue and Airport, via Pennock Island: Alignment


F1 ALTERNATIVE
Pier 4
KET-774
CABINS
Pier 5
REFINED F1 ALTERNATIVE
Pennock
Island
Pier 3
Tongass Narrows,
East Channel
Pier 4
N
KET-774 Area and Alternative F1
Scale: 1" = 100'
0
50
100
200
Feet


BARGE
KET-775
BOAT WAY
KET-775
F1 ALTERNATIVE
Pier 3
REFINED F1 ALTERNATIVE
Gravina
Island
CABIN
KET-775
Pier 2
Pier 4
Tongass Narrows,
West Channel
Pier 1
Fill
Pier 3
N
KET-775 Area and Alternative F1
Scale: 1" = 100'
0
50
100
200
Feet

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

October 23, 2003

Reply To
Attn Of: ECO-088

Ref: 99-009-FHW

Tim Haugh
Federal Highway Administration - Alaska Division
P.O. Box 21648
Juneau, Alaska 99802

Jim Evensen
Alaska DOT&PF - Southeast Region
6860 Glacier Highway
Juneau, Alaska 99801-7999

Dear Mr. Haugh and Mr. Evensen:

The Environmental Protection Agency (EPA) has completed its review of the draft Environmental Impact Statement (EIS) for the proposed **Gravina Access Project** (CEQ No. 030376) in accordance with our authorities and responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. The draft EIS has been prepared to evaluate options for improving surface transportation between Revillagigedo Island and Gravina Island in the Ketchikan Gateway Borough of Alaska. The EIS evaluates nine (9) alternatives for improving access to Gravina Island (six (6) utilizing bridges and three (3) using ferries), as well as a No Action alternative. The draft EIS identifies Alternative F1 (two (2) bridges accessing Gravina Island via Pennock Island) as the preliminary agency-preferred alternative.

Based on our review and evaluation, we have assigned a rating of EC-2 (Environmental Concerns - Insufficient Information) to the draft EIS. This rating, and a summary of our comments, will be published in the *Federal Register*. A copy of the rating system used in conducting our review is enclosed for your reference.

Our concerns are related to the following topics which are discussed in greater detail in the enclosure to this letter:

- *Ferry Alternatives*
- *Projected Growth, Development, and Activities on Gravina and Pennock Islands*
- *Spine Road on the West Side of Airport*
- *Effects of the No Action Alternative*
- *Wetlands*
- *Impacts to Water Quality*

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- ∃ *Impacts to Marine Habitat*
- ∃ *Subsistence Impacts*
- ∃ *Predicted Effects and their Significance*
- ∃ *Government-to-Government Consultation*
- ∃ *Authorized Funding*
- ∃ *Impacts to Cruise Ships*
- ∃ *Effects of Wind and Weather*

Thank you for the opportunity to provide comments on the draft EIS. I urge you to contact Bill Ryan of my staff at (206) 553-8561 at your earliest opportunity to discuss our comments and how they might best be addressed in the EIS.

Sincerely,

/s/

Judith Leckrone Lee, Manager
Geographic Implementation Unit

Enclosures

cc: Lloyd Fanter, U.S. ACOE
Jim Helfinstine, U.S. Coast Guard
Steve Reeve, Ketchikan Gateway Borough

EPA Comments
on the
Draft Environmental Impact Statement (EIS)
for the
Gravina Access Project

Ferry Alternatives

The draft EIS identifies Alternative F1 (Bridge access via Pennock Island) as the preliminary preferred alternative. The ferry alternatives (particularly Alternative G4) also provide improved access to Gravina Island while offering some significant advantages over the bridge alternatives currently being evaluated, including Alternative F1. Ferry alternative G4 would:

- minimize direct and indirect environmental impacts to wetlands, streams, and terrestrial and aquatic habitat;
- minimize the number of land parcels impacted by project construction;
- minimize the number of miles of roads that would be constructed; and
- minimize overall project costs (50 year life-cycle costs).

We encourage the Federal Highway Administration (FHWA) and the Alaska Department of Transportation and Public Facilities (ADOT&PF) to carefully and objectively consider the merits of Alternative G4 (or some variation) in light of the high project costs and the tenuous nature of funding to construct Alternative F1, and the ability to meet the purpose and need for the project with significantly lower environmental impacts. (1)

While the EIS identifies the lack of unrestricted, 24 hour access as the major shortcoming of the ferry alternatives (compared to the bridge alternatives), the EIS provides information that demonstrates that the fundamental purpose and need for the project (improved access and convenience to developable land and the airport on Gravina Island) would also be met with the ferry alternatives. We are concerned that the draft EIS seems to emphasize the convenience of a bridge (relative to a ferry) rather than the improvements to access that all the alternatives (including ferries) offer. (2) This is reflected in the reasoning presented on pages SUM 9 through SUM-11 for selecting Alternative F1 as the preliminary preferred alternative. Based on our review of the draft EIS, Alternative G4 also appears to meet all the criteria listed on page SUM-10, but with lower costs and with less environmental (and other) effects than Alternative F1. The only significant element that seems to differentiate these alternatives is that, as the EIS states, Alternative F1 has "beneficial impacts" of creating a "hard link" to Gravina Island. Such beneficial impacts should be clearly identified in the EIS and contrasted with the lower impact and cost benefits of Alternative G4. (3) This will provide the decision makers and the public with information that will allow them to clearly understand the differences between the alternatives currently under consideration and the reasoning for identifying Alternative F1 as the preliminary preferred alternative.

The EIS should include an evaluation of options for dealing with emergency situations when ferries would not be running. (4) With the present lack of such options, the EIS seems to suggest that selection of any of the ferry alternatives would result in unsafe conditions after normal ferry operating hours. We do not believe that this needs to be the case and that there are options available for addressing emergency situations during ferry off-hours that should be explored and evaluated in the EIS. For example, water taxis or other water craft could be made available to deal with situations where evacuation from the island is necessary. Medical and fire

situations could be potentially addressed using facilities located on Gravina. Such options (or others) should be identified, evaluated and the implications of their use reported in the EIS. This will provide the decision makers and the public with information that will allow them to understand how access and emergency needs could be addressed (and their associated impacts disclosed) should a ferry alternative be selected for implementation. Without the assessment of approaches for addressing emergency situations (particularly when ferries would not be running), a complete assessment of the ferry alternatives has not been completed.

The conclusion presented in Section 4.26.2.4 that Alternatives G2, G3 and G4 (the ferry alternatives) would "have an adverse impact on recreation in the project area" is not supported by information presented in the EIS. As with the bridge alternatives, access to lands on Gravina would increase with ferry access since it would connect with whatever road system is developed on the island (just as the bridge alternatives would). While the bridge alternatives would provide unrestricted access to lands on Gravina and the ferry alternatives would require coordination with ferry schedules, both would be improvements over the current access situation. We recommend that this conclusion be revised to reflect the information and analyses presented in the EIS. (5)

It may be beneficial to consider a phased approach to accessing Gravina that would first include the construction of some roads on the island that would be served by improved ferry service. Should sufficient demand for greater access and development result, bridge access could be reconsidered at a later date. This approach would provide an option for addressing the desire for greater access to Gravina in the relatively near-term. With the high cost of bridge access and the uncertainty that funding could be secured for the construction of a bridge, options for meeting the desire to improve access to Gravina without a bridge should be carefully considered so that the objective of the access project could still be realized. (6)

Projected Growth, Development, and Activities on Gravina Island

Because one of the primary purposes of the proposed project is to promote development on an essentially undeveloped island, it is critically important that the EIS clearly present information about the direct and indirect effects of the expected development. While the EIS does describe and reference various planning efforts that would affect development and access on Gravina Island, the information is presented in a manner that is difficult to understand. The EIS should be augmented with maps that depict information from relevant planning efforts related to development activities on the island and reflect island-wide information and assessments. Maps developed as part of the Ketchikan Gateway Borough's (Borough) comprehensive planning process for Gravina Island provide valuable baseline information as well as depictions of potential future conditions and we recommend that similar maps be included in the EIS. We find the maps contained in the *Gravina Island Plan, Citizen's Guide to Public and Private Decision-making* (henceforth, *Gravina Citizen's Guide*) to be particularly informative in providing island-wide information related to locations of natural resources as well as potential future development (such as roads). We recommend that you refer to them in the further development of the assessment of indirect (including cumulative) effects for the proposed project. (7)

Table 4-16 provides generalized descriptions of development scenarios used to estimate secondary impacts that would result with improved access to Gravina Island. While this table and the accompanying text provide some sense of potential development that would result with improved access, more specific information is needed to clearly inform the decision maker and the public of the significance of impacts from this development. We believe that maps should be (8)

developed that identify how the acres of development are expected to be distributed on an island-wide basis along with attendant infrastructure, such as roads. Since the acres of predicted development have been quantified, we presume that there is a general understanding of where the development would likely take place. These maps should also reflect the proximity of the development to important natural resources, such as important terrestrial and aquatic habitat, essential fish habitat, and wetlands. This type of information should then be utilized to quantify some of the expected effects (e.g., number of important fish-bearing streams impacted, acres of wetlands impacted, acres of important habitat impacted or fragmented). (9)

The EIS should provide maps that present relevant information from various planning and permitting efforts that have been undertaken for Gravina Island to place the currently proposed access project in the proper context. We believe that the EIS should include maps presenting the following information. 10

- Potential road network on Gravina - The EIS should depict the potential future road network on Gravina. This map should include those roads from the Forest Service's proposed Gravina Island timber sale as well as other roads that are being considered for development or may currently exist. Because the currently proposed access project and subsequent development would be connected to Forest Service's road system and other roads, it is important that the EIS clearly disclose the extent that access to the island would be expanded with the establishment of a road network on the island. Map 5 from the *Gravina Citizen's Guide* provides a good depiction of the potential future road network on the island.
- Location and access to timber and potential commercial timber harvesting - The EIS should include maps that identify where timber harvesting activities are planned or could take place and their relationship to improved access on Gravina. This would include an identification of harvest units presently proposed for harvest on the Tongass National Forest as well as Borough, State or private lands where timber harvest could potentially take place. See Map 9 of the *Gravina Citizen's Guide.*
- Location and access to minerals and potential mining activities - The EIS should include maps that identify where mineral resources are located on Gravina Island. The EIS should discuss the implications of improving access to these areas and the potential for mining on Gravina. See Map 10 of the *Gravina Citizen's Guide.*
- Location of recreational destinations - The EIS should include maps that identify where current or potential future recreational destinations are located on Gravina Island. The EIS should discuss the implications of improving access to these locations along with the effects that would be expected with increased public use. See Map 7 of the *Gravina Citizen's Guide.*
- Subsistence areas - The EIS should include maps that identify where resources currently used for subsistence purposes are located on Gravina Island. The EIS should discuss the implications of improving access to these locations along with the effects to subsistence resources and their users.
- Development in the Airport Reserve - The EIS should include a map that depicts activities planned to occur within the Airport Reserve. Specifically, the EIS should reveal the scope of improvements that would be undertaken with the implementation of the Airport Master Plan. Similarly, the EIS should provide a map that would depict the scope of the planned Lewis Reef development.

With the potential for increased industrial activities on Gravina Island comes the potential for developing water-based facilities to transport raw materials and/or finished products to and from industrial facilities. The EIS should discuss whether water-based facilities would be developed to support planned growth and where future facilities supporting water-based transport (such as barge traffic) would likely be constructed. Effects from such facilities should be assessed with respect to potential effects to marine and land-based resources and marine traffic. The results of those assessments should be included in the EIS. (11)

Projected Growth, Development, and Activities on Pennock Island

Alternative F1 (as well as Alternative F3) would provide road access to Pennock Island, yet the EIS presents very little assessment of the effects that additional roads and development on the island would bring. Table 4-16 indicates that residential and retail/commercial development is predicted to occur on 76 acres of Pennock under Alternatives F1 and F3, yet the EIS presents only a very general description of the location of this development (undeveloped waterfront areas) and no assessment of how that land would be accessed (presumably with roads) or the environmental and other effects associated with developing and accessing that land. Since the acres of predicted development have been quantified, we presume that there is a general understanding of where the development would likely take place. We recommend that the EIS be revised to include a map (or maps) that identify the locations of expected development and roads and other infrastructure that would be needed to support expected development. Environmental effects associated with these changes on the island should be evaluated and reported in the EIS. (12)

Spine Road on the West Side of Airport

We are concerned with the inclusion of a 2.2 mile long road along the west side of the airport (henceforth, the Spine road) for all build alternatives under consideration. While Section 2.3.4 of the draft EIS indicates that this was done because the Borough currently has plans to construct a road in the same general vicinity to access the Lewis Reef development area, the EIS provides no discussion of how the Spine road would provide improved access to Borough lands since it would end within the airport reserve area (lands owned by the ADOT&PF). It is not clear that the Spine road would meet one of the primary elements of the purpose and need statement for the project as it would not provide improved access to Borough lands. We recommend that the EIS be revised to clearly indicate how the Spine road would satisfy the purpose and need for the project and why it is the only option being considered. (13)

As presented in the draft EIS, the Spine road does not appear to provide an identifiable connection to anything or terminate in a logical place. We recommend that the EIS provide an explanation of why the Spine road would end where currently proposed. This explanation should include a discussion of how the Federal Highway Administration requirement for projects to have logical end points would be met. (14)

Effects of the No Action Alternative

The draft EIS states that development on Gravina or Pennock islands would primarily be a transfer of growth that otherwise would occur on Revillagigedo Island. We note that the EIS does not identify where growth would occur on Revillagigedo Island in the absence of improved access to Gravina island. This information, along with an assessment of the direct and indirect environmental (and other) effects should be analyzed in the EIS as part of the assessment of the No Action alternative. The analysis and disclosure of the effects of the No Action alternative are (15)

required by the National Environmental Policy Act (NEPA) and its implementing regulations.

Wetlands

We do not believe that EIS provides sufficient information to demonstrate that the preliminary preferred alternative (Alternative F4) represents the least environmentally damaging practicable alternative, a demonstration that is necessary before an Army Corps of Engineers permit can be issued pursuant to Section 404 of the Clean Water Act. As part of this demonstration, the EIS must show that impacts to waters of the United States, including wetlands, have been avoided, minimized, and mitigated, consistent with the analysis procedures outlined in the Section 404(b)(1) Guidelines (see 40 CFR Part 230). We recommend that the FHWA and ADOT&PF revise the EIS to include an evaluation of alternatives that complies with the requirements of the 404(b)(1) Guidelines and demonstrates that the preferred alternative represents the least damaging practicable alternative. (16)

Impacts to Water Quality

The draft EIS states that freshwater streams and creeks on Gravina Island "could" be adversely affected from runoff. The EIS should identify the specific streams and creeks that are expected to be impacted by stormwater runoff and identify actions that would be taken to avoid or minimize such discharges. (17)

The discussion in the draft EIS related to the expected impacts of construction activities on water quality is general and unclear, making it difficult to determine where such impacts are expected to occur, how significant the effects would be and what specific measures would be used to avoid or reduce those effects. (18) Section 5.25.10 states that the "potential for water quality impacts is proportional to the time spent constructing close to and within water bodies and wetlands and the amount of surface runoff that occurs during construction." While we do not disagree with the statement, the EIS should provide information indicating where such activities would take place, their proximity to surface waters (particularly those of high value), the duration of these activities or the degree of degradation of water quality that would result in these water bodies. (18) This type of information should be included in the EIS to inform the public and decision maker of the impacts to water quality associated with the construction of each of the project alternatives currently under review. The EIS should also identify specific actions that would be taken to avoid or minimize these effects, consistent with the direction of the NEPA implementing regulations to identify mitigation measures in the EIS (see 40 CFR 1502.14(f)). (18)

The specific Best Management Practices (BMPs) that would be used to reduce runoff and sedimentation impacts to water quality should be identified in the EIS. The specific BMPs to be employed represent mitigation designed to avoid or minimize specific effects and should be identified in the EIS, as required by the NEPA regulations (see 40 CFR 1502.14(f)). We also recommend that the erosion and sedimentation control plan and spill prevention plan be developed and included in the EIS as they also will reflect the mitigation strategies to be employed to reduce impacts to water quality. (19)

Impacts to Marine Habitat

The specific Best Management Practices (BMPs) that would be used to reduce impacts to the marine environment should be identified in the EIS. The specific BMPs to be employed represent mitigation designed to avoid or minimize specific effects and should be identified in (19)

the EIS, as required by the NEPA regulations (see 40 CFR 1502.14(f)). We also recommend that the erosion and sedimentation control plan and spill prevention plan be developed and included in the EIS as they also will reflect the mitigation strategies to be employed to reduce impacts to water quality. (19)

Subsistence Impacts

The EIS is unclear in its analysis and presentation of impacts to subsistence resources and their users. Section 4.3.6 presents a discussion of acres of wetlands, ponds and uplands that would be impacted by each alternative to characterize impacts to subsistence. The draft EIS does not explain how those acreages relate to specific subsistence resources that would be impacted, the nature and extent of those impacts, and the significance of those impacts. The EIS should specifically identify terrestrial and aquatic subsistence resources that would be directly impacted by the access project and an assessment of the impacts to those resources and their significance. (20)

Predicted Effects and their Significance

The EIS does not provide clear characterizations of whether estimated impacts associated with each alternative would be significant or not. The implementing regulations for NEPA require Federal agencies to disclose the direct and indirect effects of their actions, and their significance (see 40 CFR 1502.16). The EIS should be revised to present predicted results and conclusions along with a characterization of their significance to ensure that the EIS complies with the NEPA implementing regulations. (21)

Government-to-Government Consultation

The draft EIS presents no evidence that the Federal government (either the Federal Highways Administration, the Army Corps of Engineers or the Coast Guard) has consulted with the governing bodies of potentially affected Tribes, consistent with EO 13175 (*Consultation and Coordination with Indian Tribal Governments*). EO 13175 states that the U.S. government will continue "to work with Indian tribes on a government-to-government basis to address issues concerning Indian tribal self-government, trust resources, and Indian tribal treaty and other rights." This is particularly important since improved access to Gravina Island is likely to affect subsistence activities on the island. We recommend that further development of the EIS and project be conducted in consultation and coordination with the governments of tribes that may be affected by the direct or indirect effects of the project. The results of these consultations should be documented and reported in the EIS. (22)

Authorized Funding

Pages SUM-2 and 1-1 of the draft EIS state that the Transportation Equity Act of the 21st Century (TEA-21) authorized approximately $20 million dollars to construct a bridge that joins Gravina Island with Ketchikan. It is our understanding that TEA-21 authorized environmental and engineering studies related to improving access between Ketchikan and Gravina Island and did not authorize funding for construction of a bridge. It is also our understanding that funding for the solution to be identified at the completion of this evaluation process has not been identified or authorized. We recommend that the EIS be revised to more accurately reflect the funding authorized and available for current evaluation activities and, if known, for implementation of the identified access solution. (23)

Impacts to Cruise Ships

Section 4.7.2.4 of the draft EIS indicates that Alternative F1 would introduce an incremental increase in grounding and allision risks for cruise ships. As written, it is difficult to determine whether the increased risks are large or small or what their significance is to navigation through the East Channel. The EIS should discuss the magnitude and significance of these increased risks. (24)

Section 4.7.2.4 indicates that marine pilots have expressed concerns with the proposed bridges crossing the East and West navigation channels at angles. The EIS indicates that if Alternative F1 were selected for implementation, additional evaluation related to realigning the bridges and evaluating their environmental effects would be undertaken as mitigation. We disagree that these proposed analyses represent mitigation, as there is no assurance that any actions to reduce potential adverse effects would result. Additionally, we believe that such analyses should be completed as part of this EIS process because they have direct implications on the decision to be rendered. The analyses would introduce new information related to bridge design and cost considerations as well as environmental effects that should be considered before a final decision is reached. Given the already high cost of Alternative F1, it is important that the decision maker and the public are informed of potential cost increases associated with likely changes to the preferred alternative. (25)

Effects of Wind and Weather

Section 4.7.3.7 of the draft EIS indicates that high winds and inclement weather would have effects on all alternatives in the form of travel restrictions and/or needed design features of a bridge solution. The EIS indicates that additional analyses of bridge designs (including wind tunnel modeling) would need to be conducted. We recommend that the EIS indicate if the costs of these additional analyses and potential design changes have been factored into the estimated cost of Alternative F1. If not, we recommend that the project costs reported in the EIS be revised to reflect these costs. (26)

We suggest that the EIS include information related to weather conditions that would restrict operations of the ferry alternatives. We presume that there is information related to the operation of the current ferry that would likely identify the types of conditions and frequencies of occurrences when operation of the ferries would be restricted. Additional information related to such conditions may also be available from the Alaska Marine Highway System. Climatological information needed to develop such analyses can likely be derived from meteorological measurements taken at the airport. (27)

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements Definitions and Follow-Up Action*

Environmental Impact of the Action

LO + Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC + Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO + Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU + Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 + Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 + Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 + Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

ALASKA DOT & PF
OCT 7 2003
SPECIAL PROJECTS

Strategic Planning Office
Office of Program Planning & Integration
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
1315 East West Highway
SSMC-3
Silver Spring, MD

Phone: (301) 713-3318
FAX: (301) 713-0585 or
(301) 713-3324

TO: Reuben Yost **FROM:** Steve Kokkinakis

PH:

FAX: 907-465-2016 **Number of Pages:** 15 (including cover sheet)

MESSAGE:

Gravina Access DGIS Comments

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

October 3, 2003

Reuben Yost
Special Projects Manager
Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

Dear Mr. Yost:

The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Statement (DEIS) for the Gravina Access Project. The purpose of the project is to improve surface transportation between Revillagigedo Island and Gravina Island in the Ketchikan Gateway Borough, Alaska. The DEIS evaluates six bridge alternatives and three ferry alternatives. All alternatives include a roadway around the southern end of the airport runway connecting the airport terminal to a spine road on the west side of the airport. The preferred alternative would be a bridge between Tongass Avenue and the airport via Pennock Island.

Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act requires Federal agencies to consult with NMFS on all actions that may adversely affect Essential Fish Habitat (EFH). NMFS is required to make conservation recommendations which may include measures to avoid, minimize, mitigate or otherwise offset adverse effects. For the purposes of this DEIS, EFH includes all segments of streams where salmon reside during any period of the year as well as the marine waters and substrates of Tongass Narrows. These areas provide habitat for a number of anadromous and marine species including all five species of Pacific salmon, arrowtooth flounder, dusky rockfish, Pacific cod, sablefish, yelloweye rockfish, shortraker rougheye rockfish and sculpins.

Section 7(a)(2) of Endangered Species Act (ESA) directs interagency cooperation "to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species" or result in the destruction or adverse modification of critical habitat. NMFS is responsible for the administration of the ESA as it applies to certain cetaceans, pinnipeds, and marine fish. These include several species of whales, Pacific salmon, and Steller sea lions.

This letter contains NMFS comments on the DEIS with respect to both EFH and the ESA. NMFS reviewed a draft of the EFH Assessment in March 2003. At that time, we recommended the use of bridges in place of culverts for stream crossings. The revised EFH Assessment

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proposes to use bridges for road crossings at Government Creek and Airport Creek. However a culvert is still being proposed for one of the crossings of the anadromous stream southeast of government creek. The EFH Assessment acknowledges that this culvert will result in a direct loss of EFH but does not explain why a culvert is being proposed for this crossing instead of a bridge. (1)

In the March review, NMFS also indicated that the EFH Assessment should document how much eelgrass would be impacted by the various alternatives and where the impacted eelgrass is located. Although a map has been provided in the DEIS documenting the location of eelgrass, the amount of eelgrass and kelp that will be impacted is provided only for the channel modification activities in Alternative F3. (2) NMFS also indicated that Table 1-1 should specify acreage of impacts by habitat type of eelgrass, kelp and wetlands. (3) A wetlands category has been added to this table in the revised EFH Assessment, however there is still only a general "marine" category for all other EFH.

In general, NMFS finds that the DEIS lacks site-specific information on the type and extent of EFH in the project area and the potential impacts of each of the alternatives on EFH. (4) The DEIS does not link site specific analyses of environmental conditions and the type and extent of fish habitat at the proposed location of each alternative to the magnitude and extent of actions associated with each alternative (pile driving, dredging, etc.). (5) The DEIS indicates that dredging, pile driving and in-water blasting may be required under all the alternatives; however it does not identify the amount of dredging that may be required, the number of pilings that would need to be placed, or the amount of in-water blasting that might be required under each of the alternatives. (6) The proposed locations for pile driving, dredging and blasting are not identified and no discussion of EFH within the impacted areas is provided. (7) As a result, how conclusions on the potential impacts of the alternatives on EFH were reached is not clear.

For example, the EFH assessment indicates that dredging for pier construction and channel modification would create turbidity plumes; however, the document does not contain any information on the tidal exchange or currents in Tongass Narrows, nor does it identify the nature of the substrate that would be disturbed. Yet, the assessment concludes that "because of the strong tidal currents" turbidity from dredging would dissipate "with minimal effect on biota." The amount of time that dredged particles remain suspended is directly related to the nature of the particles and the currents in the disturbed area. Strong currents can assist in dissipating particles, but they also can increase the impact area by carrying suspended particles away from the dredging site. The size of the suspended particles, and the amount of time that they remain suspended, is important in determining the potential impacts, especially on filter-feeding organisms. (8) Without more specific information on the particle size of the substrate being dredged and the currents in the project area, the conclusion that the impact of dredging on biota will be minimal appears to be largely conjecture.

To adequately assess the potential impact of the alternatives on EFH, the revised EFH assessment and EIS need to include site-specific data and information to support the conclusions on potential

impacts from project activities. At a minimum, the revised documents will need to identify the scope and extent of potential pile driving, dredging, blasting and other activities that have the potential to impact EFH, the probable locations of these activities, the environmental conditions (currents, substrates, etc.) in the vicinity of the activities, and the EFH that may be impacted by these activities. Conclusions regarding the potential impacts of construction and operation activities on EFH should be provided for each alternative. (9) (10)

All marine mammals that occur in the project area are protected by the Marine Mammal Protection Act (MMPA) of 1972. The DEIS states that all build alternatives would adversely impact marine mammals in the Tongass Narrows. The revised EIS should include detailed information on the activities that may affect marine mammals and should differentiate the magnitude of the effects among the alternatives. The DEIS states that marine mammals would likely move away from any excessive noise resulting from the project. Harassment of marine mammals, including "annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to migration, breathing, nursing, breeding, feeding, or sheltering...," is prohibited under the MMPA. The EIS should state how construction impacts or other associated project activities that may result in harassment of marine mammals (as defined at 50 CFR 216.3) will be mitigated. If disruption of marine mammal behavior (such as feeding or migration) cannot be avoided, Section 101 (a) 5 of the MMPA contains provisions for obtaining a permit authorizing harassment of marine mammals incidental to specific activities. The permit process generally requires 6 to 8 months. Therefore, early identification and planning are necessary to avoid project delays in the event that harassment of marine mammals cannot be avoided. For more information on incidental harassment permits, contact Ken Hollingshead of NMFS at (301)713-2322, extension 128. (11) (12) (13)

The DEIS concludes that impacts to marine mammals from construction activities such as blasting and pile driving would be temporary, and the animals would return to their normal behavioral patterns once these activities were completed. The amount of time required for construction activities under the various alternatives is not discussed in the DEIS. The only timeline mentioned is in the EFH assessment with respect to channel modification required under Alternative F. This section states "The duration of these activities would be 1 to 3 months. Channel modification work would occur up to seven days a week with almost continuous disturbance from dredging and intermittent disturbance from blasting" (page 13). More detailed information on the length of the construction period for each alternative is necessary before the impacts to marine mammals can adequately be assessed. (14)

The DEIS should be revised to contain more in-depth information on the population status and trends of marine mammals that occur in the project area. Alaska Marine Mammal Stock Assessments are published every year by NMFS. These reports provide a good source of information on current stock abundance and trends and on activities that have historically affected marine mammal populations. Stock Assessment Reports can be accessed at the following website: http://www.nmfs.noaa.gov/prot_res/PR2/Stock_Assessment_Program/sars.html. (15)

Steller sea lions and humpback whales are found in the vicinity of the project. In addition to protection under the MMPA, these species are listed as threatened and endangered, respectively, under the ESA. NMFS agrees with the determination in the DEIS that impacts to these species are more likely to result from construction related impacts than from the proposed project itself. Section 4.25.15 of the DEIS states that pile driving and underwater explosives could adversely affect Steller sea lions through high noise levels and vibration. Section 4.25.15.2 of the DEIS states that humpback whales could be affected directly by underwater noise from construction work in Tongass Narrows. Because this action 'may affect' listed species, the responsible Federal agency, the Federal Highway Administration, should request consultation with NMFS under section 7 of the ESA. If adverse effects to listed species are identified, NMFS and the Federal Highway Administration may try to eliminate those effects by revising the proposed action. Adverse effects on listed species may be avoided by the use of seasonal work windows and observers to monitor the presence of listed species and suspend action until the animals have cleared the area. Section 3.20.2 in the DEIS needs to be revised to include information on the approximate number of Steller sea lions that occur in the project area and the seasonal use of this area by Steller sea lions in order to adequately assess the impacts of the proposed action on this species and to facilitate the consultation process. (16) (17) (18) (19)

Section 3.20.1 in the DEIS should be revised to include the following information with regard to humpback whales: (20)

1. The International Whaling Commission (IWC) first protected humpback whales from commercial whaling in 1965.

2. Humpback whales were listed as endangered under the ESA in 1973.

3. Commercial whaling of humpback whales in the North Pacific ceased in 1965 with protection from the IWC.

All alternatives include construction of a road on the west side of Ketchikan International Airport that would cross Government Creek. However, only Alternatives G2, G3 and G4 apparently would require "placement of concrete, rock and other fill materials in the Government Creek estuary." The reason for this is not clear. The road crossing of Government Creek is identified in Figure 2.2 as being the roadway for all build alternatives. Additional discussion of the need for the proposed fill under these alternatives should be provided. (21)

Comments and recommendations with respect to specific activities that have the potential to affect EFH and protected species are included in the attachment to this letter. Please contact Katharine Miller with the NMFS Alaska Region at (907) 586-7643 if you have any questions regarding this letter and attachment.

Sincerely,

for Joyce Wood
NEPA Coordinator

Attachment to NMFS Comments on the Gravina Access DEIS

Pile Driving:
Appendix N indicates that pile driving may be a requirement for all project alternatives. Section 3.1.3 of Appendix N acknowledges that severe adverse impacts to fish can occur from the use of an impact hammer to drive hollow steel piles of the type required for the project under all alternatives. However, the EFH assessment in Appendix O states that "minor fish kills could result from driving large diameter steel piles into hard sediments with an impact hammer." The DEIS does not indicate the type of pile driving equipment that is proposed for use, number of piles to be driven under the various alternatives, the depth to which the piles will be driven, the amount of time needed to drive the piles, or the nature of the substrate into which the piles will be driven. No mitigation is proposed for adverse impacts to EFH from pile driving. (22)

Pile driving can generate intense underwater sound pressure waves that have been shown to injure and kill fish (Caltrans 2001, Longmuir and Lively 2001, Stotz and Colby 2001). Injuries associated directly with pile driving may include rupture of the swimbladder, internal hemorrhaging (Caltrans 2001, Abbott 2002), and structural damage to the fish inner ear (Enger 1981, Hastings 1996). Loud sounds can also have detrimental effects on fish by causing stress, increasing risk of mortality by reducing predator avoidance capability and interfering with communication necessary for navigation and reproduction.

The type and intensity of the sounds produced during pile driving depend on a variety of factors, including, but not limited to, the type and size of the pile, the firmness of the substrate into which the pile is being driven, the depth of water, and the type and size of the pile-driving hammer. Sound pressures are positively correlated with the size of the pile, as more energy is required to drive larger piles. Hollow steel piles as small as 14 inches in diameter have been shown to produce sound pressures that can injure fish (Reyff 2003). Firmer substrates require more energy to drive piles, and produce more intense sound pressures. Sound attenuates more rapidly with distance from the source in shallow water than in deep water (Rogers and Cox 1988).

Studies have shown that the use of an impact hammer to drive hollow steel piles produces intense, sharp spikes of sound which can easily reach levels that injure fish. Fish may respond to the first few strikes of an impact hammer with a startle response. After these initial strikes, the startle response wanes and the fish may remain within the field of a potentially-harmful sound (Dolat 1997, NMFS 2001). Impact hammers produce such short spikes of sound with little energy in the infrasound range, that fish fail to respond to the particle motion (Carlson *et al.* 2001). In contrast, vibratory hammers produce sounds of lower intensity with a rapid repetition rate. When exposed to sounds which are similar to those of a vibratory hammer, fish consistently displayed an avoidance response (Enger et al. 1993, Dolat 1997, Knudsen et al. 1997, Sand et al. 2000), and did not habituate to the sound, even after repeated exposure (Dolat 1997, Knudsen et al. 1997). Thus, impact hammers may be more harmful than vibratory hammers for two reasons: first, they produce more intense pressure waves, and second, the sounds produced do not elicit an avoidance response in fishes, which will expose them for longer periods to those harmful pressures.

In summary, effects on EFH and managed species during pile driving for the Gravina Access Project will depend on a number of variables associated with environmental conditions at the project site and variables associated with the construction schedule. These include:

- size and force of the hammer strike
- distance of fish from the pile
- depth of water around the pile
- bottom substrate composition and texture
- size and species of fish in the project area

(23)

Before an assessment can be made regarding the extent of potential impact from pile driving on EFH, these variables will need to be evaluated in the EFH Assessment. The following EFH conservation recommendations should be considered with respect to pile driving for all alternatives:

(24)

1. Use a vibratory hammer when driving hollow steel piles. If impact hammers are required for seismic stability or substrate type, the pile should be driven as deep as possible with a vibratory hammer prior to use of the impact hammer.
2. For piles located in intertidal and shallow subtidal areas, piles should be driven during low tide.
3. A fish and hydroacoustic monitoring program should be developed that includes the following:
   a. Underwater sound measurements at various distances and depths from pile driving operations
   b. Evaluation of fish mortality and injury rates. This could be accomplished through the use of caged fish at various distances and depths from pile driving operations.
   c. Observation of bird predation and behavior.
4. Implement measures to attenuate the sound should sound pressure levels exceed the 180 dB threshold. Methods to reduce the sound pressure levels include, but are not limited to, the following:
   a. Surround the pile with an air bubble curtain system or air-filled coffer dam.
   b. Use a smaller hammer to reduce sound pressure. The sound produced has a direct relationship to the force used to drive the pile.
   c. Use a hydraulic hammer if impact driving cannot be avoided. The force of the hammer blow can be controlled with hydraulic hammers; reducing the impact force will reduce the intensity of the resulting sound.
5. To avoid attracting fish during nighttime pile driving operations, piles driving should be limited to daylight hours to the extent practicable and artificial illumination should be minimized. If needed, illumination for any pile driving operations should be directed away from the water.

Pile driving may also have adverse impacts on marine mammals. These include direct effects from exposure to elevated sound levels that may produce a temporary shift in the animal's hearing threshold, and indirect effects such as behavior modification.

The following conservation recommendations for minimizing impacts to marine mammals should be considered with respect to pile driving for all alternatives: (25)

1. Pile driving should be conducted only during daylight hours.
2. Implement measures to attenuate the sound should sound pressure levels exceed the 180 dB threshold. If sound pressure levels exceed acceptable limits, implement mitigative measures. Methods to reduce the sound pressure levels include, but are not limited to, the following:
   a. Surround the pile with an air bubble curtain system or air-filled coffer dam.
   b. Use a smaller hammer to reduce the sound pressures. The sound produced has a direct relationship to the force used to drive the pile.
   c. Use a hydraulic hammer if impact driving cannot be avoided. The force of the hammer blow can be controlled with hydraulic hammers; reducing the impact force will reduce the intensity of the resulting sound.
3. A 50m initial safety zone should be established around the pile-driving site. A NMFS-approved marine mammal monitor should scan the safety zone continuously for 5 minutes just prior to, and during, pile driving to determine whether marine mammals are present. Pile driving should not begin until the safety zone is clear. If an animal is in the safety zone before initiation of the pile driving activity on any given work day, operations should be delayed until the animal has moved a safe distance away. If an animal enters the safety zone while pile driving is occurring, operations should be stopped immediately until the animal has moved beyond the range of the safety zone. In consultation with NMFS, the safety zone may be increased if animals beyond 50 m show excessive behavioral changes in response to pile driving operations. If pile driving stops for longer than 45 minutes, another scan should be performed.
4. A "dry fire" of the hammer should be performed prior to operating at full capacity. A "dry fire" occurs when the hammer is raised and dropped with no compression of the pistons which produces approximately 50 percent of the maximum in-air noise level. This dry-firing should allow sea lions in the area to voluntarily move from the area and should expose fewer animals to loud sounds both underwater and above water

In-water Blasting:

Appendix N states that in-water blasting may be needed to prepare foundations for in-water piers under all alternatives and would be needed under Alternative F3 to improve navigation conditions in the channel west of Pennock Island. Section 3.1.3 indicates that underwater blasting can be expected to cause heavy mortalities of fish within 100 meters of the blast area with lesser numbers of fish killed with greater distance. The proposed conservation measures include preparation of a blasting plan to be reviewed by NMFS prior to any blasting activities, pre-blasting surveys for fish

schools, post-blasting surveys to assess fish mortality, and possible use of mitigation measures such as bubble curtains.

The DEIS does not contain any information on the amount of blasting that may be required for each alternative, duration of blasting, size of charge, detonation velocity of charge, etc. The DEIS also does not contain an evaluation of the specific EFH and fishery resources in the vicinity of proposed blasting operations. (26) (27)

Research conducted by the Army Corps of Engineers indicates that the lethality of an explosive is directly related to its detonation velocity (Keevin, 1997). Detonation velocity is the speed with which a blasting agent ignites. The more rapid the detonation velocity the more abrupt is the resultant hydraulic pressure gradient and the more difficulty fish have adjusting to the pressure changes. Investigations have demonstrated that the swimbladder is the most frequently damaged organ. Laboratory tests have demonstrated that small negative pressures can injure fish swimbladders, and negative pressures of only one atmosphere (101.4 kPa) can kill marine fish. This is well below the pressure of most underwater explosions.

The distance from the blast at which lethal effects occur depends upon several variables including: the typical size (weight) of the fish species likely to be in the area, the depth of the fish, the depth of detonation of the charge, and the weight of the charge. Lethal ranges will be increased if the water is shallow (less than five times either the detonation depth or target depth, whichever is greater) or where the bottom is rocky (Keevin, 1997).

Non-lethal effects from blasting are similar to those discussed above for pile driving. In addition, sedimentation resulting from the use of explosives may cover spawning areas or may reduce or eliminate benthic prey. By-products from the detonation of explosives may include ammonia or similar compounds and may be toxic to fish and other aquatic biota (Wright 1998).

The DEIS proposes to mitigate the effects of in-water blasting in part by conducting pre-blasting surveys to ensure that no fish schools are in the vicinity of the blasting area. These surveys will be only partially effective, since many of the fish species likely to be impacted by blasting are not schooling species. To adequately evaluate the potential impact of possible blasting activities on EFH and to design mitigation measures to reduce adverse impacts, site specific data on the marine resources in the vicinity of potential blasting areas should be collected and included in the revised EFH assessment. (23)

Dredging and Stream Crossings:

The EFH assessment indicates that dredging for pier construction and channel modification may be a component of all alternatives. All alternatives include construction of a road on the west side of Ketchikan International Airport that would cross anadromous streams. As discussed above, the conclusion that turbidity from marine dredging would dissipate "with minimal effect on biota" does not appear to be based on analysis of site-specific environmental conditions. The type of dredging equipment to be used and the potential for entrainment of fish in dredging equipment is (8) (29)

not addressed. The DEIS does not contain any conservation recommendations with respect to dredging other than the use of BMPs when placing fill next to streams. (30)

Marine dredging has the potential for both direct and indirect impacts to fish. Potential direct effects include entrainment of fish, particularly juvenile fish, and invertebrates in dredging equipment. Indirect effects include behavioral and sub-lethal impacts from increases in turbidity and redistribution or release of contaminants with increased potential for chronic or acute toxicity (NMFS 2001).

Dredging causes temporary elevation of suspended solids emanating from the project area as a turbidity plume. Excessive turbidity can affect fish or their prey by abrading sensitive epithelial tissues, clogging gills, decreasing egg buoyancy, and can affect photosynthesis of phytoplankton and submerged vegetation leading to localized oxygen depression (Bash 2001, NMFS 2001). Dredging may also affect the migration patterns of juvenile salmonids as a result of noise, turbulence, and equipment (Bash 2001, NMFS 2001). The amount of time that sediments remain suspended in the water column and the rate at which they can be expected to sink depends upon the type and size of sediment being dredged. The amount of current in the dredging area will affect both the rate at which turbidity dissipates and the total area that may be affected by dredging activities.

The removal of bottom sediments during dredging can disrupt the benthic communities and eliminate feeding habitat available to fish. The rate of recovery of the dredge area is temporally and spatially variable and site specific. Recolonization varies considerably with geographic location, sediment composition, and types of organisms inhabiting the area (Kennish 1997).

Suspended sediments dredged from estuarine and coastal marine systems can be high in organic matter and clay, both of which may be biologically and chemically active. Dredged spoils removed from areas adjacent to industrial and urban centers can be contaminated with heavy metals, organochlorine compounds, polyaromatic hydrocarbons, petroleum hydrocarbons, and other substances (Kennish 1997) and may be prone to resuspension.

To adequately evaluate the potential impact of dredging on EFH and to design mitigation measures to reduce adverse impacts, site specific information is needed on the environmental conditions, including the potential for any contaminated sediments, and the type and extent of fish habitat in the areas where dredging may occur. The revised EFH assessment should also identify the magnitude and extent of dredging associated with each alternative, the type of dredging equipment that will be used, and options for disposing of dredge material. The following conservation recommendations should be considered with respect to dredging for all alternatives: (31) (32) (33)

1. Dredge timing windows should be incorporated into the dredging program to eliminate potential effects to sensitive life cycle stages of fish and invertebrates (e.g., rearing and migration) similar to those proposed in the DEIS for blasting. Information in the DEIS is insufficient for NMFS to recommend timing windows at this time.
2. A dredge barge should be utilized to completely retain dredge material to minimize turbidity.

3. Depending on the type of dredging equipment that will be used, a fish and invertebrate presence monitoring program should be implemented during dredging to monitor for evidence of fish entrainment. If significant numbers of fish or invertebrates appear in the spoils, then dredging should be curtailed.
4. If suction dredges are used, the draghead of dredges shall be operated with the intake at or below the surface of the material being removed.

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STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF HABITAT MANAGEMENT AND PERMITTING
PRINCE OF WALES AREA OFFICE

FRANK H. MURKOWSKI, GOVERNOR

P.O. Box 668
Craig, Alaska 99921-0668
Phone 907-826-2560
Fax 907-826-2562

MEMORANDUM



TO: Reuben Yost
Special Projects Manager
DOT&PF – Southeast Region
Juneau

FROM: Mark Minnillo
Habitat Biologist
Craig

DATE: October 6, 2003

SUBJECT: Gravina Access Project, Draft Environmental Impact Statement Comments

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The Office of Habitat Management and Permitting (OHMP) of the Alaska Department of Natural Resources (DNR) has reviewed the Draft Environmental Statement (DEIS) prepared by HDR Alaska, Inc. (HDR) for the Gravina Access project. The information and recommendations contained herein are the result of a coordinated interagency State response.

Project Description

The proposed project is located in and across Tongass Narrows between Ketchikan on Revillagigedo Island and Gravina Island. The Alaska Department of Transportation and Public Facilities has presented 10 alternatives that include 6 bridge alternatives, 3 ferry alternatives, and 1 no action alternative. Alternative F1 is identified as the "Preferred Alternative". The summary indicates that under this alternative, 2 bridges between Tongass Avenue and the airport via Pennock Island would be constructed. The East Channel Bridge would be approximately 3,715 feet long; have a maximum height of approximately 250 feet; a vertical navigational clearance of 200 feet above high tide; and a horizontal navigational clearance of approximately 550 feet. The West Channel Bridge would be approximately 2,750 feet long; have a maximum height of approximately 160 feet; a vertical navigational clearance of 120 feet; and a horizontal navigational clearance of approximately 500 feet.

Fisheries and Water Quality

For clarification purposes, the DEIS states that all road structures crossing fish habitat channels would be designed to provide passage for juvenile and adult salmon as per Alaska Department of Fish & Game (ADF&G) Title 16 standards. As of April, 2003, per Executive Order 107, the Division of Habitat and Restoration has been transferred from ADF&G to the Alaska Department of Natural Resources (ADNR) and is now known as the Office of Habitat Management and Permitting. Along (1)

with this transfer, the authority delegated under Title 16.05 has also been transferred to ADNR OHMP under Title 41.14.

As listed in the Atlas and Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes, on Gravina Island there are 2 cataloged anadromous streams (Airport Creek East and West) that will be directly affected by all proposed alternatives excluding the no action alternative. With respect to the preferred alternative, 4 additional cataloged anadromous streams (Government Creek, and 3 unnamed streams) will be directly affected by the proposed road alignment; and 1 cataloged anadromous stream (Clam Creek) will be indirectly affected by the proposed road alignment. (2) (3)

All of the above mentioned streams have been found to be important for the spawning, rearing, and/or migration of coho salmon. In addition, Airport and Government Creeks also support runs of pink salmon. Spawning begins in August and continues through December. Eggs deposited in the gravel do not complete hatching into free-swimming fry until mid-June. Juvenile coho occupy the area year-round. Any instream activity, including equipment crossings, could jeopardize egg-to-fry survival. Timing restrictions for in-water construction will be placed on all fish stream crossings based on the species present. Since many small fish-bearing streams do not show up in the Atlas or on maps, we recommend that additional stream surveys be conducted on any other streams or tributaries not mentioned in the DEIS, in order to determine if there are any other fish-bearing streams that may be affected by the proposed project. (4) (5) (6)

Sediment control during construction is always a concern in this type of project. Many surface waters are to be crossed, from inundated wetlands to streams of varying sizes and flow rates. Measures to minimize sediment production and to maximize containment of sediment produced during construction will be important considerations during project design and construction. Waste disposal areas need to be carefully placed to avoid wetlands and other highly productive areas to the extent possible. (7) (8)

Wildlife

Direct impacts associated with increasing vehicular traffic to Gravina Island may occur in several forms. First, the loss of habitat from creating the road will directly reduce wildlife habitat on the island and in particular low elevation winter habitat for deer. Second, road access will also increase access to wildlife and could increase harvest of deer and wolves through hunting. Additionally, an increase in deer harvest would likely have a significant impact on the wolf pack that currently resides on the island and may lead to elimination of the pack through displacement due to reduced prey populations. ADF&G may require the implementation of more restrictive hunting regulations to protect game and furbearer populations. Third, it is likely that wildlife will be killed directly through collisions with vehicles. This will likely include both game (e.g. Sitka black-tailed deer, and black bears) as well as a wide range of non-hunted species that live in proximity to the road or attempt to cross the road during normal travels. Fourth, increased human population on Gravina Island due to easier access will most likely result in an increase in bear mortality due to human and bear encounters. (9) (10) (11) (12) (13) (14)

In the short term, ADF&G may need to close seasons by Emergency Order should trapping or hunting take exceed the sustained yield for a given species. In subsequent years, proposals will likely be made to the Alaska Board of Game to reduce hunting and/or trapping opportunity where access is easy. This (12)

could include access restrictions, vehicle restrictions, sex-specific hunts, shortened seasons, or some other regulatory actions determined by the Board. The Federal Subsistence Board would likely follow a parallel process.

Secondary impacts may also result from increased logging and user conflicts. With a direct link to Gravina Island, the cost of logging operations will be reduced resulting in more pressure to increase timber harvest. Such activities will result in loss of habitat for wildlife and in reduced carrying capacity for both game and nongame species. User conflicts are also likely to increase in this area because federally qualified subsistence users and other hunters (all those hunting under state regulation) will have easier access to populations of game species like deer and bear. (15) (16)

The cumulative effects of this project will undoubtedly lead to reduced populations of both game and nongame species in and around the project area and longer term wildlife loss resulting from reduced carrying capacity. (17)

The FEIS should further consider the long-term effects to wildlife and to users of these resources. (18)

Endangered Species and Alaska Species of Special Concern

The Humpback whale is one of five species identified as endangered in Alaska by the Commissioner of Fish and Game. A *Species of Special Concern* is any species or subspecies of fish or wildlife or population of mammal or bird native to Alaska that has entered a long-term decline in abundance or is vulnerable to a significant decline due to low numbers, restricted distribution, dependence on limited habitat resources, or sensitivity to environmental disturbance. The list of special concern species includes the Steller sea lion and the harbor seal. (For both lists, please see Attachment A.)

The DEIS text considers the Steller sea lion and the humpback whale, but other listed species are only briefly mentioned. We recommend the FEIS consider the full range of sensitive marine mammals that may be affected by the project. (19)

Subsistence

In general, the sections of the DEIS referring to subsistence use of Gravina and Pennock Islands by subsistence users from Saxman and Metlakatla are sufficient. Should ADOT decide to include more detailed information in the FEIS concerning the use of Gravina and Pennock Islands by residents of Saxman and Metlakatla, we have additional information in our office. (20)

Mitigation Measures

For clarity, we recommend a summary of all mitigative measures together in one section or subsection of the final document. In addition to the mitigative measures described or listed in the DEIS, we recommend the following: (21) (22)

Anadromous Fish Habitats: All bridge options involve crossing several anadromous streams on Gravina Island that are known to support coho salmon or coho, pink, and chum salmon. We recommend bridge crossings for Government, Airport, and Lewis Creeks. Further, we recommend that all bridges and culverts on Gravina Island be sized for increased runoff rates that can be anticipated once Gravina Island is developed as envisioned (for example, land clearing, resource extraction, and hard surface development associated with urbanization).

Revegetation and Restoration of Areas Disturbed during Construction, Slope Stabilization: Native plant species should be used for slope stabilization and reclamation of areas disturbed during construction. Species known to be invasive or noxious should not be used for any plantings or seedings.

Navigation: Construction timing for the actual bridge crossings should be reviewed closely, as any disruption of vessel traffic east or west in Tongass Narrows from May 1 through September 30 could cause an economic impact on the large charter boat and commercial fishing fleets that operate from downtown Ketchikan. Also, vessel movement by noncharter sport fishers leaving the downtown area, especially on weekends, could be impacted.

Project Elements and Alternatives: Submarine Utility Cables

In addition to the ferry and bridge alternatives described in Chapter 2, all access scenarios include a submarine electrical cable, two substations, and a submarine fiber optics cable (Chapter 4, page 4-151). The alternative of using a bridge structure as a means to suspend or otherwise carry the cables over Tongass Narrows and Pennock Island is not described or evaluated. The Final EIS should relate these cables to the Preferred Alternative, and should explain why the Preferred Alternative is to have the cables submarine and why substations are necessary. The Environmental consequences of the cables and substations should also be analyzed. (23)

Additional Comments

ADOT has made the Gravina Access Project DEIS available to us in electronic format. The portable CDs are easy to distribute and use; the searchable text made our review of sections pertinent to the Department far more efficient than paging though a lengthy paper copy. Further, the project website, http://www.gravina-access.com/, made supplemental reports available to us. We appreciate DOT's use of these technologies and opportunities. (24)

Thank you again for the opportunity to participate in your review of this NEPA document.

Mark J. Minnillo
Area Habitat Biologist

Attachment

cc: Al Ott, OHMP, Fairbanks*
Alex Dugaqua, OPMP, Juneau*
Janet Schempf, ADF&G, Juneau*
Kim Titus, ADF&G, Juneau*
Mike Turek, ADF&G, Douglas*
Phil Doherty, ADF&G, Ketchikan*
Steve Hoffman, ADF&G, Ketchikan*
Boyd Porter, ADF&G, Ketchikan*
Susan Round, District, Ketchikan*
*e-mail

Attachment A

State of Alaska Endangered Species List, 5 AAC 93.020

Eskimo Curlew *(Numenius borealis)*

Short-tailed albatross *(Diomedea albatrus)*

Humpback whale *(Megaptera novaeangliae)*

Right whale *(Eubalaena glacialis)*

Blue whale *(Balaenoptera musculus)*

Alaska Species of Special Concern (Effective November 27, 1998)

Aleutian Canada goose[1, 2] *(Branta canadensis leucopareia)*

American peregrine falcon[2] *(Falco peregrinus anatum)*

Arctic peregrine falcon[2] *(Falco peregrinus tundrius)*

Northern goshawk, Southeast Alaska population *(Accipiter gentilis laingi)*

Spectacled eider[1] *(Somateria fischeri)*

Steller's eider[1] *(Polysticta stelleri)*

Olive-sided flycatcher[4] *(Contopus cooperi)*

Gray-cheeked thrush *(Catharus minimus)*

Townsend's warbler *(Dendroica townsendi)*

Blackpoll warbler *(Dendroica striata)*

Brown bear, Kenai Peninsula population *(Ursus arctos horribilis)*

Steller sea lion, population east of 144° W. Long.[1], population west of 144° W. Long.[3] *(Eumetopias jubatus)*

Harbor seal *(Phoca vitulina)*

Beluga whale, Cook Inlet population *(Delphinapterus leucas)*

Bowhead whale[3] *(Balaena mysticetus)*

Chinook salmon, Fall Stock from Snake River[1] *(Oncorhynchus tshawytscha)*

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[1] Federally listed as threatened
[2] Downlisted from Alaska Endangered Species List
[3] Federally listed as endangered
[4] Category 2 Candidate Species under federal ESA

RECEIVED

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 6898
ELMENDORF AFB, ALASKA 99506-6898

REPLY TO
ATTENTION OF:

October 6, 2003

ALASKA DOT & PF
OCT 9 2003
SPECIAL PROJECTS

Regulatory Branch
East Section
9-2000-0152

Mr. Reuban Yost
Alaska Department of Transportation
And Public Facilities
6680 Glacier Highway
Juneau, Alaska 99801-7999

Dear Mr. Yost:

This is reply to your request for review and comments on the Gravina Access Project, Draft Environmental Impact Statement (DEIS), dated August 6, 2003, Ketchikan, Alaska (Township 75 S., Range 90 East, sections 16, 22, 23, 26, 27, 35, 36, and others, Copper River Meridian). This interim response further expands on our previous comment letter to Mr. Bill Ballard letter, dated July 28, 2003, (enclosure 1) and Mr. Steve Duncan's e-mail comments on the preliminary DEIS, July 24, 2003 (enclosure 2).

The purpose and need for Alaska Department of Transportation and Public Facilities (ADOT&PF) proposed transportation project is to enhance access to the Ketchikan Airport, and to enhance the development and recreational potential of Gravina Island. The proposed project would require two bridges and adjoining arterial roadway across Tongass Narrows via Pennock Island connecting Revillagigedo and Gravina Islands. Your draft Department of Army (DA) permit application (Appendix L of the DEIS) states that the two bridges across Tongass Narrows requires 500,000 cubic yards of fill for the placement of 14 bridge piers, and a total of 103.3 acres of wetlands to be filled.

We have determined that portions of your proposed actions requires DA authorization under:

a. Section 10 of the Rivers and Harbors Act of 1899 requires that a DA permit be obtained for certain structures or work in or affecting navigable waters of the U.S., (33 U.S.C. 403). The Tongass Narrows is a navigable water of the U.S; and (1)

b. Section 404 of the Clean Water Act (33 U.S.C. 1344) requires that a DA permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including wetlands. The Tongass Narrows and adjacent and hydrological connected wetlands are waters of the U.S.

We have also determined that there is insufficient project and alternative description information to determined if a DA permit is required under: (2)

c. Section 103 of the Marine Protection, Research and Sanctuaries Act (33 U.S.C. 1413), commonly referred to the Ocean Dumping Act, requires that a DA permit be obtained for the transport of dredged material for the purpose of dumping it into ocean waters.

We reviewed ADOT&PF's Gravina Access Project DEIS including Appendix L, Draft DA permit application (DA file number 2000-0152, Tongass Narrows 524) including the "draft 404(b)(1) Analysis"; Appendix M, Wetland Determination Methods; and, Appendix N, Marine Environment Impact Assessment - Technical Memorandum. We have determined that additional information concerning ADOT&PF's proposed project and alternatives descriptions (Chapter 2), Scope of Analysis (Chapter 1), Existing Environment (Chapter 3), and Environmental Consequence (Chapter 4) are necessary before the Corps could adopt the project EIS as part DA permit evaluation process including our NEPA requirements as stated in 33 CFR 325 Appendix B. Our general comments are provided below. Additional specific comments will be provided at a later date as discussed with Mr. James Evensen of your staff."

Our major concerns include:

a. Inaccurate description of Department of Army, Corps of Engineers jurisdiction and coordination requirements, such as presented on page 3-50 and 4-51 of the DEIS. The statement "The Section 404 permit application and approval requires:" should be changed to more accurately state that "The Corps regulatory permit evaluation process under Section 10 RHA and Section 404 CWA requires coordination and approvals with:"... (the list needs revision to reflect coordination requirements stated in 33 CFR 320." On page 3-51, 3-14.1 should be modified to include the Clean Water Act as amended. (3)

b. The lack of project design information, including alternatives, to establish the project's environmental impacts and to development mitigation concepts. For the DEIS, preliminary information on project locations, habitats affected, fill footprints, fill and dredging quantities, disposal sites and temporary fills in waters of the U.S., including wetlands are to be sufficient to focus attention on the major §404 CWA issues. When the Final EIS is prepared and the formal DA permit occurs, there should be sufficient information and evaluation to make a permit decision. This also applies to Appendix L which should be entitled "Draft 404(b)(1) Evaluation" for the Final EIS. Appendix L as currently prepared is deficient in complying with the Environmental Protection Agency's (EPA) regulations 40 CFR 230, *Guidelines for specification of Disposal Sites for Dredged or Fill Material* {§404(b)(1)}. An example of a 404(b)(1) evaluation as an appendix to the DEIS is provided as enclosure. (4) (5)

c. The designation of a "preliminary preferred alternative" based on agency and public input, should be corrected to state that the Corps is prohibited from designating a preferred alternative during the EIS process until the ROD (Record of Decision) process. We recommend that the statement should read the "ADOT&PF Preferred Alternative." We also (6)

recommend the use of the term "action alternatives" in place of "build alternatives" as currently used in the DEIS. In Chapter 2 we also note that a comparative summary of alternatives including environmental (physical, biological and socio-economic) consequences is missing (40 CFR 1502.14). Table 2-1 "Summary of Reasonable Alternatives" could be modified to include this information. Also missing in this chapter or cited in other chapters is the designation of an "Environmentally Preferred Alternative," and designation of a "Least Environmentally Damaging Alternative" as required by EPA 404 (b)(1) Guidelines. Please note that a preliminary review for compliance with the 404 (b)(1) guidelines indicates that the proposed discharge of dredged or fill material may not contain all appropriate and practicable steps to minimize potential impacts of the discharge on the aquatic ecosystem, nor does it appear to represent the least environmentally damaging practicable alternative. (7) (8) (9) (10)

d. The DEIS does not identify what is the "Scope of Analysis" for this EIS. With the expansion of ADOT&PF's needs to include development of Gravina Island for development for economic and recreational purposes, the scope of the analysis should be defined to include the area of these secondary and cumulative impacts. (11)

e. Under Chapter 4, we find that the DEIS would be improved by providing the significant issues of the wetland impacts within the EIS, rather then just referencing Appendix M. In addition the significant elements of Appendix L 404(b)(1) evaluation should also be included. The DEIS as currently written requires further improvement to meet Corps requirements. In addition we find Chapter 4 omitting discussions on hydrology and if culverts or small bridges would be utilized with the project design for fish bearing creeks or streams. We also find deficiencies in delineation of impacts to aquatic and marines resources under our jurisdiction in this Chapter. (12) (13) (14) (15)

f. The description and analysis of "construction impact" requires further design information for which an impact analysis could be completed under areas of our jurisdiction. This information includes construction related impact from temporary fill placement in waters of the U.S., rehabilitation measures when these temporary sites are abandoned, footprint for construction staging areas, etc. The DEIS statement that "A definitive quantification of affected wetland acreage would be determined for the selected alternative during the design phase." is totally unacceptable and contrary to previous agreements between the Federal Highway Administration and the Corps of Engineers (i.e. Applying the Section 404 Permit Process To Federal-Aid Highway Projects, (Improving Interagency coordination on Federal-Aid Highway Project and Integrating the National Environmental Policy Act and Section 404 Requirements). (16) (17)

A remaining unresolved issue that needs to be discussed is the Corps' role as either a cooperating agency or as a commenting agency concerning the Gravina DEIS. As stated above these comments are provided to comply with your October 6, 2003, ending of the comment period. These should also be considered interim comments as previously discussed with Mr. Evensen of your staff. (18)

Should you or your staff have any questions concerning the above, feel free to contact Mr. Lloyd H. Fanter of my staff at the letterhead address above, by telephone at (907) 753-5554, by fax at (907) 753-5567, or by e-mail at: lloyd.h.fanter@poa02.usace.army.mil. For additional information about our Regulatory Program, visit our web site at: www.poa.usace.army.mil/reg.

Sincerely,

Glen Justis
Chief, East Section

Enclosures

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

ALASKA DOT & PF
OCT 14 2003
SPECIAL PROJECTS

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OCT 6 2003

ALASKA DOT & PF
OCT 14 2003
SPECIAL PROJECTS

Mr. Reuben Yost
Special Projects Manager
Alaska Department of Transportation & Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

Dear Mr. Yost:

This is in response to the request for the U.S. Department of the Interior's (Department) comments on the Draft Environmental Impact Statement (DEIS) for the **Gravina Access Project,** Ketchikan Gateway Borough, between Revillagigedo Island and Gravina Island, Alaska. We commend the excellent coordination in project planning between the Alaska Department of Transportation, and local city/borough governments. We offer the following comments for your consideration.

SECTION 4(F) EVALUATION COMMENTS

The Department of the Interior has no objection to Section 4(f) approval, providing that the Final Environmental Impact Statement evaluates alternatives that potentially minimize harm to Section 4(f) resources. We recommend that a chapter titled "Section 4(f) Evaluation" be placed in the body of the Final Environmental Impact Statement. Missing from the DEIS is a Section 4(f) evaluation that includes statutory mandates, maps depicting Section 4(f) properties and resources. The close proximity of the project to public recreational lands, numerous historic and archeological properties within the study area provides the opportunity for potential impacts to Section 4 (f) resources. ①

ENVIRONMENTAL STATEMENT COMMENTS

The DEIS evaluates alternatives to improve surface transportation between Revillagigedo (Revilla) and Gravina Islands in Ketchikan. Six potential bridge configurations and three potential ferry service options are considered. The preferred alternative (F1) would use two bridges, one between Revilla and Pennock Islands, and a second between Pennock and Gravina Islands.

The DEIS does a good job identifying potential impacts of each of the alternatives considered, with one exception. To improve the accuracy and completeness of the Final Environmental Impact Statement, the U.S. Fish and Wildlife Service recommends that you include an analysis of the important and productive habitat near Lewis Reef, which would be impacted by the selection of Alternative G-2 (construction of a ferry terminal at that site). A diverse mix of habitat types in this small area provides food and ②

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Maintenance and Logistics Command Pacific

Coast Guard Island Bldg. 54-D
Alameda, CA 94501-5100
Staff Symbol: (sr/m)
Phone: (510) 437-5905
Fax: (510) 437-5753
Email: mnygren@d11.uscg.mil

11011
October 3, 2003

Mr. Reuben Yost
Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

Dear Mr. Yost:

This letter concerns the "Gravina Access Project Draft Environmental Impact Statement" (DEIS) issued by your office on August 6, 2003. Your alternatives "F1 (Preferred)" and "F3" would have negative impacts on our Integrated Support Command (ISC) in Ketchikan that do not appear to have been addressed in your project planning efforts to date. (1)

ISC Ketchikan provides Health and Safety training and services, Personnel services, Facilities and Industrial Engineering, and Comptroller support to Coast Guard units in Central and Southeast Alaska, supporting about 1100 active duty and civilian personnel. In addition, ISC Ketchikan provides the following support services for all Coast Guard units in Alaska: Industrial Support Activity services, Naval Engineering support for our patrol boats and small boats, and Force Optimization and Training support, including small arms training.

As described in the DEIS, "F1 (Preferred)" would have the greatest impact on ISC Ketchikan in the following areas: Security; Armory Magazine; Firing Range; and Access, Noise and Utilities.

Security:
The land behind the ISC is currently undeveloped. As such, its deep growth and extreme terrain provide a natural security perimeter. The new road would provide ready access to a considerable portion of the eastern perimeter of the ISC, more than doubling the amount of fence line that we would have to maintain and protect. We will have to ensure adequate lighting, a clear-line-of-sight both inside and outside the fence line, increased personnel for security patrols, and enhance our security camera system to address this increased vulnerability. (2)

Armory Magazine:
Our current class 1.2 explosive magazine is not located far enough from buildings and other magazines on the upper base of the ISC. Our plan is to relocate the magazine to another site on the upper base that meets the setback standards and won't constrain future development. However, the proposed alignment of the new bridge access road, which is not completely clear due to the possible inaccuracy of current information and drawings, may impede our ability to move this magazine to a safe location. The clear zone for a class 1.2 explosive magazine is as follows (distances are for our allotment of 10,000 lbs): (3)

Inhabited Building - 394 feet
Public Traffic Route - 236 feet
Intraline distance 142 feet

Firing Range:
The current Firing Range sets roughly in a Northeast to Southwest direction with undeveloped land to the North and East. People stand at the Southwest end and fire toward the Northeast. Nothing should come out of the range but with its open construction, it is possible that a stray round could ricochet from the structure and continue to travel toward the proposed road. Our range is defined in Military Handbook 1027/3B, "Range Facilities and Miscellaneous Training Facilities Other Than Buildings," as a Partially Baffled Outdoor Small Arms Firing Range (Type "PB"). The Surface Danger Zone (SDZ) for a Type "PB" range is as follows: a horizontal plane from the firing line extending out 45 meters from each inside wall of the range, then extending down range at a 10 degree angle parallel with the direction of fire. By definition, the SDZ extends down range half the distance of the maximum range of the most powerful cartridge used. In our case, the .50 caliber ball (M33) cartridge is the most powerful used, with a maximum range of 6500 meters. Therefore, we have a SDZ of 3250 meters down range from the firing line - converting this into layman's terms, it's just a fraction over 2 miles. It is clear that in order for the road to be built in the "F1 (Preferred)" alignment, we cannot continue to use our existing range once construction starts. This will have a major impact on Coast Guard operations, as well as other Federal, State and local law enforcement and public safety agencies who use the range. Coast Guard military, homeland defense, and law enforcement duties require that our crews shoot for qualification semi-annually, and the other users of the range have similar requirements. (4)

Access, Noise and Utilities:
Future development trends at the ISC have more functions moving from the lower base to the upper. We would like to see provisions made for an upper base entrance from the new road in the design process. (5) While it is possible that we will never install a new entrance, we feel it is better to design it in now than to have to modify the road grade, etc. later. (6) We also have concerns about storm water drainage and runoff from the new road alignment on to our property. (7) There also may be construction and traffic noise impacts to residents in our barracks and housing on the upper base of the ISC. (8) Our utilities may be affected with the possible relocation of the water line paralleling South Tongass Avenue.

As a final note concerning "F1 (Preferred)," your acquisition of the right-of-way across ISC Ketchikan for the proposed bridge and access road alignment may be problematic. We do not hold the property in "fee simple title" rather; the land is withdrawn from the public domain lands held by the United States for "lighthouse purposes" by Executive Order 1520 dated April 20, 1912. As we are sure you are aware, these lands are subject to regulations issued and administered by the Bureau of Land Management (BLM). Given the nature of the improvements to be constructed on our property, this may require much coordination and approval from BLM. (9) A possible solution may be similar to that recently done with the Sitka Rocky Gutierrez Airport expansion project, where we were "indemnified" for loss of our facilities in exchange for the land for your project.

As described in the DEIS, "F3" would have a lesser impact on ISC Ketchikan. This would be manifested mainly through increased traffic on South Tongass Avenue, affecting access to both our upper and lower bases. (10)

11011
October 3, 2003

In order to have better coordination in your planning process, please add the following Coast Guard offices to your distribution lists: (11)

Commander (dpr)
Seventeenth Coast Guard District
P.O. Box 25517
Juneau, AK 99802-5517

Street address for FedEx/UPS/Shipping:
709 W. 9th Street, Room 759
Juneau, AK 99801

Commander (s)
Maintenance and Logistics Command Pacific
Coast Guard Island, Bldg. 54-D
Alameda, CA 94501-5100

Commanding Officer
Integrated Support Command Ketchikan
1300 Stedman St.
Ketchikan, AK 99901-6661

Commanding Officer
Civil Engineering Unit Juneau
P.O. Box 21747
Juneau, AK 99802-1747

Street address for FedEx/UPS/Shipping:
709 W. 9th Street, Room 817
Juneau, AK 99801

We wish to work with you on this very important project. If you have any questions, please contact Mr. Rick Nygren of my staff at the address or telephone number above.

Sincerely,

M. VALERIO
Captain, U.S. Coast Guard
Chief, Civil Engineering Division
By direction

Copy: CGD SEVENTEEN (dpr)
CG ISC Ketchikan
CG CEU Juneau
FHWA AK Division, Juneau

KETCHIKAN GATEWAY BOROUGH
Department of Planning and Community Development **Telephone 228-6610**
344 Front Street · Ketchikan, Alaska · 99901 **Fax 247-8439**
planning@borough.ketchikan.ak.us

October 1, 2003



Reuben Yost
Special Projects Manager
DOTPF Southeast Region
6860 Glacier Highway
Juneau, Alaska 99801-7999

The purpose of this letter is to offer comments of the Ketchikan Gateway Borough Planning Commission on the Gravina Access Project Draft Environmental Impact Statement. We wish also to submit for the record copies of the draft Gravina Island Plan now being prepared by our Planning Department.

Attached are drafts of four elements of what is to constitute the Gravina Island Plan. These are "North Gravina Area Plan," "Central Gravina & Airport Reserve Area Plan," "Clam Cove and Blank Inlet Area Plan" and "Citizen's Guide to Public and Private Decision-making" which provides background information on Gravina, outlines development considerations and important issues, and introduces the plan and its policies.

The three area plans provide detailed, area-specific development guidance. We strive to have these area plans be useful and practical. They are designed to:

- determine where, how and when new development activities (roads, public facilities, land development, timber harvests, etc.) are to occur;
- assist private developers to achieve their objectives within a framework of community values;
- communicate decisions to other landowners and agencies with oversight on local actions;
- secure grant funds for large projects including airport improvements, infrastructure, roads, and harbors; and
- conserve key lands and resources that are in the community's interest to maintain for future generations.

In developing these plans, the Borough has endeavored to keep pace with the State's preparation of the EIS. The alternative ultimately chosen by the State and our community for improved access to Gravina has a very direct bearing on land use development. While we recognize that this decision has not been definitively taken, we have needed to move ahead with the assumption that the recently announced preferred Pennock alternative will be ultimately chosen. We will need to make adjustments to the plan when the decision is clear.

The highlights of the three area plan recommendations include:

- a proposed road system master plan for the eastern portion of Gravina from Vallenar Point to Gravina Point;
- a conceptual expansion plan for the community of Clam Cove, assuming the preferred Pennock access alternative;
- two proposed industrial parks at the north and south ends of the airport reserve;
- three proposed planned developments at Gravina Point, Judy Hill and Rock Point/ Rosa Reef to be carried out by private/public partnerships on Borough, Mental Health Trust and some private lands;
- preliminary layouts for recreational and residential subdivisions of Borough lands;
- a management plan for Borough lands including trails, wetlands, recreation areas, timber harvests, etc.; and
- a new zoning plan for the entire area.

It should be emphasized that the attached documents are drafts. Over the next several months, using these draft document as a means to broaden public understanding, we will meet with area property owners, discuss our plans with other public landowners (DNR, Mental Health Trust and University Trust) and conduct a number of community meetings to build on and improve this draft. We expect to complete this work and have our final approved drafts in hand in early 2004 at the same time you (State DOTPF) complete the Gravina Access Project EIS. (Note: We are presently updated and finalizing the July, 2002 North Gravina Area Plan and we will, within several weeks, provide you with a new copy of that draft to replace the attached version.)

In its review of the DEIS, the Commission commends you on the work to date prepared by your department and your consultants. It is an excellent and exhaustive compilation of the many challenging issues faced by the Gravina Access Project.

There are several matters that Planning Commissioners concluded deserve further attention as you move to finalize the EIS. One issue relates to traffic in the downtown area of our community. While the Planning Commission understands that it would be unlikely that a new element to the scope of the present project would be added, the Commission does believe that it would be appropriate to show how the preferred Pennock alternative could be designed to accommodate a future project that would enable traffic to bypass the downtown core. ①

The project we envision is to route traffic around the downtown to the bridgehead near the Coast Guard base via an extension of the new 3rd Avenue bypass along Schoenbar Road. Such a project would leverage the extensive investment now underway in the 3rd Avenue Bypass and complete a key segment of the long planned "secondary route." We think it is important to analyze this in order to demonstrate how future traffic loads can be addressed with the configuration now presented in the preferred alternative.

Finally, we feel at least conceptual design alternatives and cost estimates for access to and from Pennock Island should be incorporated in the final EIS. We understand that it must be our community's responsibility to develop a land use plan for Pennock Island, however, we feel that the design, engineering and cost issues of Pennock access/egress should be substantively addressed in the EIS. ②

We appreciate your steadfast support of our community's efforts to realize our long-held objective to improve access to Gravina Island.

Linda Millard

Linda Millard, Acting Chairperson
Ketchikan Gateway Borough Planning Commission

Section 7 Correspondence

(Circled numbers correspond to the numbered comments in Table 7-2 in Chapter 7.)

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

February 17, 2004

Bill Ballard, State Environmental Coordinator
Statewide Design and Engineering Services Division
Alaska Department of Transportation and Public Facilities
3132 Channel Drive
Juneau, Alaska 99801-7898

Dear Mr. Ballard:

This letter responds to your Biological Assessment of the Gravina Access Project on federally listed humpback whales (*Megaptera novaeangliae*) and Steller sea lions (*Eumetopias jubatus*). NOAA Fisheries has reviewed the November, 2003 Biological Assessment and concurs with your conclusion, that, as described, the Gravina Access Project is not likely to adversely affect listed species or their designated critical habitat.

No further consultation on the effects of the Gravina Access Project on endangered humpback whales or threatened Steller sea lions is required. This determination will be reconsidered should the proposed action change in a manner that may result in additional effects on listed species.

If you have any questions regarding this project, please contact Brandee Gerke of my staff at (907) 586-7248. Thank you for your cooperation in the effort to protect threatened and endangered species.

Sincerely,

Arnold J. Berg

For James W. Balsiger
Administrator, Alaska Region

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STATEWIDE DESIGN & ENGINEERING SERVICES DIVISION

3132 CHANNEL DRIVE
JUNEAU, ALASKA 99801-7898

PHONE: (907) 465-2958
FAX: (907) 465-2460
TEXT: (907) 465-3652

January 26, 2004

Subject: Gravina Access Project, ESA Consultation. ACHP-0922(5)

Kaja Brix, Director
Protected Resources Division
National Marine Fisheries Service, Alaska Region
P.O. Box 21668
Juneau, AK 99802-1668

RECEIVED
FEB 0 2 2004

Dear Ms. Brix:

I've attached for your review the Biological Assessment (BA) for the subject in continuation of our informal consultation with your staff in compliance with Section 7 of the Endangered Species Act. Based on the findings of the BA, we've concluded that the proposed action will "not likely affect" listed species and request your concurrence.

I'd like to take this opportunity to thank Brandee Gerke of your staff for her timely assistance and counsel on this project. If you have any questions, please contact me.

Sincerely,

Bill Ballard

Bill Ballard
State Environmental Coordinator

Cc: Jim Evenson, P.E. Design Manager, DOT&PF
Tim Haugh, Right-of-Way and Environment Team Leader

25A-T34LH

Gravina Access Project
Threatened and Endangered Species Biological Assessment for Humpback Whale and Steller Sea Lion

Updated November 2003

Introduction

An environmental impact statement (EIS) is underway for the Gravina Access Project in the Ketchikan Gateway Borough, Alaska. There are no species under the jurisdiction of the U.S. Fish and Wildlife Service listed as threatened or endangered under the Endangered Species Act in the project area. The National Marine Fisheries Service (NOAA Fisheries—part of the National Oceanic and Atmospheric Administration) lists two species within the project area as endangered or threatened: the Steller sea lion and the humpback whale. Both species are additionally protected under the Marine Mammal Protection Act of 1972. The text of this document is substantially the same as the text intended for the final EIS and constitutes a biological assessment as required by 50 CFR 402.12. The measures outlined here to protect these two species will also protect other mammals protected by the Marine Mammal Protection Act. As described below, employing these measures, the project is not likely to adversely affect protected species or any identified critical habitat.

Construction Background

The project is anticipated to take up to three years to construct. Seasonal construction timing is discussed at the end of this document. On-site construction of ferry terminals could be completed more quickly than three years, and the in-water components would be completed in 1-2 construction seasons. Bridge construction alternatives likely would require three years. The most critical construction components related to marine mammals is in-water work, particularly drilling rock for pier placement, possible blasting, and possible dredging.

Drilling, using reverse rotary drill technology, would create holes 10-12 feet in diameter and 50-100 feet deep in substrate rock to anchor the piers. Each bridge pier foundation would require drilling 4-6 such holes. There are six in-water piers for Alternative F1 (the preferred alternative) and approximately equal numbers for other bridge alternatives. Each hole would take approximately one week to complete. This amounts to a total of approximately 30 weeks of in-water drilling, although it is possible that more than one hole could be drilled simultaneously.

Underwater blasting is possible with any of the alternatives. However, based on the preliminary nature of the engineering, it is not known how much blasting would be necessary, if any. Only under Alternative F3, for which increasing West Channel navigation clearances is proposed to mitigate shipping impacts, is there a known quantity of dredging and blasting. This would entail removal of a ridge of rock approximately 2,000 feet long and up to 750 feet wide would involve dredging of 63,000 cubic yards of surficial sediment and blasting to remove 16,100 cubic yards of bedrock. For this alternative only, the combination of drilling, blasting, and dredging is anticipated to last 1-3 months. Blasting under any other alternative is not anticipated to take place for more than 2-3 days total and may not be required at all. Ferry alternatives would likely require blasting and dredging near shore to provide adequate depth for the ferries. Except for the mitigation measures just described for Alternative F3, dredging is not considered likely under the

bridge alternatives. Under any alternative, dredged and blasted material is anticipated to be dumped at sea in accordance with section 103 of the Marine Protection, Research, and Sanctuaries Act, in areas permitted by the Environmental Protection Agency and Corps of Engineers.

Humpback Whale

The humpback whale (*Megaptera novaeangliae*) was federally listed as endangered in 1966. Before the mechanization of commercial whaling, the population of humpback whales was about 15,000. The International Whaling Commission (IWC) first protected humpback whales from commercial whaling in 1965, and such whaling ceased in the North Pacific. The whales were listed as endangered under the Endangered Species Act in 1973. The humpback whale is listed as "depleted" under the Marine Mammal Protection Act.

The Central North Pacific Stock, currently estimated at about 4,000 animals, is the group in question for this project. This stock of humpback whales generally winters in Hawaiian waters and summers along the North Pacific coast. Humpback whale distribution in summer is continuous from British Columbia to the Russian Far East, and humpbacks are present offshore in the Gulf of Alaska. The whales appear to return to the feeding areas where their mothers first brought them as calves, with evidence of some crossover to other areas but only at a rate of approximately one percent.

More than 500 humpback whales inhabit the waters near Southeast Alaska during the summer.[1] A NOAA Fisheries stock report[2] indicates 404 individual whales have been documented in the portion of Southeast Alaska that includes Chatham Strait and waterways to the north, and 275 have been documented in northern British Columbia (primarily near Langara Island). No counts have been completed specific to southern Southeast Alaska and the project area. There is no designated critical habitat for humpback whales as there is for Steller sea lions.

According the NOAA Fisheries stock report, this stock is the focus of a large whale watching industry in Hawaii and a growing whale watching industry in Alaska and B.C. Regulations concerning minimum distance to keep from whales and how to operate vessels when in the vicinity of whales have been developed for Hawaiian waters in an attempt to minimize the impact of whale watching. In 2001, NMFS issued regulations to prohibit most approaches to humpback whales in Alaska to 100 yards (66 FR 29502; May 31, 2001). The growth of the whale watching industry is a concern to NOAA Fisheries, because preferred habitats could be abandoned if disturbance levels became too high. Noise is another, related concern. Continual noise appears to the primary concern, with noise from an Acoustic Thermometry of Ocean Climate program, the U.S. Navy's Low Frequency Active sonar program, shipping, and whale watching cited by NOAA Fisheries. Incidental or short-term noises are not mentioned.

Humpback whales commonly feed and breed over shallow banks but traverse the open ocean during migration. They prey on small schooling fish such as herring and swarms of krill by using bubbles that concentrate prey. They also feed in formation, herd prey, and practice lunge

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[1] *MacDonald, S.O., and J.A. Cook.,* The Mammal Fauna of Southeast Alaska, *University of Alaska Fairbanks, 1999.*

[2] *NOAA Fisheries. 2002. "Stock Assessment Report: Humpback Whale (*Megaptera novaeangliae*): Central North Pacific Stock"*

feeding as a group.[3] Most of the Alaska summer whale population leaves by about October or November for Hawaii. Calving takes place in the wintering grounds. A few humpback whales stay in Alaska and may be seen in winter.

NOAA Fisheries documented human-caused injury or mortality to this stock of whales. Entanglement or other injury caused by fishing gear and nets appears to be the primary issue. Two incidents were noted in the general Ketchikan area. There is documentation of apparent injury to and death of humpback whale related to repeated underwater blasting in Newfoundland.

There is no data about seasonal abundance and distribution of humpback whales specific to Tongass Narrows. However, there is informed anecdotal information from a member of the marine mammal stranding network,[4] an ADF&G biologist,[5] and a spotter pilot,[6] all based in Ketchikan, to indicate use of the area. Humpback whales may be found in Tongass Narrows year round, although the numbers are small much of the year, and they are seen only perhaps once or twice per month. There is a peak in activity in April and May, corresponding to herring spawning season, when daily sightings are common. Whales do not appear to use Tongass Narrows specifically as a migration route, and there is no evidence that Tongass Narrows is a favored location for critical activities, although the whales presumably may feed in the Narrows. As indication of relatively low numbers of whales in summer, a flightseeing air service based in Ketchikan advertises flying more than 100 miles north to Frederick Sound to see humpback whales. Another advertises flying south 40 miles or more to the shores of Prince of Wales Island near the mouth of Clarence Strait to view whales in summer.

Potential Impacts to Whales. The completed project is expected to have no population-level effects that are distinguishable from natural variation in numbers. Occasional individual passing whales could be exposed to increased noise from project operation (principally ferry engines/propellers); however, whales hear such noise in the area now, because Tongass Narrows is a busy shipping lane. They would likely move away from areas of excessive noise and disturbance. They do not stay in Tongass Narrows for extended periods; therefore, these disturbances are not expected to have a measurable impact on humpback whales.

Construction of the project would include activities that could disturb whales if completed while whales were present. These include the noise of reverse rotary drilling in submerged rock and substrate for placement of bridge piers, dredging West Channel for shipping (Alternative F3 only), and dredging near shore for ferry terminal construction. Underwater blasting is anticipated for Alternative F3 (for widening the shipping lane in West Channel), and blasting is a possibility for any of the alternatives. All of these activities would be scheduled for fall and winter, after most whales leave Alaska for wintering grounds and after the busy cruise ship season. Project commitments to ensure no measurable disturbance to humpback whales and other marine mammals are listed at the end of this document. Employing these measures, the project is not likely to adversely affect the humpback whale.

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[3] *Wynne, Kate.* Guide to Marine Mammals of Alaska, *University of Alaska Fairbanks, 1997.*

[4] *Frietag, Gary. 2000. Personal communication.*

[5] *Porter, Boyd. 11/20/2003. Personal communication.*

[6] *Masden, Michelle. 11/20/2003. Personal communication.*

Steller Sea Lions

Steller sea lions (*Eumetopias jubatus*) number 100,000-140,000 worldwide.[7] Approximately half live in Alaska. The western Alaska population of Steller sea lions, inhabiting the western Gulf of Alaska and Bering Sea, has declined substantially and is endangered. The Eastern Stock is the population of interest for this project, extending through the eastern Gulf of Alaska and along the coastal areas of Alaska, Canada, and the western Lower 48 states. This stock was listed as threatened in 1990. According to a NOAA Fisheries stock report,[8] the eastern stock is stable or increasing in the northern portion of its range (Southeast Alaska and British Columbia). For the Southeast Alaska population, the trend is growth, from 6,898 animals in 1982 to 9,862 in 2000.

Steller sea lions feed on a wide variety of prey such pollock, flounder, herring, crab, rockfish, cod, salmon, squid, and octopus. Feeding occurs from the intertidal zone to the continental shelf.[9]

Critical habitat has been defined in Southeast Alaska at major haulouts and major rookeries (50 CFR 226.202). The nearest rookery is Forrester Island, and the nearest major haulouts are at Timbered Island and Cape Addington. All three sites are about 80 miles west of Tongass Narrows.

Steller sea lions have not been specifically studied or counted in Tongass Narrows. However, there is informed anecdotal information from a member of the marine mammal stranding network,[10] an ADF&G biologist,[11] and a spotter pilot,[12] all based in Ketchikan, to indicate use of the area. Sea lions may be found in Tongass Narrows year round, although the numbers are small much of the year. There is a peak in activity in March-early May, corresponding to herring spawning season. At this time, it is reported that large pods of sea lions may occur the area (20-80 animals possible). In summer, most sea lions move to large rookeries (such as Forrester Island) for pupping and the next mating cycle. Small numbers of non-mating animals remain in the Tongass Narrows area but are infrequently seen. There is another small peak in activity in later summer, associated with salmon. There are not large numbers in winter.

There are no established haul-out sites in Tongass Narrows. Grindall Island, 12 miles west of the northern tip of Gravina Island, is a year round sea lion haulout but not a rookery. This appears to be the nearest haulout area. ADF&G has done aerial surveys of this site over a number of years (1982-1996) and never recorded animals there in summer (June/July) but has counted more than

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[7] *Wynne, Kate. 1997. Guide to Marine Mammals of Alaska. Sea Grant College Program, University of Alaska Fairbanks.*

[8] *NOAA Fisheries. 2002. "Stock Assessment Report: Steller Sea Lion (*Eumetopias jubatus*): Eastern U.S. Stock"*

[9] *ADF&G, September 5, 2002. Wildlife Notebook Series: Steller Sea Lions, http://www.state.ak.us/adfg/notebook/marine/sealion.htm.*

[10] *Frietag, Gary. 2000. Personal communication.*

[11] *Porter, Boyd. 11/20/2003. Personal communication.*

[12] *Masden, Michelle. 11/20/2003. Personal communication.*

200 animals each on the only two non-summer counts: March 1993 and December 1994.[13] The sea lions have been observed in Tongass Narrows around the fish hatchery, where large numbers of salmon congregate in late summer. In Ketchikan harbor itself, daily sighting of sea lions are not unusual in winter—more than in summer, when the harbor is busiest.

NOAA Fisheries reports concerns about fishing related injury and mortality, such as entanglement in fishing gear. Other causes of mortality are also reported (subsistence hunting, illegal shooting, elimination of sea lions for protection of aquaculture in B.C., etc.). There is no indication of substantial problems related to construction.

Potential Impact to Steller Sea Lions. No impact to the Steller Sea Lion population is anticipated from operation of any of the alternatives, once constructed. The habitat and population of sea lion prey, principally off-bottom fish, is not expected to be substantially affected. Sea lions could be exposed to increased noise from project operation (principally ferry engines), but this would be of the same character of noise already present in the Tongass Narrows shipping lanes and not distinguishable from daily and annual variations. Collision with vessels is not likely, because marine mammals in general tend to avoid collisions by using their excellent acoustic capabilities.

Construction of the project would include activities that could disturb sea lions if completed while sea lions were present. These include the noise of reverse rotary drilling in submerged rock and substrate, for placement of bridge pilings, dredging West Channel for shipping (Alternative F3 only), and dredging near shore for ferry terminal construction. Underwater blasting is anticipated for Alternative F3 (for widening the shipping lane in West Channel), and blasting is a possibility for any of the alternatives. NOAA Fisheries stated in a June 4, 2001 letter, "Steller sea lions are unlikely to be affected by underwater noise associated with project construction activities because they have higher thresholds for noise disturbance and are able to raise their heads out of the water to avoid noise transmission." Nonetheless, all of these activities would be scheduled for fall and winter, between late summer salmon runs and spring herring runs that attract sea lions. Project commitments to ensure no disturbance to Steller sea lions and other marine mammals are listed at the end of this document. Employing these measures, the project is not likely to adversely affect the Steller sea lion.

Mitigating Measures for Marine Mammal Protection

The June 4, 2001 letter from NOAA Fisheries (Alaska) provided an initial response to a request for informal consultation in accordance with Section 7 of the Endangered Species Act and recommended mitigation measures. An October 3, 2003 letter from NOAA Fisheries (Maryland), in response the draft EIS, recommended further mitigation measures. Note that the draft EIS erroneously indicated that pile "driving" would be part of project construction. A reverse rotary drill actually would be employed to drill into submerged rock and substrate for the bridge alternatives. Noise would occur, but the intense spikes of sound and shock waves of pile driving would not be produced. To ensure no injury to or harassment of Steller sea lions, humpback whales, or other marine mammals, the project is committed to the measures listed

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[13] *Gerke, Brandee. 2003.*

below. These are designed to be compatible with Essential Fish Habitat (EFH) mitigation measures for the project.

- In-water work will occur outside the springtime months, when there is greatest sea lion use of the project area. The EFH work window for in-water work in Tongass Narrows is July 1 to February 28, and this would be followed for marine mammals as well. Major work, such as drilling for piers, any dredging required, and any in-water blasting required, would occur only November 1 to February 28. This timing avoids runs of salmon and herring, on which humpback whales and Steller Sea Lions feed.
- The construction contract will require a blasting plan approved by NOAA Fisheries, should blasting be necessary.
- The construction contract will require a dredging plan approved by NOAA Fisheries, should dredging be required.
- The project will ensure use of trained and approved observers to indicate when sea lions are within a 50 m zone around pier work or other in-water work, and activity will wait until the animals move out of the area, or work would be stopped if mammals were to enter the area.
- An in-water warning sound will be issued prior to drilling or blasting to allow any marine mammals to voluntarily move to a comfortable distance.
- All necessary permits and agency approvals will be acquired prior to construction and stipulations will be incorporated into contract specifications.
- If necessary, based on the alternative ultimately selected and the design and construction methods ultimately decided upon, an incidental harassment authorization might need to be obtained from NOAA Fisheries.

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Gerke, Brandee. November 19, 2003. Personal communication between Gerke, National Marine Fisheries biologist, Juneau, and John Wolfe, HDR Alaska, Inc.

HDR Alaska, Inc. April 2000. Gravina Access Project Federal and State Listed Threatened and Endangered Species Technical Memorandum. Prepared for the Alaska Department of Transportation and Public Facilities. Juneau.

HDR Alaska, Inc. August 6, 2003. Gravina Access Project Draft Environmental Impact Statement. Prepared for the Alaska Department of Transportation and Public Facilities and Federal Highway Administration. Juneau.

Hollingshead, Ken. October 29, 2003. Personal communication between Hollingshead, of NOAA Fisheries, and Sirena Brownlee of HDR Alaska, Inc., regarding marine mammal incidental harassment permits.

MacDonald, S.O., and J.A. Cook. 1999. *The Mammal Fauna of Southeast Alaska,* University of Alaska Fairbanks.

Masden, Michelle. November 19, 2003. Personal communication between Masden, owner and pilot for Island Wings Air Service, Ketchikan, and John Wolfe of HDR Alaska, Inc. Also "Whale Watching." in www.islandwings.com. Ketchikan, Alaska. Maseden flies for ADF&G, NOAA Fisheries, and charter tours spotting sea lions, humpback whales, and other wildlife.

Misty Fjords Air & Outfitting. 2003. www.mistyfjordsair.com. Ketchikan, Alaska.

NOAA Fisheries. 2002. "Stock Assessment Report: Steller Sea Lion (*Eumetopias jubatus*): Eastern U.S. Stock" *in* www.nmfs.noaa.gov/prot_res/PR2/Stock_Assessment_Program/Pinnipeds/Steller_(East)/AK02stellersealion_East.PDF. Revised 9/29/01.

NOAA Fisheries. 2002. "Stock Assessment Report: Humpback Whale (*Megaptera novaeangliae*): Central North Pacific Stock" *in* www.nmfs.noaa.gov/prot_res/PR2/Stock_Assessment_Program/Cetaceans/Humpback_Whale_(Central_N._Pacific)/AK02humpbackwhale_CentralN.Pacific.PDF. Revised 10/30/01.

Perry, Simona L., Douglas P. DeMaster, and Gregory K. Silber. 1999. The Great Whales: History and Status of Six Species Listed as Endangered Under the U.S. Endangered Species Act of 1973, section on the Humpback Whale, in Marine Fisheries Review, vol. 61. number 1. National Marine Fisheries Service Scientific Publications Office. Found on spo.nwr.noaa.gov/mfr611/mfr6113.pdf.

Porter, Boyd. 11/20/2003. Personal communication between Boyd, Alaska Department of Fish and Game wildlife management biologist, Ketchikan, and John Wolfe, HDR Alaska Inc. Prior to his current position, Boyd was a Steller sea lion research biologist for ADF&G at Forrester Island and other Southeast Alaska sea lion rookeries.

Schneider, Doug. August 8, 2003. "Ultimate Whale Watching," in Sitnews: Stories In The News (www.sitnews.us). Ketchikan, Alaska.

Wynne, Kate. 1997. Guide to Marine Mammals of Alaska. Sea Grant College Program, University of Alaska Fairbanks.

Section 106 Correspondence

(Circled numbers correspond to the numbered comments in Table 7-2 in Chapter 7.)

STATE OF ALASKA

F

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF PARKS AND OUTDOOR RECREATION
OFFICE OF HISTORY AND ARCHAEOLOGY

550 W. 7th Ave., SUITE 1310
ANCHORAGE, ALASKA 99501-3565
PHONE: (907) 269-8721
FAX: (907) 269-8908

April 16, 2004

File No.: 3130-1R FHWA
3130-2R DOT

SUBJECT: Gravina Access Project
Ketchikan, Alaska

Tim A. Haugh
Environmental and Right of Way Programs Manager
Federal Highway Administration
Alaska Division
P. O. Box 21648
Juneau, AK 99802

Dear Mr. Haugh:

We have reviewed your latest letter (received 4/16/2004) expressing concern over our stipulation for an "intensive" survey of the finalized alignment. We did not intend to require extraordinary methods of survey but simply that the archaeologist perform a pedestrian survey along the staked alignment with shovel tests in areas judged as high potential for archaeological remains. If historic or prehistoric sites are encountered, then sufficient information should be collected to permit an evaluation of the site's significance (see *Secretary of Interior Standards and Guidelines* for Identification, Intensive Survey).

Based on your letter, the Federal Highway Administration is committed to having an archaeologist survey the staked alignment including subsurface testing if necessary. We concur therefore that no historic properties will be affected by this project.

Please contact Stefanie Ludwig at 269-8720 if you have any questions or if we can be of further assistance.

Sincerely,

Judith E. Bittner
State Historic Preservation Officer

JEB:sll

Cc: Van Sundberg, AK DOT & PF/ Southeast Region

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
ALASKA DIVISION
709 West Ninth Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802
907-586-7418 | 907-586-7420 FAX

April 15, 2004

REFER TO
HDA-AK
File #: ACHP-0922(5)/67698

Ms. Judith Bittner, State Historic Preservation Officer
Alaska Department of Natural Resources
550 W. 7th Avenue, Suite 1310
Anchorage, Alaska 99501-3565

SUBJECT: Gravina Access Project, Finding of No Historic Properties Affected pursuant to 36 CFR 800.4(d)(1)

Dear Ms. Bittner:

Thank you for your response on March 4, 2004, concurring with our finding of No Historic Properties Affected for the Gravina Access Project Draft Environmental Impact Statement. However, as you and Stefanie Ludwig, of your staff, discussed with Bill Ballard and Laurie Mulcahy, of the Alaska Department of Transportation and Public Facilities (AKDOT&PF), at issue is a condition placed on your concurrence: "We concur therefore, that no historic properties will be affected by this project provided that the project footprint is intensively surveyed by an archaeologist once the final alignment is surveyed and staked."

This condition causes concern because project engineering will not be further detailed or refined until a Record of Decision is signed on the project and final design is begun. Bill and Laurie explained that Mike Yarborough of Cultural Resource Consultants performed a reconnaissance level survey in the area of potential effect during August 2002. The survey coverage also included the area of the proposed alignment adjustment of the refined F1 Alternative described in our letter of February 3, 2004. Two sites KET-774 and KET-775 identified in the vicinity are being avoided. As an assurance however, once the alignment is surveyed and staked during design, we will commit to sending a qualified archaeologist into the field for an additional reconnaissance survey effort, including any subsurface testing if deemed necessary to verify that no sites were overlooked. A field report will be submitted to your office upon completion of the survey.

Based on the above considerations, FHWA has determined that the F1 Alternative, with the reconnaissance survey effort condition, would affect no historic properties and requests your concurrence. Please contact me at the letterhead phone number should you have any questions.

Sincerely,

Tim A. Haugh
Environment and Right of Way Programs Manager

cc: Bill Ballard, AKDOT&PF Statewide Environmental Coordinator
Jim Evensen, P.E., AKDOT&PF Southeast Region PD&E Supervisor
Van Sundberg, AKDOT&PF Southeast Region, Regional Environmental Coordinator

GAP FILE

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND OUTDOOR RECREATION
OFFICE OF HISTORY AND ARCHAEOLOGY

550 W. 7th Ave., SUITE 1310
ANCHORAGE, ALASKA 99501-3565
PHONE: (907) 269-8721
FAX: (907) 269-8908

March 4, 2004

File No.: 3130-1R FHWA
3130-2R DOT

SUBJECT: Gravina Access Project
Ketchikan, Alaska

Edrie Vinson
Environmental Project Manager
Federal Highway Administration
Alaska Division
P. O. Box 21648
Juneau, AK 99802

Dear Ms. Vinson:

We have reviewed your letter (received 2/6/2004) with additional clarification of the NEPA status of the Gravina Access Project. Based on the reconnaissance level survey, it does not appear that historic properties will be impacted by the preferred alternative. We concur therefore, that no historic properties will be affected by this project *provided* that the project footprint is intensively surveyed by an archaeologist once the final alignment is surveyed and staked.

Please contact Stefanie Ludwig at 269-8720 if you have any questions or if we can be of further assistance.

Sincerely,

Judith E. Bittner
State Historic Preservation Officer

JEB:sll

Cc: Van Sundberg, AK DOT & PF/ Southeast Region

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

FRANK H. MURKOWSKI, GOVERNOR

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-1821
FAX: (907) 465-4414

DESIGN & ENGINEERING SERVICES DIVISION
SOUTHEAST REGION – DESIGN

March 2, 2004

Judith Bittner, State Historic Preservation Officer
State of Alaska Department of Natural Resources
Division of Parks and Outdoor Recreation, Office of History and Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501

Re: Gravina Access Project Draft EIS – Responses to Comments

Dear Ms. Bittner:

The Alaska Department of Transportation and Public Facilities (DOT&PF) and Federal Highway Administration (FHWA) are in the process of preparing the Final EIS for the Gravina Access Project. We have reviewed your agency's comments on the Draft EIS and have revised the document where appropriate. We hope to release the Final EIS soon. The Final EIS will identify Alternative F1 as DOT&PF's and FHWA's preferred alternative.

As a courtesy, and in the interest of continued communication with your agency throughout the development of the EIS, we are providing you with a summary of our responses to your agency's comments on the Draft EIS (see the attached table). The Final EIS will include these comments and responses, along with a summary of all other agency and public comments and our responses to them.

If you have any questions or comments on the information provided herein, particularly DOT&PF's and FHWA's selection of Alternative F1 as their preferred alternative, please do not hesitate to contact me at (907) 465-1851. Thank you for your continued participation in the project.

Sincerely,

James A. Evensen

James A. Evensen, P.E.
DOT&PF Project Manager

Attachment

25A-T34LH

Attachment

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
Department of Natural Resources – Office of Parks and Outdoor Recreation – Office of History and Archaeology	
1. SHPO will defer concurrence on DOT&PF's determination of effect until the preferred alternative has been selected and final project plans are available for review. An intensive-level archaeological survey may be warranted once the area of potential effect has been more narrowly defined.	FHWA has transmitted a letter to the SHPO regarding Alternative F1 (Preferred) and its realignment over East and West Channels. These minor shifts in alignment, meant to improve ship navigation, moved the alignment away from KET-774 and KET-775, and the letter will present FHWA's finding of "no historic properties affected" for the preferred alternative. FHWA and DOT&PF commit to sending an archaeologist into the field during design once the alignment is staked to help ensure no sites have been overlooked.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
ALASKA DIVISION
709 West Ninth Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802
907-586-7418 | 907-586-7420 FAX

February 3, 2004

REFER TO
HDA-AK
File #: ACHP-0922(5)/67698

Ms. Judith Bittner, SHPO
Alaska Office of History and Archaeology
550 W. 7th Ave., Suite 1310
Anchorage, Alaska 99501-3565

SUBJECT: Gravina Access Project Finding of No Historic Properties Affected / KET-774, KET-775

Dear Ms. Bittner:

We have received your letter of August 22, 2003, commenting on the Gravina Access Project Draft Environmental Impact Statement (DEIS) and concurring with our determinations of eligibility related to historic and archaeological properties. I am writing to clarify the project status and to seek your concurrence with a finding of "no historic properties affected" for the preferred alternative.

Your August 22 letter stated:

> It appears that KET-774 and KET-775 will not be affected by any of the alternatives.... We will defer our concurrence on DOT's determination of effect, however, until the preferred alternative has been selected and we can review the finalized project plans.

We have reviewed all agency and public comments on the DEIS and are responding to them now as part of preparing the Final Environmental Impact Statement (FEIS). The preferred alternative was identified in the DEIS as Alternative F1, and it will go forward as the FEIS preferred alternative, with the refinements described below.

Section 4.7 of the DEIS indicated that cruise ship navigation issues could result in a minor alignment shift of the Alternative F1 bridge crossings to place them perpendicular to the shipping lanes. The attachments show the alignment shift as the refined F1 Alternative. This is the alignment proposed in the FEIS, and it results in somewhat different landfall locations on Pennock and Gravina Islands. The refined F1 Alternative is placed farther from known historic sites. Preliminary engineering for this alternative has determined the likely placement of pier supports for the bridge (see orange alignment on the enclosed close-up figures).

KET-775. This site consists of a collapsing cabin about 200 feet from an old barge, both of which are features of this site. As noted in the "Summary and Compilation of Data" (July 2003) and the Determination of Eligibility for KET-775, the cabin lies on a narrow strip of upland adjacent to the beach. Mike Yarborough of Cultural Resource Consultants indicates that the cabin is backed by a rock escarpment approximately 20 feet high and that the site appears to be contained to the beach level below this rock face. While the original Alternative F1 alignment was directly overhead in this location, the refined F1 Alternative reaches Gravina Island approximately 300 feet southeast from the cabin site and 500 feet from the barge. The August 2002 reconnaissance survey covered the stretch of beach and forest edge for more than 1,000 feet southeastward from the barge. The only cultural evidence found was cut stumps in the woods southeast of the cabin.

KET-774. On the western side of the East Channel, KET-774 consists of two collapsed or collapsing cabins located right on the beach, adjacent to the forest edge. The original location of the Alternative F1 bridge was overhead in this location. The refined F1 Alternative reaches Pennock Island about 290 feet southeast of the original landfall location. As indicated in the August 2002 reconnaissance survey, the only cultural evidence in this stretch of the East Channel beach and forest edge are numerous large cut stumps.

The project engineering will not be further detailed or refined until a Record of Decision is signed on the project and final design is begun. We do not propose further intensive archeological investigation at this time, because the site locations appear to be adequately known and can be avoided. However, we will commit to sending a qualified archaeologist into the field, once the alignment is surveyed and staked during design, to ensure that no sites were overlooked. Your office will be notified of the results of the survey and if any historic properties are identified, Section 106 consultation will be reinstated.

In consideration of Alaska Department of Transportation and Public Facilities' identification and consultation efforts with your office, tribal parties, and the public, the Federal Highway Administration has determined that no historic properties would be affected by the refined F1 Alternative and asks for your concurrence. We intend to finish preparation of the FEIS text this month and therefore request your concurrence by February 15, 2004, if at all possible. Please contact me at the letterhead phone number should you have any questions. Thank you.

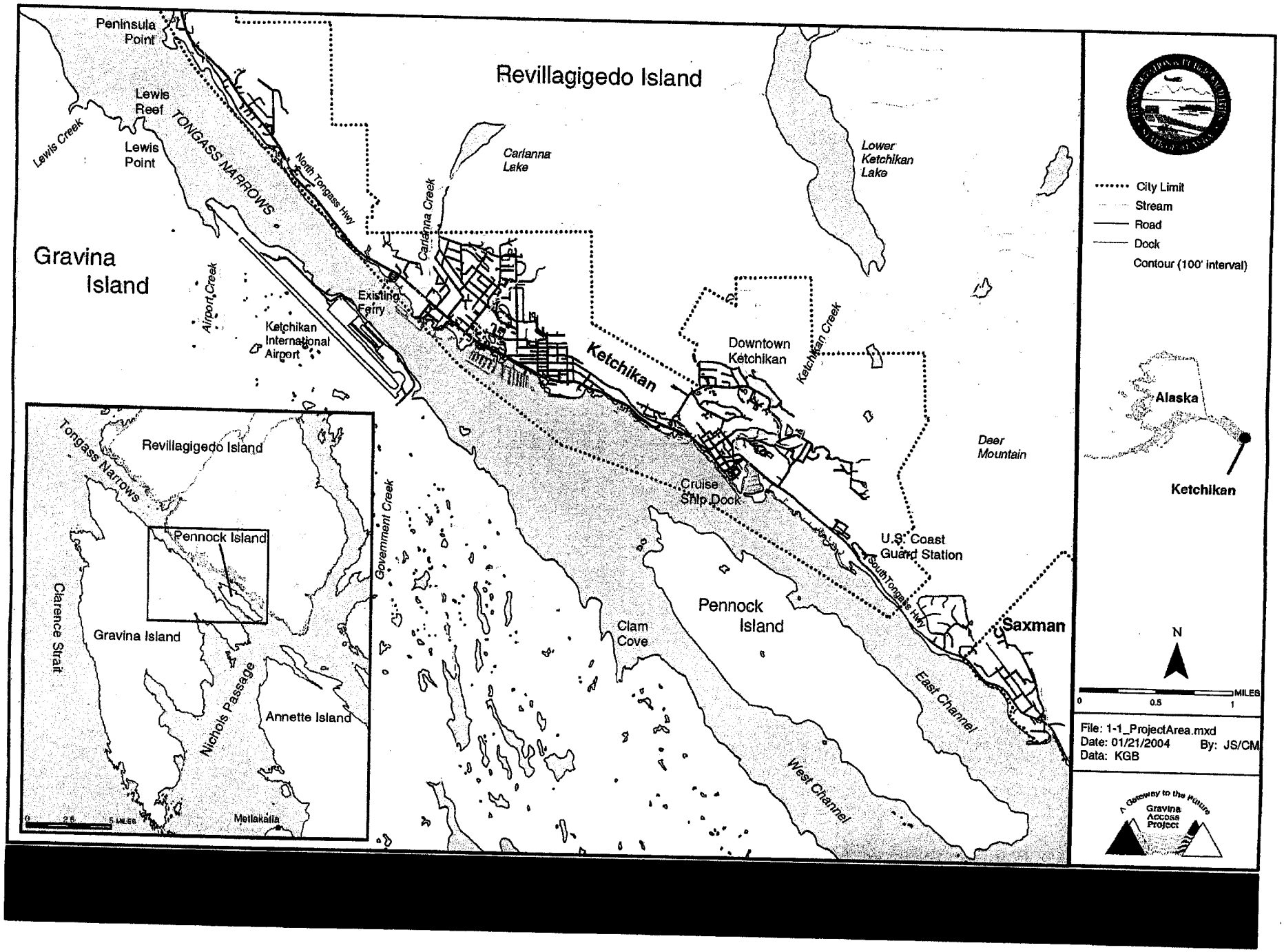
Sincerely,

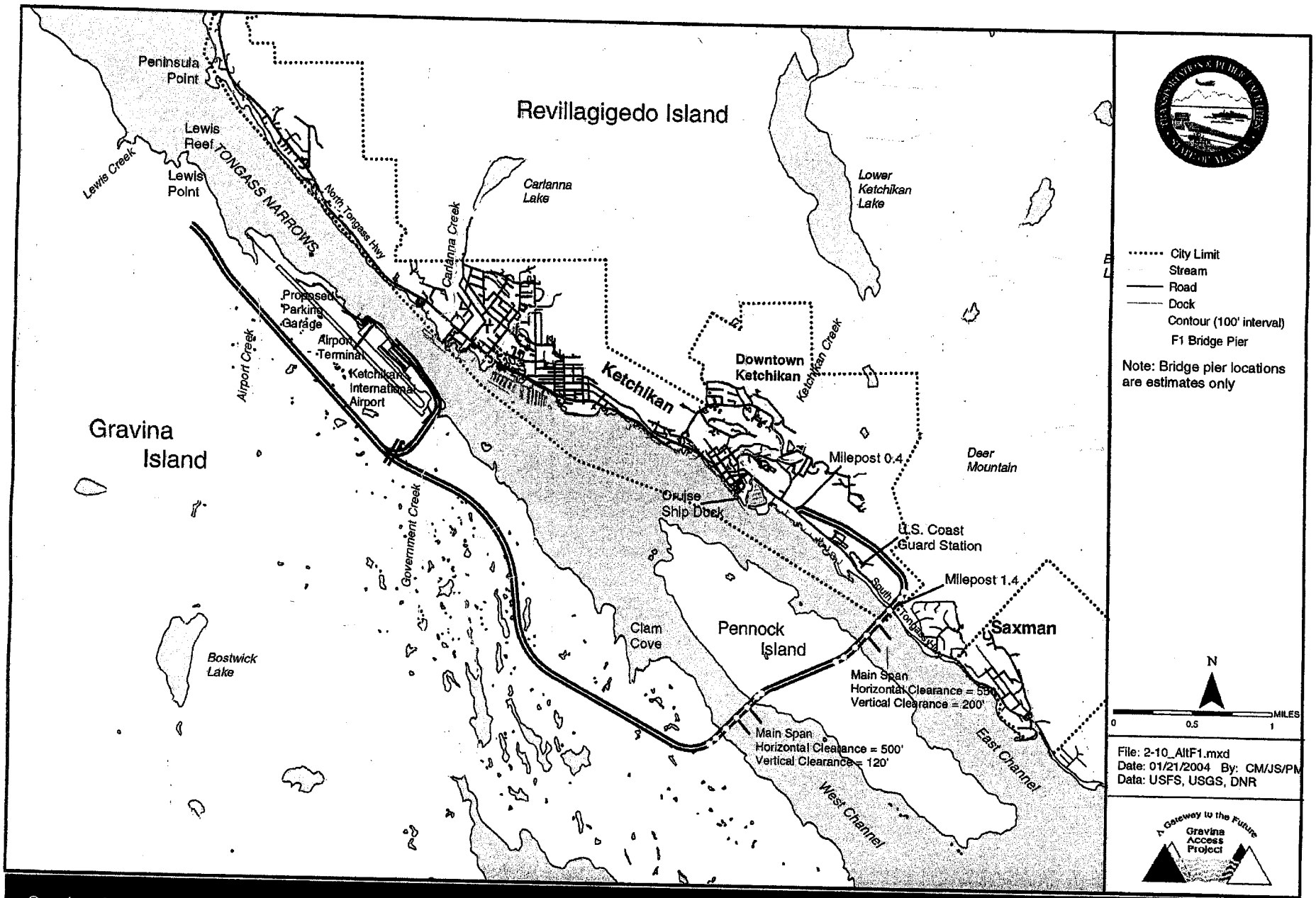
Edrie Vinson

Edrie Vinson
Environmental Project Manager

Enclosures

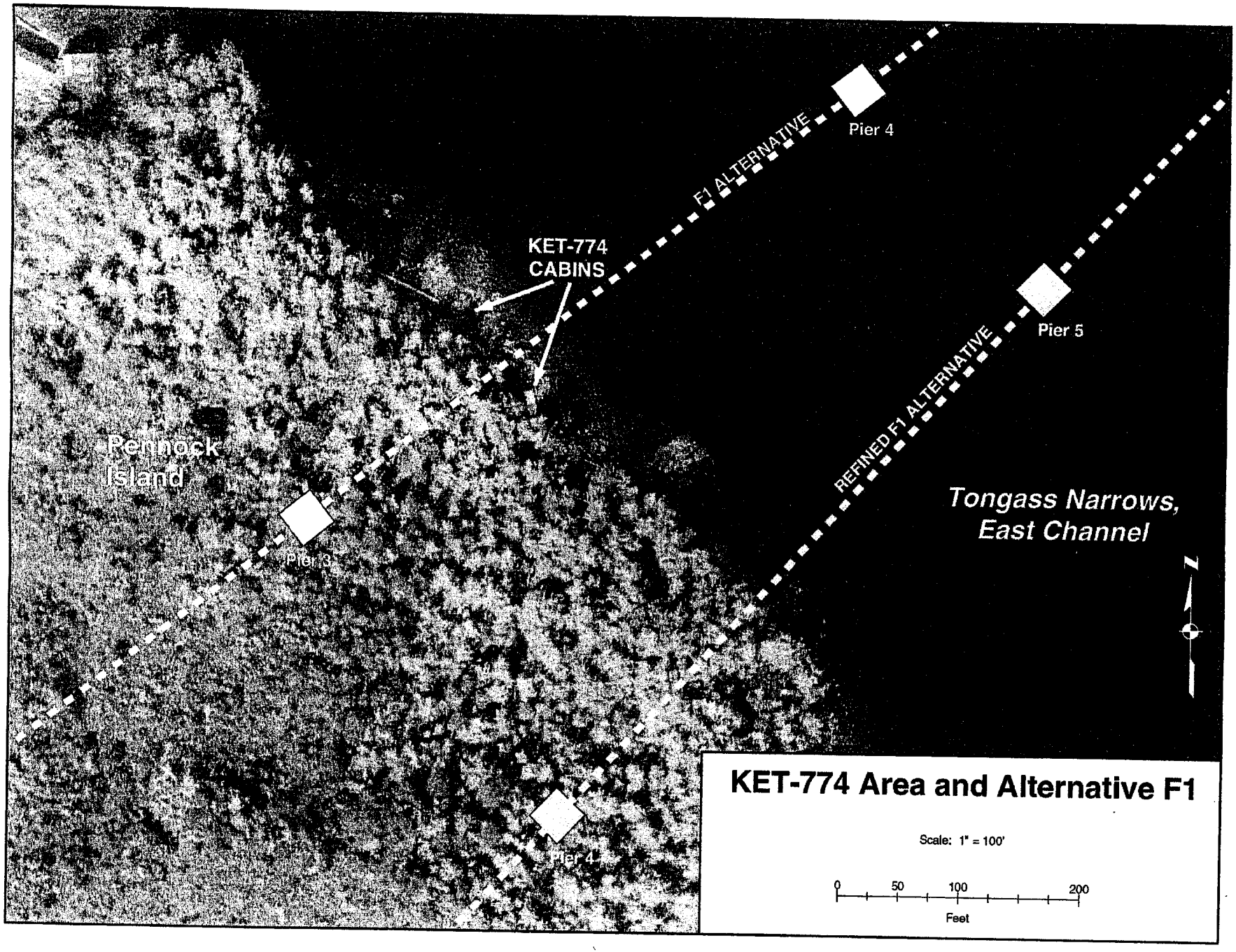
cc: Bill Ballard, AKDOT&PF
Jim Evensen, AKDOT&PF
Van Sundberg, AKDOT&PF

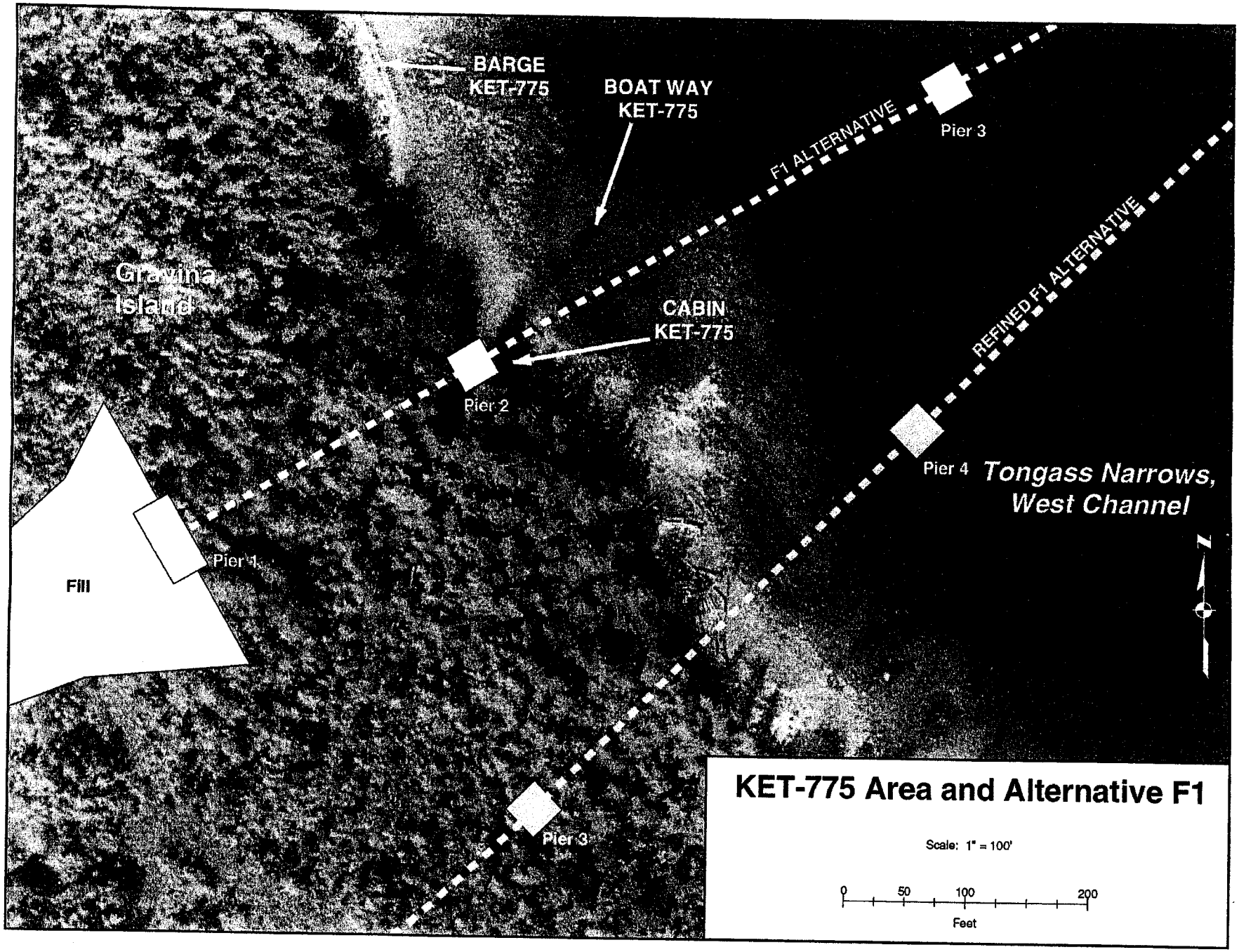

Peninsula Point
Lewis Reef
Lewis Point
Lewis Creek
TONGASS NARROWS
North Tongass Hwy
Revillagigedo Island
Carlanna Lake
Carlanna Creek
Lower Ketchikan Lake
Gravina Island
Airport Creek
Existing Ferry
Ketchikan International Airport
Ketchikan
Downtown Ketchikan
Ketchikan Creek
Deer Mountain
Cruise Ship Dock
U.S. Coast Guard Station
South Tongass Hwy
Saxman
Pennock Island
Clam Cove
East Channel
West Channel
Government Creek
Tongass Narrows
Revillagigedo Island
Pennock Island
Gravina Island
Clarence Strait
Nichols Passage
Annette Island
Metlakatla
0 2.5 5 MILES
City Limit
Stream
Road
Dock
Contour (100' interval)
Alaska
Ketchikan
N
0 0.5 1 MILES
File: 1-1_ProjectArea.mxd
Date: 01/21/2004 By: JS/CM
Data: KGB
A Gateway to the Future
Gravina Access Project



Gravina Access Project
Environmental Impact Statement

Figure 2.10
Alternative F1, Bridges (200' East and 120' West)
Between Tongass Avenue and Airport, via Pennock Island: Alignment


F1 ALTERNATIVE
Pier 4
KET-774
CABINS
REFINED F1 ALTERNATIVE
Pier 5
Pennock
Island
Pier 3
Tongass Narrows,
East Channel
Pier 4
KET-774 Area and Alternative F1
Scale: 1" = 100'
0
50
100
200
Feet


BARGE
KET-775
BOAT WAY
KET-775
F1 ALTERNATIVE
Pier 3
REFINED F1 ALTERNATIVE
Gravina
Island
CABIN
KET-775
Pier 2
Pier 4
Tongass Narrows,
West Channel
Pier 1
Fill
Pier 3
KET-775 Area and Alternative F1
Scale: 1" = 100'
0
50
100
200
Feet

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF PARKS AND OUTDOOR RECREATION
OFFICE OF HISTORY AND ARCHAEOLOGY

550 W. 7th Ave., SUITE 1310
ANCHORAGE, ALASKA 99501-3565
PHONE: (907) 269-8721
FAX: (907) 269-8908

August 22, 2003



File No.: 3130-2R DOT
3330-6 KET-774, KET-775
3330-6N KET-776

SUBJECT: Gravina Access Project, Ketchikan, Alaska
Project No. 67698

Reuben Yost
Special Project Manager
Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

Dear Mr. Yost,

We have reviewed your correspondence (7/24/2003) regarding the referenced project for conflicts with cultural resources under Section 106 of the National Historic Preservation Act. The report included with your letter, *Cultural Sites and the Gravina Access Project* identifies several prehistoric or historic sites within or near the project area. Our office concurs that KET-774 and KET-775 are eligible for the National Register of Historic Places under Criterion D and that KET-776 is not eligible for the National Register.

It appears that KET-774 and KET-775 will not be affected by any of the alternatives as presented in the *Cultural Sites and the Gravina Access Project* report. We will defer our concurrence on DOT's determination of effect however, until the preferred alternative has been selected and we can review the finalized project plans. According to the *Gravina Access Project DEIS* (8/6/2003, page 4-68), a phased approach is being used to identify and evaluate historic properties within the area of potential of effect. Field investigations of the project area so far have been at a reconnaissance level. Intensive level archaeological survey may be warranted once the area of potential effect has been more narrowly defined. ①

Please contact Stefanie Ludwig at 269-8720 if you have any questions or if we can be of further assistance.

Sincerely,

Judith E. Bittner
State Historic Preservation Officer

JEB:sll

Cc: Ed DeCleva, FHWA

EFH Correspondence

(Circled numbers correspond to the numbered comments in Table 7-2 in Chapter 7.)

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999

DESIGN AND ENGINEERING SERVICES – SOUTHEAST REGION
PRELIMINARY DESIGN & ENVIRONMENTAL SERVICES

PHONE: (907) 465-4445
TEXT: (907) 465-4647
FAX: (907) 465-3506

RECEIVED
APR 15 2004

April 13, 2004

RE: Gravina Access Project 67698/ACHP-0922 (5)

Dr. James Balsiger
National Oceanic and Atmospheric Administration- Fisheries
P.O. Box 21668
Juneau, Alaska 99802-1668

Dear Dr. Balsiger:

The Alaska Department of Transportation and Public Facilities (DOT&PF) has reviewed the comments and preliminary recommended conservation measures for the Gravina Access Project in the letter from the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) to Reuben Yost (Special Projects Manager) dated October 3, 2003. These measures were discussed with Katherine Miller in a teleconference call January 13, 2004. Recent changes to the construction methods for the Gravina Access Project have reduced the potential for adverse impacts to essential fish habitat (EFH) and marine mammals in the project area, eliminating the need to include all of the preliminary recommended conservation measures.

Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and Section 7(a)(2) of the Endangered Species Act require Federal agencies to consult with NOAA Fisheries on all actions that may adversely affect EFH or affect marine mammals and their critical habitats, respectively. NOAA Fisheries has outlined preliminary conservation measures, which include measures to avoid, minimize, mitigate or otherwise offset adverse effects. This letter presents the conservation measures proposed by DOT&PF for inclusion into the text of the final EIS.

We transmitted to Joyce Wood on March 2, 2004 a copy of the DOT&PF and Federal Highway Administration (FHWA) initial response to draft EIS comments. This letter corrects some errors in that earlier transmittal. The revised comment-response table is enclosed.

Please review this letter and the enclosed comment-response table and let us know if the conservation measures proposed satisfactorily address NOAA Fisheries concerns.

The following conservation measures are applicable to all project alternatives and are included in the Final EIS:

Essential Fish Habitat Conservation Measures

- At all stream crossings (both culverts and bridge crossings), stream banks would be re-contoured to approximate original conditions and re-seeded with native vegetation to minimize erosion.

- BMPs, developed in accordance with EPA's "Storm Water Management for Construction Activities: Developing Pollution and Prevention Plans and Best Management Practices," EPA Document 832 R-92-005 (EPA 1992), will be employed to minimize the introduction of sediment and minimize siltation of ponds and streams during adjacent fill placement.

- All anadromous fish stream crossings would be designed to minimize impacts on stream function and to provide passage to both anadromous and resident fish. All road structures crossing anadromous fish habitat channels would be designed to provide passage for juvenile and adult salmon per Alaska Statute Title 41 standards.

- In-water work in Tongass Narrows would be restricted, as follows. General use of boats and barges could occur year round for general survey and work on bridge structures above water. Except for blasting, dredging, and pile driving, other work in marine waters could occur July 1-February 28. As further described below, blasting, dredging, and pile driving could occur only November 1-February 28, with the possible exception of mid-channel locations, based on further consultation with the Alaska Department of Natural Resources (DNR), NOAA Fisheries, U.S. Army Corps of Engineers (COE), and U.S. Fish and Wildlife Service (USFWS).

- The following conservation recommendations will be followed with respect to pile driving in Tongass Narrows: A vibratory hammer would be used to drive steel piles instead of an impact hammer. Piles should be driven during low tide when in intertidal and subtidal areas. .

- All construction in and around anadromous fish streams will take place when stream disturbances would have the least impact on anadromous fish species. The recommended time period for in-stream construction work in the Ketchikan area is June 15 through August 7. In-stream construction activities should completely avoid the period from August 8 through June 14. For the Ketchikan area, salmon fry generally emerge in the spring from April 15 to May 15, and the adults move into the streams by August 1 and remain through October 31. However, timing of fry emergence and adult spawning depend on the species of fish present in each stream. For example, steelhead spawn in the spring and eggs are generally present in the stream until the middle of July. Fish surveys will be conducted in the summer of 2004 for all streams that will be affected by the project. If additional species are found to be present in the project streams, the existing timing window for in-stream construction (June 15 to August 7) may be modified to protect additional species. Construction work that occurs above the ordinary high water area of the stream and does not include in-stream construction may be conducted throughout the year. In-water work areas, except for stream crossings by construction equipment, will be isolated from flowing waters of all anadromous fish streams

- Any necessary in-water blasting will be performed such that ground vibration (particle velocity) does not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch. The project will employ monitoring devices to ensure adherence to these standards. If blasting amounts are minor, and if agreed by the agencies, monitoring may not be undertaken.

- The contractor will be required to prepare a blasting plan prior to any blasting activities. The blasting plan will be submitted for review by NOAA Fisheries for both EFH and marine mammal impacts. A fish and invertebrate monitoring program will be required for any proposed blasting activities. A pre-blasting survey will be required to ensure that no fish schools are in the vicinity of the blasting area. If fish schools are detected, blasting will be delayed until they leave. A biologist will check the area and record any kills that are within 100 feet up current and 300 feet down current of the blast area after blasting is completed. Monitoring of the dredge materials may be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Measures such as covering the rock to be blasted with sand may be used to dampen blast impact. In-water blasting shall avoid the entire months of March through June to avoid juvenile salmonids and the period from June through October 31 to avoid adult salmon. All project-related activities would conform to the pertinent provisions of the Marine Mammal Protection Act and the Endangered Species Act.

- Dredged debris would be placed onto a barge where it would enter a settling basin and be disposed of on land. Only under Alternative F3, which could require substantial removal of sediment and rock, would ocean disposal be necessary. These operations for Alternative F3 would be consistent with the regulations of Clean Water Act, Section 404(b)(1) (disposal of dredged materials into waters of the U.S.) and Marine Protection, Research, and Sanctuaries Act, Sections 102 and 103. Monitoring of the dredged materials may be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Dredging activities will avoid the entire months of March through October.

- All fueling and servicing operations will be conducted at least 100 feet away from all streams and water bodies, and fuel storage will be at least 100 feet away from all wetlands and water bodies.

- All necessary permits and agency approvals will be obtained prior to construction, and any permit stipulations will be incorporated into the contract specifications.

- Perimeter staking will be required on the outside of the disturbance area prior to construction to ensure that there is no additional impact from construction activities.

- Silt fences will be used adjacent to EFH stream channels, just beyond the estimated toe of fill.

- Gravels and streambed material will be used in the bottoms of fish-passage culverts.

- Riprap will be placed along stream banks as necessary to maintain stream bank integrity. Placement of riprap along stream banks to maintain stream bank integrity should include the use of bioengineering techniques to improve habitat value of the riprap, by incorporation of willow stakes or other locally available vegetation.

Threatened and Endangered Species Conservation Measures

- In-water work will occur outside the springtime months, when there is greatest sea lion use of the project area. The EFH work window for in-water work in Tongass Narrows is July 1 to February 28, and this would be followed for marine mammals as well. Major work, such any dredging or in-water blasting required, would occur only November 1 to February 28. This timing avoids runs of salmon and herring, on which humpback whales and Steller Sea Lions feed.

- Should blasting be necessary, the construction contract will require a blasting plan approved by NOAA Fisheries. Blasting will be performed such that ground vibration (particle velocity) does not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch. Monitoring devices will be used to measure these parameters. If blasting amounts are minor, and if agreed by the agencies, monitoring may not be undertaken.

- Should dredging be required, the construction contract will require a dredging plan approved by NOAA Fisheries.

- If blasting and dredging are required, the project will ensure use of trained and NOAA Fisheries-approved observers to indicate when mammals are within a 50 m zone around pier work or other in-water work, and activity will wait until the animals move out of the area, or work would be stopped if mammals were to enter the area.

- An in-water warning sound will be issued prior to blasting to allow any marine mammals to voluntarily move to a comfortable distance.

- All necessary permits and agency approvals will be acquired prior to construction, and stipulations will be incorporated into contract specifications.

- If design should change, an incidental harassment authorization might need to be obtained from NOAA Fisheries.

- Mitigation measures will be finalized during the permitting process with input from DNR, NOAA Fisheries, COE, and USFWS.

Alterations to the construction methods include eliminating use of impact hammers. The piles for the project will now be driven using a vibratory hammer, significantly reducing adverse noise impacts to fish and marine mammals. Also, clamshell dredges will now be used for all dredging operations eliminating the potential for entrainment of pelagic fish such as salmonids. Due to these changes, the following conservation measures are no longer pertinent to the project and will not be included the Final EIS:

- A fish and hydroacoustic monitoring program should be developed that includes the following:
    a. Underwater sound measurements at various distances and depths from pile driving operations

b. Evaluation of fish mortality and injury rates. This could be accomplished through the use of caged fish at various distances and depths from pile driving operations.
c. Observation of bird predation and behavior

- Implement measures to attenuate the sound pressure levels should sound pressure levels exceed the 180 dB threshold. Methods to reduce the sound pressure levels include, but are not limited to, the following:
  a. Surround the pile with an air bubble curtain system or air-filled coffer dam.
  b. Use a smaller hammer to reduce the sound pressure. The sound produced has a direct relationship to the force used to drive the pile.
  c. Use a hydraulic hammer if impact driving cannot be avoided. The force of the hammer blow can be controlled with hydraulic hammers; reducing the impact force will reduce the intensity of the resulting sound.

- A "dry fire" of the hammer should be performed prior to operating at full capacity. A "dry fire" occurs when the hammer is raised and dropped with no compression of the pistons which produces approximately 50 percent of the maximum in-air noise level. This dry-firing should allow sea lions in the area to voluntarily move from the area and should expose fewer animals to loud sounds both underwater and above water.

- If suction dredges are used, the draghead of dredges shall be operated with the intake at or below the surface of the material being removed.

If there are any questions regarding this letter please contact me at the letterhead address or at (907) 465-1851.

Sincerely,

James A. Evensen, P.E.
PD&E Group Chief
Southeast Region Complex, DOT&PF

Attachment: National Oceanic and Atmospheric Administration – Office of Program Planning & Integration Dated October 3, 2003

Cc: Mark Dalton, HDR
Bill Ballard, DOT
Tim Haugh, FHWA

1. The Essential Fish Habitat (EFH) Assessment (Appendix O) acknowledges that the culvert proposed for crossing the anadromous stream southeast of Government Creek would result in a direct loss of EFH, but does not explain why a culvert is being proposed instead of a bridge.	A field evaluation of all stream crossings in the project area was conducted and it was determined at the time of that field evaluation that this unnamed stream southeast of Government Creek was small and that fish passage could be maintained through the use of a Tier 1 Crossing. The discussion in the EFH Assessment (Appendix O, Section 4) and the EIS (Section 4.15.4.4) has been revised to state that, in accordance with the memorandum of agreement between DOT&PF and ADF&G, the culvert crossing would be designed to a Tier 1 stream simulation design level and would maintain natural stream conditions such as flow, substrate, and existing fish passage efficiency. There would be no permanent loss of EFH resulting from the culvert crossing. Figure 8 in the EFH Assessment shows a conceptual drawing of the culvert structure.
2. The DEIS provides the amount of eelgrass and kelp that will be impacted only for the channel modification activities in Alternative F3.	Acreages of impacts to kelps and eelgrass for all alternatives have been specified and added to Sections 4.15.1.2, 4.15.3, 4.15.3.6, and 4.15.4.4 of the EIS, and to the EFH Assessment (Appendix O, Section 1, Table 1-1).
3. Table 1-1 (Appendix O) should specify acreage of impacts by habitat type of eelgrass, kelp, and wetlands. The table shows a wetlands category, but only a general "marine" category for all other EFH.	Table 1-1 of the EFH Assessment (Appendix O) has been revised to more fully characterize laminarian kelp and eelgrass impacts for each alternative.
4. The DEIS lacks site-specific information on the type and extent of EFH in the project area and the potential impacts of each of the alternatives on EFH.	The type and extent of EFH in the project area are discussed in Section 3.15.4.4 of the EIS and impacts to EFH are discussed in Section 4.15.4.4. Appendix O provides more detailed descriptions of impacts to EFH.
5. The DEIS does not link site-specific analyses of environmental conditions and the type and extent of fish habitat at the proposed location of each alternative to the magnitude and extent of actions associated with each alternative (pile driving, dredging, etc.).	Sections 4.15.4.4 and 4.25.12.2 have been revised to provide more detailed discussions of EFH impacts from each alternative. Also see Appendix O.
6. The DEIS does not identify the amount of dredging that may be required, the number of pilings that would need to be placed, or the amount of in-water blasting that might be required under each of the alternatives.	Some of the information requested has not been determined for the alternatives. At this stage of project development, the FHWA and DOT&PF preferred alternative does not require in-water blasting. If blasting is determined to be necessary, then the issue will be revisited. Blasting would be conducted consistent with the state blasting standard. If blasting is required, blasting will be performed such that ground vibration (particle velocity) does not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch. The project will employ monitoring devices to ensure adherence to these standards, unless the need for blasting is small and NOAA Fisheries agrees monitoring is not necessary (Appendix O Chapter 5.0 and EIS Section 4.25.12.3). The amounts of dredging required for Alternatives G2, G3, and G4 and potentially required for Alternative F3 are included in EIS Section 4.15.4.4 and EFH

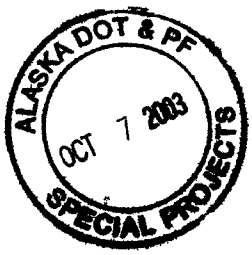
	Assessment (Appendix O), Section 4. Section 4.0 of the EFH Assessment discusses proposed in-water work requirements including blasting, dredging, drilling, and pile driving. Refer to NOAA Fisheries comment 26 for in-water blasting response.
7. The proposed locations of pile driving, dredging, and blasting are not identified and no discussion of EFH within the impacted areas is provided.	Proposed locations for piers (and associated drilling), dredging, and blasting are approximated for all alternatives. Preliminary bridge and pier foundation locations are shown in Figures 2.6 – 2.11 and 2.17 – 2.19. Refer to the EFH Assessment (Appendix O) for potential dredging and blasting locations for Alternative F3. A more detailed discussion of EFH in the proposed areas of dredging, blasting, and drilling for pilings is located in Section 4 of the EFH Assessment. .
8. Without more specific information on the particle size of the substrate being dredged and the currents in the project area, the conclusion that the impact of dredging on biota will be minimal appears to be largely conjecture.	Discussion of substrate to be dredged and temporary impacts to the currents in the project area are included in Section 4.0 of the EFH Assessment (Appendix O).
9. The DEIS needs to identify the scope and extent of potential impact to EFH from pile driving, dredging, blasting, and other activities; the probable locations of these activities; the environmental conditions (currents, substrates, etc.) in the vicinity of these activities, and the EFH that could be affected.	Sections 4.15.4.4 and 4.25.12.2 have been revised to include more discussion of potential impacts on EFH to reflect additional details as requested in NOAA Fisheries comments 4 – 8.
10. Conclusions regarding construction and operational impacts on EFH should be provided for each alternative.	Construction and operational impacts are discussed in Chapter 4 of the EIS and in the EFH Assessment (Appendix O, Section 4.0, 18). In accordance with a November 3, 1999, DOT&PF and NMFS agreement on EFH consultations (EFH Assessment Attachment A) for projects involving an EIS, DOT&PF, on behalf of the FHWA, has determined that this project may cause permanent and temporary adverse effects to EFH (Appendix O).
11. The revised EIS should include detailed information on the activities that may affect marine mammals and should differentiate the magnitude of the effects among alternatives.	Sections 4.15.4.1, 4.25.12, and 4.25.15 have been revised to reflect that the potential for impact is greatest during construction. Also refer to Marine Environment Impact Assessment Technical Memorandum (Appendix N) for a discussion of impacts to marine wildlife. Mitigation measures detailed in Section 4.25.12 include provisions for monitoring marine mammal activity and construction work windows to avoid construction activity when these animals are present.
12. The EIS should state how construction impacts or other associated project activities that may result in harassment of marine mammals (as defined at 50 CFR 216.3) would be mitigated.	A discussion of construction impacts on marine mammals and mitigation measures is included in Sections 4.25.12.3 and 4.25.15. These sections recognize there could be harassment of marine mammals (as defined at 50 CFR 216.3) if certain activities took place while mammals were present, but that measures to avoid harassment of marine mammals would be implemented. It is also noted in the text that an Incidental Harassment Authorization (IHA) could be required if impacts could not be avoided. The measures to avoid harassment of marine mammals are described in Section 4.25.12.3.

13. If disruption of marine mammal behavior (such as feeding or migration) cannot be avoided, Section 101(a)5 of the Marine Mammal Protection Act contains provisions for obtaining a permit authorizing harassment of marine mammals incidental to specific activities.	The project team discussed permit authorization with Ken Hollingshead of NMFS. Section 4.25.15 contains language that recognizes that there could be harassment of marine mammals (as defined at 50 CFR 216.3) if certain activities occurred while mammals were present and that an Incidental Harassment Authorization could be required if impacts could not be avoided.
14. More detailed information on the length of the construction period for each alternative is necessary before the impacts to marine mammals can be adequately assessed.	A discussion on the approximate duration of construction activities for specific water body modification activities was added to Sections 4.25.12.3 and 4.25.15. In addition, specific construction timeframes for blasting, drilling, and potential dredging activities for Alternative F3 can be found in the EFH Assessment (Appendix O). Refer to Appendix N for additional information on impacts to marine mammals.
15. The DEIS should be revised to contain more in-depth information on the population status and trends of marine mammals that occur in the project area.	Discussion of the status and trends of marine mammals that occur within the project area are addressed in Section 3.15.4.1. For status and trends of threatened and endangered species, see Section 3.20. Information for status and trends was obtained, in part, from the NOAA Fisheries' Stock Assessment Reports.
16. FHWA should request consultation with NMFS under Section 7 of the ESA.	Formal consultation is not required. Since publication of the DEIS, as continued informal consultation, DOT&PF sent to Brandee Gerke at NOAA Fisheries a biological assessment that includes status and trend information for listed species in the project area, as well as a finding that the project would not likely have an adverse effect on threatened and endangered species,. FHWA sent a letter January 26, 2004 requesting concurrence that the project is not likely to result in an adverse effect on T&E species, and NOAA Fisheries concurred on February 17.
17. If adverse effects to listed species are identified, NMFS and FHWA may try to eliminate those effects by revising the proposed action.	This comment is noted, and no action is required at this time.
18. Adverse effects on listed species may be avoided by the use of seasonal work windows and observers to monitor the presence of listed species and suspended action until the animals have cleared the area.	See response to NOAA Fisheries comment 11, above.
19. The DEIS needs to be revised to include information on the approximate number of Steller sea lions in order to adequately assess the impacts of the proposed action on this species and to facilitate the consultation process.	Refer to Sections 3.15.4.1 and 3.20.2 for a discussion of Steller Sea Lion population status in the project area.
20. The DEIS should be revised to include the following humpback whale information: - the International Whaling Commission (IWC) first protected the species from commercial whaling in 1965 - they were listed as endangered under the ESA in 1973 - commercial whaling of humpback whales in the North Pacific ceased in 1965 with protection	The EIS has been revised to include the additional humpback whale information (Section 3.20.1).

from the IWC.	
21. The DEIS should provide additional discussion of the need for proposed fill in Government Creek (i.e., why is it only required for Alternatives G2, G3, and G4 if all alternatives have the same roadway crossing of Government Creek?).	The statement that all alternatives would cross Government Creek and require fill in Government Creek is not accurate. Alternatives C3(a), C3(b), C4, D1, G2, and G4 would not cross Government Creek. Alternatives F1, F3, and G3, approaching the airport from the south, would cross Government Creek using a clear span bridge to avoid fill and EFH impact. The EIS has been revised to clarify these impacts. See Sections 4.15.1.2; 4.15.1.3, 4.15.1.4, 4.15.4.2, and 4.15.4.3.
22. The DEIS does not indicate the type of pile driving equipment that is proposed for use, number of piles to be driven under the various alternatives, the depth to which the piles will be driven, the amount of time needed to drive the piles, or the nature of the substrate into which the piles will be driven. No mitigation is proposed for adverse impacts to EFH from pile driving.	All alternatives may require limited pile driving to penetrate any existing sediment in the area and enable the pile to bear on or within rock. In these locations, a vibratory hammer would be used to advance the steel pile through the existing sediment until it reached bedrock, and then reverse rotary drilling would be employed to penetrate the rock and/or install the piling or rock anchors in the rock formation (see Section 4.15.4.4). Table 4-1 of the EFH Assessment and Section 4.15.4.2 of the EIS identify the number of bridge piers required for each alternative. Refer to the EFH Assessment (Appendix O, Section 4.0) for descriptions of the effects of pile driving and drilling piles on EFH. The following conservation recommendations will be followed with respect to pile driving: - A vibratory hammer would be used to drive steel piles instead of an impact hammer. - Piles should be driven during low tide when in intertidal and subtidal areas. - All pile driving activities would be conducted between November 1 and February 28.
23. Impacts to EFH from pile driving need to be evaluated based on - size and force of hammer strike - distance of fish from pile - depth of water around the pile - bottom substrate composition and texture - size and species of fish in the project area	The DEIS discussed use of an impact hammer for pile driving. This will not be necessary. A vibratory hammer will be used, if needed, to advance piles through soft sediments to rock. A reverse rotary drill will be used to drill shafts for piles into rock. Therefore the EIS does not discuss the size and force of hammer strike. The exact locations, depth of water, and precise bottom surface at piling locations will not be known until design. Fish habitat is assumed in for any in-water work, and all bridge alternatives involve piers both in shallow and deeper waters. The EIS in Section 4.15.4.4 and the EFH Assessment address the types of fish and habitats likely to be found in the vicinity of the various alternatives and the impacts of the alternatives.
24. Consider the provided list of EFH conservation measures for pile driving for all alternatives (five items listed).	The EIS now explains that any pile driving would make use of a vibratory hammer. The referenced conservation measures have been considered, and applicable recommendations have been added to the EFH Assessment (Appendix O, Section 5) and EIS. The conservation recommendations listed above under response to comment #23 will be followed with respect to pile driving. Based on consultation, because an impact hammer will not be used, a bubble curtain will not be necessary.
25. Consider the provided list of marine mammal conservation measures for pile driving for all	The EIS now explains that any pile driving would make use of a vibratory hammer, not an impact

alternatives (four items listed).	hammer, eliminating much of the concern for high sound pressure impacts to mammals. Use of timing to avoid marine mammals' higher use periods is the primary mitigation commitment for marine pile driving. This is described in 4.25.15.
26. The DEIS does not contain any information on the amount of blasting that may be required for each alternative, duration of blasting, size of charge, detonation velocity of charge, etc.	At the current stage of design, only Alternative F3 is certain to require blasting, and then only if the channel widening modifications in West Channel were implemented. Dredging for Alternatives G2, G3, and G4 may require a small amount of blasting (refer to EFH Assessment, Appendix O). A discussion of blasting durations, charges, and impacts is contained in the EFH Assessment (Appendix O). If blasting were required, it would be performed such that ground vibration (particle velocity) would not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) would not exceed 2.7 pounds per square inch.
27. The DEIS does not contain an evaluation of the specific EFH and fishery resources in the vicinity of the proposed blasting operations.	No site-specific surveys of fish likely to be present in the vicinity of dredging and blasting are available, nor were any conducted. A discussion of specific EFH resources that are likely to be present in the area of blasting has been added to the EFH Assessment (Appendix O) and the EIS, Section 4.15.4.4.
28. To adequately evaluate the potential impact of possible blasting activities on EFH and to design mitigation measures to reduce adverse impacts, site-specific data on the marine resources in the vicinity of potential blasting areas should be collected and included in the revised EFH assessment.	A discussion of marine resources that are likely to be present in the vicinity of blasting was added to the EFH Assessment (Appendix O) and the EIS, Section 4.15.4.4.
29. The type of dredging equipment to be used and the potential for entrainment of fish in the dredging equipment is not addressed.	Use of a clamshell dredge is the most likely method of dredging. A discussion of clamshell dredges and their potential for entrainment of fish is included in the EFH Assessment (Appendix O, Section 4).
30. The DEIS does not contain any conservation recommendations with respect to dredging, other than the use of BMPs when placing fill next to streams.	Additional conservation recommendations with respect to dredging have been incorporated into the EFH Assessment (Appendix O, Section 5) and EIS. Dredge timing windows would be incorporated into the dredging program to eliminate potential effects to sensitive life stages of fish and invertebrates. The dredged debris would be placed onto a barge where it would enter a settling basin and be disposed of according to normal dredge disposal regulations. Disposal of dredged and blasted material would follow the Environmental Protection Agency's (EPA) Guidelines for disposing of dredged and blasted material (40 CFR Parts 220-238) (Ocean Dumping) and would be consistent with the regulations of Clean Water Act (CWA) Section 404(b)(1) [disposal of dredged materials into waters of the U.S.] and the Marine Protection, Research, and Sanctuaries Act (MPRSA) Sections 102 and 103. All dredging activities would be conducted between November 1 and February 28 only, with the possible exception of mid-channel locations, based on further consultation with NOAA Fisheries. NOAA Fisheries may alter these timing window based on additional details developed during the design and permitting phase.

31. Site-specific information is needed on the environmental conditions, including the potential for any contaminated sediments, and the type and extent of fish habitat in the areas where dredging may occur.	The type and extent of fish habitat that occurs in the areas potentially affected by dredging that may be required under Alternative F3 and the ferry alternatives is discussed in Sections 4.15.3.7, 4.15.3.8, and 4.15.3.9 of the EIS, and in the EFH Assessment (Appendix O, Section 4). The Alaska Department of Environmental Conservation list of contaminated sites does not show any contamination in this area of Tongass Narrows. No other sampling of substrate is known that would indicate potential for contaminated sediments in this area.
32. The revised EFH assessment should also identify the magnitude and extent of dredging associated with each alternative, the type of dredging equipment that will be used, and options for disposing of dredged material.	Currently, Alternatives G2, G3, and G4 will require dredging and Alternative F3 is likely to require dredging. The EFH Assessment (Appendix O, Section 4) discusses the magnitude and extent of dredging and the guidelines for disposing of dredged and blasted materials. A discussion of clamshell dredges and their impacts also are included in Chapter 4 of the EIS and in the EFH Assessment (Appendix O, Section 4).
33. The following conservation recommendations should be considered with respect to dredging for all alternatives: - dredge timing windows should be incorporated to eliminate potential effects to sensitive life cycle stages of fish and invertebrates - a dredge barge should be used to retain dredged material to minimize turbidity - presence of fish and invertebrates should be monitored during dredging; dredging should be curtailed if significant numbers of fish/invertebrates appear in spoils - if suction dredges are used, the draghead shall be operated with the intake at or below the surface of material to be dredged	These conservation recommendations have been incorporated into the EFH Assessment (Appendix O, Section 5), where applicable. Dredge timing windows and disposal operations are discussed in the EFH Assessment (Appendix O, Section 5) and EIS. See response to comment #30 above. Suction dredges could be used in areas where thick layers of loose sands and soft silts are found (i.e., near the ferry terminals), in which case the draghead intake would be operated below the surface of the material to be dredged.





Strategic Planning Office
Office of Program Planning & Integration
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
1315 East West Highway
SSMC-3
Silver Spring, MD

Phone: (301) 713-3318
FAX: (301) 713-0585 or
(301) 713-3324

TO: Reuben Yost **FROM:** Steve Kokkinakis

PH:

FAX: 907-465-2016 **Number of Pages:** 15 (including cover sheet)

MESSAGE:

Gravina Access DGIS Comments

mcd/files/fax cover

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

October 3, 2003

Reuben Yost
Special Projects Manager
Alaska Department of Transportation and Public Facilities
6860 Glacier Highway
Juneau, AK 99801-7999

Dear Mr. Yost:

The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Statement (DEIS) for the Gravina Access Project. The purpose of the project is to improve surface transportation between Revillagigedo Island and Gravina Island in the Ketchikan Gateway Borough, Alaska. The DEIS evaluates six bridge alternatives and three ferry alternatives. All alternatives include a roadway around the southern end of the airport runway connecting the airport terminal to a spine road on the west side of the airport. The preferred alternative would be a bridge between Tongass Avenue and the airport via Pennock Island.

Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act requires Federal agencies to consult with NMFS on all actions that may adversely affect Essential Fish Habitat (EFH). NMFS is required to make conservation recommendations which may include measures to avoid, minimize, mitigate or otherwise offset adverse effects. For the purposes of this DEIS, EFH includes all segments of streams where salmon reside during any period of the year as well as the marine waters and substrates of Tongass Narrows. These areas provide habitat for a number of anadromous and marine species including all five species of Pacific salmon, arrowtooth flounder, dusky rockfish, Pacific cod, sablefish, yelloweye rockfish, shortraker rougheye rockfish and sculpins.

Section 7(a)(2) of Endangered Species Act (ESA) directs interagency cooperation "to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species" or result in the destruction or adverse modification of critical habitat. NMFS is responsible for the administration of the ESA as it applies to certain cetaceans, pinnipeds, and marine fish. These include several species of whales, Pacific salmon, and Steller sea lions.

This letter contains NMFS comments on the DEIS with respect to both EFH and the ESA. NMFS reviewed a draft of the EFH Assessment in March 2003. At that time, we recommended the use of bridges in place of culverts for stream crossings. The revised EFH Assessment

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proposes to use bridges for road crossings at Government Creek and Airport Creek. However a culvert is still being proposed for one of the crossings of the anadromous stream southeast of government creek. The EFH Assessment acknowledges that this culvert will result in a direct loss of EFH but does not explain why a culvert is being proposed for this crossing instead of a bridge. (1)

In the March review, NMFS also indicated that the EFH Assessment should document how much eelgrass would be impacted by the various alternatives and where the impacted eelgrass is located. Although a map has been provided in the DEIS documenting the location of eelgrass, the amount of eelgrass and kelp that will be impacted is provided only for the channel modification activities in Alternative F3. (2) NMFS also indicated that Table 1-1 should specify acreage of impacts by habitat type of eelgrass, kelp and wetlands. (3) A wetlands category has been added to this table in the revised EFH Assessment, however there is still only a general "marine" category for all other EFH.

In general, NMFS finds that the DEIS lacks site-specific information on the type and extent of EFH in the project area and the potential impacts of each of the alternatives on EFH. (4) The DEIS does not link site specific analyses of environmental conditions and the type and extent of fish habitat at the proposed location of each alternative to the magnitude and extent of actions associated with each alternative (pile driving, dredging, etc.). (5) The DEIS indicates that dredging, pile driving and in-water blasting may be required under all the alternatives; however it does not identify the amount of dredging that may be required, the number of pilings that would need to be placed, or the amount of in-water blasting that might be required under each of the alternatives. (6) The proposed locations for pile driving, dredging and blasting are not identified and no discussion of EFH within the impacted areas is provided. (7) As a result, how conclusions on the potential impacts of the alternatives on EFH were reached is not clear.

For example, the EFH assessment indicates that dredging for pier construction and channel modification would create turbidity plumes; however, the document does not contain any information on the tidal exchange or currents in Tongass Narrows, nor does it identify the nature of the substrate that would be disturbed. Yet, the assessment concludes that "because of the strong tidal currents" turbidity from dredging would dissipate "with minimal effect on biota." The amount of time that dredged particles remain suspended is directly related to the nature of the particles and the currents in the disturbed area. Strong currents can assist in dissipating particles, but they also can increase the impact area by carrying suspended particles away from the dredging site. The size of the suspended particles, and the amount of time that they remain suspended, is important in determining the potential impacts, especially on filter-feeding organisms. (8) Without more specific information on the particle size of the substrate being dredged and the currents in the project area, the conclusion that the impact of dredging on biota will be minimal appears to be largely conjecture.

To adequately assess the potential impact of the alternatives on EFH, the revised EFH assessment and EIS need to include site-specific data and information to support the conclusions on potential

impacts from project activities. At a minimum, the revised documents will need to identify the scope and extent of potential pile driving, dredging, blasting and other activities that have the potential to impact EFH, the probable locations of these activities, the environmental conditions (currents, substrates, etc.) in the vicinity of the activities, and the EFH that may be impacted by these activities. Conclusions regarding the potential impacts of construction and operation activities on EFH should be provided for each alternative. (9) (10)

All marine mammals that occur in the project area are protected by the Marine Mammal Protection Act (MMPA) of 1972. The DEIS states that all build alternatives would adversely impact marine mammals in the Tongass Narrows. The revised EIS should include detailed information on the activities that may affect marine mammals and should differentiate the magnitude of the effects among the alternatives. The DEIS states that marine mammals would likely move away from any excessive noise resulting from the project. Harassment of marine mammals, including "annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to migration, breathing, nursing, breeding, feeding, or sheltering...," is prohibited under the MMPA. The EIS should state how construction impacts or other associated project activities that may result in harassment of marine mammals (as defined at 50 CFR 216.3) will be mitigated. If disruption of marine mammal behavior (such as feeding or migration) cannot be avoided, Section 101 (a) 5 of the MMPA contains provisions for obtaining a permit authorizing harassment of marine mammals incidental to specific activities. The permit process generally requires 6 to 8 months. Therefore, early identification and planning are necessary to avoid project delays in the event that harassment of marine mammals cannot be avoided. For more information on incidental harassment permits, contact Ken Hollingshead of NMFS at (301)713-2322, extension 128. (11) (12) (13)

The DEIS concludes that impacts to marine mammals from construction activities such as blasting and pile driving would be temporary, and the animals would return to their normal behavioral patterns once these activities were completed. The amount of time required for construction activities under the various alternatives is not discussed in the DEIS. The only timeline mentioned is in the EFH assessment with respect to channel modification required under Alternative F. This section states "The duration of these activities would be 1 to 3 months. Channel modification work would occur up to seven days a week with almost continuous disturbance from dredging and intermittent disturbance from blasting" (page 13). More detailed information on the length of the construction period for each alternative is necessary before the impacts to marine mammals can adequately be assessed. (14)

The DEIS should be revised to contain more in-depth information on the population status and trends of marine mammals that occur in the project area. Alaska Marine Mammal Stock Assessments are published every year by NMFS. These reports provide a good source of information on current stock abundance and trends and on activities that have historically affected marine mammal populations. Stock Assessment Reports can be accessed at the following website: http://www.nmfs.noaa.gov/prot_res/PR2/Stock_Assessment_Program/sars.html. (15)

Steller sea lions and humpback whales are found in the vicinity of the project. In addition to protection under the MMPA, these species are listed as threatened and endangered, respectively, under the ESA. NMFS agrees with the determination in the DEIS that impacts to these species are more likely to result from construction related impacts than from the proposed project itself. Section 4.25.15 of the DEIS states that pile driving and underwater explosives could adversely affect Steller sea lions through high noise levels and vibration. Section 4.25.15.2 of the DEIS states that humpback whales could be affected directly by underwater noise from construction work in Tongass Narrows. Because this action 'may affect' listed species, the responsible Federal agency, the Federal Highway Administration, should request consultation with NMFS under section 7 of the ESA. If adverse effects to listed species are identified, NMFS and the Federal Highway Administration may try to eliminate those effects by revising the proposed action. Adverse effects on listed species may be avoided by the use of seasonal work windows and observers to monitor the presence of listed species and suspend action until the animals have cleared the area. Section 3.20.2 in the DEIS needs to be revised to include information on the approximate number of Steller sea lions that occur in the project area and the seasonal use of this area by Steller sea lions in order to adequately assess the impacts of the proposed action on this species and to facilitate the consultation process. (16) (17) (18) (19)

Section 3.20.1 in the DEIS should be revised to include the following information with regard to humpback whales: (20)

1. The International Whaling Commission (IWC) first protected humpback whales from commercial whaling in 1965.

2. Humpback whales were listed as endangered under the ESA in 1973.

3. Commercial whaling of humpback whales in the North Pacific ceased in 1965 with protection from the IWC.

All alternatives include construction of a road on the west side of Ketchikan International Airport that would cross Government Creek. However, only Alternatives G2, G3 and G4 apparently would require "placement of concrete, rock and other fill materials in the Government Creek estuary." The reason for this is not clear. The road crossing of Government Creek is identified in Figure 2.2 as being the roadway for all build alternatives. Additional discussion of the need for the proposed fill under these alternatives should be provided. (21)

Comments and recommendations with respect to specific activities that have the potential to affect EFH and protected species are included in the attachment to this letter. Please contact Katharine Miller with the NMFS Alaska Region at (907) 586-7643 if you have any questions regarding this letter and attachment.

Sincerely,

for Joyce Wood
NEPA Coordinator

Attachment to NMFS Comments on the Gravina Access DEIS

Pile Driving:
Appendix N indicates that pile driving may be a requirement for all project alternatives. Section 3.1.3 of Appendix N acknowledges that severe adverse impacts to fish can occur from the use of an impact hammer to drive hollow steel piles of the type required for the project under all alternatives. However, the EFH assessment in Appendix O states that "minor fish kills could result from driving large diameter steel piles into hard sediments with an impact hammer." The DEIS does not indicate the type of pile driving equipment that is proposed for use, number of piles to be driven under the various alternatives, the depth to which the piles will be driven, the amount of time needed to drive the piles, or the nature of the substrate into which the piles will be driven. No mitigation is proposed for adverse impacts to EFH from pile driving. (22)

Pile driving can generate intense underwater sound pressure waves that have been shown to injure and kill fish (Caltrans 2001, Longmuir and Lively 2001, Stotz and Colby 2001). Injuries associated directly with pile driving may include rupture of the swimbladder, internal hemorrhaging (Caltrans 2001, Abbott 2002), and structural damage to the fish inner ear (Enger 1981, Hastings 1996). Loud sounds can also have detrimental effects on fish by causing stress, increasing risk of mortality by reducing predator avoidance capability and interfering with communication necessary for navigation and reproduction.

The type and intensity of the sounds produced during pile driving depend on a variety of factors, including, but not limited to, the type and size of the pile, the firmness of the substrate into which the pile is being driven, the depth of water, and the type and size of the pile-driving hammer. Sound pressures are positively correlated with the size of the pile, as more energy is required to drive larger piles. Hollow steel piles as small as 14 inches in diameter have been shown to produce sound pressures that can injure fish (Reyff 2003). Firmer substrates require more energy to drive piles, and produce more intense sound pressures. Sound attenuates more rapidly with distance from the source in shallow water than in deep water (Rogers and Cox 1988).

Studies have shown that the use of an impact hammer to drive hollow steel piles produces intense, sharp spikes of sound which can easily reach levels that injure fish. Fish may respond to the first few strikes of an impact hammer with a startle response. After these initial strikes, the startle response wanes and the fish may remain within the field of a potentially-harmful sound (Dolat 1997, NMFS 2001). Impact hammers produce such short spikes of sound with little energy in the infrasound range, that fish fail to respond to the particle motion (Carlson *et al.* 2001). In contrast, vibratory hammers produce sounds of lower intensity with a rapid repetition rate. When exposed to sounds which are similar to those of a vibratory hammer, fish consistently displayed an avoidance response (Enger et al. 1993, Dolat 1997, Knudsen et al. 1997, Sand et al. 2000), and did not habituate to the sound, even after repeated exposure (Dolat 1997, Knudsen et al. 1997). Thus, impact hammers may be more harmful than vibratory hammers for two reasons: first, they produce more intense pressure waves, and second, the sounds produced do not elicit an avoidance response in fishes, which will expose them for longer periods to those harmful pressures.

In summary, effects on EFH and managed species during pile driving for the Gravina Access Project will depend on a number of variables associated with environmental conditions at the project site and variables associated with the construction schedule. These include:

- size and force of the hammer strike
- distance of fish from the pile
- depth of water around the pile
- bottom substrate composition and texture
- size and species of fish in the project area

(23)

Before an assessment can be made regarding the extent of potential impact from pile driving on EFH, these variables will need to be evaluated in the EFH Assessment. The following EFH conservation recommendations should be considered with respect to pile driving for all alternatives:

(24)

1. Use a vibratory hammer when driving hollow steel piles. If impact hammers are required for seismic stability or substrate type, the pile should be driven as deep as possible with a vibratory hammer prior to use of the impact hammer.
2. For piles located in intertidal and shallow subtidal areas, piles should be driven during low tide.
3. A fish and hydroacoustic monitoring program should be developed that includes the following:
   a. Underwater sound measurements at various distances and depths from pile driving operations
   b. Evaluation of fish mortality and injury rates. This could be accomplished through the use of caged fish at various distances and depths from pile driving operations.
   c. Observation of bird predation and behavior.
4. Implement measures to attenuate the sound should sound pressure levels exceed the 180 dB threshold. Methods to reduce the sound pressure levels include, but are not limited to, the following:
   a. Surround the pile with an air bubble curtain system or air-filled coffer dam.
   b. Use a smaller hammer to reduce sound pressure. The sound produced has a direct relationship to the force used to drive the pile.
   c. Use a hydraulic hammer if impact driving cannot be avoided. The force of the hammer blow can be controlled with hydraulic hammers; reducing the impact force will reduce the intensity of the resulting sound.
5. To avoid attracting fish during nighttime pile driving operations, piles driving should be limited to daylight hours to the extent practicable and artificial illumination should be minimized. If needed, illumination for any pile driving operations should be directed away from the water.

Pile driving may also have adverse impacts on marine mammals. These include direct effects from exposure to elevated sound levels that may produce a temporary shift in the animal's hearing threshold, and indirect effects such as behavior modification.

The following conservation recommendations for minimizing impacts to marine mammals should be considered with respect to pile driving for all alternatives: (25)

1. Pile driving should be conducted only during daylight hours.
2. Implement measures to attenuate the sound should sound pressure levels exceed the 180 dB threshold. If sound pressure levels exceed acceptable limits, implement mitigative measures. Methods to reduce the sound pressure levels include, but are not limited to, the following:
   a. Surround the pile with an air bubble curtain system or air-filled coffer dam.
   b. Use a smaller hammer to reduce the sound pressures. The sound produced has a direct relationship to the force used to drive the pile.
   c. Use a hydraulic hammer if impact driving cannot be avoided. The force of the hammer blow can be controlled with hydraulic hammers; reducing the impact force will reduce the intensity of the resulting sound.
3. A 50m initial safety zone should be established around the pile-driving site. A NMFS-approved marine mammal monitor should scan the safety zone continuously for 5 minutes just prior to, and during, pile driving to determine whether marine mammals are present. Pile driving should not begin until the safety zone is clear. If an animal is in the safety zone before initiation of the pile driving activity on any given work day, operations should be delayed until the animal has moved a safe distance away. If an animal enters the safety zone while pile driving is occurring, operations should be stopped immediately until the animal has moved beyond the range of the safety zone. In consultation with NMFS, the safety zone may be increased if animals beyond 50 m show excessive behavioral changes in response to pile driving operations. If pile driving stops for longer than 45 minutes, another scan should be performed.
4. A "dry fire" of the hammer should be performed prior to operating at full capacity. A "dry fire" occurs when the hammer is raised and dropped with no compression of the pistons which produces approximately 50 percent of the maximum in-air noise level. This dry-firing should allow sea lions in the area to voluntarily move from the area and should expose fewer animals to loud sounds both underwater and above water

In-water Blasting:

Appendix N states that in-water blasting may be needed to prepare foundations for in-water piers under all alternatives and would be needed under Alternative F3 to improve navigation conditions in the channel west of Pennock Island. Section 3.1.3 indicates that underwater blasting can be expected to cause heavy mortalities of fish within 100 meters of the blast area with lesser numbers of fish killed with greater distance. The proposed conservation measures include preparation of a blasting plan to be reviewed by NMFS prior to any blasting activities, pre-blasting surveys for fish

schools, post-blasting surveys to assess fish mortality, and possible use of mitigation measures such as bubble curtains.

The DEIS does not contain any information on the amount of blasting that may be required for each alternative, duration of blasting, size of charge, detonation velocity of charge, etc. The DEIS also does not contain an evaluation of the specific EFH and fishery resources in the vicinity of proposed blasting operations. (26) (27)

Research conducted by the Army Corps of Engineers indicates that the lethality of an explosive is directly related to its detonation velocity (Keevin, 1997). Detonation velocity is the speed with which a blasting agent ignites. The more rapid the detonation velocity the more abrupt is the resultant hydraulic pressure gradient and the more difficulty fish have adjusting to the pressure changes. Investigations have demonstrated that the swimbladder is the most frequently damaged organ. Laboratory tests have demonstrated that small negative pressures can injure fish swimbladders, and negative pressures of only one atmosphere (101.4 kPa) can kill marine fish. This is well below the pressure of most underwater explosions.

The distance from the blast at which lethal effects occur depends upon several variables including: the typical size (weight) of the fish species likely to be in the area, the depth of the fish, the depth of detonation of the charge, and the weight of the charge. Lethal ranges will be increased if the water is shallow (less than five times either the detonation depth or target depth, whichever is greater) or where the bottom is rocky (Keevin, 1997).

Non-lethal effects from blasting are similar to those discussed above for pile driving. In addition, sedimentation resulting from the use of explosives may cover spawning areas or may reduce or eliminate benthic prey. By-products from the detonation of explosives may include ammonia or similar compounds and may be toxic to fish and other aquatic biota (Wright 1998).

The DEIS proposes to mitigate the effects of in-water blasting in part by conducting pre-blasting surveys to ensure that no fish schools are in the vicinity of the blasting area. These surveys will be only partially effective, since many of the fish species likely to be impacted by blasting are not schooling species. To adequately evaluate the potential impact of possible blasting activities on EFH and to design mitigation measures to reduce adverse impacts, site specific data on the marine resources in the vicinity of potential blasting areas should be collected and included in the revised EFH assessment. (23)

Dredging and Stream Crossings:

The EFH assessment indicates that dredging for pier construction and channel modification may be a component of all alternatives. All alternatives include construction of a road on the west side of Ketchikan International Airport that would cross anadromous streams. As discussed above, the conclusion that turbidity from marine dredging would dissipate "with minimal effect on biota" does not appear to be based on analysis of site-specific environmental conditions. The type of dredging equipment to be used and the potential for entrainment of fish in dredging equipment is (8) (29)

not addressed. The DEIS does not contain any conservation recommendations with respect to dredging other than the use of BMPs when placing fill next to streams. (30)

Marine dredging has the potential for both direct and indirect impacts to fish. Potential direct effects include entrainment of fish, particularly juvenile fish, and invertebrates in dredging equipment. Indirect effects include behavioral and sub-lethal impacts from increases in turbidity and redistribution or release of contaminants with increased potential for chronic or acute toxicity (NMFS 2001).

Dredging causes temporary elevation of suspended solids emanating from the project area as a turbidity plume. Excessive turbidity can affect fish or their prey by abrading sensitive epithelial tissues, clogging gills, decreasing egg buoyancy, and can affect photosynthesis of phytoplankton and submerged vegetation leading to localized oxygen depression (Bash 2001, NMFS 2001). Dredging may also affect the migration patterns of juvenile salmonids as a result of noise, turbulence, and equipment (Bash 2001, NMFS 2001). The amount of time that sediments remain suspended in the water column and the rate at which they can be expected to sink depends upon the type and size of sediment being dredged. The amount of current in the dredging area will affect both the rate at which turbidity dissipates and the total area that may be affected by dredging activities.

The removal of bottom sediments during dredging can disrupt the benthic communities and eliminate feeding habitat available to fish. The rate of recovery of the dredge area is temporally and spatially variable and site specific. Recolonization varies considerably with geographic location, sediment composition, and types of organisms inhabiting the area (Kennish 1997).

Suspended sediments dredged from estuarine and coastal marine systems can be high in organic matter and clay, both of which may be biologically and chemically active. Dredged spoils removed from areas adjacent to industrial and urban centers can be contaminated with heavy metals, organochlorine compounds, polyaromatic hydrocarbons, petroleum hydrocarbons, and other substances (Kennish 1997) and may be prone to resuspension.

To adequately evaluate the potential impact of dredging on EFH and to design mitigation measures to reduce adverse impacts, site specific information is needed on the environmental conditions, including the potential for any contaminated sediments, and the type and extent of fish habitat in the areas where dredging may occur. The revised EFH assessment should also identify the magnitude and extent of dredging associated with each alternative, the type of dredging equipment that will be used, and options for disposing of dredge material. The following conservation recommendations should be considered with respect to dredging for all alternatives: (31) (32) (33)

1. Dredge timing windows should be incorporated into the dredging program to eliminate potential effects to sensitive life cycle stages of fish and invertebrates (e.g., rearing and migration) similar to those proposed in the DEIS for blasting. Information in the DEIS is insufficient for NMFS to recommend timing windows at this time.
2. A dredge barge should be utilized to completely retain dredge material to minimize turbidity.

3. Depending on the type of dredging equipment that will be used, a fish and invertebrate presence monitoring program should be implemented during dredging to monitor for evidence of fish entrainment. If significant numbers of fish or invertebrates appear in the spoils, then dredging should be curtailed.
4. If suction dredges are used, the draghead of dredges shall be operated with the intake at or below the surface of the material being removed.

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

March 14, 2003

ALASKA DOT & PF
SOUTHEAST REGION
MAR 2 0 2003
PRELIMINARY DESIGN & ENVIRONMENTAL

Mr. Reuben Yost
Regional Environmental Coordinator
Alaska Department of Transportation
and Public Facilities
6860 Glacier Highway
Juneau, Alaska 99801-7999

RE: Draft Essential Fish Habitat (EFH) Assessment,
Gravina Access Project, #67698/ACHP-0922(5)

Dear Mr. Yost:

The National Marine Fisheries Service (NMFS) has reviewed the referenced Draft EFH assessment. NMFS offers both general and specific revisions for your consideration.

General Comments:

Page 1, Section 1.0, B., second paragraph, last sentence, and Page 13, Section D.:

This sentence states that "Alternatives F1 and F3 would require placing culverts in an unnamed anadromous fish stream that would cause loss of EFH." Section D. reiterates this point. The EFH assessment and DEIS should include, as an alternative for analysis, the use of bridges for these alternatives. Bridges usually eliminate or significantly minimize adverse effects to EFH.

Page 10, Section 4.0, A., first paragraph, fourth and fifth sentences:

These sentences state that "There would be some permanent loss of eelgrass beds from placement of fill in Tongass Narrows. Pier footings and the bridge structures could slow the growth of eelgrass beds by shading, which indirectly would negatively impact EFH."

The EFH assessment should document how much eelgrass would be impacted and where it is located. Figure 1 should map the location of the eelgrass beds, as well as other sensitive habitats, including kelp beds and wetlands. A sentence should

be added to this section that mentions the loss of interspersed eelgrass and kelp in the next section "Impacts of Pier Construction and Modification." Acreage of impacts by habitat type of eelgrass, kelp and wetlands should be included in Table 1-1, which currently provides only "freshwater" and "marine" impacts.

Page 11, Section 4.0, A., third paragraph:

This paragraph outlines plans for channel widening that would deepen a 2,000 foot long by 550-750 foot wide area from -10 to -40 mean lower low water (MLLW). According to this section "This action would eliminate interspersed eelgrass and kelp beds located in this area. Newly exposed soil and rock surfaces would be re-colonized over a period of years. Ultimate benthic assemblages are expected to resemble those now found in similar substrates and depths. Because of the loss of some shallow water habitats, especially on the southwest side of the channel, overall productivity in the area would be less than current productivity in the existing shallower areas."

This discussion should indicate how much eelgrass and kelp would be eliminated, and where it is located (preferably on a map). It is unlikely that these communities would re-establish in the deeper depths that would result. Eelgrass is typically found to -20 feet MLLW in southeast Alaska, and kelp to -60 feet MLLW. This should be clearly stated, and the document should provide a more specific description of the benthic communities referred to as replacing those eelgrass and kelp communities. NMFS may be able to assist with a dive survey to document the benthic habitat in this area. United States Fish and Wildlife Service staff have also expressed interest in a possible dive survey for this project (Mr. Ed Grossman, personal communication, March 11, 2003).

Page 14, fifth bullet:

The blasting plan will need to be reviewed by NMFS for both EFH and marine mammal impacts.

Page 15, fourth bullet:

Placement of riprap along stream banks to maintain stream bank integrity should include the use of bioengineering techniques to improve habitat value of the riprap, by incorporation of willow stakes, or other locally available vegetation.

Specific Comments:

Page 3, section 3.0, penultimate sentence:

Add boldface type to sentence as follows.

"These include Government Creek, Airport Creek **and its tributary**, and two unnamed streams (Figure 1)."

Page 4, section 3.0, A., third sentence:

Replace "dusty rockfish" with "dusky rockfish".

Page 4, section 3.0, A., fourth sentence:

Replace "shore tracker" with "shortraker rockfish".

Page 4, section 3.0, A., eight sentence:

Replace "species; they", with " species, which".

Page 5, section 3.0, C., fifth sentence:

Remove the word "and" from "lower (>1000 meters) and slopes and basen (>3000 meters) (NMFS 1999)."

Page 5, section 3.0, C., "Arrowtooth Flounder" paragraph, fourth sentence:

Remove "s" from word "desmersal" to spell as "demersal".

Page 5, section 3.0, C. "Dusty (sic) Rockfish" paragraph, title and first sentence:

Replace "Dusty rockfish" with "Dusky Rockfish".

Page 6, section 3.0, C. "Pacfic Cod":

Add the sentence "Juvenile Pacific cod have been captured in nearshore eelgrass and kelp beds."

Page 6, section 3.0, C. "Shore tracker (sic) and Rougheye Rockfish":

Replace "Shore tracker" with "Shortraker"

Thank you for the opportunity to review the draft EFH assessment. Please direct any questions you may have regarding these comments to Linda Shaw at (907) 586-7510.

Sincerely,

Jonathan M. Kurland
Assistant Regional Administrator
for Habitat Conservation

cc: EPA, Juneau
ADEC, AADGC, ADNR, ADF&G, USFWS, Juneau
ADF&G, Ketchikan

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-4428
TEXT: (907) 465-4647
FAX: (907) 465-4414

DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DESIGN & ENGINEERING SERVICES DIVISION
SOUTHEAST REGION - DESIGN

February 21, 2003

Linda Shaw
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

Re: Draft Essential Fish Habitat Assessment
Gravina Access Project #67698 / ACHP-0922(5)

Dear Ms. Shaw:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration, is preparing a Draft Environmental Impact Statement (DEIS) to assess impacts of the proposed Gravina Access Project located in Ketchikan. DOT&PF has hired HDR Alaska, Inc., to complete the EIS studies. Planning has been underway since 1999 with preliminary engineering and public and agency scoping. A draft EIS is anticipated in Spring 2003.

The proposed project corridor is located between Gravina Island and Revillagigedo Island in the Ketchikan Gateway Borough. The two islands are separated by Tongass Narrows, a 13-mile-long waterway that varies in width from approximately ¼ to 1 mile. As shown on Figure 1 of the attached draft Essential Fish Habitat (EFH) assessment, six bridge alternatives and three ferry alternatives are reasonable alternatives evaluated in the DEIS.

In accordance with the EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act, we present an EFH assessment with the following information: (1) a description of the proposed action, (2) an analysis of the effects on EFH, (3) the effects of the action on EFH, and (4) proposed mitigation.

We have determined that all of the project alternatives may adversely affect EFH, as established by the 1996 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act and the Department of Commerce's EFH consultation regulations. We request your review of the enclosed draft EFH Assessment. I would appreciate your comments on the draft assessment and any recommendations and/or proposed conservation measures you may have at this time.

Based on your comments and recommendations, we will revise the draft assessment and include it in the Draft EIS for your official review per the January 7, 2000 agreement between FHWA and NMPS.

If you have any questions regarding this request, please do not hesitate to contact me at 907/465-4498 or our Consultant Project Manager, Mark Dalton, at 907/274-2000.

Sincerely,

Reuben Yost
Regional Environmental Coordinator

Copies:

Roger Healy, ADOT&PF
Mark Dalton, HDR
Tim Haugh, FHWA

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

October 13, 1999

ALASKA DOT & PF
SOUTHEAST REGION
OCT 8 1999
PRECONSTRUCTION/DESIGN

Al Steininger, P.E.
Project Manager
State of Alaska
Department of Transportation
and Public Facilities
Design and Engineering Services Division
Southeast Region - Design
6860 Glacier Highway
Juneau, Alaska 99801-7999

RE: Gravina Access Project - Agency Scoping Comments

Dear Mr. Steininger:

Thank you for soliciting scoping comments on the referenced project. The purpose of the project is to provide better access between the Ketchikan airport and the city of Ketchikan. Alternatives were discussed at the September 27 scoping meeting held in Juneau and include enhanced ferry service, an underground tunnel, and a bridge, the location of which will be considered at a number of locations. The National Marine Fisheries Service (NMFS) has the responsibility to comment on impacts to living marine resources under our jurisdiction including anadromous fish, marine fish and invertebrates and marine mammals. Accordingly, we would favor those project alternatives and designs that minimize direct, indirect and cumulative impacts to anadromous fish streams, wetlands, intertidal areas, submerged aquatic vegetation, marine habitats, and the relevant species using them.

Mark Dalton of HDR consulting has met separately with Steve Brockmann of the U.S. Fish and Wildlife Service and Jack Gustafson of the Alaska Department of Fish and Game, and provided us with a summary of resource issues provided at that meeting. Of the issues listed, the NMFS is also concerned with numbers 1, 3, 4, 5, 6, 9, 10, 11, 12, 13, 16, 17, 19, 20, and 24. Rather than re-state these issues, we are providing additional comment as follows.

Of the issues listed above, numbers 4,5 and 6 address the presence of marine mammals in Tongass Narrows and suggest that additional studies may be necessary. We concur with this recommendation, as any in-water work that generates underwater noise will need to be evaluated for its potential to disturb marine mammals that may be present (as well as migrating juvenile salmonids and spawning herring). Enclosed is a draft copy of a report for the marine mammal observation program implemented aboard some of the ferries of the Alaska Marine Highway System. Sightings collected through this program show humpback whale, killer whale and Pacific white-sided dolphin sightings in the northern area of Tongass Narrows, and/or the confluence of Tongass Narrows, Clarence Strait and Behm Canal. The humpback whale and Steller sea lion are listed as endangered and threatened species, respectively. Depending on the magnitude of impact to these species, it may be necessary to satisfy consultation requirements of the Endangered Species Act with the responsible Federal agency, the Federal Highway Administration.

The environmental impact statement (EIS) for the project will need to address the essential fish habitat (EFH) requirements of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The EIS should include an assessment of the impacts of the proposed action on EFH in a chapter or section titled "Essential Fish Habitat". The EFH assessment should include 1) a description of the proposed action; 2) an analysis of individual and cumulative effects of the action on EFH, the managed species, and associated species such as major prey species, including affected life history stages; 3) the responsible Federal agency's views regarding the effects of the action on EFH; and 4) a discussion of any proposed mitigation, if applicable.

Upon receipt of the EFH assessment, NMFS will provide back to the Federal agency or their representative, any EFH conservation recommendations, as appropriate, if we believe the project would adversely affect EFH. In order to develop these conservation recommendations, whenever possible, at least 60 days notice prior to a final decision on an action, or 90 days if the action would result in a substantial adverse impact to EFH. Upon receipt of NMFS conservation recommendations, the Federal agency is required to respond in writing to NMFS within 30 days.

EFH Assessment Information:

To assist you in developing an EFH assessment, we have identified EFH in the general vicinity of the current ferry between the airport and the city of Ketchikan. This list would need to be verified for specific project sites, but is likely to be similar, if not identical. Specific information on habitat for salmon should be obtained from the Alaska Department of Fish and Game

and U.S. Fish and Wildlife Service in Ketchikan. EFH for all five species of Pacific salmon (chinook, coho, chum sockeye, pink) is present in the project area.

Following are habitat characteristics for the non-salmonid species of EFH. References to habitat locations indicate the following depth associations; inner (1-50 meters) and middle (50-100 meters)and outer (100-200 meters) shelf regions and upper (200-1000m) and lower (>1000m) slopes and basin (>3000m).

Pacific Ocean Perch Adults and Late Juveniles:

Adults found in outer shelf and upper slope. Juveniles found in inner, middle, and outer shelves, and upper slope. Larval stages found in same as juveniles plus lower slope and basin. Adult substrates are gravel, pebble, and cobble, juvenile substrates are the same as adults plus boulders.

Yelloweye Rockfish Adults and Late Juveniles:

Adults and juveniles are both found in the middle and outer shelves and upper slope. Habitat for both is bays, estuaries, and island passes. Both life stages are demersal. Found in substrate areas of rock, coral and cobble. High concentrations are found associated with high relief containing refuge spaces such as overhangs, crevices and caves. Feeding areas are those containing fish, shrimp and crab.

Shortraker and Rougheye Rockfish Adults and late Juveniles:

Adults occur in outer shelf and upper slope, in depths from 25 to 875 m and are semi-demersal. Juveniles are found in the middle and outer shelves. Adults found over all substrates including mud, clay, silt, sand, gravel, pebble, cobble, boulder and bedrock. However, from submersible observations, soft substrates of sand or mud usually had the highest densities; whereas hard substrates of bedrock, cobble or pebble usually had the lowest adult densities. Habitats with steep slopes and frequent boulders were used at a higher rate than habitats with gradual slopes and few boulders. It is suspected that juveniles occupy shallower habitats than adults.

Dusky Rockfish Adults and Late Juveniles:

Adults found in outer shelf, upper slope and nearshore waters of Southeast Alaska along rocky shores at depths less than 50m. Juveniles found in inner (1-50m) and middle (50-100m) slopes. Substrates for adults and juveniles is gravel, cobble, boulder. Juvenile dusky rockfish have also been captured in nearshore eelgrass and kelp beds. Adults are semi-demersal/semi-pelagic.

Walleye Pollock Adults and Eggs:

Both adults and eggs occur in outer shelf. Walleye pollock and their eggs are pelagic, therefore they may occur in waters over any substrate.

Sablefish Adults and Late Juveniles:

Adults and late juveniles occur in the upper and lower slopes. Adult and late juvenile sablefish are pelagic and may occur in waters over any substrate.

Pacific Cod Adults and Late Juveniles:

Occur in both inner and middle shelf regions. Both life stages are demersal. Adults occur from the shoreline to 500m, juveniles from 60-150m. Preferred substrate is soft sediment, from mud and clay to sand.

Arrowtooth Flounder Adults and Late Juveniles:

Occur in both inner and middle shelf regions. Both life stages are demersal. Juveniles inhabit shallow areas until about 10 cm in length. Widespread distribution mainly on middle and out portions of shelf. Wintertime migration to shelf margin and upper continental slope to avoid cold temperatures.

Sculpin spp. Adults and Late Juveniles:

Occur in both inner and middle shelf regions. Both life stages are demersal. Broad range of habitats from intertidal pools, and all shelf substrates (mud, sand, gravel, etc.).

Skates spp. Adults and Late Juveniles:

Occur in middle shelf regions. Both life stages are demersal. Broad range of substrate types (mud, sand, gravel, and rock) and the lower portion of the water column.

Thank you for the opportunity to comment. We look forward to continued coordination for this project. If you have any further concerns or questions please contact Linda Shaw at (907) 586-7510.

Sincerely,

P. Michael Payne
Assistant Regional
Administrator
for Habitat Conservation

cc: EPA Anchorage (Mark Jen)
ADEC, AADGC, ADNR, Juneau
ADF&G, USFWS, Ketchikan

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DESIGN AND ENGINEERING SERVICES – SOUTHEAST REGION
PRELIMINARY DESIGN & ENVIRONMENTAL SERVICES

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999

PHONE: (907) 465-4445
TEXT: (907) 465-4647
FAX: (907) 465-3506

RECEIVED
APR 2 2 2004

April 13, 2004

RE: Gravina Access Project 67698/ACHP-0922 (5)

Dr. James Balsiger
National Oceanic and Atmospheric Administration- Fisheries
P.O. Box 21668
Juneau, Alaska 99802-1668

Dear Dr. Balsiger:

The Alaska Department of Transportation and Public Facilities (DOT&PF) has reviewed the comments and preliminary recommended conservation measures for the Gravina Access Project in the letter from the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) to Reuben Yost (Special Projects Manager) dated October 3, 2003. These measures were discussed with Katherine Miller in a teleconference call January 13, 2004. Recent changes to the construction methods for the Gravina Access Project have reduced the potential for adverse impacts to essential fish habitat (EFH) and marine mammals in the project area, eliminating the need to include all of the preliminary recommended conservation measures.

Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and Section 7(a)(2) of the Endangered Species Act require Federal agencies to consult with NOAA Fisheries on all actions that may adversely affect EFH or affect marine mammals and their critical habitats, respectively. NOAA Fisheries has outlined preliminary conservation measures, which include measures to avoid, minimize, mitigate or otherwise offset adverse effects. This letter presents the conservation measures proposed by DOT&PF for inclusion into the text of the final EIS.

We transmitted to Joyce Wood on March 2, 2004 a copy of the DOT&PF and Federal Highway Administration (FHWA) initial response to draft EIS comments. This letter corrects some errors in that earlier transmittal. The revised comment-response table is enclosed.

Please review this letter and the enclosed comment-response table and let us know if the conservation measures proposed satisfactorily address NOAA Fisheries concerns.

The following conservation measures are applicable to all project alternatives and are included in the Final EIS:

Essential Fish Habitat Conservation Measures

- At all stream crossings (both culverts and bridge crossings), stream banks would be re-contoured to approximate original conditions and re-seeded with native vegetation to minimize erosion.

- BMPs, developed in accordance with EPA's "Storm Water Management for Construction Activities: Developing Pollution and Prevention Plans and Best Management Practices," EPA Document 832 R-92-005 (EPA 1992), will be employed to minimize the introduction of sediment and minimize siltation of ponds and streams during adjacent fill placement.

- All anadromous fish stream crossings would be designed to minimize impacts on stream function and to provide passage to both anadromous and resident fish. All road structures crossing anadromous fish habitat channels would be designed to provide passage for juvenile and adult salmon per Alaska Statute Title 41 standards.

- In-water work in Tongass Narrows would be restricted, as follows. General use of boats and barges could occur year round for general survey and work on bridge structures above water. Except for blasting, dredging, and pile driving, other work in marine waters could occur July 1-February 28. As further described below, blasting, dredging, and pile driving could occur only November 1-February 28, with the possible exception of mid-channel locations, based on further consultation with the Alaska Department of Natural Resources (DNR), NOAA Fisheries, U.S. Army Corps of Engineers (COE), and U.S. Fish and Wildlife Service (USFWS).

- The following conservation recommendations will be followed with respect to pile driving in Tongass Narrows: A vibratory hammer would be used to drive steel piles instead of an impact hammer. Piles should be driven during low tide when in intertidal and subtidal areas. .

- All construction in and around anadromous fish streams will take place when stream disturbances would have the least impact on anadromous fish species. The recommended time period for in-stream construction work in the Ketchikan area is June 15 through August 7. In-stream construction activities should completely avoid the period from August 8 through June 14. For the Ketchikan area, salmon fry generally emerge in the spring from April 15 to May 15, and the adults move into the streams by August 1 and remain through October 31. However, timing of fry emergence and adult spawning depend on the species of fish present in each stream. For example, steelhead spawn in the spring and eggs are generally present in the stream until the middle of July. Fish surveys will be conducted in the summer of 2004 for all streams that will be affected by the project. If additional species are found to be present in the project streams, the existing timing window for in-stream construction (June 15 to August 7) may be modified to protect additional species. Construction work that occurs above the ordinary high water area of the stream and does not include in-stream construction may be conducted throughout the year. In-water work areas, except for stream crossings by construction equipment, will be isolated from flowing waters of all anadromous fish streams

- Any necessary in-water blasting will be performed such that ground vibration (particle velocity) does not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch. The project will employ monitoring devices to ensure adherence to these standards. If blasting amounts are minor, and if agreed by the agencies, monitoring may not be undertaken.

- The contractor will be required to prepare a blasting plan prior to any blasting activities. The blasting plan will be submitted for review by NOAA Fisheries for both EFH and marine mammal impacts. A fish and invertebrate monitoring program will be required for any proposed blasting activities. A pre-blasting survey will be required to ensure that no fish schools are in the vicinity of the blasting area. If fish schools are detected, blasting will be delayed until they leave. A biologist will check the area and record any kills that are within 100 feet up current and 300 feet down current of the blast area after blasting is completed. Monitoring of the dredge materials may be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Measures such as covering the rock to be blasted with sand may be used to dampen blast impact. In-water blasting shall avoid the entire months of March through June to avoid juvenile salmonids and the period from June through October 31 to avoid adult salmon. All project-related activities would conform to the pertinent provisions of the Marine Mammal Protection Act and the Endangered Species Act.

- Dredged debris would be placed onto a barge where it would enter a settling basin and be disposed of on land. Only under Alternative F3, which could require substantial removal of sediment and rock, would ocean disposal be necessary. These operations for Alternative F3 would be consistent with the regulations of Clean Water Act, Section 404(b)(1) (disposal of dredged materials into waters of the U.S.) and Marine Protection, Research, and Sanctuaries Act, Sections 102 and 103. Monitoring of the dredged materials may be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Dredging activities will avoid the entire months of March through October.

- All fueling and servicing operations will be conducted at least 100 feet away from all streams and water bodies, and fuel storage will be at least 100 feet away from all wetlands and water bodies.

- All necessary permits and agency approvals will be obtained prior to construction, and any permit stipulations will be incorporated into the contract specifications.

- Perimeter staking will be required on the outside of the disturbance area prior to construction to ensure that there is no additional impact from construction activities.

- Silt fences will be used adjacent to EFH stream channels, just beyond the estimated toe of fill.

- Gravels and streambed material will be used in the bottoms of fish-passage culverts.

- Riprap will be placed along stream banks as necessary to maintain stream bank integrity. Placement of riprap along stream banks to maintain stream bank integrity should include the use of bioengineering techniques to improve habitat value of the riprap, by incorporation of willow stakes or other locally available vegetation.

Threatened and Endangered Species Conservation Measures

- In-water work will occur outside the springtime months, when there is greatest sea lion use of the project area. The EFH work window for in-water work in Tongass Narrows is July 1 to February 28, and this would be followed for marine mammals as well. Major work, such any dredging or in-water blasting required, would occur only November 1 to February 28. This timing avoids runs of salmon and herring, on which humpback whales and Steller Sea Lions feed.

- Should blasting be necessary, the construction contract will require a blasting plan approved by NOAA Fisheries. Blasting will be performed such that ground vibration (particle velocity) does not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch. Monitoring devices will be used to measure these parameters. If blasting amounts are minor, and if agreed by the agencies, monitoring may not be undertaken.

- Should dredging be required, the construction contract will require a dredging plan approved by NOAA Fisheries.

- If blasting and dredging are required, the project will ensure use of trained and NOAA Fisheries-approved observers to indicate when mammals are within a 50 m zone around pier work or other in-water work, and activity will wait until the animals move out of the area, or work would be stopped if mammals were to enter the area.

- An in-water warning sound will be issued prior to blasting to allow any marine mammals to voluntarily move to a comfortable distance.

- All necessary permits and agency approvals will be acquired prior to construction, and stipulations will be incorporated into contract specifications.

- If design should change, an incidental harassment authorization might need to be obtained from NOAA Fisheries.

- Mitigation measures will be finalized during the permitting process with input from DNR, NOAA Fisheries, COE, and USFWS.

Alterations to the construction methods include eliminating use of impact hammers. The piles for the project will now be driven using a vibratory hammer, significantly reducing adverse noise impacts to fish and marine mammals. Also, clamshell dredges will now be used for all dredging operations eliminating the potential for entrainment of pelagic fish such as salmonids. Due to these changes, the following conservation measures are no longer pertinent to the project and will not be included the Final EIS:

- A fish and hydroacoustic monitoring program should be developed that includes the following:
    a. Underwater sound measurements at various distances and depths from pile driving operations

b. Evaluation of fish mortality and injury rates. This could be accomplished through the use of caged fish at various distances and depths from pile driving operations.
c. Observation of bird predation and behavior

- Implement measures to attenuate the sound pressure levels should sound pressure levels exceed the 180 dB threshold. Methods to reduce the sound pressure levels include, but are not limited to, the following:
  a. Surround the pile with an air bubble curtain system or air-filled coffer dam.
  b. Use a smaller hammer to reduce the sound pressure. The sound produced has a direct relationship to the force used to drive the pile.
  c. Use a hydraulic hammer if impact driving cannot be avoided. The force of the hammer blow can be controlled with hydraulic hammers; reducing the impact force will reduce the intensity of the resulting sound.

- A "dry fire" of the hammer should be performed prior to operating at full capacity. A "dry fire" occurs when the hammer is raised and dropped with no compression of the pistons which produces approximately 50 percent of the maximum in-air noise level. This dry-firing should allow sea lions in the area to voluntarily move from the area and should expose fewer animals to loud sounds both underwater and above water.

- If suction dredges are used, the draghead of dredges shall be operated with the intake at or below the surface of the material being removed.

If there are any questions regarding this letter please contact me at the letterhead address or at (907) 465-1851.

Sincerely,

James A. Evensen, P.E.
PD&E Group Chief
Southeast Region Complex, DOT&PF

Attachment: National Oceanic and Atmospheric Administration – Office of Program Planning & Integration Dated October 3, 2003

Cc: Mark Dalton, HDR
Bill Ballard, DOT
Tim Haugh, FHWA

Public Comment on DEIS

(Circled numbers correspond to the numbered comments in Table 7-2 in Chapter 7.)

Subject: Gravina Access Draft EIS comments
Date: Tue, 07 Oct 2003 00:56:14 +0000
From: m.clabby@att.net
To: reuben_yost@dot.state.ak.us

Attached are comments on Draft EIS for Gravina Access.

9-30-03 Gravina Access Comments.doc	**Name:** 9-30-03 Gravina Access Comments.doc **Type:** Microsoft Word Document (application/msword) **Encoding:** base64 **Download Status:** Not downloaded with message

Reuben Yost, Special Projects Mgr. Oct. 6, 03
DOT and PF-S.E. Region

Re: Comments on Gravina Access Project Draft EIS

The preferred alternative has so many problems with it, that I would hope that the final EIS presents a truly honest assessment of the negatives associated with this alternative. (31)
It is environmentally destructive (e.g. to wetlands, marine habitat and anadromous streams), visually obtrusive, will create traffic havoc through town, is exorbitantly expensive, will create some level of navigational problems and serious safety issues in the already crowded channels, will create maintenance and operations needs for ADOT (who can't even maintain our current roads), and will encourage additional single vehicle use rather than encourage modes of transportation which are more environmentally sound.

Improved ferry service, with serious thought towards improvements for walk-on passenger convenience, is a better choice. (11) If a bridge remains in the running, the options closer to the airport should be focused on.

Here are just a few comments (as I rush to get this in before deadline):

Figure 3.17 of document on Other Biological Resources. Does not correctly show locations of eelgrass beds. (32) For example, it does not show them in Clam Cove, which does have extensive eelgrass beds and associated biota. While this may seem like an inconsequential oversight, since the bridge or roadway itself would not be placed in Clam Cove itself, I am quite concerned that the biological resources of Tongass Narrows have been incorrectly and inadequately assessed. Placing the road on the wetlands (for example in the acreage behind Clam Cove) will have significant impacts to the water quality at the points where the freshwater drainage enters the marine waters of Tongass Narrows (e.g. at Clam Cove). (33) The wetlands, small stream, larger stream, intertidal and subtidal water transfer determines the quality of the marine and estuarian waters. Also, remember that by putting the many miles of road through the wetlands on Gravina (e.g. behind Clam Cove), this will end up driving additional development on the wetlands there. The cumulative effects of the roading and other development could easily demolish the fragile balance of the intricate water system on this part of Gravina Island, thus affecting not only the footprint of the road, but water quality and marine life in Tongass Narrows as well. (34) Considerable damage has already been done to Tongass Narrows, biologically. This means that areas like Clam Cove, Lewis Reef area, other coves, West Channel kelp and eelgrass areas, anadromous streams and their tributaries on Gravina, etc. are vital biological resources.

Effects on Essential Fish Habitat and related biological resources--

Alternative F3 requires blasting and dredging along over 2000 feet through the West Channel (between Pennock Island and Gravina). Over 14 acres of underwater surface habitat would be removed through either dredging or blasting of bedrock. Figures are

given such as 63000 cubic yards of sediment to be dredged and over 16000 cubic yards of bedrock to be blasted and removed. This is a serious modification of the existing channel. Based on my observations of the channel during various weather and tides, I do think your reports are correct in indicating that without the widening, the bridge would create a dangerous and bothersome obstacle to navigation. But the widening and deepening is too high of cost to pay (environmentally and financially) in order to hang onto the idea of the Pennock Island crossing idea. Other options (e.g improved ferry) are more feasible. (35)

The West Channel (between Pennock and Gravina) is rich habitat. It contains significant kelp beds and eelgrass beds which are crucial habitat for marine life. The idea that this channel can be dredged and blasted to make a long "box" for ship transit without seriously impacting marine biota is just wrong. The environmental consequences of this widening and deepening of the natural channel are so severe that all alternatives requiring such dredging/blasting should be immediately eliminated. (35)

Without the dredging/blasting in West Channel (or some in East Channel—e.g. removal of "obstructions"), all alternatives involving the Pennock Island crossings lose their viablility, because of marine safety and convenience issues (which are valid and real). Basically, just drop the Pennock crossing options. The initial proposals were shown to be too dangerous for boat traffic (which anybody who has spent much time in West Channel/East Channel could have told you, and did, by the way). Trying to retain the Pennock crossing options through demolishing the marine environment in West Channel (and or blasting rocks in East Channel) is not a good solution.

Please make improved ferry service the preferred alternative. (11) Ferry service helps encourage mass transit (as opposed to increasing use of individual vehicles). I have utilized the ferries for 23 years. They make Ketchikan unique. They can be a pain, but so can car access to airports. Use of the waters of Tongass Narrows for access to Gravina is a good thing. It is financially and environmentally more responsible than bridge options. If a bridge option remains in the works, please focus on the options near the airport. The Pennock island crossings just have too many problems. The final EIS should more accurately state all the problems with these options---including (31)

1) the dramatic effects on essential fish habitat—both underwater, and on wetlands and crossing streams. (Over 115 acres seriously directly impacted)
2) Serious effects on traffic through Ketchikan
3) Increased air pollution through increasing car use
4) Bridge and road maintenance needs have been underestimated. Ketchikan DOT can't even keep current roads safe

Wetlands

Alternatives F1 and F3 will have serious and irrevocable impact on important wetland areas. While living in Clam Cove, I explored some of the areas where the road will go. Much of it (like almost all) is viable, significant wetlands. These wetlands are crucial to the cleansing of water which eventually enters Tongass Narrows, as well as being

important habitat. The report indicates that Alt F1 would impact over 103 acres of wetlands, as well as ponds and uplands. Alt F3 would impact over 85 acres of wetlands, as well as ponds and uplands.

The report indicates that 70% of Gravina Island is wetlands. From an environmental standpoint, this redflags the need to address the cumulative environmental effects of a road project specifically intended to enable development on an island that is 70% wetlands. This is really one of the main problems I have with the F1, F3 alternatives--- They place many miles of roads directly through muskegs and other wetland. This will seriously impact the road area itself, but will also drive development in fragile wetlands, promoting destruction of 1000s of acres of wetlands. (34)

Wetland impact minimization and avoidance

The Wetlands technical report indicates that due to the large amount of wetlands, that wetland impacts cannot be avoided. I believe that your findings should clearly stress that wetland impact minimization can definitely occur by having a route which goes directly to the airport, rather than the extensive roading required for the F1 and F3 alternatives. (36) These alternatives have huge wetland impacts, as well as will drive cumulative wetland impacts through aiming other development specifically towards wetlands through which the road traverses. Hundreds of acres of wetlands can be avoided by NOT routing the access over Pennock and requiring the many miles of road through wetlands on Gravina.

Another way to avoid/minimize wetland impacts is to choose ferry service as the preferred alternative. This promotes continued use of the current airport parking areas on the Ketchikan side of the narrows, rather than leading to the need for extensive additional parking (i.e. filling wetlands) on the Gravina side. (37)

Operation, maintenance, cost and employment

The table stating operation and maintenance jobs to be created by each alternative is interesting. It claims that Alt F1 and F3 will each produce only one job for a borough resident. It is very difficult for me to imagine that 1 employee will be able to maintain the additional road and intersection on the Ketchikan side, maintain the entire bridge, roadway on Pennock and the miles of road on Gravina. (38) Especially since the ferries will be removed, these roads will have to be kept plowed and sanded 24 hours a day. No wonder the operation and maintenance costs seem to be of so little concern. This is just silly. One new employee to completely maintain miles of road and bridge?

Conflict with air traffic

Alternatives F1 and F3 are expected to result in the elimination of 200 and 100 flights per year respectively. This impact should be more clearly stated in the summary, etc. (39)

Supplemental Monte Carlo navigation simulation Study Technical Memorandum

Confirms my own observations, primarily of West Channel navigation issues. The channel is narrow (under 500 ft in width at places), and has a shelf on one side. I have observed the channel many times during various storms and tide conditions. Winds can come from unusual directions and be very strong. When combined with certain tidal conditions and various boat traffic (including cruise ships, ferries, tugs and barges, fishing boats, small skiffs, kayaks, etc.), it strikes me as dangerous to put any further obstruction in the channel. (23) All of the studies seem to agree with this observation—That further restricting the West Channel would lead to boat accidents. Now it seems that one of the proposed solutions is extensive blasting of bedrock on the sea floor as well as extensive dredging on both sides of the West Channel. This is a terrible idea. (40) The environmental consequences would be substantial. Not only the disturbance footprint habitats would be destroyed, but the resulting changes in currents, elevations, etc. will have effects on the marine habitats all up and down the channel and probably beyond the channel (e.g. Clam Cove). The destruction of the important marine habitat of West Channel is NOT acceptable. There are good alternatives (such as continued ferry service) which do not cause such severe damage.

The June 2003 update of the Ketchikan Airport Master Plan by ADOT includes providing a remote passenger terminal on Revillagegedo. This will solve many of the inconveniences which people experience currently. (41) Tying this in with improved ferry service is an excellent idea.

(42) The summary of impacts does not accurately list the potential impacts to essential fish habitat (as stated in the Essential Fish Habitat Assessment).
Freshwater, marine, and wetland impacts of over 100 acres for the preferred alternative.

(43) The bridge options crossing Pennock are not consistent with the Pennock/Gravina neighborhood plan. This should be given greater weight. As a Gravina resident at the time that plan was made, and current property owner on Gravina, I am aware that there were very valid reasons for that plan indicating that ferry service to Pennock could be a possibility and that a bridge was not desired in the foreseeable future, and that roading should stay out of the unsuitable soils of the Clam Cove/Blank inlet Penninsula. No plan (or public vote) has overridden this plan.

For the F1 and F3 options, most of the roadway is in areas with soils which are unsuitable for roads and which are also unsuitable for future residential or many other types of development. Basically, miles of roads would be built through serious wetland/muskeg areas. The draft EIS should more seriously address the impacts of this roadbuilding (from the F1/F3 bridge areas to the airport) in terms of both the direct and cumulative predicted effects. (34) If this road is intended to increase development by several hundred acres, and much of this development would be on wetlands, then this EIS needs to make known the serious potential cumulative environmental impacts.

My apologies for repetitions. Thank you.
Margaret Clabby
7960 S. Tongass Hwy. Ketchikan AK 99901

Carol
Cairnes

P. O. Box 8908, Ketchikan, AK 99901
Phone: (907) 225-8908
E-mail: isaiahspell@kpunet.net



October 6, 2002

Reuben Yost, Special Projects Manager
DOT&PF - Southest Region
69860 Glacier Highway
Juneau, AK 99801-7999

Dear Mr. Reuben Yost:

Enclosed please find page 2 of the copy of the Resolution passed and approved by the City Council for the City of Saxman on March 15, 2002. It was my intention to have this document entered into the record at the hearing held at the Cape Fox Lodge in Ketchikan, AK on September 18, 2003, but I inadvertently gave the clerk only the first page of the document. Please accept page 2 at this time for addition to the record.

Regarding the Gravina Access Project Draft Environmental Impact Statement (GAP/DEIS), I would like to call to your attention Section 3.1.1 Current Land Use. Ironically, this section states, "With very limited exceptions (and none along Tongass Narrows, there are no Indian Reservations [in Alaska]." There is no mention that Annette Island, Alaska's only Indian Reservation, is directly across Nichols Passage from Gravina Island and that (18)

Gravina Island is a traditional subsistence area for Alaska Native people from Annette Island and Revillagigedo Island.

Also, Section 3.1.1.2 Pennock Island contains no mention of the Native burial grounds on that island. Gravesites have been established in the Pennock Island burial grounds as recently as 1994. This is more than an "archeological site". (19)

There are many more comments I would like to make regarding the GAP/DEIS, but it is an extensive document and the 60 day public comment period has occurred during the busiest time of the Ketchikan tourist season. Today, October 6, is the first day I go on my winter schedule.

Other things have also limited public access to the GAP/DEIS. The document was only made available free of charge to the public in CD form. Some people do not have the technology or skill to view the document in that form. I have the technology and skill, but find that it is much less convenient to have to be at my computer to view the document. The only way I could take it with me would be if I were willing to print it out at my own expense. Then I would be able to read it in my spare time during my workday. (20)

Printed copies of the GAP/DEIS were on display in public places, but these copies could not be marked and tagged for an individual's reference. I do not understand why, considering the amount of public money appropriated for the study of the Gravina Access Project, that printed copies could not be made available to the public for individual use free of charge. I placed a call to Mark Dalton the morning after the public hearings on September 17 and 18 asking for a printed copy of the document, but he did not return my call.

The ineffectiveness of informing the public of the details contained in the GAP/DEIS by having the document available to the public only in CD form or on public display is borne out by the complete absence of any reference to the Draft EIS itself in any of the public testimony during the hearings, other than my own and Dale Collin's (who was actually a contributor to the document). I do not think the public has reviewed this document.

For this reason, and because we are talking about a project that would cost taxpayers so much money and put the economy of the Ketchikan community at risk, I encourage you to extend the comment period. (21)

Sincerely,

Carol Cairnes
P. O. Box 8908
Ketchikan, AK 99901
(907) 225-8908

WHEREAS, Any cancellation no matter how small will have a dramatic effect on the number of visitors that come to Saxman and cannot be compromised in any way; and

WHEREAS, The Gravina Access Project Alternative Evaluation Reference Document states that this will create an approximate loss of ten million dollars per year; and

WHEREAS, The Council of the City of Saxman advises that viewing Saxman as the cruise ships go by on the east channel is a selling point to the Saxman Village Tour and a critical element in enticing visitors to Saxman; and

WHEREAS, The Saxman City Council acknowledges the studies and findings provided to the City is not sufficient and does not contain simulation data and information to effectively assess the true impacts of the alternatives.

THEREFORE BE IT FURTHER RESOLVED THAT The Council of the City of Saxman does hereby reject alternative F3 as the recommended alternative described in the Gravina Access Project Alternative Evaluation Reference Document; and

THEREFORE BE IT FURTHER RESOLVED THAT the Council of The City of Saxman does further reject any bridge that will hinder the free flow of cruise ship traffic into the Ketchikan area; and

THEREFORE BE IT FURTHER RESOLVED THAT The Council of the City of Saxman does hereby call for a public vote by the people before any action is taken by the State or the Ketchikan Gateway Borough to proceed with any plans to access Gravina and/or Pennock Island for the purposes of accessing the Ketchikan Airport Facility; and

THEREFORE BE IT FINALLY RESOLVED THAT The Council of the City of Saxman does not in anyway take the position that the City of Saxman is against a bridge but urge DOT&PF to take whatever steps are necessary to prepare the necessary information, studies, and simulation to review a high bridge on the East Channel with the high bridge on the West Channel or a high bridge hard link directly to Gravina Island.

CERTIFICATION:
PASSED AND APPROVED by a duly constituted quorum of the City Council for the City of Saxman on this 15th day of March, 2002.

Daniel Williams, Mayor

ATTESTED:
Nora DeWitt, City Clerk

Subject: gravina access comments
Date: Mon, 6 Oct 2003 20:16:23 -0800
From: "MJ Turek" <mjturek@ptialaska.net>
To: <reuben_yost@dot.state.ak.us>
CC: "MJ Turek" <mjturek@ptialaska.net>

Comments on Gravina Access

1. Ketchikan has a valuable property in its viewshed. It would be folly to destroy it.
2. Residents on Pennock and Gravina value their privacy. A bridge would be detrimental to their unique lifestyle. (8) (9)
3. A bridge over Pennock would make airport access much longer and less safe. (56)
4. Emergency response time to the airport would be lengthened. Now, maximum response time to an airport emergency is about 10 minutes. 5 minutes to get to the ferry terminal and 5 minutes across. If the ferry is on the other side it can get back to the Ketchikan side and be ready for boarding in that amount of time. (16)
5. Security concerns at the airport would become more difficult to police. Increasing access by car would make the airport less safe. (57)
6. Increased time to get to the airport is a concern. Not only would it be a long drive for North and West-enders, but we would have to go through the congested downtown, cross the bridge and then retrace the route going back to the airport. And THEN, we would have our car over there. What am I supposed to do with my car there, pay parking for an extended absence? This is not more convenient.
7. Our current ferry system is adequate, but not optimal. Its main problem is baggage handling. This problem has not been apporached in a creative way. We could have carts at a minimum. How about check-in on this side? These wouid be big improvements. The ticket system is very poor also. Everyone arrives at the same time at the toll booth and a line grows. How about machine-dispensed tickets? (41)
8. I am in favor of increased ferry service with additional terminals and a variety of destinations. (11)
9. Bridges block our greatest natural resource: our natural deep water channel. They would pose a hazard for float planes and for shipping traffic. The cruise ships wouild have difficulty negotiating these obstacles. (23) (2)
10. The bridge designs are ugly. There are many beautiful bridges in the world. The designs shown are unimaginative and do not improve our natural landscape. (53)
11. The bridge option is too expensive. We have many unpaved and potholed roads on Revilla island. We could use money to repair them and then extend our road around this island, eventually hooking up via a bridge to the mainland, providing access to the rest of the continent, not to Gravina Island.
12. I am a landowner on Gravina Island. I was born in Ketchikan and have lived here all my life. (11)
13. Do not build a bridge. Improve the ferry system.

Submitted by Mary Jo Turek 2724 Third Avenue Ketchikan, Alaska 99901



Ruben Yost
Special Projects Manager
DOT&PF--Southeast Region
6860 Glacier Highway
Juneau, AK 99801-7999

October 6, 2003

Dear Mr. Yost,

Thank you for considering my comments concerning the Gravina Access Project DEIS. I live in northern Utah, but I intend to visit southeastern Alaska and the Ketchikan area fairly soon. I care very much about preserving the unique environmental and cultural qualities of the area.

My view is that the best alternative is the ferry alternative G4. I worry about the intrusiveness of the bridge alternatives. One problem is safety. Tongass Narrows is quite narrow and, from the descriptions, crowded with boat and floatplane traffic, especially in the summer. A bridge, even the preferred alternative F1, will increase risks to boats and planes. The DEIS states, "The introduction of piers in the deep navigable waters of Tongass Narrows would introduce new, permanent, grounding and allision risks" (4-30). Cruise ship pilots indicate in their correspondence (Appendix R1) that "All bridges present new obstructions ... Risks to navigation will increase." In their correspondence, cruise ship pilots express their concern that a bridge will not be properly placed across the channel. Also, they worry that the safety studies were not properly conducted since smaller boat traffic in the Narrows was not accounted for in the simulations, the speeds of the cruise ships in the simulations were higher than the speeds actually allowed in the Narrows, and wind speeds in the simulations were too low. Apparently, there may be significant risks to cruise ships attempting to pass between the piers at slower speeds if wind gusts greater than 11 knots occur. The pilots have recommended that the piers be placed further apart, at least another 100 to 150 feet. (22) (23)

There will also be increased risk to floatplane traffic. The DEIS notes that "a high bridge in the East Channel would create a hazard for floatplanes during all operations, VFR or SVFR" (4-26). From Appendix D: "aircraft are typically lower in the East Channel" (at end of Appendix D, B-2). The economic analysis of alternatives assumes that 10% of SVFR floatplane trips will be canceled if bridge alternative F1 is chosen, presumably because of safety concerns. One commentator in the Reasonable Alternatives, Public Comment Summary Document warns: "The weather conditions for flying in southwest Alaska are marginal anyway without adding another obstruction (a bridge)."

The ferry alternatives meet the declared need for the project. They would provide "more reliable, efficient, and convenient" access to Gravina Island and the airport. Apparently, they could be cost-effective. The efficiency and convenience may not be as high as with a bridge, but considering the increased risks to safety and other problems with a bridge, a ferry alternative seems the best solution. G4 seems the least disruptive to present property uses.

I'm concerned about the impacts a bridge would have on subsistence activities on Gravina Island. According to the Social Environment Technical Memo, subsistence use of Pennock and Gravina Islands is highly important to the residents of Saxman and Metlakatla. "Hunting, fishing, trapping, and gathering activities supplement personal income and provide needed food." Subsistence activities "enable residents to maintain a rich and varied diet" (p. 8). "More than 75% of the population of Saxman is Alaska Native," and "96.7% of the Saxman households participated in subsistence." Apparently, the high cost of living compels many residents of Saxman to rely on subsistence to make ends meet. None of the project documents I've looked at provide a good discussion of the impact of a bridge on subsistence. (24)

The DEIS states that the build alternatives may result in increased competition for subsistence resources (4-109). The cumulative impacts of this project with "reasonably foreseeable future actions" will be "the creation of a large road network that makes most of Gravina Island accessible." As the island becomes more accessible with more roads, and as more people come to the island as a result of this project, competition for subsistence resources, including deer, can be expected to increase. There is this troubling statement: "[I]ncreased competition for subsistence hunting of deer could decrease the deer population to a level that is not sustainable ... subsistence use of deer could be substantially restricted" (4-154). As it is now, "the middle of the island provides a refuge for deer from hunters because it is not easily accessible" (3-58). A bridge would likely have a greater impact on subsistence activities than a new ferry because of the greater convenience of travel it provides. A bridge would likely result in a greater increase in numbers of hunters, anglers, etc. I believe this should be discussed in the EIS: the different levels of impact the alternatives will have on subsistence activities. The ferry alternatives are preferable to a bridge, it seems, because of the greater impact a bridge would likely have on subsistence. Maintaining a level of subsistence adequate to the needs of the people who depend on it may be another good reason for choosing a ferry over a bridge. (24)

This project may have a disproportionate impact on Alaska Natives. Again, according to the Social Environment Technical Memo, "More than 75% of the population of Saxman is Alaska Native," and "96.7% of the Saxman households participated in subsistence." Any of the build alternatives can be expected to increase competition for subsistence resources, a bridge more so than a new ferry. It may be that Alaska Natives living in Saxman and Metlakatla, who rely heavily on subsistence, will be affected far more than other groups as subsistence resources decline. I believe this possible Environmental Justice issue should be discussed in the EIS. (25)

I'm also concerned about the impact on wolves on Gravina Island. According to the DEIS, wolves are "particularly sensitive" to human presence. The DEIS acknowledges possible declines in the wolf population as a result of any of the build alternatives. "Roads may increase both legal harvest and illegal poaching of wolves" (4-159). Deer are the primary source of food for the wolves. If increased hunting severely reduces the deer population, wolves may be eliminated from the island. "[A]n increase in deer harvest would reduce deer numbers, potentially to levels inadequate to support the wolf population" (4-159). The DEIS does not discuss how important this population is to the survival of Alexander Archipelago wolves. A bridge is expected to (26)

bring more people to the island than a new ferry. I believe the EIS should discuss the different levels of impact the alternatives will likely have on wildlife, particularly deer and wolves. Maintaining viable populations of wildlife on the island may be another good reason for choosing a ferry alternative. (26)

I'm concerned with one of the economic arguments used to support the bridge alternatives. According to Appendix D, "High levels of development on Gravina could be achieved with bridge access and high economic growth in the region. However, with high economic growth in the region, it is anticipated that improved ferry access would constrain development on Gravina Island more than a bridge. It is also expected that a bridge would result in higher levels of development on Gravina Island compared to improved ferry service under medium economic growth in the region" (2-14). There is no indication of how likely it is that high economic growth will occur in the region. It seems to me that the high-growth scenario should not be used to compare the alternatives unless it is reasonably likely that high growth will occur. (27)

The different growth scenarios are explained in the Ketchikan Gateway Borough Economic Forecasts Technical Memo. Reading this memo, the high-growth scenario appears to be based on wishful thinking. For example, this scenario includes the building of a new fish meal plant in the region. "A possible source of future growth could be ... if a fish meal plant is developed." No information is provided on how likely it is that a new fish meal plant will be built. All we are told is that this could be a source of future growth. The high-growth scenario also includes doubling of shipyard employment by 2005, and the development of two major mines in the region. Again, no information is provided on how likely it is that these things will happen. This scenario also includes a population increase of 2.07%, higher than it has actually been in recent years. There should be some discussion of how likely it is that events in the high-growth scenario will actually occur. It may be that you are comparing alternatives against a growth scenario that is extremely unlikely. The comparison may not be helpful in making a choice. (27)

One argument used to support the bridge alternatives appeals to time-savings. It seems to me that there really isn't much of an argument here. According to the DEIS, the "average waiting time for ferry passengers during the winter months is 9 minutes for foot passengers and 12 minutes for vehicle passengers" (1-4). Twelve minutes isn't really a long time to wait. Presumably a new ferry will considerably reduce these average times. Alternative F1 is preferred to a new ferry in part because it would allow people to travel from downtown Ketchikan to the airport 12 minutes faster. Twelve minutes isn't a substantial difference. The travel time argument in itself doesn't seem to provide much reason to prefer a bridge. (28) A bridge would allow 24 hour access while a ferry would allow 16 hour access. However, in an after-hours emergency the ferry is available fairly quickly (as I understand it). The DEIS doesn't indicate that there is a real problem with the lack of 24 hour access. (29) There is some lack of convenience, but this may be offset by the environmental and cultural benefits of the ferry alternatives.

Finally, it seems to me that a new ferry is preferable to a bridge since it would result in less harm to wetlands. As the DEIS states, according to federal law this project "must avoid wetlands unless there is 'no practicable alternative'" (3-51). The bridge alternatives would result in the loss of approximately 400 acres of wetlands on Gravina Island and 76 acres of wetlands on Pennock Island (primary and secondary impacts).

The ferry alternatives would result in the loss of approximately 73 acres of wetlands on Gravina Island (4-144). A new ferry would damage fewer acres of wetlands, and it would be practicable since it would meet the declared need for the project. It seems that the ferry alternatives are more consistent with federal legislation designed to protect wetlands. (30)

Thank you for considering these comments.

Gordon Steinhoff

Gordon Steinhoff
546 River Heights Blvd.
River Heights, UT 84321

A Gateway to the Future
Gravina Access Project

ALASKA DOT & PF
OCT - 6 2003
SPECIAL PROJECTS

Gravina Access Project
Draft Environmental Impact Statement
Public Comments

Comments must be received by October 6, 2003. Please drop your comments in the comment box before leaving today's meeting, or send via:

Mail. Fold so address shows, or write a separate letter using the address on back.
E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments: we believe it is time for this project to go foward. The pros & cons of this project have been broughtfoward over the last 30 years. The bridge can only be a positive influence for the Ketchikan residents. The residents that by a 2/3 majority voted for the bridge.

The jobs, the access to Gravina island & safety issues for the airport more than warrant this hard link.

Basically, Ketchikan's Gov't. has been talking alot: about the hard link to Gravina, (30yrs), Lewis Reef road (15years), aquarium (6years), Repave North & South Tongass (12years), sewer lines North & South Tongass (10years) logging has all but shut down, pulp Mill closed, Fishing prices equal to that of 1960's. The shipyard is on the edge of default: and the Ketch. Gateway Borough is almost bankrupt. This town needs a turning point to the future, and I believe the bridge will help turn the corner. (1)

Thank you,
Toma Mary Fabry

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: Toma Mary Fabry
Address: (City, State, Zip) Box 9026 Ketch., AK. 99901

Subject: 2 4 F3 (one more time)
Date: Fri, 3 Oct 2003 11:13:32 -0800
From: "Gregory Zerbetz" <grizhake@ptialaska.net>
To: <reuben_yost@dot.state.ak.us>

(61)

We wish to re-affirm our support for the f-3 alternative bridge to Pennock and Gravina Islands. We would favor F-1 if the alternative is no bridge at all; however, isn't it interesting how the most expensive alternative has been forced on us by the tourism/cruise industry and their willing agents, the SEA Pilots Association? And now word is out that it will never be built because it won't be funded. The end result is no bridge, and much money spent to, once again, "study" the situation.

Why not build F-3, the less expensive alternative? The cruise industry can adjust.

Sincerely,

Gregory and Harriet Zerbetz
Ketchikan, Ak

A Gateway to the Future
Gravina Access Project

ALASKA DOT & PF
SEP 30 2003
SPECIAL PROJECTS

Gravina Access Project
Draft Environmental Impact Statement
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E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments:

We feel this is one of the best things that can happen to Ketchikan. It will open up new waterfront for commercial, recreation and industry. It will also allow easy access to our International airport. And hopefully move all the congestion from Cruise ships downtown to another area. maybe hopefully, even over to Gravina Island. (17)

This is a long overdue project!!

As far as the Cruise Ship and ~~Pilots~~ Pilots Assn. spoke person is concerned - there is ample room for Cruise ships on either side of ~~&~~ Pennock Island - a lot of towns around the world have much less room. Some folks just like to see their name in the papers/headlines. (12)

Thank you for the chance to comment.
Our town has voted this project in - now lets begin. :)

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: Karl - Joanne Klein

Address: (City, State, Zip) Deep Bay - Moser Bay DPB c/o Ketchikan, AK 99950

ALASKA D.O.T. & PF
SOUTHEAST REGION
SEP 29 2003
PREC... & DESIGN

A Gateway to the Future
Gravina Access Project

ALASKA DOT & PF
SEP 29 2003
SPECIAL PROJECTS

Gravina Access Project
Draft Environmental Impact Statement
Public Comments

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E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

(4)

Comments: I am in full support of the F-1 Crossing for the Gravina Access Project.

It is exciting to see the development of a bridge and road to Gravina and Pennock Islands. What a great economic boost for Ketchikan. Opening up access to these islands will no doubt encourage more development and improve employment opportunities in the Ketchikan area.

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: Helen Mickel

Address: (City, State, Zip) PO Box 1056 Ward Cove, AK 99928

ALASKA D.O.T. & PF
SOUTHEAST REGION
SEP 29 2003
PRECONSTRUCTION & DESIGN

A Gateway to the Future
Gravina Access Project

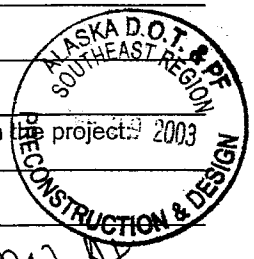


Gravina Access Project
Draft Environmental Impact Statement
Public Comments

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E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments: I AM VERY MUCH IN FAVOR OF THE TWO BRIDGE OPTION TO GRAVINA. I THINK IT WILL BE BENIFIT TO OUR COMMUNITY IN EVERY WAY. (4)



Please provide your name and address for the record and so we may notify you of future action on the project.

Name: MARY KLAND

Address: (City, State, Zip) 3812 BARANOF AVE, KETCHIKAN. AK 99901

A Gateway to the Future
Gravina Access Project



Gravina Access Project
Draft Environmental Impact Statement
Public Comments

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Mail. Fold so address shows, or write a separate letter using the address on back.
E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments: I am in favor of Alternate F-1. I have read the draft EIS and I believe this would be the best alternative for Ketchikan. Ketchikan needs better access to Gravina. The F-1 option is the best choice. (4)

Mike Cessnun



Please provide your name and address for the record and so we may notify you of future action on the project:

Name: Mike Cessnun

Address: (City, State, Zip) 428 Gold Road Ketchikan, AK 99901

A Gateway to the Future
Gravina Access Project

ALASKA DOT & PF SPECIAL PROJECTS SEP 29 2003

Gravina Access Project
Draft Environmental Impact Statement
Public Comments

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Mail. Fold so address shows, or write a separate letter using the address on back.
E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments: Ketchikan needs better access to Gravina. The F-1 bridge option is the best solution for Ketchikan and our future. ④

-Megan Cessnun

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: Megan Cessnun

Address: (City, State, Zip)
428 Gold Rd
Ketchikan AK 99901

ALASKA D.O.T. & PF SOUTHEAST REGION SEP 29 2003 PRECONSTRUCTION & DESIGN

Subject: Support of Gravina Access
Date: Wed, 24 Sep 2003 10:15:40 -0800
From: Dinah Pearson <dinahpearson@remax.net>
To: reuben_yost@dot.state.ak.us

(17)

I'd like to submit my support of the Gravina Access project. I would love to continue to live, work, and raise my children in a community that is thriving, rather than struggling to make ends meet. I think, as most people do, that growth on every level is required to continue growing. We need the project, not just for the short term advantages, but for the long term as well. Please consider the community's best interest when sending this project ahead as quickly as possible.
Thank you for giving this the full interest Ketchikan deserves.

Dinah Pearson
Ketchikan AK

Dinah Pearson <dinahpearson@remax.net>
ReMax of Ketchikan

A Gateway to the Future
Gravina Access Project

ALASKA DOT&PF
SEP 24 2003
SPECIAL PROJECTS

Gravina Access Project
Draft Environmental Impact Statement
Public Comments

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E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments:

DOT&PF SOUTHEAST REGION
~~ATTN. REUBEN YAST, SPECIAL PROJECT MANAGER.~~

MY NAME IS R.D. "CHUCK" JENSEN
P..OBOX 8516 KETCHIKAN, AK 99901 PHONE 225 3226
KETCHIKAN HA S BEEN HOME FOR OVER SIXTY YEARS. I
~~CAME HERE IN THE COAST GUARD IN THE SECOND WORLD~~
WAR. IHAVE BEEN IN BUSINESS IN ALASKA FROM 1946.
~~I have worked on getting this bridge for the~~
PAST THIRTY YEARS. I HAVE WATCHED THE AGONIZING
CRAWL THE PEOPLE OF KETCHIKAN HAVE BEEN PUT
THROUGH. WE HAVE EARNED A BRIDGE, WE NEED A BRIDGE. (1)
SO BUILD IT. WE VOTED FOR THE BRIDGE, THERE WILL
~~ALWAYS BE A DIFFERENCE OF OPINION ON WHERE IT SHOULD~~
BE. JUST BUILD IT. WHEN IT COMES DOWN TO THE ELEVENTH
HOUR OF WHERE....JUST TELL US AND THEN BUILD IT.
DON'T LET IT BOG DOWN IN PETTY ARGUMENTS.
I CAME HERE IN THE COASE GUARD, SO I RESPECT THEM
~~AND TRUST THEM. I KNOW THEY WILL GIVE THEIR BEST.~~
FOR MY MONEY YOU PEOPLE WILL BE RIGHT .

YES! YES ! BUILD THE BRIDGE...

YOURS TRULY,

R. D. Jensen

~~RANDALL D. JENSEN~~

P.S. I was at your Public Hearing 9/17/03

Please provide your name and address for the record and so we may notify you of future action on the project:

Name:

Address: (City, State, Zip)

Subject: Gravina Access Project
Date: Wed, 24 Sep 2003 10:21:32 -0800
From: Marna Cessnun <marna@kpunet.net>
To: reuben_yost@dot.state.ak.us

Dear Mr. Yost,

I would like to express my support for the bridge project to Gravina Island. Ketchikan is long overdue for this development. We need access to the land on Gravina and especially to the airport. For this community to prosper and grow it is essential. ①

The community has voted that it is their desire to have this bridge and we are all hoping that it will become a reality.

Thank you for giving me this opportunity to express my opinion on this project.

Sincerely,
Marna Cessnun
428 Gold Road
Ketchikan, AK 99901

A Gateway to the Future
Gravina Access Project

ALASKA DOT & PF
SEP 23 2003
SPECIAL PROJECTS

Gravina Access Project
Draft Environmental Impact Statement
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E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments:

(12)

I fully support the F1 or F3 bridge options. As a local tug & barge operator I have no concerns on either (or any bridge option).

I look forward to the economic opportunities the bridge will encourage in Gravina.

Thank you for this opportunity to continue to support a bridge option.

Sean E Enright

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: LOREN ENRIGHT

Address: (City, State, Zip) PO BOX 1373 WARD COVE, AK 99928

A Gateway to the Future
Gravina Access Project

ALASKA DOT & PF
SEP 2 3 2003
SPECIAL PROJECTS

Gravina Access Project
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E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments: I AM A LIFElong KETchikan Resident and I Emphatically Support The F-1 Gravina Access. Developable Land OF all Types (Commercial, Industrial, residential, recreational, etc.) is the key to Ketchikan's economy. this bridge would provide Access to all these types of property. The bridge is a MUST to open up land For future developement as well as provide Access to our existing Airport. Please Start this project As Soon as possible (4)

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: Guy Mickel

Address: (City, State, Zip) 2506 First Ave, Ketchikan, Ak 99901

Subject: Gravina Island Bridge
Date: Wed, 17 Sep 2003 23:10:14 -0700
From: Roger Lutz <rogerlutz2@earthlink.net>
To: reuben_yost@dot.state.ak.us

We are property owners on Gravina Island and are in favor of building the bridge as per the State recommended site. High bridge to Pennock and high bridge to Gravina. (4)

Sincerely,

Roger and Charlene Lutz
101 Deer Meadow Lane
Naches, WA 98937

509-658-1054

Dalton, Mark

From: Gravina FeedBack [Gravina@hdrinc.com]
Sent: Thursday, September 04, 2003 8:43 PM
To: Dalton, Mark; Reuben Yost; Robbins, Leslie; Richter, Rudy
Subject: Gravina Island Website Feedback

No response necessary

Name: Ingrid Jones
Phone:
Email:
Comment: Mr. Dalton,

I fully support the construction of the F-1 alternative with as little delay as possible. (4)

Sincerely,
David and Ingrid Jones

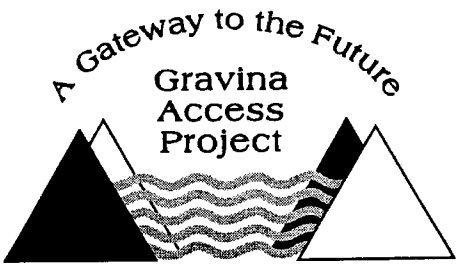
We'd Like Your Input!

Comment Sheet • February and March 2002

Gravina Access Project

Received 9/13/03

UAK





Do you have comments you would like to share?

- What are your thoughts about DOT&PF's recommended alternative for access to Gravina Island?
- Do you have any questions or concerns about other alternatives under consideration?

Please drop us a line using the space below or contact one of the project team members listed on the back.

(4)

BUILD F-1 THE SOONER THE BETTER.

MIKE ECERDING
BOX 8112
KETCHIKAN, AK 99901
907-225-5040

We would appreciate comments back by March 15, 2002.

www.gravina-access.com

Dalton, Mark

From: Gravina FeedBack [Gravina@hdrinc.com]
Sent: Wednesday, August 27, 2003 8:19 AM
To: Dalton, Mark; Reuben Yost; Robbins, Leslie; Richter, Rudy
Subject: Gravina Island Website Feedback

No response necessary

Name:
Phone:
Email:
Comment: Since the Mayor owns 1600 feet of beach front on Gravina, I would suggest a single lane bridge that you can drink and drive on in any direction. Keep up the pathetic spending until you run this country in the poor house pleasing small town big shots.

Lawrence E. Wilkinson, P.E.

Consulting Chemical Engineer
P.O. Box 19192 Thorne Bay, Alaska 99919
Phone (907) 723-4507
<Princewalesisland@Hotmail.com>

ALASKA DOT & PF
AUG 25 2003
SPECIAL PROJECTS

Rueben Yost, Special Projects Manager
DOT & PF - Southeast Region
6860 Glacier Highway
Juneau, AK 99801-7999

8/20/03

Dear Mr Yost: Subject: Comment on Gravina EIS

The State of Alaska DOT has painted itself into a corner by considering only a bridge to get to the Ketchikan airport. Had they considered a tunnel or a pair of tunnels the project could probably be completed for 1/3 of the now projected costs and would not interfere with navigation. (13)

There are expert consulting firms in the USA that could give you and the ADOT better advice than I. One is Parsons, Brinkerhoff, Quade and Douglas at 2 Penn Plaza in NYC. They have been designing tunnels for over 100 years.

Sincerely,

Larry Wilkinson

Larry Wilkinson, P.E.

Dalton, Mark

From: Gravina FeedBack [Gravina@hdrinc.com]
Sent: Monday, August 11, 2003 3:00 PM
To: Dalton, Mark; Roger Healy; Robbins, Leslie; Richter, Rudy
Subject: Gravina Island Website Feedback

No response necessary

Name:
Phone:
Email:
Comment: I think this project is not thought out well. The winter channel winds will shut down this access. All the so-called safety reasons for a bridge have zero merit. The real safety concerns will begin after the first UPS truck flips over 200 plus feet above the channel. This bridge will delay more people or deny passengers access to their plane. An ambulance is a big box that catches wind, the wind will not calm down for it. The majority of the reasons against ferries have been crafted to fit the hard link. An ambulance round trip from airport to hospital would save ten minutes or more using the ferry, but you confidently chose not to do that math. I find it very interesting of the ferry to sit back and say nothing, it makes you think bridge advocates control the ferry. This bridge has huge shoes to fill in the regard of safety to people. How does a person miss a flight because of a ferry? Did the ferry forget to set the travelers alarm the night before or are the people you speak of, an exception to the two-hour check-in policy. If a person missed a flight due to the ferry, it would mean they were so stupid they missed four ferry departures. Oh that darn ferry is the problem. This is more of a railroad job than a ferry bridge issue.

(14) (15) (16) (59)

Gravina Access Project
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Public Comments

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E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments: My name is Kristina Fabry. I live at 6387 Fabry Drive. I'm 12 years old and I represent the future adults of Ketchikan, (17) I support the Gravina Access Project our bridge to the future.

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: Kristina Fabry

Address: (City, State, Zip) Po box 9026 Ketchikan AK 99901.

We'd Like Your Input!

Comment Sheet • February and March 2002

Gravina Access Project

A Gateway to the Future
Gravina Access Project

TRANSPORTATION & PUBLIC FACILITIES · STATE OF ALASKA ·

Do you have comments you would like to share?

- What are your thoughts about DOT&PF's recommended alternative for access to Gravina Island?
- Do you have any questions or concerns about other alternatives under consideration?

Please drop us a line using the space below or contact one of the project team members listed on the back.

Building a bridge from Ketchikan to Gravina Will (60)
provide no long-term employment opertunities for (7)
residents. The Bridge would Also Cost to Substantial
raise property taxes for individuals allready
suffering from a depressed Economy I (8)
reside on Pennock Island and Do Not
want a bridge to my house. is another
reason I do not think the bridge is a
good Idea.

We would appreciate comments back by March 15, 2002.

www.gravina-access.com

A Gateway to the Future
Gravina Access Project

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Mail. Fold so address shows, or write a separate letter using the address on back.
E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments: I support building a bridge or bridges to access Gravina Island. I believe my view is shared by the majority of Ketchikan residents, although you may not see them at this public hearing or receive comments in writing to this effect. I believe the election results (was it last year? Or the year before?) reasonably reflect the views of the public here. But many, like me, are weary of public hearings and process process process. ① Through the firm in which I'm a partner, we are members of the Ktn Chamber of Commerce. I appreciate the efforts of the Ktn Chamber's Transportation Committee & the Gravina land link and support the views they presented in more detail. (over)

I appreciate your efforts to learn about the local situation, but let's be

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: John Petersen

Address: (City, State, Zip) 307 Bawden St. Ktn. AK 99901

A Gateway to the Future
Gravina Access Project

Gravina Access Project
Draft Environmental Impact Statement
Public Comments

Comments must be received by October 6, 2003. Please drop your comments in the comment box before leaving today's meeting, or send via:

Mail. Fold so address shows, or write a separate letter using the address on back.
E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments: Please build the bridge ② that will not impede cruiseships.

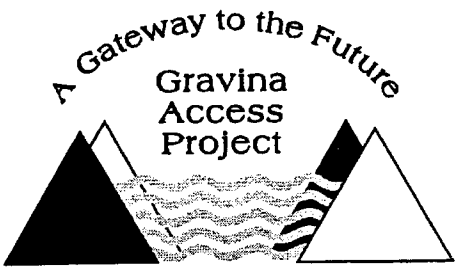
Please provide your name and address for the record and so we may notify you of future action on the project:

Name: Jim Fronk Tim Fronk
Address: (City, State, Zip) 125 STedman
Ketchikan, Ak, 99901

We'd Like Your Input!

Comment Sheet • February and March 2002

Gravina Access Project





Do you have comments you would like to share?

- What are your thoughts about DOT&PF's recommended alternative for access to Gravina Island?
- Do you have any questions or concerns about other alternatives under consideration?

Please drop us a line using the space below or contact one of the project team members listed on the back.

I Do Not believe that a bridge to Gravina addresses the problems present in the community in the way that people are arguing for a bridge suggest. First the influx of Federal money into our economy, while Nice, Does Not provide more than a one-time boost. Second The bridge is a waste of my money. I pay taxes and would prefer they spent the money on something more worthwhile. A bridge to gravina would Not provide economic ⑥ boost to the community after it is Completed. The land that it is opening up for 'development' is allready overvalued. the bridge would increase the value even more and is Not ⑩ substantially closer than land allready on the roadsystems. Many of the people on Pennock and Gravina Islands moved ⑧ ⑨ there Because it had No Road Access. They stated this in

We would appreciate comments back by March 15, 2002.

www.gravina-access.com

thier Neighborhood plan. The bridge will add value to ⑦ thier property but will Not Add Any accessor services to Actually make it worth the assessed value. Property on pennock and grawina Islands allready cannot be sold for the assessed value, what this additional Value will do is merely increase thier taxes. How is the ⑥ bridge going to spur development of grawina when the economy is so poor that people have to look outside the Community for employment? Where will the money for this development come from?

The bridge report only tells us that it might adversely Affect our tourism. This is the only clear indication of how it will affect us.

Decreasing tourism, increasing property value, the only clear winners from a bridge that I see are the burough which will get more tax money and an outside Contractor which will get paid to build it. Build a ferry. It's more cost effective, ⑪ Addresses the issues, and wont hurt our economy.

A Gateway to the Future
Gravina Access Project

Gravina Access Project
Draft Environmental Impact Statement
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Mail. Fold so address shows, or write a separate letter using the address on back.
E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments: I am in full support of any bridge option for access to Gravina Island. ①

I have been filling these out of the last 3 years; it is getting tiresome to continue to repeat.

Thank you for this opportunity to show support for a bridge.

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: Cheré Klein

Address: (City, State, Zip) 8860 N. Tongass Hwy
Ketchikan, AK 99901

www.gravina-access.com

A Gateway to the Future
Gravina Access Project

Gravina Access Project
Draft Environmental Impact Statement
Public Comments

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Mail. Fold so address shows, or write a separate letter using the address on back.
E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

(4)

Comments: I STRONGLY FAVOR THE F-1 OPTION, AND THINK THE BRIDGE SHOULD BE BUILT AS SOON AS POSSIBLE.

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: JACK DAVIES

Address: (City, State, Zip) 3851 FAIRVIEW AVE.
KETCHIKAN, AK 99901

Gateway to the Future
Gravina Access Project

Gravina Access Project
Draft Environmental Impact Statement
Public Comments

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Mail. Fold so address shows, or write a separate letter using the address on back.
E-mail. E-mail to reuben_yost@dot.state.ak.us
Fax. Fax to Reuben Yost, Alaska DOT&PF Southeast Region at 907-465-2016.

Comments: I support a bridge to Gravina. My first choice is C3(a) and 2nd choice C4. These alternatives would better serve North + West end residents. The majority of the population in Ketchikan. Downtown is extremely busy in the summer with cruise ship visitors. The F1 option (my third choice) would funnel even more traffic downtown. A bridge high enough for cruise ships to pass under is a must. The economy of Ketchikan depends upon it. Walking in the sideways rain of Ketchikan, from the ferry to the airport is not acceptable, either for our visitors or us locals. ③ ⑤ ②

Please provide your name and address for the record and so we may notify you of future action on the project:

Name: Bev Laurance-Davies

Address: (City, State, Zip) 3831 Fairview Ave
Ketchikan, AK 99901

9-17-03 Public Hearing Transcript

(Circled numbers correspond to the numbered comments in Table 7-2 in Chapter 7.)

PUBLIC HEARING

GRAVINA ACCESS PROJECT

DRAFT ENVIRONMENTAL IMPACT STATEMENT

SEPTEMBER 17th 2003

CAPE FOX LODGE

800 Venetia Way

Ketchikan Alaska 99901

7:00 p.m. - 10:00 p.m.

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H-E-A-R-I-N-G

HEARING MONITOR: Welcome to the Gravina Access Project Draft Environmental Impact Statement Public Hearing. This hearing is sponsored by the Alaska Department of Transportation and Public Facilities in association with the Federal Highway Administration and United States Coast Guard. The public hearing is taking place at the Cape Fox Hotel, 800 Venetia Way, Ketchikan, Alaska at approximately 7:00 p.m. on Wednesday, September 17, 2003. I'm glad to see that some of you could make it tonight in this weather. I appreciate you being here.

My name is Dave Hanson. I am a private businessman contracted to moderate tonight's hearing. My role is to facilitate an orderly and effective public hearing so people have their testify -- testimony transcribed. As a neutral moderator, I have no position on the Gravina Access Project or the Draft Environmental Impact Statement.

I will be assisted tonight by Ms. Judy Zenge, of SouthWest [sic] Alaska Business Services who is recording the hearing and will provide an official transcript of the hearing record.

As most of you know, the Gravina Access Project refers to the proposed State transportation project to improve surface transportation between Revilla Island and Gravina Island and the Ketchikan Gateway Borough. The project proposes to

improve access to developable Gravina Island and the airport. Ten access alternatives, including enhanced ferry service, bridges, and a No Action Alternative are under consideration. The project Draft Environmental Impact Statement, or DEIS provides a comprehensive analysis of these alternatives and sets forth a Preferred Alternative. The hearing provides an opportunity to comment on the Preferred Alternative, other alternatives being considered, and the entire DEIS.

And this brings us to the purpose of tonight's hearing, which is set forth at the top of the agenda, that you probably picked in - [sic] picked up on your way in, which is to allow the public to comment to Federal and State officials who have responsibility for the Draft Environmental Impact Statement, DEIS, and to fulfill the requirements of the National Environmental Policy Act, NEPA, N-E-P-A for a hearing.

The government officials seated at the front table who will be listening to your testimony tonight, starting from the far left, Mr. Dave Miller, Division Administration of the Federal Highway Administration. Mr. Jim Helfinstine, Bridge Program Administrator for the Alaska District of the U.S. Coast Guard, Commander Steven Rothchild, U. S. Coastguard, and Mr. Reuben Yost, Special Projects Coordinator for the Alaska Department of Transportation and Public Facilities.

As the agenda notes, this hearing will take place over two days. Tonight's session from now until 10:00 p.m. and

tomorrow, Thursday's September 18th session, from 7:00 p.m. until 10:00 p.m. There will be an open house tomorrow night before the session for people to learn more about the project and prepare for the hearing. It will start again at 5:00 and go till 7:00 tomorrow night.

On the back of the agenda are ground rules for tonight's hearing. These include, mutual respect, courtesy, and patience as key concepts. Keep comments brief, clear and to the point. Everyone will have a chance to speak. Please don't interrupt. Remain quiet so others and the court reporter can hear. And please the room for side discussions. Please turn off your cell phones and pagers.

We will now here a statement from Mr. Reuben Yost, the Special Projects Coordinator for the South East Region of the Department of Transportation and Public Facilities. Mr. Yost.

(Mr. Yost reads from Exhibit C)

HEARING MONITOR: Thank you Mr. Yost. The agenda notes several handouts that are available to help all of you better understand and comment on the project. These handouts would have been picked up at the desk as you registered. And they include an agenda and ground rules, the open -- copy of the opening statement you just heard. The DEIS summary, copy of the hearing notice, frequently asked questions, public comments sheet, and a map of the alternatives.

I've previously provided copies of the Gravina Access

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Project Draft Environmental Impact Statement, and Appendices, and these handouts to the court reporter. I now ask that these materials be made part of the official hearing record as exhibits.

THE REPORTER: They have been marked and are made part of the record.

(Exhibits A through H admitted)

HEARING MONITOR: Thank you. In addition to these two hearing sessions, public comment on the DEIS can be submitted in written form by mail, fax, hand delivery, or email to Mr. Reuben Yost, this is the guy who's going to get it. And you may also submit written comment tonight in the box in the back of the room. As Mr. Yost noted, written comment has the same weight as verbal public comment. All written comment will be considered and become part of the official hearing record if it's given to us tonight when you testify. It will become part of the official comment record if it's received after tonight. But it needs to be received to be part of the comment record by October 6th, 2003.

Now our hearing procedures for tonight, there's a sign-in table outside this room, that will be the central contact for those wishing to testify.

All attendees -- all of you are asked to register before entering check the appropriate box if you wish to testify and denote the name of the group if you're testifying on behalf of

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a group. People wishing to testify must register in person. People may sign up to testify anytime between 6:00 and 10:00 p.m. on the day they wish to testify, tonight or tomorrow night. A person may testify only once whether speaking as an individual, or behalf of a group during the two session hearing.

Each individual will have one three minute opportunity to speak, each organization will have one five minute opportunity to present testimony during the two day hearing. Only one representative of an organization may use the five minutes to speak for that organization. An individual or group, may submit more detailed comments when they testify for the hearing record, or later for the additional comment record. To allow equal opportunity for all, yielding one's time to another individual will not be allowed. And so we ask you to please check the box if you wish to testify only if you personally wish to speak. Prior to the end of the scheduled session if all who indicated a desire to speak have been called, I'll put out a general call for anyone who has not yet testified. This will include first, those who signed up, but may have been out of the room when I called their name, and second any person who hasn't previously testified. It doesn't look like we'll have a problem tonight, but if a surge of people come in at 9:30 we will keep the hearing open until 10:00 and anybody signed up until 10:00 we'll go 10:00 if

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necessary to make sure we hear their testimony.

So now I will call people forward to testify in the order they registered. When called a person should come up and take a seat at the table here. State their name, spell their name, and give their address. Your three or five minutes won't start until you've given your name and address. So please give it clearly so the court reporter can make sure she gets it correct. If you would like to provide comment, as I've stated before, please hand it to me as you come up to testify, or submit it later.

Tonight, Ms. Carol Snead will be our timekeeper who's right here. And she will hold up a -- you can show them what the cards look like, a one minute card and a 30 second card to show you how much time you've got left when you get down to a minute and 30 seconds, and then she'll ring a bell at the end of that time (rings bell) and she's going to work on gentle touch. I'll give you a few seconds if necessary to finish your thought. So as I call -- and so at this point I'd like to go ahead and call the first person forward. K. A. Swiger, am I saying that right. Thank you.

And I will give you a clarification here, my role tonight as moderator is limited to these hearings. I'm not involved in the decision process, I do try to make you feel welcome, and make you feel comfortable. The people who are involved in the decision process are these four people sitting next to me,

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as well as others. So you can direct your attention how ever you wish. If you want to feel good you can look at me, if you want to talk to them directly you can do that too.

TESTIMONY OF K. A. SWIGER

Well thank you, very much. I come fairly unprepared, and tried to speak at a later time, and then noticed that I get called first. Which is why I looked at Mark.

HEARING MONITOR: Is your mike on. And what we need to do first is.....

Name an address. My name is K. A. Swiger. I live at 8654 View Court North, Ketchikan. And appreciate the opportunity to speak before you tonight, provide some testimony. I'm afraid that I arrived a little unprepared to speak. But I wanted to take advantage of this opportunity, and go on record as saying that I'm in favor of a bridge to Gravina. And a Pennock Island crossing is my preference. (12) I've followed very closely the process of this project over the past 10 years at least. I've served as chairman of the Transportation Committee for the local Chamber of Commerce. And we've been very involed with this project, favorably, with this project. Our community has publically declared its favor for this project as well, through numerous resolutions, by both bodies of government, local organizations, and including an advisory vote, all in favor of a Pennock Island crossing. And most of them in favor of a particular bridge. I don't

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have any specific issues to address tonight. Unfortunately I'm again unprepared, because we such authority up here to answer questions. So I really apologize. But I would like to encourage all of you involved to stick with the printed time schedule, so that maybe we can really see a final EIS in January 2004. They keep getting moved back, so we in Ketchikan would really like to see that happen and it come to some conclusion. And to begin construction, as soon as possible after that. And whatever we need to do to encourage the proper funding for this, I'm as a local citizen and my and influence through organizations, we're right there. That's all I have to say, thank you.

HEARING MONITOR: Thank you very much. Next person on the list, is Tim Flaim? Is that correct. Is there a Tim out there?

UNIDENTIFIED VOICE: He was here, but he left.

HEARING MONITOR: Okay. I hope he comes back. Paul Axelson.

TESTIMONY OF PAUL AXELSON

Hi, my name is Paul Axelson, A-x-e-l-s-o-n. Mailing address, P. O. Box 5624 Ketchikan, 99901. I'm here as the Chairman of the Transportation Committee for Ketchikan Chamber of Commerce, and most of my testimony is written as it's in a -- a resolution form. From -- dating as far back as far as 1981 from the Ketchikan Chamber of Commerce, and as current as

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the most recent one and actually I'm going to give you copies that I think you all already have, of resolutions passed throughout the community whether it was by the Ketchikan Gateway Borough, or the City government. But the most current one being obviously the January 16th resolution passed by the City of Ketchikan. I am in support, I would say emphatic support, but support is support, of the F1 alternative, as well as -- and when I say the F1 alternative, I mean the Pennock crossing to -- or Gravina access.

I look forward to the day we drive across to our airport as many people in this weather do. This is a -- would be a very -- have a very significant impact on a declining economy in our community here. Not only in the short term, but in the long term, as it opens up lands on the other side, both on Pennock and on Gravina. So having said that, I believe the appropriate protocol is for me to hand these to you?

Also, one other, it's in a resolution form, but it's actually the election results. But it is actually in a resolution 1689, that I wanted to make sure that I pointed out, because it's not a true resolution as we would know it. Or as I recognize them. It has to do with proposition three that was on the ballot -- on the most recent election ballot, in October. And would like to point out that the -- even though it says no on proposition three, you should make sure you read proposition three because it was more of a -- it was

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confusing. So I would ask you to read that because the no votes, don't mean no, we don't want a bridge. It means basically that, should access -- well I'll get you guys read it. I don't want to take your time up while I read it to you. So having said that, I will submit these resolutions, there's two from the Chamber, I believe three from the Borough, and one from the City. So thank you very much for you time.

(Exhibit I admitted)

HEARING MONITOR: Thank you. Okay. Bob Weinstein.

TESTIMONY OF BOB WEINSTEIN

Good evening everyone. My name is Bob Weinstein, I'm Mayor of the City of Ketchikan. Address 334 Front Street, Ketchikan, 99901.

I'm here to speak regarding the draft EIS, and I want to commend everyone who's responsible for getting the Draft EIS completed. I want to compliment people for doing that, at long last. We've been waiting for the completion of that for some time, and I'm glad that we're back on track on that.

As Mr. Axelson, who proceeded me said, the City of Ketchikan counsel, unanimously passed a resolution in January 2003 three that supported this project, due to it's perceived long term economic benefit to this community. The one concern that the City had at the time, was asking that an alternative be selected which would not restrict navigational -- or excuse me, or vessel navigation, in either the east or west channel.

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It's my understanding that the Preferred Alternative F1, does not restrict that in any way and so, that alternative certainly meets the goals of the City of Ketchikan to not have large vessel traffic interfered with in either channel. As was said earlier I hope that the process continue as expediently as possible so that a record of decision can be issued on this project and so that it can move along. And that's really the end of the my testimony. I'm assuming that the document handed to you by Mr. Axelson, the City's resolution will be made an official part of the record, if not I'd like to request that it be made part.

HEARING MONITOR: Yes I can clarify that Mayor, it will be made part of the record. And it's a good question. Anything you hand, or anybody hands me during the testimony will become an official part of the hearing record.

MR. WEINSTEIN: Thank you very much.

HEARING MONITOR: Thank you. Did Tim, F-l-a-i-k, or F-l-a-i-m, come back in the room. Okay. At this point we don't have anybody else signed up so before we take a short recess, I'll ask is there anyone else who's here now, who would like to testify. Is there anything you'd like to say. I ask again, is there anybody who'd like to testify at this time. We'll take a recess for probably about 10, or 15 minutes to see if more people come, or more people decide they wish to testify. Knowing that you may have to wait 10 or 15 minutes,

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is there anybody who'd like to testify at this time? Okay. If you'd come forward. And sir did you sign in.....

MR. ADAMS: No, I just arrived late.

HEARING MONITOR: Okay. What were you -- we'll go ahead and take you name and address now, and have you testify. On your way out maybe you could also sign in so we can get materials to you.

MR. ADAMS: Sure.

TESTIMONY OF MR. BOB ADAMS

Okay. My name is Bob Adams, 3304 South Tongass Highway. I just made some quick notes since I'm not an off the cuff speaker. I support the bridge, and the reason I do is for future jobs. (1) You know, forty years ago, fifty years ago, when we were growing up here, we had lots of opportunities, we had mills, we had fishing, and the pulp mill came along in my era which got me started. And that gave kids who are raised here, who might want to live here, an opportunity to stay here and live here, and make their home here. I am currently watching my son look for work, he just graduated from college, and most of his friends -- well the ones who I think would like to live here are forced to leave, because there are no jobs here. Or at least not enough to satisfy the kids that I know that are leaving. Because of other -- because they found work in other places. My son chooses to live here, so he's doing the difficult job hunt business. And I guess in my mind, the

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reason I've always supported the bridge is for that exact reason, that it would possibly open up land that would possibly bring us some future jobs, that would possibly make it possible for those kids who want to live here, to find jobs, and stay here, and make their homes here. So I strongly support the bridge for the future. Maybe not my son, but my grand kids. Five of them live here and they'll be ready in 10 or 20 years. So I just would like to state that I support the bridge for those reasons. Thank you.

HEARING MONITOR: Thank you very much. Is there anyone else who would like to testify at this time? Okay. Then we'll take a short recess, of approximately 10 or 15 minutes, and I will open up the hearing again at the time, to see if there are others that wish to testify. Thank you so much for your attention so far, and we'll recess for approximately 10 to 15 minutes.

(Off record)

HEARING MONITOR: Okay. We're going to reopen the hearing, from approximately 15 or 20 minute recess, to again see if there are additional people who would like to testify. I've been informed that Mary Fabry would like to testify. Mary?

TESTIMONY OF MARY FABRY

My name is Mary Fabry, what other information did I need to state?

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HEARING MONITOR: Just need to spell your name for the record, and give your address, and then you can give your comments.

MS. FABRY: Okay. My last name is spelled F-a-b-r-y. And I reside at 6387 Fabry Drive. I'm here as an Alaska Airlines employee, to give my views on why I believe it's high time we had a bridge to Gravina Island, to the airport. (1) I'm not here in an official capacity. I'm not expressing an official opinion on behalf of the airline, I want that made clear. I'm just giving my personal opinions as an employee who has worked at the airport since 1987. And in that time I've had first had opportunity to see how relying on a ferry greatly inconveniences the traveling public. (63) It is impossible to count the hundreds of times, I've watched passengers stagger into the terminal under impossibly heavy loads of baggage, in some cases carrying a fish box over their shoulder, our of breath, sweat beaded on their foreheads, and literally almost about to have a coronary at the time they get to the ticket counter. Our whole day at the airport revolves around the ferry schedule. The Federal Express truck, Tongass Freight Service, our Alaska Airlines mail van, everything depends on the ferry and adds money to the cost of doing business. Not only that it adds an additional cost to the passengers. Fares in south east Alaska are not the lowest in the United States to begin with, but the cost is greatly added

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to by the amount of money that people spend to get to the airport on the ferry. I'll give an example. In August my 82 year old mother-in-law, my husband, and my daughter, and I went to Seattle because my mother-in-law was unable to walk on the ferry, we took our car, on a Friday, returning on a Sunday. And we paid over $40 to take our car and to pay for ourselves. That didn't include the parking fee for being at the airport. On a typical day at the airport, I see passengers arrive soaked, bedraggled, and completely done in. So as an employee, and I know many share opinion, it's high time that we had better access to the airport.

At the hearings last year, I ran into a woman here in Ketchikan who is a retiree, and has wanted a bridge for a long time. She said that when the airport was built 30 years ago, the people of this town were promised that ferry service would be for five years, and that then there would be a bridge. And here we are 25 years later and still no bridge. I think one reason why there are not more people tonight, is the people felt they spoke people last fall. It was a three to two vote, basically supporting the bridge. And I think the room would be more filled except people feel that they already have spoke, and that the community has already spoken on this. Thank you very much. And I'd like to enter, into the record the headline in the paper, the day after the election last fall, Bridge boosters win big. Thank you.

(Exhibit J admitted)

HEARING MONITOR: This will be entered into the record as an exhibit. Is there anyone else who would wish to testify at this time? I did get a clarification on the person that had signed up, and had had to leave the room, I believe it's Tim Frank. Anybody know whether Tim Frank is around? Okay. Well we will be here until 10:00 in case people do wish to testify. So again I'll ask once more before we take a 15 or 20 minute recess, is there anyone here at this time who wishes to testify. Okay. Then we will recess the hearing again for about 15 or 20 minutes. Thank you very much for your patience.

(Off record)

HEARING MONITOR: First person to testify, is Norman G. Jackson. Who is testifying on behalf of the Tongass tribe. And Norman if you'd give us your name and spell it, and your address. And we can go ahead and you can testify.

TESTIMONY OF NORMAN G. JACKSON

Well I'm Norman Jackson. And I'm a local resident of Ketchikan. And I'm also a Tlingit native from here, originally from here -- my people. The Tongass tribe. I'm also a business owner. Business operator, down here on Creek Street you know. But I'm mostly concerned about the access through Pennock.

HEARING MONITOR: Norman do you want to give us an

address?

MR. JACKSON: Oh yeah. P.O. Box 8241, Ketchikan, Alaska. And my name is N-o-r-m-a-n, middle initial G, J-a-c-k-s-o-n. Okay. Sorry about that. Now I kind of got lost there, but I was just talking about my concern about the access on Pennock, and the total island is occupied mostly by people that are local from Ketchikan, or whatever. But the local feel that (19) that was our was Tongass Tribe people, was buried all along the northern part, all the way, all the way down towards Whiskey Cove, and there could be some down further that they don't have record of. And the Cape Fox was on the other side which I won't talk about them, but they have their ancestors buried on that side too. So we just recently buried an aunt, my mom's sister there -- was probably the first one that we buried in 60, 70 years. Because I was told one of my family members was buried there, a long time -- not that long ago, but that time. And so -- we had a hard time getting that opened up to bury our people again, because the BLM -- we had to go through them to get that. So it's kind of touching feeling about the bridge going across there. And I think they could probably use the money other places, you know. I don't know how effective it will be, maybe it will open up the lands for the Borough, or the Mental Health or whatever. But I'm also a business owner on Creek Street, like I said, and I feel -- I'll speak for myself, but I feel that in the economy we

have here, is really -- it's not doing to well, you know. Ketchikan is really not doing too well. And I think that anything that would devastate this economy here in Ketchikan, especially the tourist industry which probably everybody has a family member working in. And so I'd hate to see us lose anything like that because of the bridge. Unless the bride (2) can accommodate the tourist industry and not push the -- any of the tourist industry, like those big ships away. Because they're getting bigger and bigger. I don't know much about, like I said the bridge maybe it's retractable, they could get through. But my concern was I didn't care for it to be on island. You know, that's about all I have to say. There's my five minutes. Thank you.

HEARING MONITOR: Thank you very much. Is there anyone else who would wish to testify at this time. Okay. Well thank you very much, and we'll recess the hearing again, and see anybody else decides they want to testify in the next 10, or 15 minutes.

(Off record)

HEARING MONITOR: Back on record. Is there anyone else in the room who wishes to testify, or who is signed up to testify tonight? Okay. Do we see somebody? Okay. We -- no additional people are signed up to testify tonight, and no one is showing a desire to testify tonight. It is 10:00 o'clock, so we will adjourn this session of the hearing. And we'll

recess this session of the hearing, and reopen the hearing tomorrow night, Thursday the 18th at 7:00 p.m. Thank you very much.

(Hearing adjourned)

TRANSCRIBER'S CERTIFICATE

I, JUDY A. ZENGE, hereby certify that the foregoing pages numbered 3 through 21 are a true, accurate, and complete transcript of the Public Hearing on the Gravina Access Project, Draft Environmental Impact Statement transcribed by me from a copy of the electronic sound recording to the best of my knowledge and ability.

_____ _____

Date Judy A. Zenge, Transcriber

9-18-03 Public Hearing Transcript

(Circled numbers correspond to the numbered comments in Table 7-2 in Chapter 7.)

PUBLIC HEARING

GRAVINA ACCESS PROJECT

DRAFT ENVIRONMENTAL IMPACT STATEMENT

SEPTEMBER 18th 2003

CAPE FOX LODGE

800 Venetia Way

Ketchikan Alaska 99901

7:00 p.m. - 10:00 p.m.

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H-E-A-R-I-N-G

HEARING MONITOR: Welcome to the Gravina Access Project Draft Environmental Impact Statement Public Hearing. This hearing is sponsored by the Alaska Department of Transportation and Public Facilities in close association with the Federal Highway Administration and United States Coast Guard. This hearing is taking place at the Cape Fox Hotel, 800 Venetia Way, Ketchikan, Alaska at approximately 7:00 p.m. on Thursday, September 18, 2003. I'm glad to see that some of you could make it tonight.

My name is Dave Hanson. I am a private businessman contracted to facilitate, or moderate tonight's hearing. As a moderator, my role will be to facilitate an orderly and effective hearing so people can testify. As a neutral moderator, I have no position on the Gravina Access Project or the Draft Environmental Impact Statement.

Tonight, I'll be assisted by Judy Zenge, of SouthEast Alaska Business Services, who is recording the hearing and will provide an official transcript of the hearing record.

As most of you know, the Gravina Access Project refers to the proposed State transportation project to improve surface transportation between Revilla Island and Gravina Island and the Ketchikan Gateway Borough. The project proposes to improve access to developable [sic] Gravina Island and the airport. Ten access alternatives, including enhanced ferry

service, bridges, and a No Action Alternative are under consideration. The project Draft Environmental Impact Statement, or DEIS provides a comprehensive analysis of these alternatives and sets forth a Preferred Alternative. This hearing provides an opportunity to comment on the Preferred Alternative, other alternatives or anything else in the DEIS.

And this brings us to the hearing purpose which is set forth at the top of the agenda, and I'd just like to encourage everybody if you haven't collected handouts at the sign-in desk as you came in, one of those handouts is an agenda. The hearing purpose is to allow the public to comment to Federal and State officials who have responsibility for the Draft Environmental Impact Statement, DEIS, and to fulfill the requirements of the National Environmental Policy Act, for a hearing.

The government officials seated at the front table who will be listening to your testimony tonight include, starting from the far left, Mr. Dave Miller, Division Administration of the Federal Highway Administration. Mr. Jim Helfinstine, Bridge Program Administrator for the Alaska District of the U.S. Coast Guard, Commander Steven Rothchild, U. S. Coastguard, Chief 17th Coast Guard District, Aid to Navigation and Waterways Management Branch, and Mr. Reuben Yost, Special Projects Coordinator for the Alaska Department of Transportation and Public Facilities.

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As the agenda notes, this hearing will take place over two sessions. Tonight's session from now until 10:00 p.m. is the second session. We have the first session of this hearing between 7:00 p.m. until 10:00 p.m last night.

On the back of the agenda are ground rules for tonight's hearing. These include, mutual respect, courtesy, and patience are key concepts regarding the hearing. Keep comments brief, clear and to the point. Everyone will have a chance to speak. Please don't interrupt. Remain quiet so others and the court reporter can hear. Please the room if you need to have a side discussion with anybody. Please turn off your cell phones and pagers.

We will now here a statement from Mr. Reuben Yost, the Special Projects Coordinator for the South East Region of the Department of Transportation and Public Facilities. Mr. Yost.

(Mr. Yost reads from Exhibit C previously introduced)

HEARING MONITOR: Thank you Mr. Yost. As I mentioned before there were several handouts that you picked up when you registered and came in the room. These included the agenda and ground rules, the DEIS summary, frequently asked questions, map of an alternatives, the opening -- Mr. Yost's opening statement, copy of the hearing notice, and a public comments sheet if you wish to give written comments. The handouts along with the Draft Environmental Impact Statement for the Gravina Access Project, have been previously made part

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of the hearing record as exhibits.

As Mr. Yost mentioned in addition to these two hearing sessions, public comment on the DEIS can be submitted in written form by mail, fax, hand delivery, or email to Mr. Reuben Yost, Special Projects Coordinator, at the physical address, fax number, and email address noted on the agenda and comment sheet. You may also submit written comment tonight in the box that's located on the table at the far back of the room under the air photo. As Mr. Yost noted, written comment has the same weight as verbal and public hearing comment. And will become part of the official hearing record, but it must be received by October 6th, 2003.

Now the procedures for tonight's hearing, I just want to mention a few guidelines. The sign-in table outside the door, will be the central contact for those wishing to testify.

All attendees to the hearing, are asked to register before entering, to check the appropriate box if they wish to testify and denote the name of the group if they're testifying on behalf of a group. People wishing to testify must register in person. Anytime between 6:00 and 10:00 p.m. this evening. A person may testify only once whether speaking as an individual or on behalf of a group during the two session hearing.

Each individual will have one three minute opportunity to speak, and each organization will have one five minute

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opportunity to present testimony. Only one representative of an organization may use the five minutes to speak for that organization. An individual or group, may submit more detailed written comments when you testify for the hearing, and if that's so you can just hand them to me as you testify. Or later you can submit for the comment record as we've already mentioned.

Now prior to the end of the session, if all who have indicated a desired to speak have been called, and before any recess we have tonight, I'll open it up and ask just generally if there's anybody else that wishes to testify. Our purpose here tonight is to hear anyone who wishes to testify on the record. I will call people forward to testify in the order they've registered.

So now I will call people forward to testify in the order they've registered. When called a person should take a seat at the table here. And clearly state, and spell their name, and give their address. Realize though, you can do that slowly and clearly, because your three or five minutes won't start until you've given your name and address.

Tonight Ms. Carol Snead will be our timekeeper, and she'll hold up a card -- and can show them what the cards look like, to indicate when you have one minute left and 30 seconds. At the very end of it, she'll lightly ring a bell, and I'll give you a few seconds to finish your sentence or

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your thoughts. Now we want this to be as friendly and welcoming as possible, so I will be very reasonable in letting you finish your -- the thought that you're in the middle of. I'll now call the first person to testify. Barbara Bigelow.

TESTIMONY OF BARBARA BIGELOW

You gentlemen are very organized, thank you. And I have a written comment to turn in as well. My name is Barbara Bigelow, B-a-r-b-a-r-a, and my last name is Bigelow, B-i-g-e-l-o-w. And I live at 7866 South Tongass Highway. Okay. I support the State's F1 bridge alternative for the Gravina Access Project, hard link to Gravina. I would however support any of the bridge options that were deemed the best by the engineers and experts involved in its evaluation, who have far more knowledge that I regarding Preferred Alternatives. Last year in an advisory vote the people of Ketchikan clearly supported the use of Borough owned lands for the construction of a bridge across Tongass Narrows. The margin of voter support was 2 to 1, with 66 percent of the voters, approving proposition number 3. Had the proposition not been so poorly worded, I suspect that the percentage of approval would have been higher. There are several organizations and governed bodies who have voiced strong support through written resolutions for the hard link including the Greater Ketchikan Chamber of Commerce, of which I am a board member but I'm not speaking for the Chamber tonight. The Ketchikan Visitors

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Bureau, the City Of Ketchikan, and the Ketchikan Gateway Borough. There are a number of cognizant reasons to support a hard link to Gravina Island, not the least of which is access to our International airport. It is critical and appropriate that Federal Transportation dollars, be used for hard link access to our airport. Having an International airport is a very tangible part of our economy, our commerce and our communications. In this case in particular, I believe strongly, in the build it and they will come adage. Gravina Island could present many enhanced business and industrial opportunities, once it is accessible by hard link, including new and relocated industry, natural resource extraction, resource development, both commercial and residential and outdoor recreation. I urge the printed time lines to be adhered to, with a final EIS to be ready by January of 2004, and that construction begin as soon as funding is in place. And I thank you very much for the opportunity to present testimony.

(45) (44)

(Exhibit K admitted)

HEARING MONITOR: Next person to testify will be Leigh Gerber, on behalf of the Fisheries Development Committee.

TESTIMONY OF LEIGH GERBER

Ladies and gentlemen, good evening. My name is Leigh Gerber, I live at 2415 Hemlock. It's spelled L-e-i-g-h, G-e-r-b-e-r. Am I speaking into the mike clearly enough. I'm the

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chair of the Fisheries Development Committee in Ketchikan, Alaska. The Fisheries Development Committee was formed about a year and half ago, actually in March of 2002, to try to develop a project and facilitate projects, and there was seven committees that were developed, ours the Fisheries Committee. It was comprised of people that had fisheries, were either -- worked in the fisheries, were processors in the fisheries, or were interested parties.

The project that we decided on was the public cold storage, for the development of the better fisheries economy in Ketchikan Alaska. In that developing that concept of course we have to site the facility, tell people where we were going to build it. In that siting process, Graving Island was at the beginning of the process, one of the first choices. And it was one of the first choices because the Borough was either going to, or had already zoned some land there for a fisheries industrial park, or you know, it could be one of a number of names. But that was the basic idea, future fisheries, projects, and fisheries processing plants would be built in that area. Because there is no land left for this type of organization, or this type of thing in Ketchikan that's appropriate. The problem that the committee quite frankly was that there's no hard access to Gravina Island. So I guess in speaking to Barbara's point, I say that the reason that we now have sited this at Ward Cove is because without a

(45)

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hard link, you can't build a public -- 10,000,000 pound public cold storage on Gravina Island and use ferries to run -- that only operate 10 or 12 hours a day, to run vans back and forth. So the committee supports a hard link to Gravina Island. I, myself personally support a hard link to Gravina Island. I do believe that all the land that is over there, both residential and industrial, is -- until that hard link is completed going to be under utilized or not utilized at all. And that in a nutshell is my comment.

(1)

HEARING MONITOR: Okay. Well thank you very much. Bill Smart is the next person up.

TESTIMONY OF BILL SMART

Hi, my name is Bill Smart. B-i-l-l, S-m-a-r-t. I just want to thank you guys for all your.....

HEARING MONITOR: Want to give us your address?

MR. SMART: Pardon?

HEARING MONITOR: Do you want to give your address?

MR. SMART: Oh, 34 Ridge Road, Mile 5 North Tongass. I just wanted to -- to all the Coast Guard fellows and everybody that's involved in this, it's -- I just hope you guys know that everybody in town are not bored, but it's been such a long and drawn out process that don't think that there isn't a lot of people here supporting this, because there's a lot of people in support of it, but we've kind of got tired of dragging our feet. We've been to a dozen meetings, and all

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the papers we fill out and sign in support and stuff, it gets -- people are just tired of it. But they were definitely -- everybody supports this big time, that I know anyway. And as far as the bridge goes, hey anything you guys want to build, we'll take it. I mean, truthfully, this is a 150, 200 million dollar bridge, and I know Ketchikan is probably at the bottom of the page, at the back of the book. So we -- just to let you folks know, that I know you're doing a lot of work, and I hope you don't get disgusted and discouraged about nobody showing any interest in this, because we've been fighting for a long time to get something like this. Worse case scenario if they don't get the money, they can't do the bridges, don't forget the ferry alternatives, that's better than a poke in the eye with a sharp stick, that helps us out and gives us road access and anything but -- the way the economy is and stuff, I know getting this money is not going to be a small chore, so, I just wanted to let you know that we're definitely in big support of it. And not being a very good public speaker don't help. I do like this, we ought to bring it up to the borough assembly, a timekeeper. Thank you.

(1)

HEARING MONITOR: Thank you very much. Next speaker will be Merrill Stulken.

TESTIMONY OF MERRILL STULKEN

Thank you, my name is Merrill Stulken, M-e-r-r-i-l-l, S-t-u-l-k-e-n. I'm a local citizen, and very much interested in

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the future of Ketchikan. I believe that the bridge offers a lot of positive things to look forward to, it opens -- oh, my address is 16 and half Miles North Tongass, I'm sorry. The future for our town I believe is opening up new lands that are going to be available for development to encourage growth and new types of opportunities to come to our community. The pulp mill was a big part of it, and that's history. And so we're now looking for the future, and I believe that this is going to help us. I know you have been putting a lot of effort in it. There's been a lot of time spent. Good planning is obviously necessary, and I believe that that has been achieved. I believe that with these meetings that have been attended maybe sparsely but enthusiastically through the voting process, I believe that our will has been made known to you, that we want this. There are many alternatives, we just have to trust the professionals in making the right decision in that. And I support it, I encourage you to go forth with it. And on behalf of Ketchikan, want to express that our future does to a large degree depend on your decisions. So, with that I'll encourage you to go forth and make it happen as quick as possible. Thank you.

HEARING MONITOR: Thank you. Donald Westlund.

TESTIMONY OF DONALD WESTLUND

My name is Donald Westlund, D-o-n-a-l-d, W-e-s-t-l-u-n-d. I live at 145067 Lizzie Lane, that's 15 miles North Tongass.

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I've come here tonight, kind of thinking about what Mr. Smart, just said, and that is build it, and we'll appreciate anything you have. But I look at, if we're going to build something, build something that has no restrictions of navigational boats, and unfortunately my alternative that I would like is C4, goes into the airspace, so that's not the first option. Since I live north of town, it's a shorter drive. It's just, we need access to Gravina Island. We've been looking for a place to rebuild a school. They picked on the south end of town, there's plenty of flat land of Gravina Island we could have taken and looked developing that land for a school instead of up north, or out south. That's about it. Just give us something. I've been to most all the meetings. Just give us something, we're the fourth or fifth largest city in State of Alaska so, it's about time we get some money down here. Thanks.

HEARING MONITOR: Thank you. Susan Pickrell, is that right? Let me make one announcement first. Many of you didn't -- may not have circled whether you were testifying for a group, or yourself. Unless you indicate to us, we'll assume you're just testifying for yourself.

TESTIMONY OF SUSAN PICKRELL

Good evening thank you for coming, and listening to our community about this particular bridge. My name is Susan Pickrell last name is Pickrell. I live at 6369 South Tongass,

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in Ketchikan. The reason I wanted to come and speak tonight is, I was here when the airport was built. And I remember Ralph Bartholomew talking about that time, about potentially a bridge someday. He was a local public official in our town for many years. And he probably led the charge on this bridge. And I'd just like suggest, should we get this bridge built that we name it after Mr. Bartholomew, because he had the vision, and he argued, and argued, and argued for a bridge. And felt it was important, not only for our expansion, but I think for future, to bring, I guess more transportation access. I live out on South Tongass, and I was driving into town tonight, I thought gosh, it would be kind of nice if we couldn't have the bridge farther south, because our road out south is really, really bad. I don't know if any of you have driven out there, but it's kind of like being on a roller coaster it's up and down, and if there are any areas of transportation that should be addressed it's the South Tongass Roads. But that aside, I support the hard link to Gravina because I think -- just from what I've read about the studies, it's the one that seems to be -- I don't know if you'd say the least controversial but it seems to meet most of the needs of our community. And more than anything what I'd like to see is something to bo up as soon possible. Because I think our community needs it, not just for our economic development, but I think for -- since we have support in the Congress right

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now, from Congressman Young, Stevens, or Murkowski, I think our community is just right for this kind of a project, for a whole number of reasons. But more than anything, I have children that will be raising their children, hopefully in this community. I have two sons, one's in the military, and one's entering the military, and one of the reasons that they did, is because there is no future jobs right now, for them. And I think this could offer that. And so I look forward to seeing that this project go forward, and I support it wholly. And that would hard link to Gravina, the F1 bridge. Thank you very much.

HEARING MONITOR: Thank you. Donna Gellings.

TESTIMONY OF DONNA GELLINGS

Good evening, my name is Donna Gellings. D-o-n-n-a, G-e-l-l-i-n-g-s. I'm here representing Haims (ph) Corporation, who is the owner of the upland access for alternative G3. One of the alternative ferries. My address is 2411 Second Avenue in Ketchikan. Although we happen to be the property owner of the upland access for G3, and we are not adverse to that alternative, our company doesn't not support that alternative in terms of the needs of Ketchikan. The hard link bridge to Gravina across Pennock Island is the Preferred Alternative, is our recommendation for the Gravina access. Personally I came to Ketchikan nearly 20 years ago, from the lower 48 like a lot of people and I was absolutely astounded at this community's

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lack of infrastructure, in terms of its roads, water and sewer that only goes to the edge of town -- just a tremendous lack of infrastructure. I joined the transportation committee, probably almost two decades ago, and I have attended hundreds and hundreds of hours, of meetings, City Council meetings, Borough Meetings, State meetings, not just on the Gravina access but to keep a bridge alternative as a statewide priority for this community. To get on the STIP every year, for the Statewide Transportation Improvement Program as a Ketchikan priority is a process we go through every single year. So Mr. Smart's words about this community being weary with the public hearing process, is very true. Even those of us who our staunch supporters, we get tired of the process, and the routineness of having to support the bridge. Which we do. Frankly the lack in this community of a huge turnout, which usually means opposition, is a good thing. I did have the opportunity a few years ago, to be the coordinator for the State Chamber of Commerce meeting that was in Ketchikan. It hosted about 450 people. In terms of future economic development possibilities on Gravina, that's one thing. But the lack of that hard link structure to our own airport, holds back economic opportunities in the existing Ketchikan facilities. Although we had meeting facilities and hotels, trying to transport, 450 people coming in on different airlines and figuring out to get them across to ferry, and on

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buses, was just amazing. So it really does hold back a lot of things here too. Besides the times that the tides are low, and the buses can't go across anyway. So it can be quite a fiasco. The community did experience a lot of excitement last year, tremendous public input and turnout, because we had an election about the bridge. When you see our weariness in front of you today, we expended a lot of effort and energy last year, and got an extremely strong community vote, 2 to 1 in this community is an amazing vote. And I thank you for you time.

HEARING MONITOR: Thank you. Mike Elerding.

TESTIMONY OF MIKE ELERDING

Hi, my name is Mike Elerding, E-l-e-r-d-i-n-g. I live at Box 8112 Ketchikan. And I'd like to echo Mr. Smart's comments, and thank you ladies and gentlemen for your time and your interest in our community. And we appreciate you folks being here, and the work you've been doing on behalf of Ketchikan. And it's good work. And I guess the other thing I'd like to point out, is 28 years ago, if you wanted to leave Ketchikan, you had to take an airplane, and go to Annette Island, which was really inconvenient. And so, you know we built the airport. And there really hasn't been any significant infrastructure improvements to air transportation in Ketchikan in the 28 years. And I guess 28 years is a long time, and as I look around the room tonight. I see four

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classmates of mine from high school who are still here. I guess some of us never figured out you could leave. But one of the things that I'm also noticing is that my children as they're getting older are looking for opportunities to come back to Ketchikan, but there's really limited opportunities for children -- our children, are -- you know, kids to come back, because there's not a lot of economic opportunity for them to get employment. So in addition to improving the access to the airport because it's really inconvenient. I operate a small wholesale distribution in southeast Alaska, so I've got to go to Ketchikan -- excuse me, I go to Sitka and Juneau and it's really a hassle getting back and forth and it limits my ability to get to places where I need to be to operate my business, because it's so inconvenient. But in addition to that, you know if we had the infrastructure development on Gravina, I believe it would create a lot of economic opportunity that would be good for this community, and help us create jobs for our children to come back, so that we will have a vibrant community and something that people will be able to come here and make a fair living, and contribute to the overall community. So, I support a hard link to Gravina, I support the F1 alternative, and again I just thank you guys for your time. I appreciate it, and on behalf of Ketchikan, you're doing a good job, and we'd really like to see a bridge, sooner rather than later. Thank you.

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HEARING MONITOR: Thank you, sir. Mike Painter.

TESTIMONY OF MIKE PAINTER

Good evening, my name is Mike Painter, and it's pretty much as it sounds. I want to thank you for the opportunity to speak.

HEARING MONITOR: Want to give us your address Mike?

MR. PAINTER: Oh, I'm sorry, I live at 4746 Busey Avenue. Anyway, I want to thank you for the opportunity to speak before you on this hard link to Gravina. I'm a 35 year resident of Ketchikan. My dad, as well as Bill Smart's dad worked for the company that built the airport. I remember when it opened in 1972, I was watching the first jet take off, as I was driving down Tongass and didn't see the car stop in front of me, and rear-ended it. But anyway, that was a long time ago. I'm a business owner, I -- my company is contracted with the Borough and we perform maintenance on the current access to the airport with the ferries. And I know what it's like to maintain a constant vigil access to the airport, when it comes to, you know, in terms of public safety, medical needs, medivac, that type of thing. Typically we -- during the months of May through September, the busy season per se, we're only allowed to perform maintenance on the airport ferries, after their normal working hours of you know, it usually stops, typically at 10:30. And we have to be ready within a short amount of time, no matter what we've going on

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maintenance wise for that thing to crank up, and take and take an ambulance to the airport, for a medivac, or that type of thing. That happens quite often, and I -- you know I'm here to say that I support the F1 alternative. Like I say, I'm a (4) 35 year resident of this community, and I've had my own medical emergencies, and you know my own family, and I understand what it's all about when it comes to loss of life, because of access to the airport. But anyway, I just want to thank you for the opportunity to -- for me to hear my piece.

HEARING MONITOR: Thank you, very much. Sorry I'm having trouble with the first name, but last name is Smart.

TESTIMONY OF TRISH SMART

Trish. Good evening, my name is Trish Smart, T-r-i-s-h, and Smart, S-m-a-r-t. I'm a 44 year resident of Ketchikan. I was born here two weeks before we became a State. I don't remember the first trip landing in Annette, in the cross. But I always -- my mom carried tissues because the Grum (ph) and Gooses would leak and she'd hold them up to keep the drips from getting on her kids, as we would travel back and forth. Many reasons I would like to see the bridge be built, and like my husband, at this point, whatever alternative is voted in, great. We need a bridge, we need to open up development (1) further of Gravina Island. (45) There are many folks over there that are property owners like my husband. We're fighting right now to get a road system just down to the airport for

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better access. A lot of folks there aren't even as far along as we are, I have a small home over there now, but when my husband leaves town, I don't have any way to get back and forth in the winter. But I work for the medical community (64) here in town, and once again just a quick easy way to get our folks back and forth when they're hurt. I too, have tragedies in my family, and we're down now to just airlift, we no longer have the Pond Reef folks that will help us in medivac that way. So, every minute that we can save transporting a patient back and forth, is a minute more that maybe we can save their life and get medical attention for them. And maybe -- you know there's a lot of folks that bought property over there because it was inexpensive, with dreams of making retirement homes over there. And you know, if a bridge is put in, maybe this will get started again, and just that in development of Gravina Island will provide more jobs here, as far as -- for Mr. Painter's company, for my husband's company, for Mr. Stulken's company. There's a lot of opportunities. I am in full support of putting a bridge through. Thank you.

HEARING MONITOR: Thank you. Lloyd Gossman.

TESTIMONY OF LLOYD GOSSMAN

I'm like Donna Gellings, I always look for familiar faces, I too have spent hundred of hours testifying on this bridge. And I am very much in support of the bridge. I'm in support of the F1 alternative. But first off, my name is (4)

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Lloyd Gossman, first name L-l-o-y-d, last name Gossman, G-o-s-s-m-a-n. I live at 310 North Point Higgins here in Ketchikan.

I grabbed something here I'm going to leave with you guys. It's getting kind of crusty now, because I've got the newspaper that I make a copy from, and it's out of a 1969 newspaper. And it shows here that one of the priorities, for the Ketchikan Community Highway Construction was a hard link to Gravina. Before the airport's to be built. This is in 1969. Frank Seymour, was the party listed as the President of the Chamber of Commerce then. And it's important to note too, that in this paper I think it suggests, that they were trying to get the hard link, before they built the airport. Which made sense. So, we were trying to do it right, but safety concerns, and a lot of things, about where the airport was going to be placed came to the forefront, and they had to do an awful lot of studying to decide where that airport was going to be. And do to wind, and all the other conditions that we have here in Southeast. Because they looked really trying to place it here on Revillagigedo, our island. But it just wouldn't make the grade as far as safety goes, and it had to go on Gravina. So -- the hard link took a little bit of a backseat for a while -- well I can't say for a while, look where we're at now. But again, very important document, part of our history here in Ketchikan. A lot of people have been trying to get this project accomplished for a long time. And

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I must say it's kind of hard for us to sit and watch communities like to see Sitka -- I can't say hard for us, because we like to see Sitka grow too and all the other communities. Sitka, we watched them build their bridge. We see Juneau going for a second bridge. We hear of a bridge across Knik Arm, up there by Anchorage, do you know what that would cost? I got to tell you guys, this is a pretty simple project when you really come right down to it. You know airports are a pretty important thing to communities. The Anchorage International Airport, nine out of every ten jobs in Anchorage is directly related to that airport. It's an important thing for us here too, so again economic growth is one, safety is one of the biggest concerns again, I guess it needs to be addressed, again, and again, and again. And this is something that we're used to seeing in our daily newspaper here, it talks about minus tides. I'll leave this with you guys here too, this the real world. Tides go up and down, it says limited access, during this period, in June. This came out of the '97 paper, that's the year that the pulp mill closed. This was the last time that Ralph Bartholomew I think wrote to Senator Stevens regarding this topic. Dealing with again, I will continue to support this, continue to show up, continue trying to make this happen, it's again important to the community, safety wise, development wise. Hopefully you guys will help us get it, and shorten the process. I was

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hoping that this thing would be started -- would actually be being built this year, 2003. And when I was participating in the Chamber big time, they said this project could start in 2003. Here we are guys, help us out. Thank you.

(Exhibits L and M admitted)

HEARING MONITOR: Thank you. Dale Collins.

TESTIMONY OF DALE COLLINS

Dale Collins, Southeast Alaska Pilots Association, address, 4212 South Tongass. I'd like to make comments on the Gravina Access Alternatives. The No Action Alternative, we're opposed. We do not like No Action, C3A, we support C3A. C3B, we oppose, the reasons we oppose, the height is too low, 120 feet doesn't support large vessels to go under the bridge. Five-hundred feet is pretty marginal on the horizontal width, but we could live with that. We're opposed to the 120. No large ships could get under 120 feet. C4, we support. Five-hundred and fifty, and 200. D1, we oppose. Again for the reason of the height, 120 feet. F1, we support F1. F1 gives us probably some of the best ones we like. It's the ones we fought for when F3 was declared as the as the Preferred Alternative. Our reasons were, that the east channel, is a primary channel and Tongass Narrows for a safe navigational large vessels and we need 200 feet. One hundred and twenty feet on the west channel, with a five hundred clearance, would still allow tug and barges, and Alaska Marine Highway, and

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like vessels, to take advantages of natural (indiscernible) of Pennock Island, and we could support that. We'd obviously like to see a higher bridge over there, on the west side. If you could see your way to 200 footer, we wouldn't oppose that. F3, was a bridge that we went on record as opposing, we still oppose it, because of the east side, 60 foot horizontal clearance isn't sufficient, it blocks our primary channel. Not a good option, from a navigational standpoint. All three ferry alternatives are satisfactory with us, they don't impede safe navigation, or they don't impede large ship movements. They're all satisfactory to us. I'd like to thank everyone for including F1. I support F1 personally, our association takes no stance on which option, we just want to be on record, as opposing anything that doesn't give us the horizontal clearance we need -- excuse me, the vertical clearance. Although the more horizontal you can give us, the better. We -- simulations proved that 500 to 550 is doable. In closing, I would like to -- as I look at your drawings on here, I'd like to ask that you look at making these -- which ever one you pick, or which one we build, is that you make them as perpendicular to the channel as possible. Angles, diagonal angles are hard to line up on, and they give you a bad perspective in high winds, or adverse weather conditions, they could be difficult to navigate under. And would probably limit the weather window that ships would be transiting

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underneath them. Thank you.

HEARING MONITOR: Thank you. David Jones.

TESTIMONY OF DAVID JONES

My name is David Jones, D-a-v-i-d, J-o-n-e-s. I live at 4634 South Tongass. I think I'm definitely in favor of F1m but I agree with Mr. Smart, any hard link to the island is necessary for this community. My son is a fifth generation, if he's to live here there has to be some economic growth. And without opening Gravina, I'm -- I feel that that will not happen. So I would like to see that happen. I'd also like to address some statements about the Golden Fleece Award. They were originally in our paper, and stating that -- I'll read what was written, "The bridge project being proposed is equal to the Golden State Bridge across San Francisco Bay. When that bridge was built in the early 1930's the population of just City of San Francisco, not including any of the surrounding areas, was larger than to population of the entire State of Alaska today. Ketchikan Gateway Borough has a population of only 14,000 people. Is the Congressional Delegation trying to set a Golden Fleece Award."

This community of 14,000 people since that ferry began has paid for the Golden Gate Bridge, in tolls. My highschool children cross that ferry on a regular basis to take my car across, and my family, is $28 dollars. That is higher than any toll bridge in the United States. It is time that we do

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not have to pay this kind of money to get to the airport. While we were paying for the Golden Gate Bridge, we continued paying with our Federal dollars, paying for everyone else's bridge. It is Ketchikan's turn. Thank you.

HEARING MONITOR: Thank you. Is Luz Busch in the room now, did she come back.

TESTIMONY OF LUZ BUSCH

You're the first one to say my name right?

HEARING MONITOR: Yes please.

MS. BUSCH: Good evening, my name is Luz, L-u-z, Busch, B-u-s-c-h. I live on 738 Hopkins Alley, my -- I support the bridge. Thank you.

HEARING MONITOR: Thank you.

TESTIMONY OF HARLAN HEATON

Good evening, my name is Harlan Heaton, H-a-r-l-a-n, H-e-a-t-o-n, 5109 South Tongass. I really can't say that I have -- can add anything that's all ready been eloquently stated to you, other than I do support a hard link access to the airport and to Gravina. And I'd like to see it happen, the sooner the better. We've been waiting a long time to get this done. So, thank you very much.

HEARING MONITOR: Thank you. Okay. Let me first ask, did anybody sign up, and indicate yes, that I failed to call?

Just to make sure I didn't miss anybody on the pages. Okay then I'd like to ask, is there anyone else who might have

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even put down no, that at this point would like to testify?
Okay. Well then what we'll do, is we'll take a short recess. We will be here until 10:00 and I'll reopen the hearings several times between now and 10:00 to give additional people a chance to testify, if they come, or if they change their minds. We'd like to encourage everyone who might wish to, to certainly testify tonight. And we very much appreciate the testimony we've heard so far. I'll just ask once more, is there anyone else since we'll probably have a 10, or 15 minute recess, is there anyone else who would like to testify at this time? Okay. Thank you very much for your attention, and we'll recess for about 10 to 15 minutes. Thank you.
(Off record)
HEARING MONITOR: Okay. I'm going to call the hearing back into session, and so ask people to take a seat if they can. I've been told that Kristina Fabry has signed up to testify. You can certainly come forward.

TESTIMONY OF KRISTINA FABRY

My name is Kristina Fabry, that's K-r-i-s-t-i-n-a, F-a-b-r-y. I live at 6387 Fabry Drive and I'm 12 years old. And I represent the future adults of Ketchikan. I support the Gravina Access Project, our bridge to the future. (17) Thank you.
HEARING MONITOR: Thank you Kristina. Is there anyone else who wishes to testify at this time. Yes sir, come on

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forward.

TESTIMONY OF JOHN PETERSON

Good evening, my name is John Peterson, I'm a resident of Ketchikan. I was born and raised here. Lived here all my life, other than when I've been out for education. I was -- go ahead.....
HEARING MONITOR: Do you want to give us -- did you give us your address, or did I miss that.
MR. PETERSON: No. I'll be glad to give it. As I say, John Peterson, my address is 307 Bawden Street in Ketchikan. I just have a few brief remarks, I was sitting here writing a comment sheet and given the opportunity to talk, I'll do that.
I'm supportive of a hard link to Gravina. (1) And I should say that I'm speaking as private citizen. But I'm supportive of a hard link to Gravina. I think it's an item of infrastructure that is going to have benefits forever, for this area. As you come here, you know, if you see things like the airport on Gravina Island, you see other things that are here, and you go back and think through how decision making would lead to building, or not building those kind of facilities. If the question today was should we build an airport on Gravina Island. I'm sure a lot of the same questions and feelings pro, and con would be expressed. And for that matter, if you go over to the airport as you're leaving and you look at North Tongass Highway, okay, going out

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to Ward Cove and beyond. If the question was today, should we build a road out north of town, I'm sure there would be people that say, oh no we shouldn't build a road, you know. But within my lifetime I can recall, you know, it used to be that jets would land over on Annette Island and you'd get in Grum (ph) and Goose amphibians and land in the Narrows. And today it's hard for people to feature doing business that way, living that way. There are just certain things in infrastructure that it makes sense to build for a community, and the development I think is going to occur around those things. And I think a logical step for this community is to allow a means of ready access to Pennock Island, and Gravina Island. And I guess the other thing I would say, is a little bit about decision making and public testimony. To my perception, is not a very productive way of decision making, we certainly appreciate your coming here. And you know, we're very glad to have you here, and seeing the local situation. But this -- these issues have been through an awful lot of public process. I think the fact that you may -- I think there's an awful lot of people that have feeling about this, that have already expressed their opinion either in the election that occurred or in other public processes. So, be mindful of that, and again we appreciate you coming here. Thank you.
HEARING MONITOR: Thank you.

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TESTIMONY OF KATHLEEN SVENSON

Hello, thank Judy for knowing how to say my name. Well I would just like.....
HEARING MONITOR: First, do you want to give your name and address?
MS. SVENSON: My name and address is, Kathleen Svenson, 283 South Point Higgins Road, Ketchikan, 99901. I support a bridge. (1) I think that we need to be able to access more land for recreation and to live on. (45) I don't want to get in a situation that Juneau is in right now, where they're saying we don't have enough land to build houses. I have a son who's 25 years old, he wants to live in this community, and right now he's down at the Robertson Building in a welding and he's getting ready to build that bridge. And I'm really -- I really support the bridge. Thank you, for listening.
HEARING MONITOR: Thank you. Is there anyone else who would like to testify at this time. Okay. What we'll probably do is take another 10, or 15 minute recess to see if anybody comes in the door that wishes to, or somebody here that makes -- changes their mind, I'll ask again, is there anyone else before we take a recess, that wishes to testify? Okay. Thank you. We'll recess for another 10 or 15 minutes.
(Off record)
HEARING MONITOR: We're about ready to open the hearing again. Okay. I'd like to open the hearing again, and we'll

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start of with Bill Elberson.

TESTIMONY OF BILL ELBERSON

Good evening, my name is Bill Elberson, and the last name is spelled, E-l-b-e-r-s-o-n. And I'm 11027 Victorson Court. And first of all thank you for taking your time to be here. It's late, and I've been -- I'm a real estate pedlar, and I've been doing that for -- I've lived here for 30 years, and for 20 of it I've been selling houses here. Pretty much we haven't added an inch of road in all that time. We keep dividing the same little spots up, there's a -- if you want 20 acres, and a house on it, I'd tell you to go to New York. Not in Ketchikan Alaska, it just isn't here. But the land's here, we just can't get to it. And that's one of the reasons, there's a couple of things that I see here. This bridge idea, is a great idea, I support the F1 bridge, it seems to -- one of the things it will do besides providing some darn good jobs. It will give folks a chance to and get some land, and get to some land, and get to their jobs. And one of the benefits is being able to provide some housing and some recreation over there. There's some beautiful property over there. So, I'm really strongly in favor of that. I can't think of anything else to say, except for thank you again for being here. (4) (45)

HEARING MONITOR: Thank you very much. Is there anyone else who'd like to testify at this time. We try to be real

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friendly up here.

TESTIMONY OF SUSAN WALSH

My name is Susan Walsh, W-a-l-s-h, 1252 Upper Millar. And that's a boardwalk, so -- I'd like to refer the committee panel to my comments submitted on 3/19/2002 regarding the F3 alternative. And my same comments extend, although right now, with the F1 alternative, I'm even more concerned. Tonight you have listened to numerous people tell you about the ethicacy [sic] of transporting patients. I came here in 1977, I was a night supervisor and involved in many transports. At the time before we had airlift Northwest and Alaska Airlines was extremely accommodating, and guarded my lifetime support regarding airlift patients. The present airport access does not require any changes as far as reliability and ethicacy [sic] is concerned, when dealing with medical evaluations. Transports from either north or south have at least a two hour arrival time at present. Allowing substantial opportunity to gather the ferry crew, emergency crew and equipment at any hour of the day. Traffic projections by trip source have been furnished and I would like DOT to address the projected travel time from various locals, including road conditions. Especially now considering the F1 alternative is a steeper grade, than even the F3. When you have the patient's condition, head injuries, burns, and critical MIs being transported, tubes in various orifices, going up a steep (51)

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grade, with in climate road conditions is a paramount consideration. At present we do not even have a stop light to go through. We do have to stop at the stop light, but the ferry is a five minute run from the ER, to the ferry. I would also like you address summer tourist congestion downtown, and using the bridge in the wind rain and fog that dominate our weather, and thus address ethicacy [sic] or efficiency. Addressing time is essential when taking transports into consideration. I would also like you to take into my -- into consideration my comments regarding the need to improve the access for bicycles. And how can one improve on something that does not exist. For years citizens of Ketchikan have petitioned DOT to improve, or develop our bicycle capacity on Revillagigedo with little results. I'm skeptical at this point in time that we would have any better results with this project. I'm also concerned that as a boat owner, with the background lighting on the projected bridge, and the water traffic. And safety. At this point in time, those are my only comments I will be submitting comments, written with photos. Thank you for your opportunity. (52) (23)

HEARING MONITOR: Thank you. Is there anyone else who would like to give testimony at this time.

TESTIMONY OF MARNA CESSNUN

Hi, my name is Marna Cessnun, it's M-a-r-n-a, C-e-s-s-n-u-n. I reside at 428 Gold Road in Ketchikan Alaska. And I

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want to thank you all for being here, we appreciate this. And I'm just in support of the bridge, I think it's a good -- I think it's something we need in our community. I also sell real estate. We have a limited amount of opportunities here for people to purchase homes. And I think it just would benefit the whole community. I also have a husband that's a pilot, who deals with the airport ferry, and I was here when the first -- when we had an accident on the -- at the airport, saw people going across in skiffs to get there, trying to get to the accident site, and I just feel that it's imperative that as we grow as a community, that we have that access. So thank you very much. (1) (45)

HEARING MONITOR: Thank you. Is there anyone else who would like to testify at this time, that has not had an opportunity. Okay. Then we'll take another 10 or 15 minute recess and reconvene when we have interest from others. We very much appreciate the patience all of you have shown tonight. And very much appreciate the testimony of everyone. And thank you for it. So we'll recess once again.

(Off record)

HEARING MONITOR: Stephen Reeve, come on up.

TESTIMONY OF STEPHEN REEVE

Thank you, I'm Stephen Reeve, S-t-e-p-h-e-n, R-e-e-v-e. I direct the -- oh sorry, number 28 Creek Street, Ketchikan, is my residence. I direct the planning activities for the

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Ketchikan Gateway Borough. I'm not representing the political perspective of the Ketchikan Gateway Borough. I'm representing the Planning offices perspective on the subject of this evening. I have been a an unofficial partner, throughout this process. Unofficial because I'm not an official part of the consulting firm, and the activities that have gone on. But I feel the consulting firm, and DOT, has made me feel, and the Borough feel, as though we are partners in this. So any deficiencies in the draft EIS, I take some responsibility for it as well. My main purpose in commenting tonight, is that I wanted to enter into the record and I'll be providing you Mr. Moderator copies of all of the work that the Borough has done, with respect to a plan for Gravina Island. We have a four part plan that addresses a range of issues that you would expect to be addressed on Gravina Island. We looked at the lands that are suitable for development. We look at economic development opportunities that improved access will provide. We look at which lands and resources, have important -- especially important value to the community, and which ought to be developed and protected, and in what ways. We look at areas like Clam Cove, the community of Clam Cove, and how the bridge -- the bridge itself as a physical object effects that community and what kinds of growth is likely to occur there, and how it should occur. We look at the Borough lands. The Borough is the major land

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owner on the east shore of Gravina Island. We look at their lands, which lands should be disposed, and in what ways. We look at a road network that should compliment the one that would -- the main spine would be provided by this project. We even go so far as advise other land owners, in the area, Mental Health Trust, University, DNR, DOT, who is the manager and owner of the airport reserve, how we think their lands ought to be managed. We -- and then we outline the costs of the various proposals that we are putting forth. And all of this is going to -- we wanted to maintain the same schedule as the team, as the consulting team. And so we wanted -- by the time we all got to the Draft EIS, we wanted to have our work done in draft form. So we're going to start a public process, over the next several weeks, that will result in -- I would say we'll have plans approved by -- before the actual -- final EIS is completed. So, we wanted this all to work together and I think we're doing that. So I will be submitting all of these as part of the official record, prior to you -- I can give you drafts this evening, but I'd rather give you the final public review drafts prior to your October 6th deadline.

There are two areas that I think still could use some work in the Draft EIS. I feel while we've done good job, as a consulting team, and as the Borough in addressing Gravina Island, with latest announcement of the Preferred Alternative, we have not yet done -- I think we've given short shrift to

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Pennock Island. It isn't clear how we are accessing or not accessing Pennock Island on the structure itself. We should be giving it the same kind of attention that we've given Gravina Island, in terms of how the community wishes to see that island developed. And I think that's an area we could do more on in the Draft EIS. The other area that I think still needs attention, is -- and this came up -- I'm probably speaking on behalf of the Planning Commission for this. They in fact asked me to enter in official comments prior to your October 6th deadline. That they feel and I feel as well, that more studies should be given, not so much for the Draft EIS -- 30 seconds, okay, I'm going end this then. As at least -- we need to at least be indicative of addressing the traffic congestion problem that's being -- that is being enhances by the construction of a bridge that requires the traffic through the downtown, in combination with the fact that we're soon to become the fourth largest port of call in the world, and we're going to double our visitor -- cruise ship visitor visitations to the community within the next 10 years, and we need to address that a little bit better in the Draft EIS in my opinion. And we have some suggestions for that. Thank you.

HEARING MONITOR: Okay. Is there anyone else who would like to testify at this time? As we have the other times, we'll be here till 10:00, but we'll probably take another 10 or 15 minute recess, unless someone want's to testify and get

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home, this is the opportunity if you don't want to wait until the next opening. So is there anyone else who would like to testify at this time? Okay. We'll recess the hearing again for another 10 or 15 minutes.

(Off record)

HEARING MONITOR: I'll reopen the hearing. And we have a Mr. Jim Bride who'd like to give some testimony.

TESTIMONY OF JAMES BRIDE

James Bride, at my home residence is 7125 60th Street South East, Snohomish 98209. I own a development here in Ketchikan, and I own the development where Walmart is. And I'm in the process of trying to complete that development. And over the last 20 years that I've this development out here, there's been discussion different areas to come across with that bridge. And my -- looking at you program here, I would recommend that 4C, on the basis of the location of it. How it fits in between -- within the area, as far as the access, you're going to have pluses and minuses on all of them. Fights, so on and so forth. But as I look at that one, that looks to me like the one that will have the least amount of minuses, I see one or two there, in the flight situation. But that's going to be anywhere you put it. But as far as the location is concerned, and I think also the cost factor. It looks to me like it would be a better program. I would also recommend people in the community to get involved in this as

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soon as possible, because the cost, and the construction -- that's my field, I'm in the equipment business, I sell construction equipment to the contractors, and I've got -- and I ended up with a couple of developments, but I'm not a developer. But up here in Ketchikan right now, I think it's important that you get that in, especially where they're looking at putting other infrastructure in in other areas. And I think the sooner you get it in there, the sooner you're going to be getting into a position where you're not going to be tearing up stuff that they're doing -- they're starting to do now. So that's -- but that 4C looks to me like the most cost worthiness. Which is how it's been described to me that the air traffic in that area, but like you say, you got air traffic in the whole area. And I'd like to ask you fellas or the folks, as you've had your programs today, what have you had in the way of -- what have you had at this point in the way of input on which one of these would be the most popular. Other than that I wish you a lot of luck on it.

HEARING MONITOR: Just as a point of reference the Preferred Alternative is F1 there?

MR. BRIDE: Which one is that?

HEARING MONITOR: Just as a point of information?

MR. BRIDE: Do you have any idea what the cost would be on that one, compared to down here?

HEARING MONITOR: I think most of the information is in

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the Draft EIS. But what you may wish to do, is after your testimony and we have a recess, there are several people who can show you exactly where that information is.

MR. BRIDE: Okay. I'll get up. Thank you for the opportunity.

HEARING MONITOR: Thank you. Is there anyone else who would like to testify at this time? Please come on up.

TESTIMONY OF CAROL CAIRNES

And I'm going to speak on behalf of an organization, or a group.

HEARING MONITOR: Could you introduce yourself first?

MS. CAIRNES: Okay. I just wanted to -- the group, or the -- which do you want?

HEARING MONITOR: Both.

MS. CAIRNES: Okay. My name is Carol Cairnes, C-a-r-o-l, C-a-i-r-n-e-s. I reside 11 miles North Tongass. My address is post office box 8908, in Ketchikan. And the group that I speak for, is called, Citizens for Responsible Economic Development. And that's the group that organized the initiative petition that's been mentioned several times in the testimony over the last couple days. And I wanted to give some clarification on how that developed. And there were a number of people that mentioned that the language was confusing. The initial resolution, the ballot language that we had was very straight forward. "Shall a resolution of the

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Ketchikan Gateway Borough, Alaska to support construction of a bridge across the Tongass Narrows be approved." And we were told by the Borough attorney that if we put that language on the ballot that it would first have to go through the Borough Assembly and that the Borough Assembly would say yes to that. And not allow it to go on the ballot, and we would not be able to bring it back on the ballot for two years. And then we had to spend a lot of money, and go to an attorney, and develop language that would not be kept of the ballot by the Borough Assembly. And that is why the language ended up being so convoluted. And in order to say that you wanted to not have a bridge built across the Tongass Narrows, you had to vote yes. And I had many people -- because all of this was happening during the summer, and the vote took place the first of October, October 2nd actually. I had many people come up to me and say oh, I voted no on that bridge. Because they meant to vote on the bridge, but they were voting no, which actually meant yes. So we really don't know what the vote was. We do know that the people in Saxman understood the question, because they felt like they were really going to be heavily impacted, they actually passed a resolution at the -- and I will give you this, whereas they felt that the bridge would hinder the free flow of cruise ship traffic into the Ketchikan area, and they rejected -- this was rejecting the F3 Alternative, which was at the time the Preferred Alternative.

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And that was the Saxman City Council. They also voted yes, on Proposition 3, because they did want the bridge built across the Tongass Narrows. They don't want the bridge built on Pennock Island as Norman Jackson, on behalf of the Tongass tribe last night.

The other thing I wanted to talk about a little bit was, the jobs issue. I am speaking for the organization that I told you about, but I also work for an international franchise. And the international franchise that I work for, has just opened a business here in Ketchikan. And they are having quite a bit of success with their business and they'd like to continue to grow that business. And in order for them to do that they're looking forward to having increase cruise ship business in this town.

And my children have been born here. I've been here for 26 years, I came here on a cruise ship actually. And they work in the cruise industry. And so I feel like there are a lot of jobs in this community, in the cruise industry and it is really the growth industry in this community at this time. And anything that's going to stifle the cruise ship industry (2) is not good for the economy of Ketchikan. The company that I work for, although it's an international company, it's owned by the -- the franchise is owned by an Alaskan, and it employs only local people, who live here year round.

One of the things that I -- I thought we were supposed to

be addressing the Draft EIS in these hearings, and so I've been reading on it, it's quite a massive document. And I have been working quite a bit, because this is the tourist season, and everybody's working right now. But I did want to look at this is in the reconnaissance of vessel navigation requirement report. It's on page 6-2, and it talks about the fact that the east channel currently involves passage through a constriction of the channel created by California and Idaho rocks. And the placement of bridge piers in the east channel would add a second point of constriction in the channel, by narrowing the channel width, from approximately 1100 feet, to 550 feet, this second point of constriction would limit maneuvering opportunities in the east channel, and potential groundings and (indiscernible) at other locations within the east channel would increase. So even the F1 Alternative, (55) which is tall enough for the current cruise ships to get under, does create navigation hazards for the -- make it more difficult for them. And I mean -- I'm sure you all read the reports and from what I read, they register a great deal of stress in having to do with those two constrictions. It's scored a four out of five, in terms of problems that it had with that. Okay. Oh, yeah. The other things that I wanted to mention was that I think the people that work on the ferry, the airport ferry do a wonderful job, they are just a great group of guys. They show up all the time, and they're very

reliable, and that ferry is very reliable. And those are jobs, permanent jobs, in the community. Permanent jobs for people who live here all the time. Anything else?

HEARING MONITOR: Okay. And I want to make sure that I get what you want us to put in the record from you.

MS. CAIRNES: Did you want to have any of this business about the ballot languages any of that?

HEARING MONITOR: Anything you wish you put in the record, we'll put in the record.

MS. CAIRNES: Okay. Maybe I should send that to you.

HEARING MONITOR: That would be fine, if you want to add explanation to it, that would be fine.

MS. CAIRNES: Okay. Yeah, because there's three different versions and I only brought two of them with me.

HEARING MONITOR: Okay. That makes sense. I can take these now, right.

MS. CAIRNES: Yes, you can take these now.

(Exhibits N and O admitted)

HEARING MONITOR: Okay. Well thank you very much. And any of this -- this goes for anyone. Can send in additional information, and explanation with things that you want in the record. Thank you. Is there anyone else that wishes to testify at this time. Okay. Then what I'll do is we'll recess once more and we'll reconvene by 10:00, to see if anybody wants to testify before we close the hearing.

(Off record)

HEARING MONITOR: I will ask if there is anybody who wishes to testify, that has not had an opportunity -- that has not testified before. Okay. I'll ask again, is there anyone who wishes to testify, that's not testified before in this hearing.

Seeing that no one does want to testify at this point. It is approximately 10:00 p.m. and so I will remind you that written comments can still be mailed, faxed, emailed, or hand delivered to Reuben Yost, at the address provided. But must be received by October 6th 2003. I would also like to thank our timekeeper, Ms. Carol Snead for her efforts, Ms. Kristen Maines for handling the sign-in table during this two session hearing, and Ms. Judy Zenge our court reporter. I'd also like to thank our panel for their efforts during this hearing, and giving time to come to the hearing in Ketchikan, and listen to all the testimony we have received. Thank you very much for being here. We'll now adjourn the public hearing on the Gravina Access Project, Draft Environmental Impact Statement, thank you for cooperation and participation. We are adjourned.

(Off record)

TRANSCRIBER'S CERTIFICATE

I, JUDY A. ZENGE, hereby certify that the foregoing pages numbered 3 through 48 are a true, accurate, and complete transcript of the Public Hearing on the Gravina Access Project, Draft Environmental Impact Statement transcribed by me from a copy of the electronic sound recording to the best of my knowledge and ability.

_____ _____

Date Judy A. Zenge, Transcriber

DOT&PF Responses to Comments

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-1821
FAX: (907) 465-4414

DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DESIGN & ENGINEERING SERVICES DIVISION
SOUTHEAST REGION - DESIGN

RECEIVED
MAR 11 2004

March 5, 2004

M. Valerio, Chief
Civil Engineering Division
U.S. Coast Guard
Coast Guard Island Building 54-D
Alameda, CA 94501-5100

Re: Gravina Access Project Draft EIS – Responses to Comments

Dear Captain Valerio:

The Alaska Department of Transportation and Public Facilities (DOT&PF) and Federal Highway Administration (FHWA) are in the process of preparing the Final EIS for the Gravina Access Project. We have reviewed the U.S. Coast Guard's comments on the Draft EIS and have revised the document where appropriate. We hope to release the Final EIS soon. The Final EIS will identify Alternative F1 as DOT&PF's and FHWA's preferred alternative.

Because the U.S. Coast Guard is a cooperating agency for this project, we will provide you with a copy of the Final EIS in draft form (i.e., before it is released to the public). In addition, we have attached to this letter a summary of our responses to your agency's comments on the Draft EIS. The Final EIS will include these comments and responses, along with a summary of all other agency and public comments and our response to them.

If you or any of your representatives have any questions or comments on the information provided herein, particularly DOT&PF's and FHWA's selection of Alternative F1 as their preferred alternative, please do not hesitate to contact me at (907) 465-1851. Thank you for your continued participation in the project.

Sincerely,

Jim A. Evensen, P.E.
DOT&PF Project Manager

Attachment

25A-T34LH

cc: Roy Eckert, Manager, Ketchikan Gateway Borough
Steven Reeve, Senior Planner, Ketchikan Gateway Borough
Ketchikan Gateway Borough Assembly and Clerk
Tim Haugh, FHWA
Mark Dalton, HDR Alaska

Attachment

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
1. The DEIS does not adequately address adverse impacts to the Integrated Support Command (ISC) in Ketchikan.	The potential impacts to the USCG station and possible mitigation measures were discussed in meetings between the USCG and DOT&PF. The impacts of the project and mitigation commitments of DOT&PF are described in Sections 4.1.1.6, 4.3.8.1, and 4.25.1.3.
2. Alternative F1 would provide ready access to a considerable portion of the eastern perimeter of the ISC. The ISC would have to install and maintain a new fence line and lighting, increase personnel for security patrols, and enhance its security camera system along this perimeter as a result of Alternative F1.	DOT&PF commits to providing fencing along the roadway embankment adjacent to the USCG property or to continue the USCG fence around the developed area of the property. This and other mitigation measures were discussed in meetings between the USCG and DOT&PF, and are described in Section 4.1.1.6.
3. The proposed alignment of the new bridge access road, which is not completely clear due to the possible inaccuracy of current information and drawings, may impede the USCG's ability to move this magazine to a safe location.	Alternative F1 would not affect the USCG's existing planned location for the magazine. During a coordination meeting USCG staff and DOT&PF, it was determined that the Alternative F1 roadway would meet the separation requirements for the location of such a facility. If Alternative F1 is selected, DOT&PF will coordinate with the USCG during the final design phase to ensure that actual locations of these facilities are compatible. The proposed mitigation measures for impacts to USCG facilities are discussed in Section 4.1.1.6.
4. The location of Alternative F1 would preclude use of the existing firing range because the new roadway would be within the limits of the Surface Danger Zone (SDZ) of the range – this would adversely affect all firing range users (USCG, as well as federal, state, and local law enforcement and public safety agencies).	The DOT&PF recognizes that Alternative F1 would limit current use of the firing rage because the road would be downrange of the existing facility. The DOT&PF is committed to mitigating the downrange hazard by enclosing the existing range to comply with SDZ regulations. The proposed mitigation measures for impacts to USCG facilities are discussed in Section 4.1.1.6.
5. Alternative F1 should provide access to the ISC from the eastern perimeter.	The scope of the Gravina Access Project does not include providing additional access to the USCG Station. The USCG may wish to pursue alternate access to the Station if Alternative F1 were selected.
6. USCG has concerns about storm water drainage and runoff from the new road onto the ISC property with Alternative F1.	DOT&PF will address storm water runoff and treatment during the design phase. A discussion of storm water treatment in roadway design has been added to Sections 4.12 and 4.15. Project construction will require an NPDES permit and Section 401 certification, as described in Section 4.13.
7. USCG has concerns about impacts of construction and traffic noise on residents in the barracks and housing on the upper portion of the base with Alternative F1.	As stated in Section 4.25.9.1, the project will be in compliance with local ordinances for timing of construction activities to minimize noise impacts to residential areas. Section 4.26.7.3 provides noise

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
	model results for Alternative F1, which show no impact from traffic noise at a distance greater than 46 feet from centerline of the new alignment. The closest USCG residential facility is greater than 750 feet from the centerline of Alternative F1.
8. Utilities may be affected by possible relocation of water line paralleling South Tongass Avenue with Alternative F1 or F3.	Section 4.25.20 has been revised to address possible interruptions in utility service during construction.
9. Acquisition of right-of-way from ISC for Alternative F1 would require coordination and approval from Bureau of Land Management.	All property acquisition will be done in accordance with all required regulations.
10. Alternative F3 would have less impact on ISC than Alternative F1, but would result in increased traffic on South Tongass Avenue, which would affect access to upper and lower portions of the ISC.	Alternative F3 would result in movement of approximately an additional 330 vehicles past ISC during the peak hour (i.e., less than six additional cars per minute) in 2025, as compared with No Action. With installation of a traffic signal at the Alternative F3/Tongass Avenue intersection, when traffic levels warrant, as described in Section 4.26.4.3, traffic delays and congestion associated with Alternative F3 traffic would be reduced.
11. Additions (four) to the distribution list.	These contacts have been added to the EIS distribution list (see Chapter 6).

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

DESIGN & ENGINEERING SERVICES DIVISION
SOUTHEAST REGION – DESIGN

FRANK H. MURKOWSKI, GOVERNOR

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-1821
FAX: (907) 465-4414

March 2, 2004

Judith Bittner, State Historic Preservation Officer
State of Alaska Department of Natural Resources
Division of Parks and Outdoor Recreation, Office of History and Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501

Re: Gravina Access Project Draft EIS – Responses to Comments

Dear Ms. Bittner:

The Alaska Department of Transportation and Public Facilities (DOT&PF) and Federal Highway Administration (FHWA) are in the process of preparing the Final EIS for the Gravina Access Project. We have reviewed your agency's comments on the Draft EIS and have revised the document where appropriate. We hope to release the Final EIS soon. The Final EIS will identify Alternative F1 as DOT&PF's and FHWA's preferred alternative.

As a courtesy, and in the interest of continued communication with your agency throughout the development of the EIS, we are providing you with a summary of our responses to your agency's comments on the Draft EIS (see the attached table). The Final EIS will include these comments and responses, along with a summary of all other agency and public comments and our responses to them.

If you have any questions or comments on the information provided herein, particularly DOT&PF's and FHWA's selection of Alternative F1 as their preferred alternative, please do not hesitate to contact me at (907) 465-1851. Thank you for your continued participation in the project.

Sincerely,

James A. Evensen

James A. Evensen, P.E.
DOT&PF Project Manager

Attachment

25A-T34LH

cc: Stefanie Ludwig
Tim Haugh, FHWA
Mark Dalton, HDR Alaska

Attachment

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
Department of Natural Resources – Office of Parks and Outdoor Recreation – Office of History and Archaeology	
1. SHPO will defer concurrence on DOT&PF's determination of effect until the preferred alternative has been selected and final project plans are available for review. An intensive-level archaeological survey may be warranted once the area of potential effect has been more narrowly defined.	FHWA has transmitted a letter to the SHPO regarding Alternative F1 (Preferred) and its realignment over East and West Channels. These minor shifts in alignment, meant to improve ship navigation, moved the alignment away from KET-774 and KET-775, and the letter will present FHWA's finding of "no historic properties affected" for the preferred alternative. FHWA and DOT&PF commit to sending an archaeologist into the field during design once the alignment is staked to help ensure no sites have been overlooked.

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-1821
FAX: (907) 465-4414

DESIGN & ENGINEERING SERVICES DIVISION
SOUTHEAST REGION – DESIGN

March 2, 2004

Willie R. Taylor, Director
U.S. Department of the Interior
Office of Environmental Policy and Compliance
Mail Stop 2340, 1849 C Street NW
Washington, D.C. 20240

Re: Gravina Access Project Draft EIS – Responses to Comments

Dear Mr. Taylor:

The Alaska Department of Transportation and Public Facilities (DOT&PF) and Federal Highway Administration (FHWA) are in the process of preparing the Final EIS for the Gravina Access Project. We have reviewed your agency's comments on the Draft EIS and have revised the document where appropriate. We hope to release the Final EIS soon. The Final EIS will identify Alternative F1 as DOT&PF's and FHWA's preferred alternative.

As a courtesy, and in the interest of continued communication with your agency throughout the development of the EIS, we are providing you with a summary of our responses to your agency's comments on the Draft EIS (see the attached table). The Final EIS will include these comments and responses, along with a summary of all other agency and public comments and our responses to them.

If you have any questions or comments on the information provided herein, particularly DOT&PF's and FHWA's selection of Alternative F1 as their preferred alternative, please do not hesitate to contact me at (907) 465-1851. Thank you for your continued participation in the project.

Sincerely,

James A. Evensen, P.E.
DOT&PF Project Manager

Attachment

cc: Tim Haugh, FHWA
Mark Dalton, HDR Alaska

25A-T34LH

Attachment

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
U.S. Department of the Interior:	
1. The FEIS should evaluate alternatives that potentially minimize harm to Section 4(f) resources: - include a chapter titled "Section 4(f) Evaluation" in the FEIS - include maps depicting Section 4(f) properties and resources - proximity of the project public recreational lands and numerous historic and archeological properties may affect Section 4(f) resources	None of the alternatives would affect Section 4(f) resources. New Sections 3.1.3 and 4.1.3 were added to address Section 4(f) properties. Because there is no Section 4(f) property used by an alternative or even close to an alternative, there is no need for a "Section 4(f) Evaluation" as a chapter of the EIS or as a separate document. A new figure, Fig. 4.1, shows 4(f) properties in relation to the alternatives. An explicit determination has been added to clarify the status of Section 4(f) lands: "FHWA has determined that no land would be taken from any park, recreation area, wildlife refuge, or historic site subject to Section 4(f) and that a Section 4(f) evaluation therefore is not necessary for the project."
2. The USFWS recommends that the EIS include an analysis of important and productive habitat near Lewis Reef, which would be affected by Alternative G2.	Additional detailed discussions of the habitat near Lewis Reef have been included in the EIS in Sections 3.15.3.1, 3.15.4.2, 3.15.7, 4.15.3.7, and 4.15.3.8.
3. If a ferry is selected as the preferred alternative, DOI recommends Alternatives G3 and G4 be given preference over G2 to avoid impacts to Lewis Reef habitat.	This comment is noted.

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
DESIGN & ENGINEERING SERVICES DIVISION
SOUTHEAST REGION – DESIGN

FRANK H. MURKOWSKI, GOVERNOR
6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-1821
FAX: (907) 465-4414

March 2, 2004

Judith Lee, Manager
U.S. Environmental Protection Agency
Region 10 Geographic Implementation Unit
1200 Sixth Avenue, ECO-088
Seattle, WA 98101

Re: Gravina Access Project Draft EIS – Responses to Comments

Dear Ms. Lee:

The Alaska Department of Transportation and Public Facilities (DOT&PF) and Federal Highway Administration (FHWA) are in the process of preparing the Final EIS for the Gravina Access Project. We have reviewed your agency's comments on the Draft EIS and have revised the document where appropriate. We hope to release the Final EIS soon. The Final EIS will identify Alternative F1 as DOT&PF's and FHWA's preferred alternative.

As a courtesy, and in the interest of continued communication with your agency throughout the development of the EIS, we are providing you with a summary of our responses to your agency's comments on the Draft EIS (see the attached table). The Final EIS will include these comments and responses, along with a summary of all other agency and public comments and our responses to them.

If you have any questions or comments on the information provided herein, particularly DOT&PF's and FHWA's selection of Alternative F1 as their preferred alternative, please do not hesitate to contact me at (907) 465-1851. Thank you for your continued participation in the project.

Sincerely,

James A. Evensen, P.E.
DOT&PF Project Manager

Attachment

25A-T34LH

cc: Jonathan Freedman, EPA
Tim Haugh, FHWA
Mark Dalton, HDR Alaska

Attachment

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
Environmental Protection Agency	
1. DOT&PF and FHWA should carefully consider the merits of Alternative G4 (or some variation) in light of the high project costs and tenuous nature of funding to construct Alternative F1, and the ability to meet the purpose and need for the project with significantly lower impacts.	DOT&PF and FHWA have carefully considered the merits of all alternatives.
2. The DEIS seems to emphasize the convenience of a bridge (relative to a ferry) rather than the improvements to access that all of the alternatives (including ferries) offer.	The EIS presents all alternatives and impacts fairly and comprehensively. One element of the project's Purpose and Need statement is the need for improved convenience of access, which is, in part, a function of the availability of 24-hour per day, unrestricted access. While ferry alternatives help to improve convenience of access by offering additional access points and/or improved travel time, they do not provide 24-hour per day access and travel is subject to scheduled ferry service.
3. The beneficial impacts of creating a "hard link," as with Alternative F1, should be clearly identified in the EIS and contrasted with the lower impact and cost benefits of Alternative G4.	The EIS presents all alternatives and impacts fairly and comprehensively.
4. The EIS suggests that selection of a ferry alternative would result in unsafe conditions after normal ferry operating hours. The EIS should identify and evaluate options for dealing with emergency situations when ferries would not be running to complete the assessment of the ferry alternatives.	The existing conditions of Fire Protection and Emergency Response are discussed in Section 3.3.3.4. Section 4.3.3.3 indicates that Alternatives G2, G3, and G4 would result in no change during the hours the ferry is not in operation. Alternatives G2, G3, and G4 would all have a similar response system as the existing condition, although Alternatives G2 and G3 offer different access locations which would improve emergency response time for areas close to these alternatives. Text has been added to Sections 4.3.3.1 and 4.3.3.3 to reflect this.
5. Section 4.26.2.4 concludes that Alternatives G2, G3, and G4 would "have adverse impacts on recreation in the project area." This is not supported by information presented in the EIS.	The text in Section 4.26.2.4 has been revised to show that the ferry alternatives are not as beneficial as the bridge alternatives, but are better than the No Action Alternative.
6. It may be beneficial to consider a phased approach to accessing Gravina Island that would first include construction of some roads on the island that would be served by improved ferry service. Should sufficient demand for greater access and development result, bridge access could be reconsidered at a later date.	The difficulty with such an approach is that none of the build alternatives have inconsequential cost. To build a ferry alternative as the first phase of improving access would seriously limit the ability to construct another access option in the future. We have added a discussion of the phased approach concept in Section 2.3.4.
7. The EIS should be augmented with maps that depict information from relevant planning efforts related to development activities on Gravina Island and reflect island-wide information and assessments (e.g., maps contained in the Gravina Island Plan). These should be referred to in the	Maps from the Borough's *Gravina Island Plan* (final public review draft, December 2003) have been incorporated into the discussion of secondary impacts (Section 4.26). The *Gravina Island Plan Citizen's Guide to Public and Private Decision-making* and the final public review drafts of the

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
further development of indirect and cumulative effects.	Gravina Island area plans for Clam Cove and Blank Inlet, Central Gravina and Airport Reserve, and North Gravina (i.e., the only Gravina Island Plans available at this time) are appended to the EIS (Appendix S).
8. More specific information is needed to clearly inform the public and the decision maker on the impacts from future development on Gravina Island, as presented in Table 4-16.	Section 4.26 (Secondary Impacts) draws its impact analysis from the amount of development likely to occur on Gravina Island and Pennock Island as a result of each alternative (determined in the *Gravina Access Project Traffic Projections Technical Memorandum*) and the locations of future development identified by the Borough in the Gravina Island Plan (Appendix S). The impacts of future development are described in Section 4.26 at a level of detail commensurate with the planning work that has been done for Gravina Island.
9. Provide maps showing the distribution of development on an island-wide basis along with attendant infrastructure, such as roads. Show the proximity of the development to important natural resources, such as important terrestrial and aquatic habitat, EFH, and wetlands. This type of information should then be utilized to quantify some of the expected effects.	Maps from the Borough's *Gravina Island Plan* have been incorporated into the discussion of secondary impacts (Section 4.26). The locations of future development as depicted by the Borough in the Gravina Island Plan relative to "important natural resources" can be reviewed in the area plans, which have been appended to the EIS (Appendix S).
10. The EIS should include maps of the following: - potential road network on Gravina Island - location and access to timber and potential commercial timber harvesting - location and access to minerals and potential mining activities - location of recreational destinations - subsistence areas - development in the Airport Reserve	Maps showing the requested information are provided in the *Gravina Island Plan Citizen's Guide to Public and Private Decision-making* and the plans for the North Gravina, Central Gravina and Airport Reserve, and Clam Cove and Blank Inlet areas (final public review drafts), which have been appended to the EIS (Appendix S).
11. The EIS should discuss whether water-based facilities would be developed to support planned growth and where future facilities supporting water-based transport (such as barge traffic) would likely be constructed. Effects from such facilities on marine and land-based resources and marine traffic should be assessed and included in the EIS.	The Borough has identified potential locations for water-based facilities in its Gravina Island area plans for the North Gravina, Central Gravina and Airport Reserve, and Clam Cove and Blank Inlet areas (final public review drafts), which have been appended to the EIS (Appendix S). Key components of these plans are illustrated in Figure 4.3. Section 4.26 has been revised to address water-based facilities on Gravina Island that could be developed under each of the development scenarios, as they correspond to the alternatives, and the associated impacts.
12. The EIS should include a map showing future development, roads, and other infrastructure expected on Pennock Island and an evaluation of these environmental effects of such development.	There is currently no land use plan for Pennock Island and, thus, it is not possible to depict reasonably foreseeable development on Pennock Island. Section 4.26 evaluates the potential environmental effects of future development based solely on the amount and type of future

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
	development projected in the *Gravina Access Project Traffic Projections Technical Memorandum.*
13. The EIS should be revised to clearly indicate how the Spine Road would provide access to Borough lands, a primary element of the purpose and need statement, and why it is the only option being considered.	In order to meet the purpose and need, the DOT&PF, in consultation with FHWA, determined that all build alternatives should provide access to the developable land north of the Airport Reserve zone, consistent with the road planned by the Borough. The rationale for the spine road terminus at the boundary of the Airport Reserve and Airport Development lands is explained in Section 2.4.4. The boundary between these lands is shown in Figure 3.2. A reference to this figure has been added to Section 2.4.4 to clarify the location.
14. The EIS should explain why the Spine Road ends where currently proposed and how this meets FHWA requirements for logical termini.	Section 2.4.4 includes an explanation of the spine road and its terminus. FHWA determined this to be a logical terminus because it connects with the planned Borough road and Airport Development lands.
15. The EIS should identify where growth on Revillagigedo Island would occur in the absence of improved access (i.e., under No Action), and characterize the direct and indirect effects of that growth.	The DOT&PF consulted with the Borough Planning Department to identify growth areas under the No Action Alternative. These areas and potential impacts are described in Section 4.26
16. The EIS should include an evaluation of alternatives that complies with the requirements of 404(b)(1) guidelines and demonstrates that the preferred alternative represents the least damaging practicable alternative.	The EIS contains a draft 404(b)(1) evaluation in Appendix L that was developed in consultation with the U.S. Army Corps of Engineers (COE).
17. The EIS should identify the specific streams and creeks that are expected to be impacted by storm water runoff and actions that would be taken to minimize such discharges.	A discussion of specific creeks and streams that could potentially be impacted by project alternatives has been added to Section 4.12 (Water Quality Impacts). These streams are depicted in Figure 3.15. Many of the creeks on Gravina Island are not named and are simply referred to as "unnamed smaller creeks." Final roadway and bridge design would include a storm water treatment system to minimize the effects of runoff. Alaska Department of Environmental Conservation (ADEC) would approve the storm water treatment system under their plan review for a non-domestic wastewater treatment system for issuance of a non-domestic wastewater disposal permit. Minimization of the impacts from storm water runoff will be addressed in these approvals. In addition, the project design would maintain natural stream flow conditions when possible, and culverts would be appropriately sized and placed to accommodate storm water flow. A complete list of Best Management Practices and mitigation measures that would be employed to minimize impacts to water quality is provided in Section 4.12.
18. The EIS should provide information indicating where construction activities would take place, their	A discussion on the approximate duration of construction activities for specific water body

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
proximity to surface waters (particularly those of high value), the duration of these activities or the degree of degradation of water quality that would result in these water bodies. The EIS should also identify specific actions that would be taken to avoid or minimize these effects.	modification activities was added to Section 4.25.12. Specific construction timeframes for blasting, drilling, and dredging activities for Alternatives F3, G2, G3, and G4 can be found in the EFH Assessment (Appendix O). Refer to Section 4.25.10 for a discussion of water quality impacts due to construction activities, and mitigation measures (including BMPs) that will be implemented to reduce or avoid impacts to water quality. The construction contractor would be responsible for developing erosion and sediment control and storm water pollution prevention plans to meet ADEC and EPA requirements of the Clean Water Act (i.e., Section 401 certification and NPDES permits). Figures 2.6 through 2.19 show locations of piers, ferry terminals, dredging, and roads.
19. The specific BMPs to be employed to avoid or minimize specific effects on water quality and marine habitat should be identified in the EIS. An erosion and sediment control plan and spill prevention plan should be developed and included in the EIS.	Descriptions of specific BMPs that could be used during project development have been added to Sections 4.12 and 4.25.10. The erosion and sediment control plan and spill prevention plan would be tailored specifically to the selected alternative and incorporated into the permit process (which will be reviewed by COE and EPA). Specific erosion and sediment control and spill prevention plans are not part of the scope of the EIS, nor are they appropriate to include in an EIS.
20. The EIS should specifically identify terrestrial and aquatic subsistence resources that would be directly impacted by the project alternatives, explain the nature and extent of those impacts, and the significance.	The EIS has been updated to include a discussion of federal and state subsistence regulations (see Section 3.3.7) and the subsistence resources that could be impacted by the build alternatives (see Section 4.3.7). The document has been developed consistent with FHWA policy and guidance concerning impacts on subsistence users and resources.
21. The EIS should be revised to present predicted results and conclusions along with a characterization of their significance.	The document has been developed consistent with FHWA regulations for implementing NEPA (see 23 CFR 771) and associated policy and guidance. Impacts are quantified whenever possible, described qualitatively where quantification wasn't appropriate, and presented in a comparative format to help decision-makers and the public understand relative severity of impacts.
22. The draft EIS presents no evidence of consultation with Tribes, consistent with EO 13175. Further development of the EIS and project should be conducted in consultation and coordination with governments of potentially affected tribes and the results of these consultations be documented and reported in the EIS.	The project has been conducted in compliance with Executive Order 13175. Section 7.1.4.1 indicates Native organizations were invited to initial scoping meetings and Section 7.1.4.2 indicates, under "Meetings with Government Agencies," that Native groups and governments were consulted. Table 7-1 identifies scoping activities related to tribal organizations on 2/1/00, 2/7/00, 4/13/00, 4/25/00, 2/8/02 (x2), and 7/12/02. Section 3.21indicates tribal consultation pertaining to historical and archeological resources. Secondary subsistence

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
	impacts are addressed in Section 4.26.2. Indication of tribal responses has been better documented in Sections 7.1.4.2, 7.2.1, and 7.2.1.4.
23. The EIS should be revised to more accurately reflect the funding authorized and available for current evaluation activities and, if known, for implementation of the identified access solution.	The EIS describes the available funding in the Summary, and in Sections 1.2 and 2.1. The language refers directly to the language in TEA-21 authorizing the project. The EIS also states in the Summary that "additional funding would be necessary to construct any of the build alternatives." Additional funding sources have not been identified.
24. Section 4.7.2.4 should include a description of the magnitude and significance of the reported increased risk of allisions and groundings for cruise ships.	This information is available in the EIS Appendices H and J, and has been summarized in Sections 4.7.2.2, 4.7.2.4, and 4.7.2.5.
25. The EIS (Section 4.7.2.4) identifies additional evaluation related to realigning the bridges and evaluating the environmental effects as mitigation for increased risks to cruise ships. Such evaluation is not mitigation and should be included as analyses for the EIS because they have direct implications on the decision to be rendered.	The design modification to Alternative F1 to minimize its impacts on marine navigation has been added to the description of this alternative in the Summary and Section 2.1.2.5. For those resources where the design modification of Alternative F1 materially changes the results of the impact analysis, a revised analysis has been provided in Chapter 4. The realignment of Alternative F3 is treated as mitigation for adverse impacts to navigation in the Final EIS. Similar to Alternative F1, for those resources where the realignment of Alternative F3 would materially change the results of the impact analysis, a revised analysis has been provided.
26. Section 4.7.3.7 indicates that additional analyses of bridge design for wind effects would need to be conducted. The costs presented in the EIS should reflect these analyses and potential design changes.	The costs considered in the EIS account for any additional analyses or design changes that would be required for wind effects.
27. The EIS should include information related to weather conditions that would restrict operations of the ferry alternatives.	Descriptions of weather impacts on ferry operations have been added to Section 4.3.5 Accessibility.

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

DESIGN & ENGINEERING SERVICES DIVISION
SOUTHEAST REGION - DESIGN

FRANK H. MURKOWSKI, GOVERNOR

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-1821
FAX: (907) 465-4414

RECEIVED
MAR 05 2004

March 2, 2004

Mike Salazar, Mayor
Ketchikan Gateway Borough
344 Front Street,
Ketchikan, AK 99901

Re: Gravina Access Project Draft EIS – Responses to Comments

Dear Mr. Salazar:

The Alaska Department of Transportation and Public Facilities (DOT&PF) and Federal Highway Administration (FHWA) are in the process of preparing the Final EIS for the Gravina Access Project. We have reviewed the Ketchikan Gateway Borough's comments on the Draft EIS (provided by the Borough's Planning Commission) and have revised the document where appropriate. We hope to release the Final EIS soon. The Final EIS will identify Alternative F1 as DOT&PF's and FHWA's preferred alternative.

Because the Ketchikan Gateway Borough is a cooperating agency for this project, we will provide you with a copy of the Final EIS in draft form (i.e., before it is released to the public). In addition, we have attached to this letter a summary of our responses to your agency's comments on the Draft EIS. The Final EIS will include these comments and responses, along with a summary of all other agency and public comments and our responses to them.

If you or any of your representatives have any questions or comments on the information provided herein, particularly DOT&PF's and FHWA's selection of Alternative F1 as their preferred alternative, please do not hesitate to contact me at (907) 465-1851. Thank you for your continued participation in the project.

Sincerely,

James A. Evensen

James A. Evensen, P.E.
DOT&PF Project Manager

25A-T34LH

cc: Roy Eckert, Manager, Ketchikan Gateway Borough
Steven Reeve, Senior Planner, Ketchikan Gateway Borough
Ketchikan Gateway Borough Assembly and Clerk
Tim Haugh, FHWA
Mark Dalton, HDR Alaska

Attachment

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
KETCHIKAN GATEWAY BOROUGH – PLANNING COMMISSION	
1. The EIS should show how the preferred Pennock alternative could be designed to accommodate a future project that would enable traffic to bypass the downtown core (i.e., extension of new 3rd Avenue bypass along Schoenbar Road to bridgehead near Coast Guard base).	While it is not in the scope of the Gravina Access Project to build the bypass road, DOT&PF has verified that neither Alternative F1 nor F3 would preclude the future of the planned bypass connection. The planned road has been added to Figure 3-3.
2. Conceptual design alternatives and cost estimates for access to and from Pennock Island should be incorporated into the FEIS.	While it is not in the scope of the Gravina Access Project to provide access to Pennock Island, DOT&PF has been in close consultation with the Ketchikan Gateway Borough Planning Department regarding future potential development on Pennock Island with the selection of Alternative F1 or F3. In addition, the Ketchikan Gateway Borough Planning Department has indicated they intend to complete a Pennock Island plan similar to the recently completed Gravina Island Plan, with the selection of Alternative F1 or F3. Access to Pennock Island is contingent on the Borough's completion of land use planning for the area.

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

DESIGN & ENGINEERING SERVICES DIVISION
SOUTHEAST REGION – DESIGN

FRANK H. MURKOWSKI, GOVERNOR

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-1821
FAX: (907) 465-4414

March 2, 2004

Joyce Wood, NEPA Coordinator
National Oceanic and Atmospheric Administration
Program Planning and Integration
1315 East-West Highway, SSMC-3
Silver Spring, MD 20910

Re: Gravina Access Project Draft EIS – Responses to Comments

Dear Ms. Wood:

The Alaska Department of Transportation and Public Facilities (DOT&PF) and Federal Highway Administration (FHWA) are in the process of preparing the Final EIS for the Gravina Access Project. We have reviewed your agency's comments on the Draft EIS and have revised the document where appropriate. We hope to release the Final EIS soon. The Final EIS will identify Alternative F1 as DOT&PF's and FHWA's preferred alternative.

As a courtesy, and in the interest of continued communication with your agency throughout the development of the EIS, we are providing you with a summary of our responses to your agency's comments on the Draft EIS (see the attached table). The Final EIS will include these comments and responses, along with a summary of all other agency and public comments and our responses to them.

If you have any questions or comments on the information provided herein, particularly DOT&PF's and FHWA's selection of Alternative F1 as their preferred alternative, please do not hesitate to contact me at (907) 465-1851. Thank you for your continued participation in the project.

Sincerely,

James A. Evensen, P.E.
DOT&PF Project Manager

Attachment

25A-T34LH

cc: Michael Payne, Protected Resources, NOAA Fisheries
Katharine Miller, Habitat Conservation, NOAA Fisheries
Tim Haugh, FHWA
Mark Dalton, HDR Alaska

Attachment

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
National Oceanic and Atmospheric Administration – Office of Program Planning & Integration	
1. The Essential Fish Habitat (EFH) Assessment (Appendix O) acknowledges that the culvert proposed for crossing the anadromous stream southeast of Government Creek would result in a direct loss of EFH, but does not explain why a culvert is being proposed instead of a bridge.	A field evaluation of all stream crossings in the project area was conducted and it was determined at the time of that field evaluation that this unnamed stream southeast of Government Creek was small and that fish passage could be maintained through the use of a Tier 1 Crossing. The discussion in the EFH Assessment (Appendix O, Section 4) and the EIS (Section 4.15.4.4) has been revised to state that, in accordance with the memorandum of agreement between DOT&PF and ADF&G, the culvert crossing would be designed to a Tier 1 stream simulation design level and would maintain natural stream conditions such as flow, substrate, and existing fish passage efficiency. There would be no permanent loss of EFH resulting from the culvert crossing. Figure 8 in the EFH Assessment shows a conceptual drawing of the culvert structure.
2. The DEIS provides the amount of eelgrass and kelp that will be impacted only for the channel modification activities in Alternative F3.	Acreages of impacts to kelps and eelgrass for all alternatives have been specified and added to Sections 4.15.1.2, 4.15.3, 4.15.3.6, and 4.15.4.4 of the EIS, and to the EFH Assessment (Appendix O, Section 1, Table 1-1).
3. Table 1-1 (Appendix O) should specify acreage of impacts by habitat type of eelgrass, kelp, and wetlands. The table shows a wetlands category, but only a general "marine" category for all other EFH.	Table 1-1 of the EFH Assessment (Appendix O) has been revised to more fully characterize laminarian kelp and eelgrass impacts for each alternative.
4. The DEIS lacks site-specific information on the type and extent of EFH in the project area and the potential impacts of each of the alternatives on EFH.	The type and extent of EFH in the project area are discussed in Section 3.15.4.4 of the EIS and impacts to EFH are discussed in Section 4.15.4.4. Appendix O provides more detailed descriptions of impacts to EFH.
5. The DEIS does not link site-specific analyses of environmental conditions and the type and extent of fish habitat at the proposed location of each alternative to the magnitude and extent of actions associated with each alternative (pile driving, dredging, etc.).	Sections 4.15.4.4 and 4.25.12.2 have been revised to provide more detailed discussions of EFH impacts from each alternative. Also see Appendix O.
6. The DEIS does not identify the amount of dredging that may be required, the number of pilings that would need to be placed, or the amount of in-water blasting that might be required under each of the alternatives.	Some of the information requested has not been determined for the alternatives. At this stage of project development, the preferred alternative does not require in-water blasting. If blasting is determined to be necessary, then the issue will be revisited. Blasting would be conducted consistent with the state blasting standard. If required, blasting will be performed such that ground vibration (particle velocity) does not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) does not exceed 2.7 pounds per square inch. The project will employ monitoring devices to ensure adherence to these standards (Appendix O Chapter 5.0 and EIS Section 4.25.12.3). The amounts of dredging required for Alternatives G2, G3, and G4 and potentially required for

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
	Alternative F3 are included in EIS Section 4.15.4.4 and EFH Assessment (Appendix O), Section 4. Section 4.0 of the EFH Assessment discusses proposed in-water work requirements including blasting, dredging, drilling, and pile driving. Refer to NOAA Fisheries comment 26 for in-water blasting response.
7. The proposed locations of pile driving, dredging, and blasting are not identified and no discussion of EFH within the impacted areas is provided.	Proposed locations for piers (and associated drilling), dredging, and blasting are approximated for all alternatives. Preliminary bridge and pier foundation locations are shown in Figures 2.6 – 2.11 and 2.17 – 2.19. Refer to the EFH Assessment (Appendix O) for potential dredging and blasting locations for Alternative F3. A more detailed discussion of EFH in the proposed dredging and blasting areas for Alternatives F3, G2, G3, and G4 is located in Section 4 of the EFH Assessment. A more detailed discussion of EFH in the area of drilling for pilings is located in EFH Assessment, Section 4.0.
8. Without more specific information on the particle size of the substrate being dredged and the currents in the project area, the conclusion that the impact of dredging on biota will be minimal appears to be largely conjecture.	Discussion of substrate to be dredged and temporary impacts to the currents in the project area are included in Section 4.0 of the EFH Assessment (Appendix O).
9. The DEIS needs to identify the scope and extent of potential impact to EFH from pile driving, dredging, blasting, and other activities; the probable locations of these activities; the environmental conditions (currents, substrates, etc.) in the vicinity of these activities, and the EFH that could be affected.	Sections 4.15.4.4 and 4.25.12.2 have been revised to include more discussion of potential impacts on EFH to reflect additional details as requested in NOAA Fisheries comments 4 – 8.
10. Conclusions regarding construction and operational impacts on EFH should be provided for each alternative.	Construction and operational impacts are discussed in the EFH Assessment (Appendix O, Section 4.0, 18). In accordance with a November 3, 1999, DOT&PF and NMFS agreement on EFH consultations (EFH Assessment Attachment A) for projects involving an EIS, DOT&PF, on behalf of the FHWA, has determined that this project may cause permanent and temporary adverse effects on EFH (Appendix O).
11. The revised EIS should include detailed information on the activities that may affect marine mammals and should differentiate the magnitude of the effects among alternatives.	Sections 4.15.4.1, 4.25.12, and 4.25.15 have been revised to reflect that the potential for impact is greatest during construction. Also refer to Marine Environment Impact Assessment Technical Memorandum (Appendix N) for a discussion of impacts to marine wildlife. Mitigation measures detailed in Section 4.25.12 include provisions for monitoring marine mammal activity and construction work windows to avoid construction activity when these animals are present.
12. The EIS should state how construction impacts or other associated project activities that may result in harassment of marine mammals (as defined at 50 CFR 216.3) would be mitigated.	A discussion of construction impacts on marine mammals and mitigation measures is included in Sections 4.25.12.3 and 4.25.15. These sections recognize there could be harassment of marine mammals (as defined at 50 CFR 216.3) if certain activities took place while mammals were present, but that measures to avoid harassment of marine mammals would be implemented. It is also noted in the text that an Incidental Harassment Authorization (IHA) could be

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
	required if impacts could not be avoided. The measures to avoid harassment of marine mammals are described in Section 4.25.12.3.
13. If disruption of marine mammal behavior (such as feeding or migration) cannot be avoided, Section 101(a)5 of the Marine Mammal Protection Act contains provisions for obtaining a permit authorizing harassment of marine mammals incidental to specific activities.	The project team discussed permit authorization with Ken Hollingshead of NMFS. Section 4.25.15 contains language that recognizes that there could be harassment of marine mammals (as defined at 50 CFR 216.3) if certain activities occurred while mammals were present and that an Incidental Harassment Authorization could be required if impacts could not be avoided.
14. More detailed information on the length of the construction period for each alternative is necessary before the impacts to marine mammals can be adequately assessed.	A discussion on the approximate duration of construction activities for specific water body modification activities was added to Sections 4.25.12.3 and 4.25.15. In addition, specific construction timeframes for blasting, drilling, and potential dredging activities for Alternative F3 can be found in the EFH Assessment (Appendix O). Refer to Appendix N for additional information on impacts to marine mammals.
15. The DEIS should be revised to contain more in-depth information on the population status and trends of marine mammals that occur in the project area.	Discussion of the status and trends of marine mammals that occur within the project area are addressed in Section 3.15.4.1. For status and trends of threatened and endangered species, see Section 3.20. Information for status and trends was obtained, in part, from the NOAA Fisheries' Stock Assessment Reports.
16. FHWA should request consultation with NMFS under Section 7 of the ESA.	DOT&PF sent a biological assessment that includes status and trend information for listed species in the project area, as well as a finding that the project would not likely have an adverse effect on threatened and endangered species, to Brandee Gerke at NMFS. She generally agreed with the format, content, and finding of the biological assessment. DOT&PF has sent a letter to NMFS dated January 26, 2004 requesting concurrence that the project is not likely to result in an adverse effect on T&E species.
17. If adverse effects to listed species are identified, NMFS and FHWA may try to eliminate those effects by revising the proposed action.	This comment is noted, and no action is required at this time.
18. Adverse effects on listed species may be avoided by the use of seasonal work windows and observers to monitor the presence of listed species and suspended action until the animals have cleared the area.	See response to NOAA Fisheries comment 11, above.
19. The DEIS needs to be revised to include information on the approximate number of Steller sea lions in order to adequately assess the impacts of the proposed action on this species and to facilitate the consultation process.	Refer to Sections 3.15.4.1 and 3.20.2 for a discussion of Steller Sea Lion population status in the project area.
20. The DEIS should be revised to include the following humpback whale information: - the International Whaling Commission (IWC) first protected the species from commercial whaling in 1965 - they were listed as endangered under the ESA	The EIS has been revised to include the additional humpback whale information (Section 3.20.1).

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
in 1973 - commercial whaling of humpback whales in the North Pacific ceased in 1965 with protection from the IWC.	
21. The DEIS should provide additional discussion of the need for proposed fill in Government Creek (i.e., why is it only required for Alternatives G2, G3, and G4 if all alternatives have the same roadway crossing of Government Creek?).	The statement that all alternatives would cross Government Creek and require fill in Government Creek is not accurate. Alternatives C3(a), C3(b), C4, D1, G2, and G4 would not cross Government Creek. Alternatives F1, F3, and G3, approaching the airport from the south, would cross Government Creek using a clear span bridge to avoid fill and EFH impact. All eight build alternatives would require fill in the edge of the lowermost segment of the Government Creek estuary, which is a separate issue. The EIS has been revised to clarify these impacts. See Sections 4.15.1.2; 4.15.1.3, 4.15.1.4, 4.15.4.2, and 4.15.4.3.
22. The DEIS does not indicate the type of pile driving equipment that is proposed for use, number of piles to be driven under the various alternatives, the depth to which the piles will be driven, the amount of time needed to drive the piles, or the nature of the substrate into which the piles will be driven. No mitigation is proposed for adverse impacts to EFH from pile driving.	All alternatives may require limited pile driving to penetrate any existing sediment in the area and enable the pile to bear on or within rock. In these locations, a vibratory hammer would be used to advance the steel pile through the existing sediment until it reaches bedrock, and then reverse rotary drilling would be employed to penetrate the rock and/or install the piling or rock anchors in the rock formation (see Section 4.15.4.4). . Table 4-1 of the EFH Assessment and Section 4.15.4.2 of the EIS identify the number of bridge piers required for each alternative. Refer to the EFH Assessment (Appendix O, Section 4.0) for descriptions of the effects of pile driving and drilling piles on EFH. The following conservation recommendations will be followed with respect to pile driving: - A vibratory hammer would be used to drive steel piles instead of an impact hammer. - Piles should be driven during low tide when in intertidal and subtidal areas. - As applicable, a smaller hammer would be used or use of a hydraulic hammer would be employed to reduce the impact force. - All pile driving activities would be conducted during the winter (currently anticipated between November 1st and February 28th).
23. Impacts to EFH from pile driving need to be evaluated based on - size and force of hammer strike - distance of fish from pile - depth of water around the pile - bottom substrate composition and texture - size and species of fish in the project area	The DEIS discussed use of an impact hammer for pile driving. This will not be necessary. A vibratory hammer will be used, if needed, to advance piles through soft sediments to rock. A reverse rotary drill will be used to drill shafts for piles into rock. Therefore the EIS does not discuss the size and force of hammer strike. The exact locations, depth of water, and bottom surface at piling locations will not be known until design. Fish habitat is assumed in proximity to all piers and in-water work, and all bridge alternatives involve piers both in shallow and deeper waters. The EIS in Section 4.15.4.4 and the EFH Assessment address the types of fish and

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
	habitats likely to be found in the vicinity of the various alternatives and the impacts of the alternatives.
24. Consider the provided list of EFH conservation measures for pile driving for all alternatives (five items listed).	The referenced conservation measures have been considered and applicable recommendations have been added to the EFH Assessment (Appendix O, Section 5). The following conservation recommendations will be followed with respect to pile driving: - A vibratory hammer would be used to drive steel piles instead of an impact hammer. - Piles should be driven during low tide when in intertidal and subtidal areas. - A bubble curtain will be used to surround the pile to reduce sound pressure levels. - As applicable, a smaller hammer will be used or use of a hydraulic hammer will be employed to reduce the impact force. - All pile driving activities will be conducted during the winter (between November 1st and February 28th).
25. Consider the provided list of marine mammal conservation measures for pile driving for all alternatives (four items listed).	The provided list of marine mammal conservation measures was considered and applicable measures were included in the EIS mitigation measures for marine mammals.
26. The DEIS does not contain any information on the amount of blasting that may be required for each alternative, duration of blasting, size of charge, detonation velocity of charge, etc.	At the current stage of design, only Alternative F3 is certain to require blasting, and then only if the channel widening modifications in West Channel were implemented. Dredging for alternatives G2, G3, and G4 may require a small amount of blasting (refer to EFH Assessment (Appendix O). A discussion of blasting durations, charges, and impacts is contained in the EFH Assessment (Appendix O). If blasting were required, it would be performed such that ground vibration (particle velocity) would not exceed 2.0 inches per second and peak water overpressure (instantaneous pressure change) would not exceed 2.7 pounds per square inch.
27. The DEIS does not contain an evaluation of the specific EFH and fishery resources in the vicinity of the proposed blasting operations.	No site-specific surveys of fish likely to be present in the vicinity of dredging and blasting are available, nor were any conducted. A discussion of specific EFH resources that are likely to be present in the area of blasting has been added to the EFH Assessment (Appendix O) and the EIS, Section 4.15.4.4.
28. To adequately evaluate the potential impact of possible blasting activities on EFH and to design mitigation measures to reduce adverse impacts, site-specific data on the marine resources in the vicinity of potential blasting areas should be collected and included in the revised EFH assessment.	A discussion of marine resources that are likely to be present in the vicinity of blasting was added to the EFH Assessment (Appendix O) and the EIS, Section 4.15.4.4.
29. The type of dredging equipment to be used and the potential for entrainment of fish in the dredging equipment is not addressed.	Use of a clamshell dredge is the most likely method of dredging. A discussion of clamshell dredges and their potential for entrainment of fish is included in the EFH Assessment (Appendix O, Section 4).
30. The DEIS does not contain any conservation	Additional conservation recommendations with respect

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
recommendations with respect to dredging, other than the use of BMPs when placing fill next to streams.	to dredging have been incorporated into the EFH Assessment (Appendix O, Section 5). Dredge timing windows would be incorporated into the dredging program to eliminate potential effects to sensitive life stages of fish and invertebrates. The dredged debris would be placed onto a barge where it would enter a settling basin and be disposed of according to normal dredge disposal regulations. Disposal of dredged and blasted material would follow the Environmental Protection Agency's (EPA) Guidelines for disposing of dredged and blasted material (40 CFR Parts 220-238) (Ocean Dumping) and would be consistent with the regulations of Clean Water Act (CWA) Section 404(b)(1) [disposal of dredged materials into waters of the U.S.] and the Marine Protection, Research, and Sanctuaries Act (MPRSA) Section 103. Monitoring of the dredge materials may be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Dredging activities would avoid the entire months of March through October. All dredging activities would be conducted during the winter (between November 1st and February 28th). NMFS may alter this timing window based on additional details developed during the design and permitting phase.
31. Site-specific information is needed on the environmental conditions, including the potential for any contaminated sediments, and the type and extent of fish habitat in the areas where dredging may occur.	The type and extent of fish habitat that occurs in the areas potentially affected by dredging that may be required under Alternative F3 and the ferry alternatives is discussed in Sections 4.15.3.7, 4.15.3.8, and 4.15.3.9 of the EIS, and in the EFH Assessment (Appendix O, Section 4). The Alaska Department of Environmental Conservation list of contaminated sites does not show any contamination in this area of Tongass Narrows. No other sampling of substrate is known that would indicate potential for contaminated sediments in this area.
32. The revised EFH assessment should also identify the magnitude and extent of dredging associated with each alternative, the type of dredging equipment that will be used, and options for disposing of dredged material.	Currently, Alternatives G2, G3, and G4 will require dredging and Alternative F3 may require dredging. The EFH Assessment (Appendix O, Section 4) discusses the magnitude and extent of dredging and the guidelines for disposing of dredged and blasted materials. A discussion of clamshell dredges and their impacts also are included in the EFH Assessment (Appendix O, Section 4).
33. The following conservation recommendations should be considered with respect to dredging for all alternatives: - dredge timing windows should be incorporated to eliminate potential effects to sensitive life cycle stages of fish and invertebrates - a dredge barge should be used to retain dredged material to minimize turbidity - presence of fish and invertebrate should be monitored during dredging; dredging should be curtailed if significant numbers of fish/invertebrates appear in	These conservation recommendations have been incorporated into the EFH Assessment (Appendix O, Section 5), where applicable. Dredge timing windows and disposal operations are discussed in the EFH Assessment (Appendix O, Section 5). Dredge timing windows would be incorporated into the dredging program to eliminate potential effects to sensitive life stages of fish and invertebrates. The dredged debris would be placed onto a barge where it would enter a settling basin to minimize turbidity and be disposed of according to normal dredge disposal regulations. Disposal of dredged and blasted material would follow

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
spoils - if suction dredges are used, the draghead shall be operated with the intake at or below the surface of material to be dredged	the Environmental Protection Agency's (EPA) Guidelines for disposing of dredged and blasted material (40 CFR Parts 220-238) (Ocean Dumping) and would be consistent with the regulations of Clean Water Act (CWA) Section 404(b)(1) [disposal of dredged materials into waters of the U.S.] and Marine Protection, Research, and Sanctuaries Act (MPRSA) Section 103. Monitoring of the dredge materials may be incorporated into the blasting monitoring plan as a method for documenting organisms injured or killed in the blasting. Dredging activities would avoid the entire months of March through October. All dredging activities would be conducted during the winter (between November 1st and February 28th). NMFS may alter this timing window based on additional details developed during the design and permitting phase. Suction dredges could be used in areas where thick layers of loose sands and soft silts are found (i.e., near the ferry terminals), in which case the draghead intake would be operated below the surface of the material to be dredged.

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999
PHONE: (907) 465-1821
FAX: (907) 465-4414

DESIGN & ENGINEERING SERVICES DIVISION
SOUTHEAST REGION – DESIGN

March 2, 2004

Mark Minnillo, Habitat Biologist
State of Alaska Department of Natural Resources
Office of Habitat Management and Permitting
P.O. Box 668
Craig, AK 99921

Re: Gravina Access Project Draft EIS – Responses to Comments

Dear Mr. Minnillo:

The Alaska Department of Transportation and Public Facilities (DOT&PF) and Federal Highway Administration (FHWA) are in the process of preparing the Final EIS for the Gravina Access Project. We have reviewed your agency's comments on the Draft EIS and have revised the document where appropriate. We hope to release the Final EIS soon. The Final EIS will identify Alternative F1 as DOT&PF's and FHWA's preferred alternative.

As a courtesy, and in the interest of continued communication with your agency throughout the development of the EIS, we are providing you with a summary of our responses to your agency's comments on the Draft EIS (see the attached table). The Final EIS will include these comments and responses, along with a summary of all other agency and public comments and our responses to them.

If you have any questions or comments on the information provided herein, particularly DOT&PF's and FHWA's selection of Alternative F1 as their preferred alternative, please do not hesitate to contact me at (907) 465-1851. Thank you for your continued participation in the project.

Sincerely,

James A. Evensen, P.E.
DOT&PF Project Manager

Attachment

cc: Tim Haugh, FHWA
Mark Dalton, HDR Alaska

25A-T34LH

Attachment

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
Department of Natural Resources – Office of Habitat Management and Permitting – Prince of Wales Area Office	
1. The Division of Habitat Restoration has been transferred from ADF&G to ADNR and is now known as the Office of Habitat Management and Permitting. The authority delegated under Title 16.05 has also been transferred under Title 41.14.	References to the new authority of DNR have been made in Sections 3.13, 3.15.4.3, 3.15.4.4, and 4.15.3.10.
2. There are two catalogued anadromous streams (Airport Creek East and West) that will be directly affected by all proposed alternatives (excluding No Action).	Alternatives C3(a/b), C4, D1, F1, F3, G2, G3, and G4 would include a roadway that would cross two channels of Airport Creek, which would be crossed with a clear-span bridge. See Sections 4.15.1.2, 4.15.1.3, 4.15.1.4, and 4.15.1.5.
3. In addition to Airport Creek East and West, four additional catalogued streams (Government Creek and three unnamed streams) will be directly affected by the preferred alternative, and Clam Creek will be indirectly affected.	Alternative F1 would require a culvert crossing at an unnamed anadromous fish stream southeast of Government Creek. In accordance with the memorandum of agreement between DOT&PF and ADF&G, the culvert crossing would be designed to a Tier 1 stream simulation design level and would maintain natural stream conditions. Impacts to these streams are described in Sections 4.15.1.3, 4.15.1.4, and 4.15.1.5.
4. Any instream activity, including equipment crossings, could jeopardize egg-to-fry survival.	Tables 3-21 and 3-22 show the species (and their life stages) that occur in Tongass Narrows, Government Creek, Airport Creek, and two other unnamed anadromous fish streams. NMFS, ADF&G, and DNR will be consulted to determine seasonal work windows for in-water construction activities to avoid impacting egg-to-fry survival, if a build alternative is selected. For the Ketchikan area, salmon fry emerge in the spring from April 15th to May 15th and the adults move into the streams by August 1st and remain through October 31st. The recommended time period for in-stream construction work is November 1st to April 14th and May 16th to July 31st. In-stream construction activities should completely avoid August 1st to October 31st and April 15th to May 15th. These measures will be incorporated into the permit required under Title 41.14. These timing windows may be changed based on additional details developed during the design and permitting phase.
5. Timing restrictions for in-water construction will be placed on all fish-stream crossings based on the species present.	NMFS, ADF&G, and DNR have been consulted to determine seasonal work windows for in-water construction activities, if a build alternative is selected. These work windows would be incorporated into the permit required under Title 41.14. For the Ketchikan area, salmon fry emerge in the spring from April 15th to May 15th and the adults move into the streams by August 1st and remain through October 31st. The recommended time period for in-stream construction work is November 1st to April 14th and May 16th to July 31st. In-stream construction activities should completely avoid August 1st to October 31st and April 15th to May 15th. These timing windows may be changed based on

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
	additional details developed during the design and permitting phase.
6. Since many small fish-bearing streams do not show up on the Atlas and Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes or maps, ADF&G recommends additional stream surveys be conducted on any other streams or tributaries not included in the DEIS in order to determine if there are any other fish-bearing streams that may be affected by the proposed project.	A stream survey was completed on June 11 and 12, 2002 to investigate presence/absence of fish (see Appendix O). Many of these streams are ephemeral and not likely to support fish year round.
7. Measures to minimize sediment production and to maximize containment of sediment produced during construction will be important considerations during project design and construction.	Erosion and sediment control efforts are described in mitigation portions of the construction impacts sections for Geological Resources (4.25.7), Water Quality (4.25.10), Wetlands (4.25.11), Marine Habitat (4.25.12.2), and Wildlife-Aquatic Animals (4.25.12.3). Text has been added indicating that the construction contractor is responsible for developing erosion and sediment control and storm water pollution prevention plans to meet ADEC and EPA requirements of the Clean Water Act (i.e., Section 401 certification and NPDES permits).
8. Waste disposal areas need to be carefully placed to avoid wetlands and other highly productive areas to the extent possible.	Section 4.25.11 Wetlands has been revised to include provisions for waste disposal areas.
9. Loss of habitat from creating the road will directly reduce wildlife habitat on Gravina Island, particularly low elevation winter habitat for deer.	This comment is currently reflected in Section 4.15.7.1, which describes impacts to Sitka black-tailed deer.
10. Road access will increase access to wildlife and could increase harvest of deer and wolves through hunting.	This comment is currently reflected in Section 4.26.10.2, which describes secondary impacts to wildlife.
11. An increase in deer harvest would likely have a significant impact on the Gravina Island wolf pack and may lead to the elimination of the pack through displacement due to reduced prey populations.	This comment is currently reflected in Section 4.27.9.2, which describes cumulative impacts to wildlife. A description of impacts to wolf from reduced prey populations has been added to Section 4.26.10.2, which describes secondary impacts to wildlife.
12. ADF&G may require implementation of more restrictive hunting regulations. For example: - close seasons by Emergency Order - reduce hunting/trapping where access is easy by having - access restrictions - vehicle registrations - sex-specific seasons - shortened seasons, etc.	This comment is noted.
13. Wildlife will likely be killed directly through collisions with vehicles (game and non-game species).	This comment is currently reflected in Section 4.15.7 (Wildlife-Land Mammals).
14. Increased human activity on Gravina Island will most	The potential impact of increased bear mortality due to

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
likely result in an increase in bear mortality due to encounters with humans.	encounters with humans has been added to Section 4.26.10.2, which describes secondary impacts to wildlife.
15. With a direct link to Gravina Island, the cost of logging operations will be reduced resulting in more pressure to increase timber harvest, which will result in loss of wildlife habitat and reduced carrying capacity for game and non-game species.	Section 4.26.1 has been revised to include effects of the project on logging. No increase in logging is anticipated with the Gravina Access Project; therefore, no additional impacts to wildlife habitat and species are expected.
16. User conflicts will increase because subsistence users and hunters will have easier access to populations of game species like deer and bear.	Descriptions of user conflicts have been added to Section 4.26.2, which describes secondary impacts to social groups.
17. The cumulative effects of this project will undoubtedly lead to reduced populations of game and non-game species and long-term wildlife loss resulting from reduced carrying capacity	Sections 4.26.10 and 4.27.9 have been revised to acknowledge that the build alternatives would likely result in a reduction in carrying capacity for game and non-game species.
18. The FEIS should further consider the long-term effects to wildlife and to users of these resources.	The EIS considers the long-term effects to wildlife and users of these resources in Sections 4.26.2, 4.26.10, and 4.27.9
19. The DEIS text considers the Steller sea lion and the humpback whale, but other listed species are only briefly mentioned. ADNR recommends the FEIS consider the full range of sensitive marine mammals that may be affected by the project.	The data presented in the EIS represents the results of coordination with federal and state resource agencies (i.e., USFWS, NOAA/NMFS, ADF&G, and DNR) throughout the development of technical studies on which the EIS is based.
20. The sections of the DEIS referring to subsistence are sufficient. ADNR has more information concerning the use of Gravina and Pennock Islands by residents of Saxman and Metlakatla should DOT&PF decide it is needed.	This comment is noted.
21. ADNR recommends a summary of all mitigative measures together in one section or subsection of the final document.	This comment is noted. A section of mitigation and other commitments will be included in the EIS.
22. ADNR recommends the following additional mitigation measures: - bridge crossings for Government, Airport, and Lewis Creeks - culverts and bridges sized for increased runoff rates expected with development of Gravina Island - use native vegetation (no invasives) for slope stabilization and reclamation of disturbed areas. - construction timing for Tongass Narrows bridge crossings should consider economic impacts from disruption of large charter boats and commercial fishing fleets, and noncharter sport fishers.	The EIS does propose to bridge Government, Airport, and Lewis Creeks. Culverts will be sized appropriately for natural flow (including storm water flows), and to allow fish passage. Access through Tongass Narrows for smaller vessels such as the ones noted should be maintained during construction. The intent is to maintain access through some portion of Tongass Narrows at all times. Larger vessels, such as cruise ships, may have to change their operating pattern during construction, and these impacts have been accounted for in the economic impact analysis.
23. The FEIS should describe and evaluate using a bridge structure to suspend/carry cables rather than the need for submarine cables and substations. The environmental consequences of submarine cables and substations should be analyzed.	Section 4.26.17.2 has been revised to reflect that cables could be suspended from the bridge(s) for Alternatives C3(a), C3(b), C4, D1, F1, and F3. Substations would be required regardless of how the cables cross Tongass Narrows. Given the area of impact associated with the cables and substations, negligible impacts to the environment are expected (see Section 4.26.17.2).
24. ADNR appreciates the availability of the DEIS in	This comment is noted.

GRAVINA ACCESS PROJECT DEIS COMMENT	RESPONSE/FEIS REVISION
electronic format (on CD) and the previous technical reports on the website.	

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999

SOUTHEAST REGION- PRECONSTRUCTION
PRELIMINARY DESIGN & ENVIRONMENTAL SERVICES

PHONE: (907) 465-4445
TEXT: (907) 465-4647
FAX: (907) 465-3506

RECEIVED
FEB 17 2004

February 13, 2004

RE: Project No: 67698 Gravina Access Project

Mr. Bob Deering
Chief, Environmental Engineering
US Coast Guard, 17th District
P.O. Box 21747
Juneau, Alaska 99802-1747

Dear Mr. Deering:

The purpose of this letter is to provide follow-up to the meeting that took place on Friday, November 14, 2003 between the United States Coast Guard (USCG), the Alaska Department of Transportation and Public Facilities (DOT&PF), and HDR Alaska (HDR). The purpose of the meeting was to discuss the Gravina Access Project and the impacts of Alternative F1 on the ISC Base in Ketchikan, Alaska, and to discuss the ways that these impacts could be mitigated. The following is a list of potential impacts to the base (mentioned in a letter dated 10/3/03 from Captain Valerio [USCG] to Reuben Yost [DOT&PF]) and a summary of the major points that we discussed at the November 14, 2003 meeting.

1. **Security**: There were a couple of options discussed that would mitigate USCG security concerns. The first option is for DOT&PF to continue the USCG fence around the developed area of the ISC. The second option is for DOT&PF to provide fencing along the roadway ROW adjacent to the ISC property. Fencing the roadway ROW adjacent to the ISC property is DOT&PF's preferred solution to the issue. DOT&PF is committed to resolving this issue and will make such a commitment in the final environmental impact statement (EIS).

2. **Armory Magazine**: Based on our discussion, DOT&PF does not anticipate a problem with the USCG's plan to relocate the magazine so that it complies with regulations.

3. **Firing Range**: You have demonstrated that the firing range is an integral part of the base, and the DOT&PF recognizes that Alternative F1 would limit its use. The DOT&PF is committed to enclosing the current firing range so that it complies with SDZ regulations. DOT&PF understands the issues and will work closely with FHWA and the USCG to identify an acceptable solution within the bounds of the regulations that govern each agency.

4. **Access, Noise and Utilities**: DOT&PF will make provisions to ensure that the Alternative F1 roadway design does not preclude the addition of an upper base entrance at a later date if the USCG deems it necessary. DOT&PF will also ensure that stormwater drainage is handled appropriately and in compliance with current design standards and state and federal law. All efforts will be made to ensure that runoff follows the natural channels. Noise will not be an issue since the UPH is located roughly 750 feet from the roadway. We also do not anticipate any problems with any of the ISC's utilities.

5. **Property Acquisition**: We have a copy of EO 1520 and will determine the best way to handle all of the required property acquisition, including any BLM regulations that may apply.

In order to ensure that I have summarized the meeting accurately, I would like you to review the above and let me know if you agree or disagree with what I've outlined. I truly believe the process will be much smoother if all parties are in agreement concerning the potential impacts and proposed mitigation measures.

If you have any questions or comments, please do not hesitate to contact me at (907) 465-1851. Thank you for your continued participation in the project.

Sincerely,

James A. Evensen, P.E.
AK DOT&PF
PD&E Group Chief

cc: Commander Anthony Palazetti, USCG
Captain John Healy, USCG
Rick Nygren, USCG
Tim Haugh, FHWA
Steve Boch, FHWA
Rob Murphy, DOT&PF
Mark Dalton, HDR Alaska

Other Agency Correspondence

STATE OF ALASKA

TONY KNOWLES, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

RECEIVED
JUL 21 2004

July 19, 2004

Lloyd Fanter
U.S. Army Corps of Engineers
Regulatory Branch
Alaska District
PO Box 6898
Elmendorf AFB, AK 99506-6898

Re: Gravina Access Project
DOT&PF Project 67698 Federal Project ACHP-0922(5)

Subject: Compensatory Mitigation - Originally transmitted via fax July 16, 2004

Dear Lloyd:

This letter responds to your concerns expressed on the phone and in an email on July 15, 2004. The mitigation proposal submitted for the Gravina Access Project (in a letter dated July 7, 2004) is a compromise between two interpretations of what could be required to compensate for the unavoidable loss of relatively low value wetlands (forested, shrub/scrub and muskegs) in an area with an overwhelming abundance of these types of wetlands.

At one end of the spectrum is Corps guidance (Public Notice 03-07) and draft DOT&PF Compensatory Mitigation Guidance (see below) that would not require any mitigation for wetlands where the overwhelming majority of land cover type is wetlands. Under this scenario, the abundant, relatively low value forested, shrub / scrub, and muskeg wetlands would not be compensated for and the compensatory mitigation value proposed would be $50,000/acre for high value estuaries/water bodies and $20,000/acre for marine waters, resulting in total proposed dollar value of $9,000 for all impacts. This scenario was not recommended for use primarily because the DOT&PF Compensatory Mitigation Policy is not final even though Corps guidance would allow it.

At the other end of the spectrum is the Anchorage Bowl Great Land Trust model. The Department has determined that the use of Great Land Trust's values for wetlands mitigation in Southeast Alaska is inappropriate. The Anchorage Bowl has limited wetland areas where as Southeast Alaska has an overwhelming majority of land cover consisting of forested, shrub/scrub and muskeg wetland types. Under this scenario, forested wetlands, shrub/scrub wetland, and muskegs would be compensated for at $6,900/acre, high value estuaries/water bodies would be at a rate of $50,000/acre, and marine waters at a rate of $20,000/acre, resulting in a total proposed dollar value of $674,850. This scenario was not

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recommended for use primarily because the Great Land Trust model for Anchorage has not been calibrated for use in Southeast Alaska.

Your email included six numbered points, each of which is addressed below. I look forward to talking with you further by phone or in person to resolve these quickly so we can move forward with a joint Corps public notice and final environmental impact statement (EIS).

1. Calculation of dollar value for wetland types and wetland/habitat value.
The calculation of dollar value is based most immediately on past history, but the basis for this value is ultimately linked to actual costs to restore and preserve wetlands in Anchorage. These Anchorage costs have been adjusted somewhat to account for the prevalence of wetlands in the Ketchikan area. See the description following #6, below, regarding the historical basis of compensatory mitigation in the area.

2. Deduction of the Lewis Reef Road from the mitigation plan without inclusion of previous agreed upon compensatory mitigation.
This issue may reflect a misunderstanding of intent. The previously agreed upon mitigation stipulated in the Borough's permit has been completed. The confirmation of that fact should be on record with the Corps. There is no intent to diminish in any way the compensatory mitigation for the Lewis Reef Road Project. The portion of the Gravina Access Project that coincides with the Lewis Reef Road will be a joint project of the borough and DOT&PF, with DOT&PF constructing the borough's portion using Gravina Access Project funds. The borough's contribution is the Assembly action to preserve lands elsewhere in the borough that serve as compensatory mitigation. You will find a copy of the borough's recorded action attached.

3. Compensation for impacts resulting from temporary fills – site rehabilitation and recovery time.
The Department's proposed compensatory mitigation is intended to cover all required compensatory mitigation. In addition to this compensation, mitigation for temporary fill and recovery time is included under the long list of minimization measures attached to the July 7 letter, including site rehabilitation, use of geotextiles, use of and removal of temporary fills, and so on. We do not believe there is any need to further compensate for these impacts.

4. Previous dollar value for wetland type previously utilized...not precedent setting.
The original basis for the use of these numbers is what is important, and they are based on the functions and values of the wetlands in question. See #1, above. We can all agree, I think, that use of past numbers in and of themselves is not a sufficient basis and should not, by themselves, set precedent for future projects. That would include the dollar amount proposed for this project not setting precedent for future Ketchikan or Southeast Alaska projects.

5. A multiplier should also be considered in establishing the total dollar value to be utilized in proposing an in-lieu fee proposal...
The multiplier would be most applicable for actual projects where the functions and values of the wetlands lost were higher or lower than the wetlands to be restored. In this case, the monetary value of the aquatic resources affected are compensated for on a 1:1 basis; that is, the compensation for the abundant wetlands with relatively low ecological and social functions and values (e.g. forested, shrub/scrub, and muskeg) is at a relatively low rate ($2,800/acre), the compensatory mitigation for marine waters is at an intermediate rate ($20,000/acre), and the rate for high value ponds is highest ($50,000/acre). Therefore, no use of ratios other than 1:1 appears warranted.

6. FEIS and ROD Schedule

We would like to discuss your schedule for your public notice. In conjunction with the Federal Highway Administration, we hope to have the FEIS and COE public notice out for public and agency review this month. The anticipated *Federal Register* notice date is Friday August 6, which would start the official 30-day clock for both the FEIS and the 404 permit public notice. We would like to complete the process and have the ROD signed by mid-September.

Policies and Past History Considered for Gravina Compensatory Mitigation.

The proposal presented to you is a compromise between the two extreme interpretations of guidance and represents a reasonable compensation for all impacts associated with the unavoidable loss of wetlands for this project. We are confident that upon review of the facts and justification behind DOT&PF's compensatory mitigation proposal presented herein, that you will concur this is a reasonable compromise.

There is no justification for delay in issuing the public notice as there is ample time built into the process to work out any additional specific details necessary prior to issuance of the record of decision (ROD).

U.S. Army Corps, Alaska District Guidelines. Corps guidance is given specific to the unique situation that faces project development in Alaska. Compensatory mitigation is frequently not practicable where wetlands are the overwhelming majority of land cover type, and there is a lack of suitable sites for creation, enhancement, or restoration (Special Public Notice 03-07 Alaska District Compensatory Mitigation Guidelines, Dated December 15, 2004 [*sic*]). Virtually all of the land suitable for road development across Pennock and Gravina Islands are likely jurisdictional wetlands.

Clean Water Act Guidelines. Federal regulations and guidelines associated with Section 404 of the Clean Water Act require that project proponents eliminate or reduce adverse impacts on wetlands and waters by taking certain specific steps during project planning. The first step is to identify and design project alternatives that avoid adverse impacts to these areas. Second, projects must incorporate measures to minimize adverse impacts when they are deemed unavoidable. Third, it is recommended that sites be restored if they must be temporarily adversely affected by the project. Last, projects must compensate for unavoidable adverse impacts through preservation, restoration, or creation of wetlands. Together, these steps mitigate (i.e., lessen) the overall adverse effects of a project. This process was followed for the evaluation and route analysis for Gravina Access road locations.

Draft Southeast Mitigation Policy. DOT&PF is working on a mitigation policy for Southeast Alaska, recognizing the overwhelming abundance of wetlands located in the low angle or developable lands in the region. Currently this policy is available in only in draft form as follows:

> **DOT&PF Wetland Mitigation Policy Guidance**
>
> The department's mission is to improve the quality of life for Alaskans by cost effectively providing, operating, and maintaining safe, environmentally sound, and reliable transportation systems and public facilities. This mission can often be at odds when transportation system improvements have unavoidable adverse environmental impacts on Waters of the U.S., including wetlands. To meet our responsibilities as "Good Environmental Stewards," we will mitigate to the extent practicable for unavoidable adverse impacts to wetlands.

The Department will use the Clean Water Act, Section 404(b)(1) mitigation hierarchy of avoid, minimize, and compensate. We will base any mitigation, including avoidance, on the value of the wetland affected and the cost of the mitigation. Wetlands provide numerous ecological functions (e.g. fish and wildlife habitat, ground water discharge/recharge, flood water storage, open space, passive recreation, etc). Generally the department will not provide compensatory mitigation in areas of wetland abundance (i.e., within a region or watershed) unless the impact affects a Water of the U.S., or wetlands that provide habitat for commercial, sport, or subsistence fish, wildlife, or waterfowl species.

In determining if mitigation is appropriate, the department will follow the guidance memorandum issued by the Environmental Protection Agency and the Department of the Army January 11, 1992 (e.g. "Clarification of the Clean Water Act Section 404 Memorandum of Agreement on Mitigation" from LaJuana S. Wilcher and Nancy P. Dorn).

We will evaluate wetland functions and values using the best available model for the area or project (e.g. HGM, Anchorage Credit/Debit Model, SE Alaska Freshwater Wetland Assessment Methodology, best professional judgment, etc.). We will document the functions and values along with a recommendation for the need for mitigation in a "Wetland Finding".

CE Projects

Avoidance: We will evaluate design options that avoid wetland impacts. We will only consider avoidance practicable when it meets the project purpose and is cost effective.

Minimization: We will evaluate alternatives, alignment modifications, and design options that minimize the impact of the proposed action. We will consider minimization to be practicable when: 1) it meets the project purpose and 2) the avoidance option doesn't create a chronic maintenance problem (e.g. steeper slopes that erode). The evaluation must consider flexible design standards.

Minimization options can include enhancement of material sites and waste areas and reclamation of abandoned fills, timing construction to avoid sensitive life stages of fish, wildlife, and waterfowl, and use of appropriate Best Management Practices (BMPs). For federal aid highway projects, this criterion includes restoration of transportation-related impacts (e.g. replacement of fish barrier culverts or restoration of erosion and sediment problems from slope or trails).

Compensate: We will consider compensatory mitigation only for CE projects when there is a widening or realignment that affects a Water of the U.S. (i.e. intertidal fill, stream realignment, or fills into lakes), emergent wetland, a wetland or riparian area important for waterfowl nesting, wildlife breeding, feeding or migration or stream buffer. Compensatory mitigation can include habitat creation (i.e. fish, mammal, or waterfowl), habitat protection (i.e. purchase or establishment of a conservation easement), purchase of habitat through an in lieu fee (i.e. payment to an established conservation fund or non-profit group), or participation in an established wetland bank.

Environmental Assessments and Environmental Impacts Statements

Avoidance: We will evaluate alternative and design options that avoid wetland impacts. We will only consider avoidance practicable when it meets the project purpose and is cost effective.

Minimization: We will evaluate projects for alternatives and design options that minimize the impact. This includes an analysis of flexible design standards. We will consider minimization practicable when: 1) it meets the project purpose and 2) the avoidance option doesn't create a chronic maintenance problem (e.g. steeper slopes that erode).

Compensate: We will consider compensatory mitigation for all project alternatives that affect Water of the U.S., emergent wetland, a wetland or riparian area important for waterfowl nesting, wildlife breeding, feeding or migration or stream buffer. Compensatory mitigation must be appropriate and practicable. It can include habitat creation (i.e. fish, mammal, or waterfowl), habitat protection (i.e. purchase or establishment of a conservation easement), purchase of habitat through an in lieu fee (i.e. payment to an established conservation fund or non-profit group), or participation in an established wetland bank. Compensatory mitigation should be provided in proximity to the project if practicable, or it should be provided in the same watershed or ecosystem.

For airport projects, wetland restoration and creation may be practicable in order to avoid creating a wildlife hazard within five miles of an airport per FAA Guidance on "Wildlife Hazards". This may require indirect or non-construction types of compensatory mitigation (e.g. fencing, village sanitation, in lieu fees, wetlands banks conservation easements, etc.).

Mitigation Ratios and Determining Wetland Replacement Cost

Compensatory mitigation will generally be provided at a ratio of 2 to 1,and could go as high as 4 to 1 if unique or critical habitat is affected by the project. When compensatory mitigation is provided through wetland creation, it will be based on acreage, while other forms of mitigation (e.g. in lieu fees, wetland banks, conservation easements, culvert, or trail enhancements) will be based on land value lost.

No mitigation credit will be taken for avoidance. But, when "extraordinary" costs are taken to avoid the impact to high value wetlands (e.g. retaining walls, property acquisition or relocations) the minimization measure(s) will be credited at a positive value of 1.5 to 1 (acreage or land value whichever is applicable).

Previous Ketchikan Mitigation Proposals. Ketchikan area wetlands have not been described with respect to their regional importance, nor are they categorized by their ecological value. Most of the wetlands impacted by the project (shrub/scrub, muskeg, forested) would likely fall into a low value category because of their regional overwhelming abundance, lower functional value, and limited social value. Estuarine wetlands and open water bodies (e.g. ponds) likely would be considered high value wetlands because of their sensitivity to impacts, their value as habitat, and their role in supporting a broader ecosystem. Marine waters are given an intermediate value. The wetlands sections of the EIS and wetlands technical report describe all functions and values of project area wetlands in more detail, and these passages should be reviewed.

Recent examples of in-lieu fee compensatory mitigation in the Ketchikan area include:

- In 2000, a payment of $20,000 per acre was donated to the SEAL Trust as compensation for impacts to moderate value intertidal wetlands being filled to facilitate the construction of a ferry terminal used for the Ketchikan Transfer Facility. DOT&PF agreed to $20,000 per acre based on the cumulative loss of habitat on the Ketchikan waterfront. DOT&PF initially offered $10,000 per acre based on the area's degraded, dredged condition and its location within a developed industrial zone. Resource agencies felt the land impacted should be considered moderate value wetlands considering its habitat value prior to the original dredging for the ferry terminal, and therefore recommended that $20,000 per acre was a more acceptable fee.

- In 2002, DOT&PF agreed to pay $2,800 for lower value muskegs, $10,000 per acre for impacts to shallow fens and $20,000 per acre for filling moderate value intertidal habitat. These funds were intended to compensate for impacts to wetlands from the Ketchikan Airport Taxiway Construction Project (Project No. 68035/AIP 3-02-0144-1402).

In the Anchorage Bowl, a complex method is used to calculate the fees for compensating for wetland losses. Wetland ecological values are described in the 1996 Anchorage Wetlands Management Plan (MOA 1996). The AWMP designates wetlands as "A", "B", and "C" wetlands, based on the functions each wetland is thought to provide and their regional importance. "A" wetlands are the highest value, followed by "B" wetlands. "C" wetlands are considered the least valuable wetlands. To determine the appropriate level of monetary compensation for losses of ***"A" and "B" wetlands*** in the Municipality of Anchorage, a complex debit-credit method is used. That method considers ecological values and impact acreages to determine the number of "debits" a project will accrue. The Great Land Trust has defined a monetary amount they must receive to offset that debit with preserved wetlands. The value is based on their estimated cost ***to purchase and preserve wetlands with a comparable ecological value.*** A General Permit that allows filling of ***"C" wetlands*** in Anchorage requires compensation for those wetland losses ***at a rate equivalent to the cost to restore a similar acreage*** of wetlands.

Prior to 2003, the Great Land Trust used a figure of $2,800/acre for restoration of "C" wetlands. By 2003, it raised this rate to $6,939/acre, based on actual costs to restore an acre of wetland within Anchorage. In 2003, using Great Land Trust's value model developed for the Anchorage bowl, DOT&PF agreed to pay $6,939 per acre for low value wetland impacts; $50,000 an acre for impacts to vegetated shallows and mudflats; and $20,000 an acre for marine waters impacts as compensation for road improvements along the North Tongass Highway from Ward Cove to Whipple Creek [Project No. 67600, STP-0920(19)]. These amounts resulted in a sum of $191,280 that would be donated to SEAL Trust, applied to an off-site culvert replacement project at Schoenbar Creek in Ketchikan or another project in the Ketchikan area if the money was not appropriated to help complete the Schoenbar culvert project.

In retrospect, the Department has determined that the use of Great Land Trust's new values for "C" wetlands mitigation is inappropriate in Southeast Alaska. The Anchorage Bowl has quite limited wetland areas whereas Southeast Alaska has an overwhelming majority of land cover consisting of various wetland types. Also, there is very little actual restoration opportunity in the Ketchikan area. Therefore, the Department determined that use of the previous value appeared warranted for lower value "C"-type wetlands in Southeast. As a cross-check, the Department then examined the cost to purchase raw land without access or utilities, in the Ketchikan Gateway Borough, and the $2,800 figure is within the reasonable range of land values.

Current Gravina Access Mitigation Proposal

The various options available to use as proposed mitigation for the Gravina Access Project are tabulated below:

Guidance Source	Abundant Wetland Rec.	Value Forested	Value Shrub/ Scrub	Value Muskeg	Value Ponds & Estuaries	Value Marine Waters
Corps SPN 03-07	Not Practicable	No Mitigation	No Mitigation	No Mitigation	Case by case	Case by case
DOT Draft SE Alaska Policy	No Mitigation	No Mitigation	No Mitigation	No Mitigation	No Value Listed	No Value Listed
Historical Mitigation Ketchikan[1.]	**Mitigation is undertaken**	**$2,800/ac**	**$2,800/ac**	**$2,800/ac**	**$50,000/ac**	**$20,000/ac**
Anchorage Bowl ('03) Great Land	Mitigation is undertaken	$6,939/ac	$6,939/ac	$6,939/ac	$50,000/ac	$50,000/ac

[1.] The values represented in the table for Historical Mitigation in Ketchikan also reflect the current proposed values for the Gravina Access Project Mitigation.

DOT&PF has chosen a reasonable compromise between the extremes presented in this table and forwarded a total compensatory mitigation value for all impacts associated with this project of $248,000. While this is linked to previously accepted project mitigation in the area, the true basis for these values is the functions and values of the abundant aquatic resources affected.

Conclusion

Thank you for your consideration and understanding of the facts and justification behind the Department's position and we look forward to your acceptance of our proposal. If you have questions, please phone Bill Ballard (465-6954) or me (465-1851).

Sincerely,

James A. Evensen, PE
Southeast Region DOT&PF
PD&E Section Chief

Cc: Glen Justis, COE
Steve Myers, COE
Shannon Hanson, COE
Tim Haugh, FHWA
Steve Boch, FHWA
Bill Ballard, DOT&PF
Mark Dalton, HDR

1 of 69

CONSERVATION RESTRICTIVE COVENANTS
for the
MOSER BAY ESTUARY
and the
BLANK INLET ESTUARY AND WETLANDS SYSTEM

November 5, 2003

KETCHIKAN RECORDING DISTRICT

Please return to:
Ketchikan Gateway Borough Planning Department
344 Front Street
Ketchikan, AK 99901

RECORDED-FILED
KTN. RECORD. DIST.
DOC# 2003-006269-0
PLAT# -
DATE 12-2-2003
TIME 3:01 P M
REQUESTED BY:
Ktn. Gtwy. Borough-Plan.
ADDRESS: 344 Front
Ketchikan, AK 99901

CONSERVATION RESTRICTIVE COVENANTS
for the
MOSER BAY ESTUARY
and the
BLANK INLET ESTUARY AND WETLANDS SYSTEM

THESE MOSER BAY ESTUARY AND BLANK INLET ESTUARY AND WETLANDS SYSTEM CONSERVATION RESTRICTIVE COVENANTS are made this _____ day of November, 2003, by Ketchikan Gateway Borough, hereinafter "**Borough**", a general law municipality and a Borough of the second class, whose address is 344 Front Street, Ketchikan, Alaska 99901.

WITNESSETH:

WHEREAS, the **Borough** is the sole owner in fee simple of certain real Property located at Moser Bay Estuary, Revillagigedo Island and Blank Inlet Estuary and Wetlands System, Gravina Island, Southeast Alaska, more particularly described in Exhibit A attached hereto and incorporated by this reference, **"Property"**; and

WHEREAS, the **Property** possesses natural, scenic, wetlands and estuarine values, collectively **"conservation values,"** of great importance to the **Borough** and its citizens and visitors; and

WHEREAS, Moser Bay Estuary and the Blank Inlet Estuary and Wetlands System are important parts of the coastal ecosystem and as such provide important habitat for a wide variety of birds, fishes, and both marine and terrestrial mammals and plants; and

WHEREAS, the **Property** has conservation values that the **Borough** desires to conserve and enjoy; and

WHEREAS, the specific conservation values of the Property are documented in a letter provided to the Alaska District of the U.S. Army Corps of Engineers, hereafter **"Corps of Engineers,"** dated March 7, 2003, on file at the offices of the Borough and incorporated by this reference, "**Baseline Documentation,**" and Exhibit B (attached) consists of photographs and other documentation that provide, collectively, an accurate representation of the **Property** at the time of these restrictive covenants and which is intended to serve as an objective information baseline for monitoring compliance with the terms of these restrictive covenants; and

WHEREAS, the **Borough** intends that the conservation values of the **Property** be preserved and maintained in perpetuity by the continuation of currently existing land use or activities, including, without limitation, those relating

to hunting and fishing, hiking, sport fishing, and any other uses that do not significantly impair or interfere with those values; and

WHEREAS, the **Borough** and Pacific Log & Lumber **(Permittees)** have been issued a Department of Army Permit, Nos. M-2000-0307, Tongass Narrows 525 and 4-2000-1288, Tongass Narrows 528, which authorizes the placement of fill on wetlands associated the construction of the Airport Service Road around Ketchikan International Airport on State of Alaska lands to the site of Pacific Log & Lumber, hereafter "**Permit**"; and

WHEREAS, Special Condition 1 of the **Permit** requires the **Permittees** to perform compensatory mitigation; and

WHEREAS, the **Borough**, as owner of the **Property**, agrees that these Covenants shall be placed upon the **Property** for the purpose of satisfying the **Permittees** obligation under Special Condition 1 of the **Permit**;

NOW, THEREFORE, in consideration of the above and the mutual covenants, terms, conditions, and restrictions contained herein, the **Borough** hereby voluntarily imposes, places and restricts the use and occupancy of the **Property** in accordance with the terms and conditions set forth below.

1. **Purpose**. It is the purpose of the Moser Bay Estuary and the Blank Inlet Estuary and Wetlands System Conservation Restrictive Covenants to assure that the **Property**, subject to the existing uses or activities described herein, will be retained in its natural, scenic, forested and riparian condition in perpetuity and for the **Borough** to take reasonable efforts to prevent any use of the **Property** that will significantly impair or interfere with the conservation values of the **Property**. The **Borough** intends that these Covenants will confine the use of the **Property** to such currently existing activities, including, without limitation, those involving sport fishing, protection of historical and/or archaeological sites, recreation, trails, education, or any other currently existing use or activity that is consistent with the purpose of these Covenants. These covenants are imposed for the benefit of the Airport Reserve on Gravina Island in order to satisfy the Corps of Engineers' conditions on issuance of a fill permit on the Airport Reserve.

2. **Prohibited Activities**. Any activity on or use of the **Property** inconsistent with the purpose of these Covenants is prohibited. Without limiting the generality of the foregoing, the following activities and uses are expressly prohibited:

(a) Subdivision for purposes of residential, commercial or industrial development;

(b) Industrial or residential uses;

(c) Parking lots, storage areas or waste dumps of any kind;

(d) Coverage of land by asphalt, concrete, or other material that does not constitute a natural cover for the land;

(e) Buildings, structures, or other improvements that are not necessary for the use and enjoyment of the **Property** for those uses outlined in Part 1. Purpose, above;

(f) Alteration of the land surface through grading or soil dumping or trenching, except as may be necessary for activities related to the purpose of these Covenants;

(g) Mineral development or mining within 200 feet of the surface of the **Property** and/or any underground mineral activity that results in the alteration or disturbance of the surface of the **Property**;

(h) Advertising signs or billboards;

(i) Cutting or removal of trees, shrubs, or other vegetation, except as necessary for emergency response to forest fires and cultural activities as set forth in Section 3(f);

(j) Introduction of non-native plants and animal species;

(k) Any use or activity that would cause, increase or substantially add to the risk of erosion;

(l) Dumping of any kind, including trash, concrete, toxic materials, or hazardous materials; and

(m) Commercial timber harvesting of any kind.

3. **Reserved Rights**. The **Borough** reserves to itself, and to its citizens, as well as successors and assigns, all rights accruing from its ownership of the **Property,** including the right to engage in or permit or invite others to engage in all uses of the **Property** that are not expressly prohibited herein and are not inconsistent with the purpose of these Covenants. Without limiting the generality of the foregoing, the following rights are expressly reserved:

(a) Normal and acceptable silvicultural practices necessary for emergency response to forest fires;

(b) The right to continued use of foot access for ingress and egress;

(c) All water rights within the **Property**;

(d) The right to permit sport fishing, and other non-intrusive uses or activities as they currently exist, consistent with these Covenants;

(e) The right to protect historical and/or archaeological sites, including, without limitation, the right to survey the site, excavate the site and remove artifacts and other items of historical and archaeological interest, subject to obtaining any required Corps of Engineers and/or other applicable permit; and

(f) The cutting and removal of individual trees for construction of on-site recreational uses, if suitable trees do not exist on nearby lands not restricted by these Covenants or on other lands readily accessible to the **Borough.**

4. **Change in Use or Activity**. Before the **Borough** changes any currently existing use or activity on the **Property** from that allowed under these Covenants, the **Borough** shall notify the **Corps of Engineers** of the use or activity and the **Corps of Engineers** shall concur in the use or activity if it finds the use or activity is consistent with the stated purposes of these Covenants. The use or activity proposed by the Borough shall not be implemented without the **Corps of Engineers'** written concurrence.

5. **Acts Beyond the Borough's Control**. Nothing contained in these Covenants shall be construed as a violation of these Covenants for any injury to or change in the **Property** resulting from causes beyond the **Borough's** control, including, without limitation, unforeseeable and unauthorized actions of third parties, fire, flood, storm, and earth movement, or from any prudent action taken by the **Borough** under emergency conditions to prevent, abate, or mitigate significant injury to the **Property** resulting from such causes, as long as such actions are consistent with the stated purposes of these Covenants.

6. **Access**. No right of access by the general public to any portion of the **Property** is conveyed by these Covenants without specific written authority from the **Borough** describing places, trails, and other conditions. Upon 48 hours advance notice to the **Borough**, access shall be granted to representatives of the **Corps of Engineers** and other resource agency personnel as appropriate for the purpose of inspecting and monitoring the **Property** for compliance with the terms and purpose of these Covenants.

7. **Costs and Liabilities**. The **Borough** retains all responsibility and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the **Property**. The **Borough** shall keep the **Property** free of any liens arising out of any work performed for, materials furnished to, or obligations incurred by the **Borough**.

8. **Extinguishment**. While these covenants remain in effect, the Borough shall not sell, give, or otherwise transfer ownership of the property without written approval from the Corps of Engineers. Provided, however, that no prior approval

shall be required before a transfer of the property from the Borough to the State of Alaska. These Covenants shall remain in place until the first to occur of: 1) the fill authorized by Permit Nos. M-2000-0307, Tongass Narrows 525 and 4-2000-1288, Tongass Narrows 528 has been removed by the **Borough**, and, to the **Corps of Engineers'** satisfaction, as evidenced by written acceptance, the affected area has been restored to a condition approximating that existing prior to the placement of the fill; or 2) release of the fill permit condition by the **Corps of Engineers**. The **Borough** reserves unto itself, and with the written approval of the **Corps of Engineers'**, the right to transfer this **Property** into an established mitigation bank, which has been approved by the **Corps of Engineers** and other appropriate resource agencies. Upon transfer of the **Property** to the approved mitigation bank, these Covenants will be superceded by the terms of the mitigation bank instrument.

9. **Recordation and Signage**. The **Borough** shall record, at it's cost, this instrument in timely fashion in the official records of Ketchikan Recording District, First Judicial District, State of Alaska. The **Borough** shall post the boundaries of the **Property** with signs for the purpose of informing all users of the **Property** that the **Property** is subject to these Covenants and that certain uses and activities are prohibited.

10. **General Provisions**.

(a) Controlling Law. The interpretation and performance of these Covenants shall be governed by the laws of the State of Alaska.

(b) Liberal Construction. Any general rule of construction to the contrary notwithstanding, these Covenants shall be liberally construed in favor of the grant to effect the purpose of these Covenants. If any provision in this instrument is found to be ambiguous, an interpretation consistent with the purpose of these Covenants that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) Severability. If any provision of these Covenants, or the application thereof to any person or circumstance, is found to be invalid, the remainder of the provisions of these Covenants, or the application of such provision to persons or circumstances other than those as to which it is found to be invalid, as the case may be, shall not be affected thereby.

(d) No Forfeiture. Nothing contained herein will result in a forfeiture of reversion of the **Borough's** title in any respect.

(e) Successors. The Covenants, terms, conditions, and restrictions of these Covenants shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors, and assigns and shall continue as a servitude running with the **Property**.

(f) Captions. The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon construction or interpretation.

(g) No Precedent. The parties agree that the terms and conditions set forth in these Covenants shall not act as a precedent nor be binding upon either party in regards to any future dealings between the parties.

IN WITNESS WHEREOF the **Borough** has set its hand on the day and year first written above.

Date: 11/26/03

KETCHIKAN GATEWAY BOROUGH

By: _____
Roy Eckert
Borough Manager

BOROUGH ACKNOWLEDGMENTS

STATE OF ALASKA)
) ss.
FIRST JUDICIAL DISTRICT)

THIS IS TO CERTIFY that on this 26th day of November, 2003, before me, the undersigned, a notary public in and for the State of Alaska, duly commissioned and sworn, personally appeared Roy Eckert, to me known to be the Borough Manager of the Ketchikan Gateway Borough, a municipal corporation, the corporation which executed the above and foregoing instrument; who on oath stated that he was duly authorized to execute said instrument on behalf of said corporation; who acknowledged to me that he signed the same freely and voluntarily on behalf of said corporation for the uses and purposes therein mentioned.

WITNESS my hand and official seal the day and year in the certificate first above written.

(Seal) OFFICIAL SEAL CINDY M. MONTGOMERY NOTARY PUBLIC-STATE OF ALASKA My Comm. Expires 5/7/07

Cindy M. Montgomery
NOTARY PUBLIC FOR ALASKA
My Commission Expires: 5/7/07

EXHIBIT A: METES & BOUNDS DESCRIPTIONS

MOSER BAY ESTUARY PARCEL

All and entire of U.S. Survey 296, Ketchikan Recording District, First Judicial District, State of Alaska, according to the plat approved June 7, 1905 by the U.S. Surveyor General, located at the head of Moser Bay approximately 13 miles north of the city of Ketchikan, more fully and particularly described as follows:

Commencing at Corner 1, a point on the mean high water line of Moser Bay according to the official plat of survey, and the true point of beginning for this description; thence along said mean high water line S40°15'W, 198 ft.; thence S5°00'W, 264 ft.; thence S79°00'W, 231 ft.; thence S40°15'W, 462 ft.; thence S31°30'W, 184.8 ft.; thence N41°00'W, 442.2 ft. to Corner 2; thence inland West, 84.14 ft. to Corner 3; thence South, 586.74 ft. to Corner 4; thence East, 1320 ft. to Corner 5; thence North, 1221 ft. to Corner 6; thence West, 132 ft. back to Corner 1, containing 20.89 acres, more or less.

BLANK INLET ESTUARY & WETLANDS SYSTEM PARCEL

An unsurveyed portion of ADL 103770 and ADL 101677 located within protracted Section 2, T76S, R90E; and protracted Section 35, T75S, R90E, CRM, at the head of Blank Inlet, approximately 3 miles south of the city of Ketchikan on Gravina Island in the Ketchikan Recording District, First Judicial District, State of Alaska, more fully and particularly described as follows:

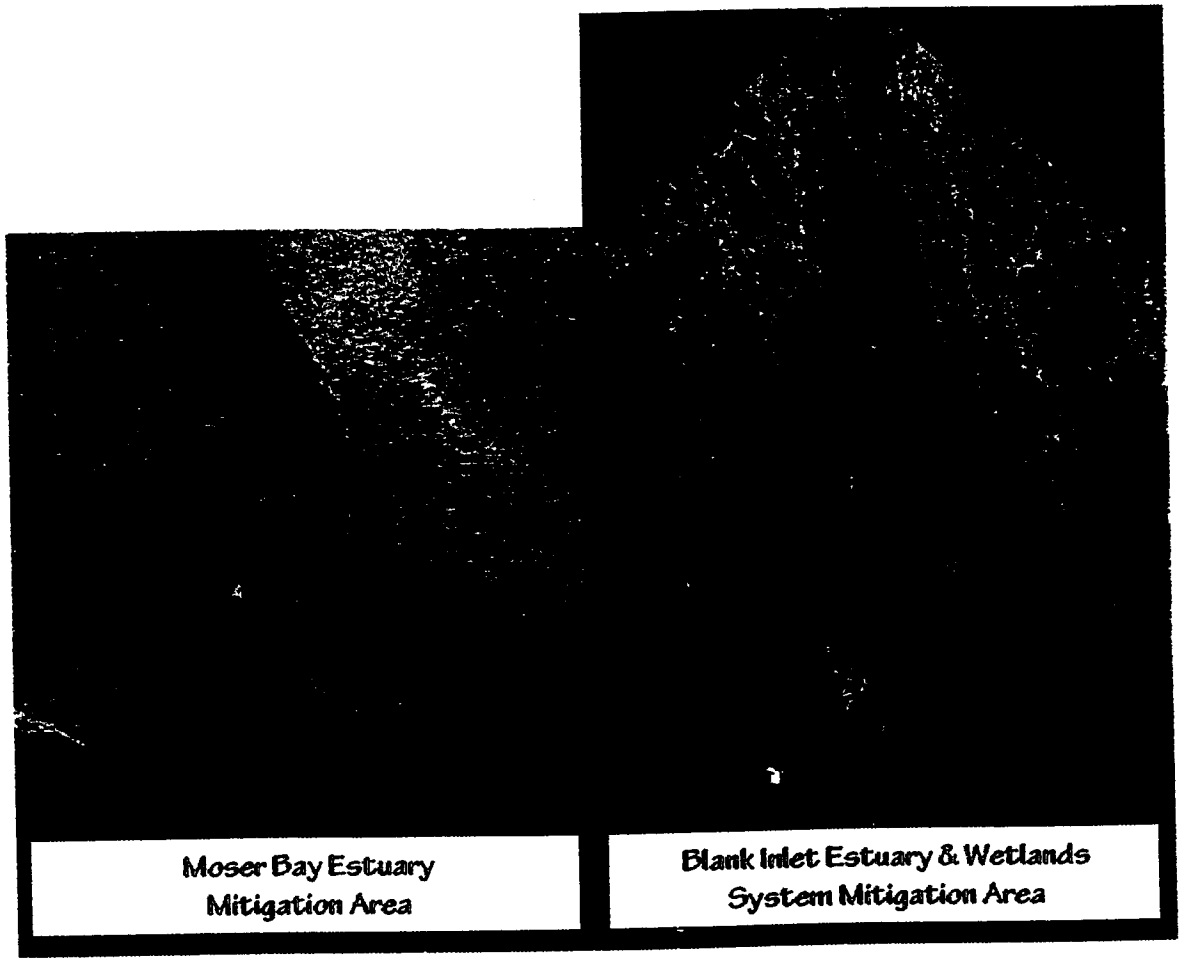
Commencing at the common corner of protracted Sections 2,3,10 and 11, T76S, R90E, CRM; thence N67°15'20"E, 2651.16 ft. to a point on the westerly shoreline near the head of Blank Inlet, and the true point of beginning for this description; thence upland N44°19'33"W, 300.54 ft.; thence N5°42'38"E, 703.49 ft.; thence N10°21'59"W, 416.80 ft.; thence N75°15'23'W, 294.70 ft.; thence N14°16'52"W, 283.77 ft.; thence N2°23'09"W, 600.52 ft.; thence N53°44'46"W, 558.03 ft.; thence ascending approximately parallel to and 100 ft. distant from an unnamed creek N38°39'35"W, 128.06 ft.; thence crossing said creek along the ADL 103770 boundary North, 510 ft.; thence descending approximately parallel to and 100 ft. distant from said unnamed creek S30°45'46"E, 488.77 ft.; thence N86°49'13"E, 180.28 ft.; thence S68°21'20"E, 338.90 ft. to a point 100 ft. distant from a second unnamed creek; thence ascending approximately parallel to and 100 ft. distant from said second unnamed creek N12°31'44"E, 184.39 ft.; thence N9°32'12"W, 633.76 ft.; thence N5°48'24"W, 593.04 ft.; thence N31°19'43"W, 134.63 ft.; thence N68°29'55"W 177.34 ft.; thence West, 385 ft.; thence crossing said second unnamed creek along the ADL 103770 boundary North, 270 ft.; thence descending approximately parallel to and 100 ft. distant from said second unnamed creek S83°21'17"E, 518.48 ft.; thence S54°05'25"E, 358.05 ft.; thence

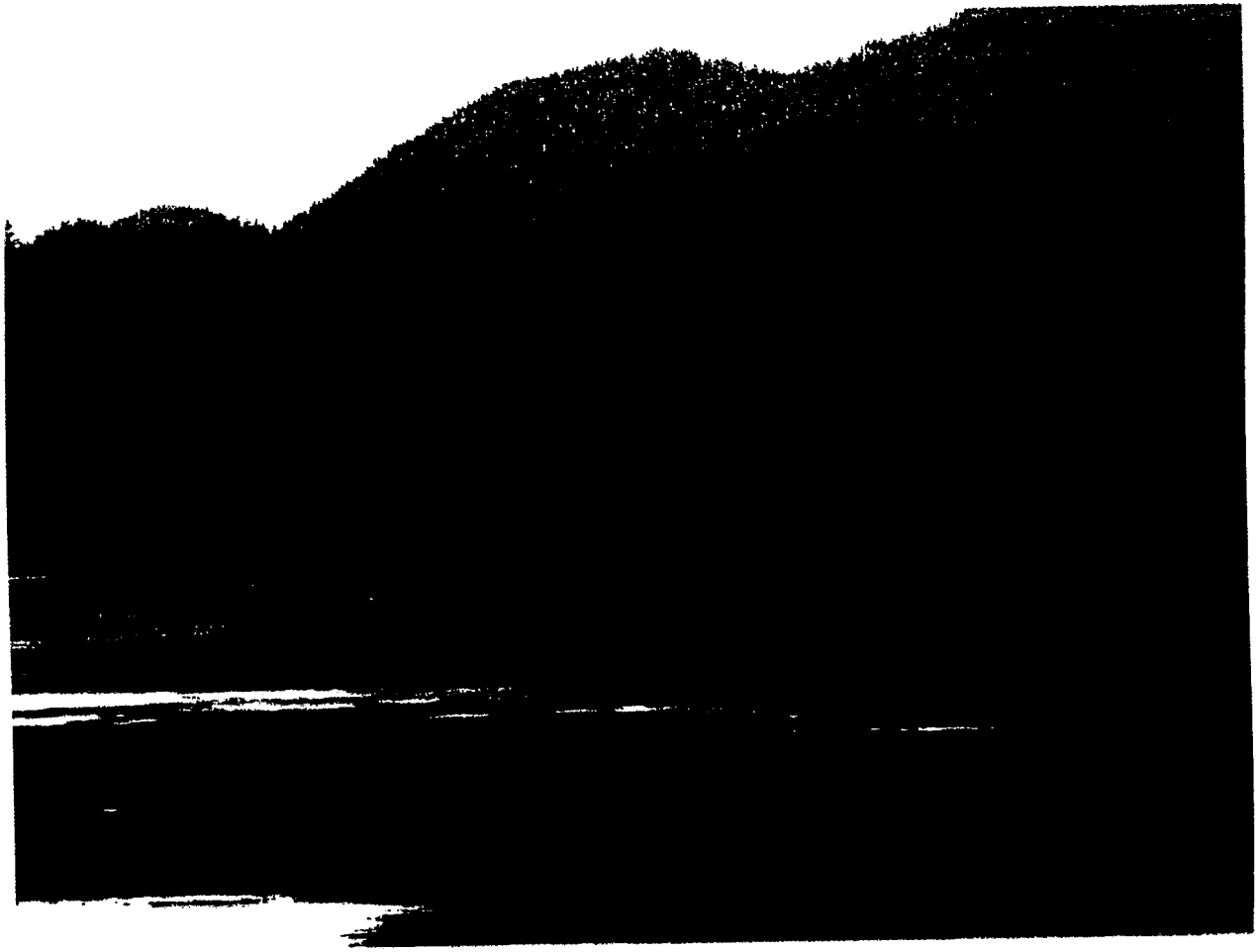
S5°42'38"E, 904.49 ft.; thence ascending approximately parallel to and 100 ft. distant from a third unnamed creek N78°50'43"E, 361.84 ft.; thence N4°01'42' E, 711.76 ft. to a point approximately 50 ft. distant from the westerly shoreline of an unnamed half mile long lake; thence following said shoreline approximately parallel to and 50 ft. distant from said shoreline N5°11'40"W, 331.36 ft.; thence N55°54'18"W, 392.46 ft.; thence N25°20'46"E, 315.36 ft.; thence N67°50'01"E, 145.77 ft.; thence N4°15'32"W, 471.30 ft.; thence N22°37'12"W, 390 ft.; thence N2°32'41"W, 225.22 ft.; thence N13°12'04"W, 415.99 ft.; thence N1°47'24"W, 320.16 ft.; thence crossing a finger at the northerly end of said half mile long lake, and another small conjoined lake, East, 650 ft.; thence following the easterly shoreline of said small conjoined lake and the easterly shoreline of said unnamed half mile long lake approximately parallel to and 50 ft. distant from said shoreline, S29°21'28E, 183.58 ft.; thence S20°03'22"W, 335.34 ft.; thence S17°31'32"E, 498.12 ft.; thence S11°03'49"E, 911.95 ft.; thence S42°16'25"E, 148.66 ft.; thence S4°49'15"E, 416.47 ft.; thence S7°52'59"W, 328.10 ft.; thence S39°28'21"W, 330.34 ft.; thence S57°59'41"W, 330.19 ft. to a point approximately 100 ft. distant from the said third unnamed creek; thence descending approximately parallel to and 100 ft. distant from said third unnamed creek S6°52'12"W, 418 ft.; thence S76°31'37"W, 493.58 ft. to a point approximately 100 ft. distant from the said second unnamed creek; thence S13°04'26"E, 1083.07 ft.; thence S48°17'21"E, 308.1 ft.; thence S8°02'57"E, 499.93 ft.; thence S31°45'34"E, 617.45 ft.; thence S47°08'51"E, 566.08 ft.; thence S6°42'35"E, 171.17 ft. to a point on the easterly shoreline near the head of Blank Inlet; thence along said easterly shoreline N47°11'09"W, 463.49 ft.; thence N51°32'47"W, 217.08 ft.; thence N42°46'08"W, 272.44 ft.; thence N28°36'38"W, 125.30 ft.; thence N20°41'44"W, 240.52 ft.; thence N 10°54'18"W, 555.02 ft.; thence across the estuarial flats S57°40'49"W, 289.91 ft. to a point on the westerly shoreline at the head of Blank Inlet; thence along said westerly shoreline S10°04'09"E, 543.37 ft.; thence S17°11'55"E, 219.83 ft.; thence S15°56'43"W, 109.20 ft.; thence S38°17'25"W, 121.04 ft.; thence S8°58'21"W, 288.53 ft.; thence S12°54'27"E, 246.22 ft.; thence S2°36'09"E, 220.23 ft. back to the true point of beginning. The enclosed lake water surface (36.7 ac.) having been excluded, the net area of this parcel is 59.1 acres, more or less.

Note: Description scaled from a 1"=500' version of the USGS Ketchikan (B-6) SE Quadrangle

EXHIBIT B: BASELINE DOCUMENTATION

The following photographs provide a representation of the mitigation parcels at the time of these restrictive covenants (October, 2003) and is intended to serve as an initial information baseline for monitoring compliance with the terms of the restrictive covenants. Both mitigation parcels have experienced no permanent physical impact from any activities; there are no roads, powerlines, docks nor built structures of any kind with the exception of remnant piling at Moser Bay.





Moser Bay Estuary

All photos document conditions of mitigation parcels in October, 2003

Moser Bay Estuary

This photo is looking south directly into the Moser Bay Estuary mitigation parcel.

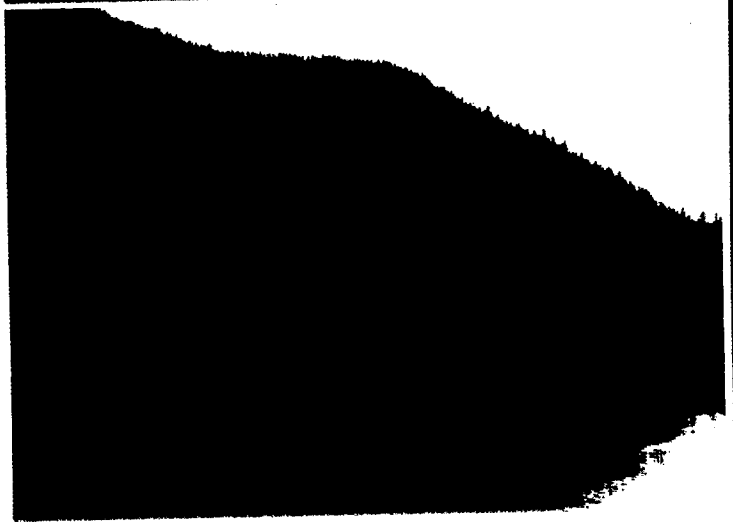


Moser Bay Estuary
(left photo below)

This view to the SE is further upstream. Note the piling that would have been used to tie off log booms.

Moser Bay Estuary
(right photo below)

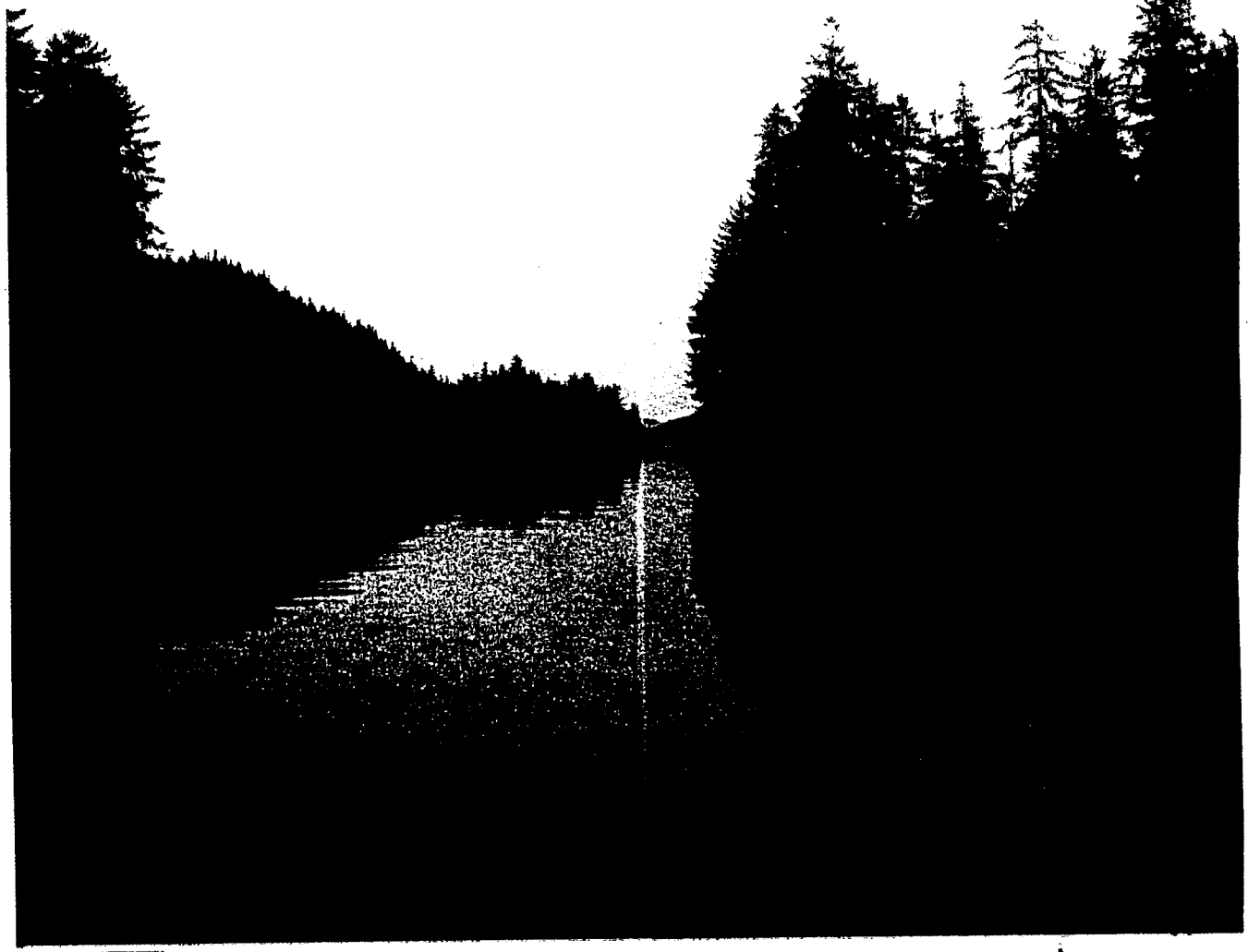
This view is to the SE as we move further upstream.





Moser Bay Estuary

Looking north up Moser Bay from inside the mitigation parcel



Moser Bay Estuary
(left photo below)

Looking to the SE up Moser Creek.

Moser Bay Estuary
(right photo below)

Looking to the SW up an unnamed creek.





Moser Bay Estuary

Seagulls feasting on salmon near the mouth of Moser Creek. This view is looking east into old growth forest within the subject parcel.



Moser Bay Estuary

View to the NE across meadows at the mouth of Moser Creek.



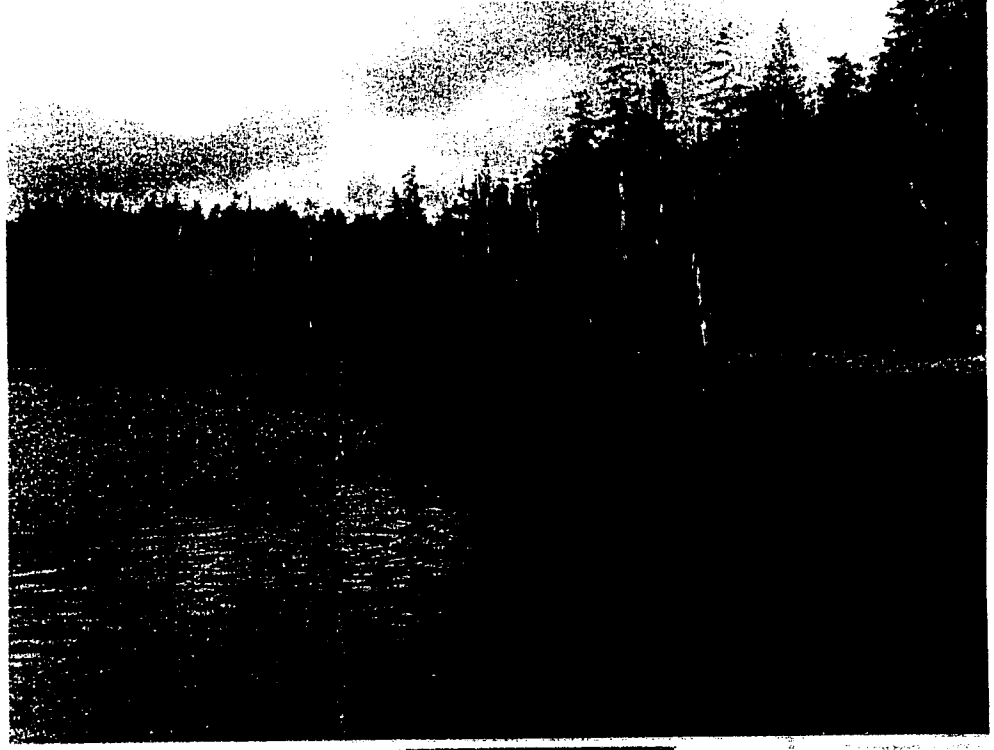


Blank Inlet Estuary & Wetlands

A view north into the estuary from Blank Inlet

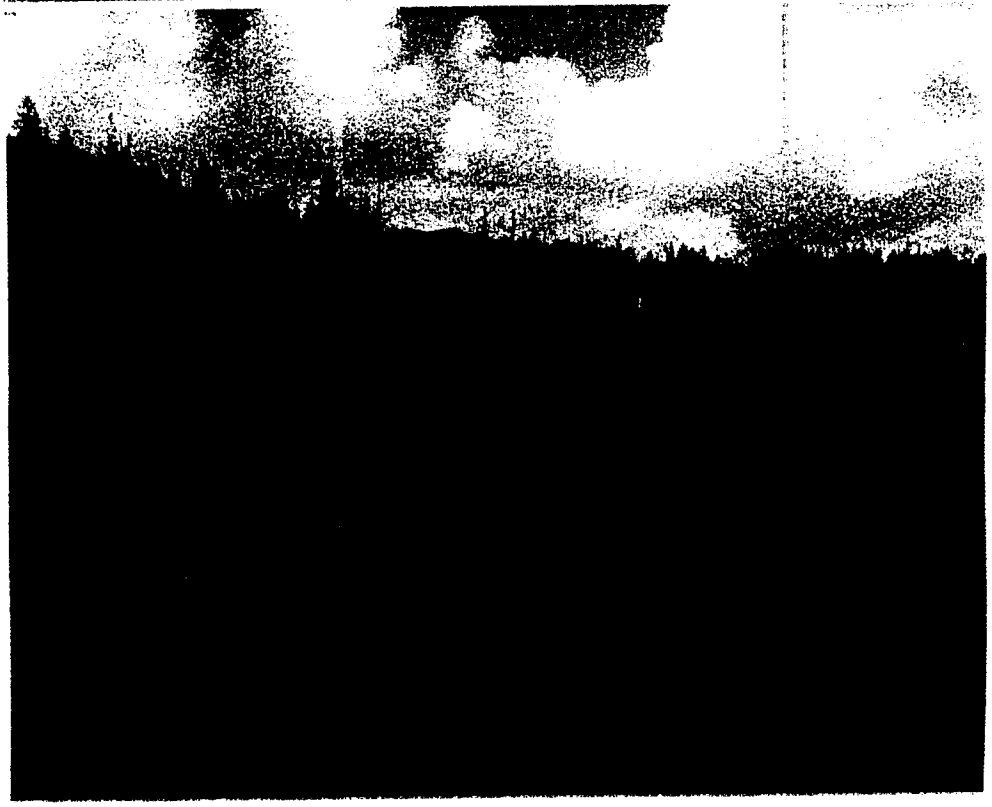
Blank Inlet Estuary

Looking to the NE toward Long Lake from within the estuary.



Blank Inlet Estuary

Looking toward the NW from within the estuary. Three anadromous streams enter this estuary.



Blank Inlet Estuary

Looking due west across the estuary toward Nipple Mountain. One of the protected streams within the mitigation parcel is visible in the center of the photo near the edge of the spit.



Blank Inlet Estuary

Looking NW toward Curve Mountain. The forested areas are the west and east slopes of the marine entry to the estuary and are included in the mitigation parcel to protect the hydrologic and aesthetic integrity of the estuary.



STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DESIGN AND ENGINEERING SERVICES – SOUTHEAST REGION
PRELIMINARY DESIGN & ENVIRONMENTAL SERVICES

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999

PHONE: (907) 465-4445
TEXT: (907) 465-4647
FAX: (907) 465-3506

July 7, 2004

RE: Gravina Access Project
DOT&PF Project 67698
Federal Project ACHP-0922(5)

Lloyd Fanter
US Army Corps of Engineers
Regulatory Branch
Alaska District
PO Box 6898
Elmendorf AFB, AK 99506-6898

Dear Mr. Fanter:

Purpose

The purpose of this letter is to present a proposal to compensate for the unavoidable impacts to wetlands and waters of the U.S. that would result from the construction of the Gravina Access Project Alternative F1 in Ketchikan, Alaska. The Alaska Department of Transportation and Public Facilities (DOT&PF) proposes to use an in lieu fee approach to compensate for adverse impacts to wetlands and waters. We seek your consideration of this proposal.

Project Background

Currently, the preliminary final environmental impact statement (PFEIS) for the project is undergoing final revisions in response to cooperating agency and legal sufficiency review comments that were received during the PFEIS comment period which ended June 7, 2004. Our intent is to issue a final EIS in July. The DOT&PF's and Federal Highway Administration's (FHWA) preferred alternative, presented as Alternative F1 in the DEIS, would cross Tongass Narrows via Pennock Island with two bridges. The East Channel bridge would be approximately 3,610 feet long and have a maximum height of approximately 250 feet. A 1-mile road would be constructed on Revillagigedo Island, linking the East Channel bridge to the Tongass Highway. The West Channel bridge would be approximately 2,960 feet long and have a maximum height of approximately 160 feet. A 0.5-mile road would be constructed across Pennock Island linking the two bridges. On Gravina Island, a road would be constructed starting at the West Channel bridge landing. The road would continue northward approximately 5.4 miles to the northern end of the Airport Reserve zone. A 1.2-mile airport access road would be constructed at the southern end of the airport runway. The airport access roadway would be constructed accommodate the planned future expansion of the runway.

Wetland impacts along the preferred alternative are described in the signed Corps of Engineers Section10/404 permit application, submitted with the PFEIS, in EIS, Appendix L and the Wetlands Evaluation Technical Memorandum Appendix M). As described above, Alternative F1 requires two bridges over Tongass Narrows and approximately 8 miles of new roadway. Approximately 500,000 cubic yards of clean fill would be placed in approximately 96.8 acres of wetlands and 0.1 acre of a ponds and 0.2 acre of marine waters to construct Alternative F1. These acreages include a total of six steel and concrete bridge pier structures placed in Tongass Narrows and seven such piers placed in wetlands on the islands.

We have been working with the Corps to comply with federal regulations and guidelines associated with Section 404 of the Clean Water Act to ensure that project proponents eliminate or reduce adverse impacts on wetlands and waters by taking certain specific steps during project planning. As you know, the first step is to identify and design project alternatives that avoid adverse impacts to these areas. Second, projects must incorporate measures to minimize adverse impacts when they are deemed unavoidable. Third, it is recommended that sites that must be temporarily adversely affected by the project be restored. Last, projects must compensate for unavoidable adverse impacts through preservation, restoration, or creation of wetlands. Together, these steps mitigate (i.e., reduce) the overall adverse effects of a project. Further guidance is given specific to the unique situation that faces project development in Alaska. Compensatory mitigation is generally not practicable where wetlands are the overwhelming majority of land cover type, and there is a lack of suitable sites for creation, enhancement or restoration. This is the situation for the road development across Pennock and Gravina Islands.

Project Area Wetlands Types and Abundance

Southeast Alaska is a wet maritime climate, and wetlands are common even in forested areas. National Wetland Inventory (NWI) mapping completed on a broad scale across the state indicates that the areas that drain directly to Tongass Narrows (excluding the large upper watershed of Ward Creek, which extends well inland) amounts to a total of 39,882 acres. This includes west-facing lands on Revillagigedo Island, all of Pennock Island, and east-facing lands on Gravina Island. According to the NWI, 16,958 acres, or 43% of the total area, is vegetated wetland and another 1,014 acres is either lake or pond. Virtually all low-angle land in the Ketchikan area is wetland under Corps of Engineers jurisdiction. These lower-angle lands accommodate most human developments.

For this project, wetlands in the vicinity of proposed construction were mapped following the NWI classification system based on Cowardin et al. (1979). Project mapping, covering 107 acres, was based on field surveys conducted by the project team in January and June of 2000.[1] The project area has four types of wetlands: forested wetlands, shrub/scrub wetlands, open "muskeg"-type wetlands, and intertidal marshes and meadows. The mapping completed in the project vicinity was done at greater precision than the NWI mapping and indicated some differences—most notably indicating scrub-shrub wetlands where the NWI mapping showed none, and indicating greater forested wetland than the NWI mapping. However, the relative proportions were similar, with muskegs most common, followed by forested wetlands, scrub-shrub wetlands, and intertidal meadows and marshes. Each type is described below.

Forested Wetlands

Forested wetlands, which the NWI indicated cover some 8,200 acres within the Tongass Narrows drainage basins, are prominent northwest of the airport and on the forested slopes of Revillagigedo

[1] DOT&PF, *Gravina Access Project Biology Report* (Draft), prepared by HDR and Pentec Environmental, October 2001.

Island. They are generally drier than other wetlands, either because they are on topographically higher or steeper sites, or because their substrates drain better internally. They are found on moderately sloping lands on Revillagigedo Island, along larger creeks, and as a fringe along the beaches of Gravina and Pennock Islands. They are also interspersed with the muskeg wetlands. A mix of conifer species (including shore pine, red and yellow cedar, western hemlock, and Sitka spruce) characterize forested wetlands. The trees appear stunted relative to those that are found in a better-drained forest. The understory supports a dense growth of blueberry, huckleberry, rusty menziesia, salal, and an herb ground cover. The functions of forested wetlands largely depend on their location. They serve as wildlife habitat along beaches and streams, may help to moderate stream flows, and help sustain the habitat functions of streams. The NWI classifies these as palustrine, open forested wetlands with deciduous shrub understory, saturated (PFO4/SS1B); palustrine, open forested wetlands with evergreen shrub understory, saturated (PFO4/SS4B); and palustrine, needle-leaved evergreen forest, saturated (PFO4B). These are shown on Figure 3.16 (attached from the EIS).

Shrub/Scrub Wetlands

Shrub/scrub wetlands, which the NWI indicated cover some 230 acres within the Tongass Narrows drainage basins (although project specific mapping indicated is more common than NWI mapping indicated), dominate areas adjacent to muskeg wetlands and other areas where tree growth is limited by soil saturation. The tree canopy is sparse enough to allow light to penetrate, promoting a dense shrub and scrub tree understory. Scrub/shrub wetlands often form slightly drier "islands" within the muskegs. They also tend to occur on the slightly better-drained (sloping) ground along the streams that run through muskegs. This wetland type has an open canopy of western or mountain hemlock. Shore pine, small Sitka spruce, and red and yellow cedar may also be present. Tall blueberry and rusty menziesia form a dense shrub layer, with a ground cover of bunchberry, deer cabbage, skunk cabbage, fernleaf goldthread, and sphagnum moss. As with forested wetlands, shrub/scrub wetlands may moderate stream flows, stabilize stream banks, and provide wildlife habitat. The NWI classifies these as palustrine, evergreen needle-leaved shrub/scrub dominated, saturated (PSS4B). These are shown on Figure 3.16 (attached from the EIS).

Muskegs

Open, muskeg-type wetlands, which the NWI indicated cover some 8,400 acres within the Tongass Narrows drainage basins, are the dominant wetland type on Pennock Island and in the areas west and south of the airport on Gravina Island. These open wetlands are intricately interspersed with small patches of forested or shrub wetland. Most of the open wetlands can be loosely described as short sedge fens, which are expected to be moderately nutrient rich and productive. Some richer, tall sedge-dominated wetlands also exist in limited areas, as do more acidic and nutrient-poor bog-type wetlands. The dominant low sedge fens are characterized by low shrub and herb vegetation, such as sweetgale, blueberry, crowberry, and short sedges, and by water pooled on the surface. Many of the wetlands are moderately sloped and have water flowing through them. Flowing water, as well as contact between that water and mineral soil, usually leads to a biological community that is more nutrient-rich and productive. Because they tend to have water flowing through them, muskegs may export organic material that supports downstream ecosystems and help maintain natural chemistry and low flows in the creeks. The muskeg areas nearest creeks maintaining base flows to those creeks. Little is known about wildlife use of these extensive habitats. Deer and black bear feed in them seasonally, and some water birds, including sandhill cranes, passerine species, and blue grouse are known to use these areas. Waterfowl often use intermixed open freshwater ponds as resting and nesting habitat. Humans use these areas for berry harvesting. The NWI classifies these as palustrine, saturated herbaceous meadows (PEM1B) and

palustrine, evergreen needle-leaved shrub/grass-like saturated herbaceous meadows (PSS4/EM1B). These are shown on Figure 3.16 (attached from EIS).

Intertidal Marshes and Meadows

Although relatively scarce in Southeast Alaska, estuarine meadows exist along the shoreline of Gravina Island (see *Gravina Access Project Biology Report Draft*[2]). The NWI indicated that these intertidal meadows cover some 200 acres of shoreline along Tongass Narrows. At elevations near the highest tides, grasses dominate these meadows, and sedges and herbs are prominent near the more average high-tide elevations. These meadows may be supported by seepage of freshwater out of the beach gravels. They are highly productive habitats, and organic matter produced within them washes into the marine ecosystem, where it supports food webs. The beach meadows are important feeding areas for many terrestrial and aquatic species of wildlife, including deer, black bear, river otter, mink, shorebirds, waterfowl, and songbirds. They provide succulent forage in spring, when other habitat types may be snow-covered. They also serve as nurseries for young fish. The NWI classifies these as estuarine intertidal areas vegetated with erect shrubs and regularly flooded by tidal waters (E2EM1N). These are shown on Figure 3.16 (attached from the EIS). Additional details about intertidal marsh areas are provided in Appendix N of the EIS.

Project Impact Avoidance

All alternatives investigated are described in detail in the DEIS. Suitable non-wetland (upland) alternatives could not be defined because of the extremely wet climate of southern southeastern Alaska; Ketchikan, on average, receives approximately 169" of precipitation annually. Nearly all lands in the general vicinity of the Ketchikan International Airport on Gravina Island are wetlands. Similar to Gravina Island, nearly all locations on Pennock Island are wetlands. Few areas with substantial uplands exist within the entire Tongass Narrows vicinity; therefore, substantial impacts on wetlands are unavoidable by any alternative, because all alternatives include a substantial new road. Several upland areas do occur on Revillagigedo Island, but these areas tend to be steep slopes, where sufficient drainage occurs so wetlands have not developed. These areas are not practicable road locations. Total avoidance of wetlands with this project is unachievable.

In Tongass Narrows, bridges were located to avoid direct disturbance of the estuarine beach meadows and adjacent shorelines and river mouths.

Project Impact Minimization

To minimize both direct and indirect impacts to wetlands, the project has included numerous management practices and construction methods. These methods of minimization are included in the EIS and in the Section 10/404 Permit application. The minimization and restoration commitments are copied from the permit application and attached to this letter.

Project Impact Compensatory Mitigation Options

Option 1: On-Site Mitigation

[2] DOT&PF, *Gravina Access Project Biology Report* (Draft), prepared by HDR and Pentec Environmental, October 2001.

On-site compensatory mitigation is not practical because of the overwhelming abundance of and unaltered state of the wetlands within and surrounding the wetlands that would be impacted by project construction. The concept of on-site mitigation is to replace wetland functions very near the location of the actual loss. In regard to the Gravina Access Project, little to no development exists along the corridor of the Alternative F1; therefore no apparent damaged or impaired wetlands exist near the impacted wetlands that could benefit from restoration or enhancement.

Option 2: Off-Site Mitigation

Recent projects constructed in the Ketchikan area have had challenges identifying on-site, in-kind options for compensatory mitigation. Off-site compensatory mitigation and contribution of in-lieu fees are currently being used for projects in Ketchikan.

Option 3: Fee In Lieu **(DOT&PF Proposed Mitigation Option)**

DOT&PF proposes to compensate for the unavoidable impacts to wetlands and waters that result from the construction of Alternative F1 through payment of a fee in-lieu of on-site or off-site compensatory mitigation projects. The monetary value has been determined using historical values for DOT&PF Southeast Alaska projects. The per acre costs used are $2,800 for forested, shrub/scrub and muskeg wetlands, $50,000 for waterbodies and $20,000 for marine waters.

Based on these values and the amount of wetlands impacted by Alternative F1, Table 1 presents a summary of what the DOT&PF proposes as an in-lieu fee of $248,400.00. This amount represents the total compensation for all expected wetland impacts for the project. This fee will be provided to a land trust acceptable to the Corps.

It is important to note that the Gravina Access Project and the "Lewis Reef Road," a Ketchikan Gateway Borough (KGB) proposal recently permitted by Corps, serve much the same purpose and follow much the same alignment on airport property. (The Lewis Reef Road would connect the southern end of the Ketchikan Airport to the Industrial Park at the northern end of the Airport. Construction has not begun). The KGB permit (COE #M-2000-0307) includes commitments for compensatory mitigation. DOT&PF is currently working with KGB, the Federal Aviation Administration (FAA), and the Corps of Engineers to modify the alignment of the KGB permitted Lewis Reef Road to coincide with the alignment referred to in the Gravina Access EIS, and to modify the Lewis Reef Road permit to reflect this alignment shift. This would avoid construction of two parallel roads through the same wetlands. The total compensation proposal referenced in Table 1 therefore takes into account the mitigation commitment by KGB for 11 acres of Lewis Reef Road and reduces the total wetlands area that other wise would be impacted by the Gravina Access Project.

Table 1. Calculation of fee in-lieu of compensatory mitigation

Wetland Type	Proposed cost per acre[2]	Impacted Area (acres) by F1 Alternative	Total cost per wetland/water type
Forested Wetlands	$2,800.00	23.6	$66,080.00
Shrub/Scrub Wetlands	$2,800.00	12.9	$36,120.00
Muskegs	$2,800.00	60.0	$168,000.00
KGB Permitted Commitment for Lewis Reef Road Mitigation		< 11.0 >[3]	- $30,800.00
Waterbodies (ponds)	$50,000.00	0.1	$5,000.00
Marine Waters	$20,000.00	0.2	4,000.00
Total		85.8	$248,400.00

1. Note: No impact to intertidal meadow and marsh wetlands is anticipated.
2. Cost based upon past SE Alaska value of wetlands used for compensatory mitigation.
3. KGB has already permitted eleven acres of impacted area and compensation has already been accepted. A permit modification is proposed for that project to ensure the Lewis Reef Road alignment coincides with the Gravina Access Project alignment. Therefore, the 11 acres has been subtracted from the total.

Summary

The DOT&PF has incorporated avoidance and minimization measures into its preferred alternative for the Gravina Access Project (Alternative F1) and proposes to compensate for the unavoidable impacts to wetlands and waters that are regulated under the authority of the Section 10 and Section 404 programs. The proposed in-lieu fee is meant to be directed toward activities relating to wetland creation, restoration, enhancement, and preservation or land acquisition. Other options have been investigated in the Ketchikan area and the in-lieu fee approach is the most viable mitigation option for this project.

---

[3] Ketchikan Gateway Borough has designed, received permits, and committed to mitigation for the Lewis Reef Road, connecting the southern end of the Ketchikan Airport to the Industrial Park at the Northern end of the Airport. This is the same road as referred to in the Gravina Access EIS. ADOT &PF is currently working with KGB, FAA and ACOE to adjust the alignment of the KGB permitted Lewis Reef Road to the alignment referred to in the Gravina Access EIS. The total impacted acreage referenced in Table 1 takes into account the mitigation commitment by KGB for 11 acres of Lewis Reef Road, acknowledging any differences between KGB and EIS alignments are taken into account in this mitigation proposal.

Thank you for your consideration and we look forward to your acceptance of our proposal. If you have questions, please don't hesitate to phone Bill Ballard at ADOT & PF (465-6954) or myself (465-1851).

Sincerely,

James A. Evensen, PE
Southeast Region ADOT& PF
PD&E Section Chief

cc:

Bill Ballard, DOT&PF
Mark Dalton, HDR
Tim Haugh, FHWA
Bruce Halstead, USFWS
Katherine Miller, NMFS
Mark Minillo, ADNR
Steve Myers, COE
Stephen Reeve, KGB
Bill Ryan, EPA

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
Southeast Region
Regional Director's Office

6860 GLACIER HIGHWAY
JUNEAU, ALASKA 99801-7999

PHONE: (907) 465-1763
TEXT: (907) 465-4647
FAX: (907) 465-2016

6/29/04 Jim

June 28, 2004

RE: Gravina Access Project
Spine Road and the KGB Proposed North
Gravina Road

Roy Eckert, Manager
Ketchikan Gateway Borough
344 Front Street
Ketchikan, Alaska 99901

Dear Mr. Eckert: Roy

Thank you for taking time out of your busy schedule to go over developments in the above referenced projects with Alaska Department of Transportation and Public Facilities (DOT & PF) staff on April 23. I am responding directly to your letter of March 26, regarding the current status of plans for the Ketchikan Gateway Borough's North Gravina Road (aka Lewis Reef Road). The Borough and the DOT&PF have been working concurrently on road plans in the same corridor on airport property. I am very supportive of mutual cooperation to achieve the Borough's plans for the ultimate development of the North Gravina Road.

The Gravina Access Project has passed legal sufficiency review and the record of decision (ROD) will follow after a 30 day public review process.

We are excited about completing the Lewis Reef Road project as discussed. In support of this effort, we have assigned Ken Collison, P.E., our Southeast Region Reconnaissance Engineer, to work with the Borough, ACOE and our consultant to transfer the existing permits to the alignment included in the EIS. I would suggest that we continue our cooperative efforts so that we are prepared to move when the ROD is approved.

Sincerely,

Gary L. Paxton
Southeast Regional Director

Ron
Sorry for the delay
But wanted to
be sure the ROD
was on track
when we answered
your letter

cc: Mike Barton, DOT&PF Commissioner
Patrick Kemp, P.E., Preconstruction Engineer
Robin Taylor, Special Project Assistant

25A-T34LH

U.S. Department of Homeland Security

United States Coast Guard

Commander
Seventeenth Coast Guard District

P.O. Box 25517
Juneau, Alaska 99802
Staff Symbol: oan
Phone: (907) 463-2268
Fax: (907) 463-2273
Email: jhelfinstine@uscg.mil

16590
June 4, 2004

Mr. Tim A. Hall
Environmental and Right-of-Way Program
Federal Highway Administration
Alaska Division
P.O. Box 21648
Juneau, Alaska 99802

Re: Gravina Access Project Preliminary Final Environmental Impact Statement Cooperating Agency Review

Dear Mr. Haugh,

The following comments are provided as a result of our agency's review of the Gravina Access Preliminary Final Environmental Impact Statement (PFEIS) provided by your agency.

(a). Please remove the statement "Potential confusion/unwillingness of combining the project with Ketchikan 2020" located in the Comments and Coordination Section on page 7-17. As discussed earlier we have no idea where this comment came from or why it was attributed to our agency.

Thank you for addressing the numerous navigational issues the waterway users and our agency raised during this long and thorough process. I note you also addressed Coast Guard concerns with impacts to security, armory magazine, firing range, access, noise, utilities, and property acquisition of the preferred alternative F1 on our Ketchikan ISC Base in Ketchikan, Alaska via letter dated 2/13/04 located in the "other agency comments" section.

If you have any questions, please contact me at 463-2268.

Sincerely,

J. N. HELFINSTINE
Chief, Bridge Section,
Aids to Navigation Branch
U. S. Coast Guard
By direction of the Commander

Copy: (1) Mr. Jim Evensen, AKDOT7PF Project Manager

Federal Highway Administration
JUN 0 4 2004
Juneau, Alaska

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
ALASKA DIVISION
709 West Ninth Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802
907-586-7418 | 907-586-7420 FAX

May 4, 2004

REFER TO
HDA-AK
File #: NCPD-HP 0922(5)

Commander Stephen Rothchild
Unites States Coast Guard
P.O. Box 25517
Juneau, Alaska 99802

SUBJECT: Gravina Access Project Preliminary Final Environmental Impact Statement Cooperating Agency Review

Dear Commander Rothchild:

Enclosed please find two (2) copies of the Gravina Access Project Preliminary Final Environmental Impact Statement (PFEIS). The Federal Highway Administration (FHWA) appreciates the continuous involvement that your staff has contributed during the development of this project. It is important to note that this is a preliminary document and is still undergoing minor changes in the text; however, we do not anticipate any major revisions and we believe that your agency's input will be helpful at this critical juncture.

In accordance with the Council on Environmental Quality's (CEQ) regulations on Cooperating Agencies (40 CFR 1501.6 and 1508.5) and CEQ's Guidance Memorandums to Federal and State Agencies, dated January 30, 2002 and February 4, 2002, respectively, we ask that you treat this PFEIS as a pre-decisional document. All communications and contact regarding this document should remain between the Cooperating Agencies (i.e., the U.S. Coast Guard, the U.S. Army Corps of Engineers, the Ketchikan Gateway Borough, the City of Ketchikan, and the City of Saxman), the Lead Agency (FHWA), and the Alaska Department of Transportation and Public Facilities (AKDOT&PF). Any disclosure of this document or any of its contents prior to the public release of the Final Environmental Impact Statement would be considered a breach of intergovernmental trust and the requirements of the CEQ regulations and its guidance.

The typical Cooperating Agency review period is 30 days. We are requesting that you complete your review and provide your comments **by Monday June 7, 2004** directly to:

Mr. Jim Evensen, AKDOT&PF Project Manager
6860 Glacier Highway
Juneau, Alaska 99801-7999

Your input is crucial to ensure the timely release of a comprehensive document, so your efforts are appreciated.

If you require additional information or have any questions, please feel free to contact me at (907) 586-7430. Thank you for your attention to this matter and for your continued participation in the project.

Sincerely,

Tim A. Haugh
Environmental and Right-of-Way Programs
Manager

cc: Jim Evensen, AKDOT&PF
Bill Ballard, AKDOT&PF
Mark Dalton, HDR Alaska, Inc.

Enclosures

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
ALASKA DIVISION
709 West Ninth Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802
907-586-7418 | 907-586-7420 FAX

May 4, 2004

REFER TO
HDA-AK
File #: NCPD-HP 0922(5)

Mr. Steve Meyers, Acting Section Chief
Department of the Army
U.S. Army Engineer District, Alaska
Regulatory Branch
P.O. Box 6898
Anchorage, Alaska 99506-6898

SUBJECT: Gravina Access Project Preliminary Final Environmental Impact Statement Cooperating Agency Review

Dear Mr. Myers:

Enclosed please find two (2) copies of the Gravina Access Project Preliminary Final Environmental Impact Statement (PFEIS). The Federal Highway Administration (FHWA) appreciates the continuous involvement that your staff has contributed during the development of this project. It is important to note that this is a preliminary document and is still undergoing minor changes in the text; however, we do not anticipate any major revisions and we believe that your agency's input will be helpful at this critical juncture.

Although this is the preliminary version of the Final Environmental Impact Statement (FEIS), the Department of Transportation and Public Facilities has completed and signed the Section 10/404 permit application (Appendix L of the PFEIS). The signed coastal policy questionnaire also is included. As we have discussed previously with Mr. Lloyd Fanter of your office, our understanding is that the Section 10/404 permit public notice would be prepared now and issued concurrently with the approved FEIS. This 30-day public and agency review would likely begin in late June. Please confirm that this is your understanding as well.

In accordance with the Council on Environmental Quality's (CEQ) regulations on Cooperating Agencies (40 CFR 1501.6 and 1508.5) and CEQ's Guidance Memorandums to Federal and State Agencies, dated January 30, 2002 and February 4, 2002, respectively, we ask that you treat this PFEIS as a pre-decisional document. All communications and contact regarding this document should remain between the Cooperating Agencies (i.e., the U.S. Coast Guard, the U.S. Army Corps of Engineers, the Ketchikan Gateway Borough, the City of Ketchikan, and the City of Saxman), the Lead Agency (FHWA), and the Alaska Department of Transportation and Public Facilities (AKDOT&PF). Any disclosure of this document or any of its contents prior to the

public release of the approved FEIS would be considered a breach of intergovernmental trust and the requirements of the CEQ regulations and its guidance.

The typical Cooperating Agency review period is 30 days. We are requesting that you complete your review and provide your comments **by Monday June 7, 2004** directly to:

Mr. Jim Evensen, AKDOT&PF Project Manager
6860 Glacier Highway
Juneau, Alaska 99801-7999

Your input is crucial to ensure the timely release of a comprehensive document, so your efforts are appreciated.

If you require additional information or have any questions, please feel free to contact me at (907) 586-7430. Thank you for your attention to this matter and for your continued participation in the project.

Sincerely,

Tim A. Haugh
Environmental and Right-of-Way Programs Manager

cc: Jim Evensen, AKDOT&PF
Bill Ballard, AKDOT&PF
Mark Dalton, HDR Alaska, Inc.

Enclosures

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
ALASKA DIVISION
709 West Ninth Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802
907-586-7418 | 907-586-7420 FAX

May 4, 2004

REFER TO
HDA-AK
File #: NCPD-HP 0922(5)

Mayor Michael B. Salazar
Ketchikan Gateway Borough
344 Front Street
Ketchikan, Alaska 99901

SUBJECT: Gravina Access Project Preliminary Final Environmental Impact Statement Cooperating Agency Review

Dear Mayor Salazar:

Enclosed please find one (1) copy of the Gravina Access Project Preliminary Final Environmental Impact Statement (PFEIS). The Federal Highway Administration (FHWA) appreciates the continuous involvement that your staff has contributed during the development of this project. It is important to note that this is a preliminary document and is still undergoing minor changes in the text; however, we do not anticipate any major revisions. We are providing you a copy of the document for your review and comment as a courtesy. Please be aware that you will also have an opportunity to review and comment on the approved Final Environmental Impact Statement (FEIS) during the 30-day public review period slated to begin in late June.

In accordance with the Council on Environmental Quality's (CEQ) regulations on Cooperating Agencies (40 CFR 1501.6 and 1508.5) and CEQ's Guidance Memorandums to Federal and State Agencies, dated January 30, 2002 and February 4, 2002, respectively, we ask that you treat this PFEIS as a confidential pre-decisional document. All communications and contact regarding this document should remain between the Cooperating Agencies (i.e., the U.S. Coast Guard, the U.S. Army Corps of Engineers, the Ketchikan Gateway Borough, the City of Ketchikan, and the City of Saxman), the Lead Agency (FHWA), and the Alaska Department of Transportation and Public Facilities (AKDOT&PF). Any disclosure of this document or any of its contents prior to the public release of the approved FEIS would be considered a breach of intergovernmental trust and the requirements of the CEQ regulations and its guidance.

The typical Cooperating Agency review period is 30 days. If you would like to provide comments at this stage, please provide them **by Monday June 7, 2004** to:

Mr. Jim Evensen, AKDOT&PF Project Manager
6860 Glacier Highway
Juneau, Alaska 99801-7999

If you require additional information or have any questions, please feel free to contact me at (907) 586-7430. Thank you for your attention to this matter and for your continued participation in the project.

Sincerely,

Tim A. Haugh
Environmental and Right-of-Way Programs
Manager

cc: Jim Evensen, AKDOT&PF
Bill Ballard, AKDOT&PF
Mark Dalton, HDR Alaska, Inc.

Enclosures

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
ALASKA DIVISION
709 West Ninth Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802
907-586-7418 | 907-586-7420 FAX

May 4, 2004

REFER TO
HDA-AK
File #: NCPD-HP 0922(5)

Mayor Daniel Williams
City of Saxman
Route 2, Box 1—Saxman
Ketchikan, Alaska 99901

SUBJECT: Gravina Access Project Preliminary Final Environmental Impact Statement Cooperating Agency Review

Dear Mayor Williams:

Enclosed please find one (1) copy of the Gravina Access Project Preliminary Final Environmental Impact Statement (PFEIS). The Federal Highway Administration (FHWA) appreciates the continuous involvement that your staff has contributed during the development of this project. It is important to note that this is a preliminary document and is still undergoing minor changes in the text; however, we do not anticipate any major revisions. We are providing you a copy of the document for your review and comment as a courtesy. Please be aware that you will also have an opportunity to review and comment on the approved Final Environmental Impact Statement (FEIS) during the 30-day public review period slated to begin in late June.

In accordance with the Council on Environmental Quality's (CEQ) regulations on Cooperating Agencies (40 CFR 1501.6 and 1508.5) and CEQ's Guidance Memorandums to Federal and State Agencies, dated January 30, 2002 and February 4, 2002, respectively, we ask that you treat this PFEIS as a confidential pre-decisional document. All communications and contact regarding this document should remain between the Cooperating Agencies (i.e., the U.S. Coast Guard, the U.S. Army Corps of Engineers, the Ketchikan Gateway Borough, the City of Ketchikan, and the City of Saxman), the Lead Agency (FHWA), and the Alaska Department of Transportation and Public Facilities (AKDOT&PF). Any disclosure of this document or any of its contents prior to the public release of the approved FEIS would be considered a breach of intergovernmental trust and the requirements of the CEQ regulations and its guidance.

The typical Cooperating Agency review period is 30 days. If you would like to provide comments at this stage, please provide them **by Monday June 7, 2004** to:

Mr. Jim Evensen, AKDOT&PF Project Manager
6860 Glacier Highway
Juneau, Alaska 99801-7999

If you require additional information or have any questions, please feel free to contact me at (907) 586-7430. Thank you for your attention to this matter and for your continued participation in the project.

Sincerely,

Tim A. Haugh
Environmental and Right-of-Way Programs
Manager

cc: Jim Evensen, AKDOT&PF
Bill Ballard, AKDOT&PF
Mark Dalton, HDR Alaska, Inc.

Enclosures

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
ALASKA DIVISION
709 West Ninth Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802
907-586-7418 | 907-586-7420 FAX

May 4, 2004

REFER TO
HDA-AK
File #: NCPD-HP 0922(5)

Mayor Robert Weinstein
City of Ketchikan
334 Front Street, Fourth Floor
Ketchikan, Alaska 99901

SUBJECT: Gravina Access Project Preliminary Final Environmental Impact Statement Cooperating Agency Review

Dear Mayor Weinstein:

Enclosed please find one (1) copy of the Gravina Access Project Preliminary Final Environmental Impact Statement (PFEIS). The Federal Highway Administration (FHWA) appreciates the continuous involvement that your staff has contributed during the development of this project. It is important to note that this is a preliminary document and is still undergoing minor changes in the text; however, we do not anticipate any major revisions. We are providing you a copy of the document for your review and comment as a courtesy. Please be aware that you will also have an opportunity to review and comment on the approved Final Environmental Impact Statement (FEIS) during the 30-day public review period slated to begin in late June.

In accordance with the Council on Environmental Quality's (CEQ) regulations on Cooperating Agencies (40 CFR 1501.6 and 1508.5) and CEQ's Guidance Memorandums to Federal and State Agencies, dated January 30, 2002 and February 4, 2002, respectively, we ask that you treat this PFEIS as a confidential pre-decisional document. All communications and contact regarding this document should remain between the Cooperating Agencies (i.e., the U.S. Coast Guard, the U.S. Army Corps of Engineers, the Ketchikan Gateway Borough, the City of Ketchikan, and the City of Saxman), the Lead Agency (FHWA), and the Alaska Department of Transportation and Public Facilities (AKDOT&PF). Any disclosure of this document or any of its contents prior to the public release of the approved FEIS would be considered a breach of intergovernmental trust and the requirements of the CEQ regulations and its guidance.

The typical Cooperating Agency review period is 30 days. If you would like to provide comments at this stage, please provide them **by Monday June 7, 2004** to:

Mr. Jim Evensen, AKDOT&PF Project Manager
6860 Glacier Highway
Juneau, Alaska 99801-7999

If you require additional information or have any questions, please feel free to contact me at (907) 586-7430. Thank you for your attention to this matter and for your continued participation in the project.

Sincerely,

Tim A. Haugh
Environmental and Right-of-Way Programs
Manager

cc: Jim Evensen, AKDOT&PF
Bill Ballard, AKDOT&PF
Mark Dalton, HDR Alaska, Inc.

Enclosures

KETCHIKAN GATEWAY BOROUGH
Office of the Borough Manager ▯ 344 Front Street ▯ Ketchikan, Alaska 99901

Roy Eckert
Borough Manager
(907) 228-6625
Fax: (907) 247-6625
mgr@borough.ketchikan.ak.us

March 26, 2004

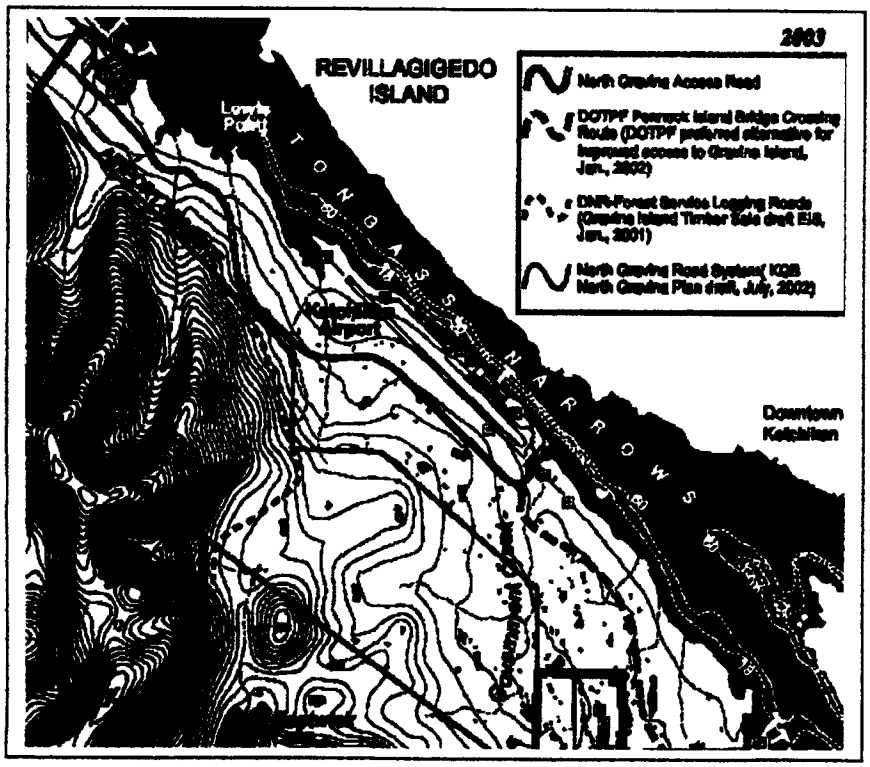
Gary Paxton, Director
DOT&PF, Southeast Region
6860 Glacier Highway
Juneau, AK 99801-7999

RE: Proposed North Gravina Road (aka Lewis Reef Road)

The purpose of this letter is to summarize our Borough's position regarding construction of the proposed road from the Ketchikan International Airport terminal to the north end of the Airport Reserve. We describe three alternatives for the road based on optional standards and phases. We also outline our preferred approach to financing among several options.

Our community objective for many years has been to build a 3.9 mile, two-lane, 35 mph standard road from the airport terminal to the north end of the Airport Reserve that would serve as the building block for many important community benefits. This is the same road as that contemplated in the Gravina Access Project. The road would:

- Provide access to Pacific Log & Lumber (PL&L) and a planned 186-acre industrial park immediately north of PL&L;



- Provide access to 1500 acres of Borough land to meet residential land needs (subdivisions are designed to accommodate 297 families);
- Establish a road network that would, in subsequent phases, access a boat harbor and recreation development near Rock Point/Rosa Reef and ultimately existing Vallenar Bay subdivisions;
- Meet a substantial portion (2 miles) of the harvest road requirements (5+ miles) for timber on DNR, Mental Health and USFS lands and also access PL&L (or an LTF on Tongass Narrows);
- Enable access to a winter and summer recreation area at Bostwick Lake.

The alternatives described below grow from several assumptions:

- The Congressionally-funded Gravina Access Project monies can be legally applied to this project and this application is consistent with the stated project purpose and need;
- The project design, mitigation, and permitting requirements are to be met by the Borough;
- The project construction is to be administered by the State; and
- If public funds are invested in the project, project construction is to be open to competitive bidding at prevailing wage rates.

The three alternatives are listed in order of Borough priority:

Description of Alternatives	Road Design Standards	Estimated Cost	Sources of Financing
Preferred Alternative Build the entire 3.9 mile road	2-lane, 35 MPH	3.9 miles @ $1.1m/mile $4.3 million	Gravina Access Project (GAP) funds or a combination of GAP funds and a revenue bond based on royalty of $10/1,000 bf for traversing road.
Second Alternative Build the entire 3.9 mile road	1-lane, "pioneer" road	3.9 miles @ 0.6m/mile $2.34 million	GAP funds or a combination of GAP funds and a revenue bond based on royalty of $10/1,000 bf for traversing road.
Third Alternative Build 2.0 mile segment only from Bostwick Lake Road intersection to PL&L (LTF)	1-lane, "harvest" road	2.0 miles @ 0.6m/mile $1.4 million	Revenue bond based on royalty of $10/1,000 bf for traversing road.

Only the Preferred Alternative will meet the above-stated Borough and Gravina Access Project objectives. The Second Alternative would meet timber harvest objectives and would be an initial step toward other objectives, but may not meet driving standards for use of GAP funds. It would also likely entail substantial future reconstruction costs to upgrade to two-lane, 35 mph standards. The Third Alternative would only meet timber harvest objectives and would postpone construction of the North Gravina Road until other funding sources are available.

In the course of public discussion of the North Gravina Road, there have been several other alternatives or combinations discussed. Many of these are not included among the three alternatives listed above. Some of these were discarded for very good practical reasons. A brief discussion of these is as follows:

Rejected Alternative A: Construction of a private logging road by Pacific Log & Lumber
As early as three or four years ago, Steve Seley discussed with the Borough the concept of his construction of a private road extending from the vicinity of the rock pit to PL&L. The concept would have involved construction of a private road with the Borough loaning funds necessary for the

construction, lease of the road corridor to PL&L, and surrender of the road to the Borough at such time as public access was provided. For a variety of reasons, this option was not pursued. Perhaps most significantly, a road designed to provide public access is public construction, and as such, state law requires payment of prevailing wages on the construction. There also are competitive procurement issues which would have needed to be resolved. It is believed that these factors prevented this option from coming to fruition. The same factors prevent this or any other "private road" option from being viable. The primary purpose of this road would be for public access and use. It must be treated as both a public construction project and a public roadway, even if public access may be limited during certain times due to safety concerns related to logging operations.

Rejected Alternative B: Construction of a pioneer road by Alcan Timber

The Borough received a proposal from Alcan Timber to construct a pioneer roadway in exchange for exclusive use of the dock at Ward Cove for at least one year and purchase of all Borough timber on Gravina. Borough staff anticipates that the dock use would facilitate export of Mental Health Trust timber harvested on Revilla Island accessible to the road system. The ability to load timber onto ships without placing it in the water would enhance the value and make the harvest process more efficient, providing an economic benefit to Alcan or any other timber operator. However, the Borough has other anticipated uses of the dock, including leasing space to AMHS, which would be inconsistent with the exclusive use for timber operations. Further, the Ward Cove study indicated that the condition of the dock is such that it should not bear loads greater than 250 pounds per square foot. Normal timber loading operations, such as those contemplated by Alcan in the past, would significantly exceed this load level. Second, the Borough has prepared a plan for use of Borough lands on Gravina that anticipates residential, recreational and other uses that may be of a higher value and may, in some cases, conflict with timber harvests. This plan has grown out of an extensive public process, and modifications to the plan would require public review. Any sale of timber on Gravina for harvest would need to be a competitive process and would require evaluation of the timber stands both for consistency with comprehensive plan guidance for harvest areas versus other land uses, and for estimated value of the timber. These combinations of factors make this alternative undesirable.

Rejected Alternative C: Construction of a roadway using Borough funds

While it might be technically possible for the Borough to bid and fund a project to construct this roadway using exclusively Borough funds, or using Borough general funds, this option requires certain preliminary steps. Initially, the only source of significant Borough funds in hand is the Borough Land Trust Fund. These funds are areawide funds, and thus may be used only for areawide purposes. Unless the Borough adopts areawide road powers, any use of these funds could only be a loan or other transfer to the airport operation. The airport operation does not generate sufficient revenues to have any realistic possibility of repaying such a loan. The legal authority to construct a roadway on Gravina is currently limited to exercise of the Borough's airport powers within the Airport Reserve. In order to construct roadway outside of the Airport Reserve, the Borough would first have to adopt either areawide or non-areawide road powers or adopt road powers in a service area by creation of a service area. Any of these actions requires a public process, and public vote, which takes a minimum of four months; but based on past experience, it usually takes six to eight months to be completed. If a service area with road powers is created, or if non-areawide or areawide road powers are adopted, then Land Trust funds could be loaned to the service area or used directly if areawide road powers were adopted. However, in the absence of these funding mechanisms, a special assessment for road improvements would be required. This would require designing the project, estimating the cost, and balloting among those properties which would be assessed the costs of the roadway to secure

majority approval for the improvement prior to construction. Special assessment bonds could be issued to be repaid from the assessments on the benefited properties. This process also carries a substantial lead time in the planning.

Reviewing the three identified alternatives, and these other three discarded alternatives, the only viable approach to construct a roadway within the next six to 12 months relies upon funding sources outside of the Borough for the primary costs of construction. While the airport and airport powers may be used to issue revenue bonds on a relatively short-term basis (without the lead time required for an election), the airport does not generate sufficient revenue to pay such bonds. The repayment mechanism would need to be related to anticipated additional revenue to be created from the existence of the roadway.

As far as outside sources of funding, one source discussed is AIP funds. In our experience, use of these funds is limited to the benefit of airport operations. While there might be a safety or other access justification for use of some funds for part of this project (i.e., access to the new apron), it is unlikely that AIP funds can be a major funding source for the entire roadway.

Our Borough appreciates the State's steadfast support of our community's efforts to realize the long-held objective to improve access to Federal, State, and Borough lands on Gravina Island. We urge you to maximize use of the Congressionally-approved Gravina Access Project funds to finance this key segment of the project and to work with us to secure all financing to build the Preferred Alternative. Please contact myself, Dick Kraft and/or Stephen Reeve if you have questions.

Roy Eckert, Manager

cc: Robin Taylor, Special Assistant
Mike Barton, DOT&PF
Ken Collison, DOT&PF
Jim Evenson, DOT&PF
Tim Haugh, FHWA
Jim Clark, Office of the Governor
Borough Mayor and Assembly

Maines, Kristen

From: Dalton, Mark
Sent: Tuesday, December 09, 2003 3:29 PM
To: Maines, Kristen
Subject: FW: Gravina COE Conversation

Please print for FEIS correspondence appendix

-----Original Message-----
From: Haugh, Tim [mailto:Tim.Haugh@fhwa.dot.gov]
Sent: Wednesday, June 04, 2003 9:46 AM
To: Reuben M Yost; Dalton, Mark
Cc: Schmidt, Karen; Boch, Steve; Miller, David C
Subject: Gravina COE Conversation

Just spoke with Larry Reeder concerning COE Cooperating Agency status on the Gravina EIS. After my explanation of the situation, Larry verbally confirmed that they will accept Cooperating Agency status. Larry requested that when we are ready to circulate the PDEIS, that we transmit to Glenn Justice referencing the Feb 19, 1999 letter and stating that due the changes to the project since that time and pursuant to his verbal confirmation today, that they are a Cooperating Agency. Questions??

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
P.O. BOX 6898
ELMENDORF AFB, ALASKA 99506-6898

REPLY TO
ATTENTION OF:

JULY 28 2003

Regulatory Branch
East Section
9-2000-0152

Mr. Bill Ballard
Alaska Department of Transportation
6680 Glacier Highway
Juneau, Alaska 99801-7999

Dear Mr. Ballard:

Your request of June 11, 2003, for a Department of the Army (DA) jurisdictional determination for the Gravina Access project in Ketchikan, Alaska, has been received. It has been assigned 9-2000-0152, Tongass Narrows 524, which should be referred to in all future correspondence with this office.

We have determined that more information is essential before we can respond to your request. The following comments are provided to assist you with providing a verifiable determination:

a. The "Preliminary Wetlands Jurisdictional Determination" nomenclature is somewhat incorrect. It should be Preliminary Jurisdictional Determination, as it should encompass all jurisdictional waters of the U.S. As such, the document submitted is incomplete and cannot be verified as it fails to identify streams and other open water areas.

b. There are numerous delineated areas on the photos without any wetlands/uplands designations. These need to be defined.

c. It appears that a DRAFT version of the list of plant species that occur in wetlands was used to determine the indicator status of vegetation. If anything other than the officially recognized reference is going to be used, this should at least be coordinated with the Corps' Project Manager familiar with the project area.

Your prompt attention to this matter will expedite processing of your request. We appreciate your cooperation with the Corps of Engineers' Regulatory Program. Please refer to file number 9-2000-0152, Tongass Narrows 524, in future correspondence, or if you have any questions concerning this letter. If you have any questions, please contact me at the above address, ATTN: CEPOA-CO-R-E, at (907) 753-2720, or toll free from within Alaska at (800) 478-2712. For additional information about our Regulatory Program, visit our web site at www.poa.usace.army.mil/reg.

Sincerely,

SIGNED

Steve Duncan
Project Manager

CONCUR
CEPOA-CO
Duncan/cmp/3-2720
CSD(000152pjd)/25 Jul 03
7/25 (1145b)

SCANNED encl. I



Gravina
Island Plan

Clam Cove & Blank Inlet

Area

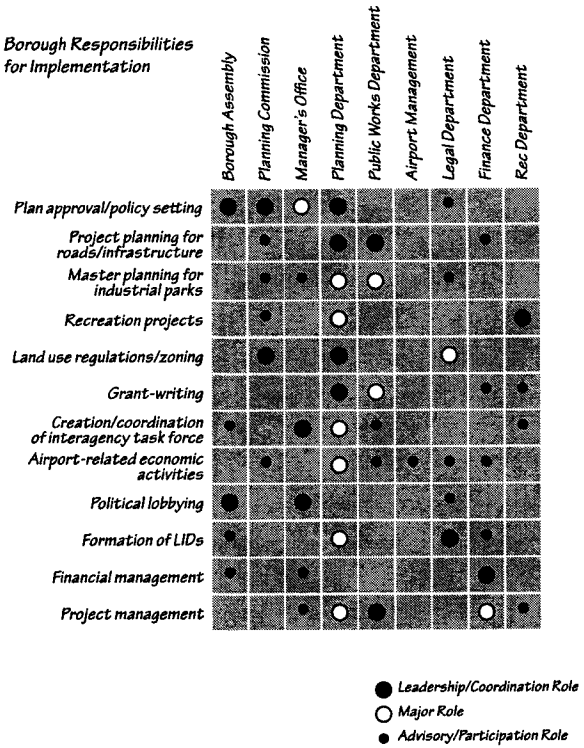




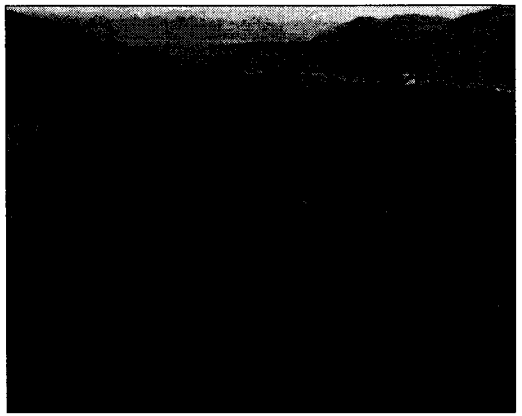


KETCHIKAN GATEWAY BOROUGH
Department of Planning & Community Development
November 2003 Draft

Public Review Draft



The Clam Cove and Blank Inlet area includes some of Gravina Island's less pronounced topography and most extensive lake and wetland ecosystems. Here, Black Sands Beach is visible in the foreground, with Judy Hill, the planning area's highest point at 806 ft., just behind. Directly across from the tip of Pennock Island can be seen Clam Cove--the site of a small, water-oriented community dating from the early 1900s. The northern part of Pennock Island and the city of Ketchikan are visible in the background.



Gravina
Island Plan

Clam Cove & Blank Inlet

Area

November, 2003 (Draft)

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Acknowledgements



This document is one of a set of four describing the Borough's long-term plans for Gravina Island. Island-wide policies and background are provided in the "Citizen's Guide." The eastern shoreline of Gravina has been divided into three area plans that address development issues and provide practical guidance at a detailed level. Copies of all four documents are available at the Ketchikan Gateway Borough Planning Department.

Borough Mayor
Michael Salazar

Borough Assembly
Samuel Bergeron
David Kiffer
David Landis
George Lybrand
Maggie Sarber
John "Jack" Shay, Jr.
George Tipton

Planning Commission
Charles Arteaga
David Deal
Mike McCormick
Daniel Kelly
Trevor Sande
Linda Millard, Acting Chair
Merrill Stulken

Borough Manager
Roy Eckert

Clam Cove & Blank Inlet Area Planning Team

Staff:
Stephen Reeve, Principal Planner
Tom Olson, Mapping Technician

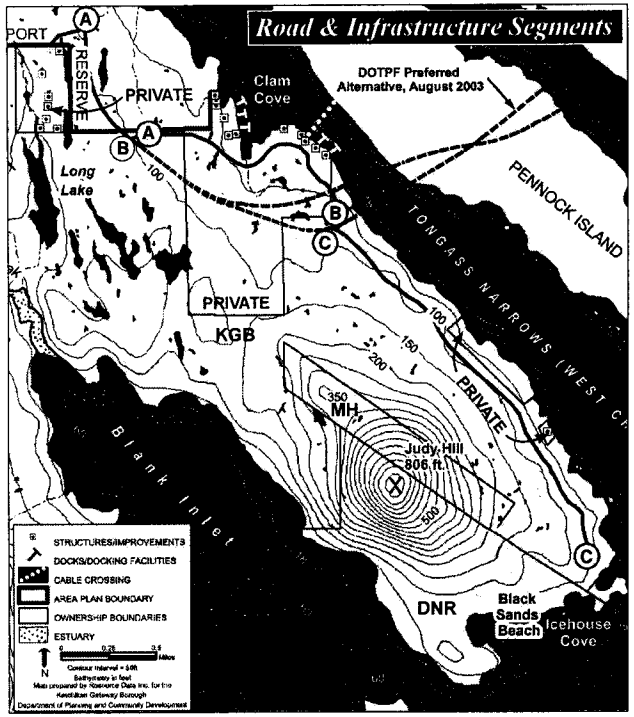
Consultants:
Dennis Kuklok, Planning Consultant
Michelle Hutchinson, Research & Publishing
Kyan Reeve, Computer Graphics Consultant
Laura Shelton, Resource Data Inc., Mapping

Note: It is impossible to recognize individually all the assistance received from citizens throughout Ketchikan and from staffs of federal and state agencies, the City of Ketchikan, the City of Saxman and private firms and individuals. Specific contributions are acknowledged as they appear throughout the document.

Year One Action Plan

The highest priorities for plan implementation are as follows:

- Reach Planning Commission and Borough Assembly approval of the plan
- Work with DOTPF to secure final decision on bridge location/access route
- Reach agreement with Clam Cove property owners and residents on a development and expansion plan for the community
- Reach agreement with property owners on alignments and standards of Road Segments A, B and C
- If the Pennock Bridge is not selected or is postponed, initiate road design for Segment A permits (south end of airport runway to south end of Airport Reserve)
- Draft and implement new land use/zoning regulations
- Establish interagency task force to address Gravina resource management issues



Summary of Estimated Road and Infrastructure Extension Costs

Segment A: South end of runway to south end of Airport Reserve
(this segment needed only if Pennock route not selected)
Road: 1.5 miles @ $1.0m/mile =$1.5m
Water: 1.5 miles @ $0.5m/mile =$0.75m
Sewer: 1.5 miles @ $0.5m/mile =$0.75m
Total: $3.75 million

Segment B: Clam Cove road
Road: 1.25 miles @ $1.0 m/mile = $1.25m
Water: 1.25 miles @ $0.5 m/mile =$0.6m
Sewer: 1.25 miles @ $0.5 m/mile = $0.6m
Total: $3.1 million

Segment C: Clam Cove-Gravina Pt
Road: 2.25 miles @ $1.5 m/mile = $3.375m
Water: 2.25 miles @ $0.5 m/mile =$1.1m
Sewer: 2.25 miles @ $0.5 m/mile =$1.1m
Total: $5.8 million

If the Pennock bridge is constructed, water and sewer could be incorporated in the bridge structure and roadway and distributed to existing treatment facilities in Ketchikan or to a facility on Gravina Island. If the Pennock bridge is not constructed, water and sewer might be connected to expanded facilities at Ketchikan International Airport (extension across Tongass Narrows is not included in the Summary of Costs). Residential, commercial, and some industrial uses can be serviced with a Septic Tank Effluent Pumping (STEP) system, as an alternative to a large-dimension sanitary sewer and fully centralized treatment plant.

Several funding sources are available for roads and infrastructure:

Priority Roads: Segment A: The segment between the airport and Clam Cove area would be needed only if the Pennock bridge is not constructed. This would likely need to be financed by a combination of Borough funds, proceeds from Borough land sales, State contributions, private sector support via local improvement district assessments (see below), and possible federal support.

Segment B and C: Segment B would be the main collector road through Clam Cove and be the first stage of the shoreline road from the Clam Cove area south (segment C).

Design and construction funding for Gravina roads may be available from the U.S. Department of Transportation TEA-21 and other programs, while related pedestrian ways, shoreline access and other amenities may be eligible for TRAAK program funds. These programs typically cover 80-90% of total project costs; the remainder requires local matching funds, all or part of which may be obtained from the State.

Water and Sanitary Sewer Systems: Funding for these services is provided by U.S. Environmental Protection Agency programs, which often funds approximately 50% of total project design and construction cost.

Electrical and Telephone Systems: Electrical and telephone systems have previously been installed by the City of Ketchikan, Ketchikan Public Utilities, with their development cost repaid by customers.

The local share of road and infrastructure costs can be provided by assessments to benefited private properties, using a Local Improvement District (LID). The LID may be initiated either by the Borough or by property owners in the benefit zone. Assessments upon individual properties are based on factors which can include area of property, building area of the property, property's demand for services, and degree of benefit from the improvements. A majority of property owners within the LID boundaries must approve its establishment and their respective assessments.

In determining the sum to be assessed under an LID, an allocation formula usually determines a public share of the total cost, attributable to community benefits for public safety, recreation and other purposes, as well as the shares representing benefits to private property owners. When public and private shares of the LID are determined, a municipal bond may be sold to cover their cost. The public share of such a bond issue is sometimes collateralized by a pledge of anticipated real estate tax receipts from the benefited properties, while the private shares are collateralized by the agreed assessment of the properties, supported by their fair market value.

Introduction and Issues to be Addressed

While the Clam Cove & Blank Inlet plan area contains some of Gravina's most extensive and diverse wetlands, it also provides significant opportunities for development and use. Clam Cove has been slated in the Gravina Island Plan as one of three residential growth centers on the island (along with North Gravina and Vallenar Bay). The mix of extensive Borough and Mental Health Trust lands suggests the potential for considerable future private lands, in particular shoreline parcels. Key state lands (Black Sands Beach) mean that some of the highest value recreational properties will remain in public ownership and use. The popular Blank Inlet area is expected to continue to provide some of the best areas for fishing, hunting, hiking and recreational use for Ketchikan residents and visitors. If a Pennock bridge is built, this area will be directly connected to the airport and city and considerable development is likely to occur near Clam Cove, along Tongass Narrows and, over the longer term, at Blank Inlet. If a non-Pennock crossing is chosen, a road from the airport to the Clam Cove area, while still likely, would be postponed until demand warrants and it can be afforded.

This Clam Cove and Blank Inlet Area Plan addresses the following:

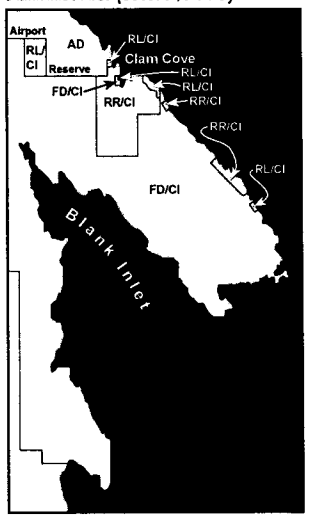
- Which areas are most suitable for development and which are less due to wetlands, hazards, difficult access, etc.? (pp 4-5)
- What are the key development opportunities? (pp 6-7)
- What lands and resources have significant community value and how should they be developed or protected? (pp 8-11)
- How should current zoning be changed? (pp 12-13)
- What are the best road alignments to access developable lands and fit into an efficient Gravina road network? How might a Pennock Bridge affect land use and development? (pp 14-15)
- How should the Borough manage its lands; which areas should be sold or leased to support desired growth, and which areas should be retained under Borough ownership? (pp 16-28)
- How can the area's many recreational attractions be used and what improvements should be made so more residents and visitors can enjoy them? (pp 22-23)
- How might other landowners (DNR, University of Alaska and Mental Health Trusts) develop and manage their lands in order to support and be consistent with this plan? (pp 20-29)
- What management strategies should be followed to protect and sustainably use the area's timber, fisheries, wildlife and personal harvest resources? (pp 24-27)
- What steps must be taken to implement the recommendations in this plan? (pp 30-32)



Black Sands Beach, shown here, has long been a popular recreation attraction for Ketchikan residents. For some, a picnic there was a long-held Fourth of July tradition. Today, Black Sands Beach is part of a 640-acre State Park, which includes the Blank Islands. While its improvements only consist of one mooring buoy and some pit toilets, it will likely in the future have improved facilities. It may one day even be accessed by road as improved access to Gravina is implemented and road extensions to Clam Cove and beyond are made. Note the summit of Judy Hill in the right background, which could be a popular vista point on trails within Black Sands Beach State Park.

1/The Clam Cove & Blank Inlet Area

Current Zoning in the Clam Cove & Blank Inlet Area (October, 2003)



Current Zoning

There are five zoning classifications in the Clam Cove and Blank Inlet area:

- **RL** (Low density residential), most privately owned small lots (under 20,000 square ft.)
- **RR** (Rural Residential), larger privately owned parcels
- **FD** (Future Development) all other very large tracts of Borough, Mental Health Trust, University, and State lands
- **CI** (Cottage Industry) all of the above zones have a Cottage Industry overlay which allows certain low-imapact "industrial" and commercial activities.
- **AD** (Airport Development), all lands within the Airport Reserve.

Ownership

The Clam Cove & Blank Inlet area totals 4,851 acres comprised of:

- 3,074 acres of land owned by the Borough (63% of the total);
- 528 acres of private parcels, including the Long Lake area, Clam Cove, along the shoreline south, and patented tidelands near Clam Cove;
- 186 acres of Mental Health Trust lands, in two parcels, one at Gravina Point and another along the north and eastern slopes of Judy Hill;
- 467 acres of University Trust land, primarily forest lands near Blank Point;
- 596 acres of State DNR land comprising Black Sands Beach State Park.

Landscape and Natural Resources

The Clam Cove and Blank Inlet area is a landscape created by glaciers. Huge ice sheets emanating from the mainland both scoured and flattened low-lying areas (creating the extensive lake and muskeg wetlands) while meltwaters and retreating glaciers left thick deposits as compacted glacial till and as features such as the many small hills. As a result, this landscape is some of the most extensive muskeg wetlands and lake country in the Borough. Approximately 2,269 acres (56% of total area) is classified as a M12 ecosystem, with organic soils too wet to support tree growth and where grass-like sedges are the dominant plants. The most notable natural features include the highest point, Judy Hill (806 ft.), Long and other lakes, a major estuary, and Blank Inlet, one of Gravina's three major bays. Blank Inlet is exposed, with storm waves coming from Clarence Strait up Nichols Passage, often resulting in rough seas.

The area's natural resources include fisheries, wildlife, scenic beauty, lakes and beaches. The area receives high recreational fishing and hunting use. Wildlife is abundant and the lakes are prime waterfowl habitat, important to migrating waterfowl (there have been reported sightings of the rare Greater Sandhill crane in Long Lake). The Blank Inlet shoreline is prime deer winter range. Timber resources are limited to scattered, relatively small areas, mostly along streams. There has been mineral exploration, however, area resources are not significant.

The recent inventory of archaeological and historic places for the Gravina Access EIS has identified 7 sites in and around the Clam Cove & Blank area. An architectural assessment of buildings needs to be conducted to determine if any should be placed on the State's historic register (none are currently).

Development Trends

Clam Cove has been Gravina's center of settlement ever since the early 1900s when the first homesteads were patented. The small cove provided some protection for boats, and the services of Ketchikan were just across the Narrows. There were expectations of growth. Both the US Forest Service and US Coast and Geodetic Survey established facilities there, and the community even developed its own water system. Still, Clam Cove remained small. The Forest Service and Coast and Geodetic Survey shut down their facilities in the early 1950s. The 1970s saw some change and expectations for development. The Stensland homestead was partially subdivided and several waterfront homes were built. Fifty recreational cabin sites around Long Lake were marketed, and 6 cabins built. However, no new construction has been recorded since 1981. Vacant lots remain available, including some waterfront parcels.

While Clam Cove is identified as one of three island growth nodes, growth will depend on improved access. If the Pennock bridge is realized, the Clam Cove area could change rapidly. If not, most growth will wait for a road extension from the airport. In either case, development will prefer waterfront and adjacent properties, and will look to Borough lands to meet demand.

implementation is to meet with property owners and residents to determine a desirable community plan to guide development of private and Borough property in this growth center. The Clam Cove community plan should address:

- community resident and property owner interests;
- access of present and future residents to the waterfront;
- provision of sufficient and suitable lands for future commercial activities, community facilities and residential expansion;
- an efficient road network to serve the community center and future expansion;
- a trails network that links the community with other planned Gravina trails and ensures access to the waterfront;
- a capital improvements plan that meets immediate infrastructure needs; and
- appropriate zoning that implements the community plan findings.

Borough Land Development

The decision regarding bridge routes to Gravina will have considerable bearing on the timing and sequence of Borough land sales in the Clam Cove & Blank Inlet area. A Pennock route would likely focus greater Borough road and infrastructure investments in this area whereas a bridge location near the airport would likely emphasize investments in the North Gravina area. If a Pennock route is constructed, the most cost-effective choice for new development would be near to and south of Clam Cove along Tongass Narrows.

As the Borough develops new subdivisions, access roads and infrastructure should be provided and the Borough should expect to recover all costs of development in the sales prices of lots.

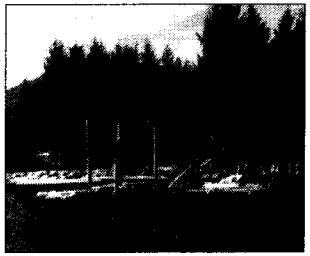
The Planned Developments

The proposed Judy Hill and Point Gravina planned developments have similar requirements to meet for successful implementation. (For a discussion of the planned developments, see pp 20-21.) Both are presented in conceptual form in this area plan. In both cases, Planned Development Master Plans will need to be prepared that provide strategies for development, including:

- defined land use plan for each commercial and residential development site;
- preferred recreational facilities mix and locations;
- shared use of facilities and infrastructure (wastewater, roads, power, water, docks);
- financing of infrastructure;
- land sales and lease terms;
- waterfront access measures;
- project marketing; etc.

Financing Implementation

To implement the Clam Cove & Blank Inlet Area Plan, an early priority will be to finalize the road and infrastructure network to serve the area. This plan proposes a "Road System Master Plan" that provides for consistent design, standards and management policies for the various road segments outlined on pp 14-15. Three initial segments of the road system are illustrated in the map below. The order-of-magnitude costs indicated in the sidebar represent a paved road, developed to a 35-45 mile per hour Forest Highway standard, water main, and sanitary sewer. Road construction costs could be reduced with lower standards and initial stages might be unpaved, single-lane roads with turnouts.



The community of Clam Cove is clustered near the shoreline for easier boat access. The privately owned float shown here extends out several hundred feet from the shoreline due to the relatively shallow water depth. The buildings are on the Stensland property, occupied by the third generation of the Antone Stensland family, which homesteaded this site back in 1913.

13/ Implementation Strategy & Costs

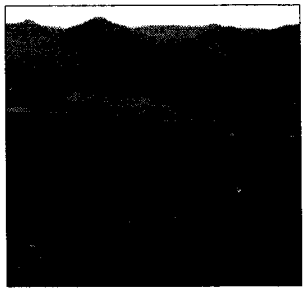
The Borough's Role

As the principal landowner in the Clam Cove and Blank Inlet area, The Borough has a key role in plan implementation. The Borough has local responsibilities for land management (including the subdivision and sale of Borough lands and the regulation of land uses), economic development, and transportation planning. These responsibilities imply important leadership roles to:

- promote and implement economic development and land use activities within the Clam Cove and Blank Inlet area;
- determine an effective transportation network for this area;
- stimulate private/public partnerships for initiatives such as the Judy Hill and Gravina Point planned developments proposed in this area plan;
- develop recreational uses and facilities on selected lands as proposed in this plan;
- secure federal/state funds for infrastructure improvements; and
- work with DNR and the Mental Health and University Land Trusts to secure stable timber supplies for local processing and to provide recreational and visitor industry opportunities on appropriate State lands.

One important early regulatory initiative will be the proper zoning of Gravina's lands to provide the framework for the plan's recommendations to be implemented. New zoning classifications are needed (resource management, planned development and others) and some existing zones should be modified. The Borough can facilitate priority economic development projects by working with regulatory agencies to pre-qualify sites so that planning and environmental review steps are complete and a project applicant can go directly to site, engineering and construction plan review.

To successfully implement the plan, the Borough will need to commit to sufficient staff (contracted or "in-house") to assume its leadership roles. It will require close cooperation between the Planning Commission, Borough Assembly, and Planning and Public Works Departments. It will also require collaboration between these organizations, other public agencies, and the private sector, including individuals and firms interested in investing in the projects conceptually proposed in this plan.



North Pennock Island, shown here in the foreground, with Clam Cove above. Pennock has developed more because it is closer by boat to downtown Ketchikan and has more private shoreline available. In the background are three of Gravina's prominent mountains: Curve, Nipple, and Plain. The highest is Nipple Mountain at nearly 2100 feet.

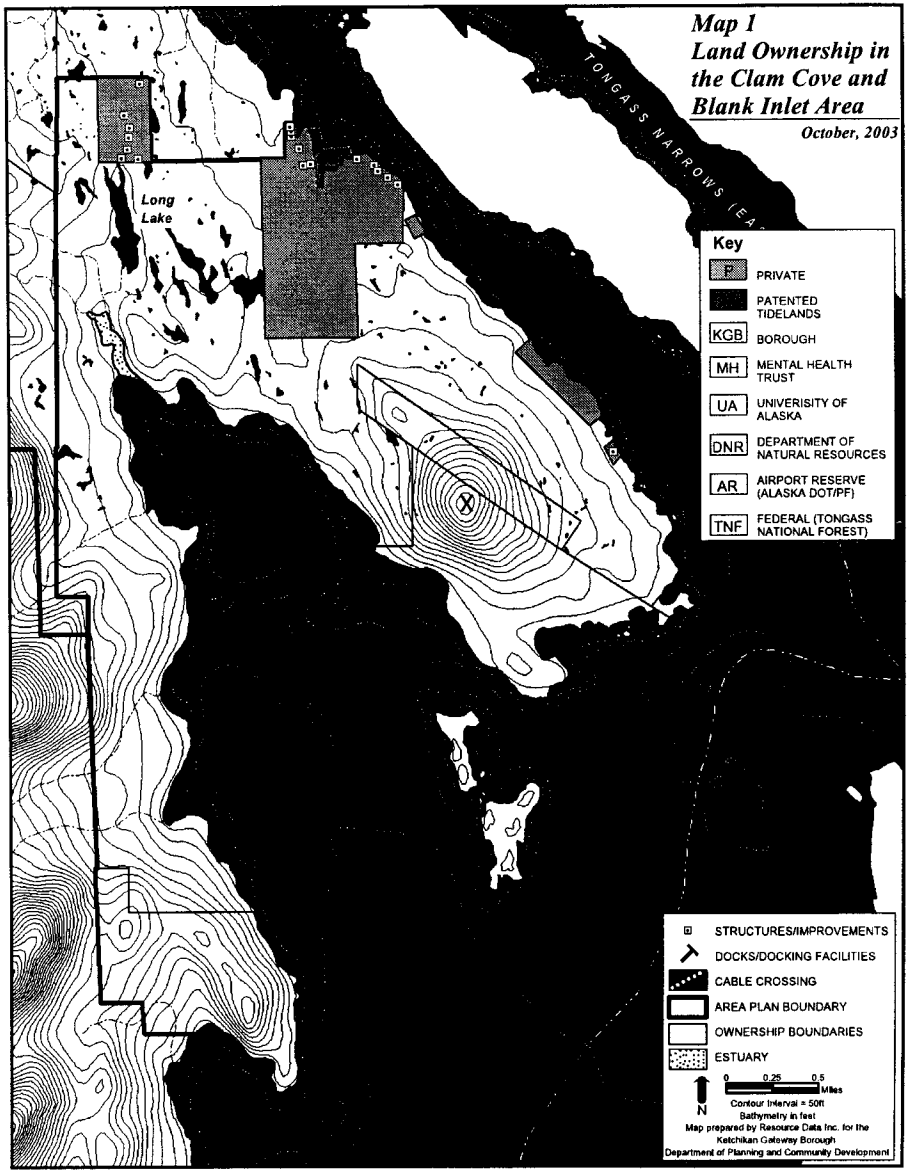
Interagency Partnerships

Implementation of the Clam Cove and Blank Inlet Area Plan requires working relationships between the Borough and those public agencies and land trusts given responsibility for managing major portions of this area's lands and resources: State DNR (including the Division of Parks), State DOTPF, and Mental Health and University Land Trusts. Each of these has its own mission and objectives. Each needs to coordinate with the others for effective implementation. In order to secure an intergovernmental partnership, it is recommended that a task force of these agencies and trusts be formed and meet at least once a year to define cooperative actions to manage area resources. Cooperative actions may include:

- joint financing for construction of roads, trails and recreational facilities;
- cooperative harvest management to sustain timber flows to local processors;
- land exchanges to facilitate better and more cost effective management;
- joint development of projects proposed in this plan;
- identification of quarry locations for construction projects;
- road maintenance and closure policies to manage habitat and contain maintenance costs; and
- agreements on mitigation lands to facilitate projects.

Clam Cove Expansion

A plan for Clam Cove is presented in conceptual form (see pp 17) in order to stimulate discussion on the future of this community. An early priority for



2/Development Suitability

Some areas are better suited for development than others. A site with deep, well-drained soil, near a road, on gentle terrain, and away from flooding is considered suitable for conventional development. Another area, equally accessible, but with muskeg soils and poor drainage, is less suitable. While development is possible, it is more costly and requires less conventional building practices. Some areas are unsuitable due to uneconomic access, natural hazards, critical habitat, proximity to airport noise and operations and other reasons. These are often best retained as open space reserves.

It is expected that development in this plan area will be concentrated near Clam Cove and along Tongass Narrows to the south. This would complement proposed industrial park activities in the south Airport Reserve as proposed in the Central Gravina and Airport Reserve plan. Over the longer term, residential development may occur along the eastern Blank Inlet shoreline and on some of the better-drained sites around Judy Hill. More difficult sites (such as Judy Hill) should be planned carefully to respond to site opportunities and limitations (see page 21).

The major limitation in this area is poor drainage and deep organic soils. Approximately 2,269 acres (56% of the entire area) was classified as M12, with the water table typically at the surface. Not only are these areas costly to develop, Federal wetlands regulations require mitigation measures be taken when roads or other development activities are located in them. The Borough is now developing a detailed wetlands inventory to better define the location and development implications of these kinds of areas.

The facing map presents a suitability analysis for the plan area. (Borough and University lands south of Spot Mtn Creek were not analyzed due to absence of ecosystem data). The following findings are noted:

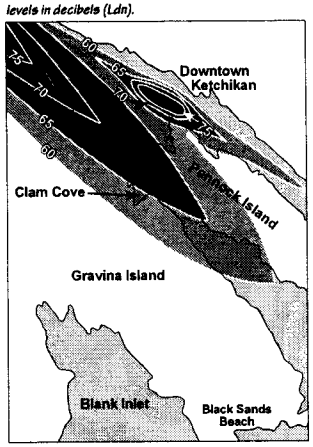
- There is no acreage without significant limitations. Such areas would be characterized by well-drained soils and gently sloping topography.
- Approximately 31% (1,277 acres) is below 300 ft elevation, with slopes under 10 % and with potential road access. The main limitation is poor drainage and organic soils as indicated by the muskeg-scrub forest ecosystems (M1, M2, MF5, F5) found there.
- In addition to poor drainage, limitations include moderate-steep slopes (10-30%), cold microclimates (north facing slopes), higher elevations (300-400 ft.), reduced accessibility (more than 1/2 mile from proposed roads) and proximity to airplane flight paths/noise.
- Approximately 15% is not suitable due to presence of one or more of the following: severe slopes (greater than 30%), high elevation (greater than 400'), "prohibitive" wetlands (classified by ADF&G), and salmon spawning stream corridors. Such areas are suitable for recreation, wildlife, flood control, watershed protection and maintaining visual quality.

Development on the poorly drained organic soils associated with the extensive muskeg and scrub forest ecosystems typically uses either an overlay technique (adding rock fill) or replacement (excavating the organic soils and replacing it with better draining and load bearing materials). These techniques are most successful when they:

- minimize re-grading and disturbance to drainage patterns,
- minimize land clearing and tree removal, and
- utilize public or community wastewater treatment systems.

Generally, mitigation actions such as restoring a wetland in a nearby area, or placing acreage in a protected status are required where development impacts Federally recognized wetlands. The area around Blank Inlet estuary and upstream has been so desigated to mitigate for the North Gravina airport service road.

Aircraft Noise Exposure
Numbers indicate day-night average sound levels in decibels (Ldn).



Airport noise levels are a factor in development suitability. The FAA considers an LDN (day/night average sound level) of 65 decibels as its threshold for "significant" noise affecting a neighborhood/community. The World Health Organization uses a lower measure of 55dB as "engendering serious annoyance and creating an unhealthy environment." The map above shows the Ldn's of 60-65 dB impact much of the Clam Cove area and extend for nearly a mile to the south, with some areas to the north into the 65 dB and higher range.

5. Minimize clearing of trees and other native vegetation. Shoreline areas contain many different ecological communities and the greatest number and variety of plants and animals. Leaving dead snags (for eagles and other birds to nest/roost), leaving native trees and shrubs (for deer to use in winter), and setting structures back from the shoreline (leaving tidelands undisturbed) are all ways to provide for the needs of native animals. It is recommended that for new residential and recreational development within 200 ft of the Blank Inlet shoreline, at least 50% of the natural vegetation should remain undisturbed.

6. Setback buildings and structures from the shoreline. Shoreline setbacks are used to allow property owners to enjoy the privilege of living or establishing a business on the waterfront while protecting the views of adjacent property owners as well as recognize public interests and ecological considerations. The amount of setback may often be 50 to 100 feet or more depending on the site, nature of the proposed development, extent of vegetation removal and other development practices.

7. Allow for walking along the shoreline. Property lines typically extend landward from the mean high tide line, permitting public movement along the shore when tides are low. Docks, jetties, mooring lines and other shoreline structures should not interfere with this except as required for economic development activities. A "best practice" in Borough waterfront subdivisions is to provide shoreline trails where needed above the mean high tide mark to help people more easily negotiate obstructions such as rock outcrops, logjams, small creeks, etc.

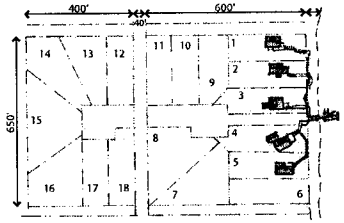
8. Maintain the natural flow of water through the property. Shoreline areas have numerous small creeks and drainage channels for directing Ketchikan's abundant rainfall and storm water to the sea, thereby preventing erosion and flooding. Property owners should minimize disturbance to these often fragile, natural water flow paths.

9. Keep wastewater out of the sea. Residential development creates two kinds of wastewater: sewage and runoff (from buildings, driveways, etc.) For years, waterfront properties took advantage of the significant tidal flushing of Tongass Narrows to dilute sewage. This is no longer permitted due to higher water quality standards and increased population. Surface runoff can best be controlled with site grading and landscaping. Wherever possible, runoff should be directed into a natural basin or swale where sediments and possible pollutants can be naturally filtered prior to flowing to the sea. Sewage treatment systems should be regularly checked to insure proper functioning.

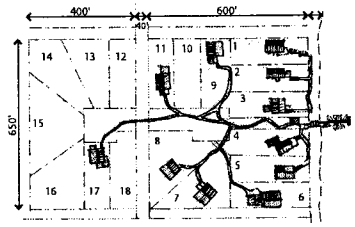
10. Avoid difficult site conditions. Some shoreline lots may have especially difficult site conditions such as a high bank, very steep topography, or a large creek running through. These may mean that one cannot build as close to the shoreline as desired, or special professional assistance is needed to work within these constraints. In a few cases, such limitations may indicate that the lot should not be developed at all.

11. Minimize site disturbance during construction. Providing access for heavy equipment and storing building materials typically requires land clearing and site modification beyond the perimeter of the finished building. Minimizing and keeping these areas upland, away from the shoreline, will save later landscaping costs and maintain the natural quality of the site. Trees and areas to remain undisturbed by construction crews should be clearly marked.

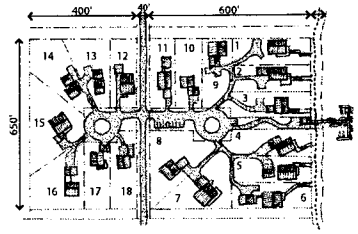
12. Keep vehicles and clutter back from shoreline. Shorelines are visually sensitive parts of the landscape; they are frequently viewed and have low screening ability. This is especially important along the heavily-trafficked west channel of Tongass Narrows south of Clam Cove. Derelict vehicles, piles of building materials and similar items should be kept upland, screened by vegetation. Providing for vehicular access to the waterfront requires site disturbance (clearing and re-grading). Unless essential for the conduct of business, driveways, garages, and parking are best kept on the upland side of the property.



Stage 1: Waterfront properties sell first and are developed around a shared dock and access by boat only. Note development of shoreline trail/ boardwalk.

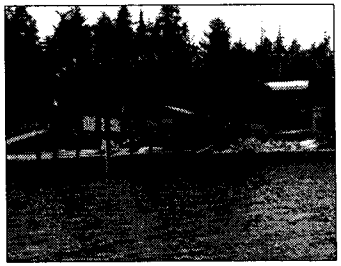


Stage 2: Some upland properties also develop with access still by boat only. Note development of central access corridor down to shared dock.



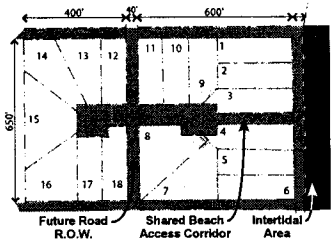
Stage 3: Road extended to subdivision. Upland properties begin to develop, and waterfront properties add driveways and parking. Note shared driveways along lot lines and road down to beach/shoreline.

12/ Shoreline Development Recommended "Best" Practices



Development on shoreline lots without road access requires investments in some kind of mooring or docking structure. Where nearshore topography is shallow, such as in this case along Tongass Narrows south of Clam Cove, a lengthy dock may be necessary. Where more intense shoreline development happens, such structures could be shared by both waterfront and upland property owners to reduce construction and maintenance expenses, minimize environmental impacts and reduce clutter along the shoreline.

Shoreline Subdivision Layout Incorporating Many of the Recommended Practices Described Here



Subdivision layout establishes 18 lots (6 waterfront properties), access easements and open space reserves for shoreline and upland properties. Note recommended 25 ft. shoreline common space above mean high tide to allow for walking along beach. Public/common space is shaded.

The development that occurs on Gravina will be largely expressed in changes to its shoreline. Most industrial activities are dependent on marine access and most residential uses will occur along the beach. Gravina's shoreline is important in many ways to Ketchikan residents: we admire its beauty, we fish along it, we walk along it (where possible), we enjoy or depend on the deer and other animals who rely on the shoreline for survival, and we benefit from the visitors who come to Ketchikan to, among other things, appreciate our beautiful waterfront setting.

The impacts of change that reduce our enjoyment of Gravina or our attractiveness as a visitor destination can be minimized by employing development practices that respect the important role the shoreline has in our lives. Regulations administered by the Borough, Corps of Engineers, Fish & Game, and others address only some impacts. Many impacts can only be addressed through responsible individual initiative. The following "best practices" are intended to assist planning and siting of new shoreline structures and protecting assets that citizens now enjoy. They are not meant as official procedures, but rather as guidance to designing successful shoreline facilities and residences.

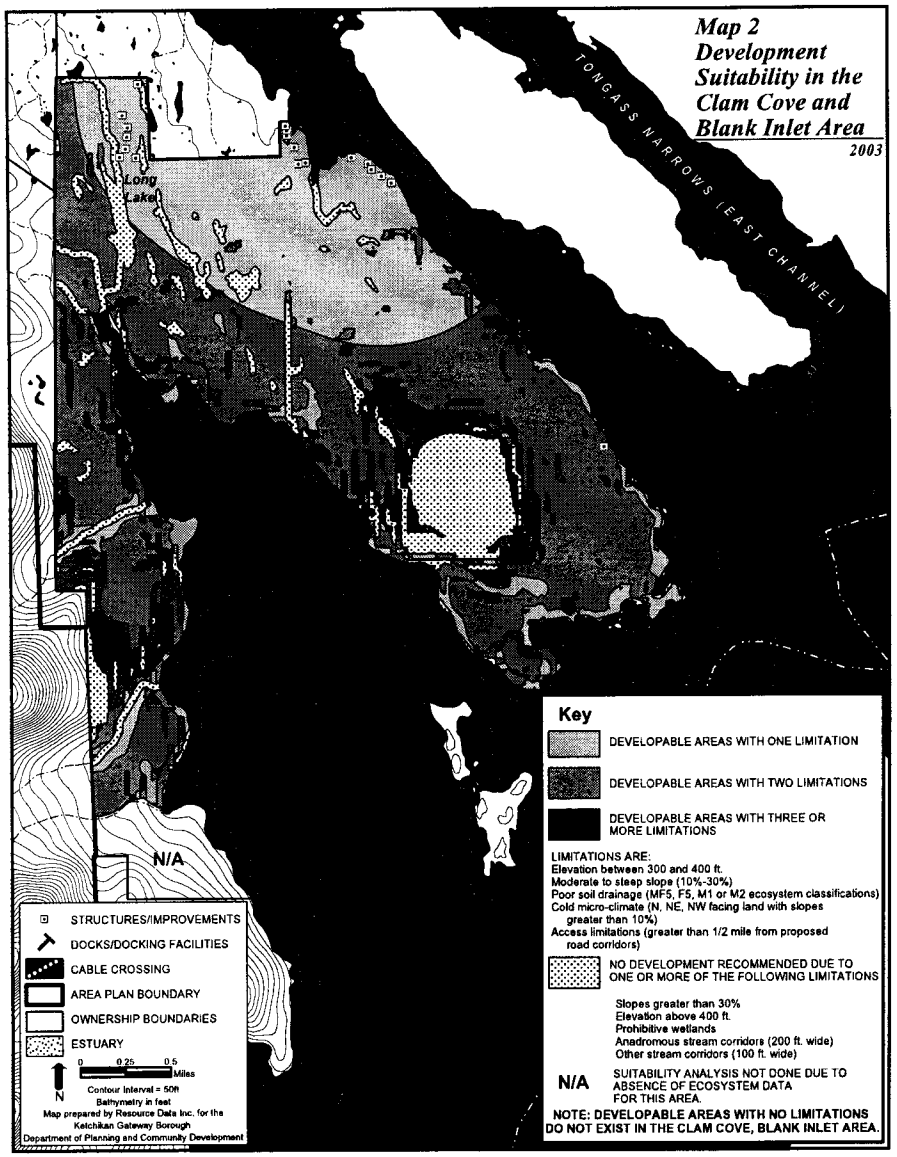
1. Give priority to water-dependent and water-related uses Waterfront land is scarce and expensive. It is important to use it carefully and not substitute it for uses that could function just as well on non-waterfront land. A water-dependent use is one that requires a waterfront location, like a dock, which can only be located on the water. A water-related use is one that benefits uniquely from its waterfront location, even though it is not strictly necessary for it to be on the water. A waterfront lodge at Gravina Point is an example, as well as recreation and some residential uses. It is important to optimize water-dependent and water-related values, both because community interests will be well-served by the property's contribution to the local economy and because high property values will be developed and maintained.

2. Start with a site development plan An important first step is a site plan that identifies the best locations for structures, roads and other improvements, as well as areas to remain natural. In preparing such a plan it is important that the long-term development and use of the entire property and, when appropriate, neighboring properties be taken into account.

3. Minimize site re-grading People often respond to steep and irregular shoreline topography by filling in low areas and cutting away steep banks in order to have a flat building pad. This typically leads to extensive rock retaining structures. On narrow waterfront lots, this can easily impact most of the site. Often the best solution is to build on posts or pilings in order to make a lighter footprint. On lots where site re-grading may impact 50% of the site within 200 feet of the shoreline, professional design assistance should be sought prior to commencing work.

4. Maintain the natural flow of water through the property. Shoreline areas have an abundance of small creeks and drainage channels for directing Ketchikan's abundant rainfall and storm water to the sea, thereby preventing erosion and flooding. Property owners should minimize disturbance to these often fragile, natural water flow paths.

5. Setback buildings and structures from the shoreline. Shoreline setbacks are used to allow property owners to enjoy the privilege of living or establishing a business on the waterfront while protecting the views of adjacent property owners as well as recognizing public interests and ecological considerations. The setback may often be 50 to 100 feet or more depending on the site, nature of the proposed development, extent of vegetation removal and other development practices.



3/Economic Development Opportunities

Economic development is often measured by numbers of jobs, increases to existing business activities, additions to the local tax base, investments in infrastructure and community services, and the formation new businesses. While the Clam Cove and Blank Inlet areas have seen little economic activity and change in the past 25 years, the potential for economic growth exists, particularly if some of the major barriers to such growth are reduced or removed, and certain projects which typically stimulate economic activity are implemented. Primary barriers to investment and growth in the Clam Cove and Blank Inlet area include:

- lack of road access, with dependence on boats and shoreline docking facilities,
- significant amounts of land with poorly drained, organic soils, and thus more difficult to develop,
- enough other sites in the Borough which are more easily accessible and less expensive to develop, and
- preferences of some residents for a rural lifestyle without many of the conveniences that most people deem essential.

Major projects which could stimulate investment and growth in the area include:

- either a Pennock bridge, or extension of a road from the Airport,
- Borough land sales, especially shoreline properties
- small boat marina and other improvements to boat docking facilities,
- development of proposed Fisheries Industrial Park at south end of Airport Reserve (including a water distribution and wastewater treatment system extended to Clam Cove properties), and
- improvements to facilities within Black Sands Beach State Park

The matrix below lists some of the projects identified during the planning process and indicates likely economic benefits. It needs to be noted that projects such as these might bring costs to the community in addition to economic benefits. For example, new roads mean more annual maintenance costs; growing neighborhoods may need extensions of services such as fire, police and schools; and sales of Borough land require survey, legal and administrative costs. Successful economic development strategies are those where these costs are minimized and/or met by developers or beneficiaries, rather than assumed by the general public. The map on the facing page illustrates where economic development opportunities might be found in the Clam Cove and Blank Inlet area.

Economic Benefits/Impacts of Selected Projects

DEVELOPMENT ACTIVITY OR ACTION	Supports local construction jobs	Supports commercial fishing industry	Supports local timber industry	Supports tourism & visitor industry	Supports real estate, banking, etc.	Supports recreation businesses/services	Creates new businesses/services	Increases local tax base
Clam Cove Community Center	○	•	•	○	○	○	○	●
Fisheries Industrial Park	○	●	•	•	○	•	●	●
Community water and sanitation system	○	•	•	•	○	•	○	●
Small marina in Clam Cove	○	○	•	○	○	●	○	○
Timber harvest on Borough & University lands	•	•	●	•	•	•	•	○
Borough land sales/leases	○	•	•	•	●	○	•	●
Gravina trail system improvements	•	•	•	○	•	○	•	•
Pennock bridge	●	•	•	○	•	○	○	•
Road from airport to Clam Cove	○	•	•	○	•	○	•	•
Golf course or equestrian center	○	•	•	●	•	●	○	○
Small resort hotel	○	•	•	●	○	○	○	●
Recreational Cabin sites	○	•	•	○	○	○	•	●
Black Sands Beach improvements	•	•	•	○	•	●	•	•

KEY:

- ● *Significant benefits likely*
- ○ *Some benefits likely*
- • *No benefits likely*

Guidelines for Clam Cove and Blank Inlet Resource Management Units

ManagementUnit
(see map, page 25)

RESOURCE VALUES	1	2	3	4
Recreation	●	●	○	●
Timber				●
Fisheries		○	○	○
Minerals				
Energy				
Habitat	●	●	●	●
Air & Water Quality	●	●	○	○
Hazard Avoidance	○	○		
Visual/Aesthetic	●	○	○	○
Visitor Attractions		●	○	○
Screens & Buffers	●	○		
Open Space	●	●	○	

Values Key

- ● Primary value (access, use and management decisions should favor this activity)
- ○ Secondary value (access, use and management decisions should favor this activity as long as it does not interfere with primary values)
- Not present or of significance in this area

ACTIVITIES	1	2	3	4
Recreational hunting	■	●	●	●
Recreational fishing	●	●	●	●
Recreational cabins (leases)	■	■	■	⧸
Motorized recreation, ORVs	●	⧸	■	⧸
Personal fuelwood cutting	■	■	■	⧸
Structures (temporary)	■	⧸	■	⧸
Structures (permanent)	■	■	■	⧸
Materials site/quarry	■	■	■	■
Timber harvest	■	■	■	⧸
Commercial fishing	■	■	■	⧸
Roads (controlled access)	■	⧸	■	■
Roads (open access)	■	■	■	■
RV camping	■	■	■	■
Tent camping	■	●	●	●
Hiking	●	●	●	●
Wild food gathering	●	●	●	●

Activities Key

- ● Generally allowed
- ⧸ Allowed only in designated areas or by permit
- ■ Not generally allowed

Notes:

1. Management Unit 1 (Borough land) should be designated "Gravina Lake Country Natural Area".
2. Management Unit 2's primary management objective is to connect the proposed USFS Nipple Mountain Old Growth Reserve to the Blank Inlet shoreline
3. Management Unit 4 includes private lands where access and uses are subject to permission by owner



This photo of Long Lake and Blank Inlet estuary shows the path of glacial ice movement across this landscape by the elongated, parallel, mostly north-south oriented lakes. Glaciers scour out depressions which eventually become lakes. They also push up and leave deposits of silt, sand and rock which become small hills (called moraines and eskers). All of these features are evident in this landscape.

Resource Management (MR) Policy Options

MR/1 The Borough will complete a materials (rock, sand, gravel) resource assessment of eastern Gravina Island (including the Clam Cove & Blank Inlet area) to identify potential sites, quality of materials, feasibility of development, reclamation potential, and recommended strategy for providing materials for Gravina development (including analysis of securing materials from the Airport quarry and from sites on Revillagigedo).

MR/2 Clam Cove and Blank Inlet's commercial timber resources will be used to support small, value added forest products industries, especially those located within the North Gravina industrial park and adjacent cottage industry zone.

MR/3 Timber harvest activities will be designed to protect the beach fringe along Blank Inlet (up to 300' along the shoreline).

MR/4 Timber harvest activities within anadromous creek watersheds will be guided by Alaska Department of Fish and Game requirements.

MR/5 Marine areas in Blank Inlet should be managed by DNR to give priority to habitat protection first, recreational and personal resource harvests second, and commercial fisheries harvests third.

MR/6 Personal resource harvest activities will continue to be allowed throughout the area except on private lands. Harvest activities in specially designated lands such as Black Sands Beach State Park will be permitted and guided by park management plans and policies.

MR/7 The Borough will exercise its development controls to retain the natural visual character of the coastal landscape primarily through setbacks of road construction and other land transformation activities from the shoreline.

MR/8 Mineral exploration and development will be permitted to the extent that existing and planned uses as outlined in this plan are not adversely impacted. Master plans are required for materials and quarry site developments which include provision for screening, noise and dust control during operations as well as restoration and re-use when mining activities are completed.

MR/9 The Borough will mitigate the impacts of roads and other development activities affecting federally recognized wetlands through expanding high value wetlands watersheds in the Gravina Lake Country area.

MR/10 The Borough and other landowners will identify and dedicate sites where experimental timber management activities can be tested (e.g., hybrid poplars, spruce and cedar plantations, fuelwood lots, replanting approaches, etc.).

MR/11 Critical habitat areas defined by ADF&G and USF&WS should be retained in their natural state. Buffer strips may be required to separate such areas from road building or residential development. The width of such buffers is to be recommended by ADF&G and/or the USF&WS.

MR/12 The Borough will pursue land exchanges where appropriate to create ownership boundaries which allow for more cost-effective and consistent management.

The following resource management policies, from the Gravina Island Plan Citizen's Guide are important to the Clam Cove and Blank Inlet area.

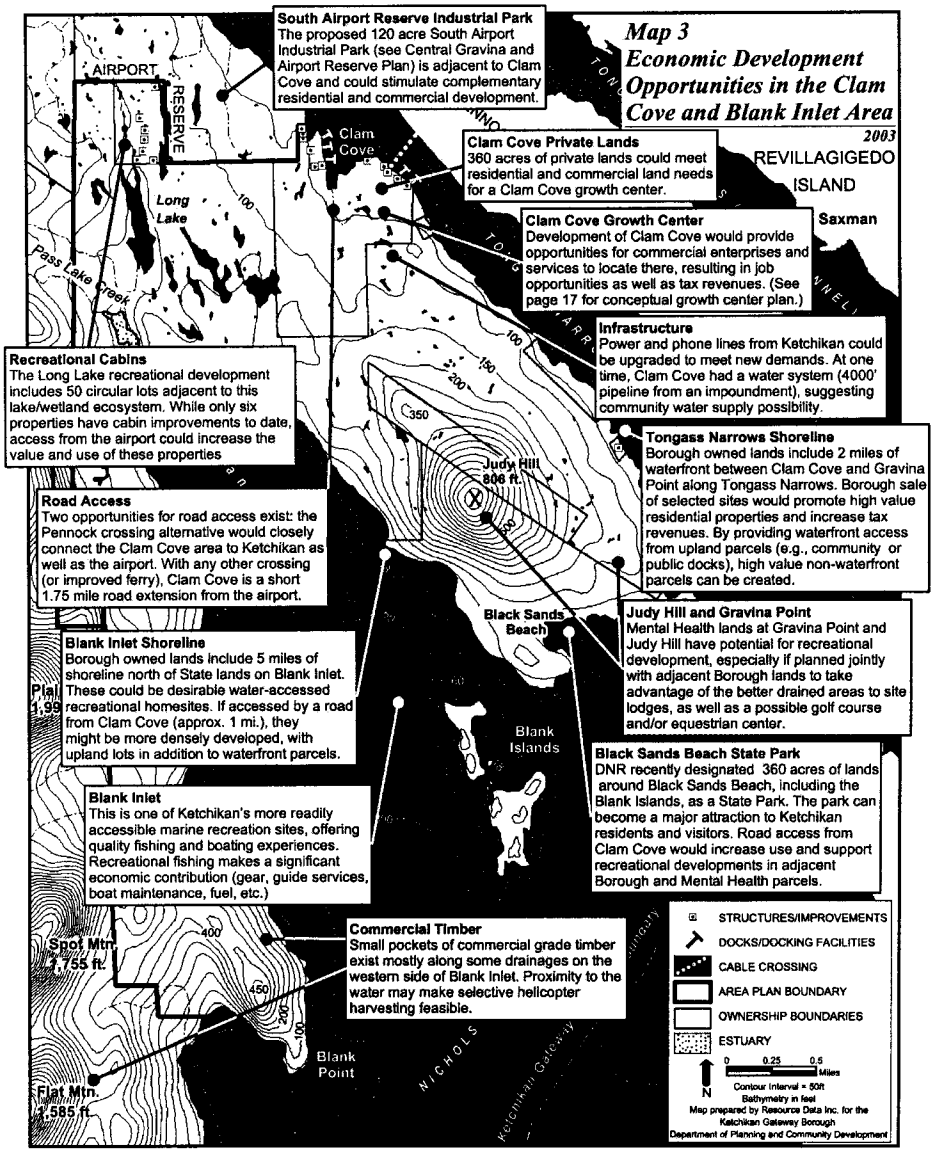
10.1 The State of Alaska Forest Resources and Practices Act (AS 41.17) and its regulations and procedures, shall provide the minimum resource protection standards and permit review procedures for timber harvest from federal, state, borough, and private land.

10.2 The Borough's forest management activities shall be planned so as to:

- Create a sustainable supply of direct and indirect jobs within the local economy.
- Provide a range of opportunities for large and small businesses engaged in the wood products industry.
- Improve timber growth and productivity on suitable timberlands made available for timber harvest, and manage these lands for long-term sustained yield.
- Contribute a timber supply to meet market demand.
- Provide a mix of resource use activities to meet recreation, personal resource harvest & other needs.
- Recognize scenic values of timberlands viewed from popular roads, trails, marine travel routes, recreation sites, bays, and anchorages, and modify timber harvest practices accordingly.
- Minimize adverse impacts to fish and wildlife populations and their habitats.
- Ensure the free passage of anadromous and resident fish in rivers, streams, lakes, and marine waters.
- Minimize sedimentation, erosion, and alteration of natural drainage patterns.
- Maintain long-term productivity of forest soils and ecosystems.
- Promote regeneration of harvested forests.

10.3 Sites for in-water log storage and transfer shall be selected and these activities conducted so as to minimize adverse affects on the marine ecosystem, conflicts with recreational uses, navigation hazards and exposure to storms.

10.4 Sand and gravel may be extracted from intertidal areas only when there is no feasible alternative to meet public need.



4/Community Interest Lands & Resources

Clam Cove is expected to become a growth center and the Blank Inlet area will be a prime recreation destination. Eventual road improvements will permit developing lands around Clam Cove as well as establishing an industrial park at the south Airport Reserve. This will create the right conditions for subdivision and sales of Borough lands, especially shoreline and second tier properties, to the south of Clam Cove. As this occurs, it is important to recognize that it is in the community's interest to identify and set aside some lands and resources to:

- protect future economic development opportunities, especially those associated with community growth around Clam Cove and along the shoreline, and
- maintain the quality of and access to resources now enjoyed by many residents, especially Black Sands Beach, Blank Inlet shoreline and recreation areas, and important lakes, streams and estuaries.

1. Black Sands Beach

Description: Approximately 600' sandy beach and nearly 3/4 mile of walkable shoreline; part of a State Park; includes one mooring buoy and basic sanitation (pit toilets).

Community Interests/Values: popular summer recreation area close to Ketchikan; somewhat protected from storms; used for hunting and fishing as well as boating and general recreation; surrounded by old growth spruce-hemlock forest.

Use/Development Considerations: part of State Park system; develop a park master plan to identify priority improvements.

Recommended Actions: improve boat facilities (small dock) for better access; blaze trail system to Judy Hill; develop attraction of old-growth trees/groves, with trails and interpretive signage.

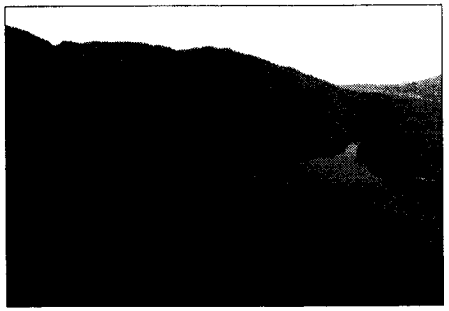
2. Blank Inlet Estuary

Description: Approximately 7 acres of intertidal area at head of Blank Inlet, fed by two unnamed creeks, Pass Lake Creek and Long Lake watersheds, DNR tideland management unit KT-23.

Community Interests/Values: diverse ecosystem and wildlife habitat (eelgrass beds, spring Pacific Herring spawning, coho and pink salmon spawning, rich in shorebirds, black bear, deer winter range, Dungeness crab, marine mammals, furbearers; some personal harvest activities.

Use/Development Considerations: high value wetland, unsuitable for development; health dependent on upstream water quality. part of Borough-dedicated wetland mitigation area; designated "important upland habitat" in current Coastal Plan.

Recommended Actions: integrate into proposed Gravina Lakes Natural Area, encompassing adjacent creek watersheds; limit disturbance due to site's fragility (boardwalks as necessary).



Like so much of Gravina, the Blank Inlet area shown here is an almost untouched landscape virtually at the doorstep of most of Ketchikan's people. To enjoy it one needs a boat--or serious waterproof walking shoes--and a sense of determination and adventure. While much of this landscape appears forested from a distance, a good portion, including many steep upland slopes, has scrub timber and very wet soils. The area just above Blank Inlet estuary has over 25 large and small lakes scoured out by the last glacier. The large mountain to the left is Curve Mountain, with Bostwick Lake just behind.

3. Judy Hill

Description: a natural landmark in the area; 806' tall, summit within State Park, NE slopes within Mental Health lands; open muskeg with some steeper slopes; named by 1883 Nichols expedition based on Punch and Judy puppet theater (see Punch Hill and a mountain called "the Puppets" above Seal Cove).

Community Interests/Values: natural landmark; possible viewpoint within State Park; some better-drained lands on NW and SW slopes have development potential; some commercial timber; may contain sites suitable for quarry/materials site development.

Use/Development Considerations: wet soils and steep slopes limit use; develop in relation to State Park uses.

Recommended Actions: maintain ridgeline in natural vegetation with only selective clearing; evaluate recreational uses for Park master plan; incorporate viewpoint in Park trail network.

4. "Historic" Clam Cove

Description: Sites and structures associated with early Clam Cove settlement (including Stensland homestead, Forest Service shipyard and boathouse site, Coast and Geodetic Survey site).

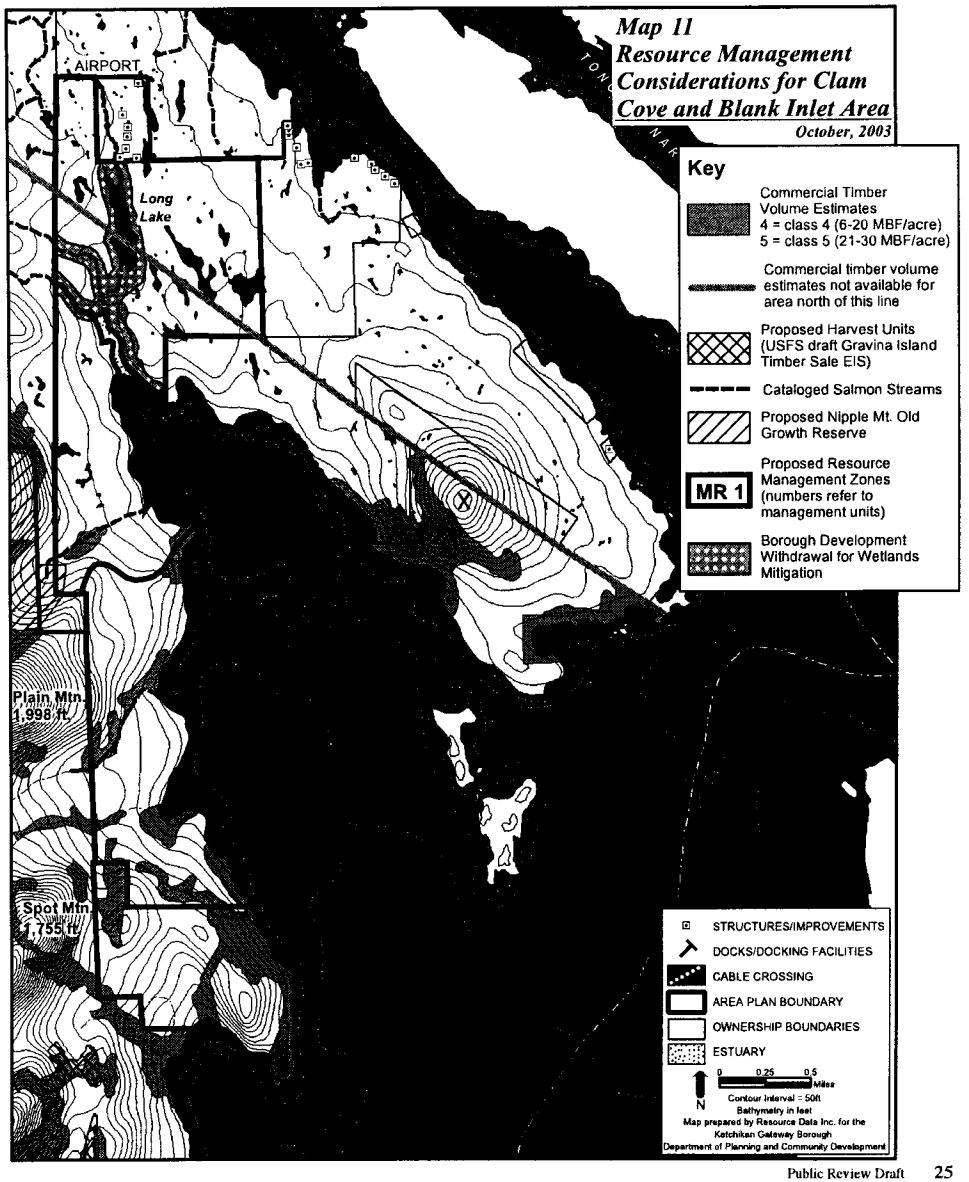
Community Interests/Values: one of the area's oldest settlements, part of Ketchikan's heritage; potential visitor attraction.

Use/Development Considerations: some structures may be restored; sites should be surveyed and catalogued; some sites currently within Airport Reserve.

Recommended Actions: seek funding for inventory and research, gather information and photographs; complete interviews with residents and old timers who have stories and information; include as destination on Gravina shoreline trail system.

5. Gravina "Lake Country"

Description: over 20 lakes west of Clam Cove, the largest being Long Lake, nearly 3/4 mile long and 500' wide; includes catalogued salmon stream # 0010 (coho); all Borough-owned except for Long Lake subdivision (84 acres).



11/Resource Management (timber, fisheries, mining, habitat & views)

Findings

The Clam Cove and Blank Inlet area has limited commercial timber resources, mostly located in prime recreational areas (Black Sands Beach State Park), along the shoreline, or along creeks.

Blank Inlet is part of ADF&G Statistical Area 101-27, considered to be a "secondary troll and seine fishery" meaning that it is not as heavily fished as, for example, the western shoreline of Gravina. The area does have geoduck potential, but is currently within a dive fishery study area, with no commercial harvest permitted. Blank Inlet estuary is one of Gravina's three most important fisheries nursery areas (along with Bostwick Inlet and Vallenar Bay).

The habitat values are significant. Blank Inlet estuary and its watersheds are a microcosm of many of the Ketchikan area's ecosystem types (eel grass beds, open muskeg wetlands, various forest types, large and small lakes, etc.). This diversity is reflected in an abundance of marine and terrestrial plants and animals. The lake system is important to migrating waterfowl, and the Blank Inlet shorelines are considered critical deer winter range.

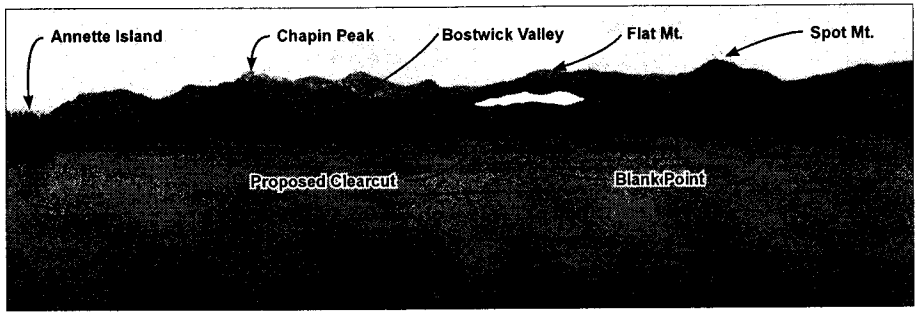
There may be sand and gravel deposits along the glacially deposited moraines and eskers between and around the lakes. Some rock materials sites may exist around Judy Hill, but these resources need to be evaluated.

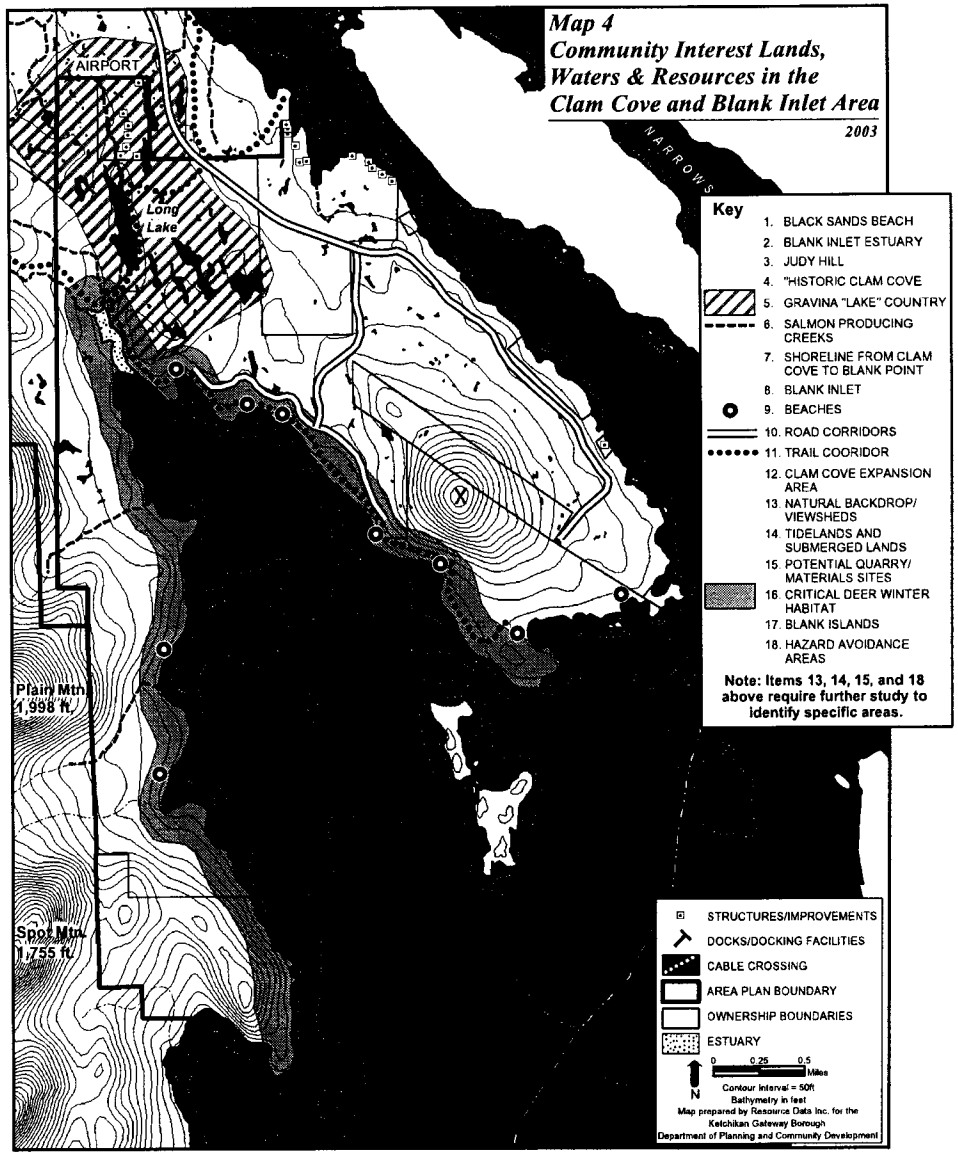
The area's flat to rolling topography and low elevations makes shorelines the most sensitive areas visually. Much of the area is not readily visible from Ketchikan (blocked by Pennock Island), making shoreline visibility from ship channels the most critical visual concern. There is virtually no sign of human activity other than the developments around Clam Cove.

Mining exploration focused on the Judy Hill area, and resulted in one patented gold mining claim along Tongass Narrows, but no significant development. The area was included in a mineral survey fly-over (1999) with results pending.

The Forest Service proposes that its Nipple Mountain area lands be managed as an Old Growth Reserve. In addition, Borough lands along several streams and lakes above Blank Inlet estuary are to be classified open space as wetlands mitigation for the Airport-PL&L mill road under development in the North Gravina area.

View from Mountain Point across Blank Inlet, illustrating the location of clearcuts proposed in the Gravina Island Timber Sale draft EIS. Photo simulation is a useful tool in assessing visual impacts of proposed timber cutting or other development activities. The harvests proposed here are located around Flat Mountain, and are near the University Trust lands below Spot Mountain to the right. The lower slopes of Blank Inlet shown here, owned by both the Borough and University, do contain patches of commercial timber; however it is mostly along stream valleys, and would be difficult to access except with helicopter logging techniques. Due to high recreational values of the Blank Inlet area, this plan recommends selective harvesting rather than larger clearcuts.

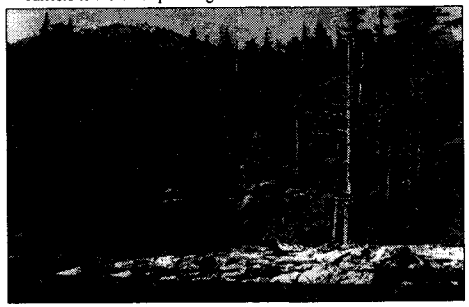




Community Interests/Values: lakes part of salmon producing creek systems (coho), key to water quality of Blank Inlet estuary; prime fish and wildlife habitat, supports migrating waterfowl; best example of lake-muskeg-estuarine complex of wetlands in the Borough; at one time popular "swimming holes."
Use/Development Considerations: includes Long Lake recreational subdivision; Federal wetland regs apply in much of area; part of Borough dedicated wetland reserve (mitigation for Airport road); used for hunting/fishing, road development difficult.
Recommended Actions: promote awareness as attraction; restrict incompatible uses; invite scientific research, including possible Wetlands Information & Research Center; negotiate exchange of several incompatible lots with Long Lake property owners; establish Gravina Lake Country Natural Area and use as future mitigation; require sealed sanitation systems for cabin development to maintain water quality; develop trails; limit road access.

6. Salmon Producing Creeks

Description: seven catalogued anadromous creeks (#s 10520, 10560, 10610, 2001, 10620, 0010, and 10310) with pink and coho runs; four of the systems feed into Blank Inlet estuary.
Community Interests/Values: runs support commercial, recreation and personal harvest fishing: some commercial timber within stream corridors; creeks are prime habitat for other wildlife.
Use/Development Considerations: considered "high value" wetlands, best retained as habitat/mitigation bank; stream crossings (roads, trails) to permit fish passage and control siltation.
Recommended Actions: some selective logging may be possible; include corridors in open space reserves where they run through proposed development areas (such as through Clam Cove); remove barriers to increase spawning habitat.



Much of the Clam Cove and Blank Inlet shoreline is rocky, with forested vegetation extending down to the high tide line, as illustrated in this photo of the eastern shore of Blank Inlet. Boat access is often limited due to shallow nearshore topography and submerged rocks, as well as exposure to wind and wave action coming from the south-southeast. Shoreline sites tend to have better drained conditions and are more suitable for residential or recreational homesite development than more inland sites in this area.

7. Shoreline from Clam Cove to Blank Point

Description: Approximately 2.7 miles of undisturbed, rocky, mostly Borough-owned shoreline from south Clam Cove to Blank Point.
Community Interests/Values: highest valued lands for recreation and residential development; includes Blank and Gravina Points, important landmarks and navigation reference points; conspicuous section of Tongass Narrows shoreline, a heavily trafficked scenic corridor for recreation & ferry/cruise travelers.
Use/Development Considerations: Borough ownership enables high quality subdivisions with public shoreline access, scenic area conservation and development compatible with safe transit of vessels in and out of Ketchikan; minimize bulkheads, retaining walls and structures that impact the natural shoreline; restrict development of shoreline next to high banks.
Recommended Actions: promote public awareness and adoption of "best practices" for shoreline development (see pages 28-29); include shoreline protection measures in deeds prior to sale of Borough lands; establish shoreline walking trails when possible.

8. Blank Inlet

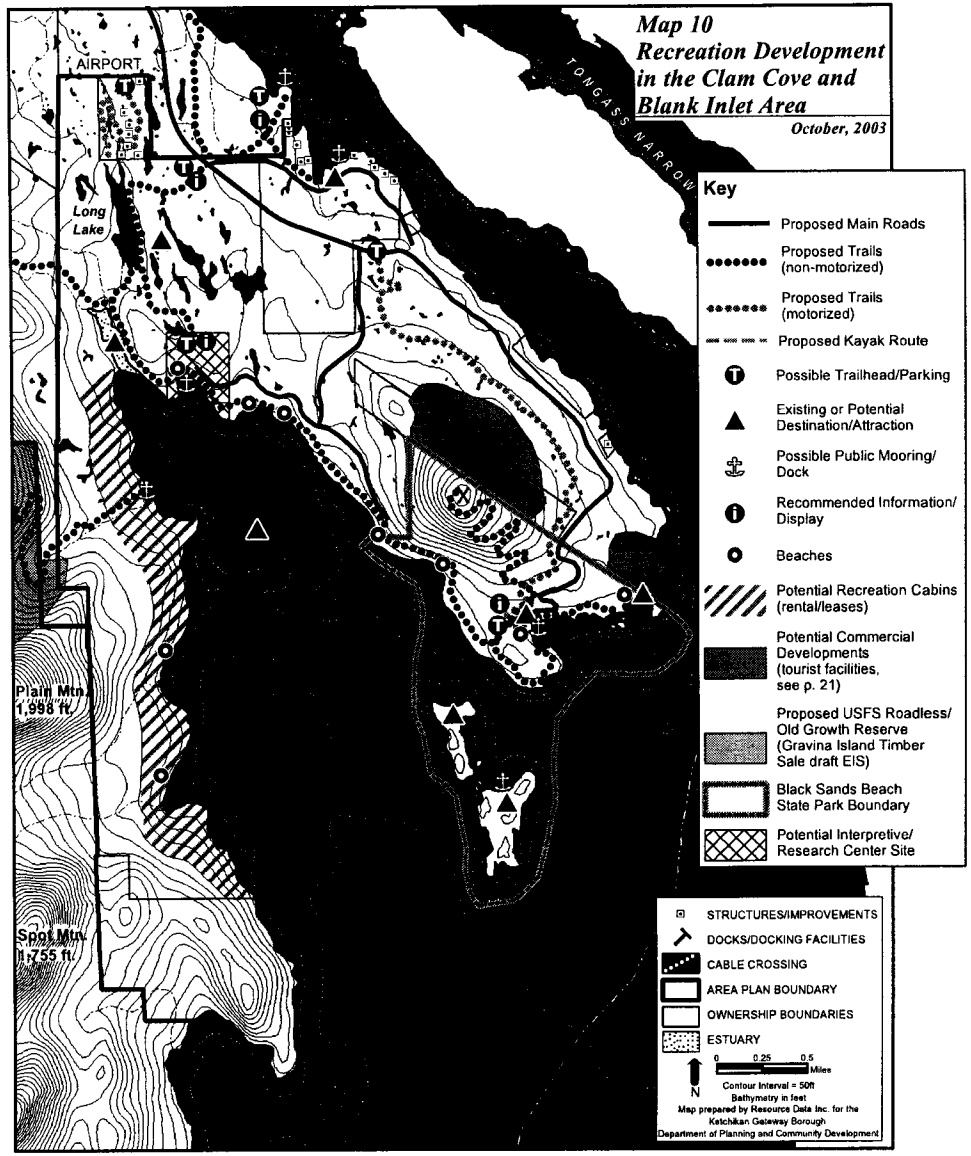
Description: includes approximately 196 acres of tidelands and submerged lands within DNR management unit KT-23.
Community Interests/Values: Gravina Island's second largest bay; high personal harvest use as well as recreation fishing/boating; a wild and natural marine area 20 minutes by boat from Ketchikan.
Use/Development Considerations: part of dive fishery study area (closed to commercial geoduck harvests); DNR management regimes include habitat, harvest, and limited shoreline use; water quality determined by upland uses, creeks and lakes feeding into Blank Inlet estuary.
Recommended Actions: recreation and personal harvest should be given priority over commercial fishing; manage upland uses (primarily Borough lands) so as to not impact water quality; monitor harvests and use to maintain fish and wildlife stocks.

9. Beaches

Description: shorelines with sandy rather than rocky or muddy intertidal zone (includes Black Sands Beach).
Community Interests/Values: preferred shoreline type for recreation; rare in Clam Cove and Blank Inlet area; can offer a secluded, natural beach experience for users.
Use/Development Considerations: beaches are small and separated by rocky shorelines with dense forest cover landward; many are exposed to wind and wave action; typically accessible only by boat, boat anchoring often possible; may be accessed and linked by future shoreline trails; below mean high water owned by DNR.
Recommended Actions: retain uplands adjacent to key beaches in public ownership; develop trail system in State Park between beaches to promote access and use; install mooring buoys when difficult anchoring conditions; link to Gravina Trail System where possible to provide land access.

10. Road Corridors

Description: best alignments for future road system, providing access to developable lands and resources as well as destinations such as Black Sands Beach.
Community Interests/Values: saves public funds by protecting best alignments and avoiding future buy-back or re-routing costs; can minimize crossing of anadromous creeks and sensitive wetlands; promotes cost effective development patterns; provides predictable framework for private land development; provides space for efficient utility distribution.
Use/Development Considerations: road alignments needed in order to move ahead with land subdivision and sales; determine right-of-way width by type of road and projected level of service; avoid wetlands and ecologically sensitive areas; provide for scenic turnouts, trailheads/parking, bike trails, etc.
Recommended Actions: once the decision for improved access to Gravina is clear, prepare a road system master plan to guide planning decisions and investments; private (pioneer) roads are to follow proposed alignments and establish access until up-graded to minimum Borough standards and opened to the public.



10/ Recreation Development



Blank Inlet's western shoreline, shown here, slopes up to mountains making up California Ridge. The peak to the right is 2096 ft Nipple Mountain, which is recommended as an old growth reserve in the Gravina Timber Sale, draft EIA. The left peak is the slightly lower Plain Mountain. Access to this shoreline will likely remain primarily by boat.

Findings

The wild and untouched character of the Blank Inlet area, with its abundance of wildlife and fisheries resources, and proximity to Ketchikan form the basis of its attraction for recreational use. Fishing, hunting and boating are the primary recreational activities in the area.

Black Sands Beach State Park, with its 640 acres of land and marine waters, has a number of attractions including popular Black Sands Beach, other beaches and coves, Blank Islands and Judy Hill. Facilities include pit toilets and one mooring buoy.

The area has exposed marine conditions subject to wind and wave from Nichols Passage. The few protected coves and beaches are important to recreational boaters. The buoy at Black Sands Beach is the only public mooring.

Primary access to the area will continue to be by boat and recreation activities will be concentrated along the shoreline. Trails development on Gravina may improve land access and use of uplands. Road access to Black Sands Beach from Clam Cove may be feasible depending on bridge location and road investment decisions.

Trails could link Black Sands Beach, Judy Hill, the Blank Inlet estuary, and Gravina Lake Country with Bostwick Lake and other proposed trails. Trail development will require careful alignment to minimize the need for boardwalks and other techniques to traverse the extensive muskegs. Gravina Lake Country, a unique concentration of lakes and wetlands, is a rich natural area with potential to be a popular attraction. All of it is Borough owned except for the 84-acre subdivision of 50 circular recreational lots.

The Clam Cove community does not have parks and recreation related areas. A park, public dock, and trailhead to the Gravina Shoreline Trail has been proposed as part of the proposed South Airport Reserve Industrial Park (see Central Gravina & Airport Reserve plan, pp 21) immediately north of Clam Cove. Providing some waterfront land in Clam Cove for public recreation and marine access would be important to a future community.

Planned development areas around Judy Hill and Gravina Point (see pp 20-21) could include special recreational facilities such as a golf course or equestrian park to serve residents and visitors.

The west shoreline of Blank Inlet (Borough and University Trust lands), as well as sites within Black Sands Beach State Park could provide sites for boat accessible recreation cabins. Some could be long-term leases; some could be rentals. Currently, Gravina Island only has one rental cabin, administered by the Forest Service, located at Phocena Bay on the island's west coast.

With improved access from Ketchikan, winter recreational use of Gravina Island could be promoted. The numerous lakes could provide ice skating opportunities, the extensive poorly drained areas can be more easily explored, and snowmobile use areas could be delineated.

Recreation Development (RD) Policy Options

RD/1 The Borough shall work with the USFS, Alaska State Parks, Trails Ketchikan and others to prepare a Gravina Island Trail Plan, incorporating Clam Cove and Blank Inlet attractions and linking to the proposed Gravina Shoreline Trail along the Airport Reserve (see Central Gravina & Airport Reserve Plan).

RD/2 New recreational attractions shall be developed that provide multiple means of access (boat/kayak, vehicle, bicycle, walking, wheelchair) to address a range of needs & preferences.

RD/3 The Borough shall provide easements and setbacks for development activities on its waterfront lands to enable access and movement along the shoreline.

RD/4 The Borough shall work to provide suitable areas for motorized recreational activities, away from sensitive natural areas, and from areas of high non-motorized recreational use.

RD/5 The Borough shall support development of visitor industry services, facilities and attractions such as lodges, boat launching ramps, golf courses, etc.

RD/6 The Borough shall work to improve marine access and use of the area's recreational attractions through the installation and maintenance of mooring buoys.

RD/7 Hunting will continue to be permitted on Borough lands. Motorized access will be regulated to minimize impacts.

11. Trail Corridors

Description: easements and public lands designated for inclusion in a proposed Gravina Island Trail System, providing for recreational use (walking, hiking, x-c skiing, mountain biking, horse, and ORV) and for access to community facilities/services.

Community Interests/Values: ensures public access to attractions/ services; can make areas more accessible to more people; useful management tool to direct activities to desired areas, and control potentially incompatible uses (e.g., ORVs and hiking); convenient trail access adds to property values where provided.

Use/Development Considerations: extensive wetlands make trail development more costly; trailheads should be integrated with the proposed road network as well as water access points (docks, moorings, etc.); some trails should be sited within the road rights-of-way (e.g. biking, ORV); shoreline trail easements should be included in waterfront development layouts; may require negotiating with private landowners for easements.

Recommended Actions: incorporate recommended Clam Cove and Blank Inlet area trails into the Gravina Island Trail System master plan; include trail considerations into Black Sands Beach Master Plan; include trail easements in Borough land sales when trails pass through proposed lots and along shorelines.

12. Clam Cove Expansion Areas

Description: land and marine areas for future Clam Cove expansion of residential, commercial and public uses.

Community Interests/Values: supports Clam Cove development (areas will be particularly important if Pennock crossing is implemented); promotes cost effective growth patterns; reduces need to develop on wetlands and less suitable sites.

Use/Development Considerations: Pennock bridge alignment would establish "edge" to Clam Cove community; extensive wetlands and lakes beyond Clam Cove "core" area constrain expansion; most expansion would occur on Borough lands.

Recommended Actions: develop a Clam Cove Community Master Plan--once the final DOTPF access decision is made--to address community expansion and growth; evaluate marine areas to provide for harbor and mooring opportunities, including the proposed south industrial park within the Airport Reserve; set aside shoreline uplands for harbor related facilities/services.

13. Natural Backdrop/Viewsheds

Description: shorelines and uplands visible from boats (small craft, ferries, cruise ships), residences and high use areas such as road turnouts, parks, trails, etc.; includes the shoreline fringe along Blank Inlet and Tongass Narrows, slopes of Judy Hill, and lower slopes of Spot, Plain and Nipple Mountains.

Community Interests/Values: helps maintain high visibility shoreline as a scenic landscape; contributes to the attractiveness of area for visitors and local recreational users.

Use/Development Considerations: shorelines most sensitive areas; flat to gently sloping topography with forest cover is the best condition for visually absorbing development activities; some of most sensitive areas within Black Sands Beach State Park.

Recommended Actions: minimize land surface alterations along shoreline (especially high bank waterfront); analyze visual impacts of proposed land development and timber harvests; shoreline developments to follow best practices (pp 28-29).

14. Tidelands & Submerged Lands

Description: areas between mean high and mean low water (tidelands) and those below mean low water to 3 miles seaward (submerged lands); there are two privately owned tidelands in Clam Cove (17.1 acres), all others are State owned.

Community Interests/Values: includes "high value" wetlands and marine habitat (nursery areas for many fish); popular recreation areas (beachcombing, fishing, boating); sites for essential shoreline structures (effluent outfalls, docks, moorings, marinas).

Use/Development Considerations: permits and leases for use available from DNR subject to Coastal Management regs and recommended practices; also subject to Federal wetlands regs.

Recommended Actions: Borough should acquire tidelands in areas it owns; identify "best practices" for tidelands/submerged lands use and promote implementation: include provision for common dock facilities in Borough waterfront subdivisions.

15. Potential Quarry/Materials Sites

Description: areas close to roads and proposed development centers (away from wetlands and anadromous streams) with rock, sand and gravel resources; potential hard rock sites around Judy Hill, sand and gravel deposits in glacial moraines.

Community Interests/Values: materials needed for most development activities, especially in areas where organic soils predominate; hauling costs minimized if sites close to developments; careful siting can minimize negative impacts.

Use/Development Considerations: site can be reclaimed/re-used when materials removal completed; need noise/dust control plan; site selection should consider potential for screening.

Recommended Actions: prepare a Materials Site Reconnaissance Survey to identify potential sites, quality of materials, reclamation potential, and strategy for providing materials for Gravina development; promote balance cut and fill on road alignments to reduce rock materials needs; explore using materials sites to store/ process overburden and vegetation debris from land clearing.

16. Critical Deer Winter Habitat

Description: forested shoreline and adjacent low elevation uplands providing deer forage and cover during periods of heavy winter snowpack, primarily along Blank Inlet.

Community Interests/Values: Gravina is one of Ketchikan's most important deer hunting areas.

Use/Development Considerations: primary habitat threat from recreational homesite developments along north Blank Inlet.

Recommended Actions: only selective cutting within 300 ft. of shoreline on public lands; Borough or University land sales to follow best practices for shoreline developments (pp 28-29).

17. Blank Islands

Description: two small islands within Black Sands Beach State Park.

Community Interests/Values: wildlife habitat; recreational use; emergency boat harboring; personal resource harvest.

Use/Development Considerations: access only by boat; eastern and southern shoreline very exposed; protected side shallow, rocky.

Recommended Actions: evaluate recreational opportunities for inclusion in Black Sands Beach State Park master plan; consider installing mooring buoys in most suitable site.

18. Hazard Avoidance Areas

Description: very steep slopes and floodplains.

Community Interests/Values: protect public safety and minimize costs from environmental accidents.

Use/Development Considerations: generally unsuitable for development and should be avoided.

Recommended Actions: map/incorporate into Borough natural hazards database; manage as open space; avoid road/trail crossings; promote awareness of locations and risks; manage cutting/land clearing in watersheds above flood-prone lowlands.

5/ Proposed Zoning

Zoning regulations protect the rights of individuals and the public. They affect the future of Gravina more than almost anything else that is done at the local level. Zoning will define the extent of the residential development in Clam Cove and along the shoreline, locations where commercial development might occur, as well as guide resource management and use of large tracts. The zoning ordinance consists of two parts; a text and a map. In the Clam Cove and Blank Inlet area there are two types of zoning recommendations:

- No changes to some existing zones (Low Density Residential, and Rural Residential), and
- New zoning classifications for those situations where existing Borough zone classifications may not satisfactorily guide development activities (e.g., Development Reserve, Resource Management, Planned Development)

Zoning of private land within the proposed Clam Cove Community Development Area (see map to right) remain in current classifications until a community master development plan is approved. At that time it is expected that zoning changes including General Commercial, Medium Density Residential and Public Lands and Institutions would be designated.

Note that some of the proposed zones include a Cottage Industry overlay. Below is a summary of recommended zoning actions. The page numbers in parenthesis indicate where recommended policies and additional information are to be found.

IP Industrial Park-South Airport Reserve (120 acres, see pp 12 and 20-21 of Central Gravina and Airport Reserve Plan for detailed information)

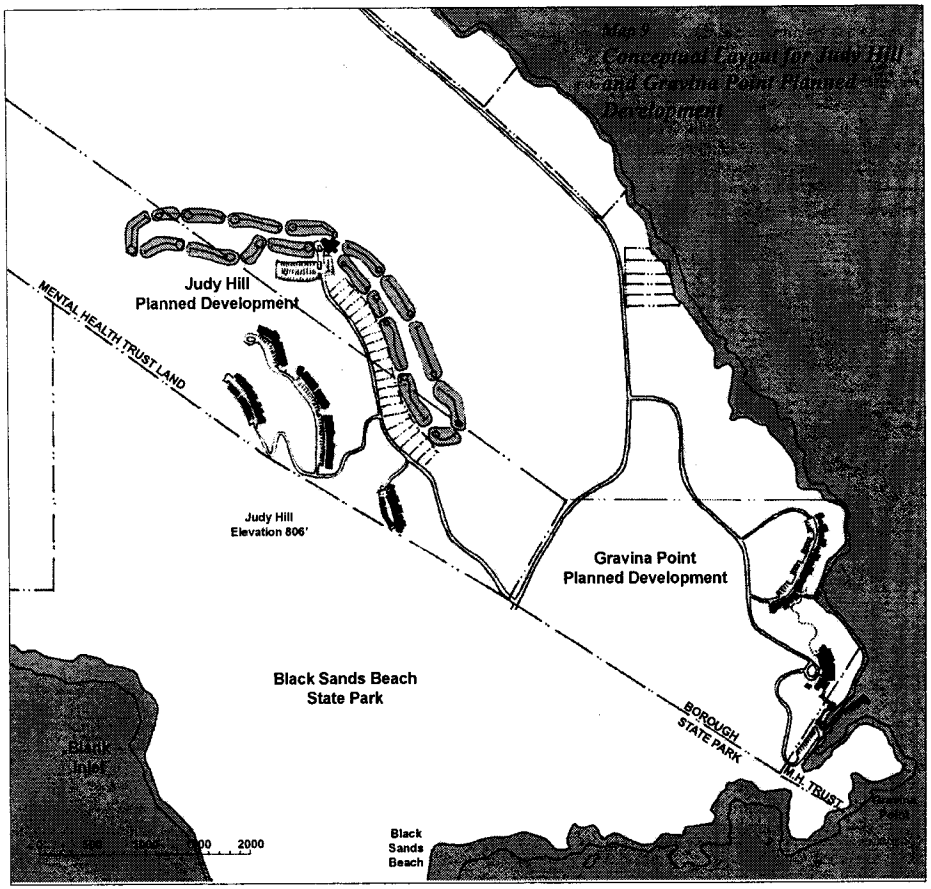
RL/CI Low Density Residential with Cottage Industry overlay (33 acres)
Intended Uses: Clam Cove community residences with provision for small scale business or cottage industry related activities.
Development Considerations: minimum lot size, 20,000 square ft., cottage industry activities must not adversely impact neighbors (noise, odors, visual clutter, hazards to children, etc.).

RL Low Density Residential (83 acres, see pp 22-23) (this is the Long Lake Park subdivision with circular lots)
Intended Uses: recreational homesites/cabins.
Development Considerations: private road access may only extend to community center area, not to individual lots; individual properties accessible by ORV trail; approved sanitation systems required; no further subdivision or additional lots permitted.
Note: This proposed zoning removes the Cottage Industry overlay.

PLI Public Lands & Institutions (2 areas)
1. Black Sands Beach State Park (640 acres, see pp 22-23)
Intended Uses: public recreation.
Development Considerations: hunting, fishing and personal resource harvest permitted subject to park regulations

2. Gravina Lake Country Research & Educational Center (68 acres, see pp 22-23)
Intended Uses: public or non-profit research and educational activities, interpretive centre, museum, staff housing, University of Alaska campus.
Development Considerations: may be operated under a lease agreement with the Borough; access by boat or trail initially; research, educational and interpretive activities may use adjacent public areas (proposed Gravina Lake Country Natural area, Black Sands Beach State Park, and proposed US Forest Service Nipple Mountain Old Growth Reserve); facilities may be shared by a number of entities including private non-profit organization, USFS, State Parks, ADF& G, University of Alaska, or others.

PD Planned Development (2 areas, totaling 664 acres)
1. Judy Hill (526 acres, see pp 20-21)
Intended Uses: mixed residential (condominiums, cabins), commercial (lodge/small hotel, restaurant) and recreational (horseback riding, golf).
Development Considerations: site plan to avoid and protect high value wetlands; development restricted to better drained uplands; may require joint Borough-Mental Health Trust development partnership; golf course development may need to include better drained forest uplands around Judy Hill; activities within Black Sands Beach State Park are subject to State Parks approval and joint management agreement.



Judy Hill Notes This concept consists of condominiums and single family lots around an 18-hole golf course.
- Development uses Borough and Mental Health Trust lands
- Condominium blocks sited on upper slopes of Judy Hill to take advantage of soil drainage opportunities, views and natural forest cover.
- High value lots front on proposed golf course.
- Lower slopes of Judy Hill may have more mineral-based soils and possibilities for site drainage to make golf course development feasible. Clubhouse and parking situated between two 9-hole circuits.
- Improved access from Ketchikan necessary, including road from Clam Cove area.

Gravina Point Notes This concept consists of a small fishing lodge situated on the cove north of Gravina Point.
- Development uses Borough and Mental Health Trust lands
- Cabin block provides waterfront views, southeast exposures and shoreline access.
- Main lodge on bluff above cove could include restaurant.
- Shoreline facilities could include boathouse, dock, café and parking.
- Development could take advantage of trails and attractions at adjacent Black Sands Beach State Park.

Full development would depend on road access from airport. Initial development (lodge, dock, waterfront facilities) may be feasible with access by boat or floatplane.

9/ Planned Development

By "planned development" is meant larger scale site development (more than just several lots) guided by an overall master plan, often undertaken by multiple landowners and investors (including public partners), and often with public participation. Planned development offers many advantages. It can:

- maximize the efficiency of infrastructure and services through more concentrated development;
- permit greater mix of development types, often incorporating single detached residences with townhouses, apartments and commercial areas;
- permit shared or common improvements including trails, boat ramps, docks, moorings, recreation facilities and community centers;
- increase the attractiveness (and value) of individual properties;
- maintain a desired density in areas with difficult terrain or site conditions;
- make smaller parcels more viable and profitable if combined;
- protect key amenities, such as a special beach, boat harbor site, etc.; and
- generate greater tax revenues.

Findings

Mental Health Trust and Borough uplands on the east side of Judy Hill contain poorly drained soils and steep slopes, making conventional development difficult. A planned development strategy would permit siting development activities in the suitable pockets and leaving unsuitable areas as open space. The patches of better drained soils around Judy Hill appear sufficient to develop a golf course, equestrian park, ORV park, or other recreational facilities associated with residential and commercial activities.

The Mental Health Trust holdings at Gravina Point are too small (10 acres) to take advantage of the dramatic nature of the site. By combining it with some of the Borough's adjacent shoreline and uplands, it becomes much more viable for recreational development such as a fishing lodge and related residential properties. Viable development of the Judy Hill and Gravina Point areas would require road access since the sites include extensive uplands. Approximately 2.75 miles of road would be needed to reach Gravina Point from Clam Cove.

Black Sands Beach Park improvements, proposed trails, and natural areas near the Judy Hill and Gravina Point sites could support high quality recreation-oriented planned developments to be enjoyed by residents as well as visitors.

For years, local residents have sought to develop an 18-hole golf course. Within SE Alaska, there are courses in Wrangell and Juneau. While the Judy Hill area is not the only site in and near Ketchikan, it does have potential to warrant serious consideration. An important limitation is the presence of wetlands and deep organic soils. Wetlands are protected by Federal statute, and peat soils, while developable into fairways, are subject to compaction and shrinkage as the organic deposits decompose. The slopes of Judy Hill may contain enough mineral soil areas and slope to permit the site drainage necessary for golf course development. Typical physical requirements for competition-level golf courses include: 150-175 acres of well-drained land, gently rolling topography, primarily a north-south orientation and an attractive setting.

The facing page illustrates conceptual layouts for Judy Hill and Gravina Point planned developments.

Planned Development (PD) Policy Options

PD/1 The Borough will consult with Mental Health Trust to explore ways their Judy Hill and Gravina Point lands might be combined to promote future planned recreational developments.

PD/2 The Judy Hill and Gravina Point planned developments will be promoted as part of a development that would include road, infrastructure and trails extensions, residential and commercial land disposals, marine improvements (docks, mooring buoys, boat launching ramps, etc.) and recreational development.

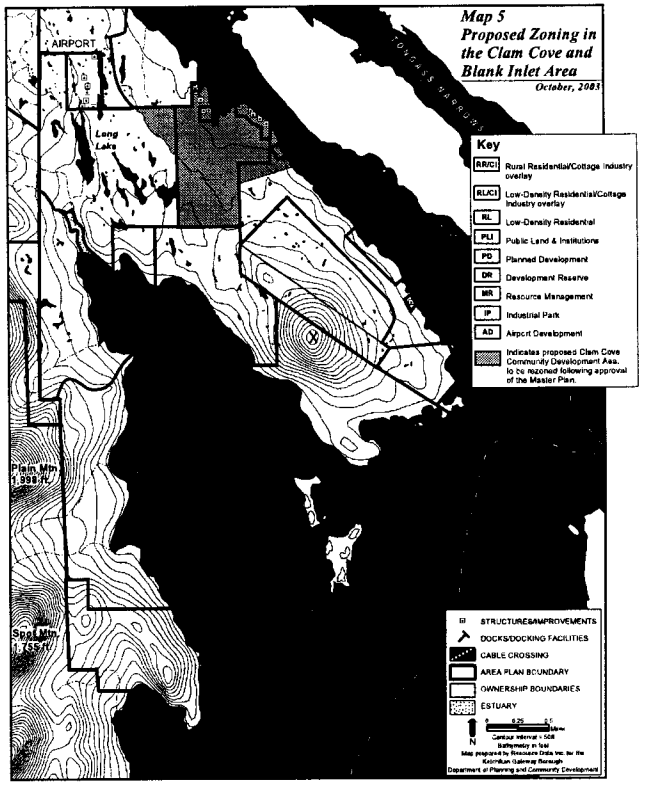
PD/3 The Borough and Mental Health Trust will include Alaska State Parks representatives in development proposals for Judy Hill and Gravina Point in order to maximize benefits from Black Sands Beach State Park operations.

PD/4 Planned development areas shall be designed to provide waterfront access for upland properties and the general public.

PD/5 The Borough will examine the feasibility of public or private golf course development at the Judy Hill site.

PD/6 The Borough will use its lands in the Gravina Lake Country area to meet mitigation requirements for wetland impacts as a result of roads and other development activities associated with planned developments.

PD/7 Planned developments will require provisions for on-site package sanitation systems unless connection to a community or other existing system is feasible.



2. Gravina Point (138 acres, see pp 20-21)
Intended Uses: mixed commercial and recreational uses (small hotel/fishing lodge, cabins, restaurant, small marina, and boat related facilities).
Development Considerations: Mental Health Trust-Borough partnership; opportunities for linkages to attractions and amenties at Black Sands Beach State Park, and Judy Hill development.

DR Development Reserve (2 areas, totaling 727 acres)
1. Tongass Narrows Shoreline (see pp 18-19)
Intended Uses: future residential expansion of Clam Cove community (prime waterfront properties and water accessible uplands).
Development Considerations: design subdivisions around a common dock serving both waterfront and upland lots (see pp 28-29); small lots (15,000 sf) if community sanitation systems; lots have vehicular & boat access; retain creek corridors as open space; maintain greenbelt along roads.

2. East Shoreline Blank Inlet (see pp 18-19)
Intended Uses: future recreational homesites, both waterfront and uplands.
Development Considerations: design subdivisions around a common dock serving both waterfront and non-waterfront lots (see pp 28-29); initially larger lots (2 acres), which may be further subdivided when road access provided.

MR Resource Management (2,258 acres) (see pp 24-27 for information on individual management units and allowed activities within each)
Intended Uses: recreation, personal resource harvest, scientific research, environmental education, selective timber harvest.
Development Considerations: roads and permanent structures generally not permitted; timber harvest by helicopter techniques; some waterfront sites may be leased for seasonal recreational cabin use, subject to site clearing and cabin siting restrictions to minimize impacts; 200 ft. wide greenbelt to be maintained along shoreline; boardwalk trails through high value wetlands.

6/ Roads & Infrastructure

Findings

A Pennock bridge crossing (F1-high east channel) is the preferred alternative announced by DOTPF in August, 2003. Two Pennock bridge locations and alignments have been under consideration (see map). Alternative F3 proposed a high bridge across the west channel of Tongass Narrows resulting in an overhead roadway on piers/columns for 1800 feet on Gravina as the road drops down to grade. Alternative F1 proposes a lower bridge across the west channel of the Narrows, resulting in the road meeting grade much nearer the Gravina shoreline (approximately 500 ft). Both alternatives would make the Clam Cove area easily accessible from Ketchikan. Either of the Pennock bridge alignments would create a visual and physical "edge" to the Clam Cove community, containing enough land to allow for expected growth. Final alignments will be determined during the public process commencing in 2004.

Future road access to Clam Cove area is not dependent on a Pennock bridge. A road could be extended from the airport to the Clam Cove area (approximately 2.5 miles). Eventual extensions of such a road could be made to service shoreline properties along Tongass Narrows to the south (an additional 2 miles) as well as Borough lands along the east side of Blank Inlet.

A few residential streets within Clam Cove have been laid out within areas where small subdivisions were platted.

The Blank inlet estuary, upland creeks, wetlands and lakes prevent cost effective road extensions towards the west shore of Blank Inlet.

While much of the landscape is poorly drained, with considerable wetlands, road alignments especially east of the lake system,may take advantage of the rolling glacial topography (moraines and eskers) and the mixed rock, sand and gravels (glacial till) associated with them.

The Long Lake Park subdivision, with its circular lots and lake-wetland ecosystem would be difficult to serve by a conventional road network.

The Clam Cove area is served by underwater power and phone cables crossing Tongass Narrows. Existing cable capacity could meet the power needs of an additional 75-100 residences. Powerline easements to all existing lots in Clam Cove have been recorded.

If Clam Cove significantly increases in population, a central water distribution and wastewater disposal system would be needed. A package wastewater treatment facility could be located in the proposed South Airport Reserve Industrial Park site or in the area southwest of the main road alignment (Pennock bridge crossing, see facing map).

Road/Infrastructure (R/I) Policy Options:

R/I/1 Road development shall be guided by a Gravina Road System Master Plan in order to ensure efficiency and cost effectiveness. The Borough will work with DOTPF, USFS, and private interests to determine alignments, ROW widths, design standards, financing and maintenance responsibilities. The Master Plan should also include a section describing "Best Practices" for road design, construction and maintenance.

R/I/2 Pioneer roads shall be consistent with the Master Plan. Improvement and maintenance costs are to be borne by the landowner(s). Such roads are to be gated and closed to the public until demand warrants inclusion in the public road system. At such time they shall be upgraded to Borough standards.

R/I/3 The Road System Master Plan shall consider alternative means of movement within the road ROW, including bus, bicycles and pedestrians as appropriate.

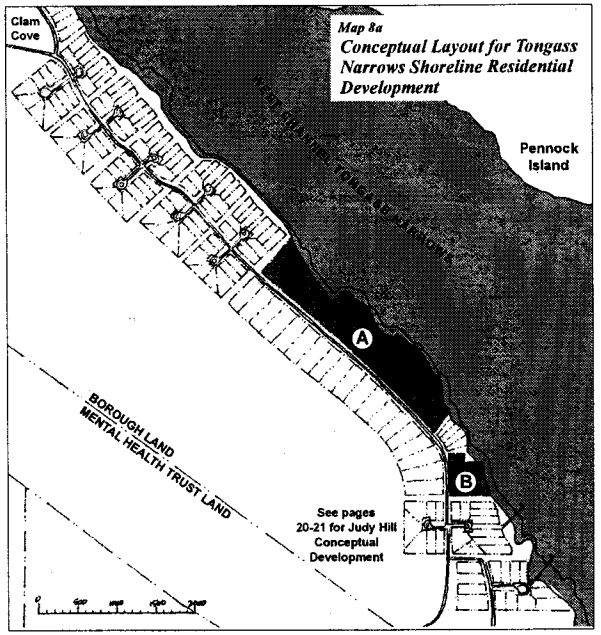
R/I/4 Road corridors shall provide for infrastructure and community services.

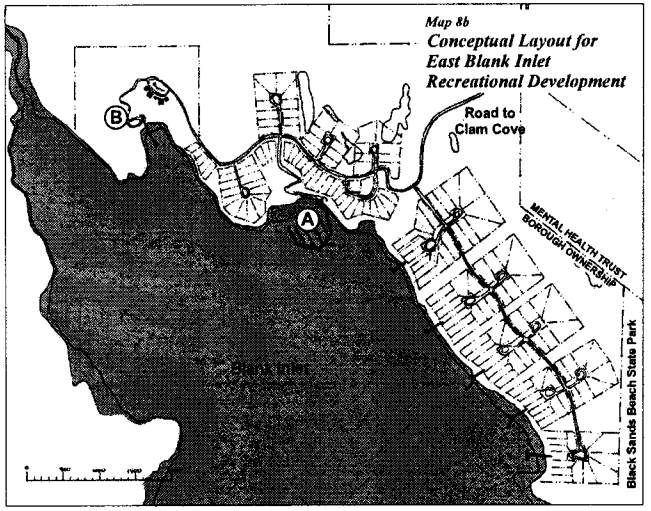
R/I/5 The Borough shall extend services as an incentive and means to guide development activities and shall recover costs of roads and infrastructure from landowners and other beneficiaries.

R/I/6 The Borough will identify the most cost effective options for providing roads, infrastructure and services to the Clam Cove area, and work with appropriate entities to implement them.

Notes

- Layout provides 134 new lots averaging 20,000sf, 44 of which are on the waterfront
- Could help meet demands for Clam Cove community expansion
- Subdivisions could be initially developed with boat access around shared docks (see sidebar, pp 28-29). Full development as shown would require a road extension from the Clam Cove area.
- Land is Borough-owned except for two privately owned tracts (A and B). Borough-owned shoreline could be retained for public access and use, primarily by area residents.





Notes

- Layout provides 148 recreational cabin/ homesite lots averaging 20,000sf, 52 of which are on the waterfront.
- Subdivisions could be initially developed with boat access around shared docks (see sidebar, pp 28-29). Full development would require a road from Clam Cove.
- All land is Borough-owned
- Steep slopes, major creeks, wetlands and lakes incorporated into open space system on which all lots have frontage.
- Shoreline retained in public ownership for access and use (shoreline trail connects Black Sands Beach State Park to other Gravina trails).
- Small boat harbor and community center (area A).
- Potential site for "Gravina Lake Country Research & Educational Center" (public or non-profit facilities such as an interpretive center, University of Alaska SE satellite campus, etc.) (area B).

8/Residential & Recreational Subdivisions

See pages 16-17 for residential development recommendations in the Clam Cove area.

Findings

The proximity to excellent hunting and fishing, presence of Black Sands Beach State Park and Gravina Lake Country, pristine nature of much of the area, proposed Gravina Trail System and near-term vehicular access--all contribute to making this an attractive area for recreational homesite/cabin development.

The Clam Cove/Blank Inlet area has 1.4 miles of potentially near-term developable shoreline and adjacent uplands under Borough ownership along Tongass Narrows, and 3.7 miles along the east shore of Blank Inlet.

The Tongass Narrows shoreline would be the natural location for residential and road extensions beyond Clam Cove. It is more protected from wind and wave than Blank Inlet, offering better boat access. In addition to the Borough lands along Tongass Narrows, there are two private tracts (one 33 acres with 1,600ft shoreline, the other 5 acres with 350ft.). One parcel has a residence.

Blank Inlet's eastern shoreline has exposed sea conditions and steep slopes adjacent to the coast. Road access, while possible, would be more difficult and expensive. Boat-accessible recreational cabin sites, centered around protected moorings, could be provided on Borough lands.

The Long Lake Park recreational subdivision, created with fifty 20,000 sf circular lots in 1973, currently has only 6 parcels with recorded improvements (small cabins). It would have better access if either a Pennock bridge is built, or if a road to Clam Cove is extended from the airport. The nature of the landscape and the subdivision would make road extensions to each of the lots difficult, though a private access road could be extended to a community centre/parking area from which ORVs or other means could be used.

There is significant demand for boat-accessible waterfront lots since such properties are not readily available in other parts of the Borough. The recent State land disposal at Vallenar Bay sold all the shoreline lots, but few of the non-waterfront sites. The Borough's land along Blank Inlet could be ideal for remote recreation development, as would be the University of Alaska Trust lands at Blank Point.

If water access is provided by shared or commonly owned docks/moorings, upland sites may be equally viable for recreational cabin development.

Today's building industry makes available a wide range of pre-fabricated, portable recreation structures (yurts, tents, kit-cabins, etc.) as well as numerous options for providing power, water, and sanitation.

Conceptual layouts for two residential and/or recreational subdivisions are illustrated on the facing page.

Residential & Recreational Subdivision (RRS) Policy Options

RRS/1 The Borough will use a portion of its shoreline and related upland properties in a manner that meets community demands for residential and recreational homesites and brings the greatest financial return to the Borough.

RRS/2 The Borough will retain key parcels of lands it sells or leases for residential and recreational homesite use to provide public access to beaches, shorelines, lakes, and other attractions, as well as for development of common or shared facilities such as docks, access corridors, small sanitation systems, etc.

RRS/3 The Borough will promote adoption of its "best shoreline development practices' as described on p 28-29.

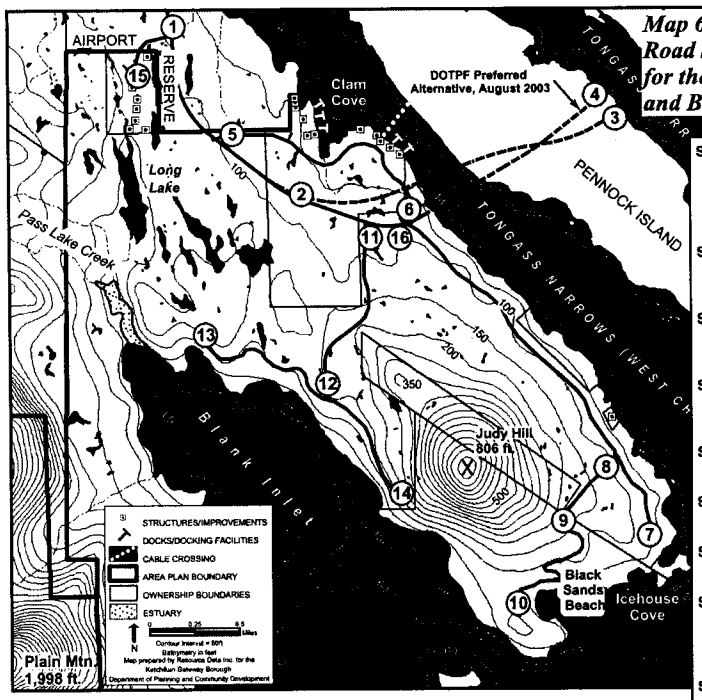
RRS/4 The Long Lake Park subdivision will remain primarily a recreational cabin development. When access by road becomes feasible, it will be extended to a centrally located area, from which ORV or other trails will provide a private trail system to individual properties.

RRS/5 The Long Lake subdivision and other recreational homesite subdivisions will require proper sanitation systems in order to protect fragile wetland and lake ecosystems from pollution. Large subdivisions, if fully developed, may require community sanitation systems.

RRS/6 Recreational subdivisions will include trails to common amenities and links to the proposed Gravina Trails System.

RRS/7 The Borough's shoreline lands immediately south of Clam Cove along Tongass Narrows will serve Clam Cove community expansion needs when demand warrants and road extension becomes feasible. Subdivision layouts will insure convenient waterfront access from upland lots.

RRS/8 Borough lands on and near the east coast of Blank Inlet will be the first priority for homesite development. A limited amount of Borough (and possibly University) lands on the west shoreline of Blank Inlet will be made available for water-accessible, recreational cabin development (this area will not likely be served by roads during this plan horizon).



Map 6 Road System Options for the Clam Cove and Blank Inlet Area

October, 2003

SEGMENT 1-2: Proposed DOTPF alignment for road from airport to Pennock Bridge. This alignment recommended as Airport-Clam Cove road if Pennock Bridge not constructed.
SEGMENT 2-3: Proposed DOTPF alignment for alternative F3 (high span on West Channel of Tongass Narrows).
SEGMENT 2-4: Proposed DOTPF alignment for alternative F1 (low span on West Channel of Tongass Narrows).
SEGMENT 5-6: Main collector road through Clam Cove (approx. 1.25 miles). See page 17 for Clam Cove development concept sketch).
SEGMENT 6-7: Main shoreline road from Clam Cove south (approx. 2.25 miles).
SEGMENT 8-9: Access road to Mental Health and Borough uplands as well as to State Park (approx. .5 miles).
SEGMENT 9-10: Black Sands Beach State Park access road (actual routing dependent on Park Master Plan).
SEGMENT 11-12: Clam Cove-Blank Inlet road, provides access to Borough, Mental Health and private uplands and to Blank Inlet, (approx. 1 mile).
SEGMENT 13-14: Blank Inlet East Shoreline road (approx. 2 miles).
SEGMENT 15: Long Lake recreational community access road (private, approx. .25 miles).
SEGMENT 2-16: Possible Clam Cove bypass (if bridge not constructed), providing access to Blank Inlet and Tongass Narrows shoreline without passing through Clam Cove.

R/I/7 A "South Gravina" road linking Clam Cove to the Airport should follow the proposed DOTPF alignment, and should be designed to eventually be extended to serve shoreline areas along Tongass Narrows to the south.

R/I/8 Access to individual lots in the Long Lake Park subdivision should continue to be by private trail. A private road may be extended from "South Gravina Road" to a community center site, from which ORVs or other small vehicles would be used to access individual properties.

R/I/9 The priority for road extensions south from Clam Cove should be first along Tongass Narrows and secondly toward the east shore of Blank Inlet.

R/I/10 The west shoreline of Blank Inlet and adjacent uplands would not be served by roads over the time horizon of this plan. Shoreline parcels leased for recreational cabin use would be accessible by boat only.

R/I/11 If a community wastewater treatment facility is developed, it should be sized and located to effectively serve both the Clam Cove community as well as the proposed South Airport Reserve Industrial Park.

7/ Clam Cove Community



This boat maintenance structure on the Stensland property in Clam Cove is the community's most prominent landmark. It was first constructed in the early 1900s. Note that the building next to it is on skids and was brought in by water, often the easiest way to get a house in an area without roads.

Findings

Clam Cove has had limited growth in the past 25 years (the last "building boom" was in the late 1970s, early 1980s when most of the structures currently occupied were permitted). Difficult access (by boat only) has undoubtedly been the major factor. Two proposed developments could change this:

- The construction of a bridge from Ketchikan over Pennock to Gravina which would make landfall near Clam Cove, or
- The extension of a road from the airport to the proposed Airport Industrial Park South (and Clam Cove which borders it).

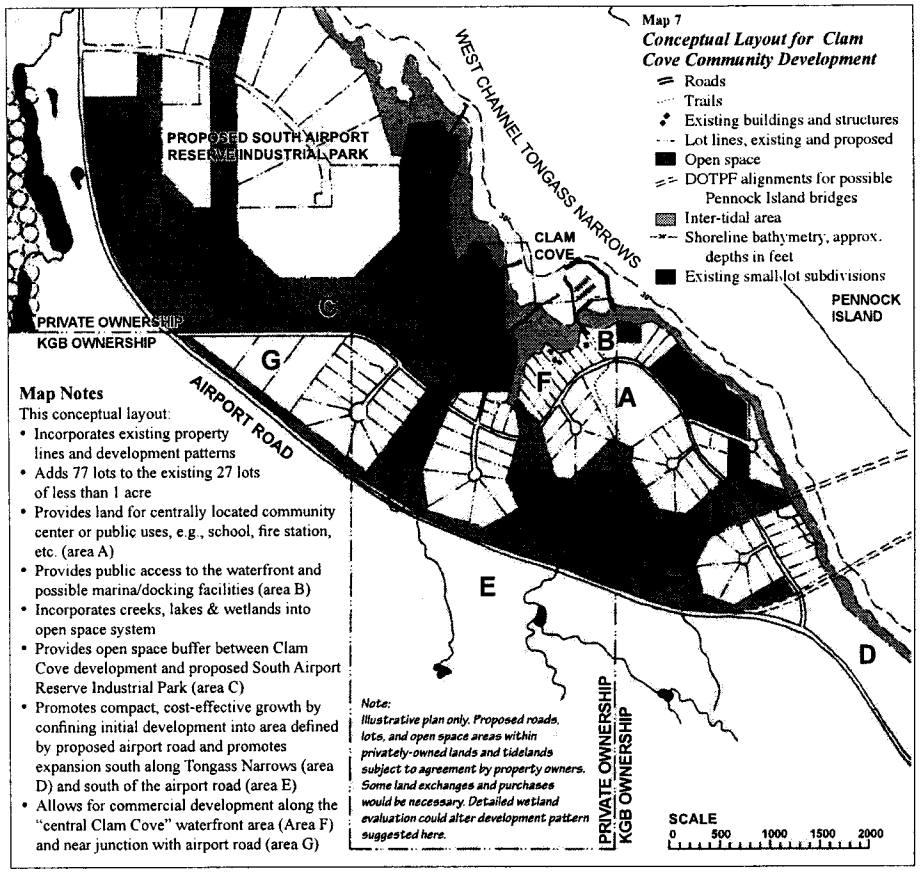
It is not expected that Clam Cove would grow into a community center without either of these two developments.

While Clam Cove has had a few subdivisions platted with provisions for streets (complete with names), 23 small scale lots (20,000 sf), and easements for infrastructure (power, phone), no overall community road and lot layout has been done. Sixteen of these lots have not had improvements. Most of the buildings and structures which attest to the history of Clam Cove have been destroyed or are in serious disrepair. Today, several families live in the Clam Cove area year-round, and one family to the south along Tongass Narrows.

Clam Cove has been identified as one of three small community growth centers on Gravina Island (the others are North Gravina and Vallenar Bay). Private lands would form the core of a future Clam Cove growth center, with mixed commercial and residential properties. A conceptual community layout (see illustration on facing page) illustrates one way that current ownership and use patterns could be incorporated into a multi-use community center.

Uplands around Clam Cove have extensive wetlands and lakes, limiting development potential. Shoreline properties are the most desired and typically the easiest to develop. While the Borough does not own land within the proposed Clam Cove community center, its properties would provide for eventual community expansion. They may also be used in trades or exchanges with private landowners for future public lands and facilities needed within the community center (e.g., school, fire, police, dock/wharf sites).

All waterfront sites are privately owned, as are the tidelands, with no formal or legal provision for public or community access and use. A public dock/marina would be an essential part of a larger, more diverse Clam Cove community.



Clam Cove Community (CCC) Policy Options

CCC/1 The Borough will work with Clam Cove residents and property owners to incorporate their interests in community growth decisions.

CCC/2 Clam Cove will continue to be water oriented and the Borough will work with residents and property owners to find and implement ways to insure water access and provide boating facilities such as a public wharf or dock and small marina.

CCC/3 The Borough will use its lands surrounding Clam Cove to support cost effective community growth patterns, and to ensure that adequate and appropriate sites for public facilities are available.

CCC/4 Residential properties in Clam Cove will continue to have the option to operate small businesses and cottage industry activities, as reflected by the Cottage Industry zone overlay.

CCC/5 Suitable and sufficient lands for future commercial activities will be set aside to meet this need and provide opportunities for local business and service growth.

CCC/6 The Borough will encourage concentrated growth around the existing Clam Cove community core in order to make cost-effective use of infrastructure and service investments.

CCC/7 The proposed DOTPF road alignment will serve as an initial "edge" or growth boundary for the community. Private and Borough lands south and west of this road corridor will be reserved for community expansion when demand warrants.

CCC/8 The Borough will encourage owners/developers of waterfront/shoreline parcels to follow recommended "best development practices" (as described on pp 28-29).

CCC/9 Historic structures and sites within the community will be identified and where possible protected or restored to preserve the community's cultural heritage.

CCC/10 The Clam Cove community will be linked to the proposed Gravina trail system, offering residents access to enjoy nearby attractions and alternative modes of transportation.

CCC/11 The area's lakes, creeks, and wetlands will be used to form the basis of the community's open space/recreation system.

CCC/12 Access to the waterfront and associated improvements and services will be available to all residents and visitors.

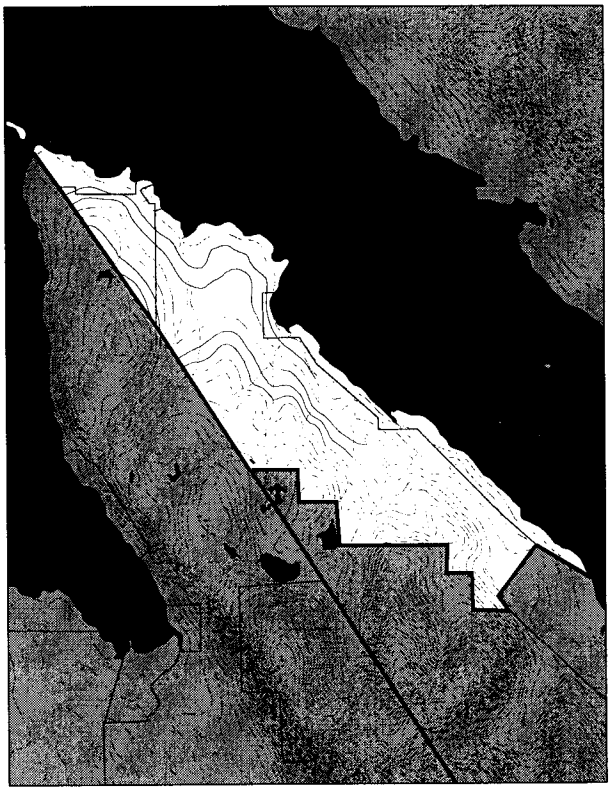
CCC/13 Provision will be made for future routing of traffic away from the waterfront and community center in order to reduce congestion and maintain its character and attractiveness.



Gravina
Island Plan

North Gravina

Area



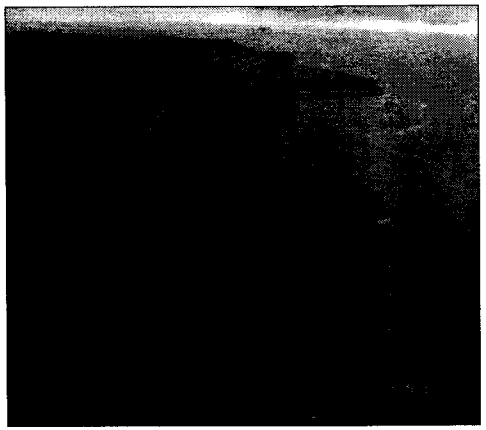




KETCHIKAN GATEWAY BOROUGH

Department of Planning & Community Development

November 2003 Draft



Looking north from the air, the gently sloping topography of the landscape is evident. The land cover consists of a complex of open muskegs surrounded by primarily scrub timbered forests—most with poor drainage and organic soils. The shoreline and creek drainages contain somewhat better lands for development. Rock Point is visible, jutting into Tongass Narrows and forming Rosa Reef. While it offers natural protection for marina development, breakwaters would likely be needed to the east and south.

Gravina
Island Plan

North Gravina

Area

November 2003 (draft)

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8. Residential & Planned Development Areas 18
9. Resource Management 22
10. Shoreline Development "Best Practices" 24
11. Implementation Strategy and Costs 26

Public Review Draft



This document is one of a set of four describing the Borough's long-term plans for Gravina Island. Island-wide policies and background are provided in the "Citizen's Guide." The eastern shoreline of Gravina has been divided into three area plans that address development issues and provide practical guidance at a detailed level. Copies of all four-documents are available at the Ketchikan Gateway Borough Planning Department.

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George Tipton

Planning Commission
Charles Arteaga*
David Deal
Michael Heiser*
Daniel Kelly
Mike McCormick
Linda Millard, Acting Chair
Robert Reeser*
Trevor Sande
Merrill Stulken

Borough Manager
Roy Eckert

Borough Planning Director
Susan Dickinson*

North Gravina Area Planning Team

Staff:
Stephen Reeve, Principal Planner
Tom Olson, Mapping Technician
John Hill, Associate Planner*

Consultants:
Dennis Kuklok, Planning Consultant
Kent Miller, Economic Consultant
Chris Nelson, Forestry Consultant
Kyan Reeve, Computer Graphics Consultant
Laura Shelton, Resource Data Inc., Mapping

* Former staff

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Introduction and Issues To Be Addressed

The North Gravina area is a focus of Borough economic development interest. It encompasses a large tract of developable Borough land as well as private land along Tongass Narrows north of the Airport Reserve, the southernmost portion of which has long been slated for water-related, light industrial uses. A road is planned to extend from the airport to the Pacific Log & Lumber sawmill and further north. This will transform land use and set the stage for likely subdivision and sale of Borough lands and development of private land along the coast. This North Gravina Area Plan proposes economic development initiatives including an industrial park and a marina and recommends steps to protect and enhance recreational values enjoyed by many citizens.

The North Gravina Area Plan addresses the following:

- Which lands and resources have significant community value and how should they be developed or protected? (see pp 8-11)
- What are the key economic development opportunities for this area? (pp 6-7)
- When, how and where should road access and other infrastructure be extended into this area? (pp 14-15)
- Where should industrial development take place? (pp 16-17)
- How should the Borough manage its lands? (pp 14-23)
- What recommendations should be made to the State Mental Health Trust regarding its lands and resources? (pp 22-23)
- How should the shoreline and tidelands be used and protected? (pp 24-25)
- What areas should be set aside and developed to meet community recreation needs? (pp 8-11 and 22-23)
- How should current zoning be changed to reflect the development strategy outlined in this plan? (pp 12-13)
- How should additional lands be subdivided for residential development over the next twenty years? (pp 18-21)
- What strategies should the Borough and others follow to implement actions proposed in this plan? (pp 26-30)
- What are the expected public costs and benefits of implementing the plan recommendations? (pp 26-30)



Beach at Rock Point, one of the prime recreation attractions in the North Gravina area.

1/The North Gravina Area

Ownership & Zoning

The North Gravina area includes

- 1459 acres (77%) Borough owned land, including 1.5 miles of waterfront;
- 195 acres (10%) Mental Health Trust lands (with 775 ft of shoreline); and
- 251 acres (13%) private land, mostly waterfront lots averaging 2 acres.

There are over 100 acres of patented (privately held) tidelands. Only 12 of the 78 shoreline lots have improvements recorded.

Most of the uplands are currently zoned Future Development; ten properties (20 acres) adjacent to the Airport Reserve are zoned Industrial/Commercial, and the remaining waterfront properties are Residential/Cottage Industry.

Landscape & Natural Resources

The North Gravina landscape is made up of an extensive bench of moderately sloping lowlands bordered by the steep, mountainous topography of California Ridge. More than 60% of the area is below 300 feet elevation. The high mountains immediately to the south and west block winter light, making the area colder and darker than the rest of the island.

The shoreline is rocky, with some tideflats and reefs. There are a few sandy beaches, especially in the Rosa Reef/Rocky Point area. The northern portion includes a large shallow offshore shelf less than 60 feet deep, while the southern portion is deeper (180 feet less than 100 feet from shore). Much of the shoreline is relatively well-protected from north and south winds, especially the area south of Rosa Reef.

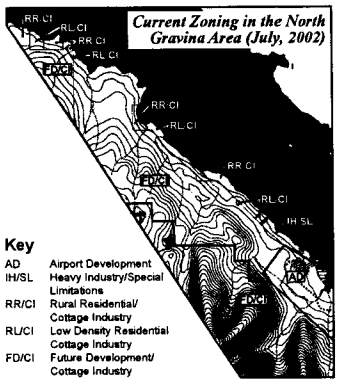
More than half of the area is classified as a "MF5" ecosystem, a combination of muskegs and scrub forest dominated by scattered pines and yellow cedar. Only a few small areas are classified as F1 or F2, the most productive forest soils in the Ketchikan area, and these are situated along the shoreline or within stream corridors. The recent timber inventory of Borough land prepared for this plan indicates that commercial timber consists of scattered individual trees near the shoreline or along drainages.

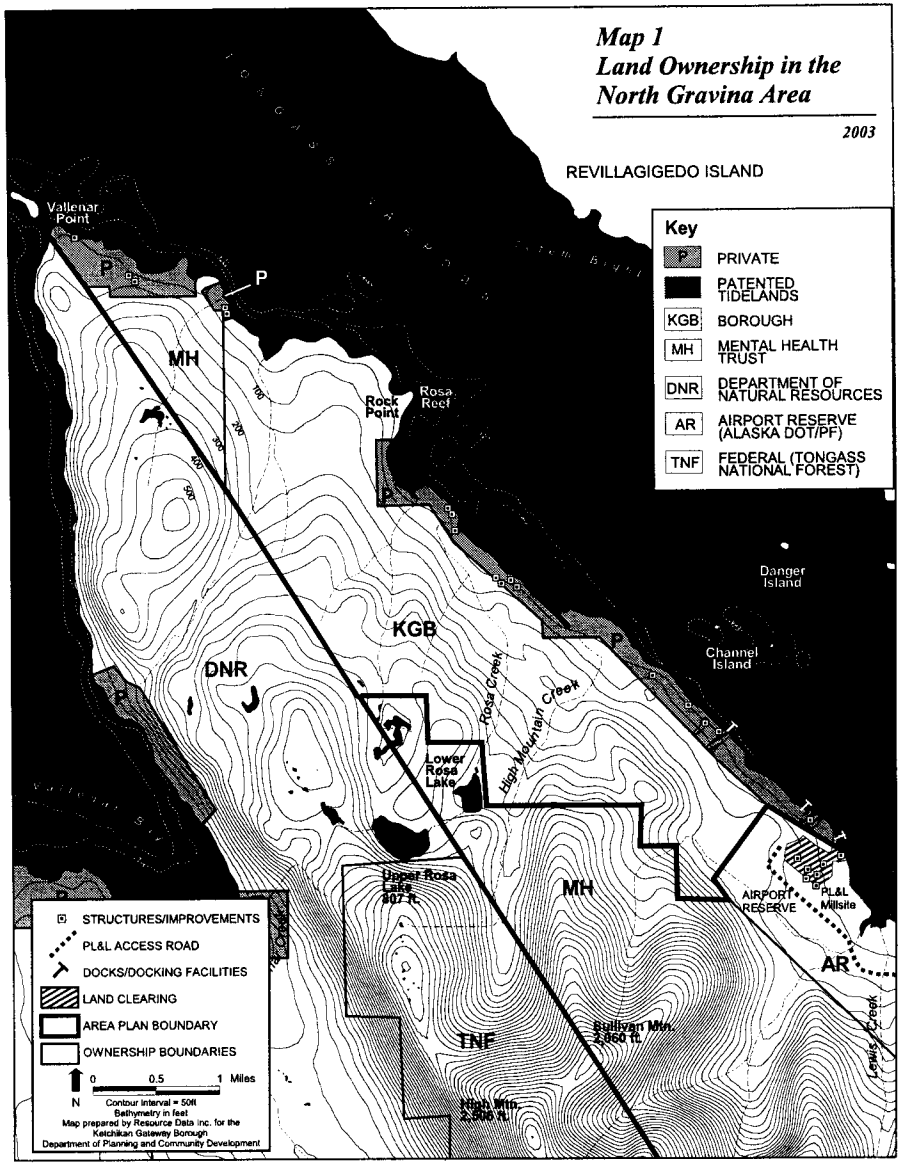
Four of the six un-named year-round streams within the area support populations of pink and silver salmon in their lower reaches. The northern coast from Rocky Point to Vallenar Point is noted for herring spawning, and much of the forested shoreline is important winter habitat for deer.

North Gravina provides an attractive natural backdrop for views from some Ketchikan neighborhoods and from Totem Bight and Refuge Cove state parks.

Development Trends

Until recently, development in the area has consisted of a few waterfront cabins and residences. The last five years have seen a number of industrial uses establishing footholds within and near the Airport Reserve. Using individual docks for marine access, they have taken advantage of the area's gently sloping topography to locate industrial activities and storage on land as well as the water. Completion of the Airport Service Road to the PL&L sawmill is expected to set the stage for likely subdivision and sale of Borough lands and development of private lands along the coast, especially as access to Gravina is improved by implementing one of the DOTPF alternatives now under study.





2/Development Suitability

Some areas are better suited for development than others. A site with deep, well-drained mineral soil near a road and on gently sloping terrain away from flooding or landslide hazards would generally be considered suitable for conventional development. Another area, equally accessible but with muskeg soils and poor drainage would be considered less suitable. While development is possible, it would be costly and require less conventional building practices. There are some areas considered unsuitable due to natural hazards, uneconomical access, critical habitat values, proximity to airport noise and operations, and other reasons. These are usually best retained as open space reserves.

The North Gravina area contains—by Ketchikan standards—a relatively high percentage of lands suitable for development. Especially within those lands in Borough ownership, there are extensive areas with gentle slope, shallow muskeg soils and moderate drainage.

The facing map illustrates the results of a development suitability analysis for the North Gravina area. It provides the following findings:

- Only 4% of the area (73 acres) has no significant limitations to development. (These areas are "white" on the map, without any overlay patterns or shading.) Such areas are characterized by well-drained mineral soils and gently sloping topography.

- A significant part of the area (418 acres) is below 300 ft elevation, has slopes under 10 %, and could be accessed by extensions of the road beyond Pacific Log and Lumber. The main limitation is poor drainage and organic soils as indicated by the muskeg-scrub forest ecosystems (MF5, F5) found there.

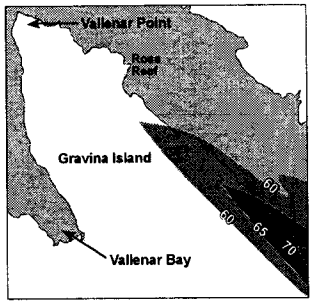
- In addition to poor drainage, other limitations include moderate to steep slopes (10-30%), cold microclimates (north facing slopes), higher elevations (300 to 400 ft.), reduced accessibility (more than 1 mile from the PL&L road), and proximity to air traffic flight paths and noise.

- Approximately 27% of the area is considered not suitable for development due to the presence of one or more of the following characteristics: severe slopes (greater than 30%, v-notch drainages), high elevation (greater than 400 ft.), "prohibitive" wetlands (as classified by ADF&G), and salmon spawning stream corridors. Such areas are suitable for open space, recreation, wildlife, flood control, watershed protection, and visual quality.

Development within the poorly drained muskeg and scrub forest areas typically uses either an overlay technique (adding rock fill over the muskeg) or replacement (excavating the organic soils and replacing it with better draining and load bearing materials). These techniques are most successful when they:

- minimize re-grading and disturbance to drainage patterns;
- minimize land clearing/tree removal; and
- utilize public or community wastewater treatment systems.

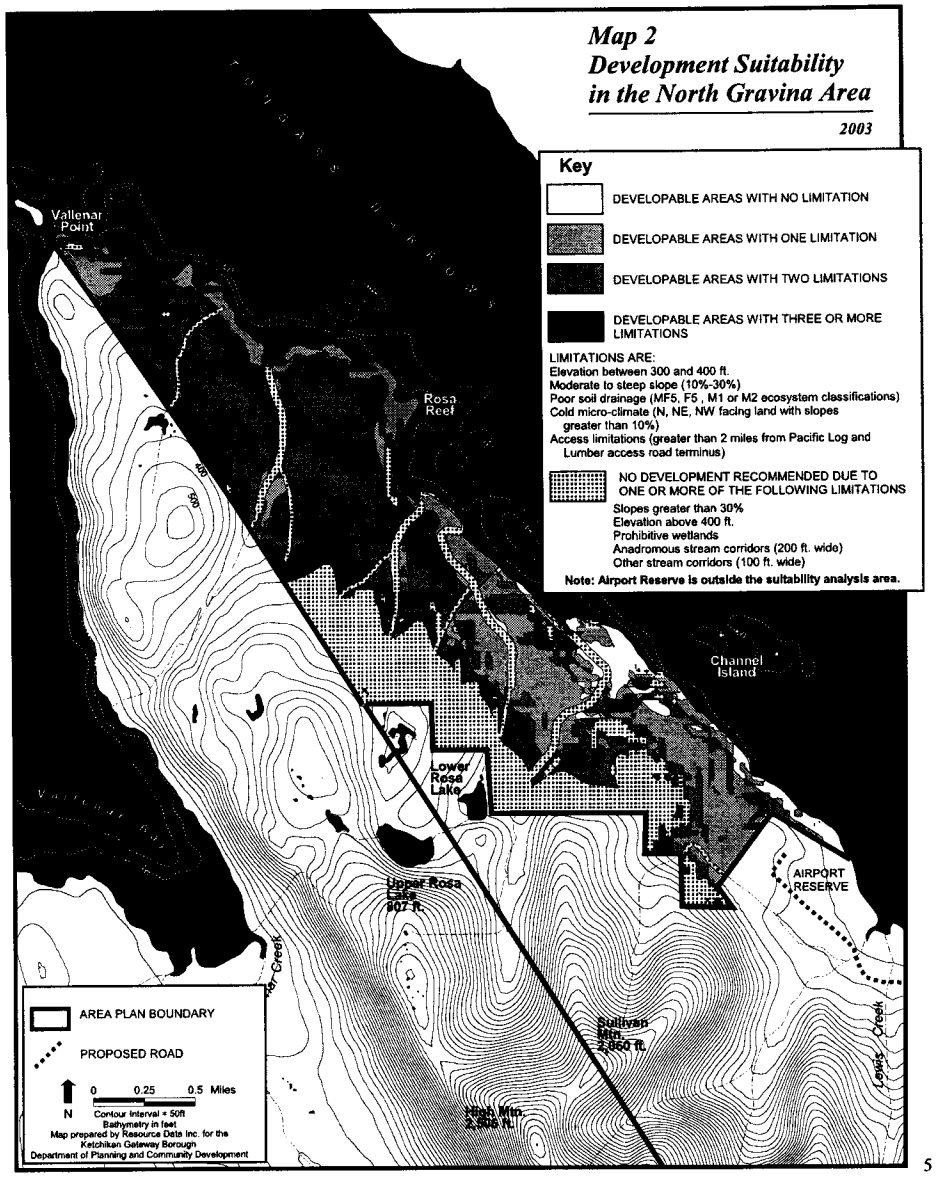
Aircraft Noise Exposure
Numbers indicate day-night average sound levels in decibels (Ldn).



Airport noise levels are a factor in development suitability. The FAA considers an LDN (day/night average sound level) of 65 decibels as its threshold for "significant" noise affecting a neighborhood/community. The World Health Organization uses a lower measure of 55dB as "engendering serious annoyance and creating an unhealthy environment." The map above shows the Ldn's of 65 dB would have impact in the proposed North Gravina Industrial Park (though many industrial uses could be compatible with airport operations and noise levels).

Map 2 Development Suitability in the North Gravina Area

2003



3/Economic Development Opportunities

Major projects which could stimulate investment and growth in the area include:

Industrial Development Large-scale heavy industrial development of the two mile section of shoreline and upland north of the Airport Reserve will provide land for this use not available elsewhere within Revilla's Tongass Highway corridor. The shoreline in this area is privately owned and partially developed. Inland tracts are Borough owned. The area's economic resources include proximity to Ketchikan International Airport (KIA) for access to inter-regional air services, air taxis, general aviation facilities and services, and air-freight service.

In the short run, industrial use will be limited by lack of infrastructure; by 2004 some access will be provided by a road to be constructed from KIA to the Pacific Log & Lumber leasehold. Pending further extension of this road, development of self-sufficient industrial sites, separately accessible by water, can occur. With the access road's extension and dedication as a public thoroughfare, industrial sites will benefit from use of the KIA ferry for access to/from Ketchikan and by more convenient access to the airport itself. More intensive development can occur when other infrastructure, including electricity, telephone, water and wastewater utilities are extended within the access road corridor.

Private lands in this area make up a narrow strip of shoreline. For industrial uses requiring larger acreage with shoreline access, the Borough's inland tracts can be planned as an adjunct to shoreline lands. Together, these areas can add 186 acres of shoreline-accessible industrial land to Ketchikan's economic base. This would require making Borough land available to private property owners by purchase or lease, enabling complementary development of the larger acreage. A conceptual layout of this industrial park is shown on page 17.

Small Boat Harbor Development A good small boat harbor location is situated inside Rosa Reef, offering the closest Ketchikan area access to Vallenar, Grindall and Cape Chacon sport fishing areas. Water traffic to/from this location would be minimally restricted by other Tongass Narrows traffic and wake-sensitive shoreline development. This site should provide at least ten acres of moorage in 18 feet of water, capable of accommodating 400 thirty-foot boats.

Natural weather and wake protection may be offered by the reef to the north; the southeast exposure in the lee of the shore can be protected from wakes by a short floating breakwater. This site, with the adjacent upland tract, can provide locations for harbor-related support services. Public development of this area can enhance the value of shoreline residential areas adjacent to the east.

Residential and Recreational Homesite Development The upland area adjacent to Rock Point/Rosa Reef is suitable for lodging and sport fishing related services. Proximity of the airport may provide a year-around market for overnight accommodations. The area can provide light commercial services for nearby residences and industrial sites and serve as an "anchor" for shoreline and alpine trailheads, accessing High Mountain, Bostwick Lake and Vallenar Bay.

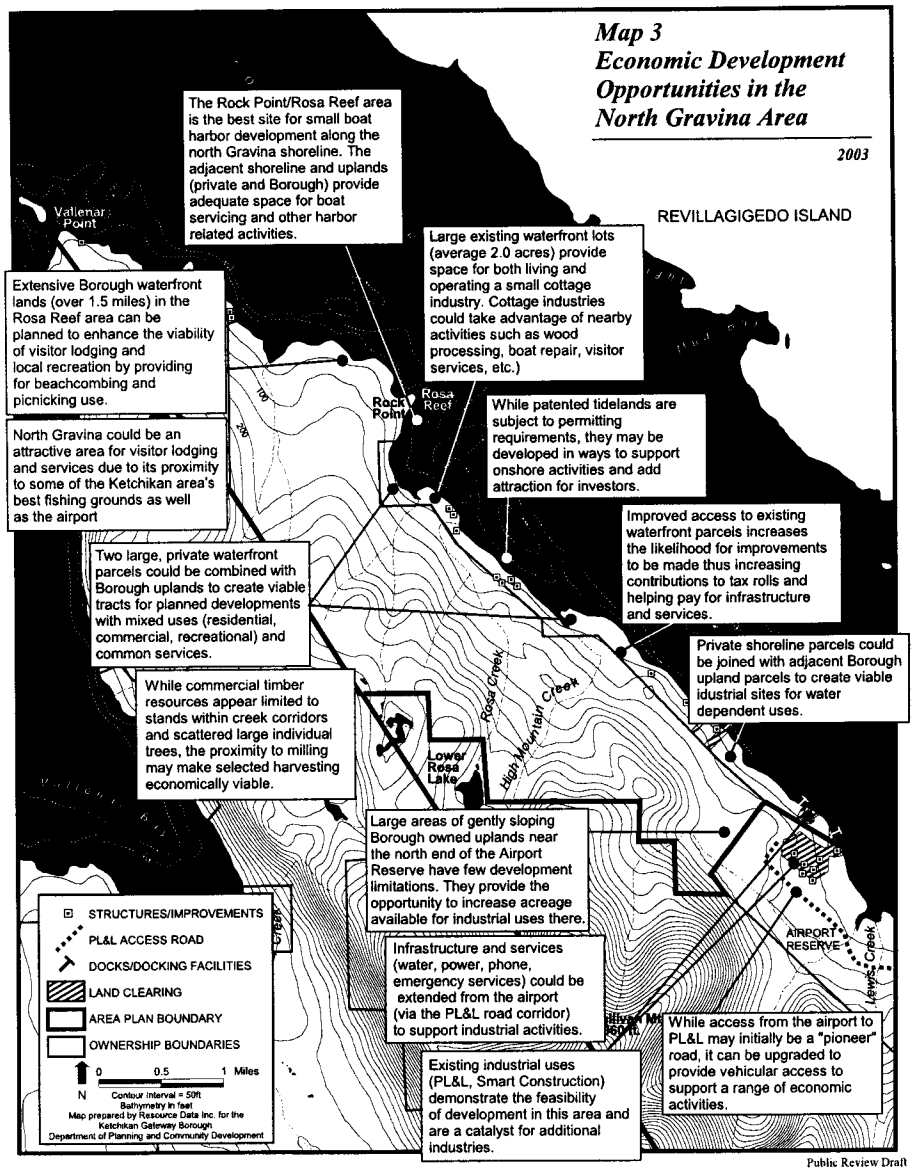
The existing residential waterfront lots south of this location will have excellent access to the proposed small boat harbor at Rock Point and its adjacent potential lodging and sport fishing-related center. With carefully planned and useful shoreline access, and attention to neighborhood and natural aesthetic values, this area could be a unique and valuable addition to Ketchikan's supply of real estate. See pp 19-21 for conceptual layouts of North Gravina residential developments.

In developing North Gravina lands for heavy industrial use, it is recognized that other economic values are affected:

- First, these lands are conspicuous sections of the Tongass Narrows shoreline, part of the Inside Passage, a heavily traveled and economically important corridor for visitors, requiring conservation of shoreline viewsheds.
- Second, the opposite shoreline from Gravina, the Revilla shore, is developed for high-quality residences, relying on views of the Narrows and opposite shore to sustain their value. This also requires viewshed conservation.
- Third, Tongass Narrows is a heavily trafficked maritime artery, one of the busiest in Alaska. Development of its shoreline must be compatible with the safe and expeditious transit of vessels in and out of Ketchikan harbor.
- Fourth, the North Gravina waterfront is part of a very limited resource for economical expansion of shoreline-accessible heavy industrial uses, requiring careful limitation of extraneous uses, which do not require location in this area, and for which other siting can be available.
- Fifth, observance of Uniform Building Code standards for improvements to land, such as for excavations, embankments, fills, foundations and drainages, are important in maintaining land value and the utility of developed areas.

Map 3 Economic Development Opportunities in the North Gravina Area

2003



4/Community Interest Lands & Resources

Due to proximity to the airport and planned road north of the airport, to the area's suitability for development and to the existence of lands already in private ownership along the waterfront, the North Gravina area is expected to receive the majority of Gravina's development over the near term. As this occurs, it is important to recognize that it is in the interest of the community to identify and set aside some of these lands and resources in order to:

- protect future economic development opportunities, especially the proposed industrial park, road corridors and marina;
- maintain community access to important resources, especially beaches now enjoyed by many residents; and
- maintain corridors to the waterfront to insure the viability of upland industrial or commercial sites dependent on waterfront access.

1. Industrial Reserve Lands

Description: Approximately 186 acres of moderately sloping uplands within/adjacent to the Airport Reserve

Community Interests/Values: helps meet future needs for large tracts of developable land suitable for water dependent industrial uses; may provide income to the community from sales/leases of Borough owned parcels; supports community economic growth.

Use/Development Considerations: maintain natural buffers and visual screens to reduce visual impacts, minimize site regrading to what is necessary; create parcel sizes that meet industrial requirements; identify site for water treatment facilities.

Recommended Actions: develop industrial reserve master site development plan; assess feasibility to upgrade PL&L road and extend basic infrastructure from the Airport (water, power); negotiate with waterfront owners regarding marine access options.

2. Shoreline Industrial Properties/Access to Uplands

Description: At least 21 waterfront parcels (46 acres) within and adjacent to the Airport Reserve

Community Interests/Values: marine access needed to increase value and viability of adjacent uplands for industrial development; upland acreage may be necessary for viability of waterfront parcels.

Use/Development Considerations: while currently zoned Heavy Industrial with Special Limitations, the steep topography and limited size of most lots limit their potential for many activities; site clearing and regrading should be limited to that which is needed for specific uses, while providing for materials/equipment storage areas on the upland side of the parcel (or on adjacent Borough lands).

Recommended Actions: work with property owners to identify ways to join adjacent lots as well as link them with Borough owned upland parcels; include parcels in industrial reserve master plan; identify opportunities for shared waterfront improvements serving multiple properties.

3. Waterfront Development Opportunity: KPC parcel

Description: private (KPC) parcel (25.7 acres with 900 feet of waterfront) and adjacent Borough uplands, including High Mountain Creek

Community Interests/Values: opportunity for concentrated, mixed use, public/private investment; generation of tax and land sales revenues to Borough.

Use/Development Considerations: development should set back from small estuary, creek corridor and shoreline; provide public access to the shoreline.

Recommended Actions: do not subdivide KPC parcel further; set aside adjacent Borough uplands (40-60 acres) for complementary development; promote planned development for waterfront and uplands.

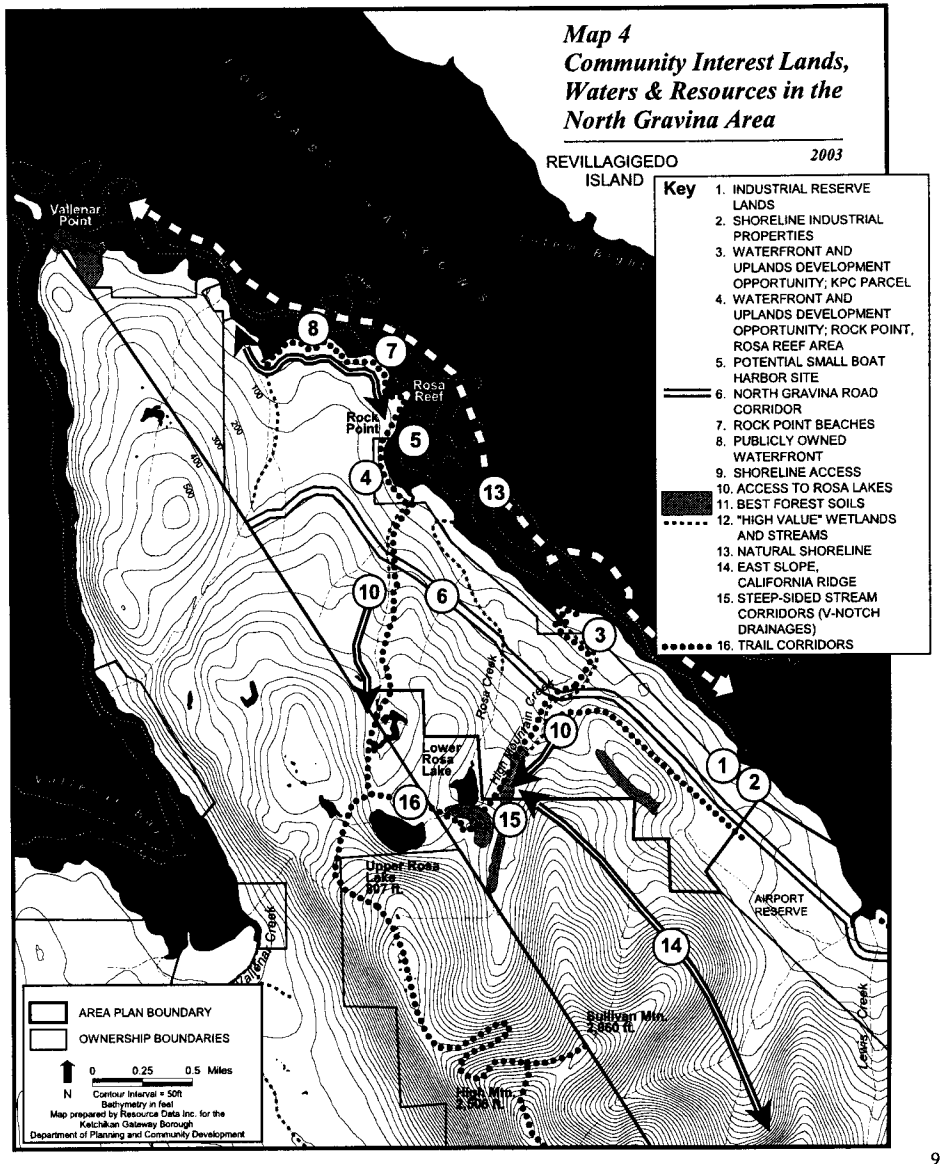
4. Waterfront & Uplands Development Opportunity: Rock Point/Rosa Reef area

Description: relatively large privately owned parcel (24.8 acres with 900 ft. of waterfront) and adjacent Borough shoreline, uplands, and potential marina site.

Community Interests/Values: opportunity for concentrated, mixed use, public/private investment; generation of tax and land sales revenues to Borough.

Use/Development Considerations: improvements should be set back from small estuary, creek corridor, and shoreline; moderate to steep slopes require careful building/road siting and site development practices; maintain public access to the beaches.

Recommended Actions: do not further subdivide private parcel; set aside adjacent Borough lands for complementary development; promote planned development for marina, waterfront and uplands (see pp 21).



5. Potential Small Boat Harbor Site

Description: 10+ acres of moorage in 18+ ft. water depth with wake/weather protection provided by Rock Point.

Community Interests/Values: best location for small marina development on Gravina's east side north of Clam Cove; marina can be important community amenity, visitor industry asset, and focus for planned public/private development.

Use/Development Considerations: design breakwater to buffer wakes from vessels transiting Tongass Narrows

Recommended Actions: promote planned development for marina, waterfront and uplands as described in number 4 above; complete marina development feasibility assessment; do not issue new tideland use permits which might interfere with future marina development; negotiate with existing tideland lease holder regarding marina development.

6. North Gravina Road Corridor

Description: Approx 3.7 mile, 120 ft. wide corridor from end of proposed Airport Service Road (at PL&L sawmill) to "pass" entering Vallenar Bay watershed; alignment roughly follows the 250 ft. contour (or below); provides primary access to serve the north Gravina area with potential to extend to Vallenar Bay.

Community Interests/Values: reserves the best alignment for future road and infrastructure extensions when feasible and needed; reduces traffic and impacts on shoreline developments; provides access to uplands.

Use/Development Considerations: alignment may be initially used for recreational vehicle access; corridor should be wide enough to allow for adjacent trails and natural buffer; alignment to follow contours and minimize large cuts and fills.

Recommended Actions: Complete engineering study of proposed alignment, survey/mark centerline, extend pioneer road into area incrementally as warranted.

7. Rock Point Beaches

Description: includes the longest protected beach area on North Gravina, as well as a number of smaller, more exposed "pocket" beaches.

Community Interests/Values: the most attractive shoreline type for recreational use; a resource of limited extent on Gravina.

Use/Development Considerations: part of the beach is private, part Borough; uplands could support many uses; marina development should protect beach areas.

Recommended Actions: retain ownership of Borough portion, provide continued marine recreational uses; prepare conceptual master plan for area (including marina) to promote/guide development.

8. Publicly Owned Waterfront

Description: approximately 1.6 miles of Borough owned shoreline near Rock Point.

Community Interests/Values: the longest stretch of publicly owned shoreline north of the Airport Reserve; significant potential for recreational and waterfront development; attractive small "pocket" beaches; helps protect visual integrity of extensive stretch of Gravina shoreline; trade potential for other waterfront parcels.

Use/Development Considerations: continued recreational use with access by boat.

Recommended Actions: retain in Borough ownership, future development options should be considered as part of master plan for Rock Point/Rosa Reef area.

9. Shoreline Access

Description: beaches and shorelines free of obstructions and with water depth and shoreline characteristics to facilitate boat access and beach walking.

Community Interests/Values: provides the opportunity for continued public access by water; increases value and viability of non-waterfront properties by providing water access and mooring opportunities.

Use/Development Considerations: promote shared docks to reduce costs and enhance development feasibility of non-waterfront parcels.

Recommended Actions: evaluate options for common waterfront access--both for shoreline property owners as well as for non-waterfront lots on Borough land.

10. Rosa Lakes

Description: two scenic upland lakes situated in a low pass between Vallenar Bay and North Gravina areas.

Community Interests/Values: provide recreational opportunities and serve as an attraction for hikers, fishermen and hunters.

Use/Development Considerations: no motorized vehicles; take visual impacts into account for any timber harvesting nearby.

Recommended Actions: include in Gravina Island Trail System Plan; field test possible routes and flag recommended one; identify best trailhead location(s) and install signage.

11. Best Forest Soils

Description: closed canopy forests with deep, well drained mineral soils found along shorelines and stream corridors; includes ecosystem type F1 and F2 and sites identified in Borough timber inventory.

Community Interests/Values: most productive sites for producing commercial grade timber (typically contains largest trees); of limited extent in this area.

Use/Development Considerations: sites are also some of the most suitable for conventional development.

Recommended Actions: Manage on a selective harvest/ sustained yield basis; encourage uses that support local value-added processing nearby; try to retain in long term timber production.

12. "High Value" Wetlands and Streams

Description: "high value" wetland types found in the North Gravina area include estuaries, tall sedge fens, scrub-shrub alder/willow and moss muskeg/sphagnum peat muskegs.

Community Interests/Values: provide important wildlife and fisheries habitat, contribute to shoreline and streambank maintenance; help regulate streamflow and maintain water quality.

Use/Development Considerations: use and impacts regulated by Federal Law; avoid disturbance and keep runoff out; establish natural buffers and setbacks.

Recommended Actions: promote private landowner/ developer awareness of values and use restrictions; set aside within open space reserves.

13. Natural Shoreline

Description: forested beach fringe interrupted only by industrial activities around the airport

Community Interests/Values: contributes to attractive views from Ketchikan and Tongass Narrows; provides critical deer winter range; helps soften impacts of development activity.

Use/Development Considerations: setback structures and minimize tree clearing and regrading; allow for walking along shoreline where topography permits.

Recommended Actions: promote public awareness and adoption of recommended practices (see pp 24-26); include shoreline protection measures in deeds prior to sale of Borough lands; establish shoreline walking trails where feasible.

14. East Slope California Ridge

Description: forested uplands (mostly under Mental Health Trust ownership).

Community Interests/Values: creates attractive natural visual backdrop for Ketchikan residents and visitors; small pockets of commercial timber along drainages.

Use/Development Considerations: higher elevations, difficult access, generally steep topography and forests of limited commercial value suggests that modifications unlikely.

Recommended Actions: Use helicopter logging for any selective timber harvests; keep cut areas small.

15. Steep Sided Stream Corridors (V-notch drainages)

Description: approximately 1.2 miles of deeply incised lands along two un-named creeks.

Community Interests/Values: unstable, erosion and landslide prone areas to be avoided.

Use/Development Considerations: not suitable for development or timber harvest; access difficult, disturbance can lead to erosion and downstream sedimentation and flooding; crossing by bridge rather than culverts recommended; keep development activities well back of the "influence zone."

Recommended Actions: retain in Borough ownership; manage as open space reserves and habitat; avoid crossing by road or trail.

16. Trail Corridors

Description: shoreline and California Ridge trails linked by connector trails along major creeks.

Community Interests/Values: ensures public access to recreation attractions; contributes to value and quality of residential areas served; avoids future costs of buying trail easements.

Use/Development Considerations: shoreline trails may be difficult in rocky areas or expensive where crossing private lands; ORV use should be guided to specific, appropriate areas (such as along future road corridors).

Recommended Actions: incorporate North Gravina trail recommendations in Gravina Island Trail System Plan; include trail easements in Borough land sales and Planned Developments; field test possible routes; establish provisional trailheads with signage at the end of any roads and along shoreline where mooring/ docking improvements made.



North Gravina, looking south from high above Vallenar Point. While much of the area shown here is more costly to develop due to its distance from existing and proposed roads and services, waterfront parcels should continue to be valued for those seeking a rural lifestyle with boat access.

5/Proposed Zoning

Zoning regulations protect the rights of individuals and the public. They affect the future of Gravina more than almost anything else that is done at the local level. Zoning will define the extent of the industrial reserve, locations where commercial development may occur, and development standards for residential areas, the shoreline and road corridors. The zoning ordinance consists of two parts: a text and a map. In the North Gravina area, there are two types of zoning recommendations:

- No changes to some existing zones (Airport Development, Rural Residential/ Cottage Industry); and
- New zoning classifications for those areas and situations where existing Borough zone classifications may not satisfactorily guide development activities (e.g., Industrial Park, Development Reserve, Resource Management, etc.)

Below is a summary of recommended zoning actions. The page numbers in parentheses indicate where recommended policies and additional information are to be found.

AD Airport Development (1,928 acres) (see pp 16-17 and Central Gravina & Airport Reserve Plan, pp 14-17)
Intended Uses: Commercial and industrial uses compatible with operation of the airport.
Development Considerations: 87 acres at the north end of the Reserve (including the PL&L sawmill lease) to be re-zoned Industrial Park; most airport-related development will continue to be concentrated around existing facility.

IP Industrial Park (186 acres) (see pp 16-17, 24-25)
Intended Uses: Light and heavy industrial activities; Master plan needed to guide development.
Development Considerations/Uplands: Tracts range from 5 to 20 acres; 10 acres to be reserved for wastewater treatment facilities; provide for access to waterfront.
Development Considerations/Waterfront: Existing approximately 2-acre lots may be combined; activities subject to waterfront development recommended practices (land clearing, site grading, drainage, public access along shoreline, setbacks, etc.).

PD Planned Development (324 acres) (see pp 18-21)
Intended Uses: Mixed residential, commercial and recreational uses.
Development Considerations: Development to be guided by approved Master Plan (showing roads, trails, utilities, lots, common areas, facilities, open space reserves); existing private parcels may be combined with Borough lands to create viable acreages.

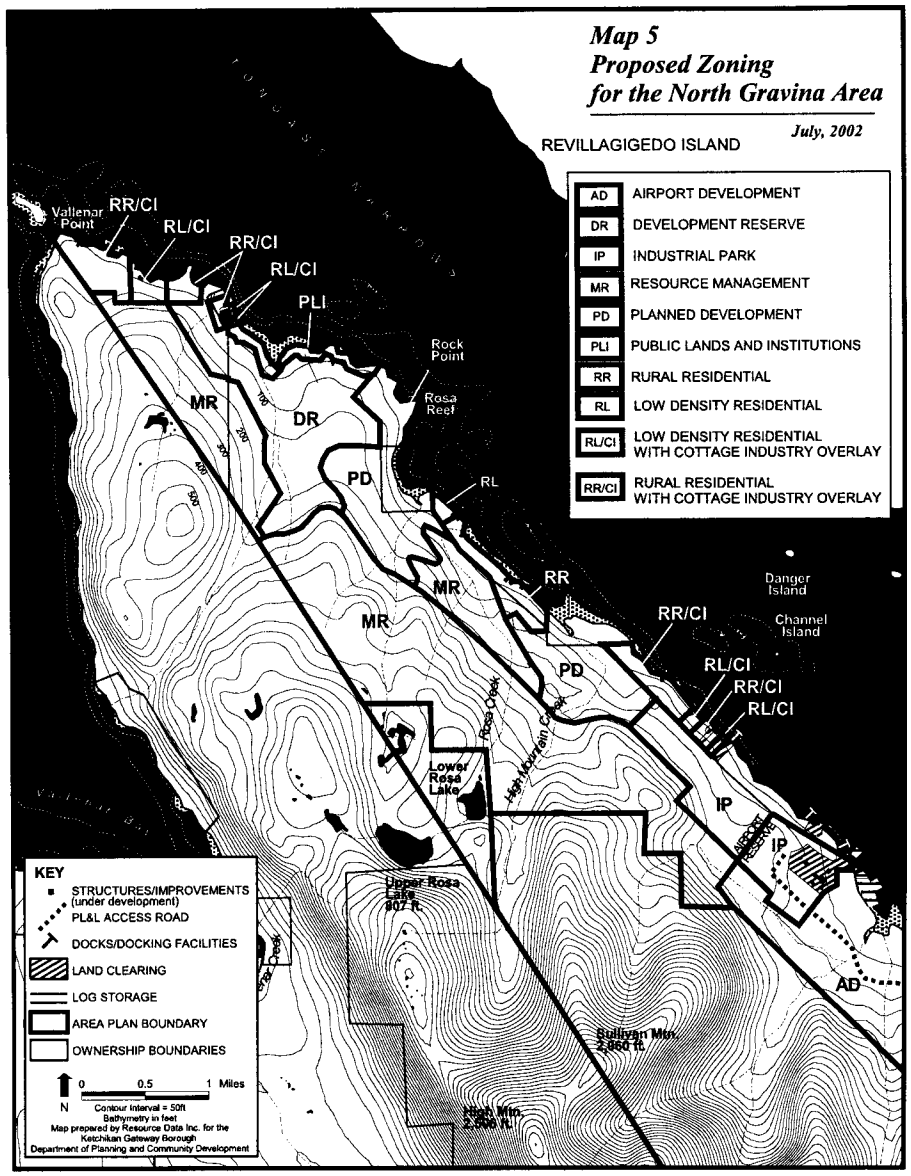
RL Low Density Residential (14 acres) (see pp 18-21)
Intended Uses: Single family residences--15,000+sf lots
Development Considerations: Cottage industry overlay recommended for removal on waterfront lots subdivided to 15,000sf; activities to consider waterfront development best practices (see pp 24-26)

DR Development Reserve (308 acres) (pp 18-20, 24-25)
Intended Uses: Future residential, commercial and recreational uses.
Development Considerations/Uplands: Dispersed recreational and resource management activities permitted (e.g. trails, primitive roads, selective timber harvest) until more intensive and permanent uses feasible.
Development Considerations/Waterfront: To continue to be used for water accessible recreation until more intensive and permanent uses feasible; eventual activities to support proposed development within Rock Point/Rosa Reef area; some of this zone may be included in the Rock Point/Rosa Reef Master Plan; maintain public access and use along shoreline.

RR/CI Rural Residential/Cottage Industry (127 acres)
Intended Uses: Water accessible rural residences with small-scale industrial activities permitted.
Development Considerations: No change to current zoning. Cottage industry overlay to be reviewed.

MR Resource Management (1,087 acres) (see pp 22-23 for information on individual management units)
Intended Uses: Upland areas managed for watershed, habitat and viewshed protection, while allowing for dispersed recreation as well as timber and other resource harvest activities.
Development Considerations: Resource harvest activities require conditional use permit that addresses road layout and standards as well as watershed, visual and habitat mitigation measures.

PLI Public Lands & Institutions (50 acres) (see pp 17)
Intended Uses: public recreation
Development Considerations: maintain public access and use along shoreline; greenbelt to remain along shoreline.



6/Road & Infrastructure Extensions

Findings

Design, preliminary engineering, and permitting has been completed for a road connecting the PL&L sawmill to the airport terminal and ferry. This 4-mile road segment is a critical piece of a network to serve the North Gravina area. The Borough is now reviewing financing options for constructing this segment.

While the terrain is relatively unchallenging, the costs of construction are formidable (the Forest Service estimates approximately $1.25 million per mile for constructing a road that meets a 35 mph driving standard, with several bridges). Extending infrastructure is also expensive (see summary of infrastructure and road extension costs on page 26). The Borough is seeking financing from diverse sources including federal highway funds, federal/state public health programs, area property owners and direct Borough investment.

Projected traffic volumes suggest that a single main road providing access to shoreline properties will be adequate into the foreseeable future. An upland bypass route is to be reserved to provide better access to Borough uplands and an alternative to the shoreline route when traffic volumes and development patterns deem it necessary (see map below).

Road/Infrastructure (R/I) Policy Options

R/I/1 Road development shall be guided by a Gravina Road System Master Plan to ensure an efficient and cost effective means of vehicular access. Initial investments will focus on access to the Industrial Park area. This road will be extended north to serve private shoreline properties and Borough lands as demand warrants. Private properties around Vallenar Point will remain accessible only by water during this plan period.

R/I/2 The Road System Master Plan will support alternative means of movement, including bus, bicycles and pedestrians.

R/I/3 While a road system providing access to existing shoreline properties will be an early focus, an upland road corridor will be set aside to meet longer term access needs and for traffic reduction along the waterfront.

R/I/4 Pioneer roads, including those associated with logging activities on Borough lands, must be consistent with the Road System Master Plan. Improvement and maintenance costs are to be borne by landowner(s). Such roads are to remain private (gated, closed to the public) until meeting Borough standards.

R/I/5 Road improvements shall be consistent with Borough standards and employ "Best Road Management Practices." They will provide viewpoints with scenic turnouts and reduce visual impacts through careful siting (minimizing cuts and fills) and minimal disturbance to natural vegetation.

R/I/6 Road corridors will provide access for infrastructure and community services. Extension of services will serve as an incentive and a means to guide development activities.

R/I/7 The Borough will recover costs of roads, infrastructure and services from landowners and direct beneficiaries.

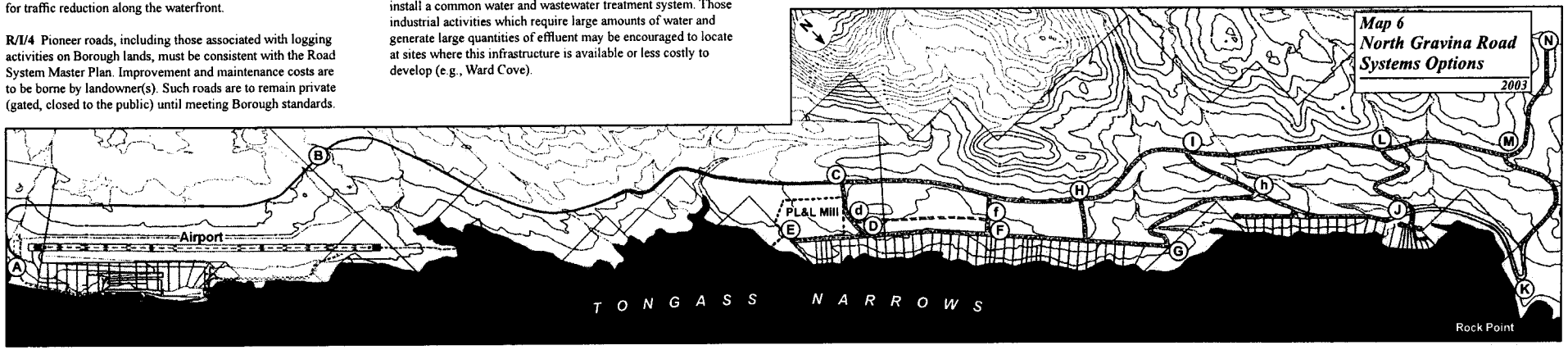
R/I/8 The Borough will work with industrial developers to install a common water and wastewater treatment system. Those industrial activities which require large amounts of water and generate large quantities of effluent may be encouraged to locate at sites where this infrastructure is available or less costly to develop (e.g., Ward Cove).

Summary of North Gravina Road System Options

Segment (see map)	Length (miles)	Recommended R.O.W. Width (feet)	Estimated max. grade (%)	Estimated cost- forest hwy standards; 2 lane; 35 mph; gravel surface @ $ 1.0M/mi	Road Function	Expected construction period: 0-5 Years	5-20 Years	> 20 Years
A-B	Airport service road currently under development (see note 1)							
B-C	Pioneer P.L. & L. access road currently under development (see note 2)							
C-D	.25	60'	6%	$250,000	Secondary road; Industrial park access (see note 3)	●		
D-E	.30	40'	7%	300,000	Local access to industrial sites and common waterfront facilities	●		
D-F	.35	60'	5%	350,000	Secondary road; industrial park access (see note 4)	●		
d-f	.35	60'	6%	350,000	Alternate route to D-F above (see note 4)	●		
F-G	.75	60'	7%	750,000	Secondary road; access to industrial park and waterfront lots (see note 3)		●	
G-h	.60	60'	7%	900,000	Optional segment through difficult terrain and environmentally sensitive area (see note 5)		●	
C-H	1.0	120'	3%	1,000,000	Access to industrial park upland sites; future N. Gravina main collector road (shoreline bypass)	●		
H-I	.50	120'	12%	500,000	Main North Gravina collector and shoreline route bypass		●	
I-h-J	1.0	60'	10%	1,000,000	Secondary road; local access to waterfront lots and Rock Pt/Rosa Reef area beyond (note 6)		●	
J-K	.68	60'	3%	700,000	Optional secondary road providing access to Rock Pt/Rosa Reef marina, services (note 7)		●	
I-L-M	1.35	120'	8%	1,350,000	Main North Gravina collector and shoreline route bypass			●
K-M	.68	60'	12%	700,000	Secondary road linking Rosa Reef marina and borough lands to main upland road			●
M-N	.55	120'	5%	600,000	Possible future road linkage to Vallenar Bay (see note 8)			●

Notes

1. *Approximately 1.5 miles, airport service road may initially be developed as one lane with turnouts*
2. *Approximately 2.4 miles may be initially developed as one lane with turnouts, controlled access for PL&L sawmill use.*
3. *Serves as main collector until upland bypass constructed.*
4. *This alignment would facilitate expansion of waterfront sites into Borough uplands.*
5. *Segment H-h is the preferred routing.*
6. *Serves as main road until upland bypass segments completed (I-L)*
7. *Long term main vehicular access to Rock Point /Rosa Reef would be along upland segments H-I-L-M-K*
8. *May initially be developed to provide access to DNR timber in Vallenar*



7/Industrial Park Area

Industrial Park (IP) Policy Options

IP/1 An Industrial Park Master Plan will be prepared to guide land sales and leases and infrastructure development. The plan will provide for varied parcel sizes, waterfront linkages and shared facilities as well as flexibility to meet changing needs.

IP/2 The Borough will work with industrial park users to improve road access and basic infrastructure for which the local match component of public investment is to be repaid by a combination of local property taxes, special assessments and user charges.

IP/3 Wastewater treatment facilities developed to service the industrial park will be designed to meet other North Gravina development needs.

IP/4 Borough lands will be sold or leased to support Industrial Park development. Borough land leases and sales may be used as incentives to developers.

IP/5 The Borough will use sale/lease of its lands to encourage compact and efficient growth. Parcels near existing activities (e.g., PL&L), would be used first, with more distant parcels reserved for future demand.

IP/6 Common waterfront facilities will be established to meet needs of upland parcels.

IP/7 Waterfront sites with difficult terrain will be encouraged to expand into upland parcels when additional space is needed, rather than severe clearing/regrading of nearshore areas.

IP/8 The Borough will work with existing owners of waterfront parcels to create viable sites, either by combining with adjacent lots or expanding into uplands.

IP/9 The Borough will support research and pilot projects for using overburden from site clearing (soils, brush, trees) in landscaping and restoration activities.

IP/10 The Borough will promote awareness and adoption of waterfront development best practices (see pages 24-25) within the Industrial Park.

IP/11 Materials site development within the Industrial Park will be done in a manner that leaves usable lands upon completion of quarrying activities.

Findings

North Gravina contains significant acreage that is well suited for water-dependent industrial purposes requiring upland acreage. This is especially true of the waterfront lands immediately north of the Airport Reserve where noise-tolerant (in the flight path) industrial uses could be appropriately located and where industry-supporting roads and infrastructure can be efficiently extended.

Extensive areas of developable, Borough-owned land north of the Airport Reserve are suitable for industrial development but isolated from saltwater access by earlier subdivisions along the coastline. Acquisition of saltwater access corridors is needed to assure that Borough land is accessible to future waterfront transportation facilities and is thereby more versatile and valuable for industrial development purposes.

Not all of the land appropriate for industrial purposes is presently zoned industrial. Residential zoning could interfere with industrial development objectives for the area north of Lewis Reef.

Many industrial zoned, privately held waterfront parcels in North Gravina are small and have steep slopes, limiting their development. At the same time there are opportunities to combine parcels as well as link waterfront sites to adjacent uplands with lesser slope limitations.

The waterfront area adjacent to the PL&L sawmill lease is to be shared by other nearby developments. A second shared waterfront access area should be identified at the other end of the proposed Industrial Park.

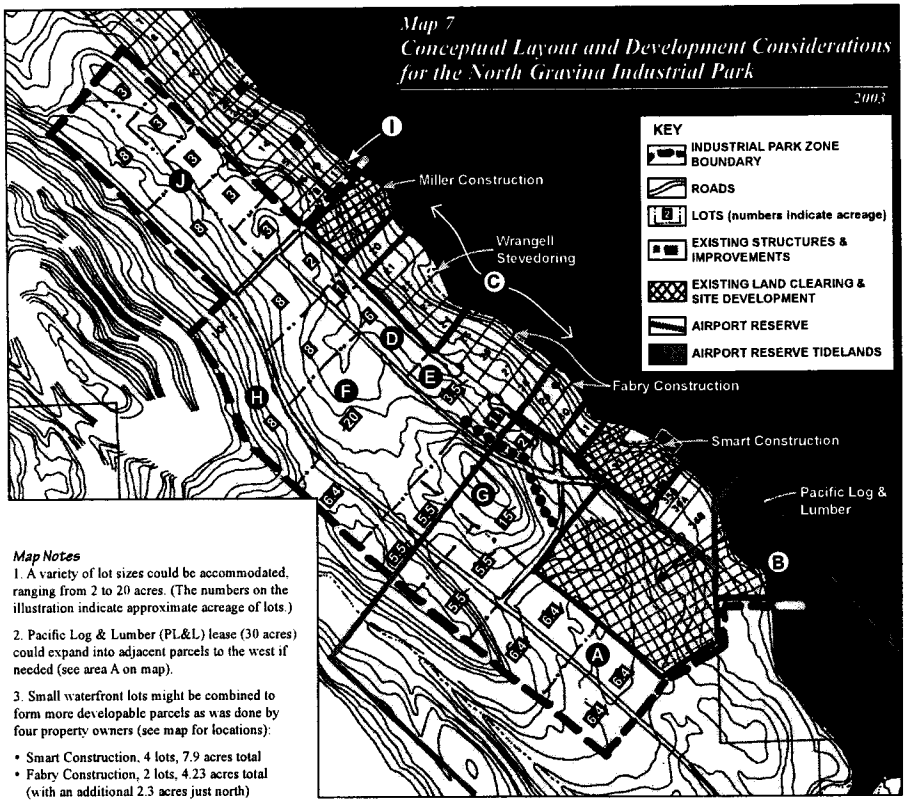
Industrial developments typically require extensive cleared areas, resulting in large quantities of organic waste materials or overburden. Research is needed on ways to process these materials for use in site reclamation and landscaping. The Borough may assist by identifying a site for overburden disposal.

Development on muskeg (organic) soils such as those found in North Gravina typically require rock overlay (for drainage and structural support). Rock may be obtained from the airport quarry site and from the small knoll just north of the PL&L lease.

Industrial development will require some form of shared wastewater treatment facilities. An economic analysis is required to determine the feasibility of extending airport services (water, sewer) to the Industrial Park or developing them within the park itself.

Extension of telecommunications and electricity by KPU to the industrial park area by submarine cable from Revilla is now under study.

Map 7
Conceptual Layout and Development Considerations for the North Gravina Industrial Park
2003



Map Notes

1. A variety of lot sizes could be accommodated, ranging from 2 to 20 acres. (The numbers on the illustration indicate approximate acreage of lots.)

2. Pacific Log & Lumber (PL&L) lease (30 acres) could expand into adjacent parcels to the west if needed (see area A on map).

3. Small waterfront lots might be combined to form more developable parcels as was done by four property owners (see map for locations):

- Smart Construction, 4 lots, 7.9 acres total
- Fabry Construction, 2 lots, 4.23 acres total (with an additional 2.3 acres just north)
- Wrangell Stevedoring, 4 lots, 9.08 acres total
- Miller Construction, 2 lots, 5.87 acres total

4. Shared docking and waterfront facilities located at one end of the Industrial Park (adjacent to the PL&L lease, area B on map) would be accessible to other properties via the proposed road network.

5. A second waterfront area with common docking, loading, and other water related facilities should be identified in the Industrial Park. The Borough may negotiate with property owner(s), possibly trading Borough property in the Park or other Gravina properties for waterfront parcels (area C on map).

6. Most shoreline properties have steep slopes, limiting the available area, and making industrial development costly and difficult. Access to adjacent Borough uplands (area D on map) provides an incentive to avoid these areas, leaving more of the shoreline fringe in a natural state.

7. The road along shoreline properties could be private, with controlled access, facilitating extension of industrial activities into adjacent Borough lands (area E on map).

8. One large site (20 acres) with convenient access to waterfront facilities reserved to attract a "keystone" activity (area F on map).

9. Small knoll to serve as possible site for quarrying rock materials needed for Industrial Park development. It could be reclaimed and used as the site for a wastewater treatment facility serving all Industrial Park properties (area G on map).

10. Careful site management and restoration could take additional rock materials from parcels with steep topography, leaving them in a condition more suitable for industrial uses (area H on map).

11. Very steep slopes to be kept in native vegetation to help reduce visual impacts, such as the lower slopes of the proposed rock materials site (black dots adjacent to area G on map).

12. The Borough may negotiate with owners of undeveloped waterfront properties adjacent to proposed Industrial Park (area I) to secure them as buffer between industrial activities and residential uses to the north. Map shows location of two properties with improvements to the north, other lots are undeveloped.

13. Northernmost portion of the Park (32 acres, area J) could be reserved for less water dependent activities and upland expansion of waterfront properties with cottage industry uses.

14. One parcel (5 acres) could be dedicated to prototype facilities for processing organic waste materials from site clearing into materials for use in site re-vegetation and restoration.

8/ Residential & Planned Development Areas

By "planned development" is meant larger scale site development (more than just several lots) guided by an overall master plan, usually undertaken by one or more investors (rather than individuals) and often with public sector participation. Planned development offers many advantages, including;

- maintains a desired density in areas of difficult terrain and other site conditions;
- makes smaller parcels more viable and profitable if combined;
- increases the attractiveness (and value) of individual properties within it and protects key amenities;
- permits a greater mix of development types, often incorporating single family detached residences with townhouses, condominiums, apartments and even commercial uses;
- maximizes the efficiency of infrastructure/services through more concentrated development and provides a greater amount of tax revenue to support them; and
- encourages shared or common improvements including trails, boat ramps, docks and moorings, and community centers.

Findings

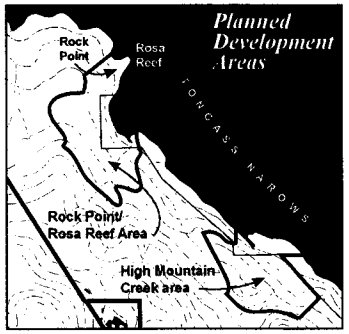
There is enough available residential land on Revilla to meet projected demand over the foreseeable future.

Of the 55 existing residential zoned properties in the North Gravina area, 10 have recorded improvements. With improved access, it is expected that the remaining parcels as well as new ones created from Borough holdings will be more attractive for residential development. The conceptual plans shown here provide for an additional 287 residential units to the community.

A considerable amount of land in the North Gravina area has limited development potential due to steep slopes (greater than 20%).

The North Gravina area has two large waterfront parcels (26 acre KPC site; 25 acre Webber Air Investments site) in private ownership which could be combined with adjacent Borough owned lands to create more viable tracts for planned development. The sketches on the following pages illustrate potential planned development scenarios for these two areas.

The Rock Point area has North Gravina's best beaches with potential for marina development, as well as 1.6 miles of Borough waterfront lands.

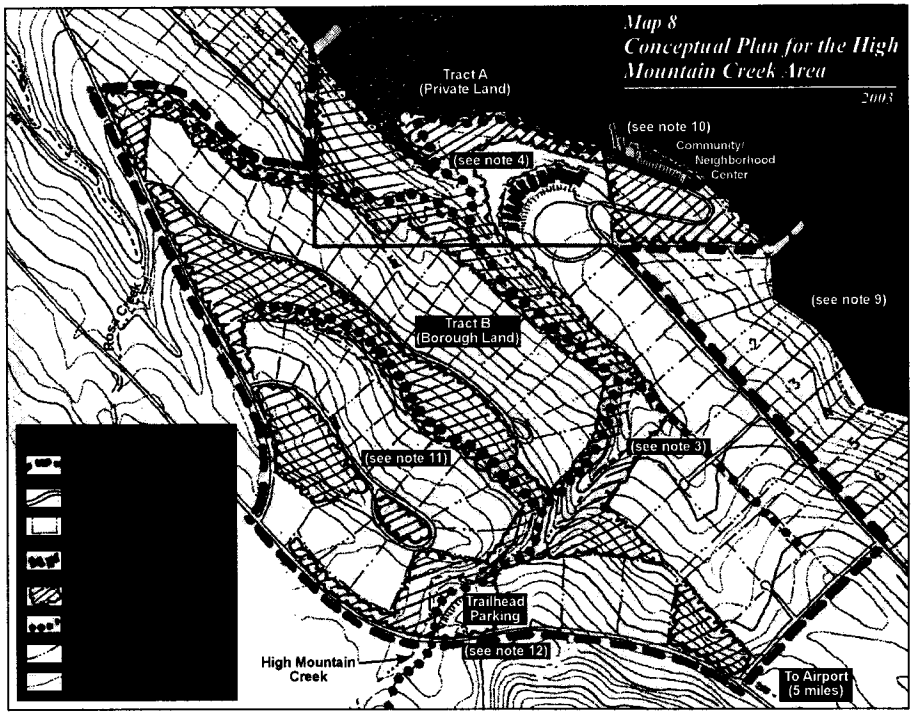


Residential and Planned Development (R&PD) Policy Options

R&PD/1 The North Gravina area is one of three planned residential development nodes on the island. Development should be concentrated to provide cost effective infrastructure and services.

R&PD/2 The North Gravina area shall provide a variety of residential options including large suburban lots (1-2 acres), more densely developed waterfront lots, multi-family sites, and remote residential parcels.

Policies continue on page 20



Notes

1. Plan illustrates integration of KPC (Tract A) and Borough (Tract B) lands.
2. Scheme provides 62 one-acre lots for single family residences, as well as 20 multi-family units. With existing waterfront lots, housing for 158 families could be provided.
3. Layout avoids difficult terrain and sensitive natural areas. The anadromous creek corridor forms part of the open space system. Wet soil conditions in much of the proposed development area would require rock overlay construction techniques.
4. Attractive prime waterfront site adjacent to High Mountain Creek estuary could be intensively developed (20 multifamily units). This maximizes use and density while recognizing fragile ecosystem.
5. Tract A and the adjoining tidelands provides for protection of the High Mountain Creek watershed, its viewsheds and the outwash flat at the mouth of the creek.
6. All properties are less than 2 miles from the proposed Rock Point/Rosa Reef marina and related services, as well as less than 5 miles to the airport.
7. Road system minimizes amount of through traffic within neighborhoods.
8. Intensive development such as that shown here would require installing a neighborhood package sewage treatment plant or connecting to a wastewater treatment system such as may be developed for the adjacent North Gravina Industrial Park.
9. 31 of the existing waterfront parcels could be subdivided into two lots, yielding 76 rather than 45 shoreline properties. This would add to the availability of this valuable site amenity.
10. The Community/Neighborhood Center provides water access (boat ramp, docking, limited mooring) for upland properties. It could either be open to the general public, or owned and managed by a neighborhood association or service area.
11. All properties have direct access to an open space and trail network, linking Upper Rosa Lake and the California Ridge Trail system to the shoreline.
12. Parking and trailheads allow for public access to the trail system.
13. Borough-owned uplands enables maintaining a buffer zone between the industrial uses to the south and residential and commercial uses to the north, while protecting the natural watershed and the values of adjoining waterfront properties.

Residential and Planned Development Policy Options continued from page 18

R&PD/3 The Borough will use its lands to support planned development adjacent to the two existing large private waterfront parcels (KPC site and Webber Air property near Rock Point).

R&PD/4 Properties in the Vallenar Point area are to remain as water-accessible, remote residential parcels until road extensions to them are economically feasible.

R&PD/5 Existing waterfront lots shall not be further subdivided until appropriate sanitation services are available.

R&PD/6 The Borough will inform and encourage shoreline residential property owners to incorporate waterfront development "Best Practices" (see pages 24-25) in design, construction and maintenance activities.

R&PD/7 Planned Development areas will be designed to meet local demand for residential properties and to support community and visitor needs for recreational services, sites and attractions.

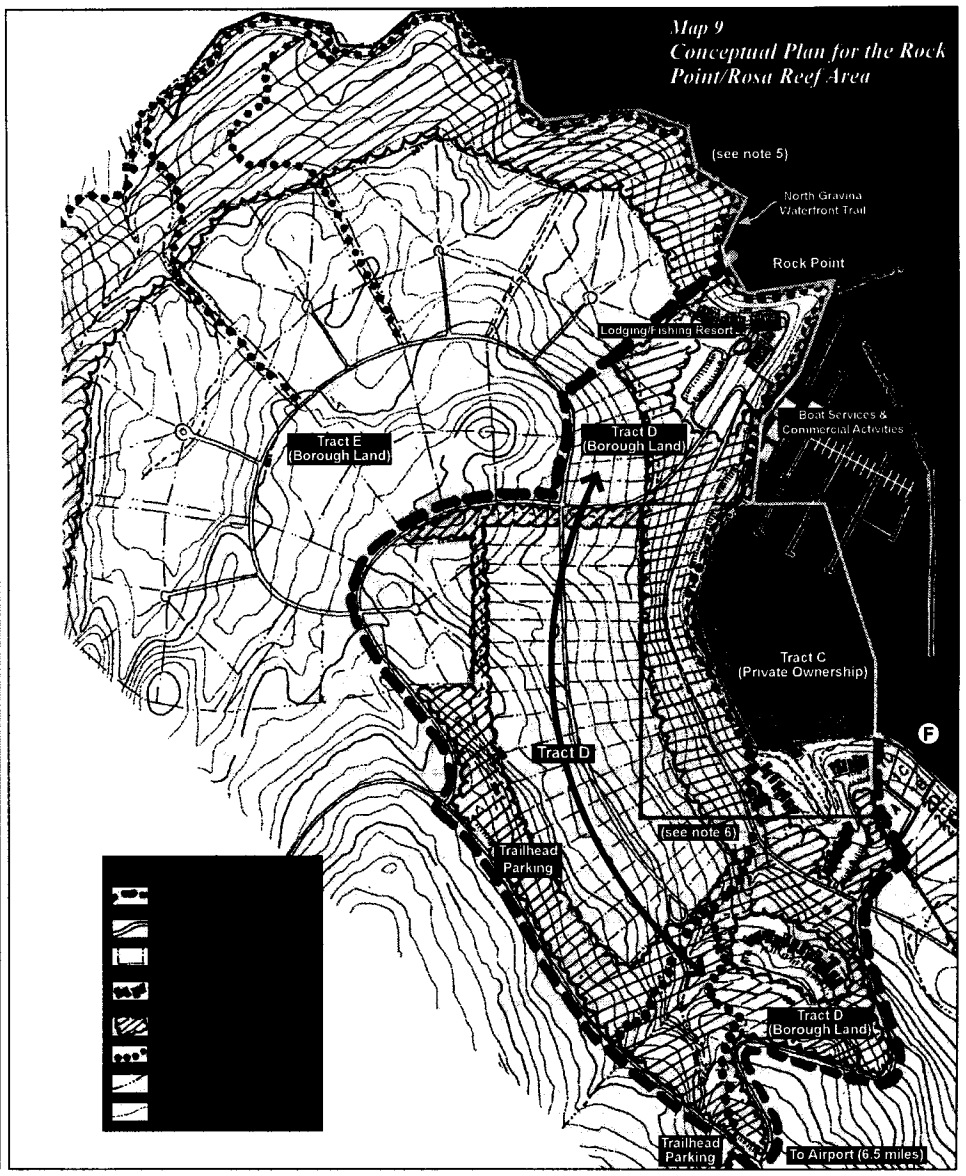
R&PD/8 Where terrain permits, public or community access along shorelines should be maintained.

R&PD/9 The Borough shall look for ways to provide and ensure access to the waterfront for upland properties as well as the general public.

R&PD/10 Docking and mooring improvements should be shared by multiple properties to reduce impacts and costs.

Notes

1. Plan illustrates integration of large private parcel (Tract C) with Borough lands (Tract D) with potential expansion into other Borough-owned parcels (Tract E).
2. A small boat harbor is proposed for the Rock Point-Rosa Reef area capable of accommodating up to 400 boats, averaging 36 feet in length, if the moorage is completely developed. Moorage and related facilities and services may be developed in stages, beginning with 40 boats, or fewer.
3. The small boat harbor would complement the industrial, commercial and residential land uses planned for the North Gravina area. For full development of the small boat harbor, road access and other infrastructure must be extended to the Rock Point-Rosa Reef area. The earliest stages of the small boat harbor could accompany an isolated development of fishing lodges and recreational residences in this area, without road access. Sanitation could be small-scale water systems with a "package-plant" or STEP sewer treatment system.
4. The scheme provides for 44 one acre lots, 47 two-plus acre lots, and 48 multi-family units, as well as a lodge site, marina, boat related services, and parking. This could provide homes for 139 families.
5. The proposed North Gravina Waterfront Trail provides resident and public access to over a mile and a half of shoreline with both large and small "pocket" beaches. Boat access to these beaches would continue. The shoreline and beach in Tract C is exceptional and should be protected for public access and recreational use.
6. Development avoids steep slopes as well as creek corridors. Wet, organic soil conditions in much of this development area would require rock overlay construction techniques.
7. All properties have direct access to the open space/trail system.
8. Much of the visual and ecological integrity of the shoreline is to be protected.
9. This area could be served by its own package sewage treatment system, or joined to the system for the High Mountain Creek neighborhood and/or Industrial Park to the south.
10. The 26 already-platted, private residential lots (see area F) and the adjacent lands to the west will have excellent access to the small boat harbor and sport fishing-related center.



Map 9
Conceptual Plan for the Rock Point/Rosa Reef Area

9/Resource Management (Recreation, Timber, Fisheries, Sand & Gravel, Habitat & Views

Findings:
Approximately 27% of the North Gravina area has significant limitations for development (see development suitability map on page 5) and is best kept in a natural state, managed for wildlife, watershed, visual, and dispersed recreational uses.

A recent timber cruise completed for Borough lands in the North Gravina area indicated commercial timber limited to a few small stands and occasional single trees along streambanks or near the shoreline. Harvest feasibility is dependent on costs associated with helicopter logging techniques, as well as securing selective harvesting permits within anadromous creek corridors.

While there are commercial timber stands on DNR and University lands in the adjacent Vallenar Bay area, it is expected that these resources would be accessed from the proposed Forest Service road system, or by helicopter techniques, and would not be dependent on a North Gravina road.

Road and other development on muskeg areas, such as those found over much of the North Gravina area, typically require significant amounts of rock. Some of this material could come from the existing quarry site by the airport; some could be extracted from the knoll within the proposed Industrial Park.

Recreational use of the area currently is light and concentrated along the shoreline due to the difficult access. The projected roads are expected to increase the numbers of people using upland areas for hunting, off-road vehicle use, and hiking.

North Gravina presents an attractive natural backdrop for many Ketchikan residents and visitors. While many areas have an adequate "visual absorption capability" (the capacity to screen and soften the visual impact of development as determined by slope and density of landcover), the most sensitive are those along the shoreline and the steep upland mountain slopes. Minimizing visual impacts along the shoreline should be the priority at this time.

The North Gravina area has four catalogued anadromous streams, with natural blockages limiting fish movement upland.

The Rock Creek/Rosa Reef area has potential for concentrated resident and visitor recreational development (marina and related facilities and services, lodge, trails, beaches) (see page 21).

Resource Management (MR) Policy Options

MR/1 Use North Gravina's commercial timber resources to support small, value added forest products industries located within industrial park and cottage industry zones.

MR/2 Identify and dedicate sites where experimental timber management activities can be tested (e.g. hybrid poplars, spruce and cedar plantations, fuelwood lots).

MR/3 Coordinate timber management and harvest activities with Mental Health Trust to increase economic viability of resource base and minimize costs.

MR/4 Integrate North Gravina destinations and routes into a Gravina Island master trail plan (Upper Rosa Lake, the High Mountain ridge, Rock Point area). Establish parking and trailheads (with signage and maps) at the end of all road extensions.

MR/5 Direct off-road recreational vehicle activities along future road corridors as a means of separating this use from non-motorized activities.

MR/6 Protect stream corridors with development setbacks (100 ft. on either side of streambank; 200 ft. within portions where salmon spawning occurs; to the top of the slope on v-notch drainages).

MR/7 In road development, provide for turnouts where scenic views are possible.

MR/8 Promote awareness and adoption of waterfront development recommended practices (see pages 24-25) to help protect visual resource values.

MR/9 Require master plans for materials and quarry site developments that include provision for screening, noise and dust control during operations as well as land restoration and re-use when mining activities are completed.

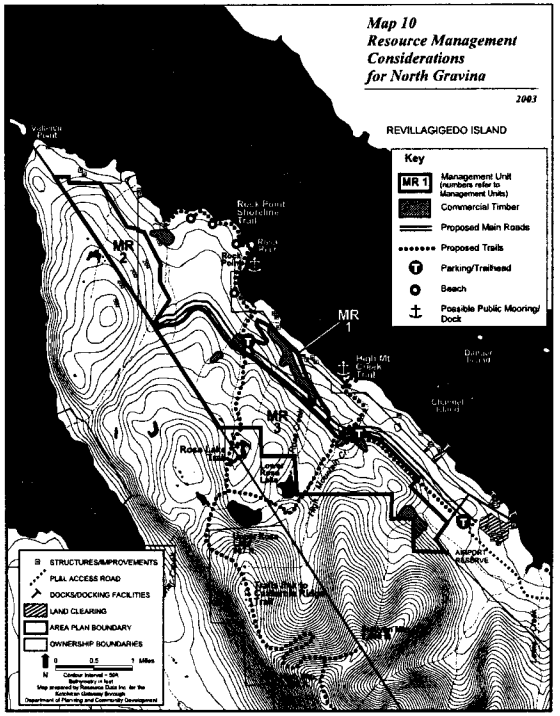
MR/10 Support research and pilot projects for using organic waste materials from site clearing (soils, brush, trees, etc.) in landscaping and land restoration activities.

MR/11 Incorporate critical habitat areas identified by ADF&G and USF&WS into open space reserves.

Management Unit (see map)

RESOURCE VALUES	1	2	3
Recreation	●	○	●
Timber	○		○
Fisheries			
Minerals			○
Energy			
Habitat	●	○	●
Air & Water Quality	●		○
Hazard Avoidance	●		○
Visual/Aesthetic	○	○	●
Visitor Attractions	○		○
Screens & Buffers	○		
Open Space	●	●	●

ACTIVITIES	1	2	3
Recreational hunting	■	●	●
Recreational fishing	●	●	●
Motorized recreation, ORVs	■	⊘	⊘
Personal fuelwood cutting	■	●	⊘
Structures (temporary)	■	⊘	⊘
Structures (permanent)	■	■	■
Materials site/quarry	■	⊘	⊘
Timber harvest	■	⊘	⊘
Commercial fishing	■	■	■
Roads (controlled access)	■	⊘	⊘
Roads (open access)	■	■	■
RV camping	■	⊘	⊘
Tent camping	■	●	●
Hiking	●	●	●
Wild food gathering	●	●	●



Values Key

- ● Primary value (access, use and management decisions should favor this activity)
- ○ Secondary value (access, use and management decisions should favor this activity as long as it does not interfere with primary values)
- ☐ Not present or of significance in this area

Activities Key

- ● Generally allowed
- ⊘ Allowed only in designated areas or by permit
- ■ Not generally allowed

10/Shoreline Development Recommended "Best" Practices

The development of North Gravina will be largely expressed in changes to the shoreline. Most industrial activities are dependent on marine access and most residential uses will occur along the beach. Gravina's shoreline is important in many ways to Ketchikan residents: we admire its beauty, we fish along it, we walk along it (where possible), we enjoy or depend on the deer and other animals who rely on the shoreline for survival, and we benefit from the visitors who come to Ketchikan to, among other things, appreciate our beautiful waterfront setting.

The impacts of change that reduce our enjoyment of Gravina or our attractiveness as a visitor destination can be minimized by employing development practices that respect the important role the shoreline has in our lives. Regulations administered by the Borough, Corps of Engineers, Fish & Game and others address only some impacts; many can only be addressed through responsible individual initiative. The following "best" practices are to assist planning and siting of shoreline structures and protecting assets that citizens now enjoy. They are not meant as official rules, but rather as guidance to designing successful shoreline facilities and residences.

1. Give priority to water-dependent and water-related uses Waterfront land is scarce and expensive. It is important to use it carefully and not substitute it for uses that could function just as well on non-waterfront land. A water-dependent use is one that requires a waterfront location, like a dock, which can only be located on the water. A water-related use is one that benefits uniquely from its waterfront location, even though it is not strictly necessary for it to be on the water. A waterfront lodge at Rock Point is an example, as well as recreation and some residential uses. It is important to optimize water-dependent and water-related values, both because community interests will be well-served by the property's contribution to the local economy and because high property values will be developed and maintained.

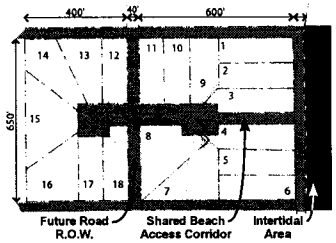
2. Start with a site development plan An important first step is a site plan that identifies the best locations for structures, roads and other improvements, as well as areas to remain natural. In preparing such a plan it is important that the long-term development and use of the entire property and, when appropriate, neighboring properties be taken into account.

3. Minimize site re-grading People often respond to steep and irregular shoreline topography by filling in low areas and cutting away steep banks in order to have a flat building pad. This typically leads to extensive rock retaining structures. On narrow waterfront lots, this can easily impact most of the site. Often the best solution is to build on posts or pilings in order to make a lighter footprint. On lots where site re-grading may impact 50% of the site within 200 feet of the shoreline, professional design assistance should be sought prior to commencing work.

4. Maintain the natural flow of water through the property. Shoreline areas have an abundance of small creeks and drainage channels for directing Ketchikan's abundant rainfall and storm water to the sea, thereby preventing erosion and flooding. Property owners should minimize disturbance to these often fragile, natural water flow paths.

5. Setback buildings and structures from the shoreline. Shoreline setbacks are used to allow property owners to enjoy the privilege of living or establishing a business on the waterfront while protecting the views of adjacent property owners as well as recognizing public interests and ecological considerations. The setback may often be 50 to 100 feet or more depending on the site, nature of the proposed development, extent of vegetation removal and other development practices.

Shoreline Subdivision Layout Incorporating Many of the Recommended Practices Described Here



Subdivision layout establishes 18 lots (6 waterfront properties), access easements and open space reserves for shoreline and upland properties. Note recommended 25 ft. shoreline common space above mean high tide to allow for walking along beach. Public/common space is shaded.

6. Minimize clearing of trees and other native vegetation. Shoreline areas contain many different ecological communities and the greatest number and variety of plants and animals. Leaving dead snags (for eagles and other birds to nest/roost, leaving native trees and shrubs (for deer to use in winter), and setting structures back from the shoreline (leaving tidelands undisturbed) are all ways to provide for the needs of native animals. It is recommended that within 200 ft of the shoreline, at least 50% of the natural vegetation should remain undisturbed.

7. Share access improvements with neighbors (docks, driveways, beach stairs/ boardwalks, bridges, etc.). Shoreline lots typically are narrow to maximize access to and enjoyment of this limited amenity. Neighbors can cooperate to construct and maintain improvements in order to reduce costs and protect the natural beauty. On long, narrow waterfront lots, shared driveways can cut necessary land clearing by half. Subdivision layouts such as that illustrated on this page can include provision for shared docking facilities for both waterfront properties and upland parcels.

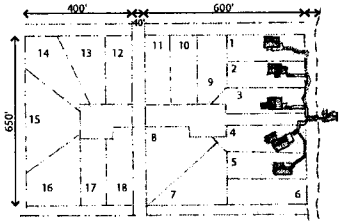
8. Allow for walking along the shoreline. Property lines typically extend landward from the mean high tide line, permitting public movement along the shore when tides are low. Docks, jetties, mooring lines and other shoreline structures should not interfere with this except as required for economic development activities. A "best practice" in Borough waterfront subdivisions is to provide shoreline trails where needed above the mean high tide mark to help people more easily negotiate obstructions such as rock outcrops, logjams, small creeks, etc.

9. Keep wastewater out of the sea. Residential development creates two kinds of wastewater: sewage and runoff (from buildings, driveways, etc.). For years, waterfront properties took advantage of the significant tidal flushing of Tongass Narrows to dilute sewage. This is no longer permitted due to higher water quality standards and increased population. Surface runoff can best be controlled with site grading and landscaping. Wherever possible, runoff should be directed into a natural basin or swale where sediments and possible pollutants can be naturally filtered prior to flowing to the sea. Sewage treatment systems should be regularly checked to insure proper functioning.

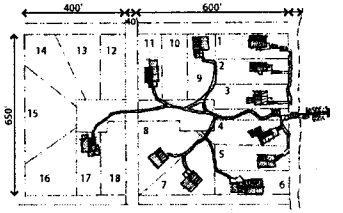
10. Avoid difficult site conditions. Some shoreline lots have especially difficult site conditions such as a high bank, very steep topography, or a large creek running through. These may mean that one cannot build as close to the shoreline as desired, or special professional assistance is needed to work within these constraints. In a few cases, such limitations may indicate that the lot should not be developed at all.

11. Minimize site disturbance during construction. Providing access for heavy equipment and storing building materials typically requires land clearing and site modification beyond the perimeter of the finished building. Minimizing and keeping these areas upland, away from the shoreline, will save later landscaping costs and maintain the natural quality of the site. Trees and areas to remain undisturbed by construction crews should be clearly marked.

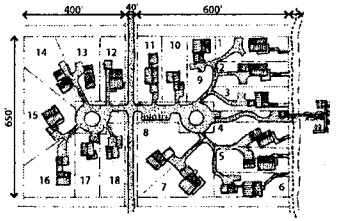
12. Keep vehicles and clutter back from shoreline. Shorelines are visually sensitive parts of the landscape; they are frequently viewed and have low screening ability. Derelict vehicles, piles of building materials and similar items should be kept upland, screened by vegetation. Providing for vehicular access to the waterfront requires site disturbance (clearing and re-grading). Unless essential for conducting business, driveways, garages, and parking are best kept on the parcel's upland side.



Stage 1: Waterfront properties sell first and are developed around a shared dock and access by boat only. Note development of shoreline trail/ boardwalk.

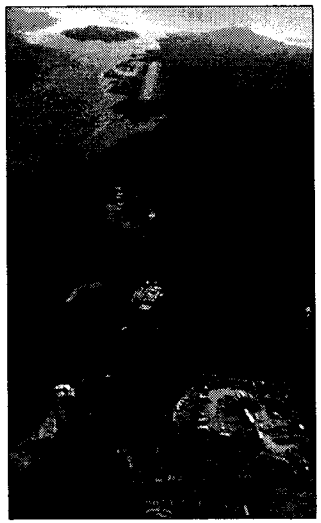


Stage 2: Some upland properties also develop with access still by boat only. Note development of central access corridor down to shared dock.



Stage 3: Road extended to subdivision. Upland properties begin to develop, and waterfront properties add driveways and parking. Note shared driveways along lot lines and road down to beach/shoreline.

11/Implementation Strategy & Costs



Pacific Log and Lumber development in the foreground with Ketchikan International Airport about 2 miles to the south.

The Borough's Role

As the principal landowner in the North Gravina area, The Borough has a key role in plan implementation. The Borough has local responsibilities for land management (including the subdivision and sale of Borough lands and the regulation of land uses), economic development, and transportation planning. These responsibilities imply important leadership roles to:

- promote and implement economic development and land use activities within the North Gravina area;
- determine an effective transportation network for this area;
- stimulate private/public partnerships for initiatives such as the Industrial Park and the Rock Point/Rosa Reef and High Mountain Creek planned developments proposed in this area plan;
- secure access to the waterfront for Borough uplands to insure long-term versatility and value for development purposes;
- develop recreational uses and facilities on selected lands as proposed in this plan;
- secure federal/state funds for infrastructure improvements; and
- assist in establishing a local service area to finance and maintain North Gravina area improvements.

One important early regulatory initiative will be the proper zoning of Gravina's lands to provide the framework for the plan's recommendations to be implemented. New zoning classifications are needed (resource management, planned development and others) and some existing zones should be modified. The Borough can facilitate priority economic development projects by working with regulatory agencies to pre-qualify sites so that planning and environmental review steps are complete and a project applicant can go directly to site, engineering and construction plan review.

To successfully implement the plan, the Borough will need to commit to sufficient staff (contracted or "in-house") to assume its leadership roles. It will require close cooperation between the Planning Commission, Borough Assembly, and Planning and Public Works Departments. It will also require collaboration between these organizations, other public agencies, and the private sector, including individuals and firms interested in investing in the projects conceptually proposed in this plan.

Interagency Partnerships

Implementation of the North Gravina Area Plan requires working relationships between the Borough and those public agencies and land trusts given responsibility for managing major portions of this area's lands and resources: State DNR (including the Division of Parks), State DOTPF, and the Mental Health Trust. Each of these has its own mission and objectives. Each needs to coordinate with the others for effective implementation. In order to secure an intergovernmental partnership, it is recommended that a task force of these agencies and trusts be formed and meet at least once a year to define cooperative actions to manage area resources. Cooperative actions may include:

- joint financing for construction of roads, trails and recreational facilities;
- cooperative harvest management to sustain timber flows to local processors;
- land exchanges to facilitate better and more cost effective management;
- identification of quarry locations for construction projects;
- road maintenance and closure policies to manage habitat and contain maintenance costs; and
- agreements on mitigation lands to facilitate projects.

Financing Implementation

Implementing the North Gravina Area Plan is expected to take place in three segments determined in large part by the extent of road and infrastructure extensions: Airport Terminal to north end ~~of~~ the Airport Reserve (Segment A); north end of the Airport Reserve to north end of the Industrial Park (Segment B); and north end of the Industrial Park to Rock Point (Segment C). Order-of-magnitude costs of road, water and sewer utility extensions of these segments are estimated to be $8 million for Segment A; $2.25 million for Segment B; and $5.63 million for Segment C (see sidebar). The above order-of-magnitude costs represent a paved road, developed to a 35-45 mile per hour Forest Highway standard, water main, and sanitary sewer. Water and sewer would be connected to existing treatment facilities at Ketchikan International Airport, extension across Tongass Narrows is not included. Residential, commercial, and some industrial uses can be serviced with a Septic Tank Effluent Pumping (STEP) system, as an alternative to a large-dimension sanitary sewer and centralized treatment plant.

To provide the necessary funds for this development, several possible sources are available, as follows:

Segment A: Airport Service Road At the time of preparing this document, the Planning Department had finalized the route of the Airport Service Road from the terminal to the north end of the Airport Reserve, had identified and secured approval for mitigation lands for construction of the route and had obtained (jointly with PL&L) a Corps of Engineers permit for construction. This segment of the road network is key to most development proposed in this area plan. Financing of the road is expected to be secured through use of Congressionally approved funds designated for Gravina Island access improvements. Financing of related sewer and water for this segment is proposed under the same funding source.

Road Segments B and C Design and construction funding for subsequent segments may be available from the U.S. Department of Transportation TEA-21 and other programs, while related pedestrian ways, shoreline access and other amenities may be eligible for TRAAK program funds. These programs typically cover 80-90% of total project costs; the remainder requires local matching funds, all or part of which may be obtained from the State.

Water and Sanitary Sewer Systems: Funding for these services is provided by U.S. Environmental Protection Agency programs, which often funds approximately 50% of total project design and construction cost.

Electrical and Telephone Systems: Electrical and telephone systems have previously been installed by the City of Ketchikan, Ketchikan Public Utilities, with their development cost repaid by customers.

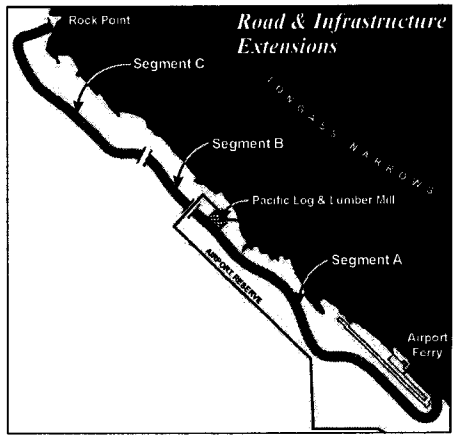
Local Financing The local share of these sub-area development costs, can be provided by assessments to benefited private properties, using a Local Improvement District (LID). The LID may be initiated either by the Borough or by property owners in the benefit zone. Assessments upon individual properties are based on a set of factors that can include area of property, building area located on the property, the property's demand for services and degree of benefit from the improvements. A majority of property owners within the LID boundaries must approve its establishment and their respective assessments.

Summary of Estimated Road and Infrastructure Extension Costs

Segment A: Airport Terminal to north end of Airport Reserve
Road: 4 miles @ $1.25 million/mile = $5.0 million
Water: 3 miles @ $0.5 million/mile = $1.5 million
Sewer: 3 miles @ $0.5 million/mile = $1.5 million
Total: $8.0 million

Segment B: North end of Airport Reserve to north end Industrial Park
Road: 1.0 mile @ $1.25 mil/mile = $1.25 million
Water: 1.0 mile @ $0.5 mil/mile = $0.5 million
Sewer: 1.0 mile @ $0.5 mil/mile = $0.5 million
Total: $2.25 million

Segment C: North end of Industrial Park to Rock Point
Road: 2.5 miles @ $1.25 mil/mile = $3.125 million
Water: 2.5 miles @ $0.5 mil/mile = $1.25 million
Sewer: 2.5 miles @ $0.5 mil/mile = $1.25 million
Total: $5.63 million



In determining the sum to be assessed under an LID, an allocation formula usually determines a public share of the total cost, attributable to community benefits for public safety, recreation and other purposes, as well as the shares representing benefits to private property owners.

When public and private shares of the LID are determined, a municipal bond may be sold to cover their cost. The public share of such a bond issue is sometimes collateralized by a pledge of anticipated real estate tax receipts from the benefited properties, while the private shares are collateralized by the agreed assessment of the properties, supported by their fair market value.

North Gravina can be developed in stages, the first of which can provide some set of improvements of a given sub-area. For example, if property owners in sub-area B, the industrial zone, consented to an LID for extension of road, water, sewer, and electrical services, available grant sources could be determined for this full array of services. However, in sub-area C, the residential and commercial zones extending north to Rock Point, property owners could decide that a more limited set of improvements would satisfy their first stage development needs. Such improvements could include initial small boat harbor development, extension of electrical service and minimal water and sewer services. These property owners' access, in lieu of a road extension, could be by water.

North Gravina Industrial Park
A plan for the North Gravina Industrial Park is presented in conceptual form in order to stimulate discussion on the future of this important project. An early priority for implementation is to work with property owners and prospective Industrial Park tenants or owners to determine a desirable master plan to guide development of private and Borough property in this growth center. The North Gravina Industrial Park master plan should address:

- existing property owner and prospective tenant/owner interests;
- an ideal set of complementary industrial and business activities as well as potential anchor tenants;
- land, security, waterfront facilities and infrastructure requirements for each activity;
- access of present and future businesses to the waterfront and to the airport (including all Borough lands);
- an efficient road network to serve the Industrial Park and future expansion;
- rock materials sources and site reclamation policies;
- development of a method to process overburden for use in site reclamation and landscaping and identification of a site for overburden disposal;
- a capital improvements plan with funding source identification; and
- a marketing strategy.

The Planned Developments
The proposed High Mountain Creek and Rock Point/Rosa Reef planned developments have similar requirements to meet for successful implementation. (For a discussion of the planned developments, see pp 18-21.) Both are presented in conceptual form in this area plan. In both cases, Planned Development Master Plans will need to be prepared that provide strategies for development, including:

- defined land use plan for each commercial and residential development site;
- preferred recreational facilities mix and locations;
- shared use facilities/infrastructure (wastewater, roads, power, water, docks);
- financing of infrastructure;
- land sales and lease terms;
- waterfront access measures; etc.

In both areas of the North Gravina shoreline, access by water can allow some development to proceed without road access, minimizing initial development cost to both the private property owners and to the Borough. In this stage of development, public investment can be concentrated on other infrastructure, such as water, sewer, electrical and telephone utilities. The area plan can provide for future more intensive development, especially of inland areas, when property values will be sufficient to justify the cost of roads.

The interim result of such a staged development process can include some relatively large and functional industrial sites, such as the PL&L sawmill, along with smaller but still productive uses. Residential development can follow the existing pattern well established on Pennock Island, where waterfront residences have electricity and telephone services. At North Gravina, water and sewer can be added to these services and shared public moorage and boardwalks can facilitate a degree of inland development by non-waterfront property owners. In the potential marina/commercial area at Rock Point/Rosa Reef, fishing lodge development, complemented by public moorage, can proceed during this early stage of development.

This stage of development can proceed within five years, accelerating the pace at which North Gravina can become a productive component of Ketchikan's overall land base. With a plan in place for road access, eventual development of the roads can proceed incrementally as funds become available to support the cost of road construction and maintenance.

Small Boat Harbor and Related Facilities at Rock Point/Rosa Reef
The proposed small boat harbor is capable of accommodating approximately 400 boats, averaging 36 feet in length, if the moorage is completely developed. However, it could be practical for this moorage and related facilities and services to be developed in stages, beginning with 40 boats, or fewer. The small boat harbor could be developed with a capital investment of approximately $1,000 per lineal foot of moorage, or $36,000 for an average-sized 36-foot berth. A first-stage development of 40 berths, then, would require capital investment in moorage of approximately $1.4 million.

Related infrastructure for a 20 lot commercial-residential waterfront subdivision using boardwalk access and an isolated water and sewer system would require additional capital investment of approximately $30,000 per lot, more or less evenly divided into costs of access, water and sewer systems.

The Borough could induce early development of this type by trading Borough land in the Rock Point-Rosa Reef area for development rights on that portion of the small boat harbor site that is privately owned. The Borough then could finance the small boat harbor, boardwalk access and utilities using a combination of grants and revenue bonds, with the debt repaid by a Local Improvement District in which benefited property owners would participate. The result of public-private participation in such a staged development could be to create a sound and attractive addition to commercial and residential land uses in the Borough without a major initial capital investment.

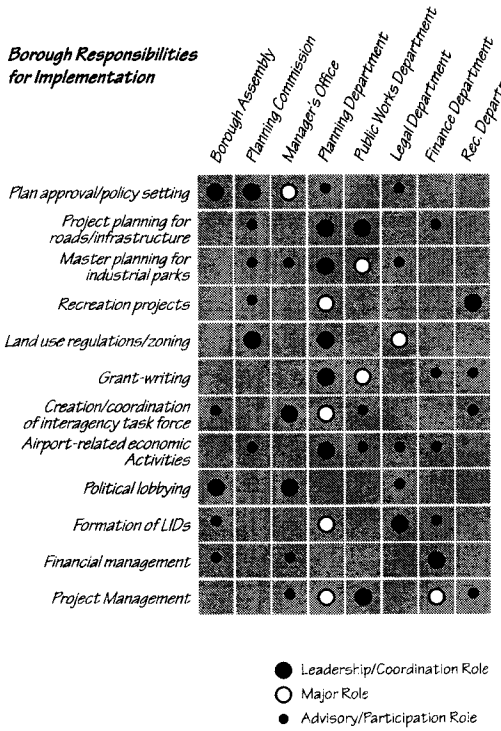
11/Implementation Strategy & Costs (continued)

Year One Action Plan

The highest priorities for plan implementation are as follows:

- Reach Planning Commission and Borough Assembly approval of the plan
- Secure funds for construction of the road (and infrastructure if possible) from the airport terminal to the north end of the Airport Reserve
- Begin construction of the Airport Service Road (Segment A) during 2004
- Prepare a master plan for development of the Industrial Park
- Reach agreement with property owners on alignments and standards of the priority road segments north of the Airport Reserve
- Initiate permits for constructing priority roads
- Develop a service area and/or local improvement district
- Draft and implement new land use/zoning regulations
- Establish interagency task force to address Gravina resource management issues

Borough Responsibilities for Implementation

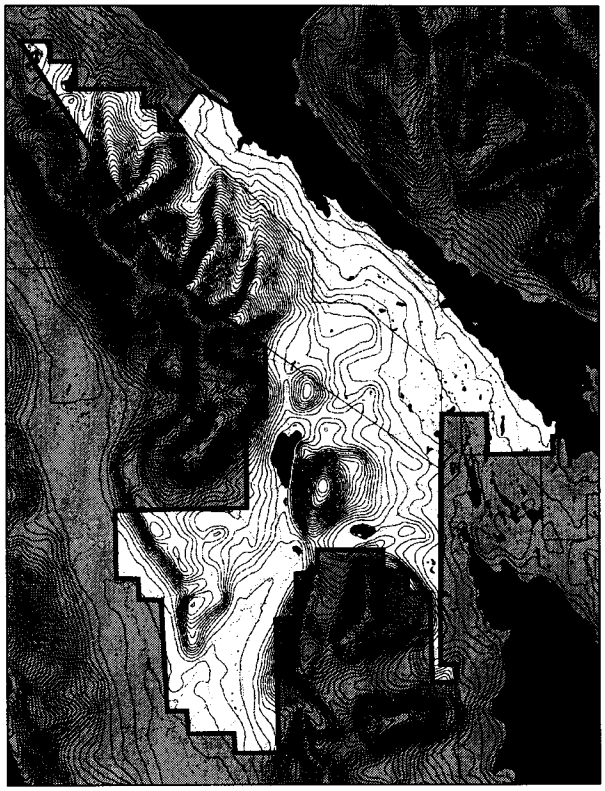


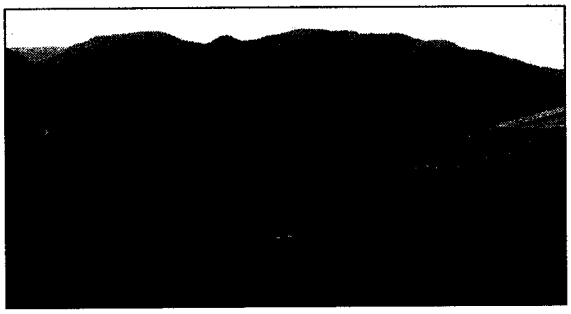


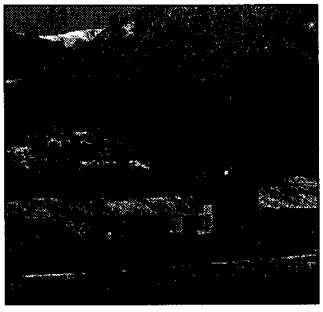
Gravina
Island Plan

Central Gravina & Airport Reserve

Area





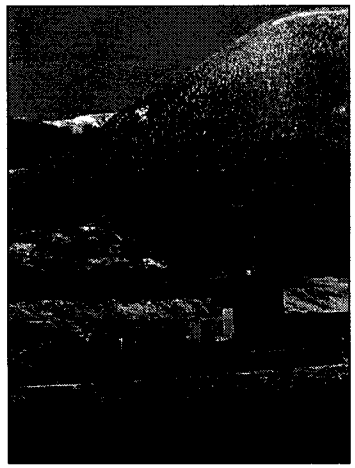


KETCHIKAN GATEWAY BOROUGH

Department of Planning & Community Development

December 2003 Draft

The Ketchikan International Airport is situated within the 2,689 acre Airport Reserve. Only a small portion is needed for existing and planned airport operations and aviation related services, leaving opportunities for compatible industrial and commercial developments as well as recreational use along the shoreline and habitat protection and open space in wetland areas unsuited for development.



Gravina
Island Plan

Central Gravina & Airport Reserve

Area

December, 2003 (Draft)

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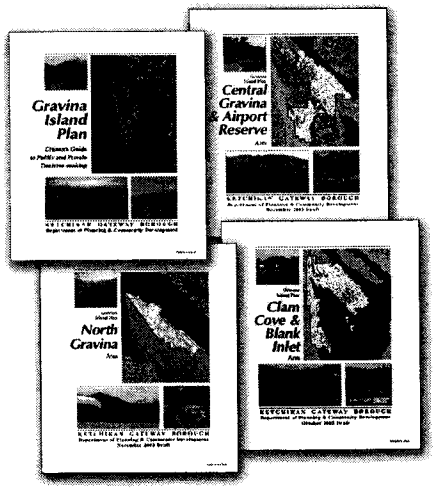
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This document is one of a set of four describing the Borough's long-term plans for Gravina Island. Island-wide policies and background are provided in the "Citizen's Guide." The eastern shoreline of Gravina has been divided into three area plans that address development issues and provide practical guidance at a detailed level. Copies of all four documents are available at the Ketchikan Gateway Borough Planning Department.

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Maggie Sarber
John "Jack" Shay, Jr.
George Tipton

Planning Commission
Charles Arteaga*
David Deal
Michael Heiser*
Daniel Kelly
Mike McCormick
Linda Millard, Acting Chair
Robert Reeser*
Trevor Sande
Merrill Stulken

Borough Manager
Roy Eckert

Central Gravina & Airport Reserve Area Planning Team

Staff:
Stephen Reeve, Principal Planner
Tom Olson, Mapping Technician

Consultants:
Dennis Kuklok, Planning Consultant
Kent Miller, Economic Consultant
Chris Nelson, Forestry Consultant
Kyan Reeve, Computer Graphics Consultant
Laura Shelton, Resource Data Inc., Mapping

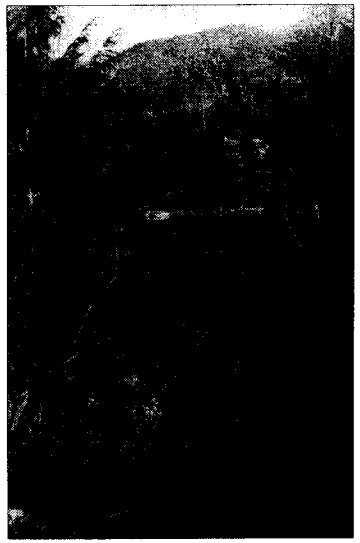
Note: It is impossible to recognize individually all the assistance received from citizens throughout Ketchikan and from staffs of federal and state agencies, the City of Ketchikan, the City of Saxman and private firms and individuals. Specific contributions are acknowledged as they appear throughout the document.

Introduction & Issues To Be Addressed

The Central Gravina and Airport Reserve area is the island's transportation hub. The Borough is designing a road north from the airport with plans for the US Forest Service (USFS) or Alaska Department of Natural Resources (DNR) to connect this road to the Bostwick Lake area for timber harvest purposes. DNR and the Mental Health Trust (MHT) are major landowners and both are considering near-term timber harvests. The Airport Reserve area is near utilities and could serve new industrial and commercial land uses compatible with safe airport operations. Bostwick Lake has potential to be a high-quality recreation destination and there are important natural areas such as Government Creek near the airport for recreation and habitat protection.

This Central Gravina and Airport Reserve Area Plan addresses the following:

- What lands, resources and tidelands have significant community value and how should they be developed or protected? (see pp 8-11)
- Which areas are most suitable for development and which are less suitable due to natural hazards, difficult access, wetlands, etc.? (pp 4-5)
- What are the key economic development opportunities? (pp 6-7)
- How can the Airport Reserve be planned to best meet development opportunities? (pp 14-17)
- How should roads proposed by DOTPF, USFS, DNR and the Borough be integrated into an effective network to serve the airport and other parts of Gravina? How should issues related to cost, standards, controlled access, and maintenance responsibility be resolved? (pp 18-19)
- What development recommendations should be made to DNR and the MHT regarding their lands and resources? (pp 18-29)
- How should Bostwick Lake and the upper Bostwick Creek watershed be managed, recognizing its significant values (hydrological, ecological, wildlife, recreational, personal resource harvest, etc.)? (pp 22-25)
- What areas should be set aside and developed to meet community recreation needs? (pp 26-27)
- What are the area's commercial timber resources and what are the Borough's interests in their management? (pp 22-25)
- How should current zoning be changed? (pp 12-13)
- What steps must be taken to implement the recommendations in this plan? (pp 29-32)



Lower Government Creek (shown here from the bridge near the south end of the Airport runway) and its estuary is only a ten-minute walk from the Airport Ferry terminal. With a few improvements (trail development, signage, interpretive map/brochure) it could be an attractive natural area for residents and visitors alike, especially travelers with a little time before a flight arrival or departure.

1/The Central Gravina & Airport Reserve Area

Ownership & Zoning

The Central Gravina & Airport Reserve area totals 11,010 acres, comprised of:

- 2,190 acres (20%) of land owned by the DOTPF designated as an Airport Reserve, which includes approximately 5.9 miles of waterfront,
- 538 acres of patented tidelands/submerged lands within the Airport Reserve,
- 3,842 acres (35%) of Mental Health Trust uplands, and
- 4,975 acres (45%) DNR-owned uplands.

There are no Borough lands in this plan area, however, there are extensive Borough holdings immediately to the north and south (see map on facing page). There are just two current zoning classifications: lands in the Airport Reserve are zoned Airport Development and all other lands are Future Development.

Landscape & Natural Resources

The boundaries of this area plan are determined by ownership patterns rather than natural features. The landscape is defined by the steep northeastern facing slopes of California Ridge (to over 2000 ft) adjacent to a gently rolling coastal plain less than 300 ft in elevation. This plain is narrow to the north (less than 0.5 miles) but widens to 1.5 miles to the south. The high mountain barrier is breached by two passes opening to Gravina's interior: Bostwick Lake (about 500 ft elevation) and Pass Lake (550 ft). This area also includes the upper part of the Bostwick Creek watershed that drains into Bostwick Inlet.

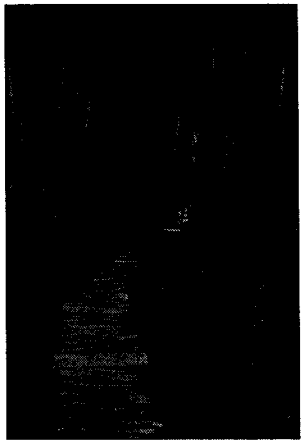
Poor soil drainage characterizes much of the landscape. The predominant ecosystem type is scrub forest on organic soils (MF5, F5), followed by non-forested muskeg (M12).

The relatively flat topography of the coastal plain extends into Tongass Narrows, resulting in extensive intertidal areas and a typically shallow shelf. Small but significant estuaries occur north and south of the runway and there are six catalogued anadromous creeks draining into the Narrows that support populations of pink and silver salmon in their lower reaches. Bostwick Lake (73 acres) is Gravina's largest lake and part of the island's major salmon producing watershed.

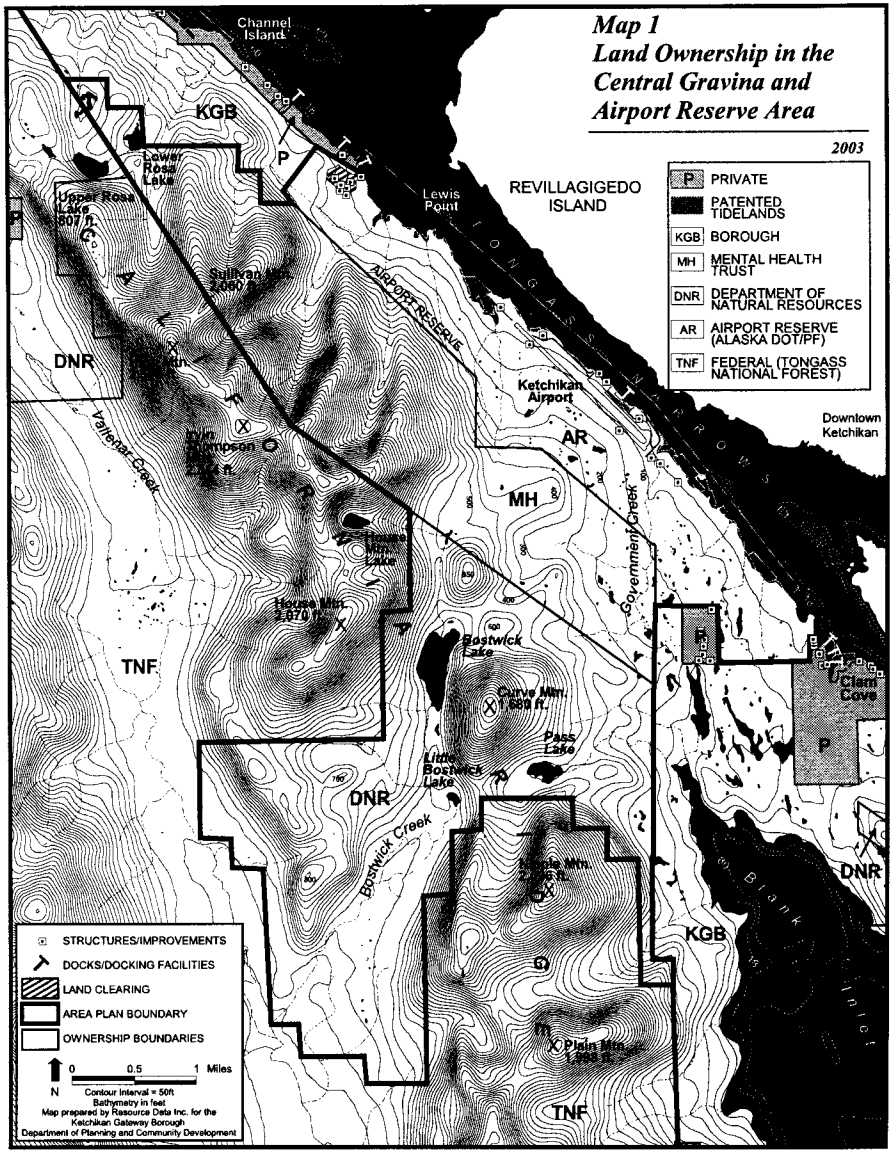
The natural shoreline and forested mountain slopes of this area provide the attractive natural backdrop for views from Ketchikan for residents and visitors.

Development Trends

This area's shoreline has long been attractive for development--especially near the airport. In the early 1900s, the Port Gravina Mill and Townsite were built there. While the site was soon abandoned after a fire, a few homesteaders made their livelihoods in the area until airport construction in the 1970s. In spite of improved access via the airport ferry, road development has not yet occurred on Gravina. The recent Pacific Log & Lumber lease in the Airport Reserve has demonstrated the viability of Gravina for some types of industrial activity and is a catalyst for road development from the airport north (see the North Gravina Area Plan). Other road plans (DNR and USFS logging roads to the interior, DOTPF hard link proposals) all traverse Central Gravina. While this area is not slated for near-term residential development, the improved access will open the area for industrial development north and south of the Airport Reserve, as well as timber harvest and recreation. Longer-range development might take advantage of developable upland Mental Health Trust lands to the northwest of Clam Cove once waterfront parcels are no longer available. Development will undoubtedly continue to focus in and around the airport.



Trail development through much of the Central Gravina landscape will require boardwalks and other surface treatments to permit year-round use.



2/Development Suitability

Some areas are better suited for development than others. A site with deep, well-drained mineral soil near a road and on gently sloping terrain away from flooding or landslide hazards would generally be considered suitable for conventional development. Another area, equally accessible but with muskeg soils and poor drainage would be considered less suitable. While development is possible, it would be costly and require less conventional building practices. There are some areas considered unsuitable due to natural hazards, uneconomical access, critical habitat values, proximity to airport noise and operations, and other reasons. These are usually best retained as open space reserves.

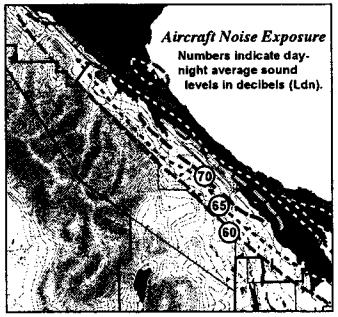
It is expected that development will concentrate around the airport. Some industrial activities are expected near the north and south ends of the Airport Reserve. Residential growth is planned for the areas to the north of this plan area (North Gravina), south (Clam Cove) and to a lesser extent west (Vallenar Bay). Future growth around Clam Cove might extend into the nearby uplands owned by Mental Health Trust and the Borough.

The map on the facing page illustrates the results of a development suitability analysis for the Central Gravina and Airport Reserve area (DNR lands south of Bostwick Lake were not analyzed due to absence of ecosystem data). It provides the following findings:

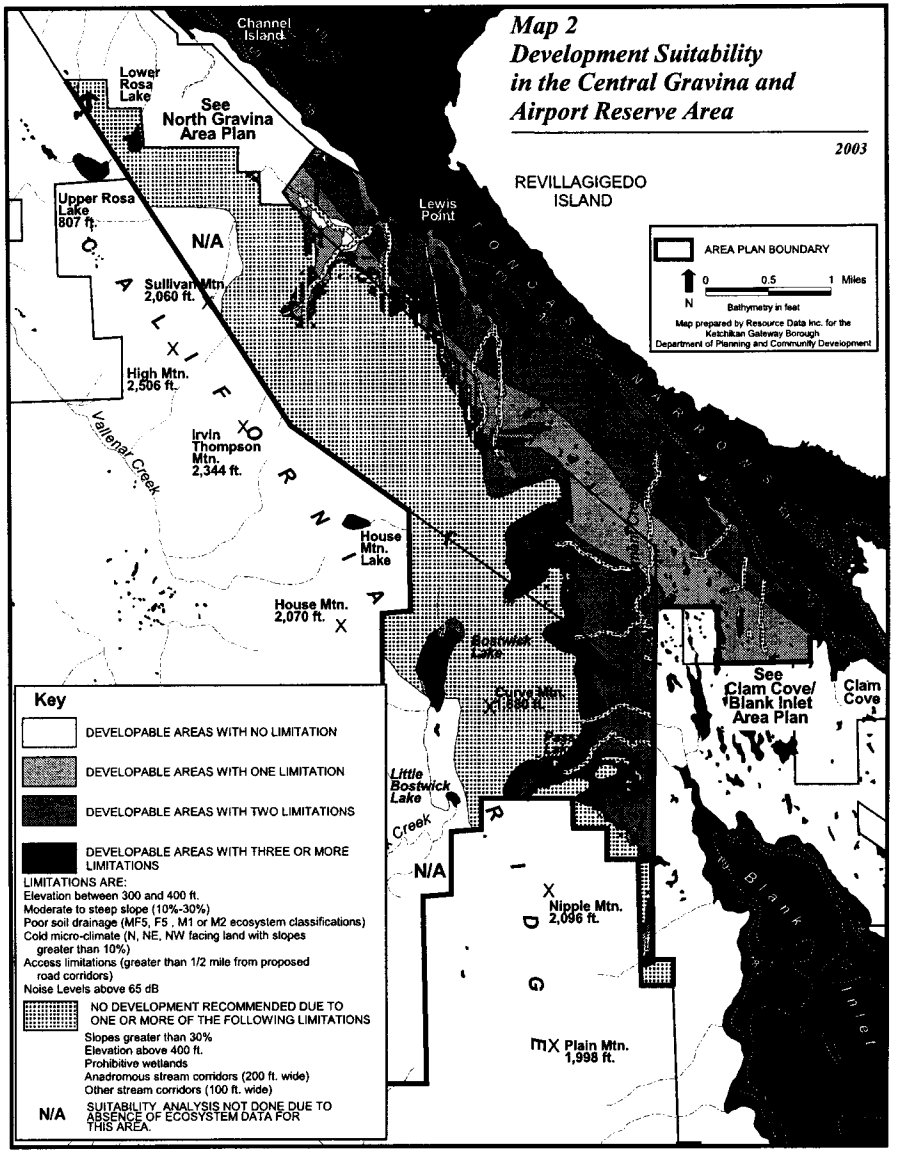
- Only a small portion of the area has no significant development limitations. (These areas are "white" on the map--without any overlay patterns or shading.) Such areas are characterized by well-drained mineral soils and gently sloping topography.
- Approximately 1,408 acres are below 300 ft elevation, with slopes under 10%, and could be readily accessed by proposed roads. The main limitation is poor drainage and organic soils as indicated by the muskeg-scrub forest ecosystems (M1, M2, MF5 and F5) found there.
- In addition to poor drainage, other limitations include moderate to steep slopes (10-30%), cold microclimates (north facing slopes), higher elevations (300 to 400 ft), reduced accessibility (more than 1/2 mile from proposed roads) and proximity to air traffic flight paths and noise.
- 54% of the area is not considered suitable for development due to one or more of the following characteristics: severe slopes (greater than 30%, v-notch drainages), high elevation (greater than 400 ft), salmon spawning stream corridors, and "prohibitive" wetlands (as classified by ADF&G). Such areas are suitable for open space, recreation, wildlife, flood control, watershed protection, and maintenance of visual quality.

Development on the poorly drained organic soils associated with the extensive muskeg and scrub forest ecosystems typically uses either an overlay technique (adding rock fill) or replacement (excavating the organic soils and replacing it with better draining and load bearing materials). These techniques are most successful when they

- minimize re-grading and disturbance to drainage patterns
- minimize land clearing/tree removal, and
- utilize public or community wastewater treatment systems.



Airport noise levels are a factor in development suitability. The FAA considers an Ldn (day/night average sound level) of 65 decibels as its threshold for "significant" noise affecting a neighborhood or community. The World Health Organization uses a lower measure of 55 dB as "engendering serious annoyance and creating an unhealthy environment." The map above shows that Ldn's of 60dB impact the shoreline and lowlands of Gravina northward to nearly Rosa Reef, while extending over one mile beyond Clam Cove to the south. Proposed industrial park areas are within the 65-70 dB impact zone.



3/Economic Development Opportunities

The Airport is the focus of economic activity on Gravina. Airport services provide numerous jobs and bring millions of dollars into the local economy annually. The sawmill and other nearby emerging industrial activities employ growing numbers of workers. This economic contribution is expected to expand as planned airport improvements and industrial expansions are implemented.

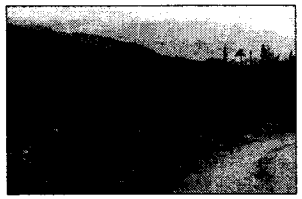
Airport Development Central Gravina economic resources include direct access to the airport's inter-regional air services, air taxis, general aviation facilities and services, and air freight services. In the short run, industrial use will be limited by lack of access and infrastructure. By 2004, some access is to be provided by road construction to PL&L from the airport and, pending final decisions on new roads associated with proposed access from Revilla, additional roads may occur over the next 5 to 10 years that would substantially expand access to areas north and south of the airport terminal. More intensive development can occur when other infrastructure, including water, wastewater, electricity and telephone utilities are extended within proposed road corridors.

North Airport Reserve The existing PL&L facility has capabilities to produce 12 mmbf of rough sawn timbers, industrial grade shop lumber, green dimension lumber and chips annually on a single shift basis. With planned dry kilns, co-generation plant and other equipment, this facility will produce a wide variety of solid wood products for sale in SE Alaska. More importantly, the availability of high quality dry lumber provides the opportunity for tertiary manufacturers to produce finished products including trusses, glu-lam beams, furniture, siding and decking products, and prefabricated homes.

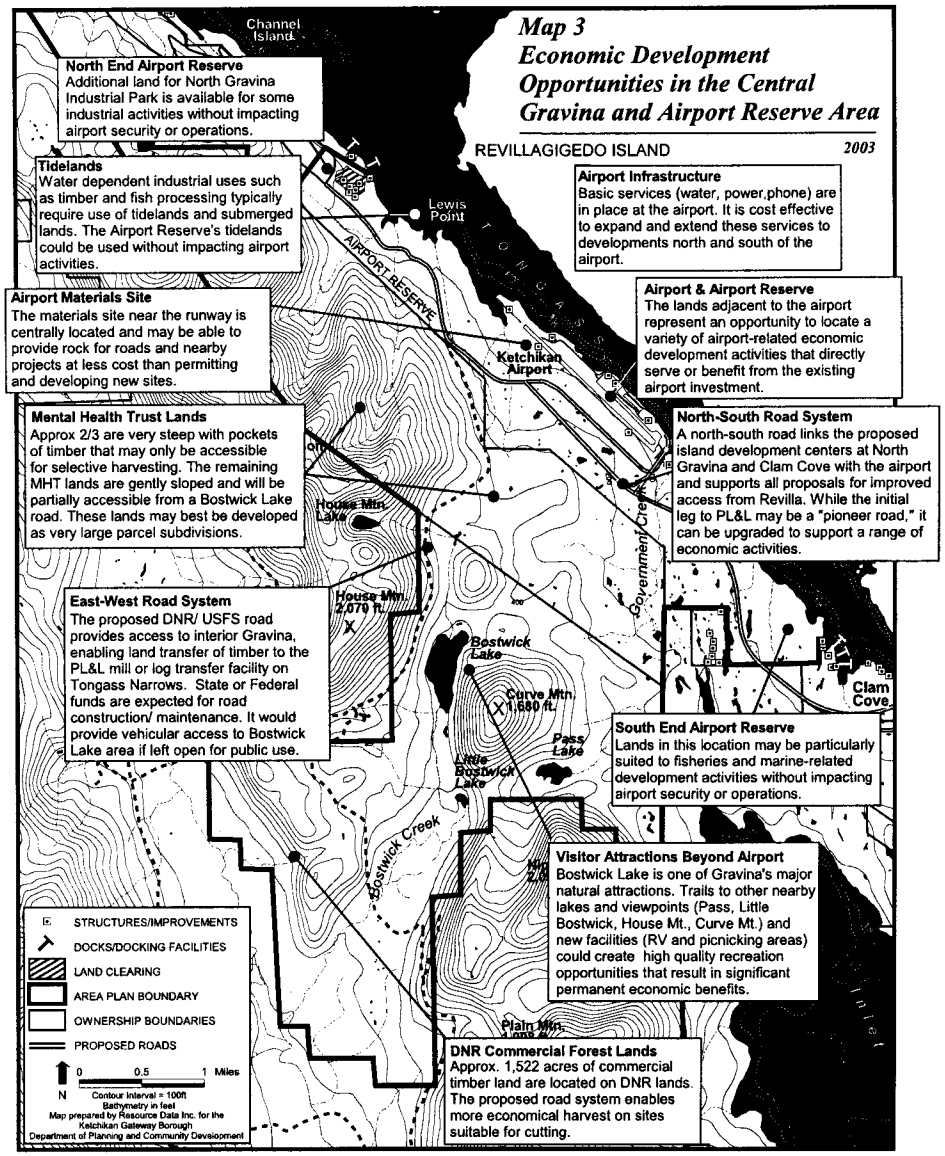
South Airport Reserve A south Airport Reserve area may be the only readily accessible and serviceable site in the entire Borough where 2,000 lineal feet of moorage suitable for a service wharf for fishing vessels is located adjacent to over 120 acres of potential industrial land. Development of this site to expand value-added fish processing might enable Ketchikan to compete effectively with Pacific NW facilities for fishing vessel services and fish processing and thus capture substantial employment income.

Commercial Forest Land There are several commercial value timber stands within the Central Gravina area. DNR expects to harvest 3.8 mmbf on 140 acres south of Bostwick Lake and may harvest an additional 350 acres southwest of the lake. There are small stands on Mental Health lands high along the east face of California Ridge. The DNR sales, as well as those planned by USFS, require building a road from harvest areas to a Tongass Narrows log transfer facility. These harvests could contribute to a sustained supply of timber to the PL&L sawmill that would support long-term jobs within the local economy.

Visitor Industry There are excellent Central Gravina recreation sites that could greatly enhance residents' all-season recreational opportunities and contribute to Ketchikan's stock of nature tourism products directed to the independent traveler as well as group tours. Most notable is the Bostwick Lake/Pass Lake/ Curve Mountain area which would be directly accessible from a DNR/USFS timber harvest road. The natural setting is untouched, is not to receive extensive logging and could be a recreation area of statewide significance that supports dispersed camping sites, trailheads, and excellent fishing and hunting. The Airport Reserve shoreline could also be a prime visitor industry asset with beautiful natural areas, dramatic views of Ketchikan, and the possibility of a coastline trail.



The flat to gently rolling slopes of much of the Central Gravina area are underlain by compacted glacial till, resulting in very poor drainage, deep organic soil deposits, and scrub forest stands such as those shown in the foreground. Even the eastern slopes of California Ridge shown in the distance have limited commercial timber resources due to poor soil drainage and generally steep slopes. Only an estimated 176 acres of Mental Health Trust's 3,482 acres of these uplands are estimated to have commercial timber stands.



Part Two:
Findings & Recommendations

4/Community Interest Lands & Resources

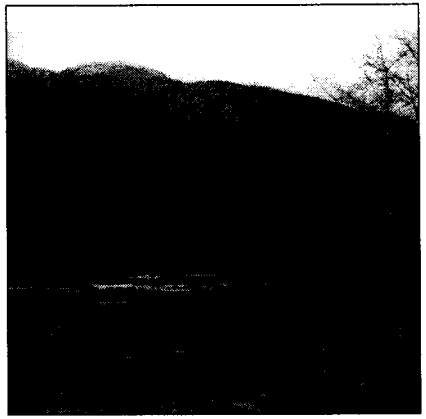
The Central Gravina & Airport Reserve area will be the focus for road improvements over the next decade. No matter which option for improving access to Gravina is ultimately chosen, a road is now being planned from the airport north to Pacific Log & Lumber and another connecting this road to the Bostwick Lake area. These road improvements will enable timber harvests, expanded recreation, industrial activities and further airport-related expansion. As this occurs, it is important to recognize that it is in the community's interest to identify and set aside some lands and resources in order to:

- protect future economic development opportunities, especially those associated with airport expansion, the proposed industrial parks at the north and south ends of the Airport Reserve, and road corridors;
- maintain the quality of and access to important resources now enjoyed by many residents, especially the Tongass Narrows shoreline, recreation areas such as Bostwick Lake and important streams and estuaries.

1. South Airport Reserve Industrial Area

Description: waterfront, tidelands, and adjacent uplands at southeast end of Airport Reserve (approximately 120 acres), adjacent to Clam Cove area (1 of 3 designated community growth nodes on Gravina).

Community Interests/Values: good road access if Pennock crossing implemented; development suitability good; convenient boat access from downtown; good access to utilities if incorporated into proposed bridge structure; undeveloped waterfront sites in high demand for water dependent/water related uses such as fish processing and boat servicing.



The un-named creek which flows into Tongass Narrows near the north end of the runway includes a high value wetland (its estuary) and is one of 8 catalogued salmon streams found in the Central Gravina planning area. Many of Gravina Island's creeks, lakes, and other natural features lack appropriate names, something that the Borough plans to address through soliciting recommendations from area residents. The area above might be called "Port Gravina Creek" in recognition of its historic past as the site of the first mill and settlement on Gravina.

Use/Development Considerations: includes wetlands and anadromous stream corridors; most uses would not adversely impact airport operations or security; extensive wharf frontage with 20-30 foot depth alongside at MLLW.

Recommended Actions: reserve area for future water dependent industrial or commercial activities.

2. Lower Government Creek & Estuary and
3. Lower "Airport" Creek & Estuary

Description: lower 1/2 mile of creeks, estuaries and intertidal areas, situated below the south and north ends of runway.

Community Interests/Values: anadromous creeks and diverse natural areas less than 1 mile from airport terminal; includes "high value wetlands" (estuary); potential for park/nature preserve and compatible airport activities; potential destinations on Gravina shoreline trail.

Use/Development Considerations: construction activities have degraded parts of sites, some restoration needed; may be impacted by further airport development, especially at Government Creek where south end runway extension and proposed access road are planned; security requirements may limit access; water (kayak, boat) access is possible.

Recommended Actions: prepare master plans for Government Creek and Airport Creek Natural Areas integrating public recreational use with airport activities and plans; include area in proposals for Gravina shoreline trail system; evaluate restoration needs, reconsider for mitigation lands.

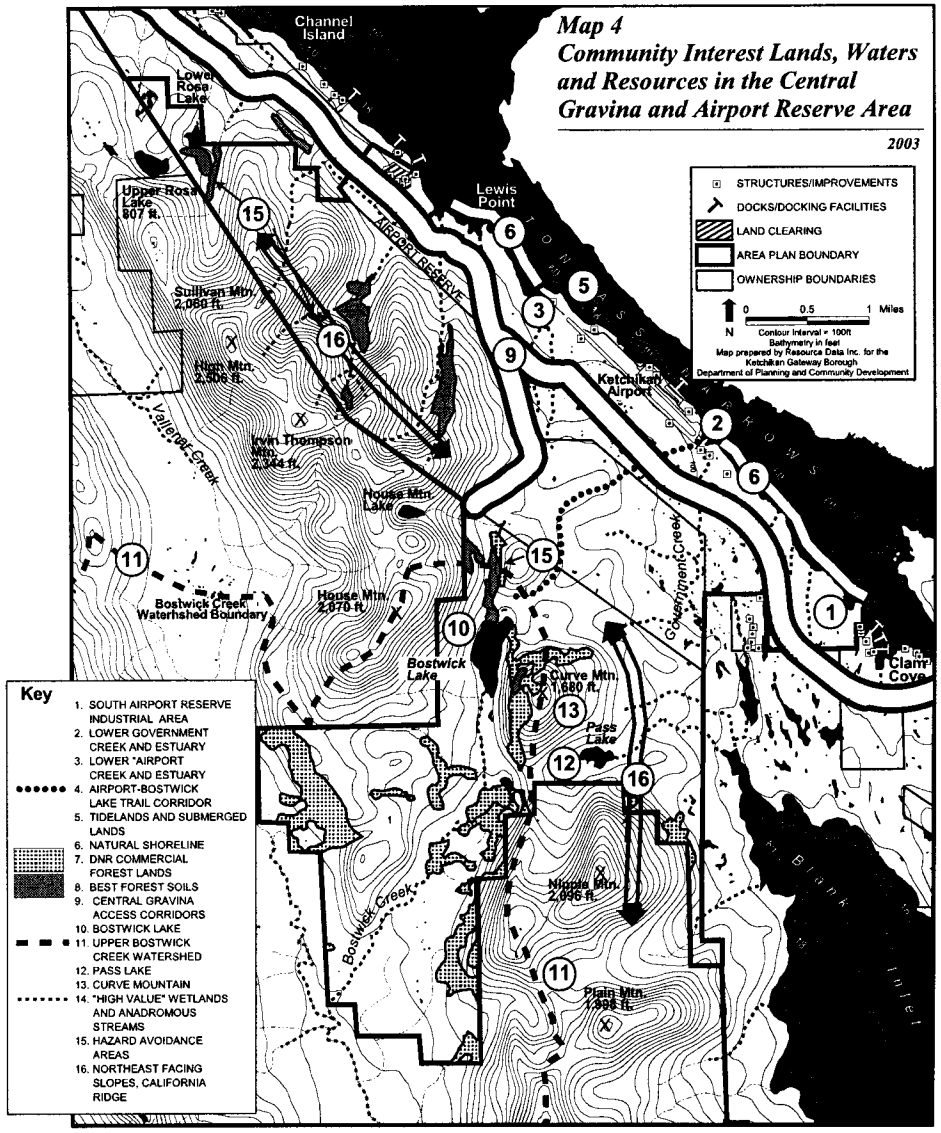
4. Airport-Bostwick Lake Trail Corridor

Description: approximately 2 miles of unimproved trail from south end of airport runway to Bostwick Lake.

Community Interests/Values: most commonly used Gravina hiking route (relatively easy day hike when trail conditions good); easy access from airport.

Use/Development Considerations: bog and open forest landscape permits good views, especially north and east towards Ketchikan; wet boggy conditions require boardwalks and careful trail alignment to permit all-weather use; trail could be main feeder route to other trails (California Ridge, Curve Mountain), as well as first leg of eventual cross-Gravina trail.

Recommended Actions: improvements to this trail (boardwalks, better alignment, trailhead map, route markings, etc.) are high priority for Gravina trail improvements; develop as a "loop" concept where return routing goes around Curve Mountain by Pass Lake and down the Government Creek drainage.



5. Tidelands & Submerged Lands

Description: Formerly patented tidelands, vacated and added to Airport Reserve.

Community Interests/Values: can support waterfront related uses (such as log storage for PL&L sawmill); may provide space for expanding adjacent land uses where space restricted (such as fill to permit development of taxiway); may be used for walking/ beachcombing, or points for water access (from kayaks, small boats); important marine habitat.

Use/Development Considerations: use near airport may be restricted due to security considerations and airport operational needs.

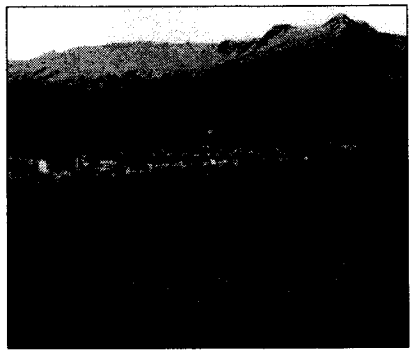
Recommended Actions: incorporate tidelands and submerged lands into proposed industrial use zones at north and south ends of the Airport Reserve; integrate tidelands into proposed Gravina shoreline trail, encouraging public access and use; develop public mooring to allow for marine access.

6. Natural Shoreline

Description: approximately 6 miles of natural, relatively undisturbed shoreline along Tongass Narrows from the north to the south ends of the Airport Reserve (including 1 mile of altered shoreline along airport frontage).

Community Interests/Values: natural shoreline contributes to the attractiveness of views from Ketchikan; most of Gravina's shoreline along Tongass Narrows is privately owned and likely to one day be developed, this portion offers the opportunity to be kept in a natural state, with portions of it open to public access and use.

Use/Development Considerations: single ownership (State land within Airport Reserve) facilitates management; airport operations and security may restrict access to and use of the shoreline along the airport; trail might not be extended beyond Airport Reserve due to private ownership.



The trail to Bostwick Lake offers attractive views of Ketchikan and the surrounding mountains upon the return. The 2 mile trail from the Airport to the lake is currently unimproved and poorly marked. Improvements needed include signage, boardwalks and all-weather surfacing and some realignment.

Recommended Actions: incorporate portions not restricted by airport security needs into a Gravina Shoreline Open Space Reserve, encouraging public access and use; develop Gravina Shoreline Trail, extending from Airport Creek to near Clam Cove; include shoreline restoration projects in airport improvement programs; restrict ORV use; identify boat access sites (mooring/docking facilities); promote public awareness by information on ferries and in airport.

7. DNR Commercial Forest Lands

Description: approximately 1,931 acres (39%) of DNR managed lands (unit K-41) within Central Gravina plan area with mature stands of commercial timber.

Community Interests/Values: proximity to processing and planned roads increases value/profitability of timber; promotes viability of local wood processing businesses; provides jobs and revenue to State and Borough; logging roads provide recreational access; provides for wildlife habitat and recreation and helps maintain water quality.

Use/Development Considerations: some stands are situated along Bostwick Creek and around Bostwick Lake, both sensitive areas; timber sale planned during DNR ten year management strategy (2000-2010); proposed logging road traverses MHT, DNR and USFS lands and would provide vehicular access to Bostwick Lake; issue on road closure to public use after logging needs resolution.

Recommended Actions: include Borough and MHT in review of draft DNR Forest Land Use Plan (FLUP) for this unit prior to advancing timber sales; coordinate sale times and locations with MHT and USFS plans; establish buffers along Bostwick Creek and around Bostwick Lake; design road crossing of Bostwick Creek to not impact fish passage or spawning activities; ensure continued availability of timber to support local mill capacity over the long term; work with stakeholders and area residents to reach consensus on public use of logging road.

8. Best Forest Soils

Description: closed canopy forests with deep, well-drained mineral soils (F1 and F2 ecosystems)

Community Interests/Values: most productive sites for commercial grade timber (typically contains the largest trees).

Use/Development Considerations: considered to be sites with the fewest development limitations;

Recommended Actions: manage on selective harvest/sustained yield basis, encouraging uses that support local value-added processing nearby; retain in long-term timber production.

9. Central Gravina Road Corridors *See pages 18-19*

10. Bostwick Lake

Description: Gravina's largest lake (73 acres); approximately 2 miles from Ketchikan airport via unimproved trail; surrounded by DNR lands.

Community Interests/Values: potential to be Gravina's center-piece attraction; easily accessible (2 hour walk from Airport Ferry); near proposed DNR-USFS logging road; excellent fishing (coho, steelhead, cutthroat, rainbow trout).

Use/Development Considerations: trail from airport traverses extensive muskeg, making access difficult when not frozen; anadromous fish populations reach lake via Bostwick Creek; timber harvest activities expected nearby; high use areas need improvements or controls to reduce impacts.

Recommended Actions: work with DNR and others to achieve Recreation Area status for the Bostwick Lake area; incorporate recreation values in preparation of DNR Unit K-41 Forest Land Use Plan; incorporate as destination in Gravina trail plan; establish visual & sound buffer around lake; assess visual impact of proposed cutting activity; identify closed seasons for fishing & hunting due to spawning activity or wildlife sensitivity; develop beach site with destination facilities; evaluate feasibility of small RV camp-ground accessible from DNR-USFS logging road.

11. Upper Bostwick Creek Watershed

Description: Bostwick Creek is Gravina's largest watershed (upper elevations only in this plan unit).

Community Interests/Values: one of Gravina's most important salmon streams and hunting areas; contains significant commercial timber stands; creates natural pass through California Ridge enabling easiest land access to interior.

Use/Development Considerations: site roads carefully; maintain screens to preserve wild character along road and trail corridors; protect stream side vegetation with appropriate setbacks.

Recommended Actions: follow best practices for road building/ maintenance; provide adequate setbacks from Bostwick Creek.

12. Pass Lake

Description: a small lake situated below the saddle between Curve and Nipple mountains.

Community Interests/Values: source of anadromous creek draining into Blank Inlet; not a key destination, but attractive stopping/ resting point on the proposed trail system.

Use/Development Considerations: poor soil drainage requires trail improvements; adjacent to proposed USFS Nipple Mountain Old Growth Reserve.

Recommended Actions: include in proposed State Recreation Area and as stopping point on Bostwick Lake loop/Curve Mtn viewpoint trails; use as trailhead for Nipple Mountain trail.

13. Curve Mountain

Description: one of California Ridge peaks, 1680 ft.

Community Interests/Values: part of natural mountain backdrop seen from Ketchikan; accessible from Bostwick Lake; spectacular viewpoint with low elevation gain; some commercial timber on lower northern and western slopes.

Use/Development Considerations: very steep slopes (north, west and south sides); generally wet soil conditions; open forest on east side affords view opportunities; commercial timber on lower slopes highly visible from Ketchikan.

Recommended Actions: establish trail from Bostwick Lake to top viewpoint; evaluate and mitigate visual impacts of any timber harvest activities.

14. High Value Wetlands & Anadromous Streams

Description: includes estuaries, tall sedge fans, muskegs and areas with scrub willow and alder as well as 8 anadromous streams.

Community Interests/Values: numerous functions, including habitat, stream bank/shoreline protection, stream flow regulation & water quality maintenance.

Use/Development Considerations: unsuitable for development; projects that impact such areas require a Corps permit and mitigation plan.

Recommended Actions: map/incorporate into Borough database; manage as open space with buffers; require developments to mitigate adverse impacts, and establish mitigation bank.

15. Hazard Avoidance Areas

Description: steep slopes (over 67%), slide paths, floodplains, v-notch drainages.

Community Interests/Values: protect public safety and minimize costs from environmental accidents.

Use/Development Considerations: generally unsuitable for development and should be avoided.

Recommended Actions: map/incorporate into Borough database; manage as open space; avoid road/trail crossings; promote awareness of locations and risks.

16. Northeast Facing Slopes, California Ridge

Description: northeast slopes of Sullivan, High, Irvin Thompson, House, Curve and Nipple mountains.

Community Interests/Values: combine to create the natural backdrop for views from Ketchikan and along Tongass Narrows; no visible signs of human use other than communications towers on High Mt; some commercial timber relatively close to PL&L sawmill.

Use/Development Considerations: steep access makes timber harvest difficult; conventional harvest practices (clearcutting) very visible from Ketchikan.

Recommended Actions: timber harvest proposals to evaluate visual impacts and employ mitigation practices; non-road dependent harvesting preferred.



The planned road from the airport terminal to Pacific Log & Lumber crosses wetlands such as these. As mitigation for the environmental impacts of this road and certain other airport development projects, approximately 80 acres of wetlands need to be protected from development. The Borough has designated 21 acres in the Moser Bay estuary and approximately 59 acres in the Blank Inlet estuary/Long Lake areas as open space reserve to meet this mitigation requirement.

5/Proposed Zoning

Zoning regulations protect the rights of individuals and the public. They affect the future of Gravina more than almost anything else that is done at the local level. Zoning defines the extent of the industrial reserves north and south of the airport, locations for commercial development, and standards for resource management and the use of large tracts. The zoning ordinance consists of two parts; a text and a map. In the Central Gravina & Airport Reserve area, there are two types of zoning recommendations:

- No changes to existing zones (Airport Development within the Airport Reserve); and
- New zoning classifications for those areas and situations where existing Borough zone classifications may not satisfactorily guide development activities (e.g., Development Reserve, Resource Management, Public Lands & Institutions)

Below is a summary of recommended zoning actions. The page numbers indicate where draft policies and additional information are to be found.

AD Airport Development
(1,928 acres) (see pp 16-17)
Intended Uses: Commercial and Industrial uses which are a part of or compatible with operation of the Airport.
Development Considerations: 87 acres at the north end of the Reserve (including the PL&L lease) to be re-zoned Industrial Park; 120 acres at the south end of the Reserve also to be rezoned Industrial Park.

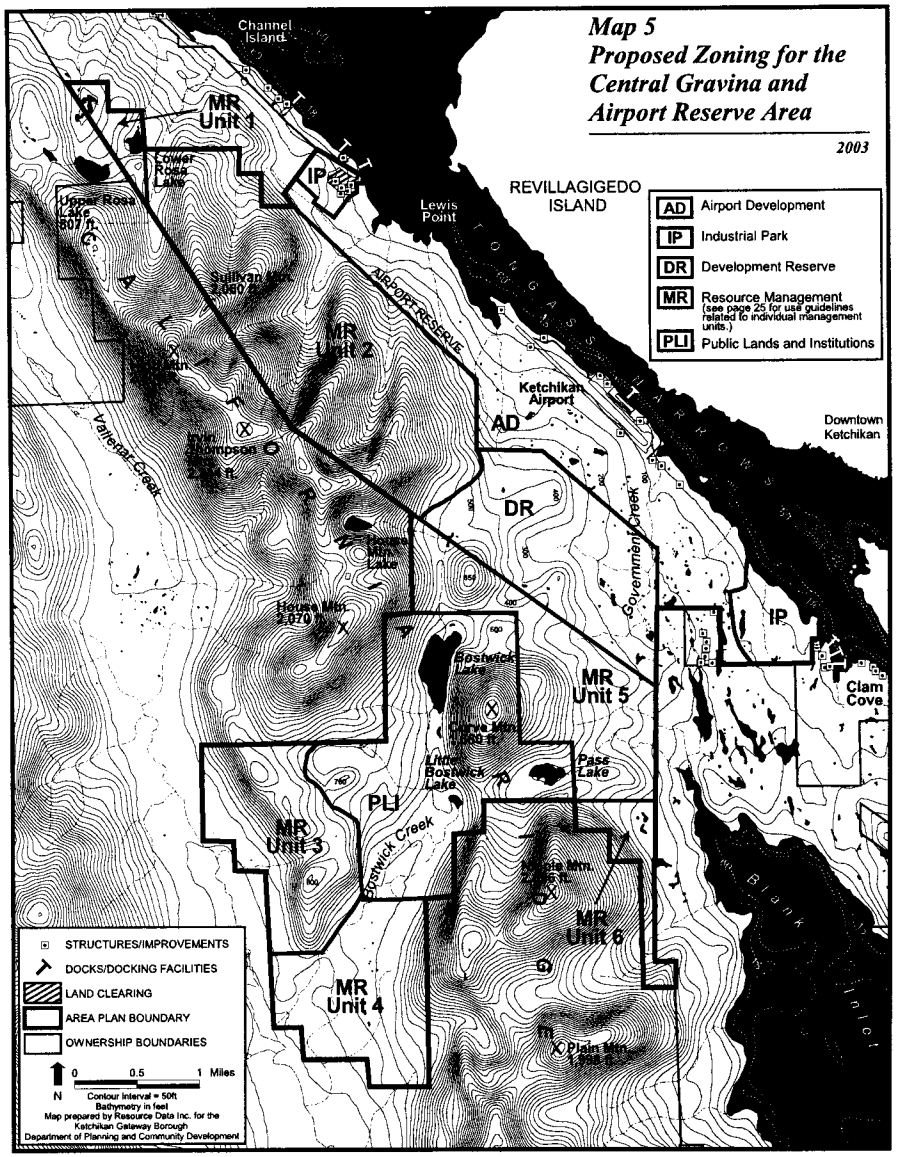
IP Industrial Park—North Airport Reserve and beyond (186 acres) (see North Gravina Area Plan, pp 16-17)
Intended Uses: Light and heavy industrial activities. Master Plan needed to guide development.
Development Considerations/Uplands: Tracts range from 5 to 20 acres; 10 acres to be reserved for wastewater treatment facilities; provide for access to waterfront.
Development Considerations/waterfront: Existing approx. 2 acre lots may be combined; activities subject to waterfront development recommended practices (land clearing, site grading, drainage, public access along shoreline, setbacks, etc.).

IP Industrial Park—South Airport Reserve
(120 acres) (pp 20-21 & Clam Cove/Blank Inlet Plan)
Intended Uses: Commercial fisheries services/processing.
Development Considerations (Uplands): Tracts range from 5-15 acres and designated for specific uses (cold storage, warehousing, manufacturing, gear storage, etc.); provide waterfront access and stream buffers.
Development Considerations (Waterfront): Provide for 2000' of wharf frontage; provide 200,000 sf of apron at wharf face; zone waterfront for specific uses.

DR Development Reserve
(1,120 acres)
Intended Uses: Future residential, commercial and recreational uses.
Development Considerations: Dispersed recreational and resource management activities permitted (e.g. trails, primitive roads, selective timber harvest) until other, more intensive and permanent uses are feasible.

MR Resource Management
(5,557 acres) (see pp 22-25 for information on management units and allowed activities).
Intended Uses: Upland areas managed for watershed, habitat and viewshed protection, while allowing for dispersed recreation and timber harvest activities.
Development Considerations: Resource harvest activities require conditional use permit that addresses road layout and standards and watershed, visual and habitat mitigation measures.

PLI Public Lands and Institutions
(1,747 acres) (see pp 26-27)
Intended Uses: year round public recreation (hiking, fishing, x-country skiing, ice skating, berry picking, camping, non-motorized boating, etc.).
Non-permitted Uses: hunting, ORV activities, timber harvest (except with viewshed protection).
Development Considerations: may include a seasonal RV campground near Bostwick Lake (summer use) accessible from the proposed DNR-USFS logging road (sited back from shoreline) as well as day-use facilities for hikers and picnickers.



6/Airport Development

The 6 Airport Reserve development categories and examples of aviation and airport-related economic development uses from the DOTPF Airport Master Plan shown here are as follows:

AV Area - Existing airport and aviation uses

AR Area - Expansion of AV uses, such as:
- Terminals, runways, taxiways, and aids
- Floatplane facilities
- Airport security
- Search & rescue, law enforcement, defense
- Airport operations, facilities and services
- Inter-regional air service operations
- Air taxi and charter operations/maintenance
- Fixed base operations and general aviation
- Aviation fuel service
- Transient aircraft and aircrew services
- Public access, viewshed and rec. facilities

AD Area - Commercial & private aviation uses with airport access, such as:
- Aircraft rentals and sales
- Flight schools and flying clubs
- Light aircraft A & E & avionics maintenance
- Aviation equipment and materials retail
- Aircraft and related equipment storage
- Airport–related hospitality services
- Airport–related surface transport services
- Public access, open space, buffers, recreation

IH Area - Heavy industrial uses, compatible with airport, especially water-dependent uses benefited by airport proximity, such as:
- Lumber & related products manufacturing
- Public access, viewshed, buffers, recreation

IL Areas - Light industrial uses compatible with airport, especially water dependent uses benefited by proximity to airport, such as:
- Seafood processing & related fishery industry services (south of AD)
- Public access, open space, buffers, recreation

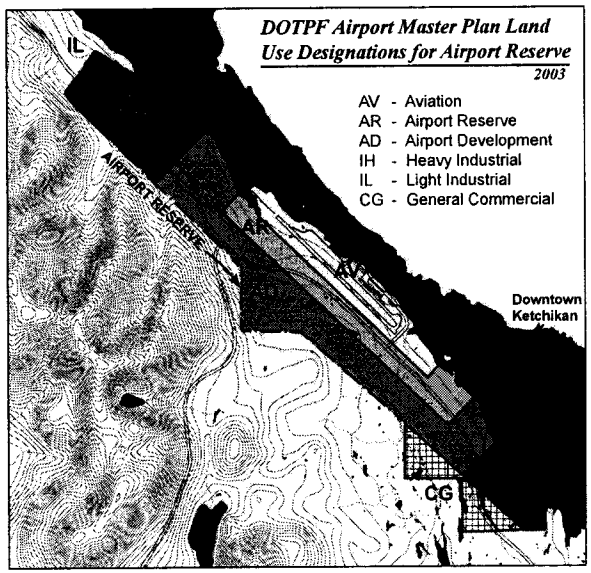
CG Areas - Commercial uses compatible with airport, esp. uses complementing AR & AD:
- Automotive fuel and service
- Convenience retail

Findings: Airport Reserve

Central Gravina land use planning centers on Ketchikan International Airport. The airport is both the primary resource for further development within this area, and is the primary constraint over other uses.

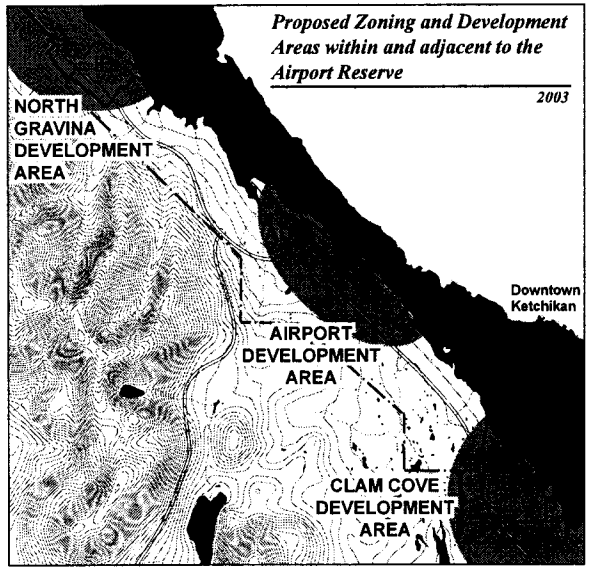
Land use at the airport and in the surrounding area is governed generally by the DOTPF Airport Master Plan, portions of which are iterated in detail by the current Airport Layout Plan. The Airport Master Plan specifies six development categories within the boundaries of the 2,689-acre Airport Reserve (see below). These categories are capable of change only with State and Federal consent, pursuant to an approved modification of the Airport Master Plan.

While lands within the Airport Reserve are to be used to support airport operations and aviation-related activities, other uses are possible with increasing distance from airport facilities. The Master Plan land use designations give the impression that extensive industrial and commercial activity is possible within the Airport Reserve, however, there are limiting forces that reduce the amount of suitable land. These include security concerns, conflicts with airport operations and the presence of sensitive areas (anadromous streams and wetlands).



The Borough's proposed development areas and zoning (see map below) are consistent with the Master Plan and focus more concentrated centers of development activity on suitable lands at the north and south ends of the Airport Reserve and beyond. Within the Airport Reserve, the land use categories IH and IL have the scarce resource of waterfront suitable for industrial uses situated adjacent to large tracts of vacant land largely suitable for industrial development. At present, about 25% of the IH area is included in the Pacific Log and Lumber Inc. lease, on which the mill currently occupies 30 acres.

The IL area to the south may be the only readily accessible and serviceable site in the entire Borough where at least 2,000 lineal feet of moorage suitable for a service wharf for fishing vessels is located adjacent to over 120 acres of potential industrial land, suitable for fish processing plants and related facilities. Development of such a site for expansion of value-added fish processing might enable Ketchikan to compete more effectively with large publicly-financed facilities for fishing vessel services and fish processing at Pacific NW ports, such as Bellingham/Blaine, Anacortes and Seattle, each of which captures substantial employment income from harvesting and processing Alaska's fisheries resource.



This Gravina Island Plan recommends three development centers linked and serviced by a proposed road. By concentrating infrastructure and service investments in these areas, more efficient development is possible. The planned industrial parks at the north and south ends of the Airport Reserve support these development strategies and effectively use lands within the Airport Reserve without impacting airport operations and aviation-related growth. By focusing development on suitable lands that do not impact wetlands and anadromous streams, Borough economic development projects will more readily receive necessary permits and the development costs will be minimized.

Airport Reserve (AR) Policy Options

AR/1 The Borough recognizes the long-term economic importance of the Airport Reserve and will exercise management authority for land uses on the Airport Reserve within a framework approved by relevant State and Federal agencies.

AR/2 The Borough will recommend a land use plan for the Airport Reserve that identifies appropriate airport-related economic development uses and provides for land areas and access conditions sufficient to implement the plan.

AR/3 The Borough will promote concentration of development around the existing airport facilities as well as use of appropriate areas at the north and south ends of the Airport Reserve for industrial and airport-related activities that do not conflict with safe operation of the airport.

AR/4 Road development in the Airport Reserve shall be guided by the Gravina Road System Master Plan in order to ensure efficiency, consistent standards and cost effectiveness. The Borough will work with DOTPF, USFS and private interests to determine alignments, ROW widths, standards, financing and maintenance responsibilities.

AR/5 The Borough will secure tidelands management authority for those tidelands within the Airport Reserve and manage them for uses that support planned industrial development in the north and south Airport Reserve.

AR/6 The Borough will promote development of a coastal trail along the length of the Airport Reserve and development of the Government Creek and "Airport" Creek estuaries as open space, with interpretive trails to promote recreational access, use and appreciation.

Findings: Airport Facilities

Ketchikan International Airport (KIA) is the focus of economic activity on Gravina. Airport services provide numerous jobs and bring millions of dollars into the local economy annually. Over 100,000 people leave and arrive by air each year in Ketchikan. In 2000, 23,561 of Ketchikan's tourists (4% of all Ketchikan visitors) arrived by air.

The Airport facilities and the Airport Reserve is owned by the State and the Borough has the legal responsibility and authority to operate and maintain KIA through a lease agreement with DOTPF. The State is accountable to FAA for the continued operation and maintenance of the airport and for major capital improvements. As a player at the airport management table, the Borough has been able to facilitate economic growth and development, e.g., the leasing and partial financing for the PL&L sawmill and the design and development of the North Gravina access road.

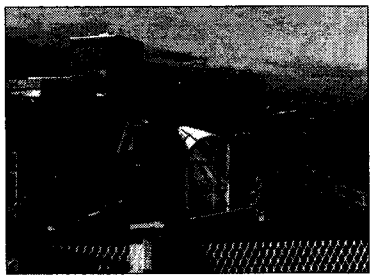
There are seven current airport improvement priorities (see map below):

- Terminal building improvements (now nearing completion)
- South runway extension to meet FAA standards ($20.2 million)
- Northeast taxiway ($14 million)
- Expansion of airport rescue/firefighting building and snow removal equipment building ($1.1 million)
- Apron and hangar expansion to support general aviation and air cargo operations ($2.1 million)
- New public float plane terminal and support facilities (to be located next to the Airport Ferry parking area on Revilla) ($20 million)
- Seaplane pullout ramp improvements ($2.8 million)

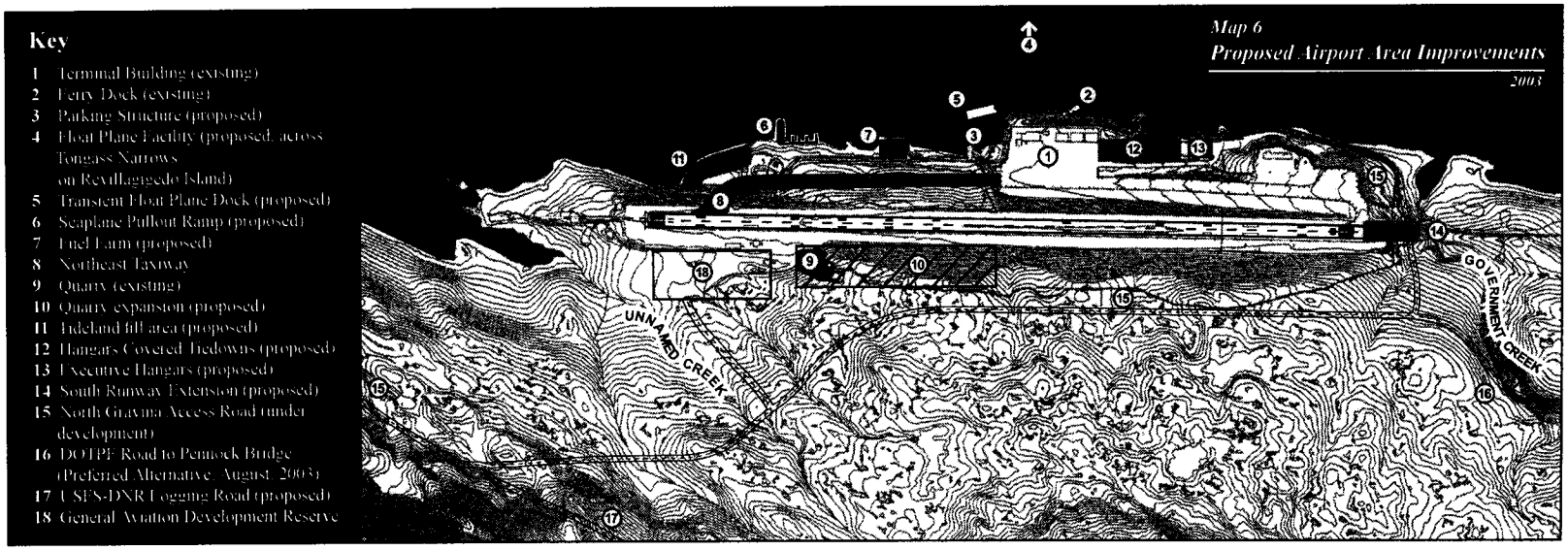
Longer term priorities for improvements are:

- Airport parking structure and access road (to meet parking needs when improved access is in place) ($1.08 million)
- Fuel storage farm near airport ($0.1 million)

Perhaps the single most significant airport improvement will be that related to access from Revilla Island now under study by DOTPF. Depending on the option finally selected and constructed, the access will range from an expanded ferry system to a bridge and associated roadways. No matter which option is selected, the project is to include construction of a two-lane, 35 mph driving standard roadway around the south end of the airport to a point near the north end of the Airport Reserve that would serve development activities on Borough lands (see pp 18-19).



In 2000, of the estimated 621,164 visitors arriving at Ketchikan, 4% arrived by air, 4.4% via the ferry, and 91.6% on cruise ships. It is expected that some of these over 24,000 visiting air passengers passing through the Ketchikan International Airport would consider visiting some of the natural attractions near the airport if they knew about them and some improvements were made to make them more visitor accessible.



Map 6
Proposed Airport Area Improvements
2003

7/Roads & Infrastructure Extensions

Road/Infrastructure (R/I) Policy Options

R/I/1 Road development shall be guided by a Gravina Road System Master Plan in order to ensure efficiency, consistency and cost effectiveness. The Borough will work with DOTPF, USFS and private interests to determine alignments, ROW widths, design standards, financing and maintenance responsibilities.

R/I/2 The planned DNR/USFS logging road shall remain open for public use to a Bostwick Lake trailhead after harvest to accommodate recreation activities and provide access to MHT lands.

R/I/3 Pioneer and logging roads shall be consistent with the Master Plan. Improvement and maintenance costs are to be borne by the landowner(s). Such roads are to be gated and closed to the public until demand warrants inclusion in the public road system. At such time they shall be upgraded to Borough standards.

R/I/4 The Road System Master Plan shall consider alternative means of movement within road ROW, including bus, bicycles and pedestrians as appropriate.

R/I/5 Road corridors shall provide for infrastructure and community services.

R/I/6 The Borough shall extend services as an incentive and means to guide development activities and shall recover costs of roads, infrastructure and services from landowners and direct beneficiaries.

R/I/7 The Borough will identify the most cost effective options for providing infrastructure and services (from airport, integrated into bridge crossing, independent local systems) to North Gravina and Clam Cove areas, and work with appropriate entities to implement them.

Findings

Four road proposals are being considered for the Central Gravina & Airport Reserve plan area (see facing map for locations). The design, standards and management policies of these roads will be key forces affecting the timing and location of development on Gravina.

1. **North Gravina Access Road**
   Replaces existing service road and extends to north end of the Airport Reserve. Borough and PL&L have completed preliminary engineering work, a Borough mitigation plan has been approved, and a Corps of Engineers permit for construction has been issued.
   - 3.9 miles, estimated cost for two lanes, 35 mph standard @ $1.25 million/mile=$5.0 million.

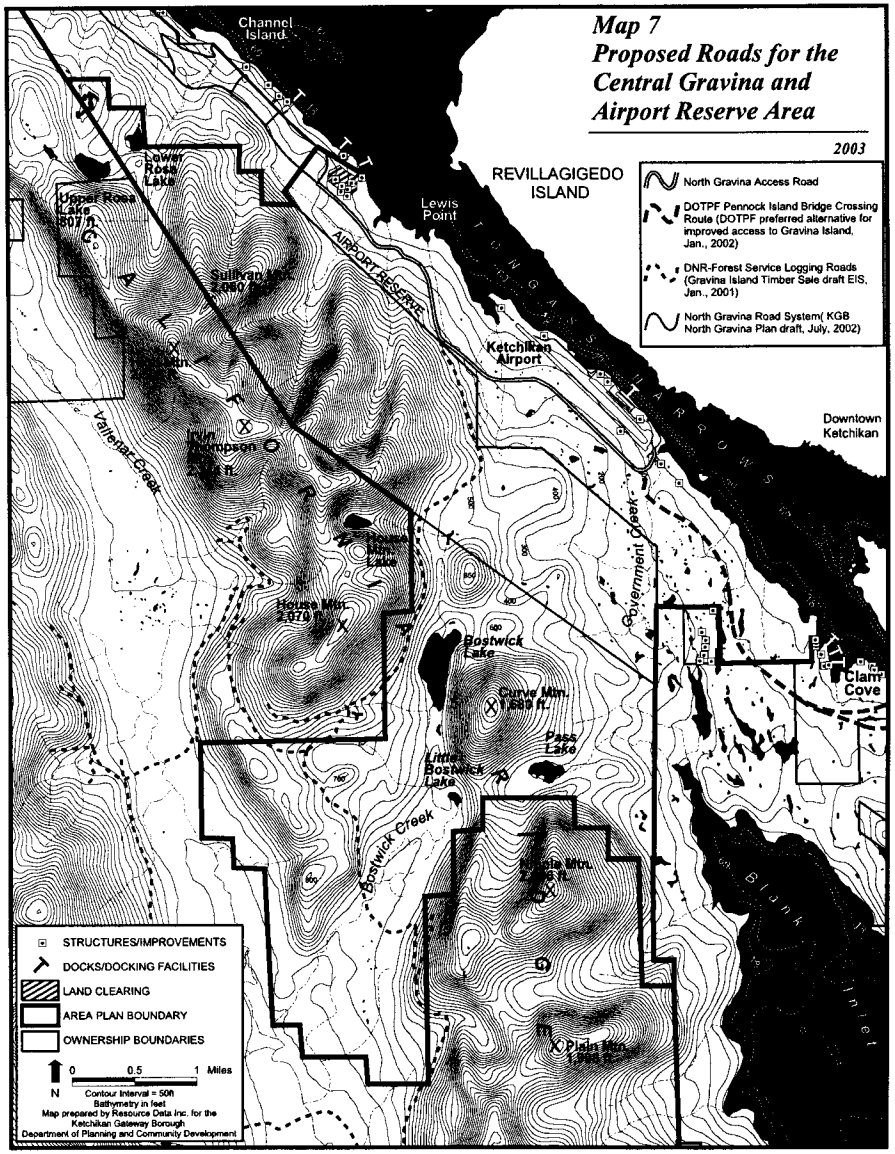
2. **DOTPF alternative road alignments**
   Designed to link airport to bridge or ferry options. Pennock route has been designated preferred alternative (pending further studies)
   - Initially two lane road designed for 35 mph, estimated cost of $1.5 million/mile for the portion on Gravina
   - Maintenance to be assumed by State.

3. **South Airport Reserve Access Road**
   Planned to be alternative access to south end of Airport Reserve in the event the Pennock Bridge route is not implemented.
   - 1.5 miles, initially one lane with turnouts, estimated cost @ $1.0 million/ mile=$1.5 million
   - Estimated cost for two lanes, 35 mph standard, including bridges @ $1.5 million/mile=$2.25 million

4. **DNR-USFS proposed logging road**
   Designed to connect with North Gravina Road to deliver logs to sawmill or to log transfer facility on Tongass Narrows.
   - At least 2 miles depending on road closure policies, initially timber harvest road
   - Estimated cost for two lanes, 35 mph standard @ $1.25 million/ mile=$2.5 million

Pending resolution of the DOTPF access alternatives, an early priority is to determine consistent standards and a financing/development strategy for the North Gravina Access Road. For the North Gravina Area Plan objectives to be realized, this will need to be a public road--preferably two-lane, 35 mph standard with integrated utilities. The financing options for the road proposals are described in the Implementation section, pp 29-32.

Serving the areas north and south of the Airport Reserve with essential utilities is also important. Several options exist including extending from existing airport infrastructure, integrating utilities with new bridge access and/or building new independent, localized systems. The costs of extending these services are described in the Implementation Strategy section, pages 29-32.



8/South Airport Reserve Industrial Park Area

Industrial Park (IP) Policy Options

IP/1 A South Airport Reserve Industrial Park Master Plan will be prepared to guide land leases and infrastructure development. The plan will provide for varied parcel sizes, waterfront linkages and shared facilities as well as flexibility to meet changing needs.

IP/2 Borough will work with industrial park users to improve road access and basic infrastructure for which the local match component of public investment is to be repaid by a combination of local property taxes, special assessments and user charges.

IP/3 Wastewater treatment facilities developed to service the industrial park should--if feasible and cost effective--be designed to meet needs of adjacent Clam Cove and private development.

IP/4 Adjacent Borough lands will be sold or leased to support Industrial Park development. Borough land sales may be used as incentives to developers.

IP/5 Common waterfront facilities and services will be established to meet needs of upland parcels.

IP/6 The Industrial Park Master Plan will provide for protection of anadromous streams and wetland reserves and for appropriate open space buffers and pedestrian routes through the site, with waterfront access.

IP/7 The Borough will support research and pilot projects for using overburden from site clearing (soils, brush, trees) in landscaping and restoration activities.

Findings

The southern part of the Airport Reserve contains lands well suited for water-dependent industrial purposes requiring upland acreage. Noise-tolerant (in the flight path) and low-emission industrial uses could be appropriately located in this area and industry-supporting roads and infrastructure can be efficiently extended either from the airport road network or, if the Pennock Bridge crossing is implemented, from that road alignment.

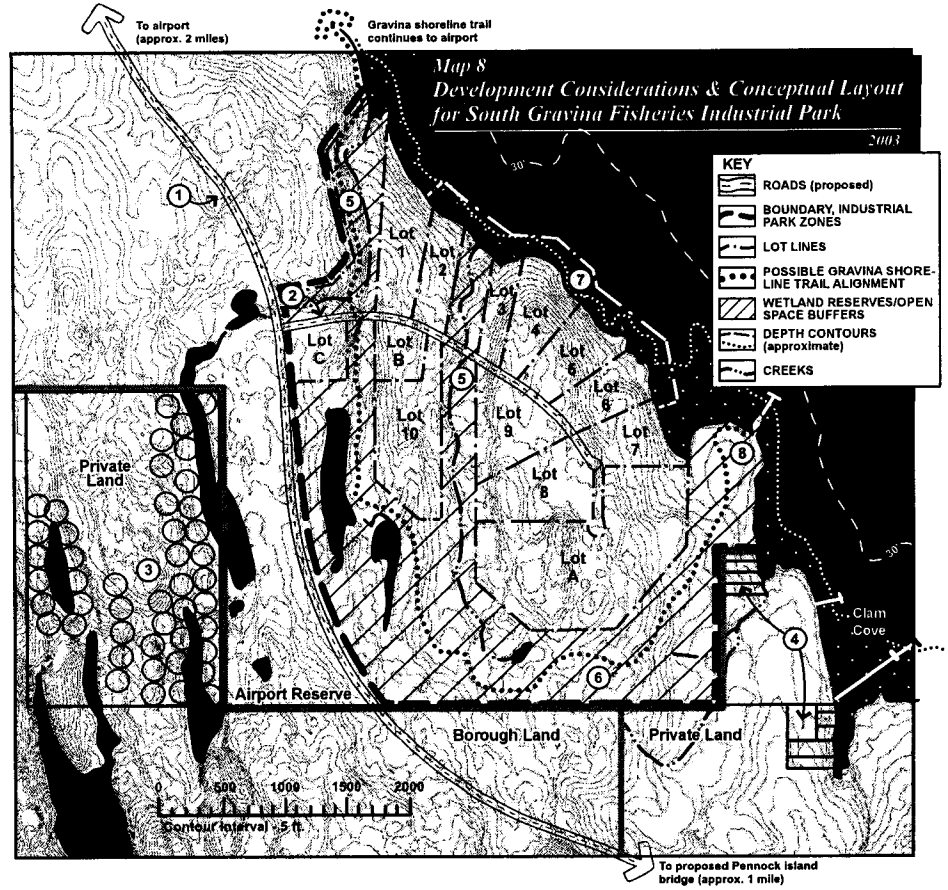
This plan proposes development of this 120-acre site for fish processing plants and related facilities. This initiative is proposed to enable Ketchikan to compete effectively with large publicly-financed facilities for fishing vessel services and fish processing at Pacific NW ports, such as Bellingham/Blaine, Anacortes and Seattle, each of which captures substantial employment income from harvesting and processing Alaska's fisheries resource.

The facilities and services which could be located in this area include:

- approximately 2,000 lineal feet of marginal wharf, with 20-30 foot depth alongside at MLLW, and up to 200,000 square feet of apron at the face, for fishing vessel loading, unloading, and short-term staging and gear and equipment storage for vessels, processors, and freight carriers;
- a 15 acre site adjacent to the wharf, for a multi-tenanted cold storage and warehousing facility and mini-processors' production area;
- four 9-13 acre fish product manufacturing plant sites, adjacent to wharf;
- a 6 acre site for regional fish waste unloading, consolidation and processing;
- a 10 acre site for regional scrap fishing gear and ex-vessel hazmat collection and processing;
- a 12 acre site for fishing gear and equipment manufacturing;
- a 9 acre site for long-term fish gear and equipment storage, including 5 acres of up to two story covered and weatherproof storage;
- approximately 40 acres of expansion area.

These uses and their allocated areas are a conceptual indication of the site's potential, subject to revision in the development planning process. The layout for potential development of this area, shown in Map 8, includes anadromous stream corridors, wetland reserves and scenic buffers, an open space buffer between the industrial area and the Clam Cove residential area to the south, a tideland reserve and pedestrian routes through the site, with waterfront access.

Although it is expected that a large majority of raw fish and fish products will be shipped to and from this site by water, the site's location near the airport will facilitate air transportation of vessel crews, processing and plant employees, air freighting of expedited spare parts and equipment, as well as receipts of flown-in raw fish and shipment of fresh and specialty fish products.



Map Notes

1. DOTPF proposed alignment for road linking Pennock Island bridges and airport (October, 2002).
2. Possible road access to industrial park parcels
3. Existing subdivision (circular, recreational lots)
4. Existing private lots around Clam Cove
5. Anadromous stream corridors
6. Open space buffer between Industrial Park activities and residential uses around Clam Cove
7. Service wharf area for vessel loading/unloading and short term open storage (2700 ft. long by 200 ft. wide).
8. Gravina Shoreline Trailhead with possible dock and other facilities

<u>Possible Lot Use Allocations</u>

Easement/shoreline access for non-waterfront sites (lot 3)
Processing plant sites with direct water access (lots 1, 2, & 6; 22 acres)
Cold storage and warehousing (lots 4 & 5; 15 acres)
Long term storage and gear work area (5 acres covered) (lot 9; 9 acres)
Fish waste processing (lot 7; 5.5 acres)
Scrap gear processing (lot 8; 10 acres)
Manufacturing gear and equipment (lot 10; 12 acres)
Possible expansion areas (lots A, B, & C; 40 acres)

9/Resource Management (Timber, Fisheries, Sand & Gravel, Habitat & Views)

Findings

There are several commercial value timber stands within Central Gravina on DNR lands in the Bostwick Lake area and on Mental Health Trust (MHT) lands high along drainages on the east face of California Ridge.

1,900 acres of DNR lands contain mature timber of commercial quality. Some are located in sensitive areas near Bostwick Lake and within the Bostwick Creek corridor. DNR expects to harvest 3.8 mmbf on 140 acres south of Bostwick Lake (not immediately adjacent to the lake) and may harvest up to 350 acres southwest of the lake (see facing map). The DNR Division of Forestry is preparing a Forest Land Use Plan for its Central Gravina lands intended to outline timber harvest proposals over a ten-year plan period (2000-2010).

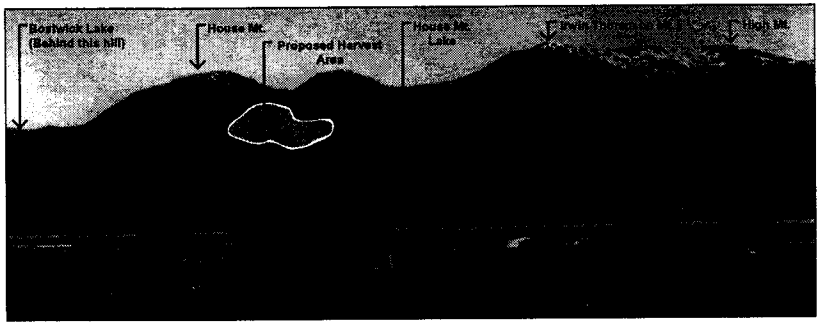
Approximately 176 acres (5 %) of MHT lands are considered to have timber of commercial quality, mainly on steep slopes above the north end of the Airport Reserve. While difficult to reach via harvest roads, it is expected that selective helicopter logging may be possible given the proximity to the Pacific Log & Lumber sawmill.

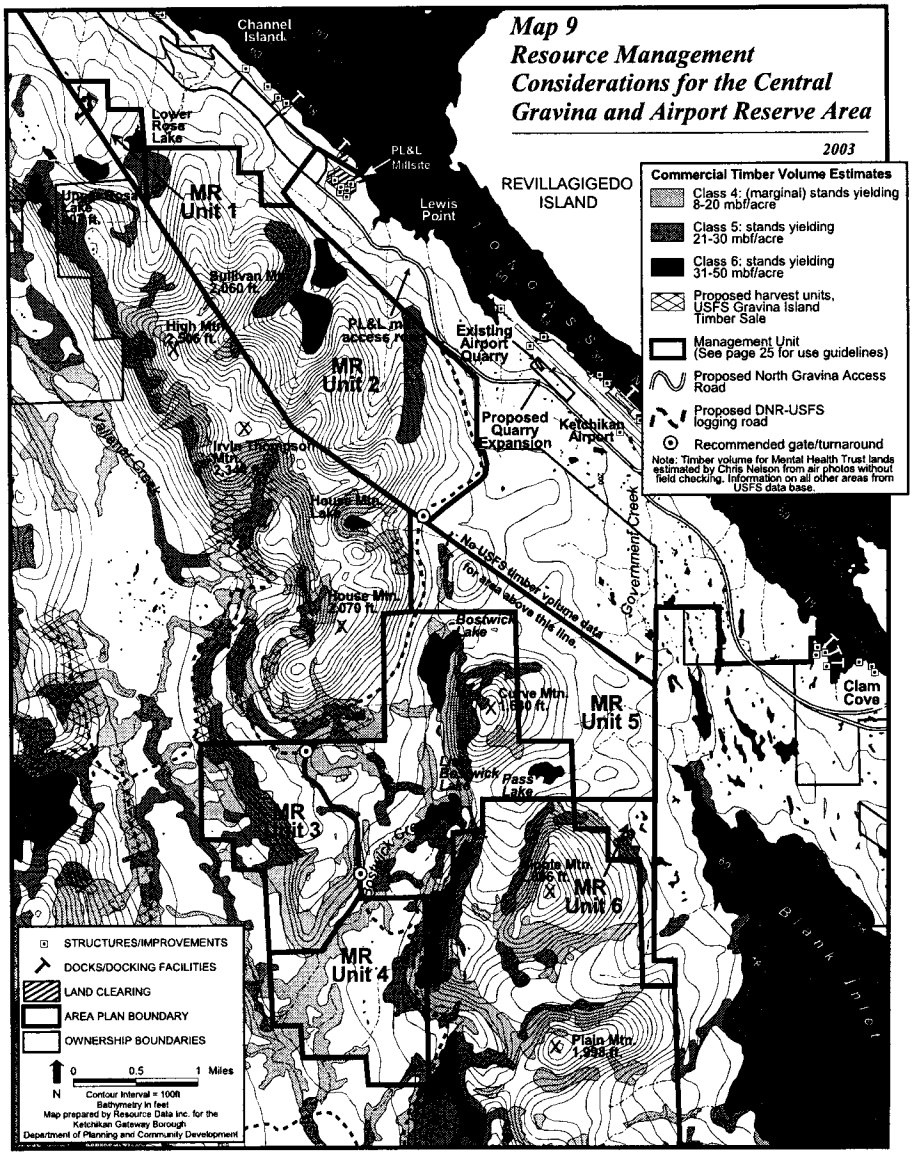
Timber harvest on MHT lands would be visible from Tongass Narrows and Revilla Island, especially if harvested by traditional methods (clear-cutting). While most DNR commercial forest lands are not highly visible from Ketchikan, some would be from the Bostwick Lake area and associated trails. Only one of the proposed USFS harvest areas would be visible from Ketchikan as illustrated by the photo below.

Bostwick is Gravina's largest lake and is popular for coho, steelhead, cutthroat and rainbow trout fishing. The Bostwick Creek watershed is also Gravina's largest. It produces substantial Pink Salmon runs, its water quality is important to the shell fisheries of Bostwick Inlet and it has high habitat values. The lake and the upper reaches of the watershed are popular hunting areas.

An estimated 800,000 cubic yards of rock are expected to be extracted from the quarry site adjacent to the runway to meet materials needs for taxiway and runway expansion projects. This site offers the potential for further materials extraction to meet road construction needs within the Airport Reserve. Another potential quarry site is the small knoll just north of the PL&L sawmill within the proposed North Gravina Industrial Park.

Visual impact analysis of proposed timber harvests includes photographic simulations of cut areas such as this one (a clearcut proposed in the USFS Gravina Island timber sale, as seen from the University of Alaska SE campus). Mitigation options include smaller cut areas or different shapes, selective helicopter logging, and replanting.





Resource Management (MR) Policy Options

MR/1 Use Central Gravina's commercial timber resources to support small, value-added forest products industries, especially those located within the North Gravina industrial park and cottage industry zones.

MR/2 Retain natural forested buffers (minimum 100 ft) along each side of future recreation access roads and trails in areas of timber harvests.

MR/3 Use gates along the proposed logging road system to meet management objectives such as limiting public access during logging activities, closing areas during spawning and restricted hunting periods, etc.

MR/4 Secure MHT, DNR, and USFS coordinated timber resource management and harvest activities to increase economic viability of resource base and minimize costs.

MR/5 Protect anadromous stream corridors with setbacks from timber harvest and roads (minimum 300 ft within portions where salmon spawning occurs; to the top of the slope on v-notch drainages). Follow ADF&G recommendations for setback width along Bostwick Creek.

MR/6 Require master plans for quarry site developments which include provision for screeningnoise and dust control during operations as well as land restoration and re-use when mining activities are completed.

MR/7 Identify and dedicate sites where experimental timber management activities can be tested (e.g. hybrid poplars, spruce and cedar plantations, fuelwood lots, replanting approaches, etc.).

MR/8 Critical habitat areas identified by ADF&G and USF&WS should be retained in their natural state. Buffer strips may be required to separate such areas from proposed development/management activities such as road building or timber harvest. The width of such buffers are to be determined by ADF&G and/or the USF&WS.

MR/9 Timber harvest activities on east facing slopes of California Ridge and on slopes visible from the Bostwick Lake shoreline shall require a Visual Impact Mitigation Plan (VIMP) prepared by a Landscape Architect or other professional with experience in this field.

MR/10 Use land trades or transfers to create ownership boundaries (size and/or configuration) which allow for more cost-effective and consistent management.

The following resource management policies, from the Gravina Island Plan Citizen's Guide are important to the Central Gravina area.

10.1 The State of Alaska Forest Resources and Practices Act (AS 41.17) and its regulations and procedures, shall provide the minimum resource protection standards and permit review procedures for timber harvest from federal, state, borough, and private land.

10.2 The Borough's forest management activities shall be planned so as to:

- Create a sustainable supply of direct and indirect jobs within the local economy.
- Provide a range of opportunities for large and small businesses engaged in the wood products industry.
- Improve timber growth and productivity on suitable timberlands made available for timber harvest, and manage these lands for long-term sustained yield.
- Contribute a timber supply to meet market demand.
- Provide a mix of resource use activities to meet recreation, personal resource harvest & other needs.
- Recognize scenic values of timberlands viewed from popular roads, trails, marine travel routes, recreation sites, bays, and anchorages, and modify timber harvest practices accordingly.
- Minimize adverse impacts to fish and wildlife populations and their habitats.
- Ensure the free passage of anadromous and resident fish in rivers, streams, lakes, and marine waters.
- Minimize sedimentation, erosion, and alteration of natural drainage patterns.
- Maintain long-term productivity of forest soils and ecosystems.
- Promote regeneration of harvested forests.

10.3 Sites for in-water log storage and transfer shall be selected and these activities conducted so as to minimize adverse affects on the marine ecosystem, conflicts with recreational uses, navigation hazards and exposure to storms.

10.4 Sand and gravel may be extracted from intertidal areas only when there is no feasible alternative to meet public need.

Guidelines for Central Gravina Resource Management Units

ManagementUnit
(see map, page 23)

RESOURCE VALUES	1	2	3	4	5	6
Recreation	●			○	●	
Timber		●	●	○	○	●
Fisheries				●		
Minerals						
Energy						
Habitat	○	○	○	●	○	○
Air & Water Quality		●	○	●	○	
Hazard Avoidance		○			○	
Visual/Aesthetic	○	●	○	○	●	○
Visitor Attractions	○				○	
Screens & Buffers			○	○	○	○

Values Key

- ● Primary value (access, use and management decisions should favor this activity)
- ○ Secondary value (access, use and management decisions should favor this activity as long as it does not interfere with primary values)
- Not present or of significance in this area

ACTIVITIES	1	2	3	4	5	6
Recreational hunting	●	●	●	●	●	●
Recreational fishing	●	●	●	●	●	●
Motorized recreation, ORVs	■	■	■	■	■	■
Personal fuelwood cutting	■	■	⁄	⁄	⁄	⁄
Structures (temporary)	■	■	■	■	■	■
Structures (permanent)	■	■	■	■	■	■
Materials site/quarry	■	⁄	⁄	■	■	■
Timber harvest	■	⁄	●	⁄	⁄	⁄
Commercial fishing	■	■	■	■	■	■
Roads (controlled access)	■	⁄	●	●	⁄	■
Roads (open access)	■	■	⁄	⁄	⁄	■
RV camping	■	■	■	■	■	■
Tent camping	●	■	■	■	●	●
Hiking	●	●	●	●	●	●
Wild food gathering	●	●	●	●	●	●

Activities Key

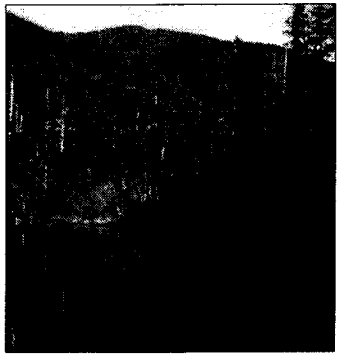
- ● Generally allowed
- ⁄ Allowed only in designated areas or by permit
- ■ Not generally allowed

Notes:

1. Management Units 1 and 2 are private lands (Mental Health Trust) with access and uses subject to owner permission.

2. ORV/ATV uses are directed to designated areas in Vallenar Creek valley (see pages 26-27)

3. Management activities for unit 6 are to be consistent with adjacent USFS lands (proposed Old Growth Reserve) as well as KGB lands facing Blank Inlet. This area may be considered for land trade with adjacent owners.



The majority of the commercial forest stands within the Central Gravina area are Class 4 (low volume, 8-20 mbf/acre) or non-commercial forests such as the southeastern slopes of House Mountain seen here from Bostwick Lake.

Recreation (Rec) Policy Options

Rec/1 The Borough shall work with DNR, MHT, USFS and local interest groups to prepare a Gravina Island Trail Plan, incorporating Central Gravina attractions and establish a recreation plan for the Bostwick/Pass Lakes area and California Ridge.

Rec/2 The Borough shall support DNR establishment of a Recreation Area in the Bostwick Lake area with eventual destination services (e.g., picnic area, shelters, small RV park, etc.) to meet local and visitor industry needs.

Rec/3 The Borough shall assist the Ketchikan Visitors Bureau and visitor industry service providers to increase awareness of Gravina attractions and include them in Ketchikan's tourism product.

Rec/4 Priorities for trail development shall be the Gravina Shoreline Trail on the Airport Reserve and the Bostwick Lake Loop Trail.

Rec/5 ATV/ORV use shall be permitted only in areas to be designated. Such areas will typically be along logging roads closed to vehicular use, proposed future road corridors, and routes that provide access to recreational properties such as Vallenar Bay.

Rec/6 New recreational attractions shall be developed that provide multiple means of access (boat/kayak, vehicle, bicycle, walking, wheelchair) to address the spectrum of recreational needs and preferences.

Rec/7 Once logging roads are established, the Borough will work with other land owners to establish recreation use policies and use road gates to guide access and use.

Rec/8 The Borough will continue to monitor recreational use with the Airport Ferry trail registry and expand it to include a user questionnaire (with map on one side) which provides additional data on areas visited and type of use.

Findings

As our visitor industry continues to grow, new destinations are in demand. There are several excellent Central Gravina recreation sites that, if managed for that use, would greatly enhance residents' all-season recreational opportunities as well as contribute to Ketchikan's stock of nature tourism products directed especially to the independent traveler. Perhaps the most important is the Bostwick Lake/Pass Lake/Curve Mountain area which would be directly accessible from an improved road to the area on State and Federal lands now planned for timber harvest. The road will make possible a recreation area of statewide significance that could support dispersed camping sites, trailheads, and excellent fishing and hunting (Bostwick is Gravina's largest lake and is popular for coho, steelhead, cutthroat and rainbow trout fishing). DNR timber harvest plans in this sensitive area should accommodate recreation and habitat values, including viewshed protection.

In addition to the independent travel market, it is expected that the very scenic road to the Bostwick Lake area will likely become a popular bus tour. Nature walks, hikes and other recreational uses should expand in popularity. Central Gravina trails and attractions can be promoted by local visitor services and businesses. They could generate revenue either by marketing as another guided tour option, or through trail use registry/ fee collection at the Airport Ferry tollbooth.

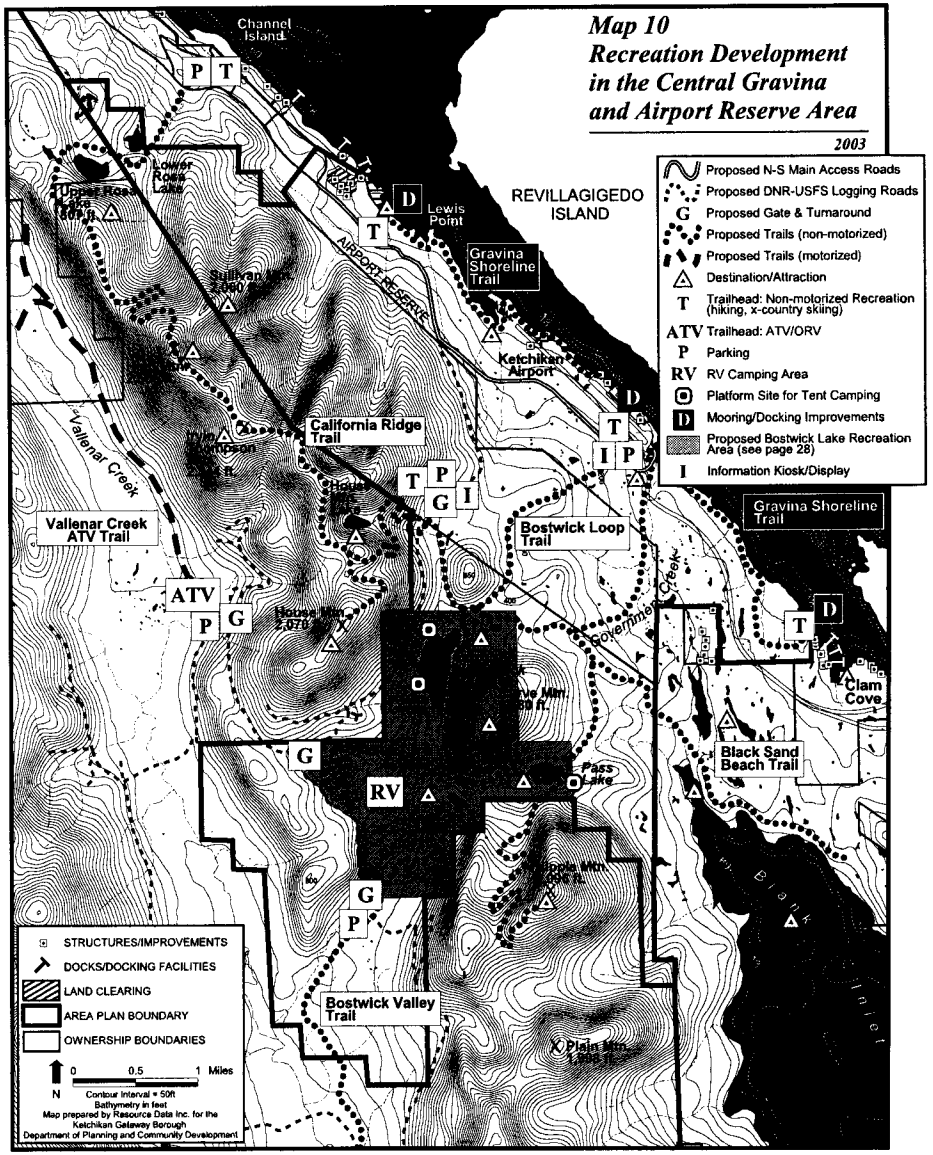
The Airport Reserve shoreline could be one of Gravina's best recreational assets, with beautiful natural areas (including Government and Airport Creeks estuaries), dramatic views of Ketchikan, the possibility of a continuous trail (due to single ownership) for an over five-mile stretch of coastline, easy access from the airport, and an absence of altered shoreline except around the airport area. This is a rare opportunity to provide Ketchikan citizens with access to our waterfront and a coastal trail for walkers, bicyclists, and joggers and can be accomplished without sacrificing other development interests.

A large portion of the eastern Gravina landscape is muskeg and poorly drained scrub forest, requiring some kind of improvements (boardwalk, rock overlay/fill) for constructing trails or special routings to avoid such areas. At the same time, muskeg and scrub forest areas are some of the most pleasing for hiking, with nearly continuous views even at low elevations.

The proposed road system (pp 18-19) could support increased recreational access and use of Gravina Island through the provision of scenic turnouts, parking at trailheads, sites for RV camping and reducing hiking time to attractive destinations. There are also opportunities to use the timber harvest roads portion of the system to control use (by gate closures) of certain areas in order to meet recreational management objectives.

There is demand in the Ketchikan area for sites designated for ATV/ORV use. Such sites should be away from hiking trails as well as lakes and shorelines (where sound travels significant distances).

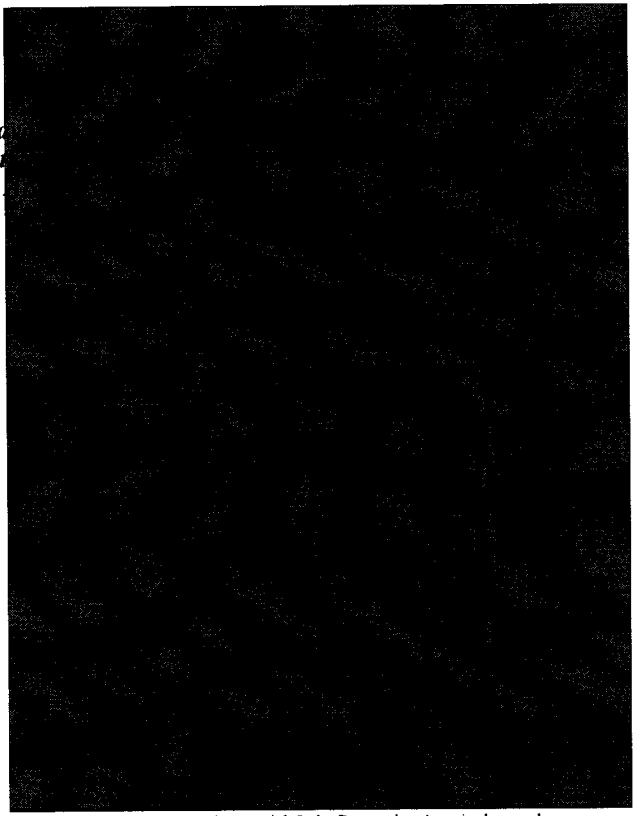
(continued on page 28)



Conceptual La for Proposed Bost Lake Recreation



Bostwick Lake, on State owned land (DNR management) is one of Gravina's more accessible attractions. New roads to the area would bring increased numbers, necessitating trail improvements, signage, sanitary facilities and possibly campgrounds for hikers and RVs. At 500' in elevation, Bostwick Lake freezes in winter months and thus could become our community's premier wintertime recreation destination for skating, cross-country skiing and other snow activities.



A conceptual plan for the proposed Bostwick Lake Recreation Area is shown above. Improvements would be staged as funding is available and access improved as demand justifies. Initially the trail from the airport should be improved, as well as efforts directed at increasing public awareness and use.

Once a road was opened from the airport to the proposed parking and trailhead area shown above (north of the lake), greater use would be expected. The parking area, trailhead, signage, and connecting trail improvements would then be made. Tent platforms along the west shore might be installed, as well as basic sanitation facilities.

Over the longer term, if a logging access road were extended into the interior of Gravina such as proposed by DNR-USFS, it would be possible to bring increasing numbers of users closer to the Lake. A day-use parking lot, picnic area, and even an RV campground might be developed. Trail extensions to other parts of Gravina would be needed to spread the use beyond the Bostwick Lake area in order to minimize impacts. Year round access might be considered to take advantage of the opportunities for skating, x-country skiing, and snowmobiling. By then the State may decide to elevate the area to State Park status.

The Borough's Role

The Borough is not a landowner in the Central Gravina & Airport Reserve area but still has a key role in plan implementation. The Borough has the legal authority and responsibility to operate KIA and has local government responsibilities for economic development, transportation planning and regulation of land uses. These responsibilities imply important leadership roles to:

- promote and implement economic development and land use activities within the Airport Reserve and throughout the Central Gravina area;
- determine an effective transportation network for this area;
- operate a safe and efficient airport while promoting economic activities that benefit from direct access to the airport's inter-regional air services, general aviation facilities and services, and air freight and taxi services;
- stimulate private/public partnerships for development initiatives such as the north and south Airport Reserve industrial parks proposed in this area plan;
- develop recreational uses and facilities on selected lands as proposed in this plan;
- secure federal/state funds for infrastructure improvements; and
- work with DNR to secure stable timber supplies for local processing and to provide recreational and visitor industry opportunities on appropriate State lands.

One important early regulatory initiative will be the proper zoning of Gravina's lands to provide the framework for the plan's recommendations to be implemented. New zoning classifications are needed (resource management, industrial park and others) and some existing zones should be modified. The Borough can facilitate priority economic development projects by working with regulatory agencies to pre-qualify sites so that planning and environmental review steps are complete and a project applicant can go directly to site, engineering and construction plan review.

To successfully implement the plan, the Borough will need to commit to sufficient staff (contracted or "in-house") to assume its leadership roles. It will require close cooperation between the Planning Commission, Borough Assembly, and Planning and Public Works Departments. It will also require collaboration between these organizations and the Central Gravina public agency landowners (State, MHT) and with the private sector including individuals and firms interested in investing in the projects conceptually proposed in this plan.

Interagency Partnerships

Implementation of the Central Gravina area plan requires close working relationships between the Borough and those public agencies and land trusts given responsibility for managing major portions of this area's lands and resources: State DNR, State DOTPF and Mental Health Trust. Each of these has its own mission and objectives. Each needs to coordinate with the others for effective implementation. In order to secure an intergovernmental partnership, it is recommended that a task force of these agencies and trusts be formed and meet at least once a year to define cooperative actions to manage area resources. Cooperative actions may include:

- joint financing for construction of roads, trails and recreational facilities;
- cooperative harvest management to sustain timber flows to local processors;
- land exchanges to facilitate better and more cost effective management;
- identification of quarry locations for construction projects;
- road maintenance and closure policies to manage habitat and contain maintenance costs; and
- agreements on mitigation lands to facilitate projects.



Looking west across Bostwick Lake, the mountains of Dall Ridge can be seen, including Chapin Peak, Gravina's highest point. Bostwick Lake is the land entry point to the interior and western side of Gravina Island. The shoreline and hillsides surrounding the lake are visually sensitive areas, critical to maintaining the recreational values of the lake's setting.

The Industrial Parks

Both of the proposed industrial parks at the north and south ends of the Airport Reserve have similar requirements to meet for successful implementation. (For a discussion of the north industrial park, see pp 16-17 of the North Gravina Area Plan; for the south industrial park, see pp 20-21 of this plan.) Both are presented in conceptual form in these area plans. In both cases, Industrial Park Master Plans will need to be prepared that provide strategies for development, including:

- defined land use plan for each industrial site;
- preferred tenant mix and locations;
- shared use facilities/infrastructure (wastewater, roads, power, water, docks);
- financing of infrastructure;
- land sales and lease terms;
- waterfront access measures;
- development guidelines for fencing, site clearing, etc.;
- project marketing; etc.

Financing Implementation

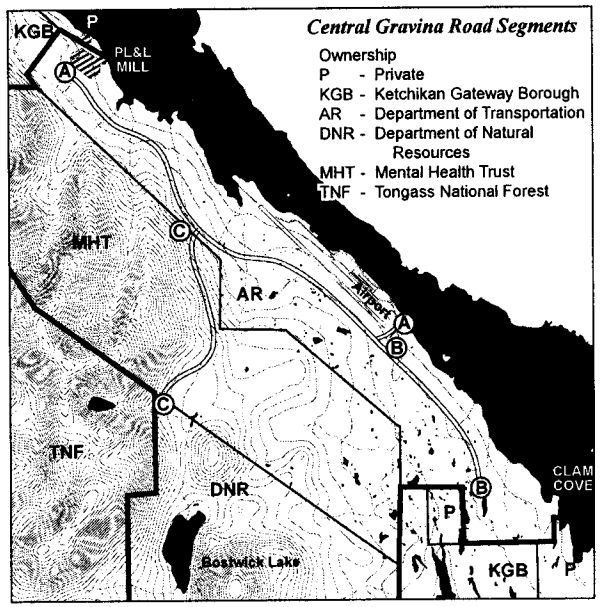
To implement the Central Gravina & Airport Reserve Area Plan, an early priority will be to finalize the road and infrastructure network to serve the area. This plan proposes a "Road System Master Plan" that provides for consistent design, standards and management policies for the various road segments outlined on pp 18-19. Three key segments of the road system are illustrated in the map below. The order-of-magnitude costs indicated in the sidebar represent a 35-45 mile per hour Forest Highway standard, water main, and sanitary sewer. Road construction costs could be reduced with lower standards and initial stages might be unpaved, single-lane roads with turnouts.

Summary of Estimated Road and Infrastructure Extension Costs

Segment A: Ferry Terminal to north end of Airport Reserve
Road:
4 miles @ $1.25*m*/mile = $5*m*
Water:
3 miles @ $0.5*m*/mile = $1.5*m*
Sewer:
3 miles @ $0.5*m*/mile = $1.5*m*
Total: $8 million

Segment B: South end of runway to south end of Airport Reserve
(this segment needed only if Pennock route not selected)
Road:
1.5 miles @ $1.25*m*/mile = $1.875*m*
Water:
1.5 miles @ $0.5*m*/mile = $0.75*m*
Sewer:
1.5 miles @ $0.5*m*/mile = $0.75*m*
Total: $3.375 million

Segment C: Bostwick Lake area access road (not including harvest roads beyond Mental Health Trust lands)
Road:
2.0 miles @ $1.25*m*/mile = $2.5*m*
Water:
Not required
Sewer:
Not required
Total: $2.5 million



Water and sewer would be connected to existing treatment facilities at Ketchikan International Airport (extension across Tongass Narrows is not included). Residential, commercial, and some industrial uses can be serviced with a Septic Tank Effluent Pumping (STEP) system, as an alternative to a large-dimension sanitary sewer and fully centralized treatment plant.

Several funding sources are available for roads and infrastructure:

Roads: Segment A: The segment between the Ferry Terminal and the north end of the Airport Reserve is planned to be the first built. This is expected to be financed by a combination of Borough funds, possible State contributions, private sector support via local improvement district assessments (see below), and possible federal support.

Segment B: The segment between the south end of the runway (connecting with Segment A) and the south end of the airport reserve would only need to be financed if the Pennock Island access route to Gravina is not implemented. (If implemented, it would be built with Federal highway funds.)

Segment C: The segment between Bostwick Lake area and the North Gravina access road (Segment A) is to be funded by USFS and/or DNR pending resolution of planned timber harvests. It would be built to harvest road standards and upgraded later to serve recreational users. Forest Highway funds may be available to meet road upgrading costs. Road access beyond Bostwick Lake is uncertain pending USFS and DNR harvest plans and habitat management and road maintenance decisions.

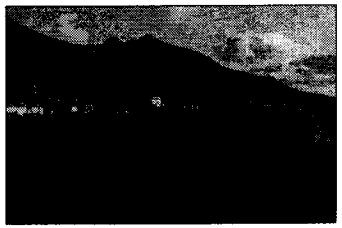
Design and construction funding for Gravina roads may be available from the U.S. Department of Transportation TEA-21 and other programs, while related pedestrian ways, shoreline access and other amenities may be eligible for TRAAK program funds. These programs typically cover 80-90% of total project costs; the remainder requires local matching funds, all or part of which may be obtained from the State.

Water and Sanitary Sewer Systems: Funding for these services is provided by U.S. Environmental Protection Agency programs, which often funds approximately 50% of total project design and construction cost.

Electrical and Telephone Systems: Electrical and telephone systems have previously been installed by the City of Ketchikan, Ketchikan Public Utilities, with their development cost repaid by customers.

The local share of road and infrastructure costs can be provided by assessments to benefited properties, using a Local Improvement District (LID). The LID may be initiated either by the Borough or by property owners in the benefit zone. Assessments upon individual properties are based on factors which can include area of property, property's demand for services, and degree of benefit from the improvements. A majority of property owners within the LID boundaries must approve its establishment and their respective assessments.

In determining the sum to be assessed under an LID, an allocation formula usually determines a public share of the total cost, attributable to community benefits for public safety, recreation and other purposes, as well as the shares representing benefits to private property owners. When public and private shares of the LID are determined, a municipal bond may be sold to cover their cost. The public share of such a bond issue is sometimes collateralized by a pledge of anticipated real estate tax receipts from the benefited properties, while the private shares are collateralized by the agreed assessment of the properties, supported by their fair market value.

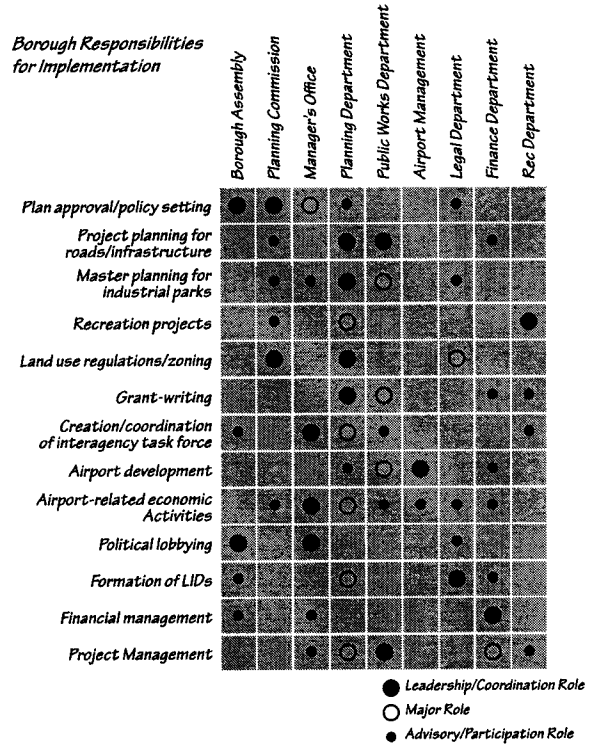


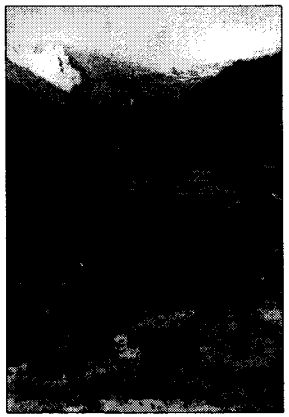
The shoreline along the Airport Reserve offers dramatic views across Tongass Narrows to Ketchikan and Deer Mountain. The Reserve's nearly six miles of undeveloped waterfront could become a popular walking route if trail improvements were made and public awareness increased.

Year One (2004) Action Plan

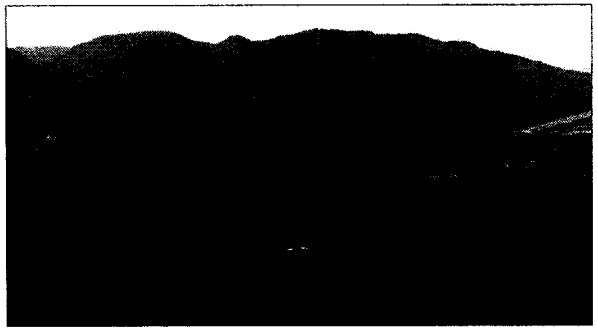
The highest priorities for plan implementation are as follows:

- Reach Planning Commission and Borough Assembly approval of the plan
- Work with DOTPF to secure final decision on bridge location/access route
- Reach agreement with DOTPF on alignments and standards of Road Segments A and B
- Secure Segment A permits (Ferry terminal to north end of Airport Reserve)
- Secure Segment A funding (including State/Federal support and LID financing as appropriate)
- Construct Segment A
- Prepare North Gravina Industrial Park Master Plan
- Draft and implement new land use/zoning regulations
- Establish interagency task force to address Gravina resource management
- Prepare Year Two Action Plan and budget request





The proposed road system on Gravina would afford views of the Airport, Tongass Narrows, Ketchikan and the mountains of Revillagigedo Island. Scenic turnouts should be considered at appropriate locations along the road where topography and natural openings afford panoramic views.



From the air, the flat to gently sloping terrain of the Central Gravina area is clearly evident. Three ownerships dominate this view: the entire shoreline and lowland area is part of the Airport Reserve, under State DOTPF ownership (and Borough management); much of the uplands are owned by the Mental Health Trust; and the higher areas in the left side of the photo are part of Curve Mountain and State DNR owned. The mountain backdrop, called California Ridge, includes House, High, Sullivan and Irvin Thompson mountains, and is within Tongass National Forest.

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

STATEWIDE DESIGN & ENGINEERING SERVICES DIVISION

3132 CHANNEL DRIVE
JUNEAU, ALASKA 99801-7898

PHONE: (907) 465-2958
FAX: (907) 465-2460
TEXT: (907) 465-3652

January 26, 2004

Subject: Gravina Access Project, ESA Consultation. ACHP-0922(5)

Kaja Brix, Director
Protected Resources Division
National Marine Fisheries Service, Alaska Region
P.O. Box 21668
Juneau, AK 99802-1668

RECEIVED
FEB 0 2 2004

Dear Ms. Brix:

I've attached for your review the Biological Assessment (BA) for the subject in continuation of our informal consultation with your staff in compliance with Section 7 of the Endangered Species Act. Based on the findings of the BA, we've concluded that the proposed action will "not likely affect" listed species and request your concurrence.

I'd like to take this opportunity to thank Brandee Gerke of your staff for her timely assistance and counsel on this project. If you have any questions, please contact me.

Sincerely,

Bill Ballard

Bill Ballard
State Environmental Coordinator

Cc: Jim Evenson, P.E. Design Manager, DOT&PF
Tim Haugh, Right-of-Way and Environment Team Leader

25A-T34LH

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

February 17, 2004

Bill Ballard, State Environmental Coordinator
Statewide Design and Engineering Services Division
Alaska Department of Transportation and Public Facilities
3132 Channel Drive
Juneau, Alaska 99801-7898

Dear Mr. Ballard:

This letter responds to your Biological Assessment of the Gravina Access Project on federally listed humpback whales (*Megaptera novaeangliae*) and Steller sea lions (*Eumetopias jubatus*). NOAA Fisheries has reviewed the November, 2003 Biological Assessment and concurs with your conclusion, that, as described, the Gravina Access Project is not likely to adversely affect listed species or their designated critical habitat.

No further consultation on the effects of the Gravina Access Project on endangered humpback whales or threatened Steller sea lions is required. This determination will be reconsidered should the proposed action change in a manner that may result in additional effects on listed species.

If you have any questions regarding this project, please contact Brandee Gerke of my staff at (907) 586-7248. Thank you for your cooperation in the effort to protect threatened and endangered species.

Sincerely,

Arnold J. Berg

For James W. Balsiger
Administrator, Alaska Region

Gravina Access Project
Threatened and Endangered Species Biological Assessment for Humpback Whale and Steller Sea Lion

Updated November 2003

Introduction

An environmental impact statement (EIS) is underway for the Gravina Access Project in the Ketchikan Gateway Borough, Alaska. There are no species under the jurisdiction of the U.S. Fish and Wildlife Service listed as threatened or endangered under the Endangered Species Act in the project area. The National Marine Fisheries Service (NOAA Fisheries—part of the National Oceanic and Atmospheric Administration) lists two species within the project area as endangered or threatened: the Steller sea lion and the humpback whale. Both species are additionally protected under the Marine Mammal Protection Act of 1972. The text of this document is substantially the same as the text intended for the final EIS and constitutes a biological assessment as required by 50 CFR 402.12. The measures outlined here to protect these two species will also protect other mammals protected by the Marine Mammal Protection Act. As described below, employing these measures, the project is not likely to adversely affect protected species or any identified critical habitat.

Construction Background

The project is anticipated to take up to three years to construct. Seasonal construction timing is discussed at the end of this document. On-site construction of ferry terminals could be completed more quickly than three years, and the in-water components would be completed in 1-2 construction seasons. Bridge construction alternatives likely would require three years. The most critical construction components related to marine mammals is in-water work, particularly drilling rock for pier placement, possible blasting, and possible dredging.

Drilling, using reverse rotary drill technology, would create holes 10-12 feet in diameter and 50-100 feet deep in substrate rock to anchor the piers. Each bridge pier foundation would require drilling 4-6 such holes. There are six in-water piers for Alternative F1 (the preferred alternative) and approximately equal numbers for other bridge alternatives. Each hole would take approximately one week to complete. This amounts to a total of approximately 30 weeks of in-water drilling, although it is possible that more than one hole could be drilled simultaneously.

Underwater blasting is possible with any of the alternatives. However, based on the preliminary nature of the engineering, it is not known how much blasting would be necessary, if any. Only under Alternative F3, for which increasing West Channel navigation clearances is proposed to mitigate shipping impacts, is there a known quantity of dredging and blasting. This would entail removal of a ridge of rock approximately 2,000 feet long and up to 750 feet wide would involve dredging of 63,000 cubic yards of surficial sediment and blasting to remove 16,100 cubic yards of bedrock. For this alternative only, the combination of drilling, blasting, and dredging is anticipated to last 1-3 months. Blasting under any other alternative is not anticipated to take place for more than 2-3 days total and may not be required at all. Ferry alternatives would likely require blasting and dredging near shore to provide adequate depth for the ferries. Except for the mitigation measures just described for Alternative F3, dredging is not considered likely under the

bridge alternatives. Under any alternative, dredged and blasted material is anticipated to be dumped at sea in accordance with section 103 of the Marine Protection, Research, and Sanctuaries Act, in areas permitted by the Environmental Protection Agency and Corps of Engineers.

Humpback Whale

The humpback whale (*Megaptera novaeangliae*) was federally listed as endangered in 1966. Before the mechanization of commercial whaling, the population of humpback whales was about 15,000. The International Whaling Commission (IWC) first protected humpback whales from commercial whaling in 1965, and such whaling ceased in the North Pacific. The whales were listed as endangered under the Endangered Species Act in 1973. The humpback whale is listed as "depleted" under the Marine Mammal Protection Act.

The Central North Pacific Stock, currently estimated at about 4,000 animals, is the group in question for this project. This stock of humpback whales generally winters in Hawaiian waters and summers along the North Pacific coast. Humpback whale distribution in summer is continuous from British Columbia to the Russian Far East, and humpbacks are present offshore in the Gulf of Alaska. The whales appear to return to the feeding areas where their mothers first brought them as calves, with evidence of some crossover to other areas but only at a rate of approximately one percent.

More than 500 humpback whales inhabit the waters near Southeast Alaska during the summer.[1] A NOAA Fisheries stock report[2] indicates 404 individual whales have been documented in the portion of Southeast Alaska that includes Chatham Strait and waterways to the north, and 275 have been documented in northern British Columbia (primarily near Langara Island). No counts have been completed specific to southern Southeast Alaska and the project area. There is no designated critical habitat for humpback whales as there is for Steller sea lions.

According the NOAA Fisheries stock report, this stock is the focus of a large whale watching industry in Hawaii and a growing whale watching industry in Alaska and B.C. Regulations concerning minimum distance to keep from whales and how to operate vessels when in the vicinity of whales have been developed for Hawaiian waters in an attempt to minimize the impact of whale watching. In 2001, NMFS issued regulations to prohibit most approaches to humpback whales in Alaska to 100 yards (66 FR 29502; May 31, 2001). The growth of the whale watching industry is a concern to NOAA Fisheries, because preferred habitats could be abandoned if disturbance levels became too high. Noise is another, related concern. Continual noise appears to the primary concern, with noise from an Acoustic Thermometry of Ocean Climate program, the U.S. Navy's Low Frequency Active sonar program, shipping, and whale watching cited by NOAA Fisheries. Incidental or short-term noises are not mentioned.

Humpback whales commonly feed and breed over shallow banks but traverse the open ocean during migration. They prey on small schooling fish such as herring and swarms of krill by using bubbles that concentrate prey. They also feed in formation, herd prey, and practice lunge

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[1] *MacDonald, S.O., and J.A. Cook.,* The Mammal Fauna of Southeast Alaska, *University of Alaska Fairbanks, 1999.*

[2] *NOAA Fisheries. 2002. "Stock Assessment Report: Humpback Whale (*Megaptera novaeangliae*): Central North Pacific Stock"*

feeding as a group.[3] Most of the Alaska summer whale population leaves by about October or November for Hawaii. Calving takes place in the wintering grounds. A few humpback whales stay in Alaska and may be seen in winter.

NOAA Fisheries documented human-caused injury or mortality to this stock of whales. Entanglement or other injury caused by fishing gear and nets appears to be the primary issue. Two incidents were noted in the general Ketchikan area. There is documentation of apparent injury to and death of humpback whale related to repeated underwater blasting in Newfoundland.

There is no data about seasonal abundance and distribution of humpback whales specific to Tongass Narrows. However, there is informed anecdotal information from a member of the marine mammal stranding network,[4] an ADF&G biologist,[5] and a spotter pilot,[6] all based in Ketchikan, to indicate use of the area. Humpback whales may be found in Tongass Narrows year round, although the numbers are small much of the year, and they are seen only perhaps once or twice per month. There is a peak in activity in April and May, corresponding to herring spawning season, when daily sightings are common. Whales do not appear to use Tongass Narrows specifically as a migration route, and there is no evidence that Tongass Narrows is a favored location for critical activities, although the whales presumably may feed in the Narrows. As indication of relatively low numbers of whales in summer, a flightseeing air service based in Ketchikan advertises flying more than 100 miles north to Frederick Sound to see humpback whales. Another advertises flying south 40 miles or more to the shores of Prince of Wales Island near the mouth of Clarence Strait to view whales in summer.

Potential Impacts to Whales. The completed project is expected to have no population-level effects that are distinguishable from natural variation in numbers. Occasional individual passing whales could be exposed to increased noise from project operation (principally ferry engines/propellers); however, whales hear such noise in the area now, because Tongass Narrows is a busy shipping lane. They would likely move away from areas of excessive noise and disturbance. They do not stay in Tongass Narrows for extended periods; therefore, these disturbances are not expected to have a measurable impact on humpback whales.

Construction of the project would include activities that could disturb whales if completed while whales were present. These include the noise of reverse rotary drilling in submerged rock and substrate for placement of bridge piers, dredging West Channel for shipping (Alternative F3 only), and dredging near shore for ferry terminal construction. Underwater blasting is anticipated for Alternative F3 (for widening the shipping lane in West Channel), and blasting is a possibility for any of the alternatives. All of these activities would be scheduled for fall and winter, after most whales leave Alaska for wintering grounds and after the busy cruise ship season. Project commitments to ensure no measurable disturbance to humpback whales and other marine mammals are listed at the end of this document. Employing these measures, the project is not likely to adversely affect the humpback whale.

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[3] *Wynne, Kate.* Guide to Marine Mammals of Alaska*, University of Alaska Fairbanks, 1997.*

[4] *Frietag, Gary. 2000. Personal communication.*

[5] *Porter, Boyd. 11/20/2003. Personal communication.*

[6] *Masden, Michelle. 11/20/2003. Personal communication.*

Steller Sea Lions

Steller sea lions (*Eumetopias jubatus*) number 100,000-140,000 worldwide.[7] Approximately half live in Alaska. The western Alaska population of Steller sea lions, inhabiting the western Gulf of Alaska and Bering Sea, has declined substantially and is endangered. The Eastern Stock is the population of interest for this project, extending through the eastern Gulf of Alaska and along the coastal areas of Alaska, Canada, and the western Lower 48 states. This stock was listed as threatened in 1990. According to a NOAA Fisheries stock report,[8] the eastern stock is stable or increasing in the northern portion of its range (Southeast Alaska and British Columbia). For the Southeast Alaska population, the trend is growth, from 6,898 animals in 1982 to 9,862 in 2000.

Steller sea lions feed on a wide variety of prey such pollock, flounder, herring, crab, rockfish, cod, salmon, squid, and octopus. Feeding occurs from the intertidal zone to the continental shelf.[9]

Critical habitat has been defined in Southeast Alaska at major haulouts and major rookeries (50 CFR 226.202). The nearest rookery is Forrester Island, and the nearest major haulouts are at Timbered Island and Cape Addington. All three sites are about 80 miles west of Tongass Narrows.

Steller sea lions have not been specifically studied or counted in Tongass Narrows. However, there is informed anecdotal information from a member of the marine mammal stranding network,[10] an ADF&G biologist,[11] and a spotter pilot,[12] all based in Ketchikan, to indicate use of the area. Sea lions may be found in Tongass Narrows year round, although the numbers are small much of the year. There is a peak in activity in March-early May, corresponding to herring spawning season. At this time, it is reported that large pods of sea lions may occur the area (20-80 animals possible). In summer, most sea lions move to large rookeries (such as Forrester Island) for pupping and the next mating cycle. Small numbers of non-mating animals remain in the Tongass Narrows area but are infrequently seen. There is another small peak in activity in later summer, associated with salmon. There are not large numbers in winter.

There are no established haul-out sites in Tongass Narrows. Grindall Island, 12 miles west of the northern tip of Gravina Island, is a year round sea lion haulout but not a rookery. This appears to be the nearest haulout area. ADF&G has done aerial surveys of this site over a number of years (1982-1996) and never recorded animals there in summer (June/July) but has counted more than

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[7] *Wynne, Kate. 1997. Guide to Marine Mammals of Alaska. Sea Grant College Program, University of Alaska Fairbanks.*

[8] *NOAA Fisheries. 2002. "Stock Assessment Report: Steller Sea Lion (*Eumetopias jubatus*): Eastern U.S. Stock"*

[9] *ADF&G, September 5, 2002. Wildlife Notebook Series: Steller Sea Lions, http://www.state.ak.us/adfg/notebook/marine/sealion.htm.*

[10] *Frietag, Gary. 2000. Personal communication.*

[11] *Porter, Boyd. 11/20/2003. Personal communication.*

[12] *Masden, Michelle. 11/20/2003. Personal communication.*

200 animals each on the only two non-summer counts: March 1993 and December 1994.[13] The sea lions have been observed in Tongass Narrows around the fish hatchery, where large numbers of salmon congregate in late summer. In Ketchikan harbor itself, daily sighting of sea lions are not unusual in winter—more than in summer, when the harbor is busiest.

NOAA Fisheries reports concerns about fishing related injury and mortality, such as entanglement in fishing gear. Other causes of mortality are also reported (subsistence hunting, illegal shooting, elimination of sea lions for protection of aquaculture in B.C., etc.). There is no indication of substantial problems related to construction.

Potential Impact to Steller Sea Lions. No impact to the Steller Sea Lion population is anticipated from operation of any of the alternatives, once constructed. The habitat and population of sea lion prey, principally off-bottom fish, is not expected to be substantially affected. Sea lions could be exposed to increased noise from project operation (principally ferry engines), but this would be of the same character of noise already present in the Tongass Narrows shipping lanes and not distinguishable from daily and annual variations. Collision with vessels is not likely, because marine mammals in general tend to avoid collisions by using their excellent acoustic capabilities.

Construction of the project would include activities that could disturb sea lions if completed while sea lions were present. These include the noise of reverse rotary drilling in submerged rock and substrate, for placement of bridge pilings, dredging West Channel for shipping (Alternative F3 only), and dredging near shore for ferry terminal construction. Underwater blasting is anticipated for Alternative F3 (for widening the shipping lane in West Channel), and blasting is a possibility for any of the alternatives. NOAA Fisheries stated in a June 4, 2001 letter, "Steller sea lions are unlikely to be affected by underwater noise associated with project construction activities because they have higher thresholds for noise disturbance and are able to raise their heads out of the water to avoid noise transmission." Nonetheless, all of these activities would be scheduled for fall and winter, between late summer salmon runs and spring herring runs that attract sea lions. Project commitments to ensure no disturbance to Steller sea lions and other marine mammals are listed at the end of this document. Employing these measures, the project is not likely to adversely affect the Steller sea lion.

Mitigating Measures for Marine Mammal Protection

The June 4, 2001 letter from NOAA Fisheries (Alaska) provided an initial response to a request for informal consultation in accordance with Section 7 of the Endangered Species Act and recommended mitigation measures. An October 3, 2003 letter from NOAA Fisheries (Maryland), in response the draft EIS, recommended further mitigation measures. Note that the draft EIS erroneously indicated that pile "driving" would be part of project construction. A reverse rotary drill actually would be employed to drill into submerged rock and substrate for the bridge alternatives. Noise would occur, but the intense spikes of sound and shock waves of pile driving would not be produced. To ensure no injury to or harassment of Steller sea lions, humpback whales, or other marine mammals, the project is committed to the measures listed

[13] *Gerke, Brandee. 2003.*

below. These are designed to be compatible with Essential Fish Habitat (EFH) mitigation measures for the project.

- In-water work will occur outside the springtime months, when there is greatest sea lion use of the project area. The EFH work window for in-water work in Tongass Narrows is July 1 to February 28, and this would be followed for marine mammals as well. Major work, such as any dredging or in-water blasting required, would occur only November 1 to February 28. This timing avoids runs of salmon and herring, on which humpback whales and Steller sea lions feed.
- The construction contract will require a blasting plan approved by NOAA Fisheries, should blasting be necessary.
- The construction contract will require a dredging plan approved by NOAA Fisheries, should dredging be required.
- The project will ensure use of trained and approved observers to indicate when sea lions are within a 50 m zone around pier work or other in-water work, and activity will wait until the animals move out of the area, or work would be stopped if mammals were to enter the area.
- An in-water warning sound will be issued prior to drilling or blasting to allow any marine mammals to voluntarily move to a comfortable distance.
- All necessary permits and agency approvals will be acquired prior to construction and stipulations will be incorporated into contract specifications.
- If necessary, based on the alternative ultimately selected and the design and construction methods ultimately decided upon, an incidental harassment authorization might need to be obtained from NOAA Fisheries.

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